Landmarks on the W coast of the Strait are: the peak of Mitridat (45°21'N, 36°28'E), Yeni-Kale lighthouse standing on Mys Fonar, and on the E coast the peaks of Gorelaya (45°20'N, 36°49'E), Zelenskogo (45°09'N, 36°42'E), Lysaya (45°13'N, 36°42'E) and others are prominent.

Depths in Kerch Strait are shallow. The greatest depths occur at the entrances to the strait from the Black Sea and the Sea of Azov, but they do not exceed 10 m in the N part of the strait and 18 m in the S part. Depths decrease gradually in the middle of the strait, and S of Mys Yeni-Kale they are less than 5 m. Because of this vessels of deep draught can only sail through the channel in the centre part of the strait.

Dangers. There are many dangers which make navigation very difficult in Kerch Strait. In the vicinity of the entrance capes from the Black Sea there are many reefs, banks and submarine obstacles, in the vicinity of Mys Tuzla there are underwater rocks, banks and piles, while to the south of Mys Yeni-Kale there is the area of the Tserkovni Banki. There are many obstacles on both sides of the Kerch-Yeni-Kale channel, particularly on the E side of the channel. Dangers located in passages, in the dredged channel and close to passages are marked with light buoys, unlit buoys and spar buoys.

Hydrometeorological information.

Winds. Winds from the NE predominate throughout most of the year, marked by strength and long duration. In winter these winds give rise to icing. Strong winds are recorded particularly in autumn and winter, but in summer winds from the S are more common. Regardless of direction, winds with a strength of greater than 9 occur quite rarely.

Fog is most frequently encountered in spring.

Currents in Kerch Strait largely depend on the winds and the water level in the Sea of Azov. Currents from the Sea of Azov generally form when the wind blows from the N sector, and currents from the Black Sea form when winds blow from the S sector. Likewise, in strong winds of long duration from the NE, which drive water from the Sea of Azov to the middle of the strait, there is quite a strong reverse current from the Black Sea. The greatest rate of current is recorded in the narrowest portions of the strait and can reach 3 knots. In the wide portions of the strait the rate of the current is 0.1 knots.

The level of water in the straits is influenced by strong winds. Thus the level falls when strong winds blow from the NE, and increases when winds blow from the SW. The observed change in level is more than 1 m.

Ice appears in the Kerch Strait approximately every year, at the beginning of the month of December. Sheets of ice break off because of variable currents and winds during the winter. In very hard winters the strait is covered with relatively solid ice which persists until the end of the month of February. Drifting ice may be encountered in spring when the Sea of Azov thaws.

A local magnetic anomaly has been recorded in Kersch Strait.

Pilotage. When entering the Kerch Strait from the N, the pilot pick-up point is adjacent to W cardinal light buoy No. 1 (45°12'N, 36°28'E) S of the entrance to the Kerch-Yeni-Kale

channel. On approaching from the S the pilot pick-up point is at the location (45°27.5N, 36°41'.5E).

Communications. All vessels approaching this area must establish and maintain permanent radio communication on VHF frequency.

The W coast of Kerch Strait runs for a distance of 22 m from Mys Takyl in a generally N direction to Mys Khrony. The coast is high and with isolated exceptions almost all is steep-to and devoid of vegetation.

From Mys Takyl to Komysh-Buruns'ka Zatoka the coast is hardly indented at all. Kerchens'ka Zatoka, which is quite broad, indents the coast a little to the N of Komysh-Buruns'ka Zatoka.

There are many dangers such as rocks, reefs, banks and wrecks in the approaches to this coast.

From Mys Takyl to Kerchens'ka Zatoka the coast is generally high and steep-to; sandy portions with gentle slopes are only seen in a few places.

Depths along the coast described decrease gradually, but N of the parallel of Mys Belyi they are less than 5 m.

Mys Takyl (45°06'N, 36°27'E) is the W entrance cape to Kerch Strait from the S. The cape is high, steep-to and clearly visible on approaching the strait. 2.5 M W of the cape stands the summit of Kharuchu-Oba, 105 m high, while 2 M NW of the cape there is another summit with a steep slope and a height of 76 m. The cape is associated with dangers extending towards the E as far as close to the Pavlovs'kyy leading marks.

Ratified by Resolution of the State Committee
for Sanitary and Epidemiological Monitoring
of the Russian Federation
of 11 March 1996, No. 6

Date entering into effect:
The moment of publication

ENTERPRISES IN THE FOOD AND FOOD-PROCESSING INDUSTRY (TECHNOLOGICAL PROCESSES, RAW MATERIALS)

PRODUCTION AND SALE OF FISH PRODUCTS

SANITARY REGULATIONS AND NORMS (SRN) SRS 2.3.4.050-96

1. Sanitary regulations and norms were drafted by:

The State "Badge of Honor" Research and Design Institute for the Development and Operation of sea-going vessels (L. B. Mukhina, R. M. Kurdina, E. N. Borisovskaya, A. G. Ryboshlykov, I. E. Anoshkina, and T. A. Lebedeva);

The Fisheries Committee of the Russian Federation (V. E. Korchinskii);

The State Committee for Sanitary and Epidemiological Monitoring of the Russian Federation (O. V. Novikova)

The Institute of Nutrition of the Russian Academy of Medical Science (I. N. Lukovtseva)

The All-Union Research Institute for Marine Fishing and Oceanography (E. T. Martynova, V. p. Lisovaya);

The Atlantic Research Institute for the planning and design of enterprises of the fish Industry (L. S. Guslits);

The Shelf Science and Technology Centre (A. N. Tkachenko);

The St. Petersburg Municipal Centre for Sanitary and Epidemiological Monitoring (V.V. Kartsev);

The Leningrad Regional Centre for Sanitary and Epidemiological Monitoring (L. A. Lipatova).

2. Presented by the State Institute for Research and Development of the Fishing Fleet. [Giprorybflot] on 24 Nov 1995 No. 34/1238.

3. Ratified and adopted by Resolution of Russian State Committee for Sanitary and Epidemiological Monitoring [RCSEM] 11 March 1996, N 6).

4. The "Sanitary Regulations for On-shore fish-processing enterprises" ratified by a Deputy of the Chief State Physician for Hygiene of the USSR of 24 July 1981, No. 2509-81 are to be regarded as null and void from the moment the present Sanitary Regulations and Norms are ratified.

Act of the RSFSR entitled "On the Sanitary and Epidemiological Well-being of the Population"

The Sanitary Regulations, Norms and Hygienic Guidelines, hereinafter called Sanitation Regulations (SR) are normative documents establishing criteria for safety and/or

harmlessness to humans of criteria for humans, environmental factors of the human habitat, and requirements ensuring favorable conditions for the activities of human life.

Compliance with SR is mandatory for all state bodies and public societies, enterprises, and other entities engaged in economic activity, organizations and institutions, irrespective of the entity to which they are subordinate and of their particular form of property, and for public officials and citizens" (Article 3).

Unlawful, culpable (deliberate or negligent) conduct (action or inaction) involving violation of the health legislation of the RSFSR, including existing sanitary regulations shall be deemed a violation of citizens' rights and contrary to the interests of the state...

Official persons and citizens of the RSFSR who have committed a breach of the laws governing sanitation and hygiene are subject to disciplinary action or administrative and criminal accountability" (Article 27).

1. Area of application

1.1. The present Sanitary Regulations and Norms (hereinafter referred to as Sanitary Regulations or SR) were drafted in accordance with the Act of the RSFSR entitled "On the Hygienic and Epidemiological Well-being of the Population", the Act of the Russian Federation entitled "On protection of consumer rights," the Act of the Russian Federation entitled ""On the certification of goods and services" The guidelines for setting state sanitation and epidemiological standards and norms, ratified by the Decree of the government of the Russian Federation of 5 June 1994, N 625, and the directives of the European Union (EC): Council directives 80/778/EEC, 91/492/EEC, 91/493/EEC, 92/48/EEC. 95/149/EEC; the decisions of the Commission 93/140/EEC, 93/185/EEC, 94/356/EEC the EEC Regulations 1093/94 and establish the specifications for the production and sale of fish and fish products.

1.2. The Sanitary Regulations and Norms apply to functioning on-shore fish-processing plants and vessels marketing fish products irrespective of their governing state entities and of their particular form of property. <*>

<*> These regulations do not apply to enterprises and shops producing children's foods and special-purpose foods.

1.3. The present SR establish the sanitation specifications for the production and sale of export <*> fish products caught and processed aboard vessels. Production and sale within the country take place in accordance with the SR for sea-going vessels of the merchant marine of the USSR, in accordance with the sanitation specifications for the processing of sea foods aboard vessels No. 4393-87 and paragraph 5 of the present SR.

<*> the term 'export products' in the text hereinafter is understood to mean fish products delivered to the countries of the EU.

1.4 In respect to already existing fish-processing plants marketing producing products for export, the specifications of the present SR require absolute compliance.

1.5. In respect of fish-processing plants marketing products for sale within the country:

- The specifications for the maintenance of sanitary conditions require absolute compliance.

- Specifications that may be introduced after renovation and mechanization of production processes must be met within a period of five years from the moment these SR come into effect;

- specifications concerning the layout of the land and installation of services and utilities on it shall be met within a period agreed upon with the relevant State Sanitation and Epidemiological Monitoring Centers (SSEMC).

1.6 In respect of fish-processing plants and vessels under renovation the present SR shall apply to the fullest.

1.7. These SR set the specifications for the production and sale of live bivalve mollusks.

1.8. Compliance with the specifications of the present SR for fish-processing plants and vessels will be monitored by the competent bodies <*>

<*> For sale within the country these are the Russian State Committee for Sanitary and Epidemiological monitoring and its Centers, The RF committee for the fish industry or other authorised representatives to whom these rights have been delegated.

2. References to other normative documents

The following documents used in reference in the present SR:

2.1. The Act of the RSFSR entitled "the Hygienic and Epidemiological Well-being of the population"

2.2. The Act of the RSFSR entitled "On Protection of Consumer Rights";

2.3. The Act of the Russian Federation entitled ""On the certification of goods and services"

2.4. The guidelines for setting state sanitation and epidemiological norms, ratified by the Decree of the government of the Russian Federation of 5 June 1994 N 625.

2.5. The act of the RSFSR "On conserving the natural environment," No. 2060-1 of 19 December 1991.

2.6. The medico-biological specifications and sanitary norms for the quality of foodstuffs and food products. Ministry of Health, No. 5061-89, Moscow, 1990.

2.7. Provisionally admissible levels (PAL) for the content of the radionuclides cesium 134. cesium-137, strontium-90 in food products, PAL 93. Resolution of the Russian State Committee for Sanitary and Epidemiological Monitoring, entitled "On the Ratification of normative standards of hygiene," no. 7, of 21 July 1993.

2.8. Council directive, 91/492/EEC of 15 July 1991 entitled "On the sanitary and hygienic conditions of production and sale of bivalve mollusks.'

2.9. Council directive 91/493/EEC, of 22 July 1991 entitled ""on the sanitary and hygienic conditions of production and sale of fish products."

2.10. Council Directive 92/48/EEC of 16 July 1992 entitled "On minimal sanitary and hygienic regulations for fish products on board fishing vessels in accordance with Article 3(1) (a) (1). Directive 91/493/EEC."

2. 11. Council Directive 79/923/EEC of 30 October 1979 entitled "On the sanitary and hygienic specifications for the quality of water in which mollusks are kept."

2.12. Commission decision 93/51 EEC of 15 December 1992 entitled "on the microbiological criteria for the production of culinary processed crustaceous mollusks.

2.13. Commission Decision 93/140/EEC of 19 January 1993 entitled "on detailed rules for visual inspection to detect parasites in fish products."

2.14. Commission Decision 93/185/EEC of 15 March 1993 entitled "On procedure for certification of fish products coming from third countries in accordance with the Council Directive 91/493/EEC."

2.15. Commission Decision 94/356/EC of 20 May 1994 entitled "On detailed rules for compliance with council directive 91/493/EEC in respect of internal sanitary and hygienic monitoring of the production of fish products."

2.16. Commission decision 95/149/EEC of 8 March 1995 "Establishment of limit concentrations of total nitrogen of air-borne bases (TNAB) in certain types of fish products and standardization of methods of analysis."

2.17. Council Rules (EC) N 1093/94 of 6 May 1994 "Conditions for the unloading and sale of catch in ports of the Community by fishing vessels of third countries."

2.18. Council Directive 80/779/EEC of 15 July 1980 "The quality of water intended for human consumption."

2.19. Instructions for the sanitary and microbiological control of the production of food products made of fish and marine invertebrates, N 5319-91. Leningrad, Giprorybflot, 1991.

2.20. Instructions for the sanitary treatment of technological equipment in fish-processing plants and vessels, N 2981-84. Moscow, Transport, 1985.

2.21. Instructions on the sanitary and parasitological evaluation of ocean fish and fish products (fish crude, refrigerated and frozen ocean fish intended for sale in the commercial network and in restaurants), Moscow, 1989, ratified 29.12.88.

2.22. Instructions for the system of sanitary and technical inspection of conserves in production plants, wholesale bases, in the retail trade, and in restaurants. VNIIKOP, Moscow, 1993, N 01-19/9-11 of 21 July 1992.

2.23. Instructions on mandatory pre-hiring and periodic medical examinations of workers and the medical examination of independent truckers, ratified by Order of the Ministry of Health of the USSR 29.09, N 555 and agreed with the Secretariat of the VTsPS 27 Sep 1989 N 20-27.

2.24. Procedural instructions for the sanitary and microbiological inspection of fish canning plants and vessels, N 4222-86, ratified 05 Dec 1986.

2.25. Appendices 1 and 2 to the Order of the Ministry of Health of the USSR N 555 from 29 Sep 1989 "Improving the system of medical examinations of workers and independent truckers" (except for N.pp. 1-3).

2.26. Appendices 1 and 2 to the Order of the Ministry of health for the Medical Industry of Russia and the Russian State Committee for Sanitary and Epidemiological Monitoring of 05 Oct 1995 N 280/88 "Ratification of the list of harmful and dangerous substances and industrial factors, as well as of types of work for the performance of which preliminary and periodical medical examinations of workers are required" (in Part N pp. 1-3).

2.27. Handbook of technological instructions on the processing of fish vol. 1, Instructions on the preparation of ice (TI N 9), Moscow, 1992.

2.28. Sanitary regulations on the use of food additives, N 1927-78.

2.29. Sanitary regulations on sanitary helminthological expert evaluations of fish and the conditions for disinfestations from larvae of diphyllobothrium and opistochoris, ratified 03 December 1990. Sanitary regulations and Norms, 15-6/44, Moscow, 1990.

2.30. Sanitary regulations and norms for the safeguarding of surface waters against pollution (SRN) 4630-88).

2.31. SRN for the protection of shoreline sea waters against pollution in places of public water consumption, SRN 4631-88).

2.32. Drinking water and water supply of populated localities. Zones of sanitary protection of sources of water supply and water piping intended for drinking and household use (SRN 2.1.4.027-95).

2.33. Conditions and time limits for the storage of foodstuffs that spoil especially quickly. SRN 42-123-4117-86.

2.34. Sanitary norms for the microclimate of production premises. N 4088-86 of 31 Mar 1986.

2.35. Sanitary norms for permissible noise limits at work places. N 3223-85. Ratified 12Mar 85.

2.36. Sanitary regulations for seagoing vessels of the merchant marine of the USSR, 1977, N 1814-77 of 22 Dec 1977.

2.37. Sanitary norms for the designing of industrial plants (SN 245-71)

2.38. Sanitary specifications for the processing of marine products on ships, N 4393-87.

2.39. Procedural instructions for the sanitary microbiological analysis of surface waters N 2285-81. Moscow, 1981.

2.40. Procedure for parasitological inspection of sea fish and fish products (selfish crude, refrigerated and frozen fish) ratified 29 Dec 1988, Moscow, 1989.

2.41. Rules for sanitary veterinary expert evaluation of fresh water fish and crustaceans. Moscow, 1989.

2.42. System of technological documentation. Procedure for the development of procedures for the sterilisation and pasteurisation of canned goods and prepared canned foods RD 10.03.02-88.

2.43. Rules for the protection of surface waters State Committee for nature conservation. Moscow 1991.

2.44. Building norms and regulations (BNR 01.01-82). System of normative documents in construction. Main provisions ratified by GOSSTROI of the USSR

2.45 Building norms and Regulations (BNR 2.04.01.05). Internal running water piping and sewage in buildings.

2.46. Building norms and Regulations (BNR 11-4-79. Natural and artificial lighting. Planning norms. Amendments in BST N 8, 10, 1996.

2.47. Building norms and Regulations (BNR 2.04.05.91 .Heating, ventilation and air conditioning.

2.48. Building norms and regulations (BNR 2.09.04-87) .Administrative and public buildings.

2.49. GOST 18963-73. Drinking water. Methods of sanitary and bacteriological analysis.

2.50. GOST 2874-82. Drinking water. Hygienic specifications and quality control.

2.51. GOST 13830-84. Table salt.

2.52. GOST 8.002.86. State Monitoring and official inspection of measuring instruments. Basic principles.

2.53. GOST 12.1.005-88. General sanitary and hygienic specifications for the air in a work zone.

2.54. GOST 11771-93. Canned and preserves of fish and marine food products. Packaging and branding.

2.55. GOST 7630-87. Fish, marine mammals, marine invertebrates, water algae, and products of their processing. Branding.

3. Specifications for on-shore fish-processing plants

3.1. General provisions

3.1.1. The following items may be produced by a fish-processing plant depending on the size and range of products marketed: cold, salted, canned, preserved, balyk caviar, smoked, culinary, products made of fish fat, protein concentrates protein roe, animal feed and technical products, iced goods,, tin-canned goods, etc,

3.1.2. The designing of new fish-processing plants or the renovation of existing ones require compliance with the Building Regulations and norms (BRN 0.1.01.82. System of normative documents for the construction industry. Basic Principles ratified by Gosstroi of the USSR).

3.1.3. Projects for the construction of new and renovation of existing on-shore fish-processing plants as well as the development and adoption of new equipment must be agreed with the State Sanitary and Epidemiological Monitoring Centre.

3.1.4. When construction is completed, a fish-processing plant must be and started up by a commission with obligatory participation of a representative of the State Sanitary and epidemiological Monitoring Centre.

3.1.5. Changes in the technological process for the manufacture of fish products must be agreed in each particular case with the State Sanitary and epidemiological Monitoring Centers.

3.1.6. A shop may begin working with new or refurbished or renovated technological equipment only after sanitation treatment followed by a mandatory microbiological inspection.

3.1.7. Sanitary inspection days and shifts must be regularly scheduled in every section of a fish-processing plant. The schedule of sanitary inspection days must be agreed for each plant with the plant's laboratory and ratified by the director. An additional off-schedule sanitary inspection day is held at the demand of the laboratory or the Sanitary and Epidemiological Department if the sanitary conditions of a production process are found to be unsatisfactory.

3.1.8. All buildings, premises and objects coming into contact with food products are subject to sanitary inspections.

3.1.9. Fish products must meet medico-biological specifications and sanitary quality norms for unprocessed foodstuffs and food products as well as other normative documents <*> in regard to safety indices and maximum permissible levels.

<*> GOST, OST, TU, Technological Instruction and other normative documents.

3.1.10. The sanitary microbiological inspection of unprocessed material prepared foods, auxiliary materials, and end products is to be carried out in accordance with the Instructions "Sanitary microbiological inspection of the production of food products consisting of fish and marine invertebrates" and "Sanitary and technical inspection of the canning process."

3.1.11. Visual inspection of unprocessed material, prepared foods, and end products, and of the sanitary condition of technological equipment is mandatory and must be done every two hours per shift.

3.1.12. Plants producing canned goods, preserves, and slightly salted products containing less than 5% salt, smoked, culinary, roe, and boiled and frozen products must have a production laboratory with one specialist in microbiology on its staff.

3.2. Designing plants

3.2.1. The grounds on which a fish-processing plant is situated must have paths and roads for transport vehicles and pedestrians as well as production areas with a solid water-impermeable covering, rainwater drains that do not clog from sudden downpours, and fencing, and must meet sanitary specifications in regard to the planting of greenery, natural lighting, ventilation, and ground water levels.

3.2.2. The location of a fish-processing plant must be such that the plant is effectively protected against the effects of other industrial plants on it.

3.2.3. The complex of buildings and work areas must not be situated nearer than 15 m from the red line (street, highway).

3.2.4. The utility yard (repair shops, garage, storehouses, etc. must be situated no nearer than 50 m to the nearest unbarred entrances to production areas.

3.2.5. Storage of building materials, equipment, implements, packing containers, or fuel in the yard is permitted on specially designated areas in accordance with regulations.

3.2.6. A zone with a rigorous artesian well regimen, as well as a protective zone around cleaning equipment are to be set off as independent zones.

3.2.7. It is prohibited to locate diverse buildings having no bearing on production on the grounds of a fish-processing plant.

3.2.8. An area with a water-impermeable covering and sloped floor for drainage of waste water into the sewage system and equipped with receptacles for preparing disinfectant solutions must be set aside in the utility zone.

3.2.9. Special storage places with temperatures no lower than 5°C and no higher than 30°C, and humidity of 75-80% must be provided to store preparations used for disinfection, pest control, and rat extermination. The areas should be closed off and appropriately marked. All preparations must have identifying labels affixed.

3.2.10. Metal containers are to be installed on asphalted or concrete flooring which should extend 1 m in all directions from the base of the container for the accumulation of rubbish; they must be placed no nearer than 50 m from production and storage areas. The area on which rubbish bins are located must be enclosed on three sides by a concrete or brick wall 1.5 m in height and have a water inlet ands well as sewage for water runoff.

3.2.11. It is recommended that toilets for dispatchers, drivers, loaders, etc. be located in an auxiliary building with separate exit from the toilet on to the grounds.

3.2.12. Technical production shops must be located no less than 100 m from food production areas and be separated from the latter by greenery.

3.2.13. Work areas, apparatus, and work equipment may only be used for work involved in the production of fish products. However, with permission from State Sanitary and Epidemiological Centers, they may be used for work with other food products after careful cleaning, scrubbing and disinfection.

3.3. Production Areas

3.3.1. A plant must have sufficient production area for working under proper hygienic conditions.

3.3.2. The surface area and cubic capacity of production areas are to be determined with due consideration given to the technological process, with no less than 4.5sq.m. surface area and 15cu.m. air <**> calculated for each worker <*>

<*. Taking into account the maximal number of people in each shift.

<**> CH-245-71.

3.3.3. The height of production areas should be no less than 4.2 meters depending on the equipment used and the conditions for removal of excess moisture, heat and gas emissions from the working area; for low-volume production processes a height of 3m is permitted. The height of rooms for fat meal shops, painting and lithography shops, the production of tins, and agar-agar processing must be no lower than 6m.

3.3.4. The construction and planning of plants must also be such as to prevent contamination of products; the "dirty" and "clean" parts of the building must be completely isolated from one another.

3.3.5. The localization of production areas in the building and of production processes on plant grounds land must be such as not to encumber the flow of the technological process and must preclude any possibility that the flows of raw materials, prepared foods, and waste do not intersect with the flows of the end product, and that prepared foods not protected from outside environmental influences must not be transported through open spaces.

3.3.6. Shops where food products and medicinal preparations are produced must be completely isolated from shops producing technical and feeds and must have separate entries and areas for amenities.

3.3.7. To store fish products a plant must have a refrigerator or cold storage room that maintains a temperature in agreement with the Normative Document (ND) for the specific type of product.

3.3.8. In a multi-storey building shops using the most water must be located in the first storey to reduce the drainage onto stairwells between storeys.

3.3.9. If there is ventilation, storage rooms, refrigeration rooms, brine storage, stokers, apparatus and machinery rooms and cooling equipment are permitted in the basement storeys where the rules of safety technology allow it.

3.3.10. Measures of protection against the penetration of rodents (solid doors, careful sealing of gaps around communication lines. and metal screens on ventilation openings) must be provided in production and storage areas.

3.3.11. The design of technological production areas and the placement of equipment must be such as to allow access for purposes of cleaning and sanitation.

3.3.12. The floors of production areas should be a solid, non-adsorbent surface; they must not be slippery, and they should be made of water-resistant, non-toxic, acid-, alkali-, and oil-resistant material that are easy to clean, disinfect and dry properly.

3.3.13. A floor must be sloped and have no juts or prominences or depressions for water to stagnate.

3.3.14. The slopes of gutters and channels must be no smaller than the slop of the floor. The direction of slope should be such that waste waters are able to drain off through openings in gutters, ducts, and wells equipped with removable screens without crossing passageways for vehicles and persons.

3.3.15. If there is no water drain, shops should have equipment for water removal.

3.3.16. The joints between the floor and shafts must be water-impermeable and permit easy access for cleaning and disinfection, with 300 mm waterproof carpeting.

3.3.17. Inner walls must have a smooth water-resistant and impact-resistant surface; they must be painted a bright color and be easy to wash.

3.3.18. For finishing of inner walls material permitted by public health authorities must be used, e.g.: plaster cement, ceramic plate, and various types of metallic corrosion-resistant sheets (sheet steel, or aluminium alloys) or a non-metallic covering with a good-quality surface resistant to blows and easy to remove.

3.3.19. The joints of sheet coverings must be sealed with mastic or another material resistant to the action of hot water.

3.3.20. Wall must be without protuberances. All pipes and cables must be buried in the wall surface or properly hardwired.

3.3.21. Doors by through which fish and other food products pass must be sufficiently wide and made of or covered with corrosion-resistant and impact-resistant materials and must be easy to clean.

3.3.22. Ceilings must be designed and made to prevent the accumulation of dirt and condensate and be easily cleaned.

3.3.23. Ceilings must have a smooth, water-resistant surface and be brightly painted with emulsion paints or whitewashed.

3.3.24. In buildings with protruding elements in the ceilings (beams, pipes, etc.), installation of suspended ceilings is recommended.

3.3.25. If roof beams cannot be closed off and the inside surface of the roof serves as a ceiling all joints must be sealed. Supporting beams must be brightly painted. The roof surface must be smooth, easy to clean, and must be such as to prevent dust, dirt and condensate from getting into the fish products.

3.3.26. To store cleaning implements and materials, detergents and disinfectants special storerooms, closets and bins must be provided.

3.3.27. The following must be provided for in production areas:

- flush taps, 1 tap valve per 150 sq.m. surface (at least one per room), and brackets to store hoses;

-sinks with hot and cold water connections fitted with mixer faucets, and supplied with soap, brushes, disinfectant solution, and throwaway towels or electric towels must be installed in work areas for washing hands. Sinks must be located in every production areas the entrance or else at a distance of no more than 15 meters from the work area; 1 toilet for every 20 persons.

- for drinking, fountains or aerators must be installed at a distance of no more than 70 meters from the work area; the temperature of drinking water must be no higher than 15°C.

3.3.28. Taps in work areas and toilets must not be manual.

3.4. Water supply and sewage

3.4.1. The water supply of fish-processing plants must be achieved by connection to the centralised domestic drinking water mains; if the latter is unavailable an independent water pipeline must be built. Water must meet the specifications of State Standard (GOST) 2874. The water supply must be monitored by the plant laboratory as stipulated in Appendix 7.1.

3.4.2. The water supply system, the choice of water source, and the pertinent equipment must be agreed with State SEM centers.

3.4.3. Sanitary water safety zones are to be established in accordance with the SRN specifications 2.1.4.027-95 on all water mains (irrespective of the official body under whose governance they fall) supplying water from either surface or underground sources.

3.4.4. Connections between the domestic drinking water main system and technical water mains are absolutely prohibited.

3.4.5. Pipes, fittings, and equipment used to install internal hot and cold water supply systems must meet the specifications of SRN 2.04.01-85.

3.4.6. All water lines, sewage, and steam and gas pipelines outside working areas must be painted specified colors to distinguish them outwardly.

To avoid moisture condensation on pipelines whose surface temperature is below the ambient temperature the pipes must be heat-insulated.

3.4.7. The following water consumption norms should be observed to determine the amount of water needed for everyday purposes, watering greenery, etc (Table `1):

Table 1

Purpose of water	Water consumption l/day	
	Plant	
	With sewage	without sewage
For drinking and personal	25	15
Hygiene (per person)	40	
Cantine (per meal)	20	
Laundry machine (per kg dry wash)	60	
Transport (per vehicle)	600	
Watering road surfaces (per sq.m.)	2	
Watering green areas per sq.m.	4	
Club, Red spaces (per visitor)	6	
First-aid stations (per visit)	6	
Laboratory (per faucet-h)	40-60	

3.4.8. Water consumption norm for washing floors, paneling and waters, per shift:

- In production areas requiring a special sanitary regimen (fish dissection shop, caviar, canning, culinary and preserves sections, medicinal fat section, etc.) 10 l/sq/km
- in areas with minor floor dirt 5 l.sq.m. <*>

<*> Three litres/sq.m. Water is needed per shift for washing down floors.

3.4.9. Hoses for cleaning work areas are to be connected to the hot and cold water inlets via mixer faucets. The hose ends must be equipped with pistol fittings and devices that prevent contact with the floor.

3.4.10. Water used in technological work areas must meet the specifications of GOST 2874 "Drinking water."

Sea water must be disinfected beforehand with a solution of chlorinated lime or chloramines in a concentration of 10g/cu.dm. As well as the bactericidal preparations AB or Catapol in a concentration of 0.2-0.5 g/cu.m. Ozonisation, electrolytic chlorination, as well as ultraviolet radiation with bactericidal lamps can be used for disinfection.

The container must be washed with domestic water or fresh sea water or blasted with steam. Freshened sea water can be used to produce steam.

3.4.11. Water for the production of canned foods must meet the specifications of the instructions entitled "The procedure for sanitary and toxic monitoring of canned goods in production plants, at wholesale sales points and retail shops, and in restaurants."

3.4.12. In the case of production of fish products for export, drinking water or clean sea water meeting the specifications set out in Appendix 7.2 should be used for all purposes.

The use of catamine and Catapol to decontaminate water for cooling canned goods is not permitted.

Sea water may be used for the operation of fire-prevention systems and for cooling refrigerating equipment. The pipelines used for these purposes must not be used for other purposes. These pipes are a source of food product contamination.

3.4.13. Sea water must be collected far from shore in areas not contaminated with petroleum products, waste waters, decaying algae, etc.

3.4.14. Water in open bodies of water used for everyday and technological purposes, preparing detergent and disinfectant solutions, and scrubbing and spraying equipment must meet the specifications in "Sanitary regulations and norms for the protection of surface waters from pollution in places of water usage by the populace,"

3.4.15. A water pipeline station must be located in an isolated place that can be closed off. It must have manometers, taps for taking samples, traps for drainage, and reverse valves allowing water pressure to build up in only one direction.

3.4.16. Drinking water is to be analysed in accordance with GOST "Drinking water. Methods of bacteriological and sanitary analysis" while water from open bodies and sea water is analysed in accordance with the "Procedural guidelines for the microbiological and sanitary analysis of surface waters."

3.4.17. Construction of the sewage system of plants in the fish-processing industry must meet the specifications of the SRN entitled. "Sewage. Surface systems and equipment." "Internal water pipes and sewage system in buildings." as well as the specifications of the present SRN.

3.4.18. Plants must have separate systems for production and for domestic sewage, while there should be a gutter drainage system for sudden downpours. Connection between production sewage and domestic sewage systems are prohibited.

3.4.19. Wells and pipes for carrying off industrial wastes that run through the spaces between storeys must be impermeable to water and designed in such a way that they are not over equipment used for the production of fish products, over work places or over areas where food products are stored. The pipes for ordinary sewage must not pass through production shops, storage rooms for food products, or eating areas.

3.5. Lighting, heating, ventilation

3.5.1. The lighting of production areas must meet the SRN "Natural and artificial lighting, Design norms."

3.5.2. Lights with luminescent lamps must have a protective screen (grid), light disperser, or special lamp fittings preventing the bulbs from failing out of the lamps. Lamps with incandescent bulbs must have a solid protective glass.

3.5.3. Luminescent lighting is admissible only if the question of the utilisation of spent luminescent lamps containing mercury filler has been resolved.

3.5.4. For lighting areas with open technological processes lights should placed such that there is no possibility of fragments falling into the product.

3.5.5. The sanitary treatment of lamps should be carried out at least once every three months and in shops producing caviar at least once per week in accordance with the schedule for sanitary treatment of the shop.

A technically trained person should be charged with monitoring the condition and performance of lighting fixtures.

3.5.6. All production areas of caviar shops must be equipped with bactericidal lamps calculated at 1.5-2.2 W per cubic metre of air. Bactericidal lamps are to be switched on one

hour before work begins (the presence of persons in a room where bactericidal lamps are switched on is prohibited). Persons must not be permitted to enter a room until at least 30 minutes after the bactericidal lamps have been switched off.

The time during which bactericidal lamps are in operation (in accordance with the specifications) is recoded in a special diary.

3.5.7. The surface area of windows in the main production shops must be at least 30% of the floor area. To prevent excessively bright illumination windows should face the north. The best illumination is achieved if the lower edge of a window is 80-90 cm from the floor, and the upper edge 20-30 cm from the ceiling. The width of the wall spaces between windows should not exceed one half the width of the window.

3.5.8. The outside glazed surface of light spaces (windows, transoms, window leaves) should be cleaned of dust and soot whenever they have become dirty but at least once every three months; inside surfaces should be cleaned once per month. In winter only the inside frames of window openings need to be cleaned.

Broken window glass should be promptly replaced with intact glass. Composite glass must not be installed in windows.

Light passageways both inside and outside a building must not be obstructed with alien objects.

3.5.9. Machinery and equipment should be placed such that the work area receives the fullest illumination, yet is out of direct sunlight.

3.5.10. When the use of a production area is changed, or if equipment is rearranged or replaced, lighting fixtures must also be refitted and adapted to the new conditions with diverge from lighting norms.

3.5.11. All production, administrative and general-use rooms must have ventilation providing air meeting the SRN specifications "Heating, ventilation, and air conditioning" SRN "Administrative and general-use buildings", and GOST "General sanitary and hygienic specifications."

3.5.12. Window leaves, transoms that open, and frames equipped with mechanical devices that open and latch them, screens, etc, should be provided for natural ventilation of enclosed spaces. Windows should open inward so they may be washed.

3.5.13. All air inlets should be located in places that do not allow dirty air, gases and water to enter into them. The incoming air devices of systems swerving food production shops must be equipped with filters to remove dust from the air.

3.5.14. Incoming ventilating devices and exhaust openings for natural ventilation should be equipped with screens to protect from insects.

3.5.15. Ventilation ducts, air outlets from technological apparatus must be dismantled and their inside surfaces cleaned as they become dirty (at least once per year).

3.5.16. To prevent overcooling of production areas air-thermal curtains should be provided at technological passageways and lobbies.

3.5.17. Recirculation of air in ventilation or air heating systems are prohibited in production process accompanied by the release of noxious fumes, gases and dust and in rooms for machinery and apparatus for ammonia-operated cooling systems.

3.5.18. Each production process must have its own ventilation systems. Thus, pumps for dust and readily condensing vapours, and pumps for substances producing a noxious or explosive mixture when mixed together must not be combined into a single common exhaust device.

3.5.19. Central heating is to be provided in plants.

3.5.20. The air temperature and relative humidity in production areas, closets and storerooms for storage and ripening of food must meet the specifications of GOST 12.1.005-88 and comply with technological instructions.

3.5.21.A heating system must be provided in refrigerators, in compartments for thawing frozen raw material, in cold salting rooms, and in storerooms in accordance with SRN specifications for "heating, ventilation, and air conditioning' as well as with technological instructions.

Heating systems in production areas must be water-heated systems with a heat element temperature of 150°C or steam-heated (130°C) with local heating devices that have a smooth surface and are easy to clean,

In general-use and administrative rooms the temperature of the heat element must be 95°C for two-pipe heating systems and 105°C for one-pipe systems.

3.5.22. All production processes differing radically in regard to temperature and humidity must be in separate rooms connected if necessary only by lobbies, corridors, doors, etc.

3.5.23. Sources that emit considerable amounts of steam and heat should be heat-insulated (covered with a roof, insulated by a jacket or capped).

3.5.24. Air temperature in production areas must be regulated depending on the outside weather conditions.

3.6. Maintenance of grounds and production areas

3.6.1. The grounds of a fish-processing plant (shop) must be kept clean and orderly, watered in the summer and cleared of snow and ice in the winter.

3.6.2. The grounds should be cleaned up at least twice a day in the summer.

3.6.3. Water runoff from precipitation, thaw water and water from washing, utility spaces and passageways must be regularly cleaned and kept in good repair.

3.6.4. Grounds, production areas, general-use areas, and auxiliary buildings must be cleaned up by specially assigned and trained staff, which may not be recruited to work in food production.

3.6.5. When work k is complete, shops, equipment, utensils, and containers must be tidied up and cleaned. Doors, cornices, window-sills, heating devices, etc. must be wiped down with a moist material after which floors are to be scrubbed. Floors and walls are scrubbed down with hot water with liquid detergent added, and then disinfected. During the course of work floors must be mopped as they become dirty.

3.6.6. To keep shops and sections in the proper sanitary condition sanitary inspection days are scheduled in fish-processing plants:

- once per week for shops where canned goods, preserves, caviar, culinary, and smoked products, and ground fish are produced;'
- every five days where boiled and frozen crustaceans and salted caviar are produced;'
- once every ten days where frozen, salted, and brine products, animal feed, and fats are produced.

After completion of a sanitary inspection day, a microbiological check is done.

3.6.7. Shutdown time for shops, the time allotted for repair work and the volume of work to be done must be ratified by the plant management.

3.6.8. Cosmetic repairs of plants, shops, and work areas must be done in measure as they become dirty, but at least once per year. If mold appears on walls, ceilings, and in corners sodium oxyphenolate or other permitted antiseptics should be applied before

whitewashing. Sanitary treatment, whitewashing and painting of a shop is prohibited while work is going on.

To protect the facing and painted walls and doors from damage buffers and stops should be installed on the floor.

Places where the plaster has fallen away must be promptly replastered followed by whitewashing and painting.

3.6.9. The placement and installation of equipment in production shops must not be such as to obstruct access for cleaning and disinfection.

3.6.10. Containers may not be more than two-thirds filled with production wastes; when that level is reached they must be emptied (at least once per day in the summer and once every two days in the winter), cleaned, scrubbed down, and disinfected. Pouring liquids into the containers is absolutely prohibited.

3.6.11. Rubbish, broken glass, packing scrap, wastes from fuel combustion etc. must be stored in especially reserved places in containers and regularly trucked away in special vehicles.

3.6.12. Domestic animals are absolutely prohibited on the grounds and in the buildings of a fish-processing plant (with the exception of watch dogs, provided they are properly looked after).

3.6.13. Eating food or engaging in outside activities is absolutely prohibited in production areas.

3.6.14. Entry of outside persons into production areas or storerooms is allowed with the permission of the administration but only if specialized or sanitary clothing is worn.

3.6.15. Implements for cleaning shoes, Scrapers, grids, mats, and brushes must be provided at the entrance to production areas. These implements s must be cleaned outside said areas at least twice per shift.

Disinfectant rugs moistened with a 0.5% solution of chlorinated lime or chloramines must be placed at the entries to production areas, storerooms, and general-use rooms. The rugs must be replaced once per month.

3.7. Specifications for equipment, implements, and packaging materials

3.7.1. Apparatus and working equipment, dissection benches, receptacles, conveyer belts and knives must be made of material that is allowed to come into contact with food products and they must be easy to clean and disinfect.

Metal constructions should be made of rustproof materials.

The use of wood for dissection benches and other constructions is prohibited.

3.7.2. Equipment must be designed such that it is easy to dismantle and its units easy to access so that all parts coming into contact with food products can be easily cleaned scrubbed down and disinfected. Pallets should be easy to move. They should be no more than 30 cm from the floor.

3.7.3. Parts of technological equipment coming into direct contact with food products must be lubricated solely with vegetable oil.

3.7.4. Bunkers, tanks, tubs, block forms, and other receptacles for raw material, prepared foods, and end products must have a smooth surface that is easy to clean, wash and disinfect.

3.7.5. Table tops should be smooth, and made of non-corrosive metals or synthetic materials that have been cleared by the Russian SCSE M for contact with food products,

3.7.6. The use of mercury measuring and monitoring instruments is prohibited. Glass measuring instruments must have metal cases,

3.7.7. Metal rustproof steel paddles with plastic handles must be used when cooking various kinds of concoctions.

3.7.8. Only metal spoons, pipes and pincers may be used to extract samples for analysis.

3.7.9. Production implements must be marked; the use of unspecified implements is not permitted.

3.7.10. Equipment, implements, and packing, including coverings having contact with food products and unprocessed raw materials must be made of materials cleared by the Russian SCSEM.

3.7.11. Consumer packaging for end products must meet the specifications of normative documents and be packed in cardboard boxes with liners or in polyethylene bags with damaging or deforming the packing material.

3.7.12. A packing used for labeling canned products must meet normative documents specifications. Periodic checks of the quality of the packaging and evaluation of its sanitary condition are made in conformity with the rules of sampling and testing methods explained in official documents. Specifications for washing and disinfection of canning tins and preserve jars are presented in Appendix 7.3.

3.7.13. The lids of tins must arrive to a shop clean and packed in water-impermeable paper or in hermetically sealed polyethylene bags. Packing materials should not be removed from the lids until just before they are fed into the hopper of the rolling machine.

The metallic lids for glass polymer and metallic tins must be clean and packed in water-impermeable or oiled paper. The tins may be used without first preparing them provided they are not unwrapped until just before they are rolled.

3.7.14. The coating on the inner surface of tin cans and lids must be resistant and meet the specifications of normative documents.

3.7.15. The empty tins must be stored in clean, dry places on a temperature regime that is fitting for the type of material. Tins made of polymer materials must not be stored in the light.

3.7.16. Casks must be stored in clean dry places or under an awning on pallets.

3.7.17. Membranes used for packing sausages and foils for packing end products must be cleared by the Russian SCSEM.

3.7.18. Packing and auxiliary materials used for packing fish products must be clean and dry and free of foul odors and must meet the specifications of normative documents. The use of soiled or moldy packaging is prohibited.

3.7.19. Measures for washing and disinfection of production shops, equipment, implements, containers, and transport vehicles in packing plants are to be carried out in accordance with Instructions for the sanitary treatment of technological equipment in fish-processing plants and vessels with detergents and disinfectants cleared by the Russian SCSEM.

3.7.20. The use of new detergents and disinfectants is allowed only with clearance from the Russian SCSEM. Detergents and disinfectants must not have a detrimental effect on equipment or products.

3.7.21. A microbiological inspection of the quality of washing and disinfection of technological equipment, implements and packing is to be carried out on the basis of Instructions for the microbiological inspection of food products consisting of fish and marine invertebrates and the Procedural instructions for the Sanitary and microbiological Inspection of fish canning plants and vessels.

3.8. Accessory materials and ice

3.8.1. Accessory materials must have a document certifying quality and be subjected to lab inspections checks upon arrival and thereafter periodically in accordance with the specifications of normative documents.

3.8.2. When imported food additives are used, a firm must have a certificate and specifications sheet from the supplying company as well as a health certificate or a clearance from the Russian SCSEM.

Imported food additive must be stored in the manufacturer's packaging. Transfer to another receptacle for storage is prohibited.

3.8.3. Places for the storage of accessory materials must be dry, well ventilated and free of alien odours, and must not be infected with storehouse pests.

3.8.4. Products must be arranged in storerooms such that the distance between the lower rows of sacks or crates and the floor is at least 10 cm. Placement near water pipes and heating devices is prohibited.

3.8.5. Spices are to be stored and transported in their packaging.

3.8.6. Storage of spices in places with strong smelling substances is absolutely prohibited.

3.8.7. All friable accessory materials must be passed through magnetic detectors before use.

3.8.8. Vegetable oil arriving to a plant must be inspected by the laboratory for the presence of Staphylococcus aureus. It must be stored in opaque, tightly sealed and plumbed containers whose tap must not be higher than the bottom of the container.

3.8.9. Vegetable oil and oil mixtures must be stored on shelves in a cold storage room in accordance with the specifications of normative documents

3.8.10. Bottles of acetic acid must be placed in wicker baskets or wooden crates with a soft lining in a dry cool place (insulated).

3.8.11. Special closed-off storage areas with a relative humidity of no more than 75% must be used to store salt.

Salt storage bins must protect the salt from incidental exposure to atmospheric precipitation, ground waters, and physical contamination (dust, dirt, etc.) and prevent losses of salt.

3.8.12. Special bunkers, crates, and other receptacles must be used to store salt at work places to protect the salt from contamination.

3.8.13. Pure drinking water is to be used to prepare ice. The quality of drinking water must meet the specifications of GOST 2874.

To prepare chlorinated ice chlorinated lime with a chorine proportion of no more than 25% by mass is to be used.

3.8.14. Disinfected sea water as well as fresh water from outdoors, meeting a Coli index of GOST 2874 may be used to make ice.

3.8.15. Insulating material used to cover ice should bee clean. Insulating material should be stored near areas set aside for ice storage (in bales), taking measures to protect the materials from atmospheric precipitation,

3.8.16. Artificial or natural ice used to refrigerate fish, saline solution (brine), should have a Coli index meeting the specifications for drinking water.

3.8.17. Ice must be stored in accordance with the specifications of normative documents.

3.8.18. The conditions for transporting ice must be such as to maintain its quality in accordance with the specifications of normative documents.

When ice is transported in open vehicles it most be covered with a clean tarpaulin.

3.8.19. When working in salt and ice storage areas workers must use special shoes and implements.

3.9. Fisheries

3.9.1. A site for setting up a fishery must be agreed with the local SCSEM Centre.

3.9.2. All on-shore lands of a fishing area must be fenced off and levelled.

3.9.3. Racks meeting sanitary and hygienic specifications must be mounted for drying nets after they are first cleaned.

3.9.4. An elevated on-shore area not susceptible to flooding on solid ground should be chosen for the placement of storage bins, sheds and other constructions and utility areas on a fishery

3.9.5. The grounds of a fishery must be kept clean and should be cleaned up every day.

3.9.6. Fisheries must have connections to a water supply meeting the specifications of GOST 2874.

3.9.7. A sewage system must be connected for the collection of domestic and fecal wastes (from canteens, laundries, toilets); rubbish bins with lids that can be tightly closed for collecting rubbish and wastes should be placed at a distance of at least 50 m from housing and public buildings, wells, and places for laying out nets.

3.9.8. The contents of rubbish bins must be sprinkled every day with a 10% solution of chlorinated lime or solutions of Lysol or cresol. The rubbish and waste must be trucked away to the municipal dump by special trucks as it accumulates.

3.10. Fish receiving departments and fish dissection shops

3.10.1. Fish-receiving site (dock) of a fish-processing plant must have a sewage system. The floors of receiving sites must be asphalted and be sloped toward the sewage drain. The use of receiving areas as a docking area domestic needs and for the sanitary treatment of vessels is prohibited.

3.10.2. Hot and cold water and steam must be connected to a sanitary docking area and fish-receiving site and marked receptacles for shipping vessels must also be installed.

3.10.3. Fish receiving areas must be cleaned and disinfected with a 2% solution of chlorinated lime and washed down with clean water every day.

3.10.4. The space under a receiving area must be kept clean and must be periodically disinfected. Dumping rubbish and waste under the receiving platform is prohibited.

3.10.5. When fish is unloaded measures must be taken to protect it from contamination and harmful materials.

3.10.6. Loading and unloading should be done with maximal use made of machinery (cranes, telphers, fish pumps, motorised wagons, etc.

3.10.7. A fish-receiving workplace must be enclosed, heated, with proper roof and ceiling. Attic spaces must not be screened. The walls of the workplace must have a tile facing and have no gaps, and the floors must have a solid, water-impermeable covering sloping toward drains and gutters.

3.10.8. The workplace floor must be periodically cleared of production wastes, scrubbed down with water, and disinfected. Walls and roofing must be periodically cleared of dust, cobwebs, and other types of dirt.

3.10.9. Fish is to be placed in a special bunker or on a pallet for dissection. The distance between the floor and the pallet must be no more than 30 cm. Fish must not be placed on the floor.

3.10.10. fish-dissecting benches must be washed as they become soiled. Machines must be cleaned at lest once per shift.

3.10.11. Hoses used to wash the fish must be hung coiled on the wall, whereby the end of the hose must not touch reach the floor.

3.10.12. To wash big fish, special implements, including capron brushes with a spray nozzle, sponges, etc must be used

3.10.13. When the fish is completely dissected it is carefully washed in clean running water (temperature no higher than 15-18°C), removing mucus, blood, and the remains of entrails and stored in refrigerated bunkers or immersed in ice in accordance with technological instructions or immediately sent onward to the next stage of the technological process. .

3.10.14. Each type of food waste must be collected separately in clean boxes.

The time for collecting wastes in one container must not exceed 1.5 hours.

The collected waste must be promptly sent onward for further treatment or frozen.

3.10.15. If it is impossible to handle the container promptly it must be sent to a cold storage room with an air temperature of 0-5°C regardless of how filled it is. The waste must not be kept for more than four hours.

3.10.16. Fish wastes intended for feed for cattle must be stored in a specially marked container with a solid lid and removed from the work area at least once per shift.

When wastes are sent off as cattle feed, the veterinary inspection authorities must be notified.

3.11. Cold handling of fish

3.11.1. Crushed ice (artificial or natural) should be used to prepare refrigerated fish. The ice should be washed before crushing.

3.11.2. Fish must be thoroughly washed with clean water (temperature no higher than 15°C) before being sent for refrigeration and freezing. Disinfected sea water may be used for hosing down the fish.

3.11.3. The time of loading and removal of fish from a freezer and the data from control measurements of temperature of frozen fish must be recorded in a special diary.

3.11.4. Technological operations in freezers must be carried out with measures in place to prevent the temperature in the freezer from rising even when the fans for circulation of forced air are switched off.

3.11.5. Fish may be covered with special protective coverings, especially recommended for use in the food industry, that delay processes of oxidation of the fat on frozen fish and also prevent the fish from drying out during cold storage.

3.11.6. Water in glazing vats must be changed as it becomes dirty, no at least once per day, and the vats must be cleaned at the same time.

3.11.7. The sanitary treatment of glazing vats and equipment is to be done in accordance with Instructions for the sanitary treatment of technological equipment in fish-processing plants and vessels.

3.11.8. Water used to glaze fish (drinking water and disinfected sea water) must meet the specifications of GOST 2874.

3.11.9. In preparation of sea water disinfected with antiseptics in the vat of a glazing apparatus outboard sea water in an amount compatible with the capacity of the vat should be fed in from a technological main pipeline. At the same time, an antiseptic, either catamine

AB or Catapol, in a concentration by mass of 0.5 g/dl, is added with a measuring cup while carefully stirring for ten minutes. As the disinfected sea water is dispensed, the prepared antiseptic solution in an amount of 0.5/g/dl is added to maintain the level required for glazing blocks of fish.

3.11.10 Storerooms equipped to receive finished products must be cooled to a preset storage temperature before being filled.

3.11.11. Storerooms (holds) for fish and fish products must have devices and instruments for humidity and temperature control.

3.11.12. The air temperature in a storeroom must be monitored daily (at least twice per day) using automatic recording devices or tested thermometers placed in central easily accessible places in the storeroom at a height of 1.5-1,8 cm from the floor.

3.11.13. The relative humidity of the air in storerooms must be checked at least once per week with the appropriate stationary or portable instruments (psychrometers, hygrometers, and hygrographs).

3.11.14. The results of such measurements of temperature and relative humidity of the air in store rooms are to be entered in a special record diary.

3.11.15. Automatic recording devices must be placed in such a way that their information may be conveniently read. The recording sensor must be located at the most remote point from the source of cold air, i.e., where the temperature of the room is the highest. The recorded temperature data should be kept until the food products are sold and must be available for presentation to the inspection authorities.

3.11.16. Closed platforms must be provided for loading and unloading in cold storage rooms with a capacity of over five tonnes.

3.11.17. Products deemed unfit as food must be stored in a separate area for later use for technical purposes or for destruction.

3.11.18. Products received in a dirty or contaminated condition, with clear signs of spoilage and meld, and with a peculiar or uncharacteristic odour, and other deviations from standard specifications may only be accepted for temporary storage.

3.11.19. The question of whether such goods maybe sold and how must be decided by a technician or merchandising specialist, and in complex cases where the safety of the products is at issue,, with the assistance of regional CSSEM Centres, the Trade Inspectorate, and the Office for the Assessment of Goods. Depending on the conclusion of these evaluations the goods are transferred from the storage room (with the agreement of the supplier) to be processed by the appropriate enterprises or sent onward for later sale.

3.11.20. Objects for storage must be placed no nearer than 50 cm from walls and at a height of no more than 20 cm from the floor to ensure that air has access to the fish products and to make rodent control easier in cold storage rooms.

3.11.21. Products that mutually affect each others quality and condition must under no circumstances be stored together in one room.

3.11.22. In some cases were there is insufficient free space short-term storage of diverse types of products that require the same temperature regimes may be allowed provided this does not cause a deterioration of their quality.

3.11.23. Floors in rooms, corridors, and shelves must be cleaned as they become dirty but at least once per shift.

3.11.24. Regular repair work, whitewashing, and disinfection must be done as needed but no less than once per year.

3.11.25. 'Fur' must be removed from battery poles as it accumulates but no less than once per month, and once per day in air conditioners.

3.11.26. The administration of cold storage units must rigorously comply with the shelf-life of food products and have them sold promptly.

2.11.27. The cold storage administration is responsible for the sanitary and technical condition of a cold storage unit.

3.12 Manufacture of salted products

3.12.1. The Starting material used in the production of salted products must meet the specifications of the existing normative documents.

3.12.2. Salting containers, implements, and equipment should be prepared in accordance with the Instructions on the sanitary treatment of technological equipment in fish-processing plants and vessels.

3.12.3. After each emptying, tubs, vats, and implements must be carefully cleaned of the rests from brine, fat, and fatty salt and checked for water-impermeability.

3.12.4. All the implements of a salting shop (carts, crates, and haulers) must be marked, washed daily, and disinfected once per week.

3.12.5. The walls of stationary tubs for salting, thawing, and washing, which are set deep in the earth, must be elevated at least 50 cm over the floor.

3.12.6. Tub bottoms must be sloped toward the drain and ensure that the spent brine and wash waters are completely drained off.

3.12.7. Workers engaged in salting fish in the tubs and then unloading them must wear special shoes, overalls, clean gloves sleeves, and also use the specialised implements for a salting shop, which should be marked and kept in a special, separate place.

3.12.8. Brine remaining in tubs after the fish has been removed which does not have a putrid odour, and has an acidity of no more than 2-3 may be reused in the production process after purification (filtration) on the decision of the laboratory.

3.12.9. The weights for the tubs must be made of material that is resistant to brine waters, and easily cleaned and disinfected. They must have handles and weigh no more than 20 kg. The use of bags containing salt and other devices not meeting sanitary specifications as tub weights is prohibited.

3.12.10. Hot and cold water must be connected via a mixer faucet to the receptacles for thawing, salting, and washing

3.12.11. The drain pipe from receptacles must be equipped with a shutoff device.

3.12.12. Containers for salting fish must be made of corrosion-resistant metal or polymer materials.

3.12.13. Cleaning, reconstitution, and cooling of brine waters used for fish salting in circulating brine and for salting in a pulsating stream of brine must be done in accordance with the technological instructions.

3.12.14. Racks for draining thawed, washed and salted fish must be situated at least 40 cm from the floor.

3.13. Production of preserves

3.13.1. A preserves shop (section) may be set up in a separate building or in an isolated room in a building with other shops processing fish products for consumption.

3.13.2. For the production of preserves the following auxiliary shops must also be present in addition to the main production sections (raw fish room, dissecting room, unpacking room packing room, and room for preparing sauces) depending on the technological process: washing and disinfection of empty vats, washing of implements and packing coming from outside; preparation and treatment of vegetables and fruit, cold storage

room for short-term storage of reserves; a place to store accessory materials, a cooled room for storing the end product at temperatures between 0 and minus 8°C; ' a place to store empty containers; and a centralised brine room (the process of preparing and feeding brine must be mechanised).

3.13.3. The sanitary and microbiological monitoring of the preserves production process must be done in accordance with the Instructions for the sanitary and microbiological monitoring of food products of fish and marine invertebrates.

3.13.4. The starting material used for the production of preserves must meet the specifications of the normative documents.

3.13.5. The process of manufacture of preserves in sauces must be thoroughly mechanised.

3.13.6. Frozen reserves must not exceed the hourly need of the dissecting shop. Keeping frozen starting material in water is prohibited.

3.13.7. Empty return containers and containers with fish must be kept on racks at least 40 cm from the floor. The bottoms of containers must have holes for draining off water. Containers with fish are to be stacked in a single row at a height for draining.

3.13.8. A spicy, salted sauce is to be mixed with acetic acid in a porcelain or rustproof steel vessel.

3.13.9. After rolling, preserves may not stay in production areas longer than 2 hours and must be sent to the cold storage room for maturation at temperatures of 0 to minus 8°C as the batches are put together

3.13.10. A sanitary station must be built for preserves production.

3.14. Production of canned goods

3.14.1. Canned food may be manufactured in plants that have monthly microbiological inspections.

3.14.2. The main canned good production is to be located in a general area with mandatory separation of sauce-making autoclave rooms and two separate rooms for washing containers and implements, as well as areas for the starting material, for cooking, for blanching and for packing

3.14.3. Production areas must be situated such that technological processes may flow unimpeded and the flows of raw material, prepared foods, and end products do not cross each other.

3.14.4. Starting material used for the production of canned goods must meet the specifications of normative documents

3.14.5. Sanitary technological inspection must be carried out in accordance with Instructions for a system of sanitary technical inspection of canned goods in processing plants, wholesale bases and in the retail sales network and in restaurants.

3.14.6. Sterilisation of canned goods must be done under conditions ratified by the RF Commission for fish production. The procedure for the development of regimens is explained in RD 10.03.02-88.

3.14.7. Autoclaves must be equipped with automatic recording devices for control data. Working on autoclaves without thermographs or with faulty thermographs is prohibited.

3.14.8. Thermograms are documents subject to strict accounting procedures and may be kept for 6 months after the warranted storage limit for canned goods. The designation of the canned goods, the number of the autoclave cooker, the shift, the date, the sterilisation conditions, and the name of the operator must be clearly inscribed in ink on thermograms. A diary is to be kept for registering thermograms.

3.14.9. All control measuring instruments on sterilisation autoclaves must pass inspection in accordance with the State Standard "State monitoring and official control of measuring devices. Basic Principles."

3.14.10. For exported products, the efficacy of the sterilisation process must be check periodically by a random sample method, namely:

- Incubation test at 37 C for seven days or at 35 C for nine days;
- inspection of the outer appearance of tins and microbiological analysis of their contents in the plant's laboratory

3.14.11. Samples must be taken daily at set intervals to check the effectiveness of rolling. To do this suitable equipment for tracing cuts of the connecting seams of tins must be available.

3.14.12. In the case of export products, roll seam checks must be made every 30 minutes on two tins from each machine.

3.14.13. Checks are to be made for the internal damage in the vats.

3.14.14. All vats that have been through heat treatment under practically the same conditions must bear an identifying batch mark.

3.14.15. Every day after work is over, all oil and other fill substances must be drained from the system, and the systems and filling machine must be washed with hot water and detergent as well as disinfectant, followed by a rinse with hot water.

3.14.16. Storage of preserved foods at the plant/manufacturer must be done in dry warehouse facilities in the specified way (temperature, relative humidity) in accordance with the Regulatory Document (RD). Bloated and other defective preserved foods must be kept in a separate facility.

3.15. Food production

3.15.1. The food production unit must be in a separate facility in the same production unit that houses other food-fish processors.

3.15.2. Food production must have the following facilities (divisions): raw foods (storage, unpacking, thawing, and dressing); storage and processing of vegetables; flour sifting and dough preparation; sausage smoking; fish cooking and roasting; fish cooling; preparation of jellied dishes; preparation of stuffed dishes; preparation of sauces and reductions; storage of auxiliary materials; for production packaging; as well as cold-storage shipping; cold room for storage of waste from processing raw foods; washing facilities for unit-internal packaging and inventory; for washing of empty containers for finished production.

3.15.3. Raw materials used in food production must meet the requirements of the RD.

3.15.4. The processing of eggs must be done in a separate area in specially marked containers. The eggs must be examined with an ovoscope, washed in a 0.5% solution of sodium carbonate, disinfected in a 0.5% solution of chloramine or a 2% solution of bleach, and rinsed in cold running water for 5 minutes. After processing they should be placed on trays or in other clean vessels. Taking unprocessed eggs in cartons into the production units and storing them there is prohibited.

3.15.5. Vegetables and herbs are first washed, then picked over, cleaned, and again washed in water. Cleaned vegetables may only be stored whole in an open container for 2-3 hours at most.

3.15.6. The temperature during the cooking, boiling, and baking of food items must be noted in a special register. The internal temperature of the item should be at least 80°C.

3.15.7. After a product is cooked it is cooled to 20°C and immediately packaged.

3.15.8. In the production of fish meal [or minced fish] products, the meal must be sieved in order to remove foreign matter, including ferromagnetic particles.

3.15.9. The temperature for boiling and smoking sausages is noted in a special register. After boiling, the internal temperature of the link should be at least 80°C, and after smoking, 45-50°C.

3.15.10. For sanitary handling of sausage filling equipment, all detachable parts are removed. The feed tube is washed clean of all fat. The dispensing mechanism, which is difficult to disassemble, is washed 2-3 times with a detergent solution, and then a disinfectant solution, using the sausage filling feed tube. After disinfection the dispensing mechanism is to be washed with water.

3.15.11. The storage and sale of finished food products and ready-to-cook foods is to be done in accordance with Health Regulations and Rules "Conditions, length of storage for perishable foods" or the RD for new food items.

3.15.12. The sale of finished food products placed in an unsealed or lidless container (cartons, trays, etc.) is prohibited.

3.16. The production of fish farce

3.16.1. The production of food-quality fish farce calls for fish at a temperature between 0-5°C.

3.16.2. Raw foodstuffs used for the production of fish farce must meet all RD requirements.

3.16.3. Fish farce is to be immediately packaged and frozen or used in the production of food items.

All technological operations involved in the production of fish farce must be done as quickly as possible.

3.16.4. Farce with other ingredients added must be carefully mixed for 4-7 minutes, depending on the type. The temperature of the farce during this process should not exceed 10°C.

3.16.5. The mixture of stabilizing ingredients for the farce should be quickly prepared and stored in a tightly covered container in a cool, dry place.

3.16.6. The sanitary handling of equipment used in producing fish farce is to be done in accordance with the Rules for the sanitary handling of equipment at fish processing plants and on ships.

3.17. Boiled products using crustaceans and mollusks

3.17.1. The production of crustacean- and mollusk-based boiled food products is permitted at plants that undergo monthly microbiological inspections.

3.17.2. After boiling, crustaceans and mollusks must be quickly cooled. For cooking, potable water in accordance with Government Standard 2874, or sea water meeting the requirements of the stated coli-index standard may be used. For export products, the potable and clean sea water must meet the requirements laid out in Appendix 7.2.

3.17.3. Shucking and shelling must be carried out under sanitary and hygienic conditions.

3.17.4. After shucking or shelling, the boiled product must be immediately frozen or kept cool.

3.18. Production of smoked foodstuffs

3.18.1. The smoked foodstuffs plant, beyond the facilities where the basic technological processes are conducted (thawing, dressing, salting and equalizing, soaking, smoking of fish), must have the following separate facilities:

- for preparing the salt solution; a cooled location for the day's supply of raw foodstuffs; for the packaging of finished food products; a refrigerator for temporary storing of finished food products; for the sanitary handling of empty containers; drying and storage of containers; a storeroom for containers that has an area for repairs;
- for storing fuel and sawdust, as well as disinfectants and detergents, and liquid for smoking;
- for storing packaging and auxiliary materials.

3.18.2. Smoking rooms must be equipped with mechanical exhaust ventilation, have tightly closing doors and hatches.

3.18.3. Spits (switches), laths (poles) must be doubled and subjected to sanitary procedures once every shift. They are to be thoroughly cleaned, washed in a 1-2% hot solution of sodium carbonate, scalded. The smoking rooms and boxes must undergo sanitary procedures once a week.

3.18.4. To control and temperature and humidity in the smoking rooms there must be remote measuring and recording devices (thermometers, hygrometers, wet-bulb thermometers) whose readings are recorded in special registers. The temperature of a hot-smoked fish must be at least 80°C.

3.18.5. Raw foodstuffs used in the production of smoked goods must been the requirements of the RD.

3.18.6. Finished food products must be quickly cooled to a temperature not to exceed 20°C, and must be packaged and removed to the refrigerator room. Prior to sale, hot-smoked fish must be kept at a temperature between 2° to –2°C, and cold-smoked fish from 0° to –5°C.

3.18.7. Hot-smoked fish must not be kept more than 12 hours from the time it is taken from the smoking oven until the time it is frozen. The fish must be frozen to a temperature of at least –18°C shortly after cooling.

3.18.8. Trays for packaging smoked fish must have openings on the butt sides.

3.18.9. If smoked fillets are to be sold in small portion packages (slices, pieces), the entire inventory must have its own identifier.

3.18.10. When packaging slices, spatulas or forks must be used.

3.18.11. Cutting boards, tables used in skinning and for weighing out slices must be washed with a hot, 0.5% sodium carbonate solution, disinfected, rinsed, and dried.

3.18.12. Raw fish for production and prepared product must be delivered and removed using separate entrances and elevators.

3.18.13. Storage, sale, and transport of prepared hot-smoke product must be carried out in accordance with the conditions, storage and shelf life established for especially highly perishable products.

3.18. Production of Cured and Dried Fish Product

3.19.1. In addition to general production accommodations, dried product separated under artificial conditions requires the following detached sections:

- Packaging;
- Storage areas for prepared product with temperatures set according to variety;

• Separate processing of packaging material and inventory.

3.19.2. Walls and ceilings of enclosed areas used in drying fish under artificial conditions must be smooth and easily cleaned.

3.19.3. Rooms used in drying fish under artificial conditions must be equipped with remote-type measuring and control devices.

3.19.4. Raw fish used in drying and curing fish product must comply with normative document requirements.

3.19.5. Fish is dried naturally on open frames or in sheds. The section for natural fish drying must be detached, and located at least 50 m from garbage cans and toilets.

3.19.6. The area under the frames used in natural fish-drying must have an even, hard covering that is slanted to allow water to drain off and for cleaning purposes. Use of these areas for other purposes, cleaning or gathering fish is prohibited under the frames.

3.19.7. When hanging fish on frames, the lower rungs must be at least 0.8 m from the ground.

3.19.8. After each use, cages, rods, strips, lattices, etc. must be sanitized, carefully cleaned, rinsed with a 1-2% sodium carbonate solution, and heat-dried thoroughly. Rods, strings, and nets are made from materials approved by the Russian State Committee on Sanitary Epidemiologic Surveillance.

3.19.9. Prepared dried fish is placed on tables at least 50 cm from the floor.

Dried fish piled into mounds must be covered with tarps. The mounds cannot be left standing overnight.

3.19.10. Dried fish product is stored in a cooled area within which air temperature and relative humidity comply with normative document requirements.

3.19.11. Areas used for drying fish either naturally or artificially must undergo preventive treatments for cheese flies, beetles, or rodents.

3.19.12. During the production of dried fish product, the air inside drying sheds must be kept clean, and nets and trays must be carefully sanitized.

3.20. Caviar Production

3.20.1. The caviar plant must be designed as a separate facility in order to ensure good production flow. Canning in jars and barrels must be done separately.

3.20.2. Manufacturing, subsidiary, and living areas at the caviar production facility must be detached

3.20.3. Tables for dressing the fish and removing the roe must be watertight and easily cleaned and sluiced out (stainless steel, marble, etc.). Equipment (lattices, screens, containers, baths, etc) must be made from materials that meet the requirements of current Health regulations (point 3.7).

3.20.4. The area where the roe is separated from the membrane and punctured must be equipped with a sink supplied with hot and cold water that can be mixed, and supplied with facilities for washing hands and equipment with an antiseptic solution.

3.20.5. Transparent inspection tables with artificial lighting must be used during caviar production to eliminate discolorations [translator's note – unsure of exact meaning of this term] and contaminating impurities.

3.20.6. Raw material used in caviar production must comply with normative document requirements.

3.20.7. Fish roe must be collected into clean containers and placed in the processing area in a cooled state (0° C).

3.20.8. Only boiled, cooled, salted sea water can be used in the production of caviar. Oil should be tested for the presence of staphylococcus aureus.

3.20.9. Roe can be tested during the salting process using horned forks or plastic spatulas that are disinfected after each test.

3.20.10. Caviar cannot be placed into jars that have been in use.

3.20.11. Before being filled with caviar, the packaging (jars) must be carefully washed and steam-processed or run through a drier. Linen bags and napkins must be carefully washed and boiled. Waxed packing barrels must be lined with wax paper.

3.20.12. No more than two hours can elapse between the start time for packaging the caviar to its pasteurization.

3.20.13. Prepackaged and sealed roe must be taken immediately to a refrigerated area for storage.

3.20.14. Depending on variety, roe must be stored at temperatures compliant with normative documents.

3.20.15. Linen filters used with gelatin to form the coverings for albuminous caviar must be washed after every use, and boiled before use.

3.20.16. Facilities, equipment, and implements used in caviar production must be cleaned daily after work, with a full cleaning day not less than once every 5 days.

3.20.17. Bactericidal lamps are placed in production facilities to disinfect the air (1.5 – 2.2 watts for every cubic meter of air).

3.21. Production of Medical Fish Oils, Vitamins, Hydrolyzed Collagens, Etc.

3.21.1. For fish oil, vitamin, and hydrolysate production, a separate storage area without natural lighting must be allocated for packaging, raw materials, unfinished product, and finished product in order to ensure compliance with technological instructions regarding storage.

3.21.2. The production area must be supplied with hoses carrying hot water for cleaning equipment.

3.21.3. Air temperature in warehouses must comply with technological instruction requirements.

3.21.4. Equipment must be washed after each production cycle.

3.21.5. Equipment used in clarifying, rendering, and filtering oils must be cleaned after completion of each production cycle, washed, and disinfected. Any water used for cleaning must be disposed of through a grease trap.

3.21.6. The production process for medical oil and vitamin preparations must be as sealed as possible, and should be provided with efficient general forced-air ventilation, while all instruments should be equipped with removable covers. The cleaning process for tubing (sectioned), cisterns, and instruments should be as mechanized and automated as possible.

4. Requirements for Fishing and Fish-Processing Vessels Exporting Fish Product 5.

4.1. Design and Equipment Requirements for Fishing Vessels

4.1.1. Fishing vessels must have holds and containers for raw fish and frozen or refrigerated fish product in compliance with the storage conditions established by the appropriate orders (normative documents). Holds must be isolated from the engine room and crew facilities by impenetrable barriers, in order to prevent contamination of the stored fish product.

4.1.2. The interior surfaces of holds and containers must be watertight and manufactured from smooth material, or given a smooth coating for easy cleaning and disinfecting. Coatings should not contaminate the fish product with substances that are harmful to humans.

4.1.3. Holds should be designed so that melted water does not touch the fish product.

4.1.4. Storage containers for fish product that satisfy present Health Regulation storage condition requirements (points 3.7.1 and 3.7.4).

4.1.5. Work decks, equipment, tanks, and containers must be cleaned every month, and must be disinfected once a week. Frozen fish product holds must be cleaned and washed down after a full offload. Either drinking water or sea water may be used. They should be disinfected, receive insecticide or pesticide treatments when necessary.

4.1.6. Washing and rust-preventing substances, insecticides, and other toxic substances should be stored in closed areas or shelves. They should be used only when there is no risk of contaminating fish product.

4.1.7. Frozen fish product on board a vessel is produced in compliance with current technological instructions. When fish is frozen in a freezing solution, the solution cannot be allowed to become a source of contamination for the fish. The solution must be changed if there is contamination.

4.1.8. The following requirements must be met for refrigerating fish product in clean sea water:

- Tanks must be supplied with any equipment necessary for filling or draining sea water, and for maintaining the same temperature in all tanks;
- Tanks must have devices that record temperature and are connected with indicators mounted in the portion of the tank where the temperature is highest;
- Tanks or containers must have a cooling rate that allows the temperature of the fish and the sea water to reach 3° C six hours after loading, and 0° C 16 hours after loading.
- Each time a tank is unloaded, the circulation system and containers should be completely dried and carefully cleaned, using clean fresh water or clean sea water. They should be filled only with clean sea water or fresh water that has been disinfected;
- Temperature records indicate date and tank number.

A journal must be prepared for presentation to a competent agency.

4.2. Requirements Regarding Raw Fish and Fish Product on Board Vessels

4.2.1. Vessel sections or containers allocated for storing raw fish or fish product must not contain other objects or products. These sections and containers should be designed to eliminate contact with fish product, and to allow easy cleaning and disinfecting.

4.2.2. Vessel sections or containers used for storing raw fish or fish product must be clean, and not allow contamination by fuel or water from holds.

4.2.3. Raw fish must be protected from contamination and the effects of the sun or other heat sources from the moment it comes on board the vessel. Desalinated or clean sea water, in compliance with the requirements set out in Addendum 7.2, can be used for washing.

4.2.4. Mechanical damage to raw fish or fish product must be prevented during processing and storage. Sharp tools may be used to move large fish or fish that might present a danger to processors under the condition that the fish product not be damaged.

4.2.5. Raw fish, other than fish that is stored live, must be refrigerated as soon as possible after it is caught. Raw fish should not remain on board fishing vessels where there is no practical means of refrigeration for longer than eight hours.

4.2.6. Ice used to refrigerate product must be prepared from drinking water or clean sea water. Before use, it should be stored so that any contamination is prevented.

4.2.7. After unloading the fish product from a container, any vessel equipment or sections that came in direct contact with fish product must be washed with drinking water or clean sea water, and disinfected.

4.2.8. Any heading and/or gutting of fish on board must be carried out with consideration of normative documents, technological instructions, and health requirements. Product must be washed immediately and carefully with drinking water or clean sea water. Liver and roe for consumption must be frozen or refrigerated.

4.2.9. Any equipment used in gutting, heading, or removing fins, as well as containers and equipment that come into contact with fish product, must be made from watertight materials that do not rot, or must be coated with such materials, and must also be smooth, for easy washing and disinfecting. During use, they must be completely clean, and must be sanitized monthly.

4.3. Design and Equipment Requirements for Fish-Processing Vessels

4.3.1. General Requirements

4.3.1.1. The receiving bunker in a refrigerated hold used for taking fish product on board must be designed so that each successive catch is located in a separate section. Receiving bunkers and refrigerated holds and their moving parts must be easily accessible for cleaning. They must be designed to protect product from the sun, precipitation, and any sources of contamination.

4.3.1.2. Health requirements must be taken into consideration in transferring fish product from receiving areas to the production area with consideration of health requirements.

4.3.1.3. Production areas for preparing and processing fish product must comply with health requirements, and prevent secondary contamination of the product during production.

4.3.1.4. Storage areas for finished product must be large enough and designed in order to allow easy cleaning. If waste products are being processed on board, they should be stored in a separate hold.

4.3.1.5. Storage areas for packaging must be separate from product preparation and processing areas.

4.3.1.6. Special equipment for disposal overboard or watertight collection containers for waste products or fish product that is unsuitable must be provided.

4.3.1.7. Equipment that provides a supply of fresh water, in compliance with Addendum 7.2, or a pressurized supply of clean sea water must be provided. Sea water must be collected in such a way that it is does not come into contact with run-off or water used in processing or to cool the engine.

4.3.2. Requirements for Fish Product Preparation, Processing, and Freezing Areas

4.3.2.1. Areas used in the preparation, processing, and freezing (flash freezing) of fish product must have:

- Non-skid flooring that is easily cleaned, large ducts that cannot be blocked by fish waste products, and that provide for free water flow;
- Easily cleaned partitions and ceilings, especially in the vicinity of piping, circuitry, or electrical wiring;
- Hydraulic transmission that is mounted, or protected, in such a way that oil does not come into contact with fish product;
- Natural or forced ventilation, and, when necessary, good exhaust fans;

- Work place is illuminated in compliance with standards;
- Supplies for cleaning and disinfecting instruments, equipment, and fittings;
- Supplies for washing and disinfecting hands, disposable towels (spigots cannot be turned on manually).

4.3.3. Equipment and Instrument Requirements

Equipment and instruments, as well as processing tables, containers, dressing, fillet machines, etc. must be non-corrosive, in good condition, accessible for cleaning and disinfecting, and be made from materials approved by the Russian State Committee on Sanitary Epidemiologic Surveillance. The use of wood is forbidden.

4.3.4. Requirements for Freezing Fish Product

4.3.4.1. Vessels that freeze fish product must have:

- Freezer facilities for rapid drops in temperature and deep freezing;
- Refrigeration facilities for maintaining the required temperature in storage holds for fish product. Product holds should be equipped with easily accessible systems for registering temperature.

4.4. Requirements for Processing and Storing Fish Product on Fish-Processing Vessels

4.4.1. Persons responsible for compliance with hygiene requirements for fish product production on board a fish-processing vessel are: the factory manager, the technologist, the fish master, and the laboratory director. They have the right to check for compliance with current Health regulation statutes, and must provide inspectors with records of compliance checks on board for basic statutes, an observation journal, and records of temperature registration.

4.4.2. General hygiene requirements for facilities and equipment are set out in point 5.8 of the current Health regulations.

4.4.3. General hygiene requirements for workers are set out in point 5.8 of the current Health regulations.

4.4.4. Fish product production on board must be carried out in compliance with normative document requirements, Health requirements for processing sea products on vessels, and the requirements set out in points 3 and 5 of the current Health regulations.

4.4.5. Fish product must be packaged in compliance with normative documents and the requirements set out in point 5.1 of the current Health regulations.

4.4.6. On-board storage of fish product must take place in compliance with normative documents for the specific product, as well as the requirements set out in point 5.3 of the current Health regulations.

5. General Section

5.1. Sanitary Epidemiologic Surveillance and Regulation of Production Conditions

5.1.1. General Observations

5.1.1.1. Competent agencies must provide monitoring of compliance with current Health regulations.

5.1.1.2. The following are subject to monitoring:

- Fishing and fish-processing vessels in port;
- Offload and first sale conditions;
- Fish-processing companies;

- Wholesale markets, auctions;
- Marking, storage conditions, transport.

5.1.2. Special monitoring

5.1.2.1. Organoleptic monitoring

5.1.2.1.1. Organoleptic monitoring of fish product is carried out in compliance with the requirements of normative documents.

5.1.2.1.2. If it is found, as a result of organoleptic monitoring, that fish product is not suitable for consumption, measures must be taken to isolate and destroy that product.

5.1.2.1.3. In the event that doubts arise regarding the freshness of fish product, organoleptic monitoring may be supplemented by chemical or microbiological testing.

5.1.2.2. Chemical Testing

5.1.2.2.1. Chemical testing of fish product is carried out in compliance with the requirements of normative documents.

5.1.2.2.2. Chemical testing of fish product for export consists of an analysis of general unstable nitrogen, nitrogen, trimethylamine, and histamine.

5.1.2.2.3. In accordance with Commission Decision 95/149/YeS [translator's note – most probably European Counsil], fish product is considered unsuitable for human consumption with the following excess level of general unstable nitrogen:

- For category A fish

Sebastes spp. (marine rockfish),
Helicolenus dastylopterus (blackbelly rosefish),
Sebastichibus capensis (capensis rockfish) – 25 mg nitrogen per 100 g sample;

- For category B fish

Family Pleuronectidae* (righteye flounders) – 30 mg nitrogen per 100 g sample.

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* With the exception of Hippoglossus ssp. – halibut.

- For category C fish

Salmosalar (Atlantic salmon),
Family Merlucciidae (cod-like fish)
Family Gadidae (cod) – 35 mg nitrogen per 100 g sample.

5.1.2.2.4. In compliance with the requirements of Directive 91/493/YeES [European Economic Community], the level of histamine is regulated only in fish of the mackerel, tuna, salmon, and herring families. For histamine testing, nine samples should be taken from each lot, in accordance with the following requirements:

- Average level should not exceed 100 mg/kg;
- In two samples, the level may exceed 100 mg/kg, but must be less than 200 mg/kg;
- No sample should exceed 200 mg/kg.

If fish from these families are subjected to salt-processing for ripening, the histamine level in the finished product can be higher, but should not exceed 400 mg/kg.

5.1.2.2.5. The content of toxic substances from water in the product must comply with Medical and Biological requirements and health standards for raw materials for consumption and food products.

5.1.2.3. Microbiological Testing

Microbiological testing of fish product is carried out in compliance with the requirements of normative documents.

5.1.2.4. Testing for Parasites

5.1.2.4.1. Before shipment for consumption or processing, fish product must undergo a visual examination for parasites.

5.1.2.4.2. Fish or fish parts that are infested with parasites should not be shipped out to be sold as food products.

5.1.2.4.3. Requirements for fish product containing parasites are set out in point 5.2 of the current Health regulations.

5.1.2.5. Certification of Quality and Health Certification

5.1.2.5.1. An enterprise must guarantee that its quality indicators for its product comply with the requirements of normative documents and Medical and Biological requirements, as well as health standards for raw material quality and food products. Each lot must include documents in the approved format.

5.1.2.5.2. For sale inside the country, each lot of product must be accompanied by a Certificate of Quality (Addendum 7.4), signed by the enterprise director.

5.1.2.5.3. Products shipped out for export must be accompanied by a Health Certificate (Addendum 7.5), signed by an official inspector, representing a competent agency.

5.2. Requirements for Fish Product Containing Parasites

5.2.1. Before shipment to the consumer or for production, fish product must undergo a visual examination for parasites that may be dangerous to humans, and for their viability.

5.2.2. The following may conduct expert examinations for parasites:

- At shore-based fish-processing enterprises – production laboratory, ichthyological inspection crews, or state health surveillance commissions;
- On fish-processing vessels – production laboratory director or factory manager, or the senior fish master of the watch.

5.2.3. When fish containing contaminants are processed (copepods, larvae, parasites), the former must be eliminated as completely as possible. When attempts to rid the fish of contaminants are unsuccessful, it should be sent to competent agencies for a finding.

5.2.4. During processing, if fish are found to be contaminated with parasites or infectious diseases, the following rules must be followed:

- The fish or its parts, including waste products, should not be disposed of into the water supply;
- Domestic animals should not be fed the meat or internal parts of fish that are infested with parasites;
- Fresh fish whose skin is infected with trichodina, costia, chilodonella, intioftririus, etc. must be washed with hot water or a 5% table salt solution before rinsing with water;
- After the infected fish is processed, the factory, equipment, and implements are cleaned and disinfected; hands must be washed with soap and disinfected with a 0.2% chloride of lime or other disinfectant;
- During thermal processing, fish meat must be carefully boiled or fried, in compliance with approved instructions;
- During technological processing, the following regulations must be followed: Methodical Parasitological Inspection of Marine Fish and Fish Product (raw marine fish, refrigerated and frozen fish), Instructions for Health and Parasitological Assessment of Marine Fish and Fish Product, "Health Regulations on Health and Helminthologic Analysis of Fish and Conditions for Removing Diphyllobothrium and Opisthorchis Larvae."

5.2.5. When infestation with diphyllobothrium or opisthorchis larvae is found in even one species of fish, regardless of the degree of invasion, all the fish caught in that body of water and capable of serving as interim hosts for the parasites listed are considered "conditionally suitable."

5.2.6. The sale of fresh or frozen "conditionally suitable" fish that has not been decontaminated through public dining or trade enterprises is prohibited. When it is

impossible to process "conditionally suitable" fish where it is caught, the fish may be transported to the nearest processing points.

5.2.7. Usually, only parasites located in muscle tissue are significant in determining the food or feed suitability of marine fish; in other cases, parasites in surfaces of the body, liver, roe, or milt should be taken into consideration if those parts are meant for food or feed use.

5.2.8. Parasites of the gills or other organs, especially the digestive tract and bodily tissues, cannot serve as a cause for penalizing the fish or lowering its grade.

5.2.9. If even one living helminth larva is found in an inspected sample, the lot cannot be sold through the trade network. The fish must be decontaminated.

5.2.10. Fish infested with myxospores (thinning of the muscle tissue) should be frozen as quickly as possible after it is caught in order to minimize fish decomposition.

Thawing should be done very quickly (to a temperature not exceeding minus 2° C), and subsequent thermal processing (frying) should take place at high temperatures (160-165° C).

5.2.11. The use of "conditionally suitable" fish for food is permitted, depending on its species and size after processing that guarantees product decontamination in compliance with the Health Regulations on Health and Helminthologic Analysis of Fish and Conditions for Removing Diphyllobothrium and Opisthorchis Larvae, and the Regulations for Veterinary Health Examinations of Freshwater Fish and Crustaceans.

5.2.12. When it is impossible to guarantee decontamination of the fish by freezing, it should be used for food only after salting, thermal processing, or in canned form.

5.2.13. Fish-processing enterprises must take preventive steps against infestation of workers with tapeworm or opisthorchis larvae. Fish-processors should take personal prevention measures. Sampling of raw ground fish and other partially processed fish products or roe is prohibited. Waste products obtained during fish processing must be decontaminated in a timely manner.

5.2.14. The question of whether or not fish infested with helminth should be used for food is decided by head of the production laboratory, or the factory manager of the receiving vessel or the fish master; on shore, it is resolved by the head of the production laboratory or one of the technological service chiefs, or the health service.

5.2.15. Fish exporters should be guided by the rules for visual examination for parasites, in compliance with Commission Decision 92/140/YeES [European Economic Union]:

- Parasites or a groups of parasites whose size, coloring, and texture is easily distinguishable from fish tissue are considered observable parasites;
- Visual monitoring is understood to be a non-invasive assessment of the fish or fish products without the use of optical or magnifying systems, and with illumination suitable for human vision; if necessary, additional lighting may be used;
- Visual testing must be carried out on a representative quantity of samples;
- Staff assigned to carry out visual testing at shore-based enterprises or those who are certified to do so on vessels must determine the scale and frequency of visual testing, based on the type of fish products, their geographical origin, and use.

5.3. Packaging

5.3.1. Packing must take place under conditions that do not permit contamination of fish product.

5.3.2. Packaging and packing materials must:

- Not change the organoleptic character of the fish product;
- Be made from materials approved for contact with food products by the Russian State Committee on Sanitary Epidemiologic Surveillance;
- Be sufficiently durable.

5.3.3. Packing materials for the packaging of food product must comply with the requirements of normative documents, undergo health processing (mechanical cleaning, washing with hot water and cleaning substances, disinfecting, rinsing, and drying). The use of contaminated or moldy packaging is forbidden.

Packing materials should not be used twice. The only exception is packing material that has been lightly cleaned and disinfected.

5.3.4. Packing material used to store ice-cooled product must ensure good run-off for melted water.

5.3.5. Unused packing materials must be stored in areas outside production facilities, and must be protected from dust and contaminants.

5.4. Markings

5.4.1. Markings are placed on shipping and consumer packaging. The structural elements of marking are set out in State Standards 7630; 11771. Structural elements of marking depend on the packaged product, and are made in agreement with the customer. Marking is done in Russian and/or the state language of the country where the enterprise is located, or in the language of the country upon whose order the product was manufactured.

5.4.2. The following must be marked on packaging and accompanying documents for fish product for export:

- The sending country;
- Registered and permit number of the fish-processing enterprise or vessel.

5.5. Storage and Transport

5.5.1. Storage and delivery times for fish product must be in compliance with the conditions determined for the specific product type, and must be indicated in the accompanying documentation.

Frozen product must be maintained at a temperature no greater than minus 18° C. During its transport, short-term variations in temperature are permitted, with a rise of no more than 3° C.

5.5.2. Automotive vehicles used to transport finished product must have health passports.

5.5.3. Fish product may not be stored or transported with other types of products that may lead to a decrease in its quality.

5.5.4. Where ice is used for refrigeration, there must be good drainage for melted water so that it does not come into contact with product. Interior surfaces of the transport vehicle must be made from material that has no negative effect on fish product, and must be smooth for easy washing and disinfecting.

5.5.5. Transport vehicles for fish product may not be used to ship other product. In exceptional cases, they may be used with subsequent careful cleaning and disinfecting.

5.5.6. Transport vehicles used to carry live fish raised on fish farms must be equipped with isothermic cisterns, containers, or other means of ensuring that the quality of the live fish be maintained.

5.5.7. Cisterns, containers, or other receptacles must be carefully washed, disinfected with a 3% solution of chloride of lime or other disinfectant, then washed again and rinsed with water.

5.5.8. Water for transporting live fish in trucks must be clean, transparent, and must not contain harmful additives.

Live fish may be transported in tap water containing chlorine on the condition that the water be aerated first carefully for 30 – 50 minutes.

5.5.9. The driver and expeditor must have medical booklets, clean robes, and a health passport for the vehicle.

5.6. Requirements for Unloading and Wholesale Sale of Fish Product

5.6.1. Equipment used for unloading must be made from materials that are easily cleaned and disinfected, and that are kept clean.

5.6.2. When unloading, contamination of fish product must be avoided; specifically, following these guidelines:

- Unloading must be done quickly;
- Fish product must be moved without delay to a protected environment that can provide the temperature needed for its storage, and, when necessary – put on ice;
- Equipment that can affect the quality of the product should not be used.

5.6.3. Locations of auctions or wholesale markets where fish product are exhibited must:

- Be covered; ceilings and walls must be easily cleaned and disinfected;
- Have watertight, easily washed and disinfected floors that allow for drainage;
- Be equipped with sinks and toilets. Sinks are provided with handwashing and disinfecting supplies, and disposable towels;
- Have good lighting;
- Be used only to demonstrate or store fish product; transport vehicles with exhaust fumes that could damage product quality are not permitted;
- Regularly, at least after each sale, containers must be cleaned and washed on both sides with drinking water or clean sea water; when necessary, they should be disinfected;
- Have noticeable signs prohibiting smoking, spitting, eating, or animals;
- Be closed down if competent agencies deem necessary;
- Have reliable water supplies that comply with the conditions set out in point 3.4 of the current Health regulations;
- Have special watertight containers made from non-rusting materials for fish product that is not suitable for consumption;
- Have a room equipped for fish product inspections.

5.6.4. After unloading or the first sale, fish product must be transported without delay to a point set in compliance with requirements set out in point 5.5 of the current Health regulations.

5.6.5. If the conditions of point 5.6.4 are not observed, sales places must have cold areas that are large enough to ensure that fish product is stored in compliance with the requirements of normative documents.

5.7. Environmental Protection

5.7.1. In compliance with RSFSR Law "On Protection of the Environment," steps must be taken to ensure environmental protection during industrial processing of raw fish and the manufacture of fish product.

5.7.2. Enterprise design must take into account the maximum allowable burden on the environment, and provide for reliable and effective ways to give notice and eliminate contamination of the environment by harmful waste products, their decontamination and utilization, to implement conservation measures, low-waste and no-waste technologies and production methods.

5.7.3. The construction and remodeling of enterprises, buildings, and other facilities must be carried out according to approved plans that have received a positive finding from the state ecological board, in strict compliance with current environmental protection, construction, and health standards and regulations.

5.7.4. During the construction and remodeling of enterprises located within populated areas, the sizes of health-protection zones for them must be established in agreement with local health centres.

5.7.5. Free areas and territory belonging to enterprises along fences must be greened with bushes and trees.

The planting of trees or bushes that drop seeds is prohibited.

5.7.6. Production, residential, and rain run-off from fish-processing enterprises must be disposed of into the sewage system, and must undergo purification at city (settlement) or local purification facilities. When it is disposed of into city (settlement) purification facilities, the conditions for disposing of run-off waters are determined by the Regulations for Receiving Production Run-Off Water into the Sewage Systems of Populated Areas. Where local purification facilities exist, the conditions for disposing of purified wastewater are determined by the Health Regulations and Standards' "Protection of Surface Waters from Contamination in Areas of Water Use by the Population. Plans for local purification facilities and disposal areas must be agreed on with state health centres. The disposal of production and residential wastewater into bodies of water without appropriate purification and decontamination, and the installation of absorbing wells is forbidden. Disposal conditions must be approved by state health centres in each specific situation.

5.7.7. After delivering the fish, the vessel is taken to a specially equipped health pier (the location of which is approved by local state health centres) to pump its wash water into purification equipment and be sanitized.

5.7.8. The ventilation must not be a source of air pollution with smoke or harmful gasses.

5.7.9. A mechanical exhaust fan must be provided to eliminate smoke from the smoke generator and smoking chambers, while adjacent areas must be equipped with air intakes to avoid penetration by smoke or gasses.

All ejection of waste products into the air from technological equipment that contain harmful additives must be cleaned. The temperature at the top of the airways must not exceed 45° C.

5.8. Protection of Labour

5.8.1. Protection of labour must be one of the main components of the production process at the enterprise, in the factory, the area, every workplace.

5.8.2. The design and construction of fish-processing enterprises and vessels must take into consideration health and sanitation standards and regulations relating to the organization of labour.

5.8.3. A plant's microclimate must meet the specifications of the Sanitary norms of a microclimate in production premises.

5.8.4. The noise level at work places of production premises and on plant grounds must conform to the Sanitary norms for permissible noise levels at workplaces and must be no more than 80 decibels.

5.8.5. Lighting of work surfaces at workplaces must meet the specifications of the SNR entitled "Natural and artificial lighting" and must be 200-400 lux depending on the end purpose of the premises.

5.8.6. Floors of production areas located over unheated or artificially cooled rooms must be warmed up such that the temperature of the room and of the floor surface does not exceed 2.5 C; an intermediate air space that can be ventilated must also be provided.

5.8.7. Workplaces must be equipped with foot grids if the floors are constantly wet because of the conditions of the technological process. In the zone where the floors meet the outer wall surface, heating is to be provided.

5.8.8. Where natural ventilation is provided for drafts and sudden cooling of the air at workplaces is not permitted.

5.8.9. In shops where considerable heat is generated as may be expected in southern regions, air conditioning must be provided.

5.8.10. The concentration of harmful substances in the air of the work zone must not exceed the maximum permissible concentration for each particular substance.

5.8.11. Catamine and Catapol must be kept in closed storerooms n packaged form in casks of rustproof steel having a capacity of 100-200 cu.dl in accordance with normative documents.

5.8.12. Persons working with undiluted solutions of catamine AB or Catapol (concentration 5 g.cu.dl) must have aprons of rubberized fabric, rubber gloves, and eyeglasses. If the solution gets on the skin or in the eyes they must be flushed out carefully with water.

5.8.13. Persons exposed to the action of harmful and insalubrious production factors are required to submit to a medical examination before beginning work and thereafter periodically in accordance with the Instructions for obligatory medical examinations before beginning work and periodical medical examinations of workers and medical examinations of independent truckers.

5.8.14. Those groups who will undergo preliminary and periodical examinations are to be determined by SCSEM centres (by company, profession, and insalubrious factors) no later than 1 December of the preceding year.

SSEM centers are also to run checks to ensure prompt and full compliance in the performance of these preliminary and periodic medical examinations.

5.8.15. When a preliminary medical examination is passed on to a medical institution the plant administration must supply the surname, patronymic, and name, date of birth, the subject's profession, the harmful factors and mention the insalubrious working conditions in accordance with Appendices 1 and 2 of the Decree of the Ministry of Health of the USSR N 555 of 29 Sep 1989 entitled "On improving the system of medical examinations of workers and independent truckers."

5.9. Medical examinations and investigations

5.9.1. All persons starting work are obliged to undergo a medical examination in accordance with Instructions on conducting preliminary medical examinations of workers and medical examinations of independent truckers.

5.9.2. The frequency of preventive examinations is regulated by the aforementioned Decree and by decisions of local authorities taken on the basis of the current epidemiological situation on the particular territory.

5.9.3. Every worker must have his personal medical booklet in which examination results as well as information on the health training programme the worker has attended.

5.9.4. The performance of preventive medical examinations must be reflected in a company's internal rules and regulations. An order is to be issued by the administration giving the place and time of a preventive medical examination with indication of the person responsible (in each department for seeing to it that all workers receive their examinations promptly.

5.9.5. Medical examinations may be done in-house in plants with more than 30 workers. The regional SSEM Centre covering the particular plant s must issue the relevant permission.

5.9.6. The plant administration must not allow ill persons, persons with bacterial infections or persons who have not promptly undergone preventive medical examinations, as well as persons who have not completed a sanitary and hygienic training course to come to work.

5.9.7. The shop foreman or the person in charge of the shop as ratified by order is to keep a special chart on who has undergone medical examinations. Personal medical booklets are to be kept by the shop foreman or person in charge.

5.10. Rules of personal and professional hygiene

5.10.1. All workers in fish-processing plants are required to observe the rules of personal and professional hygiene.

5.10.2. Each of a plant's workers is responsible for the state of his workplace and for meeting the technological and sanitary specification s of his or her area.

5.10.3. Workers in a plant are obliged to wear clean special clothing or sanitary clothing and head coverings. Persons who by the nature of the work they do come into direct contact with exposed fish products must ensure that their head covering covers all of their hair.

5.10.4. Sanitary clothing must be made from light-coloured materials, and bear a marking that identifies the worker's particular shop. Shoes must be designed to withstand repeated disinfections.

A suit of sanitary clothing for workers in dissecting departments consists of a scarf, a cotton gown, rubber boots, a rubberized apron, and cotton and rubber gloves. Workers in wrapping, storage, and packing departments must wear a scarf (kerchief), cotton gown or jacket, cotton trousers, and four-layer gauze kerchiefs, and have a personal towel.

5.10.5. Sanitary clothing should only be worn during work; outer garments may not be worn over sanitary clothing.

5.10.6. Sanitary clothing must not be fastened with pins and needles; bringing objects for personal toiletry and other alien objects is prohibited.

5.10.7. Workers assigned to the processing and preparation of fish products must wash their hands before beginning work and each time they recommence work. Wounds on the hands must be covered with a water-impermeable bandage. Works with pustular wounds are not to be permitted to work.

5.10.8. Packers in canned goods, culinary, and caviar departments, as well as in the small package section must wash and then disinfect their hands before starting work and after each visit to the toilet (but at least twice per shift). They must not use nail polish and must

promptly excuse themselves from work with finished food products if they have suppurating sores on their hands, or if injured areas on their hands are not covered with water-impermeable bandages.

5.10.9. Workers must be furnished protective and prophylactic compositions for the skin on their hands and arms.

Workers in dissecting and wrapping departments must disinfect their hands at least twice per shift with a 0.1% solution of chloramine or other antiseptics, and to prevent pustular diseases hands must be washed with a solution of magnesium potassium oxide (one g per ml water), silicone cream, Gigien brand soap, Novikov's liquid, or other agents for this use

5.10.10. Workers in the wrapping department must be provided with personal towels and napkins to wipe scales and tables.

The napkins used in the work must be change as they become soiled but at least twice per shift. Laundering and disinfection (0.1-0.5% chloramines solution) of napkins should be done centrally in a specialized laundry department.

5.10.11. Sanitary clothing must be removed before visits to general-use rooms or administrative offices. Shoes must be carefully treated (disinfecting mat, a container with a disinfectant solution) before entry into production areas.

5.10.12. Only staff familiar with the rules of use of disinfectants and rat-killing agents must work with them. Use of these materials must not entail the risk of food products becoming contaminated.

5.10.13. To discover persons with pustular lesions of the skin the plant medical personnel must do daily checks of the hands of workers to ensure no such diseases are present and then make an entry in a special diary (Appendix 7.6). If there is no medical worker on the plant staff, the sanitary post (a specially designated and trained plant employee or a shop foreman) must carry out this procedure.

5.10.14. Regular checks to ensure that shop workers observing the rules of personal and professional hygiene are to be made by a technician, a foreman, or a shop's sanitary post.

5.10.15. Sanitary posts check compliance with the plant's sanitary production regime.

A sanitary post must check twice per shift that wrappers are disinfecting their hands , taking preventive measures against pustular conditions of the hands, and are wearing their special clothing correctly.

A sanitary post checks and keeps account of the preparation of disinfectant solutions. The data are recorded in a diary.

5.10.16. Smoking, spitting, eating and drinking are prohibited in work areas and places where fish food products are stored.

5.10.17. Taking food is permitted solely in cafeterias, restaurants or areas specially set aside for this purpose.

5.10.18. After work is ended, a worker must hand over his workplace properly cleaned and tidied to the shop foreman, and sanitary clothing is give to persons responsible for receiving, storing and dispensing clothing.

5.10.19. Mechanics and electricians, adjusters, and other workers doing tuning and repair work in production shops and storage rooms must also comply with the rules of personal hygiene and taker measures to prevent foreign objects from getting into the finished products, the starting material and prepared foods.

5.11. General-use areas

5.11.1. General-use areas for workers in production areas must be equipped like sanitary inspection rooms; devices for cleaning and disinfecting shoes must be available at the entrance.

5.11.2. Specialised shops for the production of caviar must have general-use areas separate from the areas for the plant as a whole.

5.11.3. Cloakrooms for outer garments, home clothes, clothing work clothes and sanitary clothing and shoes, a linen closet for clean sanitary clothing, a place for handing in dirty sanitary clothing, shower rooms, a manicure area, a toilet, a sink for washing hands, drying rooms, a room for the on-duty staff, foot baths, and respirators must be available in sanitary general-use areas

5.11.4. Cloakrooms for work clothes and sanitary clothing must be located apart from cloakrooms for outer garments and leisure clothes.

5.11.5. The shower rooms and cloakrooms must be contiguous and equipped with open and enclosed cabins.

5.11.6. If the number of women on a shift is more than 100 a room must be provided for personal hygiene; for fewer women a special cabin with a hygienic shower is to be provided.

5.11.7. The walls in shower rooms, cloakrooms for sanitary clothing, a linen room for receiving clean clothing, in sanitary stations, and in the women's personal hygiene are faced with glazed tiles to a height of 2 m as far as above to supporting beams, and should be painted with emulsion paints or other types of moisture-resistant paints, while in other rooms the walls may be painted or whitewashed.

The ceilings in shower rooms are to be coated with an oil paint, all the other rooms with lime whitewash, and the floors are to be of ceramic tiles.

5.11.8. At the end of work general-use areas or rooms must be tidied up carefully and wet-mopped, and must undergo disinfection at least once per week.

5.11.9. When needed, but not less than once each shift, health centers and women's hygiene rooms are carefully cleaned, washed with water and cleaning agents, then disinfected.

5.11.10. Every time the toilets are cleaned, water faucet valves, handles, door locks, and other surfaces touched by human hands are wiped down with separately dispensed tissues moistened with a disinfectant solution.
Depending on how contaminated they are, urinals are cleansed of salt deposits using a 10% oxalic acid or sodium bisulfate solution and washed.

5.11.11. Special implements must be used, with distinguishing colors and markings, in cleaning health centers. These implements should be stored separately from cleaning implements used for other areas.

5.11.12. Toilets are disinfected at least two times each shift with a chloride solution containing 500 mg/l of active chloride.

5.11.13. Toilets must be equipped with sewage systems, heat, sluices, supplied with hangers for sanitary clothing, sinks with elbow-operated spigots and hot and cold running water for washing hands. Urinals must be equipped with pedal flushes, and toilets must have self-closing doors.

5.11.14. A sign must be posted on the toilet door that says "Entry in Sanitary Clothing Forbidden." Toilets are supplied with toilet paper, soap and disinfectants for hand washing, and electric hand dryers.

5.12. Warnings for Rodents and Insects

5.12.1. Rodents and insects are not allowed in fish-processing enterprises or vessels. Enterprises should be sanitized periodically using substances approved by the Russian Federation Sanitary Epidemiologic Service in order to alert personnel of their presence.

5.12.2. Hatches and ventilation openings should be covered with metal screens, with mesh size no greater than 0.5 cm.

5.12.3. Grooves where walls and ceilings intersect with piping, electrical wiring, etc. should be carefully filled with cement and bitumen, covered with metal screens and sheet iron.

5.12.4. Openings through which rodents can penetrate are filled in with sharp metal shavings mixed with cement.

5.12.5. The dumping of trash is forbidden in subsidiary buildings, lofts, cellars, and holds.

5.12.6. If rodents are found, traps must be set immediately. Only pest control specialists are permitted to apply chemical substances to destroy rodents, in agreement with local Sanitary Epidemiologic Service centers.

5.12.7. To fight flies, windows should be screened during the summer. The use of insecticides is not permitted during work time. Adhesive surfaces and traps are permitted, but cannot be placed over a production line.

5.12.8. Cracks in walls and dividers in living areas are filled to prevent cockroaches. Food remnants must not be allowed to accumulate.

5.13. Rights and Responsibilities for Compliance with Current Health Regulations

5.13.1. When hiring, administration must be guided by the requirements of current Health Regulations.

5.13.2. Enterprise administration must ensure:

- Conditions necessary for manufacturing product of guaranteed quality;
- That workers undergo the necessary medical examinations according to schedules established by Sanitary Epidemiologic Service centers;
- That all factories are supplied with first-aid kits, as well as protective-preventive substances for hand-washing;
- Attendance at hygiene training, and passing tests once every two years, as well as upon hiring;
- That each worker has three sets of sanitary clothing, footwear, and gloves;
- Mending and replacement of clothing according to wear, centralized laundry (washing sanitary clothing individually at home is categorically forbidden);
- That personnel working in packing, parceling, inspection (culinary, roe, preserves production) be provided with four-layer gauze masks, rubber gloves, and aprons that must be sanitized after each shift;
- A sufficient number of cleaning implements, substances for cleaning and disinfecting, soap, towels, and napkins;
- That manicurists be included in canning factory staff;
- Concluding agreements with local Sanitary Epidemiologic Service centers regarding rodent control and disinfecting;

- That all workers have medical books, that all production areas have sanitation journals, journals of monthly personnel examinations for pustular diseases, and other health documentation in established format (numbered, bound, printed);

5.13.3. Administration must notify all staff who come into contact with food products in the course of their work of current Health Regulations, and require that they are rigorously fulfilled.

5.13.4. Enterprise administration must hold responsible persons guilty of violating technological, health, and hygiene procedures used in production, and must immediately take any action necessary to eliminate problems that appear.

5.13.5. The enterprise manager bears responsibility for the health and technical condition of the enterprise, and for fulfilling current health regulations.

5.13.6. The shop (area) heads, production chiefs, masters, brigadiers, warehouse managers, or persons appointed by the enterprise manager, bear responsibility for the sanitary condition of the area, shop, section, subsidiary facilities and equipment, respectively.

5.13.7. Each worker bears responsibility for personal and professional hygiene, for maintaining the sanitary condition of the contents of his workplace and the equipment and implements associated with it.

6. Production and Sale of Live Bivalve Mollusks

6.1. Requirements for Regions Cultivating Live Bivalve Mollusks

6.1.1. Areas with bodies of water where mollusk farms are located must negotiate with local Sanitary Epidemiologic Service centers. Exporters must cooperate with competent agencies in the European Community country, as well.

6.1.2. Recommended microbiological standards for marine water in regions of live bivalve mollusks cultivation are presented in Table 1.

Table I

RECOMMENDED MICROBIOLOGICAL STANDARDS FOR MARINE WATER IN AREAS OF LIVE BIVALVE MOLLUSK CULTIVATION

Indicator	Allowed Number of Live Cells per 1 Cubic Decimeter No Greater Than	Periodicity of Control
Colibacillus group bacteria	25,000	Twice a month by aquaculture bacteriologist
Fecal colibacillus	1,000	Same
Salmonella	None	Same
Pathogenic	Same	Tested by Sanitary

halophilic vibrions		Epidemiologic Service centers in case of epidemic

6.1.3. In established regions, live bivalve mollusks must be held in clean sea water before being shipped out for processing; for export, sea water for mollusks must meet the requirements set out in Addendum 7.2.

6.1.4. Microbiological indicators for live bivalve mollusks during cultivation must meet the requirements presented in Table 2.

Table II

MICROBIOLOGICAL STANDARDS FOR LIVE BIVALVE MOLLUSKS DURING CULTIVATION

Indicator	Standard
Number of Mesophilic Aerobic, Fecal-Anaerobic Microorganisms Colony-Forming to one gram	1×10^5
Colibacillus Group Bacteria [illegible] g	Not Permitted
Most Likely Number of Bacteria, Colibacillus Group [illegible], No More	100
[Illegible] Mesophilic Aerobic Microorganisms in [illegible]	Not Permitted
Salmonella in [illegible] g	Same
Pathogenic Halophilic Vibrions in [illegible] g	Same

6.1.5. Live Bivalve Mollusks for Industrial Processing Are Subject to During Harvest to the Requirements Presented in Table III

Table III

MICROBIOLOGICAL STANDARDS FOR LIVE BIVALVE MOLLUSKS FOR INDUSTRIAL PROCESSING

Indicator	Standard	
	For Canning	For Cooking
Number of Mesophilic Aerobic and Fecal Anaerobic	1×10^5	5×10^4
Colibacillus Group Bacteria in [illegible] g	Same	Not Permitted
The most likely number of coliform bacteria in 1 g not more	-"-	50
Mesophilic anaerobic microorganism spores in 0.1 g	Not permitted	Not permitted
Salmonella in 25 g	same	same
Pathogenic halophilic vibrios in 25 g in disease free conditions	-"-	-"-

6.1.6. Live bivalve shellfish intended for export must meet requirements of Council Directive 91/492/EEC in regard to microbiological indicators.

- in the period when shellfish are grown, MPN fecal coliforms may not exceed 6000 or E.coli 4600 in 100 g of meat.

- in shellfish, intended for immediate consumption, there must be less that 300 or E.coli 230 MPN of fecal coliforms per 100 g of meat and interpallial fluid; salmonella must not be present in 25 g shellfish.

6.2. Requirements for harvesting, initial processing and transport

of live bivalve shellfish to processing plants

6.2.1. Means of harvesting, initial processing of shellfish (the collector's ascent with the shellfish, removing them from the collector, washing, cleaning of encrustation and other foreign matter) must not cause mechanical damage to live bivalve mollusk.

6.2.2. Means of processing, transport, unloading of shellfish must not cause additional contamination, lowering of quality and must preserve signs of their viability.

6.2.3. Transportation used to deliver shellfish must meet the requirements of current Sanitary Regulations and contain devices for water runoff.

6.2.4. During storage and transport shellfish must not be exposed to high or low temperature conditions.

6.2.5. Shellfish transport must be implemented in special vats or containers with running or fresh sea water with a temperature of no higher than 25°.

6.2.6 Transport of shellfish without water is permitted in special containers with placement in a layer of not more than 2/3 of the height of the vat (height of shellfish layer not more than 1 m) at an air temperature of 0 to 12°C.

When the air temperature rises higher than that which is established, the shellfish are chilled with ice, an ice and salt mixture, or are chilled to 2°C with sea water or other means.

6.2.7. Each shipment of shellfish must be delivered to the processing plant with documents containing the following information:

- name of vessel (harvester);

-date of collection;

-place of collection;

-duration of transport;

-signature of responsible party.

6.3. Processing plant and work room requirements

6.3.1. Plants and work rooms must not be located near sources of unacceptable odors, smoke, dust and other contaminants.

The premises must not be flooded with runoff water during rising tides or runoff from surrounding areas.

6.3.2. Work rooms and premises must be maintained in satisfactory condition; contamination of shellfish by any type of discharge, dirty water, or fumes and the presence of any rodents or other animals are not permitted.

6.3.3. Work rooms where shellfish are processed or stored must have

- a floor covering which is easily cleaned and has a slope for water runoff;

- enough working space to allow implementation of all operations in natural light;

- separate equipped space for washing of tools and containers;

- sufficient number of dressing rooms, sinks and toilets.

6.3.4. Work rooms must be provided with potable water, meeting GOST 2874 requirements or have vats for its storage and have a system of supplying clean sea water. Pipes and faucets with potable water must be clearly distinguishable from pipes and faucets with non-potable water.

6.3.5. During export of products, potable and clean sea water must meet requirements stated in Addendum 7.2.

6.3.6. Surface areas of equipment and machines which touch shellfish must be made of rustproof material.

6.3.7. General hygienic requirements of the premises, equipment, work places and personnel are stated in paragraphs 3 and 5 of current Sanitary Regulations.

6.4. Cleaning center requirements

6.4.1. Requirements for tanks and vats where live bivalve shellfish are kept.

6.4.1.1. Equipment and tanks for keeping shellfish must not be sources of contamination.

The floor and walls of the cleaning tanks must have a smooth, nonporous surface, which is easily washed and cleaned and must be made of corrosion-proof and non-toxic material.

Use of copper and copper alloys is not permitted in parts and components that have contact with sea water in the pipeline system and the tanks themselves.

6.4.1.2. Tank construction must

- provide for a steady flow of water through the container which holds the shellfish;

- prevent the development of stagnant areas and the possibility of repeat contamination of shellfish as a result.

6.4.1.3. A necessary level of water circulation in tanks is obtained with the correlation of their length and width from 1.10 to 1.4. During significant length of flows they are installed with a slope of up to 2% water runoff.

6.4.1.4. Containers where shellfish are place must be manufactured from corrosion-proof material.

6.4.2. Requirements for sea water quality used for cleaning of live bivalve shellfish.

6.4.2.1. The water intake structure area of sea water used to clean shellfish must not be subject to contamination by industrial or household runoff water.

6.4.2.2. To provide for the effective subsequent processing of sea water it must contain no more than 1 x 1000 kl/cu inches of coliform bacteria and no more than 1 x 10000 kl/cu.cm of mesophilic aerobic and facultative anaerobic microorganisms.

6.4.2.3. After decontamination the sea water's bacteriological indicators must comply with requirements of GOST 2874.

6.4.2.4. Shellfish cleaning is conducted in clean sea water with a salinity of 15-19 per thousand in the course of 24 -48 hours. Salinity lower than 10 and higher than 20 per thousand negatively affects the general physiological condition of shellfish and negates the effectiveness of the cleaning process as a whole.

6.4.2.5. Water temperature must be within 10 -20°C. When water temperature is higher than 20°C or when there are extreme differences in water temperature in the growing area and the

temperature in the cleaning tanks, the shellfish may have a large-scale expulsion of reproductive products.

6.4.2.6. The level of dissolved oxygen in sea water used to clean shellfish must be no less than 5 mg/cu. inch.

6.4.3. Processing of sea water intended for cleaning of live bivalve shellfish.

6.4.3.1. Decontamination of sea water is done with the aid of ultraviolet radiation with a wavelength in the range of 200-295 nm which has a

maximum bactericidal effect. When sea water turbidity is higher than 85 parts per million and coloration is higher than 20 (90 -150 parts per million) it must be subjected to preliminary desilting or filtration to lower these indicators to the indicated level.

6.4.3.2. Standard equipment for decontamination of sea water is used for irradiation; its quantity and power depend on the volume of water necessary for the shellfish cleaning process.

6.4.3.3. Monitoring of the intensity of the ultraviolent emissions of the bactericidal lamps is implemented monthly with the aid of a standard bactericidal power meter. Lamps which have emissions lower than 60% of the initial level must be replaced.

6.5. Requirements for procedures of holding of live bivalve shellfish

6.5.1. Shellfish with damaged valves, stripped mantles, or with cracks must not be allowed through for holding. Shellfish must be thoroughly washed with a stream of water from a hose before placement in a tank and arranged on a latticed "false bottom" raised 15 – 20 cm from the tank bottom or in special containers. The thickness of the shellfish layer on the "false bottom" or on shelves in containers must not be more than 15 cm. When keeping the shellfish in multi-tiered containers the thickness of the water layer above them must not be less than 15 cm between sections and not less than 30 cm over the top layer of the shellfish.

6.5.2. Before the shellfish cleaning process the system must be thoroughly cleaned.

The distance between the water intake area of sea water and the sewage water runoff must be sufficient to avoid contamination.

6.5.3. After 12 hours of cleaning the shellfish and tank bottom must be washed with a strong stream of water to remove silt and separate the shellfish.

6.5.4. Upon completion of cleaning, shellfish shells must be thoroughly washed with clean sea water from a hose. The water for cleaning must not be used again.

6.6. Monitoring of cleaning process of live bivalve shellfish

6.6.1. The plant laboratory must implement the following microbiological tests:

- of sea water entering the cleaning tanks;

- of live bivalve shellfish before and after they are kept in water.

6.6.2. The following data must be noted in a special log:

- date and number of shellfish arriving for cleaning;

- time of filling and emptying of cleaning systems;

- shellfish cleaning procedure;

- results of sea water and shellfish microbiological tests.

6.7. Packaging

6.7.1. Live bivalve shellfish are packed in satisfactory hygienic conditions.

6.7.2. Packaging material or containers:

- must not emit extraneous odors or damage the organoleptic characteristics of live shellfish;

- must be durable and ensure that products are protected from effects of external factors.

6.7.3. Oysters must be packed with concave shells down.

6.8. Marking of shipment of live bivalve shellfish

6.8.1. Marking must be carried out in compliance with ND requirements on labels, tags, markers, made out of paper, plywood or other material.

6.8.2. Each container place must have a tag containing the following information:

- Country of origin;

- Producer;

- Type of shellfish (common or Latin name);

- Date of production: day, month, and time (h) of technical process completion;

- Time and conditions of storage.

6.8.3. The indicated information must be easily legible, indelible, and markings must be easy to decipher.

6.9. Storage and transport of live

bivalve shellfish

6.9.1. Shellfish storage space must ensure a temperature that does not have negative effects on their quality and viability.

Package must not touch the storage facility floor and must be placed on a clean rack.

6.9.2. The following requirements are in effect in regard to means of transportation used to transfer shellfish shipments:

- internal walls which may touch live shellfish must be made of rustproof material and must be smooth and easily cleaned;

- shellfish must not be transferred with other products which may contaminate them.

6.9.3. Ice used while transferring shipments of live shellfish must be produced from potable or clean sea water.

6.10. Requirements in effect for

live bivalve shellfish

6.10.1. Live bivalve shellfish must maintain signs of viability; valve surface must be clean and comply with ND requirements.

6.10.2. In regard to microbiological indicators, shellfish must meet requirements stated in p. 6.1 of current Sanitary Regulations.

6.10.3. Content of organochloride pesticides and heavy metals must not be higher than regulations established by medical and biological requirements and sanitary standards of quality of alimentary raw materials and food products.

6.10.4. During export of live bivalve shellfish the amount of paralytic poison contained in the edible part of the shellfish (the entire body or any separate edible part taken) must not be higher than 80 mcg per 100 g of shellfish meat, determined by a biotesting method in conjunction with, if necessary, a chemical method of detecting saxitoxins or by any other accepted method. Traditional biological methods of testing must not give positive reactions for diarrhetic poisons in edible shellfish parts (the entire body or any separate edible part taken).

6.11. Sanitary monitoring

6.11.1. The plant laboratory must establish a system of sanitary monitoring to check the fulfillment of requirements indicated in current Sanitary Regulations.

Monitoring must be implemented with the purpose of:

- Exclusion of the possibility of shellfish harvesting in ecologically unsafe areas;

- checking for microbiological indicators of live bivalve shellfish in compliance with established requirements;

- checking for the existence of toxic elements, which may not be exceed the limits, established by medical and biological requirements and sanitary standards of quality of alimentary raw material and food products.

- checking for possible presence of toxin producing plankton in areas where shellfish are harvested and for biotoxins in shellfish.

6.11.2. In the period when shellfish are grown, they must be monitored once a month in the winter-spring period and twice a month in the summer-fall period.

6.11.3. In the period of shellfish harvesting, monitoring must take place once every ten days.

6.11.4. In compiling the plan for selection of samples of molluscs for monitoring, the following should be taken into account:

- variations in degree of faecal pollution of the mollusc cultivation area;

- variations in quality of plankton containing marine biotoxins.

6.11.5. If the results of the analysis of the selected samples shows that live bivalve molluscs could represent a danger to human health, the laboratory or other competent authority must close the mollusc collecting area until the normal situation is restored.

6.11.6. A monitoring system must be set up to check the level of marine biotoxins.

Supplement 7.1

(mandatory)

LABORATORY-INDUSTRIAL WATER SUPPLY MONITORING LOG

from _____ to _____

(day, month, year) (day, month, year)

Date & time sample was taken	Place sample was taken	No. of micro-organ-isms per cubic cm	No. of bact-eria of Esche-richia coli group per cubic dm of water - "colin-	No. of spores of meso-philic clost-ridium per 100 cubic cm	Con-tent of resid-ual chlor-ine, mg per cubic dm	Organo-leptic prop-erties (smell, taste, after-taste, turbi-dity, colour index	Con-centr-ation of chemical sub-stances (total rigidity, content of lead, arsenic,	Conclu-sion	Meas-ures taken	Signa-tures of micro-biolo-gist and chem-ist

			dex"			etc.)	fluorine, copper, zinc etc.), mg per cubic dm			

Supplement 7.2

(mandatory)

REQUIREMENTS FOR DRINKING WATER AND SEA WATER IN ACCORDANCE WITH COUNCIL DIRECTIVE 80/778/EEC

Section 1

From Council Directive 80/778/EEC referring to the microbiological description of water intended for human use.

The full procedure for monitoring sea water and drinking water must be scrupulously recorded in documents in the HACCP (Hazard Analysis Critical Control Point) system. The form of documentation is approved by the management.

Microbiological parameters

Table 1

Parameters	Volume of specimen, ml	Maximum permissible concentration (MPC)	
		membrane filter method	extreme fractionation method (MPN)
Total number of coliforms	100	0	< 1
Quantity of faecal coliforms	100	0	< 1
Faecal streptococci	100	0	< 1

Sulphite-reducing clostridia	20	-	≤ 1

Table 2

Parameters	Incubation temperature	Volume of sample, ml	Basic level	Max. permissible concentration (MPC)
Total no. of bacteria in water intended for human use	37°C 22°C	1 1	10 100	- -
Total no. of bacteria in water intended for closed reservoirs	37°C 22°C	1 1	5 20	20 100

Notes. 1. Determining the number of total and faecal coliforms is done by the extreme fractionation method, and the result is expressed in "most probable number" (MPN) values; or by the membrane filtration method. Endo agar can be used as a dense nutritive medium. The incubation temperature for determining the total of all coliforms is 37°C, of faecal coliforms 44°C.

2. The number of faecal streptococci is found by the Liskey method on a medium with sodium azide. The result is expressed in MPN. The membrane filtration method may be used, with growth through the filters on a suitable dense medium.

3. Sulphite-reducing clostridia are determined by calculating the spores after heating the samples to 80°C:

a) for seeding in a medium with glucose, sulphite and iron, by calculating the colonies with a black aureole;

b) by membrane filtration after growth through the filter on a medium with glucose, sulphite and iron. For incubation, the filter is covered with a layer of agar;

c) by finding the MPN in test tubes on a differential medium.

4. The total number of bacteria (TNB) is determined by inoculation of the sample into nutritive agar with subsequent incubation of seedings at 22°C for 72 hours and 37°C for 48 hours.

In sea water, the TNB is not determined. There should not be a positive result for coliform organisms in two successive samples.

If E.coli, faecal streptococci or sulphite-reducing clostridia are found to be present in the samples, the water of this water source must not be used without prior disinfection.

Section 2

From the Recommendations of Directive 80/778/EEC with reference to checking water at fish-processing enterprises.

Schedule for microbiological monitoring:

1) for water intended for supply to people without intermediate storage, analyses should be conducted not less than one a year from different representative points of selection on the territory of the enterprise;

2) for water intended for supply to people with intermediate storage, not less than once a month.

Plan for distribution of water at an enterprise

The management of the enterprise must be held responsible for the state of the water supply sources (main supply lines, common supply lines with intermediate storage, surface water, well water) and bear liability for the suitability of the water used at the enterprise for drinking purposes.

The official inspector must have access to a water supply plan including the layout of pipelines and drains of the enterprise; the drains must be marked on the plan by sequential numbering.

Chlorinating system

In chlorinating water, the water-chlorine contact time must suffice for the chlorine to react with organic compounds

Chlorinating time is 20-30 min.

Fish products intended for export to EC countries should not be treated with hyperchlorinated water.

The chlorine content should be checked regularly (not less than once a day).

Supplement 7.3

(mandatory)

WASHING & DISINFECTION TREATMENT FOR CONSERVING & PRESERVING CANS & JARS

Form of pack	Wetting & mechanical cleaning	Washing	Flushing	Degreasing	Drying off
Metal cans		With hot running water at temperature 65-85°C		With sharp steam	By allowing to drain (turned upside down) or with a hot

					air jet (60°C)
Clean new glass jar		in hot water (65-85°C) by rinsing twice or in hot running water (65-85°C)		The same	The same
Glass jar (used)	In a solution containing 3% caustic soda, 2% sodium silicate and 1.5% trisodium phosphate, for not less than 10 min. <*>	3% alkaline solution at temperature 65-85°C	Flushing twice in hot water at temperature 65-85°C and at water pressure 2 kg/sq. cm	With sharp steam	By allowing to drain (turned upside down) or with a hot air jet (60°C)
Polymer jars and lids, apart from jars made of PVC <**>, new, clean			In running water at temperature 60-65°C		Drying off in jet of air at temperature 60-65°C
New, but not properly stored or packed	In a 1% solution of calcinated soda at temperature 60-65°C for not less than 10 min. <*>	In water at temperature 60-65°C for two min.	In running water at temperature 60-65°C	In 0.004% (1 g to 25 litres of water) of potassium permanganate for 5 min. <***>	Rinse in running water for 2 min. Dry off in jet of air at temperature 60-65°C
Polymer jars and lids (used)	In a 2% solution of calcinated soda at temperature 60-65°C for not less than 10 min., followed by mechanical cleaning with brushes <**>		In running water at temperature 60-65°C	In 0.004% (1 g to 25 litres of water) of potassium permanganate for 5 min. <***> Change solution when brown colour appears	Rinse in running water for 2 min. Dry off in jet of air at temperature 60-65°C

<*> Replacement by other washing materials is possible.

<**> For polymer jars of PVC (new, dirty and used), the temperature regime at all stages of sanitary treatment is 40-45°C.

<***> Replacement by other disinfectants is possible. Where washing materials with disinfectant properties are used, the operation of degreasing the pack is not carried out.

Supplement 7.4

(mandatory)

Supplement 7.4.1

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE №____

DATED "__" _____ 199_ FOR FISH AND OTHER PRODUCTS

OF FISHING, REFRIGERATED AND FROZEN,

FOR CONSIGNMENT NOTE №_____DATED "__"_____199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Batch №	Name of product	Date of manuf-acture	Form of trans-port pack	No. of places in trans-port pack, items	Form of con-sump-tion pack and no. of actual packs	Net weight of batch, kg	Consis-tency	Temp. in fish (block) at time of dis-patch, °C	Sort (write in by hand)	How quality indi-cators meet require-ments of regu-latory docu-ment

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.4.2

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR FROZEN MINCED FISH

FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

_____

Destination point_____

Form of transport _____

_____

Manufacturer_____

Dispatcher_____

Recipient_____

Batch №	Name of product	Date of manufacture (day, month, year)	Form of transport pack	No. of places in transport pack, items	Form of consumption pack and no. of actual packs	Elasticity, g	Percentage of water, %	Temp. in fish (block) at time of dispatch, °C	How quality indicators meet requirements of regulatory document

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.4.3

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR FISH PRODUCTS,

CAVIAR AND PRODUCTS FROM NON-FISH OBJECTS OF FISHING

(APART FROM REFRIGERATED & FROZEN FISH, MINCED FISH

& NON-FISH OBJECTS FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

Destination point_____ _____

Form of transport _____ Manufacturer_____

_____ Dispatcher_____

Recipient_____

Batch №	Name of product	Date of manufacture (day, month, year)	Form of transport pack	No. of places in transport pack, items	Form of consumption pack and no. of actual packs	Net weight of batch, kg	Percentage by weight			Sort (write in by hand)	How quality indicators meet requirements of regulatory document
							of fat	of cooking salt	Of preservative (state what type)		

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.4.4

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE №____

DATED "__"_____ 199_ FOR CONSERVES & PRESERVES,

FOR CONSIGNMENT NOTE №_____DATED "__"_____199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

Destination point_____

_____

Manufacturer_____

Form of transport _____

_____

Dispatcher_____

Recipient_____

Ba	Name	Shift	Form	No.	Total	Net	Total	Percentage by weight	Sort	How

tch №	of prod-uct	& date of manu -fact-ure	of trans-port & consu -mer pack	of places in trans-port pack, items	no. of actual cans or jars, items	wt. of can or jar, g	acid-ity % <*>	of cook-ing salt (sodium chloride)	of dry subst-ances	Of pre-serv-ative (state what type) <**>	(writ e in by hand)	quality indi-cators meet require-ments of regu-latory docu-ment

<*> For product for which there is an indicator.

<**> Based on results of periodic analyses.

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.4.5

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR FATS OF FISH AND MARINE

MAMMALS FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

Destination point_____ _____

Form of transport _____ Manufacturer_____

_____ Dispatcher_____

Recipient_____

[Table below is incomplete, right-hand part of it is missing]

Batch no.	Name of	Date of	Form of	Form of	Wt. of batch, kg	Colour	Trans-paren-	pN no.,	Sapon-ifica-	Iodine no.	Wt. %

	prod-uct	manu-fac-ture (day, month, year)	trans-port pack & no. of items	con-sumer pack & no. of actual packs, items	gross	net		cy	mg KOH <*> per 1g of fat	tion no., <**> KOH <*> per 1g of fat	<**> g of iodine per 100 g of fat	non-sapon-ified subst-ances

<*> KOH: potassium hydroxide

<**> For the group of fats for which these indicators are included in the regulatory documents.

Complies with current regulations and rules for safety indicators. In the event of disagreements in assessing the quality of the fat, at the demand of the customer, the standard "safety" will be as defined in GOST 9393-82, section 2, point 2.3.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.4.6

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR FROZEN MEAL FROM FISH,

MARINE MAMMALS, CRUSTACEANS AND MOLLUSCS

FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

_____

Destination point_____

Form of transport _____

_____

Manufacturer_____

Dispatcher_____

Recipient_____

[Part of table missing off right of page]

Batch	Name	Date	Form	No. of	Net	Exter-	Percentage by weight

no.	of prod-uct	of manu-fact-ure	of trans-port pack-ing	places, items	wt., kg	nal app-ear-ance	water	fat	dry pro-tein (total nitro-gen x 6.25)	cook-ing salt (sod-ium chlor-ide)	phos-phorus	cal-cium	anti-oxi-dant

<*> Indicator determined by requirement of customer.

<**> Toxicity and pathogenic microflora in meal determined in accordance with point 2.3 of GOST 2116-82.

The meal is in Class 4 of self-combustible substances, according to MLIOГ

Conditions of time of transporting _____

Conditions and time of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise_____ Stamp

(surname & signature)

Supplement 7.4.7

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR REFRIGERATED & FROZEN

FODDER PRODUCTS FROM AQUATIC LIFE (FISH, CRUSTACEANS ET AL.)

AND MINCED FODDER PRODUCTS PRODUCED WITH

ADDITION OF VARIOUS PRESERVATIVES

FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

Destination point_____ _____

Form of transport _____ Manufacturer_____

_____ Dispatcher_____

Recipient_____

[Right edge of table below missing]

Batc	Nam	Date	For	No.	Net	Percentage by weight	mea	Pat-

h no.	e of prod-uct	of manu-facture (mont h, year	m of trans -port pack	of places , items	weigh t kg	cook -ing salt (sod-ium chlor -ide) <**>	wate r <*>	nitro -gen	vola -tile foun -dat-ions <*>	Free sulph -uric acid	pre-serv-ative (NM-ZhK) <*** > et al. <*>	n pH <*>	hog - enic mic -ro-flor a

<*> For product for which indicator is required

(<**> not explained)

<***> *[Possibly a product of Nizhni Novgorod Meat & Fat Combine]*

Conditions of time of transporting _____

Conditions and time of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise_____ Stamp

(surname & signature)

Supplement 7.4.8

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR AGAR & AGAROID

FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

_____

Destination point_____

Form of transport _____

_____

Manufacturer_____

Dispatcher_____

Recipient_____

[Right edge of table below missing]

Batch no.	Name of	Date of	Form of	No, of	Form of	Net wt. of	Colour of	Weight %	Tra-nsp-	Gel strength, g	*ill-egi-*

	pro-duct	manu-fac-ture (day, month, year)	trans-port pack	places of trans-port pack & no. of actual packs, items	con-sum-er pack & no. of actual packs, items	pro-duct (re-calc-ulat-ed to 18% humi-dity)	water	total nitr-ogen	ash	are-ncy & col-our of gel	with-out sugar	with sugar	*ble*

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage. o be stored for not more than one year from date of manufacture, in dry well-ventilated premises without undesirable odours with air humidity not more than 80%, without acute variations in temperature.

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.4.9

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR MANNITOL

FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

Destination point_____

_____

Form of transport _____

Manufacturer_____

_____

Dispatcher_____

Recipient_____

[Right edge of table below is missing]

Batc	Type	Date	Form	No. of	Net	Percentage by weight	Coppe	Acid	Melt-

h no.	of mann -itol	of manu- fac- ture (day, month , year)	of trans -port pack	places , items	wt. of batch , kg	D- mann -itol	Ash (sulp - hate)	Subs -tan- ces insol -uble in water	Chlor -ides	r mg/kg	-ity, %	ing point , °C

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage: product is stored in manufacturer's pack in closed and ventilated store premises. Time limit for storage of product is two years from date of manufacture.

Supplement 7.4.10

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR EDIBLE

(TECHNICAL) SODIUM ALGINATE

FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

Destination point_____ _____

Form of transport _____ Manufacturer_____

_____ Dispatcher_____

Recipient_____

[Right edge of table below is missing]

Batch no.	Name of	Date of manu-	Form of	No. of places of	Form of con-	net weight of product, g	Ext-ernal	Colour	Percentage by weight

	prod-uct	fac-ture (day, month, year)	trans-port pack	transport pack, items	sumer pack & no. of actual packs, items	Dry	Recal-culated for 16% (18%) humid-ity	app-ear-ance		of water	of ash	of sub-stan-ces insol-uble in boil-ing water

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage. Store at temperature 5-25°C and relative humidity of air not more than 80% in clean well-ventilated premises for not more than one year.

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.4.11

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR EDIBLE(TECHNICAL)

FISH GLUE FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

Destination point_____

_____

Form of transport _____

Manufacturer_____

_____

Dispatcher_____

Recipient_____

Batch no.	Name of product	Date of manufacture (day, month, year)	Form of transport pack	No. of places of transport pack, items	Form of consumer pack and no. of actual packs, items	Net weight, kg	External appearance	Colour	Smell and taste	Consistency	Conformity with quality indicator requirements of regulatory docu-

											ments

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.4.12

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR PEARL FISH PASTE

FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

_____

Destination point_____

Form of transport _____

_____

Manufacturer_____

Dispatcher_____

Recipient_____

[Right edge of table below is missing]

Batch no.	Name of product	Date of manufacture (day, month, year)	Form of transport pack	No. of places of transport pack, items	Form of consumer pack and no. of actual packs, items	Net weight kg	External appearance	Colour	Percentage by weight			Conformity with quality indicator requirements of regulatory documents
									dry guanite	dense residue <*>	ash	

<*> Indicator determined at customer's requirement

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.4.13

to SanPiN 2.3.4.050-96

approved by Resolution № 6 of

Goskomsanepidnadzor of RF

on 11th March 1996

(mandatory)

QUALITY CERTIFICATE № _____

DATED "__" _____ 199_ FOR UNDRESSED FUR

PELTS OF MARINE ANIMALS

FOR CONSIGNMENT NOTE № _____

DATED "__" _____ 199_

Production Association

_____

(company, concern, etc.)

Laboratory

_____

(name of producing enterprise)

Point and date of dispatch_____

Destination point_____ _____

Form of transport _____ Manufacturer_____

_____ Dispatcher_____

Recipient_____

Batch no.	Name of product	Date of manufacture (day, month, year)	Form of transport pack	No. of places, items	Net weight of batch, kg	No. of pelts, items	Defects	Description of fur covering	Group of defect	Sort (write in by hand)	Conformity with quality indicator requirements of regulatory documents

Complies with current regulations and rules for safety indicators.

Certificate of Compliance №___ dated "__"_____199_. Valid until "__"_____199_.

Issued by _____

(name of certification authority or centre)

_____

(its address, registration №_____)

Conditions and period of transporting _____

Conditions and period of storage _____

Head of laboratory _____

(surname & signature)

Director of enterprise _____ Stamp

(surname & signature)

Supplement 7.5

(mandatory)

FROM COMMISSION DECISION 93/185/EEC RE

COUNCIL DIRECTIVE 91/493/EEC

SPECIMEN SANITARY CERTIFICATE FOR FISH PRODUCTS

FOR EXPORT TO COUNTRIES OF THE EUROPEAN UNION

Country of dispatch _____

Authorised representative <*>_____

Inspecting body <**>_____

Number of Sanitary Certificate

1. Separate descriptions of fish products

Description:

- forms (scientific name),

- stage <***> or type of processing.

Form of packing

Quantity of packing units

Net weight

Storage and transportation temperature

<*> Name and address.

<**> The same.

<***> Live, intended for direct consumption, at various stages of processing.

2. Origin of fish products

Address(es) or phone numbers of preparation or production enterprise(s) having an export permit issued by the competent authorities

_____

3. Destination of fish products

The fish products have been dispatched

from _____

(place of dispatch)

to _____

(country or actual destination)

by the following form of transport

Name and address of dispatcher _____

_____

Name of recipient, address and location to which being sent _____

_____

4. Sanitary attestation

The undersigned official inspector confirms that:

1) the aforementioned fish products have been processed, prepared, identified, stored and transported in conditions complying with the requirements of council Directive 91/493/EEC dated

22nd July 1991, which defines the sanitary conditions for the production and marketing of fish products;

2) furthermore, in the case of frozen or processed bivalve molluscs , the molluscs were collected in conditions not lower than the requirements of Council Directive 91/492/EEC dated 15th July 1991, which defines the sanitary conditions for the production and marketing of live bivalve molluscs.

Inspected _____

(place) (date)

_____

(Signature of official inspector)

_____

Name (in block capitals), volume and quality description of cargo

Supplement 7.6

(mandatory)

LOG

OF INSPECTION OF HANDS AND UNCOVERED PARTS OF BODY FOR PRESENCE OF PUSTULAR DISEASES AND OTHER BREACHES OF INTEGRITY OF THE INTEGUMENT

Surname, forename, patronymic	Month												Measures taken<*>
	1	2	3	4	5	6	7	8	9	10	11	12	
Total inspected:													

Including relieved of duty:

<*> Listing measures take with respect to people relieved of duty, stating date, full name, reasons for relieving them of duty and to what work they have been transferred.

Standard markings to be made in log: H = healthy, R = relieved, struck through = not inspected.

Supplement 7.7

(recommended)

TERMINOLOGY

USED IN DIRECTIVES OF THE COUNCIL OF THE EUROPEAN UNION

1. Fish products: all sea or fresh-water animals or parts of them, including their roes, with the exception of marine mammals, frogs, and water animals within the competence of other legislative acts of the Community.

2. Aquaculture products - all fish products, born and cultivated in controlled conditions until they are sent to the market for sale as food products. Furthermore, sea or fresh-water fish, or crustaceans, caught in their natural habitat at the immature stage and kept until the reach the required marketable size for human consumption, are also considered aquaculture products. Fish and crustaceans of marketable size, caught in their natural habitat and kept alive for subsequent sale are not considered aquaculture products if they are simply kept alive without any attempt to increase their size or weight.

3. Refrigeration - the process of reducing the temperature of fish products to a level approaching the melting point of ice.

4. Fresh products - any fish products, whole or in prepared form, including products which are vacuum-packed or in a modified air environment, which have not been subjected to any preservation treatment apart from refrigeration.

5. Prepared products - any fish products which have been subjected to operations which have altered their anatomical integrity, such as gutting, beheading, cutting up, filleting, chopping into pieces etc.

6. Processed products - any fish products subjected to chemical or physical treatment, such as heating, smoking, salting or dehydrating; or the marinating, etc. of refrigerated or frozen products, together with other food products or without them, or a combination of these various processes.

7. Conservation - a process in which the products are packed in sealed closed containers and are heat-treated to a point at which any microorganisms capable of multiplying are destroyed or become inactive, regardless of the temperature at which the products are to be stored.

8. Frozen products - any fish products which are subjected to freezing and have reached a core temperature of minus 18°C or below after the temperature has become stabilised.

9. Packing - procedure to provide protection to fish products by means of wrapping material, packets or any other suitable means.

10. Portion

10.1. In relation to fish products - a quantity of fish products obtained in virtually identical circumstances.

10.2. In relation to bivalve molluscs - a certain quantity of live bivalve molluscs collected in a fishing ground and then destined for dispatch to an approved distribution centre, cleansing centre or cleansing region, or to a processing enterprise to which these belong.

11. Batch

11.1. In relation to fish products - a quantity of fish products intended for one or more customers in the destination state and being delivered by only one form of transport.

11.2. In relation to bivalve molluscs - a certain quantity of live bivalve molluscs processed in a distribution or cleansing centre and then intended for one or more customers.

12. Means of transport - the goods part of motor vehicles, railway wagons and aircraft, the holds of ships, and also containers for transporting by land, sea or air.

13. Competent authority - the central administrative authority of a member country competent to carry out veterinary inspections, or any other authority to which such competence has been delegated.

14. Enterprise - any territory where fish products are produced, processed, refrigerated, frozen, packed or stored. Auctions and wholesale markets where the products are only exhibited and sold wholesale are not considered enterprises.

15. Sending to sales market - the holding or exhibiting for sale, the sale itself, delivery or any form of sending to the sales market in the Community, with the exception of retail sale and direct passing to the retail trade or consumers at local markets by fishermen in small volumes of products, which are subject to the sanitary check established by the national rules for checking retail trade.

16. Importing - bringing fish products or live bivalve molluscs onto the territory of the Community from third countries.

17. Bivalve molluscs - -filtering lamellibranchiate molluscs.

18. Marine biotoxins - poisonous substances accumulated by bivalve molluscs which feed on plankton containing toxins.

19. Pure sea water

19.1. In relation to fish products: sea or salt water free from microbiological pollution, harmful substances and/or poisonous plankton in such quantities as might affect the sanitary-hygienic quality of the fish products and which is used in compliance with the conditions specified in Directive 91/493/EEC.

19.2. In relation to bivalve molluscs - sea water or subsaline water, which must be used in accordance with the conditions specified in Directive 91/492/EEC and which is free of microbiological pollution and of toxic and undesirable substances found in natural conditions, or as a result of the dumping in the habitat of the substances listed in the supplement to Directive 79/923/EEC, in such quantities as might have a negative effect on the physical condition of bivalve molluscs or do harm to their taste qualities.

20. Retention - for live bivalve molluscs, their storage in tanks or any other storage facilities containing pure sea water, or in natural conditions for the removal of sand, clay or sludge.

21. Collector - any individual or legal entity collecting live bivalve molluscs in a fishing ground by any means, with the aim of processing and marketing them.

22. Production sector - any region of the sea, river estuary or pool containing natural accumulations of bivalve molluscs, from which live bivalve molluscs are taken.

23. Relay cleansing sector - any region of the sea, river estuary or pool approved by the competent authorities, with clearly designated and marked buoys, markers or other fixed devices, used exclusively for the natural cleansing of bivalve molluscs.

24. Distribution centre - any approved marine or shore installation for the reception, preservation in fresh condition, washing, cleansing, sorting and packing of live bivalve molluscs suitable for human consumption.

25. Cleansing centre - an approved device with pools supplied with sea water which is naturally pure or has been purified by appropriate treatment, in which live bivalve molluscs are placed for the time necessary for the elimination of microbiological pollution, after which they become fit for consumption.

26. Cleansing (in reference to molluscs) - operation of transfer of live bivalve molluscs to approved regions of the sea, pools or river estuaries under the supervision of a competent authority for a sufficient period to remove pollution from them.

This does not include the particular operation of transferring bivalve molluscs to regions more suitable for their further growth and fattening.

27. Means of delivery - cargo compartments in motor vehicles, railway wagons and aircraft, and also the holds of ships, and containers for transportation by land, sea or air.

28. Packing - the operation of placing live bivalve molluscs in packing material suitable for this purpose.

29. Sending to market - the holding or exhibiting for sale, offer for sale, the sale itself, delivery or any form of sending live bivalve molluscs for human consumption in fresh form of for processing in the Community, with the exception of direct delivery to the local market for retail sale, for which the molluscs are subject to the sanitary check established by the national rules for checking retail trade.

30. Faecal coliforms - facultative, aerobic, gram-negative, non-spore-forming, cytochromoxidase-negative bacilli, capable of the fermentation of lactose with the formation of gas in the presence of bile salts or other surfactant compounds with similar growth-restraining characteristics, at 44°C for not less than 24 hours.

31. E.coli. - means faecal coliforms which also form indole from tryptophan at 44°C in 24 hours.

25. Pı	Conditions for use and operating conditions	REQUIREMENTS		Supplier response		
The c	The customer asks the supplier to offer separately the following systems priced separately.	Uncondit	Recommende	Uncondit	Recommende	Inspection
25.1	The boat should have a transport trailer for boat transfers by land.		X			
	- The transport trailer must be a dual-axle trailer which makes it possible for road transports in the Nordic countries without special traffic arrangements.	X				
	-The transport trailer must be fitted in accordance with paragraph 16.18 on transfer and storage racks.	X				
	- The supplier must meet the offered trailer inspection for use in road traffic. (specification: use inspection)	X				
25.2	The boat should have a 5-year full warranty (Specification: warranty does not cover normal wear)		X			
25.3	The boat should have 3 -year full warranty (Specification: warranty does not cover normal wear)		X			
25.4	The boat should have a fuel heater to the cockpit and / or for blown additional heat to the engine room.		X			
25.5	The boat should have weather protection in the cockpit.		X			
	- The cockpit should have the top covered, partially covered from the sides, and open from the back		X			
	- Weather protection for the cockpit		X			
	- Weather protection should be lightweight and removable by the user action in less than 60 minutes		X			
	The weather protection should protect passengers from above (specification: rain protec		X			
25.6	The boat should have protected from small-calibre weapons from the front against fire. (specification: primarily cockpit)		X			
	- Ballistic protection must stop 7,62x51 NATO Ball M2 bullets (level III threat per NIJ-STD-0108.01).	X				
25.7	The boat should have an automatic control system		X			
	- It must be integrated into the automatic control system, by which the boat can travel in the desired direction	X				
	It must be integrated into the automatic control system by which the boat can travel in the d	X				
	There must be a rudder angle indicator (1-2 units)	X				
25.8	The boat should have stabilised TV/IR CAMERA sensor (specification: variant 1) reference: 25.9		X			

	- Should be integrated into a part of the navigational system stabilised sensor ball, where TV and IR camera functionality (specification: is requested to offer Raymarine T-series, FLIR M series or equivalent)		X			
	- The navigation system radar target acquisition to the sensor ball should be possible (specification: sensor turns one radar target one after another)		X			
	- The sensor image should show on the navigational system multifunctional displays.		X			
	-The sensor direction/indication possibility should have the navigation system from the maritime navigation radar target (specification: sensor follows one radar target at a time).		X			
	- The sensor direction/indication possibility should have a navigation system from the AIS target (specification: sensor follows one AIS target at a time).		X			
	- The sensor guideline should be visible in the navigational system multifunctional displays.		X			
	- The sensor controller/control panel should be installed for use for the navigator		X			
	- The sensor controller/control panel should be positioned ergonomically		X			
25.9	The boat should have a multi-sensor system (e.g. FLIR TALON or Controp Quad 2). (specification: option 2) reference: 25.8		X			
	The sensor should be installed at the top sensor (specification: sensor weight max 50 kg).		X			
	The sensor image should show the navigational system on the multifunctional display.		X			
	The sensor direction/indication possibility should have navigation system from the maritime navigatio		X			
	The sensor direction/indication possibility should have a navigation system from the AIS target (speci		X			
	- The sensor guideline should be visible in the navigational system multifunctional display.		X			
	The sensor controller/control panel should be installed for use for navigation.		X			
	The sensor controller/control panel should be positioned ergonomically		X			

Please See Language_Direct_Question_5_Translation_sample_3.2 for English Translation

Върху динамиката на речното легло на р. Дунав – фактор за екологичното състояние на реката

E-mail:

Abstract

В настоящата разработка се разглежда въпроса за динамиката и състоянието на дъното на речното легло в долното течение на р. Дунав. При иследователската работа е използвана теорията на хидродинамичните характеристики на речно течение - пулсационните скорости, връзката им с осреднените във времето показатели и пределните неизравящи скорости. За определяне пулсационните дънни скорости се предлата аналитична зависимост. Нейното приложение дава възможност за установяване на максималната пулсационна скорост. Чрез нея се определя и прогнозира състоянието при което леглото е в покой, пределно равновесие или в процес на ерозиране – понижение при преминаване на висока вълна или пълноводие.

Key words: *hydrodynamics, pulsation velocities, river flows, river beds.*

Общи положения

Състоянието и динамиката на речното легло при долното течение на р. Дунав е в пряка, непосредствена връзка и зависимост от състоянието и динамиката на водните нива, респ. преминаващите водни количества. Въздействието на течението върху дънните отложения, които формират леглото, се извършва чрез скоростите на течението, които обтичат повърхностните частици на тези отложения. Когато силата на обтичането, действаща върху съответната частичка е по - малка от силата на дънното съпротивлението, конкретната частица е в покой, а при равновесие на двете сили частицата е в пределно равновесно състояние. Скоростта на обтичане при това състояние се наименова в специализираната литература пределна неизравяща скорост. При скорости по – голями от пределната неизравяща, частиците обтичани с такава скорост преминават в движение, речното легло се ерозира (отмива) и котата на речното дъно се понижава. Това понижение продължава до момента на настъпване на пределно равновесие при което активната сила на обтичане става равна на съпротивителната сила на дъното. Логично, при бързо, динамично нарастване на скоростта на обтичане, т.е. при период на пълноводие или висока вълна настъпва съответно бързо понижаване на дъното. При еднородна едрина на наносните отложения, равновесието и динамиката на леглото се описва достатъчно точно от една представителна по отношение на едрина и форма частица от повърхността на леглото.

Наносните отложения в долното течение на р. Дунав може да се приеме за еднородно. По изследвания при устието на р. Искър едрината на пясъчните частици на отложенията са в интервала 1,0 ÷ 2,0 mm.[3].

При отминаване на високата вълна, в периода на понижение започва процес на отлагане и повишаване котата на дъното.

Понижението на дъното на речното легло в долните течения при настъпване на висока вълна може да бъде в значим размер застарашаващ устойчивостта на речните съоръжения и тяхната фундаментна основа. От изследвания в това направление в долните течения на р. Марица и р. Струма (Марино поле) понижението на дъното при висока вълна достига до 1,5 ÷ 2,0 m.

Преценката и прогнозата за динамиката на речното дъно се извършва при допускане на хипотезата, че скоростта която обтича повърхностните частици на леглото са постоянни във времето. Но в действителност скоростите на течението

в коя да е точка от същото, при дадено постоянно водно количество, респ. постоянен отчет на водното ниво са променливи и то нерегулярно, наименовани пулсационни скорости или реални скорости. Напълно е възможно при определяне състоянието на леглото по хипотезата за постоянни скорости да е в покой, а спрямо реалните (пулсационни) скорости да е процес на ерозиране.

Видно е, че състояние на речното легло може значително по - реално да се установи или прогнозира само чрез използване на пулсационните скорости.

За условията на речното легло на р. Дунав, т.е. за несвързани и еднородни наносни отложения при хипотезата че течението е плоско (отношение $b/h \geq 10$, където b е средна ширина на леглото, h е средна дълбочина) се дава зависимост за проследяване и установяване на динамиката на измененение на котата на дъното.

Предложената зависимост за първи път отчита влиянието на пулсационните скорости и тяхната вероятност на настъпване M, а също и турбулентната интензивност τ на речното течение

Изходна основа и метод

Взаимодействието между подвижното речно легло и самото течение се реализира от реално съществуващите сили – съпротивителната на леглото и хидродинамичната произтичаща от реалните, пулсационни скорости. Последните са нерегулярно променливи, с различна вероятност на настъпване. Поради недостатъчно познаване на процеса на изменение и големината на пулсационните скорости и тяхната връзка с осредената в литературата няма решение за динамиката на речните легла на база реални, пулсационни скорости.

Аналитичното описание на пулсационните скорости и връзката им с осреднените (средните) е развита и изложена в монографията [2] и има вида

$$V_{пул} = V_g + \tau M V_g \quad (1)$$

където V е пулсационната скорост в разглежданата точка от течението. За разглеждания проблем $V_{пул}$ е дънната пулсационна скорост която обтича повърхностните частици на речното легло. Приема се, че е на разстояние 2/3 d от дъното, където d е обемния диаметър на частицата.

$V_д$ – осредената във времето скорост в разглежданата точка. За случая $V_д$ е скоростта на разстояние y= 2/3 d от дъното при скоростната диаграма (ключова крива) на течението при даден воден стоеж, респ. водно количество.

τ - турбулентната интензивност на течението. Установява се експериментално или по формули. При липса на данни за речно легло с отложения от пясъци с едрина 1,0 ÷ 2,0 mm може да се приеме $\tau = 0,17$. При легло с по - голяма грапавина величината τ получава стойности до 0,45.

M – вероятностен коефициент на настъпване на пулсационната скорост. Стойностите на M са положителни и отрицателни в интервала от $-\infty$ до $+\infty$, но практическата значимост е от – 2,58 до + 2,58. При отрицателни стойности на M съответните пулсационни скорости со по - малки от осреднените стойности на всички пулсационни скорости, а при положителни стойности на M –пулсационните скорости са по –голями от същите осреднени. Абсолютните стойности на M са представени в таб. 1.

Извод на зависимост за изменение и състояние на речното дъно

Динамичното изменение на несвързани подвижни речни легла от пясъчни отложения настъпват когато дънните пулсационни скорости на течението придобият стойности по - големи от пределните неизравящи скорости. В практиката най – често се използва средната скорост на течението в разглежданата вертикала. Връзката между дънната и средна скорост се дава от уравнението [3]:

(2)

От решението на тази зависимост и на (1) по отношение на дънната пулсационна скорост се получава:

(3)

С помощта на тази зависимост, при коя да е дълбочина на течението (H), респ. преминаващо водно количество със средна скорост в разглежданата вертикала $V_{ср}$ и легло с наносни отложения с едрина на пясъчните частици d се намира големината на пулсационните скорости при дъното които обтичат повърхностните частици на дъното при различни вероятности на настъпването им от M = - 2,58 до M = + 2,58. Величината η по резултати от изследвания дадени в литературата [3] е функция на d.

За условията на р. Дунав при устието на р. Искър, където едрината на частиците на дънните отложения са в интервала от d = 1,0 mm до d = 2,0 mm или средно 1,5 mm., величината η, при такава едрина има стойност η = 0, 315. Приложението на зависимостта (3) за определяне на дънната пулсационна скорост при тези условия има вида:

(4)

където d е в см ; H – в см; V – в cm/s.

От друга страна дънната пределна неизравяща скорост от експериментални изследвания на речните наноси при устието на р. Искър се определя по зависимостта [3]:

(5)

при ρ = 1,65 = const. за случая на речни наноси се получава:

(5')

При d = const. за разглеждания случай ($d_{ср}$ = 1,5 mm = const.) пределната дънна неизравяща скорост има размер

cm/s (6)

От съпоставянето на (3) и (5) може да се прогнозира динамичното състояние на речното легло. За разглеждания случай на речно легло с едрина на наносни отложения d = 1,5 mm (р. Дунав при устието на р. Искър), пулсационните скорости се изменят по отношение на M в интервала от M = – 2,58 до M = + 2,58 И настъпват следните състояния:

- при $(V_{пул\ д})_{max} < V_{пр\ д}$

Леглото е в покой, нито една частица от повърхността на дъното не се ерозира.

При този случай $(V_{пул\ д})_{max}$ настъпва при вероятностен коефициент M = +2,58

- при $(V_{пул\ д})_{M=0} = V_{пр\ д}$

Леглото на реката се ерозира от половината от всички пулсационни скорости. Дъното на леглото се понижава. Но в този случай $V_{пул\ д}$ при M=0 представлява известната в практиката и литературата дънна скорост по ключовата крива на скоростите в разглежданата вертикала. От това следва, че преценката и прогнозата за състоянието на леглото спрямо скоростите от ключовата крива от измерванията по приетите методи не е съвсем достоверна. Това произтича от факта, че половината от всички реални (пулсационни) скорости в интервала от M = 0 до

M = + 2,58 са по – големи от пределната неизравяща скорост.

- **при** $(V_{пул\ д})_{M=min}$ **>** $V_{пр\ д}$ състоянието на леглото е в процес на максимално (интензивно) понижаване вследствие на ерозирането му от всички пулсационни скорости.

Следва, че при определянето на състоянието на речното легло въз основа на дънната скорост по ключова крива дъното на леглото се ерозира винаги от всички пулсационни скорости по – големи от средната в интервала до M = + 2,58, т.е. от най- големите пулсационни скорости превишаващи средната до 3 и повече пъти.

Изводи

1. Установена е зависимост (3) за определяне на дънната пулсационна скорост във функция на средната скорост по дълбочина на течението в разглежданата вертикала, турбулентната интензивност на течението и вероятностния коефициент за настъпване на скоростa която обтича дънните частици.
2. Предлага се подход и начин за установяване и прогнозиране на динамичното състояние на р. Дунав чрез съвместното използване на зависимостите (3) и (5), а за разглеждания конкретен случай чрез зависимости (4) и (6).
3. Речното легло на р. Дунав в едногодишен период (цикъл) има две твърде различни състояния:

1-во състояние – дъното на леглото е стабилно, с постоянен (почти неизменен) наклон и кота на дъното в дадено сечение (створ)

2-о състояние – леглото на реката е в непрекъснато динамично изменение, с редуващи се процеси на повишаване и понижаване на дъното.

4. При наносни отложения от пясък със средна едрина от 1,5 мм пределната неизравяща скорост е около 0,20 m/s.

Литература

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On the dynamics of the Danube river bed – a Factor of the ecological condition of the river

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Abstract
This work treats the question of the dynamics and the condition of the river bed in the lower course of the Danube river. The research work makes use of the theory of the hydrodynamic characteristics of a river flow – pulsation velocities, their connection with the time-averaged parameters and the utmost non-furrowing velocities. An analytical relationship is proposed for determination of the pulsation bottom velocities. It is used to determine and prognosticate the condition where the bed is at rest, at utmost equilibrium or in process of erosion – lowering upon the passage of a higher wave or upon high water.

Key words: *hydrodynamics, pulsation velocities, river flows, river beds.*

General

The condition and the dynamics of the river bed in the lower course of the Danube river is in a direct, immediate relation and dependency of the condition and dynamics of the water levels, resp. the passing water quantities. The impact of the flow on the bottom depositions forming the bed, takes place via the flow velocities streamlining the surface particles of these depositions. When a streamlining force acting on the respective particle is smaller than the bottom resistance, the specific particle is at rest, and upon an equilibrium of the two forces the particle is in utmost equibalance state. The streamlining velocity for such condition is referred to in the specialized literature as utmost non-furrowing velocity. Upon velocities higher than the utmost non-furrowing velocity, the particles streamlined with such velocity get moving, the river bed erodes (washes) and the elevation of the river bed lowers. This fall continues till the moment of setting-in of utmost equilibrium, whereupon the active force of streamlining becomes equal to the resistant force of the bottom. Logically, upon faster dynamic growth of the streamlining velocity, i.e. during a period of high water or high wave there begins a respective fast lowering of the bottom. For a uniform coarseness of the wash deposits, the equilibrium and the dynamics of the bed is described precisely enough by a single particle of the bed's surface in terms of coarseness and form.

The wash deposits in the lower course of the Danube river can be assumed as uniform. According to investigations, the coarseness of the sand particles of the deposits at the mouth of the Iskar river are within the interval of 1.0 ÷ 2.0 mm. [3].

Upon passover of the high wave, in the period of lowering begins a process of settlement and raising of the elevation of the bottom.

Upon the beginning of a high wave, the lowering of the bottom of the river bed in the lower courses can be significantly endangering to the stability of the river facilities and their foundation basis. Studies in this direction show that in the lower courses of the Maritsa and Struma rivers (Marino Pole) the lowering of the bottom upon high wave reaches up to 1.5 ÷ 2.0 m.

The assessment and the prognostication of the dynamics of the river bed is carried out by assuming the hypothesis that the velocity of streamlining of the surface particles of the bed are permanent in time. But in reality, the velocities of the flow at any point of the latter, for a given permanent water quantity, resp. a permanent reading of the water level are irregularly variable, named pulsation velocities or real velocities. It is totally possible for the condition of the bed when determined by the permanent velocities

hypothesis, to be at rest, and in relation to the real (pulsation) velocities, to be in process of erosion.
It is evident that the condition of the river bed can be established with considerably better actuality only by using the pulsation velocities.
For the conditions of the Danube river bed, i.e. for unconnected and uniform wash deposits, with the hypothesis that the flow is flat (a b/h $\geq$ 10 relation, where "b" is average width of the bed, "h" is an average depth), a relationship is given for the monitoring and establishment of the bottom elevation.
The dependency proposed for the first time accounts for the influence of the pulsation velocities and their probability of occurrence "M", as well as the turbulent intensity τ of the river flow.

The starting base and the method

The interaction between the mobile river bed and the flow itself is realized by the really existing forces – the resistant force of the bed and the hydrodynamic force ensuing from the real pulsation velocities. The latter are irregularly variable, with different probability of occurrence. Because of insufficient knowledge of the process of variation and the magnitude of the pulsation velocities and their connection with the averaged one, the literature does not provide a solution for the dynamics of the river beds on the basis of real, pulsation velocities.
The analytical description of the pulsation velocities and their connection with the averaged ones is developed and set forth in the monograph [2] and has the following form:

$$V_{пул} = V_g + \tau M V_g \quad (1)$$

where V is the pulsation velocity at the considered point of the flow. For the problem under consideration $V_{pul.}$ is the bottom velocity which streamlines the surface particles of the river bed. It is assumed at a distance of 2/3 d from the bottom, where "d" is the volumetric diameter of the particle.

V_d – time-averaged velocity at the point considered. For this case V_d is the velocity at a distance of y = 2/3 d from the bottom with the velocity diagram (key curve) of the flow at a given water position, resp. water quantity.

τ - turbulent intensity of the flow. It is established by way of experiment or by use of formulae. Upon lack of data for a river bed with sand deposits of 1.0 ÷ 2.0 mm coarseness, τ = 0.17 can be assumed. For a bed of bigger roughness, τ assumes values of up to 0.45.

M – probability coefficient of occurrence of the pulsation velocity. The values of "M" are positive and negative in the interval from - ∞ to + ∞, but the practical significance is from – 2.58 up to + 2.58. For negative values of "M" the respective pulsation velocities are smaller than the averaged values of all pulsation velocities and for positive values of "M" – the pulsation velocities are bigger than the averaged ones. The absolute values of "M" are presented in Table 1.

Inference of dependency for change and condition of the river bed

The dynamic change of non-connected mobile river beds of sand deposits occurs when the bottom pulsation velocities of the flow acquire values higher than the utmost non-furrowing velocities. In the practice, the most often used is the average velocity of the flow in the vertical considered. The connection between the bottom velocity and the average velocity is given by equation [3]:

(2)

Resolving this dependency and (1) in relation to the bottom pulsation velocity results in:

(3)

By means of this relationship, for any flow depth (H), resp. a passing water quantity with average velocity in the considered vertical $V_{av.}$ and a bed with wash deposits with coarseness of the sand particles "d", there is established the magnitude of the pulsation velocities at the bottom that streamline the surface particles at the bottom for different probabilities of their occurrence from M = - 2.58 up to M = + 2.58. The quantity η according to research results given in the literature [3] is a function of "d".

For the condition of the Danube river at the mouth of the Iskar river, where the coarseness of the particles of the bottom deposits is in the interval from d = 1.0 mm up to d = 2.0 mm or averagely 1.5 mm, the quantity η for such coarseness is $\eta = 0.315$. The application of the dependency (3) for determination of the bottom pulsation velocity for these conditions has the following form:

(4)

where "d" is in cm; H – in cm; V – in cm/s.

On the other hand, the bottom utmost non-furrowing velocity from experimental studies of the river deposits at the mouth of the Iskar river is determined according to [3]:

(5)

for $\rho = 1.65$ = const. for the case of river deposits, the result is:

(5')

For d = const. for the case considered (d_{av} = 1.5 mm = const.) the utmost bottom non-furrowing velocity has the following magnitude:

cm/s (6)

By juxtaposing (3) and (5) there can be prognosticated the dynamic condition of the river bed. For the case considered (a river bed with coarseness of the wash deposits d = 1.5 mm (the Danube river at the mouth of the Iskar river), the pulsation velocities vary in relation to M in the interval from M = – 2.58 up to M = + 2.58 and the following conditions set in:

- **for $(V_{pul\ d})_{max} < V_{utm\ d}$**

The bed is at rest but no particle from the surface of the bottom erodes.

For this case $(V_{pul\ d})_{max}$ sets in for a probability coefficient M = + 2.58

- **for $(V_{pul\ d})_{M=0} = V_{utm\ d}$**

The river bed erodes by half of all the pulsation velocities. The bottom of the bed lowers. But in this case $V_{pul\ d}$ for M = 0 represents the key curve of the velocities in the vertical under consideration, as known in the literature. Hence, the assessment and the prognostication for the condition of the bed in relation to the velocities of the key curve from measurements by the methods adopted is not quite reliable. This follows from the fact that half of all real (pulsation) velocities in the interval from M = 0 to M = + 2.58 are higher than the utmost non-furrowing velocity.

- **for $(V_{pul\ d})_{M=min} > V_{utm\ d}$** the condition of the bed is in a process of maximal (intensive) lowering in result of its erosion by all pulsation velocities.

Hence, upon determination of the condition of the river bed based on the bottom velocity as per a key curve, the bottom of the bed always erodes by all pulsation velocities 3 or more times higher than the average one.

Conclusions

1. Established is dependency (3) for determination of the bottom pulsation velocity in a function of the average velocity in flow depth in the vertical considered, the turbulent intensity of the flow and the probability coefficient of setting in of the velocity that streamlines the bottom particles.

2. Proposed is an approach and manner of establishing the dynamic condition of the Danube river by joint use of dependencies (3) and (5), and for the cpecific case under consideration by means of dependencies (4) and (6).
3. The river bed of the Danube during a one-year period (cycle) has two quite different conditions:

1st condition – the bottom of the bed is stable, with a permanent (almost unchanging) slope and elevation of the bottom in a given cross-section (range)

2nd condition – the river bed is in continuous dynamic change, with alternating processes of raising and lowering of the bottom.

4. For wash deposits of sand with average coarseness of 1.5 mm, the utmost non-furrowing velocity is around 0.20 m/s.

Literature

1. Gadjev R., 2008 – Influence of the pulsation and averaged movement on the coefficient of resistance for flows in smooth pipes.

Άρθρο 7ο	**Article 7**
Εξαίρεση Επιβολής Κυρώσεων	**Exemption from sanctions**
1. Δεν επιβάλλονται κυρώσεις στον ανάδοχο, αλλά χορηγείται κατά την κρίση του αρμοδίου φορέα της ΠΑ παράταση των συμβατικών προθεσμιών ολοκλήρωσης των εργασιών επισκευής των υλικών, εφόσον διαπιστωθεί :	**1.**No sanctions shall be imposed to the contractor and an extension of the contractual deadlines for completion of the repairs of the materials shill be granted at the discretion of the competent authority of the AF if one of the following is ascertained:
α. Υπαιτιότητα της Υπηρεσίας.	a. Liability of the Service
β. Ανωτέρα βία εξ αιτίας της οποίας προκαλείται αδυναμία ολοκλήρωσης των εργασιών επισκευής μέσα στο συμβατικό χρόνο. Η απόδειξη της ανωτέρας βίας βαρύνει τον ανάδοχο. Ως περιπτώσεις ανωτέρας βίας αναφέρονται ενδεικτικά οι παρακάτω :	b. Force majeure due to which the completion of the repair works within the conventional time was impossible. The burden of proof of force majeure shall be borne by the contractor. Following incidents are examples of force majeure:
(1) Γενική ή μερική απεργία που συνεπάγεται την διακοπή των εργασιών του καταστήματος ή του εργοστασίου του αναδόχου.	(1) A general or a major strike that results to a suspension of the operations in the factory or a main branch of the contractor.
(2) Γενική ή μερική πυρκαγιά, στο κατάστημα ή στο εργοστάσιο του αναδόχου.	(2) A major fire in the factory or in a major branch of the contractor.
(3) Πλημμύρα.	(3) Flood.
(4) Σεισμός.	(4) Earthquake.
(5) Πόλεμος	(5) War
(6) Διακοπή παροχής του ηλεκτρικού ρεύματος ή βλάβη των μηχανημάτων, που πιστοποιείται από το αρμόδιο όργανο και υπό την προϋπόθεση ότι αυτή επιδρά στην εκτέλεση της σύμβασης από τον ίδιο ή τον κατασκευαστή – ανάδοχο δευτερευόντων εξαρτημάτων ή πρώτων υλών.	(6) An interruption of power supply or a failure of equipment, certified by the competent authority and under the condition that this incident affects the implemantation of the contract by the contractor himself or by the manufacturer - supplier of secondary raw materials or components.
(7)	(7) Transport Boycott (International

Εμπορικός αποκλεισμός μεταφορών (Διεθνούς Δικτύου).	Network).
(8) Εμπορικός αποκλεισμός εισαγωγής (EMBARGO).	(8) EMBARGO.
2. Τα γεγονότα που συνιστούν την ανωτέρα βία πρέπει να αναφερθούν από τον ανάδοχο, εγγράφως στην Υπηρεσία μέσα σε προθεσμία είκοσι (20) ημερών από την εκδήλωσή τους και να βεβαιώνονται από σχετικά έγγραφα αρμόδιας Αρχής. Εφόσον τα γεγονότα είναι διαρκή, ο ανάδοχος θα πρέπει να τα αναφέρει μέσα στην ίδια προθεσμία την έναρξη και λήξη τους.	**2.** The incidents of force majeure must be reported by the contractor in writing to the Service within a time period of twenty (20) days. Additionally the contractor has to furnish a documentation of the incidents issued by a competent Authority. In case of ongoing events the contractor should report the beginning and the end of them within the above time period of the 20 days.
Άρθρο 8°	**Article 8th**
Εγγυοδοσία	**Guarantee**
1. Για την καλή εκτέλεση των όρων της σύμβασης, ο ανάδοχος υποχρεούται να καταθέσει με την υπογραφή της σύμβασης τραπεζική εγγυητική επιστολή που θα καλύπτει ποσό ίσο στο δέκα τοις εκατό (10%) επί της συνολικής συμβατικής αξίας. Η εν λόγω εγγυητική απομειώνεται αναλογικά για το ποσό που αντιστοιχεί στις τμηματικές παραδόσεις επισκευασμένων υλικών για τις οποίες έχει πραγματοποιηθεί οριστική ποιοτική – ποσοτική παραλαβή και πληρωμή.	**1.** As a guarantee for the proper implementation and compliance to the terms and conditions of the contract, the contractor must furnish a bank letter of guarantee covering an amount equal to ten percent (10%) of the total contractual value before signing of the contract. The amount of the letter of guarantee is decreasing in proportion to partial deliveries of repaired material which must have been finally repaid and definitively accepted and approved in regard of quality and quantity.
2. Επιπλέον, ο ανάδοχος υποχρεούται να καταθέσει τραπεζική εγγυητική επιστολή πριν την έναρξη του χρόνου καλής λειτουργίας για τα υλικά θέματος, η αξία της οποίας ορίζεται σε 3% επι της καθαρής αξίας της επισκευής. Ο χρόνος ισχύος της εγγύησης καλής λειτουργίας ορίζεται σε δεκαπέντε (15) μήνες από την οριστική ποιοτική και ποσοτική παραλαβή των υλικών.	**2.** In addition, the contractor must deposit a bank letter of guarantee before the commencement of smooth and proper operation of the materials in regard, whose value is 3% of the net value of the repairs. The warranty of smooth and proper operation is valid and effective for a time period of fifteen (15) months after the definitive acceptance and approval of the materials in regard of quality and quantity.

ΜΕΡΟΣ ΤΡΙΤΟ	**PART THREE**
ΤΕΧΝΙΚΟΙ ΟΡΟΙ	**TECHNICAL TERMS**
Άρθρο 9°	**Section 9**
Τεχνική Περιγραφή – Παροχή Εγγυήσεων	**Technical Description - Guarantees**
1. Η εκτέλεση των εργασιών επισκευής των υλικών, θα γίνει σύμφωνα με το παράρτημα «.....», σε συνδυασμό με την προσφορά του αναδόχου, ως το παραρτήματα «.....» της παρούσας.	**1.** The performance of repairs of the materials, will be in accordance with Annex «.....», in conjunction with the offer of the contractor, as annexes to this «.....».
2. Για την υλοποίηση των επισκευών δεν υφίστανται λοιπές εξειδικευμένες απαιτήσεις.	**2.** There are no further specific requirements for the completion of the repairs.
3. Ο ποιοτικός έλεγχος των υλικών θα γίνει σύμφωνα τα ακόλουθα, ανά Κατασκευαστή/επισκευαστικού φορέα που δηλώνεται:	**3.** Quality control of materials will be performed as follows, per manufacturer / repair operator stated below:
(1) Για προμήθεια της υπηρεσίας από τον OEM των υλικών ή τον OEM του μείζονος συστήματος (RADAR MPDR-90), απαιτείται COC αυτών, υπογεγραμμένο από το Τμήμα Διασφάλισης Ποιότητάς τους και με αναγραμμένο, μεταξύ άλλων, τον κωδικό αριθμό τους ως Κατασκευαστή/επισκευαστικού φορέα.	For the Service to acquire by the OEM the materials or OEM's major system (RADAR MPDR-90), the COC of those is required, signed by their Quality Assurance Department. Among others the code number of them as Manufacturer / repair operator must be given.
(2) Για εξουσιοδοτημένο Κατασκευαστή/επισκευαστικό φορέα του υλικού, ο οποίος δεν είναι OEM, αλλά περιλαμβάνεται στην Τεχνική Βιβλιογραφία είτε του Κύριου Υλικού είτε του ευρύτερου συγκροτήματος/υποσυγκροτήματος που φέρει το εν λόγω υλικό, απαιτείται COC του εν λόγω Κατασκευαστή, υπογεγραμμένο από το Τμήμα Διασφάλισης Ποιότητάς των και με αναγραμμένο, μεταξύ άλλων, τον κωδικό αριθμό του κατασκευαστή του υλικού.	(2) For an authorized Manufacturer / repair operator of the material, who is not OEM, but is included in the Technical Library either of the Main Material or the broader assembly / subassembly carrying the material in regard, a COC of the manufacturer is required, signed by their Quality Assurance Department and including, among others, the code number of the material manufacturer.
(3) Στην περίπτωση εξουσιοδοτημένου	(3) An authorized manufacturer / repairer operator, who is not OEM,and

Κατασκευαστή/επισκευαστικού φορέα, ο οποίος δεν είναι OEM, και δεν περιλαμβάνεται ως κατασκευαστής στην Τεχνική Βιβλιογραφία είτε του Κύριου Υλικού είτε του ευρύτερου συγκροτήματος/υποσυγκροτήματος που φέρει το εν λόγω υλικό, αυτός θα πρέπει να αποδεικνύει την εξουσιοδότησή του, με πιστοποιητικό του OEM, στο οποίο να φαίνεται ότι ο εν λόγω πάροχος είναι εξουσιοδοτημένος από τον OEM (OEM Certified/Verified) για την παροχή της ζητούμενης υπηρεσίας κατά το χρονικό διάστημα που διαρκεί η προμήθεια της ή ότι έχει σύμβαση παροχής ανάλογων υπηρεσιών με τις Ένοπλες Δυνάμεις της χώρας εγκατάστασής	is not listed as manufacturer in theTechnical Library either of the Main Material or of the broader assembly / subassembly carrying the material in regard, should carry a certificate of OEM stating either his authorization for providing the service in regard and the time period for the relevant service issued by OEM (OEM Certified / Verified), or stating that he has a contract to provide similar services to the Armed Forces of the country the provider is established.
(4) Το CoC μπορεί να αναφέρεται σε ένα ή περισσότερα υλικά, με την προϋπόθεση ότι κάθε υλικό αναγνωρίζεται και περιγράφεται αναλυτικά στο CoC. Το CoC, καθώς και κάθε άλλο πιστοποιητικό ποιοτικού ελέγχου των υλικών, θα είναι πρωτότυπο ή επικυρωμένο αντίγραφο.	(4) CoC may refer to one or more materials, provided that any material is identified and described in detail in the CoC. The CoC, and any other certificate of quality control of the materials must be original or a certified copy.
(5) Κάθε παροχή υπηρεσίας που δε θα συνοδεύεται από τα κατά περίπτωση απαιτούμενα πιστοποιητικά, δεν θα γίνεται αποδεκτή.	(5) No service can be admitted if not supported by the appropriate certificates and documents.
4. Τα υλικά απαιτείται:	**4.** Materials
Να συνοδεύονται υποχρεωτικά από εγγύηση καλής λειτουργίας, η οποία ανέρχεται σε 200 ώρες λειτουργίας ή ένα (1) χρόνο από την έκδοση του τιμολογίου (invoice), όποιο επέλθει πρώτο. Στην περίπτωση που δεν δύναται να εκπληρωθεί το ανωτέρω *επιθυμητό κριτήριο, στο στάδιο της αξιολόγησης και πριν την κατακύρωση, θα πρέπει να λαμβάνεται υπόψη η αναγραφή του όρου εγγύησης (υποχρεωτικά), τουλάχιστον όπως αυτή περιγράφεται στις προσφορές των εταιρειών κατά περίπτωση προμήθειας υλικού ή παροχής υπηρεσιών και η οποία εγγύηση δεν θα είναι μικρότερη από την αντίστοιχη* που χορηγείται	must be supported by a Warranty of Good Performance for 200 hours of smooth operation or one (1) year from the date of invoicing, whichever comes first. If it is not possible to meet this requirement in the evaluation phase before contract award, then the writing of the term Guarantee should be taken into account (mandatorily), at least as described in the bids of companies for supplying equipment or services; this guarantee shall be no less than that granted in Greece to the manufacturer / service provider, the Air Force.

στην ημεδαπή, του κατασκευαστή/παρόχου υπηρεσίας, Πολεμική Αεροπορία.	
ΜΕΡΟΣ ΤΕΤΑΡΤΟ	**PART FOUR**
ΟΡΟΙ ΠΑΡΑΔΟΣΗΣ – ΠΑΡΑΛΑΒΗΣ	**TERMS OF DELIVERY - ACCEPTANCE**
Άρθρο 10ο	**Section 10**
Παράδοση – Παραλαβή	**Delivery - Acceptance**
1. Η παράδοση των επισκευασμένων υλικών θα γίνει «ΕΛΕΥΘΕΡΑ» (EX WORKS) στις αποθήκες του προμηθευτή ή FOB στην έδρα του αντίστοιχου εξουσιοδοτημένου μεταφορέα (FREIGHT FORWARDER-FF) της ΠΑ στο εξωτερικό (INCOTERMS 2000) και ο τρόπος μεταφοράς αεροπορικώς σύμφωνα με τους όρους της διακήρυξης και της επισυναπτόμενης σύμβασης που θα υπογραφεί και θα ολοκληρωθεί το συντομότερο δυνατό – **ο χρόνος να καθορίζεται στις προσφορές των συμμετασχόντων στο διαγωνισμό αναδόχων**– από την υπογραφή της σύμβασης, και όχι αργότερα από έξι (6) μήνες.	**1.** The delivery of the repaired equipment will be "FREE" (EX WORKS) in the supplier' stores or FOB at the headquarters of the respective authorized carrier (FREIGHT FORWARDER-FF) of the AF(INCOTERMS 2000). The material will be transported by air in accordance with the terms of the tender notice and the attached contract, which will be signed and implemented as soon as possible – **the tenderers have to set the time period in their tenders-**, and not later than six (6) months after the signature of the contract.
2. Η ποιοτική και ποσοτική παραλαβή των υλικών θα ενεργείται από την αρμόδια Επιτροπή Ελέγχου και Παραλαβής Προμηθειών της Υπηρεσίας (ΥΕΕΠΠ/ΠΑ) με τη σύνταξη πρωτοκόλλου ποιοτικής και ποσοτικής παραλαβής παρουσία του αναδόχου ή νόμιμου εκπροσώπου του εφόσον ο ίδιος το επιθυμεί.	**2.** The quality and quantity evaluation of the materials will be effected by the competent Committee on Procurement and Acceptance of Supplies Service (YEEPP / PA) upon drawing up of a protocol for qualitative and quantitative acceptance. The Contractor or his legal representative may attend the procedure.
3. Τα υλικά κατά την οριστική, ποιοτική και ποσοτική παράδοση – παραλαβή τους θα συνοδεύονται από πιστοποιητικό CoC.	**3.** The materials must be furnished with a CoC certificate upon their definitive delivery-acceptance.
Άρθρο 11ο	**Article 11th**

Κωδικοποίηση	**Coding**
Δεν απαιτείται η κωδικοποίηση των υπό γενική επισκευή υλικών.	No codification is required for materials subjected to a general overhaul.
Άρθρο 12ο	**Section 12**
Απόρριψη Υλικού – Παραπομπή σε Δευτεροβάθμια Επιτροπή	**Material Rejection - Referral to Review Committee**
1. Σε περίπτωση που η Επιτροπή παραλαβής απορρίψει υλικά, αναφέρει στο σχετικό πρωτόκολλο τις παρεκκλίσεις που παρουσιάζουν αυτές από τους όρους της σύμβασης και τους λόγους της απόρριψης και γνωματεύει αν τα υλικά μπορούν να χρησιμοποιηθούν. Εφόσον κριθεί από το αρμόδιο όργανο, ότι οι παρεκκλίσεις των υλικών δεν επηρεάζουν την επιχειρησιακή χρήση τους – καταλληλότητα αυτών και, ως εκ τούτου μπορούν να χρησιμοποιηθούν – παραληφθούν, με απόφαση του αρμόδιου Φορέα μπορεί να εγκριθεί η παραλαβή των, και ως εκ τούτου της εργασίας – υλικού που απορρίφθηκε από την επιτροπή παραλαβής, με έκπτωση επί της συμβατικής αξίας. Ύστερα από την απόφαση αυτή η επιτροπή παραλαβής υποχρεούται να προβεί στην παραλαβή των υλικών και να συντάξει σχετικό πρωτόκολλο παραλαβής, σύμφωνα με τα αναφερόμενα στην απόφαση της Αναθέτουσας Αρχής.	**1.** In case that the Commission rejects materials has to give in the relevant protocol the derogation of the rejected material to the terms and conditions of the contract and any other further reason for the rejection.exceptions are those from the contract and the reasons for the refusal and advising in that the materials can be used. As judged by the competent body that material deviations do not affect the operational use - adequacy and therefore can be used - received, by decision of the Agency may approve the acceptance of, and therefore work - material rejected by the receipt of a discount on the contract value. Following this decision, the Committee received shall not remove material and prepare relevant protocol received, as indicated in the decision of the Contracting Authority.
2. Ύστερα από γνωμοδότηση του αρμόδιου οργάνου, μπορεί να εγκριθεί η παραλαβή των υλικών και ως εκ τούτου των εργασιών επισκευής με έκπτωση επί της αξίας τους, για τις οποίες η επιτροπή παραλαβής εξέδωσε οριστικό πρωτόκολλο απόρριψης όπου αναφέρονται οι παρεκκλίσεις από τους όρους της σύμβασης.	**2.** Pursuant to a suggestion by a competent instrument, materials and repairs which were previously 'permanently' rejected due to deviations from the contractual specifications may be accepted with a discount.
3. Σε δευτεροβάθμια επιτροπή παραλαβής παραπέμπονται για επανεξέταση περιπτώσεις υλικών – εργασιών, που απορρίφθηκαν ή	**3.** Materials and works rejected or deemed acceptable despite defects observed during visual inspection (or other investigations conducted by the

κρίθηκαν παραληπτέες παρά τις αποκλίσεις που διαπιστώθηκαν κατά τον μακροσκοπικό έλεγχο, ή από άλλους ελέγχους που διενήργησε η πρωτοβάθμια επιτροπή παραλαβής. Η παραπομπή κατά τα ανωτέρω γίνεται ύστερα από σχετικό αίτημα του αναδόχου ή αυτεπάγγελτα από την Υπηρεσία. Η δευτεροβάθμια επιτροπή παραλαβής προβαίνει κατά περίπτωση, στους ελέγχους που διενεργεί και η πρωτοβάθμια επιτροπή παραλαβής και συντάσσει σχετικό πρωτόκολλο παραλαβής ή απόρριψης. Εφόσον κριθεί από το αρμόδιο όργανο, ότι οι διαπιστωθέντες παρεκκλίσεις δεν επηρεάζουν την καταλληλότητά – επιχειρησιακή ετοιμότητα των υλικών και μπορεί αυτά να παραληφθούν τότε με απόφαση του αρμόδιου Φορέα, μπορεί να εγκριθεί η παραλαβή των υλικών, με έκπτωση επί της συμβατικής τιμής των εργασιών επισκευής.	primary acceptance committee) are referred to a secondary acceptance committee. The reference is made upon the sponsor's request or automatically by the Service. The secondary acceptance committee repeats the same investigations carried out by the primary acceptance committee and drafts a relevant protocol of acceptance or rejection. If the competent authority decides that the deviations from the specifications do not affect the suitability and / or operational readiness of the equipment, then the competent authority may decide that the materials are acceptable after discounting the cost of conventional repair from the price of the materials.
4. Ύστερα από την απόφαση αυτή, η δευτεροβάθμια επιτροπή παραλαβής υποχρεούται να προβεί στην παραλαβή των υλικών και να συντάξει το σχετικό πρωτόκολλο οριστικής, ποιοτικής και ποσοτικής παραλαβής, σύμφωνα με τα αναφερόμενα στην απόφαση. Το αίτημα για επανεξέταση από δευτεροβάθμια επιτροπή παραλαβής, υποβάλλεται από τον ανάδοχο, μέσα σε ανατρεπτική προθεσμία είκοσι (20) ημερών από την ημερομηνία κοινοποίησης της σχετικής απόφασης. Τα έξοδα της δευτεροβάθμιας επιτροπής παραλαβής, βαρύνουν τον ανάδοχο, εφόσον οι εργασίες επισκευής απορριφθούν οριστικά ή παραληφθούν με έκπτωση, ανεξάρτητα εάν η ανάθεση για επανεξέταση γίνεται μετά από αίτημα του αναδόχου ή αυτεπάγγελτα. Τα έξοδα αυτά καταλογίζονται με απόφαση του αρμόδιου φορέα και εκπίπτονται από όσα έχει να λαμβάνει ο ανάδοχος ή εισπράττονται από την εγγύηση καλής εκτέλεσης της σύμβασης ή με βεβαίωση μέσω του δημόσιου ταμείου.	**4.** Pursuant to this decision, the Secondary Acceptance Committee must accept the materials and draft a final quality and quantity acceptance protocol. The request for review by the Secondary Acceptance Committee is submitted by the contractor within a time limit of twenty (20) days from the date of notification. The fees of the Secondary Acceptance Committee are charged to the contractor if repairs are finally dismissed or accepted with a discount, regardless of whether the review is assigned at the request of the contractor or on its own motion. By decision of the competent authority, these costs are deducted from the amount receivable by the contractor or are collected from the performance guarantee or the state treasury with a certificate.

5. Τα πρωτόκολλα που συντάσσονται από τις επιτροπές παραλαβής, πρωτοβάθμιες ή δευτεροβάθμιες, κοινοποιούνται υποχρεωτικά και στους αναδόχους.	**5.** The protocols drafted by the Primary or Secondary Acceptance Committees are mandatorily communicated to the contractors.
ΜΕΡΟΣ ΠΕΜΠΤΟ	**PART 5**
ΛΟΙΠΟΙ ΟΡΟΙ	**REMAINING TERMS**
Άρθρο 13ο	**Article 13**
Τροποποίηση Όρων Υπογραφής Σύμβασης	**Amended Contract Terms**
1. Σύμφωνα με τα προβλεπόμενα στο άρθρο 24 § 4 του ΠΔ 118/07, η σύμβαση τροποποιείται σε αντικειμενικά δικαιολογημένες περιπτώσεις και εφόσον και τα δύο συμβαλλόμενα μέρη συμφωνήσουν προς τούτο, ύστερα από γνωμοδότηση του αρμοδίου συλλογικού οργάνου της Υπηρεσίας. Τροποποίηση ή συμπλήρωση αυτών των όρων γίνεται εγγράφως, με γραπτή τροποιητική της παρούσας σύμβασης μεταξύ των συμβαλλομένων. Η απόφαση της Διοίκησης με την οποία συναινεί στην τροποποίηση, δύναται να προσβληθεί από οιονδήποτε έχει έννομο συμφέρον.	**1.** Pursuant to the provisions of Article 24 § 4 of Presidential Decree 118/07, the Contract shall be amended in objectively justified cases provided that both parties agree to do so upon suggestion by the competent committee of the Service. Any amendments or supplements of these terms must be done in writing, with an amendment of this contract executed by the parties. The decision by which the Board consents to the amendment may be challenged by anyone with a legitimate interest.
2. Πράξεις ή παραλείψεις των συμβαλλομένων επ΄ ουδενί θεωρούνται ότι ενέχουν σιωπηρή τροποποίηση της σύμβασης αυτής ή οιουδήποτε όρου της. Κάθε ανοχή ή καθυστέρηση ή αμέλεια των συμβαλλομένων στην άσκηση των δικαιωμάτων τους ή αξιώσεών τους, δεν θεωρείται ούτε ερμηνεύεται ως παραίτηση από αυτά.	**2.** Acts or omissions of the parties are in nowise considered to contain an implicit modification of this contract or any term thereof. Any tolerance or delay or negligence by the parties in exercising their rights or claims, shall not be considered or construed as a waiver of them.
Άρθρο 14ο	**Article 14**
Ολοκλήρωση Σύμβασης	**Contract Completion**
1. Η σύμβαση θεωρείται ότι εκτελέστηκε όταν :	**1.** The contract shall be deemed executed when:

α. Παραδόθηκε ολόκληρη η ποσότητα ή εάν η ποσότητα που παραδόθηκε υπολείπεται της συμβατικής, κατά μέρος που κρίνεται ως ασήμαντο από το αρμόδιο όργανο.	a. The entire quantity is delivered or, if the quantity delivered is less than that specified in the contract only by an amount that is deemed insignificant by the competent body.
β. Παραλήφθηκε οριστικά ποσοτικά και ποιοτικά η ποσότητα των υλικών που παραδόθηκε.	b. The quantity of materials delivered was accepted as final as regards quantify and quality.
γ. Έγινε η αποπληρωμή του συμβατικού τιμήματος, αφού προηγουμένως επιβλήθηκαν τυχόν κυρώσεις ή εκπτώσεις.	c. The contract price was paid in full, including any penalties or deductions.
δ. Εκπληρώθηκαν και οι τυχόν λοιπές συμβατικές υποχρεώσεις και από τα δύο συμβαλλόμενα μέρη και αποδεσμεύθηκαν οι σχετικές εγγυήσεις κατά τα προβλεπόμενα από τη σύμβαση.	d. Any other contractual obligations were also paid in full by both parties and the relevant guarantees were released as provided by the contract.
ΓΕΝΙΚΑ	**GENERAL**
1. Η σύμβαση κατισχύει κάθε άλλου κειμένου στο οποίο στηρίζεται, όπως προσφορά, διακήρυξη, απόφαση κατακύρωσης ή ανάθεσης, εκτός καταδήλων σφαλμάτων ή παραδρομών.	**1.** The agreement supersedes any other text on which the agreement is based upon, such as tender notice, award decision, unless there are obvious errors or oversight.
2. Η παρούσα συντάχθηκε εις διπλούν και αφού αναγνώσθηκε και βεβαιώθηκε, υπογράφεται από τους συμβαλλομένους.	**2.** This document was prepared in duplicate and after having been read and verified, it is signed by the parties.
Σμήναρχος (Ο) Γεώργιος Δανιηλίδης	Colonel (The) George Daniilidis
Διοικητής ΥΠ/ΠΑ	**Commander, AF Service**

Source text - English

The measurement of angular dependency, sometimes called the angular distribution, of luminous intensity (see Definitions) is usually carried out by using a goniophotometer. A goniophotometer consists of a goniometer (tilt and turn) table, on which the item under test is mounted, and a distant photometer that measures the light emanating from the item. As the goniometer is moved or stepped through various angular positions, the photometer records the luminous intensity at each angle. There is an important relationship between the angular resolution of the goniometer and the measurement angle of the photometer (see 9.9).

In order to carry out angular measurements using the goniometer it is usually necessary to make the item under test exhibit a fixed light. For rotating beacons, this can be achieved by disabling the rotation mechanism and locking the mechanism in one position. If the item under test emits more than one beam, each beam axis or surface should be identified with the datum clearly defined. Separate vertical and horizontal plots should be carried out for each beam axis.

If the light source within a rotating beacon is non-uniform and the measurement is to be carried out by rotating the whole beacon, including the light source, on the goniometer, additional output data for the bare light source, for example a lamp polar plot, should be obtained. If the measurement is to be carried out with the lamp in a fixed position and not rotated with the goniometer, measurements of all emitted beams should be carried out with the light source in two different positions, those that give maximum and minimum intensity.

For omnidirectional beacons with a flashing light source, the light source should be made to light continuously by following instructions in the manufacturer's handbook. If no instructions are available, advice from the manufacturer or supplier should be sought. It should be noted that the continuous intensity of a beacon exhibiting a fixed light may be different to the peak intensity of the same beacon when it exhibits a flashing light (see 11.4)

Translation - Russian

Измерение угловой зависимости, иногда называемое угловым распределением силы света (см. Определения) обычно производится при помощи гониофотометра. Гониофотометр состоит из стола гониометра (поворотный и наклонный), на котором устанавливается испытываемая позиция, и удаленного фотометра, который измеряет свет, исходящий от позиции. По мере перехода или движения гониометра от одного углового положения к другому фотометр регистрирует силу света при каждом угле. Существует важная взаимосвязь между угловым разрешением гониометра и углом измерения фотометра (см. 9.9).

Для проведения угловых измерений с использованием гониометра обычно требуется, чтобы испытываемая позиция излучала постоянный огонь. У поворотных навигационных знаков этого можно достичь отключением механизма вращения и закреплением его в одном положении. Если испытываемая позиция излучает более одного пучка лучей, каждая ось или поверхность пучка должна быть опознана по четко отмеченной опорной точке. Отдельные вертикальные и горизонтальные зависимости следует выполнять для каждой оси пучка лучей.

Если источник света в пределах поворотного навигационного знака неоднородный и измерение проводится при вращении навигационного знака целиком вместе с источником света, с гониометра следует снять дополнительные выходные данные для бескорпусного источника света, например, график лампы в полярных координатах.

Если измерение проводится с лампой в неподвижном положении, не вращающейся с гониометром, измерения всех излучаемых пучков лучей следует проводить, когда источник света находится в двух различных положениях, т.е. таких, при которых сила света максимальна и минимальна.

У всенаправленных навигационных знаков с проблесковым источником света источник

света должен работать непрерывно в соответствии с указаниями в руководстве производителя. Если указания отсутствуют, следует запрашивать консультацию производителя или поставщика. Следует отметить, что непрерывная сила света навигационного знака с постоянным светом может отличаться от пиковой силы света того же самого навигационного знака с проблесковым светом (см. 11.4).

Source text - Spanish

CORRELACIÓN FACTORES DE PELIGRO - OPERACIONES
LISTA NO EXHAUSTIVA DE OPERACIONES / CONDICIONES DE TRABAJO

01. Operaciones con generación de niveles de ruido Lpico (peak) = 135≥ dB(C). Impactos en herrería/carpintería, utilización de compresores / aire comprimido, motores, etc.
02. Operaciones que generan una concentración considerable de material pulverulento. Mecanizado en general; lijado, desbastado, corte, fresado, cepillado, rascado, etc.
03. Operaciones con aporte de calor por radiación, conducción o convección. Soldadura, doblado de tubos, pruebas de elementos mecánicos. Utilización de determinados rádares y máseres (microondas).
04. Operaciones en que es necesaria la manipulación de líquidos combustibles/ inflamables. Reparaciones de tanques combustibles, desengrase de superficies, pulido, ensamblajes mediante adhesivos, enmasillado, imprimado, pintura y barnizado.
05. Operaciones con generación de atmósferas explosivas. Operaciones con baterías, enmasillado, imprimación, pintura y barnizado. Existencia de recipientes abiertos de líquidos inflamables.
06. Operaciones con producción de partículas incandescentes / chispas / arcos eléctricos. Soldadura y mecanizado en general. Uso de telefonía móvil y telecomunicación.
07. Operaciones con generación de radiaciones no ionizantes. Soldadura eléctrica y de plásticos. Calentamiento y secado de materiales. Utilización de aparatos medidores.
08. Operaciones que generan el riesgo de caída de objetos suspendidos o posicionados. Montaje de andamios, extracción o colocación de: motores o partes de los mismos, elementos de transmisión y propulsión de la embarcación, mástiles y velería, depósitos y en general, elementos pesados y contundentes.
09. Operaciones con generación de radiaciones ionizantes. Pruebas de fatiga de materiales con aparatos de medición de rayos X, láseres, etc.
10. Operaciones sobre partes eléctricas activas o que generen electricidad estática. Reparaciones eléctricas, trasiego de combustibles por tuberías y conducciones.
11. Operaciones que generan atmósferas húmedas, presencia de agua / líquidos conductores. Limpieza por agua a presión, reparación/ limpieza / sustitución de tuberías, depósitos y conducciones, retirada de aguas de sentina.
12. Operaciones con producción de aerosoles o goteo de sustancias cáusticas o corrosivas. Utilización de decapantes, sustitución / reparación de baterías, limpieza de tuberías y conducciones.
13. Operaciones con generación de aerosoles, vapores y gases nocivos y tóxicos. Soldadura, preparación de superficies y pintura.
14. Otras operaciones que no generan un factor de peligro. Cualquiera de las no mencionadas anteriormente.

Translation - English

INTERRELATION BETWEEN HAZARD FACTORS AND CARRIED-OUT OPERATIONS
NON-EXHAUSTIVE LIST OF OPERATIONS/WORKING CONDITIONS

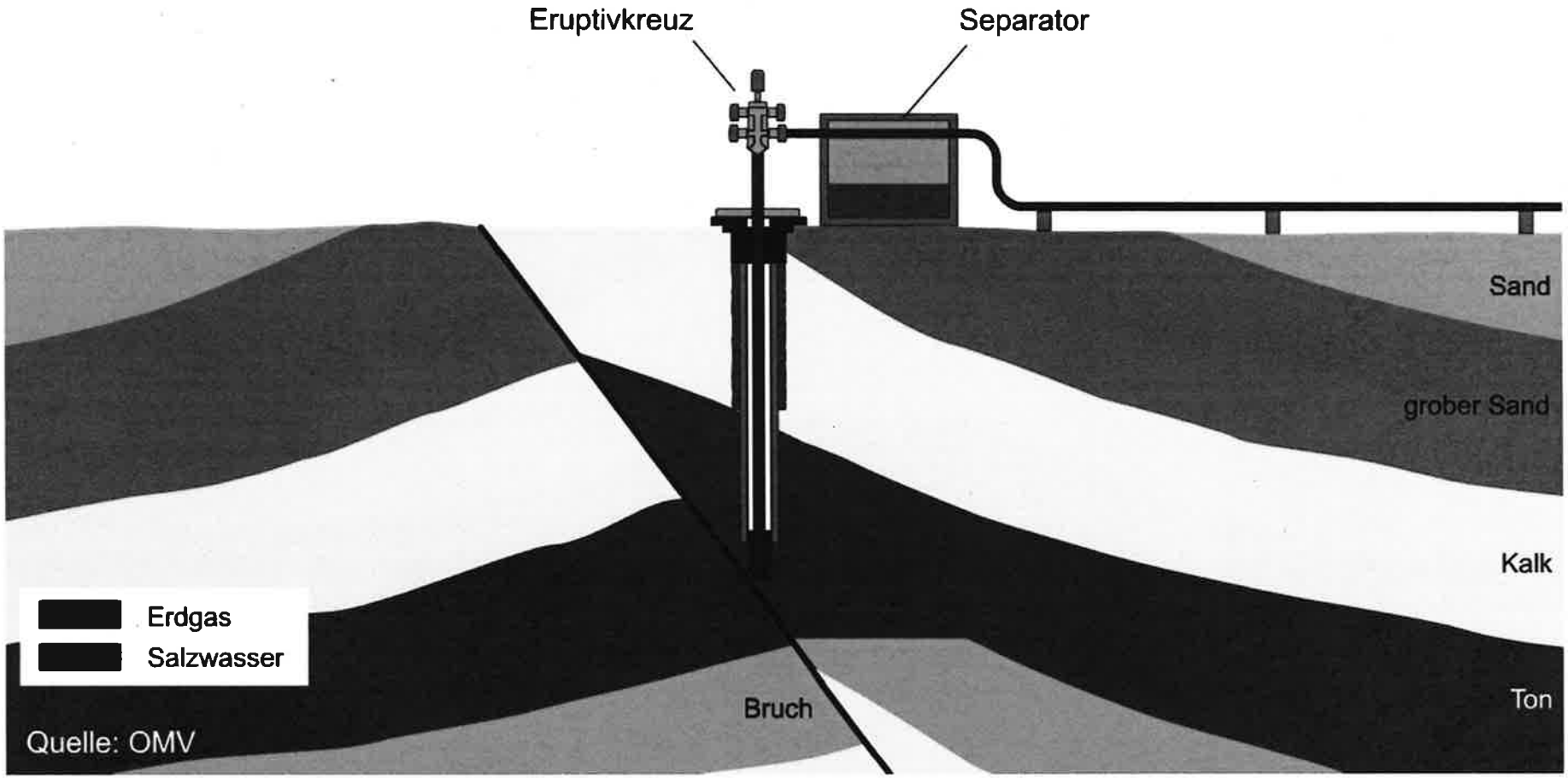
01. Operations involving sound levels equal to or higher than LCpeak = 135 dB(C). Blows during carpentry/blacksmith's works, use of compressors and compressed air, engines, etc.
02. Operations which generate a considerable amount of pulverulent material and dust. General machining works, sanding, roughing down, cutting, milling, brushing, scraping, etc.
03. Operations producing heat by radiation, conduction or convection. Welding, bending of tubes, testing of mechanical elements. Use of determined types of lasers and masers (microwaves).
04. Operations that involve the handling of combustible/flammable liquids. Repair works on

combustion tanks, degreasing of surfaces, polishing, assembly with adhesives, sealing with putty, priming, painting and varnishing.
05. Operations which imply the production of explosive atmospheres. Operations with batteries, putty, priming, painting and varnishing. Works carried out in the surroundings of open containers and recipients containing flammable products.
06. Operations producing incandescent particles/sparks/electric arcs. Welding and general mechanizing works. Use of mobile phones and telecommunication.
07. Operations which produce non-ionizing radiations. Electric and plastic welding. Heating-up and drying-up of materials. Use of measuring equipments.
08. Operations involving the hazard of falling down of suspended or deposited objects. Scaffolding erection; removal or replacement of engines or engine parts, drive and power transmission systems of the boats, masts and sails, deposits/tanks and generally all type of works involving heavy loads and protruding elements.
09. Operations which produce ionizing radiations. Fatigue tests carried out with X-ray measuring units, lasers, etc.
10. Operations on live electrical parts or involving the production of static electricity. Electrical repair works, decant of fuel through tubes and conductors.
11. Operations which generate humid atmospheres or in the presence of water/conductive liquids. Water pressure cleaning, repair/cleaning/replacement of tubing, deposits and pipelines, collection of bilge water.
12. Operations producing aerosol or dripping of caustic and corrosive substances. Use of descaling products, replacement/repair of batteries, cleaning of tubing and pipelines.
13. Operations generating aerosol, vapours or gases which are harmful and toxic. Welding, preparation of surfaces and painting.
14. Other operations which do not imply any hazardous factor. Any other activity not mentioned abov

Förderung von Erdgas

Im Eruptivkreuz wird der Gasdruck gemessen und die Gasmenge reguliert.

Im Separator wird das Erdgas von mitgefördertem Wasser gereinigt.



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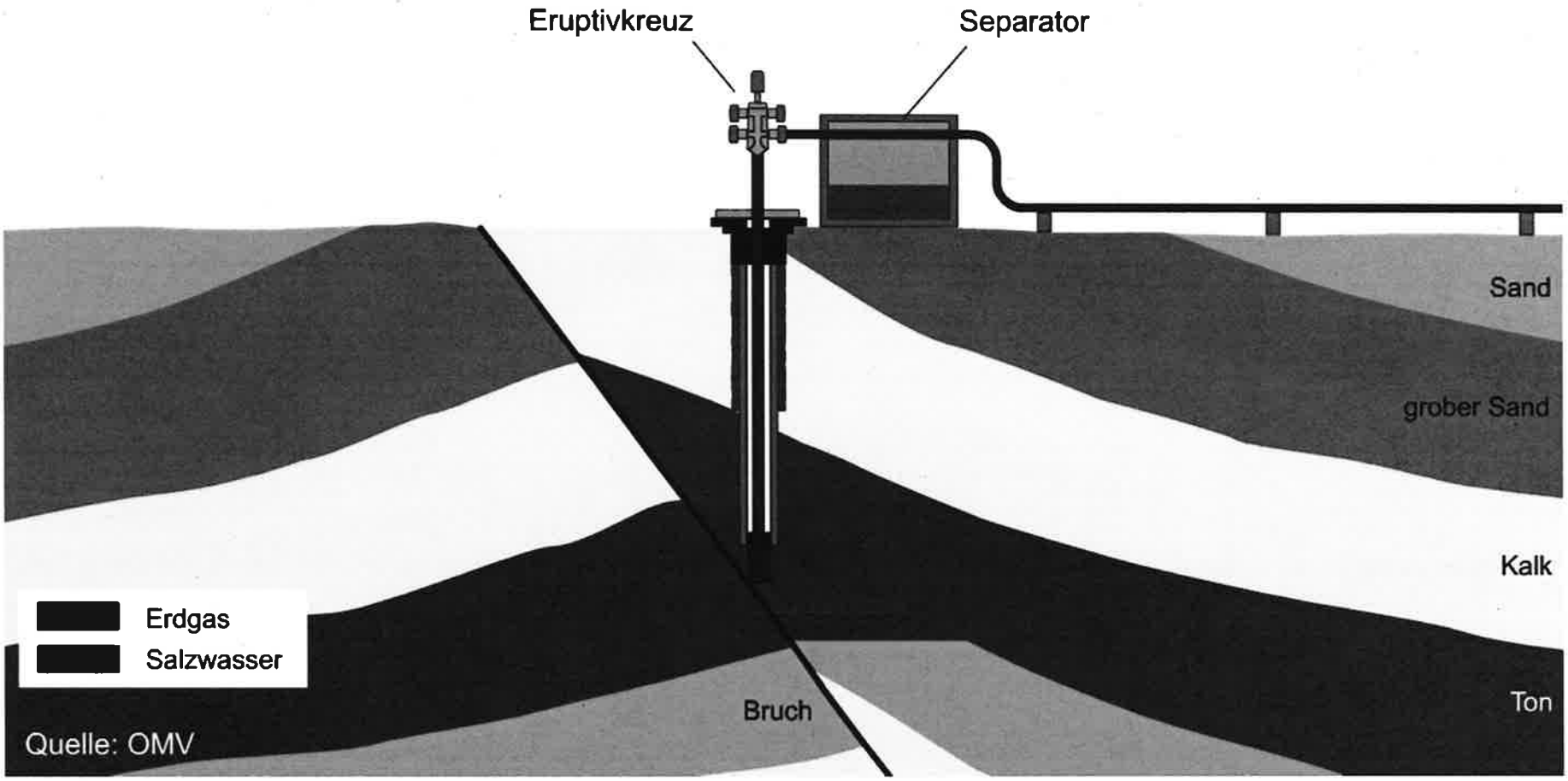

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2. We have displayed three rows as an example only. We can generate one invoice per document/project or we can add few (theoretically) unlimited rows in a single invoice.

We confirm that we can provide "Standard monthly reports for Translation services" as required by UKHO.

ULKA please see a typical request from a customer for reports , we can provide . Please feel free to modify/add/take off etc

Dear Supplier,

Further to my telephone call to you, I am writing to request some statistical information on language service usage by the Borough for the period **01st April 2008 – 31st March 2009 (period 1) and 1st April to 30 November 2009 (period 2). Please send me the information separately for each period.**

Details as follows:

- Total number of bookings for Audio transcriptions
- Total number of bookings for Braille
- Total number of bookings and total number of hours for face to face interpreting
- Total number of bookings and total number of hours for British Sign Language (BSL)
- Total number of bookings and total number of words for translation
- Total number of bookings and total number of minutes for telephone interpreting

Activity (01 Apr 08 - 31 Mar 09)	Quantity
Audio Transcriptions (no. of bookings)	
Braille (no. of bookings)	
Face to Face Interpreting (no. of bookings) Total number of hours	
British Sign Language Interpreting (no. of bookings) Total number of hours	
Translations (no. of bookings) Document Name Language From - To Total number or words	

Telephone Interpreting Activity (01 Apr 08 - 31 Mar 09)	Quantity
Total number of calls	
Total number of minutes	

I am also attaching a table which I would like you to complete for the period **1st April 2008 – March 2009**. This will give me an indication of the number of requests by language that your organisation has taken.

Language	Audio	Braille	F2F Interpreting	Translations	Telephone Calls	Total
Albanian						
Algerian						
Algerian (Arabic)						
Amharic						

Arabic						
Armenian						
Bengali						
British Sign Language						
Bulgarian						
Cantonese						
Chinese						
Czech						
Dari						
Dutch						
English						
Farsi						
Filipino						
French						
German						
Greek						
Gujurati						
Hebrew						
Hindi						
Igbo/Ibo						
Italian						
Japanese						
Korean						
Kurdish (Kummungi)						
Kurdish (Sorani)						
Lingala						
Mandarin						
Oromo						
Palantypist						
Panjabi						
Polish						
Portuguese						
Pushtu						
Romanian						
Russian						
Serb/Croat/Bosnian						
Slovak						
Somali						
Spanish						
Swahili						
Swedish						
Sylheti						
Tagalog						
Tamil						
Thai						
Tigrignia						
Turksih						
Ukrainian						
Urdu						
Vietnamese						

Yoruba						
Total						

Now please complete the tables below for the period 1st April 2009 – 30 November 2009:

Activity (01 Apr 09 - 30 Nov 09)	Quantity
Audio Transcriptions (no. of bookings)	
Braille (no. of bookings)	
Face to Face Interpreting (no. of bookings) Total number of hours	
British Sign Language Interpreting (no. of bookings) Total number of hours	
Translations (no. of bookings) Document Name Language From - To Total number or words	

Telephone Interpreting Activity (01 Apr 09 - 30 Nov 09)	Quantity
Total number of calls	
Total number of minutes	

Language	Audio	Braille	F2F Interpreting	Translations	Telephone Calls	Total
Albanian						
Algerian						
Algerian (Arabic)						
Amharic						
Arabic						
Armenian						
Bengali						
British Sign Language						
Bulgarian						
Cantonese						
Chinese						
Czech						
Dari						
Dutch						
English						
Farsi						
Filipino						
French						
German						
Greek						
Gujurati						
Hebrew						
Hindi						
Igbo/Ibo						

Italian						
Japanese						
Korean						
Kurdish (Kummungi)						
Kurdish (Sorani)						
Lingala						
Mandarin						
Oromo						
Palantypist						
Panjabi						
Polish						
Portuguese						
Pushtu						
Romanian						
Russian						
Serb/Croat/Bosnian						
Slovak						
Somali						
Spanish						
Swahili						
Swedish						
Sylheti						
Tagalog						
Tamil						
Thai						
Tigrignia						
Turksih						
Ukrainian						
Urdu						
Vietnamese						
Yoruba						
Total						

Language Direct

Interpreting & Translations

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Fax: 020 3298 8621
www.languagedirect.org

VAT No: 719 1251 47

Translation Quotation

Name
Building No/ Name
Street
Town
City
County
Post Code

Quotation No:
Date

UKHO Discreet Task Reference

Requested By

Language From (Source)

Language Into (Target)

Document / Project Name	Target Word Count	Price per 1,000 words	Amount Excluding VAT	% Discount For using memory software	Amount Excluding VAT after Discount	VAT Amount	Amount Including VAT
					Sub Total		
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Source text - Spanish

CORRELACIÓN FACTORES DE PELIGRO - OPERACIONES

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Hidrogrāfijas dienests veic precīzus hidrogrāfiskos mērījumus, izmantojot modernāko tehniku un aparatūru. Hidrogrāfijas dienesta rīcībā ir:

1. Hidrogrāfijas kuģis 20 m garš katamarāns), kas aprīkots ar precīzu daudzstaru eholota sistēmu, augstas precizitātes pozicionēšanas sistēmu un citu aparatūru;
2. Mērījumu kuteris "Blesser" dziļumu mērījumiem seklās vietās, kā arī jūras piekrastes zonās un ostu akvatorijās, aprīkots ar precīzu vienstastara eholota sistēmu, augstas precizitātes pozicionēšanas sistēmu un citu aparatūru;
3. Vēl tiek ekspluatēti vecie dziļumu mērījumu katamarāni – dziļumu mērījumiem seklās vietās, kā arī nelieliem mērījumu apjomiem, aprīkoti ar integrētu mērījumu sistēmu.

Hidrogrāfijas kuģis ir būvēts Somijas kuģu būvētavā UUDENKAUPUNGIN TYOVENE OY. Pamatā kuģa projekts izstrādāts Latvijas Hidrogrāfijas dienestā un realizēts par Latvijas Jūras administrācijas līdzekļiem. LHD kuģi Somijas kuģu būvētavā saņēma 2001. gada vasarā. Par kuģa krustmāti tika uzaicināta Latvijas Republikas prezidente Vaira Vīķe – Freiberga, kura 2001. gada 29. jūnijā deva tam izcilā tālbraucēja kapteiņa, jūrskolotāja un hidrogrāfa vārdu.

Mērījumu kuteris "Blesser" tika projektēts un uzbūvēts 2008. gadā. Tas ir 6m garš un 2m plats, apgādāts ar diviem 50zs motoriem, kā arī pilnu hidrogrāfisko mērījumu aparatūras komplektu.
Mazie dziļumu mērījumu katamarāni tika projektēti un uzbūvēti pēc LHD pasūtījuma 1994. gadā. Laika gaitā tie tika aprīkoti ar vienstara eholotu, diferenciālo pozicionēšanas sistēmu un datoru ar specializētu programmatūru mērījumu datu uzkrāšanai un apstrādei.

Hydrographic department provides accurate hydrographic surveys using most up-to-date equipment and software. Hydrographic Service possesses:

1. Hydrographic vessel named ls" (catamaran 20 m in length), equipped with precise multibeam echosounder system, high accuracy positioning system and other modern technologies;
2. Motorboat "Blesser", equipped with precise single beam echosounder, high accuracy positioning system and other technologies for surveys in shallow waters, coastal areas and harbor aquatoriums.
3. In some cases, for hydrographic surveying in shallow waters or minor surveys, old surveying catamarans, equipped with integrated surveying system, are used.

Hydrographic vessel was built in Finnish shipyard UUDENKAUPUNGIN TYOVENE OY. The project of the vessel was designed in LHS (Latvian Hydrographic Service) and realized with the financial resources of Maritime Administration of Latvia. LHS received the vessel in Finnish shipyard in summer of year 2001. The president of the Republic of Latvia Vaira Vīķe – Freiberga was invited to be the patroness of the ship and on June 29, 2001 she gave the vessel the name of outstanding seafaring captain, naval teacher and hydrographer Christian Dahl.
The motorboat designed and constructed in year 2008. It is 6m long and 2m wide motorboat, equipped with two 50hp engines and hydrographic surveying equipment.
The small surveying catamarans were designed and constructed by the order of LHS in 1994. Over time catamarans were equipped with single beam echosounder, differential positioning system and computer with special software for processing of survey data.

Language Direct

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Fax: 020 3298 8621

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Invoice No
Invoice Date

PO No

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Name
Building No/Name
Street
Town
City
County
Post Code

Language From (Source)
Language Into (Target)
Date Requested
Requested By (this field is Name of Person Making Request)
UKHO Task Reference

Document / Project Name	Target Word Count	Price per 1,000 words	Amount Excluding VAT	%Discount For using memory software	Amount Excluding VAT after Discount	VAT Amount	Amount Including VAT
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The UKHO ITT for the Provision of Translation Services for the UKHO

Provision of Translation Services Questionnaire

Please complete all questions and, where requested, provide additional documentation. Please ensure additional documentation file names and titles refer to the tender question number

Question Number	Organisation Identity	Tenderer Response	Evaluation Criteria
1	Name of the company in whose name the PQQ was submitted.	Applied Language Solutions (ALS) Ltd In December 2011, ALS was acquired by Capita plc. The acquisition represents a new service offering for Capita and as such ALS continues to operate as a standalone language services division within the group while benefiting from the strength and size of Capita.	Information

Question Number	Specification Questions	Tenderer Response	Score	Weighting	Weighted Score	Evaluation Criteria	SOR or ITT Reference
2	Please confirm which additional languages does your company translate into	ALS offers a broad range of language pairs. We are able to offer translations in over 200 languages and around any combination of these languages. Below is a list of our top 200 languages: Afar AfghanPersian Afrikaans Albanian Alsatian American Amharic Arabic Aramaic Armenian Assamese Assyrian Australian Aymara Azerbaijani Bahasa Melayu Baluchi Bandjabi Bangla Bashkir Basque Belarusan Belarusian Bemba Bengali Bhojpuri Bicol Bosnian Breton Bubi Bulgarian Burmese Burushaski Cakchiquel Cambodian Carolinian Castilian Catalan Cebuano Chamorro Chichewa Chinese Corsican Creole Patois Crioulo Croatian Czech Damara Danish Dari Dinka Djerma Dogri Dutch Dzongkha English Eskimo Estonian Ethiopian Ewe Fang Faroese Farsi Fijian Finnish Flemish French French Canadian Frisian Fula Flani Gaelic Gagauz Galole Garifuna Georgian German Greek Greenlandic Guaragigna Guarani Gujarati Hainan Hassaniya Hausa Hebrew Herero Hiligaynonor Ilonggo Hindi Hindustani Hmong Hokkien Hungarian Ibo Icelandic Igbo Ilocan Indonesian Irish Italian Japanese Javanese Jola Kabye Kannada Kaonda Kapingamarangi Kazakh Kekchi Khmer Kikongo		N/A		Information	

3	Please provide details which demonstrate that your proposals meet the Authority's requirements. Please also state what other additional benefits and potential savings, in terms of products or services, your company is including within its ITT response and is offering to the Authority, and which are relevant to the requirement. Please state the advantages of these additional benefits and savings and what, if anything, the Authority has to provide in order to obtain these further benefits	Experience ALS has been providing translation services since 2003, and is now one of the fastest growing Language Service providers in the world. This experience makes us ideally placed to provide quality translations in the required time frames to the UKHO. ALS has experience in providing translations in numerous forms and formats including all those required by the UKHO. We provide translation of letters, memos, management briefings, product literature, marketing brochures, adverts and website pages on a daily basis for both public and private sector customers and within hundreds of industries. These are always provided back to the customer in an agreed format and in the required file types, such as MS Word and PDF. Flexibility Our business model is founded upon maximising effective operations in times of volume spikes. As we operate a global team we can flex resources as and when required, often at short notice from our customers. We would work with UKHO to try and forecast work volumes in advance and would adjust our team to cope with that demand or to increase resources. Thanks to our database of over 17,500 translators we can easily adapt to handle large volumes of work, seasonal variations and larger one-off projects at short notice and on tight turnaround times. The ALS head office is manned from 8am to 6pm Monday to Friday and can provide a guaranteed response within the key time scales required by the UKHO. We would assume that a 24 hour turnaround requested on a Friday at 10am would require submission by Monday at 10am. Mandatory Requirements We understand from the Tender documentation that accuracy, prompt		5		Specification Compliance	1.1, 1.3, 1.4, 1.4.1, 1.4.2.1 to 1.4.2.12, 3.9
4	How quickly, in terms of hours or days, can your company source a translator for a new language not already covered in the Authority's Statement of Requirements at Annex A? How quickly can you provide firm pricing (per 1,000 words) for the new language and confirm all delivery lead times can be met? Are there any issues or factors which may delay responses?	Sourcing a suitably qualified and experienced translator for a language not already covered in the UKHOs Statement of Requirements within a timely fashion would be entirely dependent on the particular language required. In theory and based on past experience this can take anything from half an hour to numerous days. One of the main difficulties we face when sourcing in-country translators is the time difference, which in some cases means a 24-hour turnaround in communication. What ALS can do is guarantee to commence the search within 20 minutes of identifying it as a new language. Pricing for new languages can be provided to the UKHO within 7 hours, i.e within the same working day that the request is made. The main factor that may cause a delay or us being unable to guarantee a lead time can be met is the sourcing of the translator with suitable experience and qualifications. A delivery date for a project cannot be confirmed until we have a translator ready.		N/A		Information	
5	Please confirm if you use "mother of tongue" translators within your organisation and if so, how many "mother of tongue" translators do you have and in which languages specifically. How many of your translators are based abroad and in which countries?	ALS can confirm that its translators will only translate into their mother tongue and be in-		N/A		Information	
6	How many of your translators have navigational and/or maritime knowledge and experience and can understand maritime terminology and in which languages? Please confirm if your company has translated hydrographic and/or maritime related documents and data. If yes, please provide actual hard or soft copy examples in tender response. Please confirm if your company has undertaken any of maritime related documents or graphics. If so, please state and provide hard or soft copy examples of the work carried out.	We are able to assess suitability of a linguist through review of CVs and previous transla		15		Specification Compliance	1.3, 1.4.1 & 1.4.2.9

7	Please confirm that your company will provide at least one dedicated translator for each piece of work issued. This applies to any work, unless the lead time is unusually short (less than 24 hours) or larger than normal in volume.	ALS can confirm that at least one dedicated translator will be assigned to each piece of work issued.		N/A		Information	
8	How many quality assurance checks do your staff carry out on each piece of customer's work, to ensure 100% accuracy is met, and before being sent back to the UKHO. Please provide full details of the processes carried out at each stage/check and who by. Please specify which members of staff are involved, their post titles, and what checks they carry out specifically. State also how stages are audited in the event of issues with a customer's order or complaint i.e. the full audit trail of each order and how lessons are learnt and built in for future reference.	Quality Assurance is maintained through many avenues by ALS, the most important beir		15		Quality Procedures	1.4., 1.4.1, 1.4.2.4 & 1.4.2.6
9	Please provide hard or soft copies of your standard request for quotation form and also your standard invoice which you would be submitting under this Contract. Please state what level of detail you provide and what information is inserted on each form e.g. quotation form - does it include discreet task reference, language from and into, target word count, price per 1,000 words, and any discount for using memory software? With the invoice, does this include similar details and ex VAT and inc VAT pricing, and clearly shows any discount for using memory software and how this has been calculated?	Request for Quotation ALS does not have a standard request for quotation form as requests are very varied and can come to our project managers in numerous ways. ALS can provide a bespoke request for quotation form for UKHO similar to the one provided as the attachment to this submission entitled 'Request for Quotation Sample' which can include details like: Project Reference Language Pair Rate Turnaround Required Delivery Date Comments Invoicing Invoices are generated automatically via our project management system TalkBase.NET. In line with our ISO 14001 accreditation we always aim to email all invoices to customers to cut down on paper use. Should the UKHO require invoices via post then ALS are able to do so. Invoicing can be scheduled to meet your requirements upon further discussion and can include any number of things including individual reference, language from and into, target word count, price per 1,000 words, discount for using memory software and ex VAT and inc VAT pricing. There are a number of ways in which we can set up invoicing for UKHO, which include: • Invoicing per language • Invoicing daily, weekly, monthly, project by project, etc. Automatic invoicing link to online purchase order systems • Invoicing can be done by cost centre / division / group • Invoice per international location (each location will be set up on our		N/A		Information	
10	With your FTP website, how often do you perform maintenance on the website and on what days? Are you likely to be changing your FTP portal within the contract period? If so please advise when this may happen where known? If not already stated, please confirm FTP website address, Account Manager and IT Manager (for the timed trials process), and provide their full contact details.	Maintenance on the FTP server is not currently carried out on a firmly scheduled basis. I		5		Technical Operational Support	1.4.1 & 1.4.2.4

11	Please confirm which languages your memory software can be used for? Are Tenderers aware in advance of any languages where memory software is unlikely to be employed by your translators?	ALS has a very comprehensive list of languages that our Translation Memory tools support. These are as follows; Abkhazian Afar Afrikaans Albanian Amharic Arabic (Algeria) Arabic (Bahrain) Arabic (Egypt) Arabic (Iraq) Arabic (Jordan) Arabic (Kuwait) Arabic (Lebanon) Arabic (Libya) Arabic (Morocco) Arabic (Oman) Arabic (Qatar) Arabic (Saudi Arabia) Arabic (Syria) Arabic (Tunisia) Arabic (U.A.E) Arabic (Yemen) Armenian Assamese Aymara Azeri (Cyrillic) Azeri (Latin) Bashkir Basque Bengali		5		Specification Compliance	1.4.1, 1.4.2.3 & 1.4.2.7
12	Translation timed trial - Please confirm that you have returned all trial samples by the trial stipulated timescales	ALS can confirm that all test pieces have been completed and returned on time. Please note that following an email request from at the UKHO offices we delivered the time trial translations via email and not via the FTP.		25		Timed Translation trial results	
13	Tender Price (MEAT price)	See Pricing Schedule table below		30		Price	
		TOTAL	**0**	**100**	**0**		

Pricing Schedule	**The Contractor shall provide firm prices per 1000 words (each translation will be based on these prices on a pro rata system), per country, irresp**

We propose a minimum charge to be applied for each individual job. Please see additional comment below.

Translation Memory Software		
Match Types		**% Discount - Tenderer to confirm what discount applies**
Repetition	The same text is contained elsewhere in the document	
100% match	Text translated previously and contained partly in the translation memory	
90% - 99% match	Text translated previously and contained partly in the translation memory	
80% - 89% match	A similar text was translated using the memory tools previously and is available in the memory	
60% - 79% match	A similar text was translated using the memory tools previously and is available in the memory	

1% to 59% match	A similar text was translated using the memory tools previously and is available in the memory	

	Examples:	Pricing
A	100 word document (Spanish into English) with 75 words translated by memory software i.e. 60% to 79% match	
B	1,000 word document (Russian into English) with 850 words translated using memory software i.e. 80% to 89% match	
C	2,000 word document (Japanese into English) with 1,000 words translated using memory software i.e. 1% to 59% match	

Note: Tenderers shall clearly state by way of priced examples above how the % discount will be applied and how much discount in terms of value will be taken off total price

Language	Price per 1000 words regardless of turn round time requested - Into English	Price per 1000 words - regardless of turn round time requested - From English
Chinese Cantonese		
Chinese Mandarin		
Korean		
French		
Russian		
Spanish		
Indonesian		
Norwegian		
Croatian		
Brazilian Portuguese		
Japanese		
Greek		
German		
Portuguese (European)		
Italian		
Romanian		
Dutch		
Taiwanese		
Serbian		
Arabic		
Polish		
Thai		
Burmese		
Lithuanian		
Vietnamese		
Serbian Latin		
Persian		
Cambodian		
Swedish		
Malay		
Estonian		
Georgian		
Welsh		
Turkish		
Danish		
Latvian		
Bulgarian		
Finnish		
Icelandic		
Ukrainian		

Slovene		
Hebrew		
Tagalog		

Language	Minimum Charge Per Job - regardless of turn round time requested	Minimum Charge Per Job - regardless of turn round time requested
Chinese Cantonese		
Chinese Mandarin		
Korean		
French		
Russian		
Spanish		
Indonesian		
Norwegian		
Croatian		
Brazilian Portuguese		
Japanese		
Greek		
German		
Portuguese (European)		
Italian		
Romanian		
Dutch		
Taiwanese		
Serbian		
Arabic		
Polish		
Thai		
Burmese		
Lithuanian		
Vietnamese		
Serbian Latin		
Persian		
Cambodian		
Swedish		
Malay		
Estonian		
Georgian		
Welsh		
Turkish		
Danish		
Latvian		
Bulgarian		
Finnish		
Icelandic		
Ukrainian		
Slovene		
Hebrew		
Tagalog		

Invoice

Account No:
Invoice No :
Invoice Date :

Applied Language Solutions Ltd
Riverside Court, Huddersfield Road, Delph, Oldham, OL3 5FZ, UK
Reg No 05122429

tel: +44(0)870 172 0000 email: accounts@appliedlanguage.com
VAT Account: GB618184140

The United Kingdom Hydrographic Office
Admiralty Way

Taunton
Somerset

TA1 2DN

United Kingdom

Client PO : Dummy Project

Project Contact :

Company Contact :

Telephone : +44 (0) 1823 337900

Account Manager :

Description Dummy Project for Demonstration Purposes Only

Job Number	Language From	Language To	Description	Value
JOB569646	French	English	Translation	£
JOB569647	French	English	Proofreading	£
JOB569649	English	Arabic (Modern Standard)	Translation	£
JOB569650	English	Arabic (Modern Standard)	Proofreading	£
JOB569651	Ukrainian	English	Translation	£
JOB569652	Ukrainian	English	Proofreading	£
JOB569653	Turkish	English	Translation	£
JOB569654	Turkish	English	Proofreading	£

continued

Applied Language SOLUTIONS

Invoice

Applied Language Solutions Ltd
Riverside Court, Huddersfield Road, Delph, Oldham, OL3 5FZ, UK
Reg No 05122429

tel: +44(0)870 172 0000 email: .com
VAT Account: GB618184140

Account No:
Invoice No :
Invoice Date : 31/07/2012

The United Kingdom Hydrographic Office
Admiralty Way

Taunton
Somerset

TA1 2DN

United Kingdom

Client PO : Dummy Project
Project Contact :
Company Contact :
Telephone : +44 (0) 1823 337900
Account Manager :

Description Dummy Project for Demonstration Purposes Only

Job Number	Language From	Language To	Description	Value
			Discount	£

Comments

THIS INVOICE IS DUE FOR PAYMENT ON:

30/08/2012 14:53:17

Net	:	£	**0.00**
Vat	:	£	**0.00**
Gross	:	£	**0.00**

Bank Details

Bank Address:

Note:

Indonesian	English	15
Swahili	Russian	1
Various	Bulgarian	1
Dari	English	15
Slovenian	Chinese (Tradit.)	1
French (Canada)	Tamil	1
Armenian	Bantu	1
Burmese	English	4
Croatian	Hungarian	2
Czech	Romanian	1
Italian	Chinese (Simplified)	9
Malay	Mandarin	2
Vietnamese	English	16
Quechua	English (US)	1
Chinese (Simplified)	Javanese	1
Danish	Bulgarian	2
Dutch	Indonesian	2
English	Farsi (Eastern)	6
Kazak	Mongolian	1
Mongolian	Swedish	1
Russian	Japanese	5
Sylheti	Spanish	1
English	Bahasa Malaysian	9
French	Kikongo	2
Slovak	Serbian	1
Russian	Czech	24
Catalan	German	3
English	Fula	2
French	Polish	69
Swedish	Spanish Latin America	3
Urdu	Arabic (Modern Standard)	5
Asian	English (US)	2
Bulgarian	Japanese	1

Source Language	Target Language	Count of Suppliers
Bosnian	English (US)	3
Farsi	Hindi	1
German	Belarusian	2
Polish	Spanish	6
Romanian	Hebrew	1
Russian	Punjabi	2
Spanish Latin America	Portuguese	5
Uzbek	English (US)	1
French (Belgium)	Polish	3
English - AUS	Arabic (Modern Standard)	5
Swiss German	Romanian	1
French (Belgium)	Spanish Latin America	2
Bosnian	Burmese	1
English	Ewe	1
German	Greek	40
Hindi	Creole	1
Serbian	Croatian	15
Serbo-Croat	Albanian (Kosovo)	1
English	Chavacano	1
Serbian	French	1
Slovak	English	23
Spanish Latin America	German	12
Arabic (Modern Standard)	Hindi	4
Danish	English - AUS	1
Kikongo	Lingala	2
Romanian	English (US)	4
French (Belgium)	Dutch	5
Persian	Arabic (Modern Standard)	2
Danish	Finnish	8
Aramaic	Assyrian	1
Finnish	Czech	2
German	Serbo-Croat	2

German	Punjabi	1
Arabic (Modern Standard)	Kurdish (Bahdini)	1
Bulgarian	Various	1
English	Slovak	191
French	Turkmen	1
French	Ukrainian	13
Macedonian	Bulgarian	4
Bulgarian	Czech	1
Chinese (Simplified)	Russian	10
English	Karen (Thailand)	7
French	Catalan	6
Swedish	Finnish	34
Urdu	Somali	1
Cantonese	English	5
Punjabi, Eastern (India)	Urdu	2
Hakka	Mandarin	1
Asian	Karen (Thailand)	1
Czech	Estonian	1
English	Maori	2
German	Chinese (Tradit.)	7
Polish	Serbian	1
Serbo-Croat	German	1
Spanish	Pahari-potwari	1
Bangla	Afrikaans	2
Arabic (Classical)	Kurdish (Sorani)	6
English	Krio	1
Nepali	Russian	1
Pashto	Dari	13
Serbian	Bosnian	11
Spanish	Croatian	4
Frisian	English	2
Deafblind (BSL hands-on / hand-under-hand)	English	2
Afrikaans	Yoruba	1

Faroese	English	2
Italian	Spanish	148
Bahasa Indonesian	French	1
Bengali	Telugu	1
Czech	English (US)	3
Japanese	French (Canada)	1
Spanish Mexican	Italian	4
English	Tetum	1
Hebrew	Italian	1
Hindi	Gujarati	30
Italian	Croatian	11
Russian	Finnish	7
Swedish	Greek	3
Slovenian	Ukrainian	1
Yiddish	Russian	1
Baluchi	Urdu	1
Cantonese	Chinese (Simplified)	24
Acholi	Ganda	1
Dutch	Croatian	1
Kirundi	English	1
Russian	Chinese (Tradit.)	3
Slovenian	Czech	1
Katakana (Japanese script)	English	2
Hmong	English (US)	1
English (US)	Chinese Traditional (Hong Kong)	1
German	Telugu	2
Italian	Portuguese (Brazil)	27
Danish	Czech	2
French	Farsi (Western)	2
English (US)	Japanese	67
Chinese (Tradit.)	Chinese Simplified (Malaysia)	1
Hungarian	Slovak	5
Turkish	German	9

Chinese (Simplified)	Hindi	1
English	Tswana	6
Finnish	Chinese (Tradit.)	1
Slovak	Spanish	1
Cambodian	Vietnamese	1
French	Luxembourgeois	2
French	Bahasa Indonesian	1
Italian	Filipino	1
Japanese	Marathi	3
Vietnamese	Chinese (Simplified)	3
Hmong	Thai	1
French (Belgium)	Greek	1
English	Burmese	29
English	Bahasa Bali	1
Greek	English (US)	4
Serbian	Italian	1
Spanish	Filipino	2
English	Patois (Jamaica)	1
English	Turkish	437
Hindi	Urdu	39
English (US)	Russian	175
Amharic	English	8
German	Spanish Latin America	35
Latin	Swedish	1
Norwegian	Latvian	1
Swedish	Catalan	1
Sylheti	English	4
Ukrainian	Georgian	1
Arabic (Modern Standard)	Amharic	1
Bengali	Oriya	1
Swedish	Ukrainian	1
Bulgarian	Russian	4
Chinese (Simplified)	Malay	2

English	Cebuano	8
Faroese	Turkish	1
German	Yoruba	1
Hindi	Somali	1
English (US)	French (Canada)	44
Galician	Japanese	1
Urdu	Creole	1
Danish	Bahasa Indonesian	1
Estonian	German	1
Macedonian	Slovenian	1
Breton	Kashmiri	1
Chechen	English	1
Persian	Farsi	10
Turkish	Bulgarian	3
Arabic (Modern Standard)	Kurdish (Kurmanji)	2
Danish	Norwegian	40
Czech	Croatian	2
Estonian	Czech	1
Lao	Thai	3
Russian	Spanish Latin America	4
French (Canada)	English	27
Burmese	Khmer	1
Danish	Icelandic	8
Dari	Kurdish	1
Gikuyu	English	1
Russian	Ukrainian	37
Mirpuri	Pashto	1
French	Greek	81
Russian	Chechen	2
Turkish	Kurdish (Sorani)	3
Punjabi, Western (Pakinstan)	Kashmiri	1
Lingala	English (US)	1
Nepali	Hindi	1

Croatian	Urdu	1
Finnish	Russian	8
Italian	Turkish	14
Portuguese (Brazil)	Portuguese	23
Bulgarian	Ukrainian	1
Chinese (Simplified)	Japanese	3
French	Various	1
German	Icelandic	7
Spanish	Welsh	1
Turkish	Portuguese	1
Urdu	Farsi	1
Bangla	English	3
Dutch	Italian	28
German	Dutch	84
Icelandic	English	8
Russian	Kazak	6
German	Catalan	2
Kashmiri	Hindi	1
Malay	English - AUS	1
Polish	Slovak	4
English (US)	Hindi	7
English	Arabic (Classical)	190
French	Chinese (Tradit.)	8
German	Ukrainian	27
Hindi	Arabic (Modern Standard)	1
Norwegian	Hungarian	1
Sanskrit	Gujarati	1
Bahasa Indonesian	Chinese (Simplified)	1
English	Spanish	1397
Danish	German	10
Spanish	Italian	377
Ukrainian	Russian	127
Bahasa Indonesian	Indonesian	3

Kirundi	Rwandan	1
Spanish	French	330
Tigrinya	English	1
Luganda	Ganda	1
Flemish	English	17
Hungarian	Dutch	1
Latin	Spanish Mexican	1
Thai	Chinese (Tradit.)	1
Deafblind (Clear speech communicator)	British Sign	1
English	Hebrew	112
Hindi	Punjabi, Western (Pakinstan)	1
Khmer	English (US)	1
Norwegian	Lithuanian	1
Serbo-Croat	Macedonian	7
English (US)	Malay	3
English	Estonian	83
French	Czech	18
Kashmiri	Punjabi	1
Kurdish (Kurmanji)	Arabic (Modern Standard)	2
English (US)	Punjabi	1
Dutch	French	31
English	Maltese	22
Kirghiz	Afar	1
Macedonian	German	1
Portuguese	Polish	4
Rwandan	English	1
English (US)	Spanish Latin America	341
Persian	Urdu	1
Italian	French	132
Japanese	English - AUS	2
Swedish	Russian	18
English	English (US)	112
Hindi	Malayalam	6

Swahili	Punjabi	2
Swedish	Belarusian	1
English	Kiswahili	7
English	Twi	8
Hungarian	Spanish	2
Russian	Norwegian	1
English (US)	Ukrainian	11
Korean	Japanese	2
Swedish	Icelandic	5
Afrikaans	Dutch	4
Arabic (Classical)	Gujarati	2
French	Georgian	1
Norwegian	English	48
Swedish	Dutch	10
Italian	Slovak	8
Kiswahili	Somali	1
Russian	Bengali	2
Slovenian	Russian	3
English	Portuguese (Brazil)	384
German	Farsi (Western)	1
Hebrew	French	9
Hebrew	Spanish Latin America	5
Romanian	Arabic (Classical)	1
Russian	Hindi	2
Turkmen	Turkish	1
Bulgarian	German	4
Croatian	Swedish	1
French	Finnish	18
Galician	Polish	1
Hungarian	Estonian	2
Malagasy	French	1
Punjabi	Bangla	1
Swahili	Lingala	3

Occitan	English	1
Spanish Mexican	French	3
Azerbaijani	English	11
Aramaic	Afar	1
Swedish	Chinese (Tradit.)	3
Vietnamese	Thai	2
Catalan	Portuguese	1
Danish	Russian	13
Greek	Romanian	2
Hungarian	English (US)	2
Tajik	Farsi	1
English	Croatian	108
Russian	German	38
Thai	Russian	1
Breton	Croatian	1
English (US)	Icelandic	2
Chinese Traditional (Hong Kong)	Chinese (Tradit.)	1
Azerbaijani	Kurdish (Sorani)	1
English	French	1397
Farsi (Eastern)	English	3
Japanese	Chinese Traditional (Hong Kong)	1
Breton	French	1
English (US)	Farsi (Western)	2
Italian	English (US)	53
Czech	Spanish	5
English	Asian	1
French	Bosnian	2
Latvian	Polish	1
Tibetan	Urdu	1
Arabic (Classical)	Pashto	1
French	Russian	155
Portuguese	Finnish	2
Portuguese (Brazil)	English	83

Mirpuri	Urdu	31
Arabic (Classical)	Somali	5
Burmese	Vietnamese	1
Finnish	German	4
French	Swiss German	1
Khmer	French	1
Krio	English	1
Portuguese	Chinese (Tradit.)	2
Somali	Arabic (Modern Standard)	1
Arabic (Classical)	Tigrinya	1
English	Visayan	1
German	Hindi	4
Korean	Chinese (Tradit.)	2
English (US)	Catalan	1
English	Sinhalese	4
Flemish	Turkish	1
Serbo-Croat	Albanian	2
English (US)	Amharic	1
English	Malagasy	1
German	Bushman	1
Greek	Spanish	6
Hungarian	French	4
Tongan	French	1
Japanese	Czech	1
Spanish	Dutch	39
Esperanto	Russian	1
Croatian	Slovenian	15
English	Swahili	33
Hebrew	Polish	1
Slovak	English (US)	3
Arabic (Modern Standard)	Punjabi	1
Chinese (Simplified)	Polish	2
Gujarati	Portuguese	1

Swedish	Faroese	1
English	Frisian	3
Turkish	Kazak	2
English	Ibanag	1
Galician	Spanish Latin America	1
Malayalam	Tamil	4
Tahitian	English	1
Spanish Mexican	Dutch	1
Arabic (Modern Standard)	Chinese (Tradit.)	2
Asian	English	6
Hebrew	Dutch	2
Italian	Hebrew	5
Polish	Latvian	2
Spanish Latin America	Korean	2
Tagalog	Chinese (Tradit.)	1
Cantonese	English (US)	2
Italian	Thai	1
Portuguese	Greek	2
Arabic (Classical)	Farsi	1
Chinese (Tradit.)	Korean	2
Polish	Hebrew	1
Romanian	Spanish	5
Turkish	Japanese	1
French (Congelese)	Arabic (Modern Standard)	1
English	Sindhi	7
English	Baluchi	1
Polish	Estonian	2
Hindi	Bulgarian	3
Latin	Gaelic (Irish)	1
Russian	Kirghiz	1
Spanish Latin America	Albanian	2
Swedish	Bosnian	2
German	Turkmen	1

Japanese	Chinese (Tradit.)	8
Serbian	Serbo-Croat	7
Seychelles-Creole	English	1
Urdu	Punjabi, Western (Pakinstan)	3
Breton	Bosnian	1
Kannada	Tamil	1
Polish	English (US)	10
Asian	Chinese (Simplified)	3
English	Romanian	373
English	Tamil	121
Portuguese	Spanish Latin America	23
Portuguese (Brazil)	Spanish Mexican	3
English (US)	Polish	56
Montenegrin	Macedonian	3
Arabic (Classical)	Arabic (Modern Standard)	100
Bosnian	Croatian	15
Bulgarian	Other	1
Dutch	Luxembourgeois	1
English	Kurdish	61
Portuguese	Ukrainian	1
Portuguese (Brazil)	French (Belgium)	1
Russian	Turkmen	4
Mende	Mandinka	1
Chinese (Tradit.)	English	76
Creole	French	6
Ukrainian	Turkmen	1
Kurdish (Sorani)	Kurdish	7
Belarusian	English	6
Chinese (Tradit.)	Cantonese	14
Urdu	Vietnamese	1
Katakana (Japanese script)	English (US)	1
Norwegian	Swedish	38
Serbian	Greek	1

Ndebele	Shona	3
Spanish	Luxembourgeois	1
Turkish	Farsi	2
French (Belgium)	Italian	10
Punjabi, Western (Pakinstan)	Pahari-potwari	1
French	Haitian Creole French	8
Japanese	Spanish Latin America	1
Croatian	German	7
English	Chinese (Simplified)	785
English	Kazakh	7
Georgian	English	6
Hungarian	Romanian	13
Malay	Chinese (Tradit.)	2
Turkish	Arabic (Modern Standard)	3
Turkish	Persian	2
English (US)	Bahasa Indonesian	4
Catalan	Japanese	1
English	Uzbek	10
Greek	Portuguese (Brazil)	2
Russian	Tajik	7
Spanish Latin America	Bulgarian	1
Chinese (Simplified)	Greek	1
Bengali	Sylheti	5
Italian	Estonian	4
Lingala	French	11
Temne	Krio	1
Welsh	Russian	1
Persian	Kurdish (Sorani)	1
Baluchi	English	5
Akan	Acholi	1
Latin	English	15
Luxembourgeois	Italian	1
Romanian	Kurdish	1

Iraqi, dial	Arabic (Modern Standard)	2
Kalmyk	English (US)	1
English	Pahari-potwari	2
Hindi	Pashto	12
Pashto	English (US)	1
Polish	Lithuanian	5
English (US)	Haitian Creole French	5
English - AUS	Flemish	1
French	Hindi	8
English (US)	Tibetan	1
Czech	French	7
English	Dari	51
German	Bosnian	4
Greek	Italian	7
Spanish	Greek	36
Austrian (German)	German	1
Czech	Dutch	3
Bahasa Indonesian	English (US)	2
Arabic (Classical)	Armenian	2
Arabic (Classical)	Urdu	6
Croatian	Bulgarian	1
French	Montenegrin	1
English (US)	Chinese (Tradit.)	41
Lithuanian	Czech	1
Portuguese (Brazil)	Korean	3
Turkmen	Uzbek	1
Wolof	English	1
English (US)	Finnish	7
Austrian (German)	Bemba	1
Other	English	11
Bulgarian	Polish	2
Dutch	Greek	1
Flemish	Spanish	2

Italian	Maltese	12
Lingala	Kikongo	3
Tibetan	English	2
English (US)	Tagalog	9
Hiragana (Japanese script)	Japanese	2
Arabic (Modern Standard)	Dutch	1
English	Luganda	4
Polish	English	65
Cebuano	Tagalog	1
Chechen	English (US)	1
Albanian	English (US)	1
Dutch	Belarusian	1
English	Swiss French	3
Bosnian	Turkish	1
Greek	French	9
Ukrainian	Polish	5
Mirpuri	Punjabi, Western (Pakinstan)	1
Bété	Bemba	1
English	Lutora	1
Hausa	Cantonese	1
Romanian	Italian	8
Bantu	English	1
Czech	Slovak	68
English	Afrikaans	30
Kiswahili	Rwandan	1
Slovenian	Bosnian	3
Japanese	Russian	10
Marathi	English (US)	1
English	Filipino	17
German	Polish	108
Hindi	Fijian	1
Luxembourgeois	French	2
Romanian	Turkish	3

Russian	Kurdish (Kurmanji)	2
Punjabi, Eastern (India)	Pashto	2
Basque	Russian	1
Korean	German	3
Norwegian	Danish	22
Dinka	English	1
English	Venda	1
Farsi	Kurdish (Bahdini)	1
Hindi	Bengali	26
Oromo	English	3
Sicilian	Italian	2
Arabic (Classical)	French (Algerian)	1
English	Ulster Scots	1
Romanian	French	9
Vietnamese	English (US)	3
English (US)	Wolof	1
Chinese (Simplified)	Chinese (Tradit.)	36
Kiswahili	Lingala	1
Serbian	English (US)	2
Basque	Marathi	1
English	Ghanian	2
Italian	Swahili	1
Kannada	English	9
Korean	Chinese Traditional (Hong Kong)	1
Russian	Latin	1
Slovenian	Polish	2
Kurdish (Sorani)	English	5
French (Canada)	Spanish Mexican	1
Persian	Pashto	4
Bosnian	French	1
Hindi	Assamese	1
Latvian	Russian	19
Urdu	Gujarati	16

Chinese Traditional (Taiwan)	Chinese (Simplified)	1
Chinese (Tradit.)	Vietnamese	1
Dutch	Romanian	4
German	Luxembourgeois	2
Lao	English (US)	1
Spanish	Georgian	1
Spanish Latin America	Norwegian	1
English (US)	Kanji (Japanese script)	1
Farsi	Russian	4
French	French (Canada)	8
Italian	Arabic (Classical)	4
Italian	Romanian	51
Japanese	Hindi	2
Polish	Chinese (Simplified)	1
Portuguese (Brazil)	Swedish	2
Tamil	French	1
English (US)	Czech	7
Albanian (Kosovo)	English	1
Croatian	Albanian	2
Czech	Italian	6
English	Khmer	21
English	Thai	118
English	Welsh	23
Hausa	English	5
Igbo	English	5
Portuguese	Russian	13
Creole	Haitian Creole French	1
Farsi	Farsi (Western)	2
French	Spanish Latin America	86
Korean	Russian	3
Swedish	Polish	3
Aramaic	Arabic (Modern Standard)	1
Croatian	Macedonian	5

English	Indonesian	110
Japanese	German	4
Serbo-Croat	Slovenian	1
Somali	English	10
Ukrainian	Greek	1
Urdu	Pashto	50
Pahari-potwari	Punjabi	5
English (US)	Mandarin	2
Hindi	Norwegian	1
Malayalam	English	9
Spanish Latin America	Bengali	1
Belarusian	Estonian	1
English (US)	Albanian	8
English (US)	Cantonese	3
Bengali	Punjabi	1
Malagasy	Russian	1
English (US)	French (Belgium)	8
Croatian	English	20
Estonian	Swedish	1
French	Bengali	3
English (US)	Farsi	15
English (Pidgin)	Arabic (Modern Standard)	1
Belarusian	English (US)	1
Urdu	Asian	1
English (US)	Hungarian	22
French (Canada)	Romanian	2
Bahasa Malaysian	Chinese (Simplified)	7
Tigrinya	Italian	1
Flemish	Italian	2
Portuguese (Brazil)	Estonian	1
Vietnamese	French	2
Croatian	Serbian	20
German	Bulgarian	51

Norwegian	Kiswahili	1
Portuguese	Arabic (Modern Standard)	2
Punjabi	Punjabi	2
Spanish	Russian	65
Unknown	German	1
French	Slovenian	10
English (US)	Norwegian	11
Hunanese	Chinese (Simplified)	1
Estonian	Lithuanian	2
German	Hausa	1
Hungarian	Finnish	2
Norwegian	Romanian	1
Portuguese (Brazil)	English (US)	31
Occitan	Italian	1
Assamese	Bangla	1
Mandarin	Fijian	1
Other	Greek	1
English	Pampangan	1
Punjabi	Punjabi, Eastern (India)	1
Ukrainian	Czech	3
Bahasa Bali	Indonesian	1
Azerbaijani	Aymara	1
English	Georgian	35
German	Igbo	1
Russian	Korean	5
Ilongo	Slovak	1
Assamese	Hindi	2
Chinese (Simplified)	Kazak	1
English	Mirpuri	6
Lithuanian	English	16
Luxembourgeois	German	1
Austrian (German)	English	3
English	Luxembourgeois	3

Flemish	French	5
Neapolitan	Italian	2
Farsi (Eastern)	English (US)	1
German	Czech	68
Norwegian	Italian	3
Slovenian	Bulgarian	1
English	Spanish Latin America	778
Indonesian	Chinese (Simplified)	1
German	Japanese	9
Hebrew	Russian	19
Assyrian	Arabic (Modern Standard)	1
Farsi (Western)	Persian	1
Italian	Bosnian	3
Shona	Ndebele	2
Maldivian	Romanian	1
Inuit	French (Canada)	1
Spanish	Japanese	6
Bahasa Malaysian	English	5
Danish	Swedish	41
German	Finnish	29
Albanian	Amharic	1
Chinese (Simplified)	Arabic (Modern Standard)	4
English	Guarani	2
Portuguese	Macedonian	1
Portuguese (Brazil)	Turkish	1
Romanian	Polish	3
Norwegian	French	7
Afar	Afrikaans	1
English	Yiddish	1
Farsi	Armenian	1
Farsi (Western)	Russian	1
Hungarian	Spanish Latin America	2
Papiamento	English	2

Russian	Hungarian	8
Turkish	Azerbaijani	3
English	Serbo-Croat	29
English	Yoruba	25
Urdu	Tamil	1
Chinese (Tradit.)	English (US)	27
English (US)	Pashto	3
Azerbaijani	French	1
English	Greek	298
Russian	Albanian	1
Telugu	English	7
Arabic (Modern Standard)	Tigrinya	5
English	Punjabi	124
French	German	175
Polish	Indonesian	1
English (US)	Korean	87
Dutch	Russian	11
English	Ga	1
Maori	English	3
Ukrainian	Bulgarian	2
Bahasa Bali	English	1
English	Kikongo	2
German	Albanian	9
Greek	Polish	1
Hungarian	Czech	2
Russian	Bulgarian	59
Swahili	French (Belgium)	1
Arabic (Modern Standard)	Kirghiz	1
Arabic (Classical)	Turkish	3
Chinese (Tradit.)	Thai	1
Galician	Portuguese	2
Bangla	Sylheti	1
Azerbaijani	Kurdish	1

Bulgarian	Swedish	1
Spanish	Persian	1
Thai	German	1
Cebuano	English	1
Yiddish	Hungarian	2
Kazakh	Russian	2
Akan	English	5
Swiss French	English	3
Catalan	Danish	1
English	Ukrainian	106
French	Latin	2
Bahasa Malaysian	Khmer	1
English	Catalan	24
Finnish	Hungarian	1
Malay	Chinese Simplified (Malaysia)	2
Mongolian	Turkish	1
French (Canada)	French	10
Farsi	Tajik	1
Hindi	Kannada	7
Russian	Swedish	3
Kurdish (Kurmanji)	English	2
Montenegrin	Serbian	7
English - AUS	Chinese (Simplified)	2
Czech	Polish	11
Italian	Serbo-Croat	3
Maldivian	English	1
Kinyarwanda	Rwandan	3
Mandarin	Cantonese	8
English	Kashmiri	14
French	Bulgarian	44
Hausa	English (US)	1
Swedish	Czech	3
Bahasa Malaysian	Karen (Thailand)	1

English - AUS	Indonesian	1
German	Russian	168
Greek	Chinese (Tradit.)	1
Polish	French	9
Russian	Vietnamese	6
Breton	Czech	1
Aramaic	Hebrew	1
Arabic (Classical)	Spanish	3
Czech	Georgian	1
French	Kurdish (Sorani)	1
Ndebele	English	2
Portuguese	Hungarian	3
Somali	Arabic (Classical)	1
Spanish	Hindi	3
English (US)	Afar	1
French (Belgium)	German	1
Punjabi, Eastern (India)	English	4
German	Slovenian	34
Kazak	English	3
Swahili	Rwandan	2
Esperanto	German	1
Danish	Latvian	1
Polish	Dutch	1
Vietnamese	Malay	1
Chinese Traditional (Hong Kong)	Cantonese	1
Finnish	Swedish	10
French	Tagalog	1
English	Farsi (Western)	12
Sylheti	Bangla	1
Malay	English	18
Romanian	Greek	4
Russian	Pashto	2
Russian	Serbian	1

Swedish	German	14
Ukrainian	Slovenian	1
Bulgarian	Slovenian	2
Chinese (Simplified)	Korean	7
Macedonian	Romany	1
Russian	Danish	3
Czech	Finnish	3
French	Portuguese	135
Hebrew	Japanese	1
Latin	English (US)	1
Turkish	Mongolian	1
English	Tadjik	1
Bosnian	Greek	1
Spanish Latin America	English	135
Afar	English	4
German	Kazak	1
Russian	Slovenian	2
French (Canada)	Chinese (Simplified)	1
Bengali	Russian	2
Bosnian	Belarusian	1
Italian	Hindi	1
Kurdish (Bahdini)	Kurdish (Kurmanji)	2
Arabic (Classical)	English (US)	3
Chinese (Simplified)	Fijian	1
Dutch	Spanish Latin America	3
English	Oriya	27
Farsi	Urdu	1
Farsi	Persian	3
French	Somali	3
Georgian	Georgian	1
German	Norwegian	20
English (US)	Vietnamese	19
Catalan	Basque	1

Italian	Spanish Latin America	46
Italian	Ukrainian	4
Slovenian	German	5
Dutch	Ukrainian	1
Japanese	Arabic (Modern Standard)	4
Latin	Italian	8
Swedish	Bulgarian	3
Xhosa	Ndebele	1
English (US)	Swedish	25
English - AUS	English	1
Hindi	Tamil	7
Mongolian	English (US)	1
Breton	Russian	1
English (US)	Kazak	1
Deafblind (Large print communicator)	Other	1
Afrikaans	Russian	1
Chinese (Simplified)	Hungarian	1
English	Belarusian	16
Kanji (Japanese script)	Japanese	4
German	Bahasa Indonesian	1
Hindi	Sindhi	1
Tamil	Sinhala	1
Mandarin	Chinese Simplified (Malaysia)	1
English	Hmong	10
Urdu	English	49
Armenian	English	12
Bushman	Czech	1
English	Dutch	351
Farsi	Arabic (Modern Standard)	4
Spanish	French (Canada)	2
Tajik	English	4
Spanish Mexican	Spanish Latin America	12
Faroese	Dari	3

German	Montenegrin	1
Norwegian	Filipino	1
Portuguese	Japanese	1
English (US)	Creole	1
Bengali	Hindi	7
English	Telugu	55
French	Macedonian	4
English (Pidgin)	Japanese	1
Latin	Spanish	4
Portuguese	English - AUS	1
Arabic (Modern Standard)	Arabic (Modern Standard)	2
Arabic (Modern Standard)	Persian	1
Chinese (Tradit.)	Chinese (Simplified)	98
Dutch	French (Canada)	1
English	Nepali	37
Fijian	English	1
Polish	Italian	5
Spanish	Spanish Latin America	82
Wolof	Fula	1
English	Chinese (Tradit.)	185
Hungarian	Russian	1
Macedonian	Serbian	2
Russian	Azerbaijani	10
Slovak	French	3
Somali	English (US)	1
Punjabi	Hindi	15
Spanish Latin America	Basque	1
Armenian	Farsi	2
Bulgarian	Bemba	1
English	Kurdish (Bahdini)	1
French	Albanian	8
Tamil	Oriya	1
Ukrainian	German	2

Uzbek	Mandarin	1
English (US)	Slovenian	6
Persian	English	10
Chinese (Tradit.)	Cebuano	1
English	Javanese	4
Kiswahili	English	1
Latin	Romanian	1
Swiss French	English (US)	1
English	Bangla	9
Spanish	Bengali	2
Croatian	Romany	1
English	Other	29
German	Tagalog	1
Serbian	Polish	1
Cebuano	Afrikaans	1
Akan	Afrikaans	1
Arabic (Modern Standard)	Bulgarian	1
English	Sicilian	1
Farsi	Kurdish (Sorani)	8
Patois (Jamaica)	English	1
Punjabi	German	1
Russian	Portuguese	3
French (Congelese)	English	2
German	Marathi	2
Gujarati	Tamil	1
Serbo-Croat	Hungarian	2
Bahasa Bali	English (US)	1
Indonesian	English (US)	1
Laotian	Khmer	1
Dari	English (US)	1
Turkish	Serbian	1
English (US)	Flemish	2
Turkish	English	51

Finnish	Latvian	1
Khmer	Russian	1
Spanish	Icelandic	1
Swiss Italian	English	2
English (US)	Armenian	5
French (Belgium)	Russian	1
Albanian	Serbo-Croat	1
Danish	Somali	1
Kashmiri	Bengali	1
Mongolian	English	4
English (US)	Bengali	2
Dutch	Catalan	1
French	Wolof	1
Portuguese	Bulgarian	5
Swahili	Gujarati	1
Kurdish (Kurmanji)	Kurdish (Sorani)	3
Azerbaijani	Turkish	4
English	Haitian Creole French	11
Italian	Catalan	1
Japanese	Korean	6
Lipspeak (English)	English	1
English	Faroese	18
Estonian	English	13
French	Hungarian	34
Ukrainian	Portuguese	1
Ilongo	English	1
Bahasa Indonesian	Chinese (Tradit.)	1
Arabic (Classical)	English	34
English	Sinhala	46
Gujarati	Urdu	7
Spanish	Polish	36
French (Belgium)	French (Canada)	1
Belorussian	Lithuanian	1

Chinese (Tradit.)	Spanish	1
English	Akan	3
English	Gaelic	2
Spanish	Catalan	14
Assamese	Oriya	1
Deafblind (BSL Visual frame)	British Sign	1
French	Norwegian	10
Norwegian	Turkish	2
Spanish	Ukrainian	4
Spanish Latin America	French (Belgium)	1
Hiragana (Japanese script)	English	2
Croatian	Turkish	1
Italian	Polish	34
Slovenian	Macedonian	2
Arabic (Modern Standard)	Aramaic	1
Dutch	Polish	12
French	Japanese	16
Kirundi	Kiswahili	1
Wolof	French	1
Slovenian	Portuguese	1
English (US)	German	100
Catalan	English	33
Dutch	Chechen	1
Russian	Mongolian	5
Yoruba	English	6
English	Bosnian	40
English	Hindi	190
Swahili	Urdu	1
Tibetan	English (US)	1
Italian	Dutch	14
English (US)	Urdu	4
Bahasa Malaysian	Chinese Simplified (Malaysia)	1
Hebrew	English - AUS	1

Fula	German	1
French (Algerian)	Arabic (Modern Standard)	3
Portuguese (Creole)	Portuguese	2
Arabic (Classical)	Chinese (Simplified)	1
Hindi	English	49
Japanese	Hungarian	1
Farsi	Swedish	1
Italian	Luxembourgeois	1
Dutch	Bahasa Indonesian	1
English	Chinese Traditional (Taiwan)	6
Japanese	Bulgarian	3
Marathi	Oriya	1
Nepali	Urdu	1
Bahasa Indonesian	Malay	2
German	Gaelic (Scottish)	1
German	Macedonian	9
Serbo-Croat	Serbian	9
Spanish	German	115
English	Tibetan	5
Malay	Cantonese	2
Mongolian	Chinese (Simplified)	1
Swedish	Portuguese	3
Tamil	Hindi	6
Uzbek	Russian	7
English (US)	English - AUS	1
Ulster Scots	English	2
Tok Pisin	Other	1
Russian	Armenian	21
English (US)	Danish	11
Danish	Portuguese	1
Italian	Farsi (Western)	1
Latin	French	1
Norwegian	Slovak	1

Telugu	Urdu	1
Ilocano	Filipino	1
French	Arabic (Modern Standard)	131
French	Farsi	3
Spanish Mexican	German	1
Bulgarian	Macedonian	4
Chinese (Tradit.)	Indonesian	1
English	Italian	1324
Greek	Russian	3
Hebrew	German	3
Japanese	Swedish	1
Portuguese	Slovenian	1
Serbo-Croat	English	8
Swedish	Norwegian	41
Frisian	Dutch	2
Arabic (Classical)	Tamil	1
Chinese (Simplified)	German	6
French	Persian	2
Portuguese (Brazil)	Spanish	32
French (Canada)	Arabic (Classical)	1
Hakka	Cantonese	1
Latvian	Czech	1
Spanish	Tagalog	1
Swedish	Japanese	2
Swiss German	Russian	1
Tamil	Malay	4
Arabic (Modern Standard)	Bengali	1
Chinese (Tradit.)	French	10
French	Korean	6
Norwegian	Estonian	1
Slovak	Romanian	2
English	Katakana (Japanese script)	2
Italian	Akan	1

Polish	Croatian	3
Various	English	2
Slovenian	Hungarian	1
Czech	Ukrainian	2
English	Laotian	1
Finnish	Somali	1
Spanish	Guarani	1
Unknown	Ukrainian	1
English	Greenlandic	1
Norwegian	English (US)	5
Russian	Moldovian	1
Assamese	Telugu	1
English (US)	Arabic (Modern Standard)	93
Arabic (Modern Standard)	Russian	4
Danish	Hungarian	1
Khmer	Malay	1
Spanish Latin America	Swedish	4
Thai	Korean	1
Punjabi, Western (Pakinstan)	Punjabi	3
Gujarati	English	18
Sindhi	Hindi	2
Aramaic	English	4
Arabic (Modern Standard)	Gujarati	1
Bosnian	Italian	1
Georgian	French	1
Japanese	Slovenian	1
French (Canada)	English (US)	16
Punjabi, Western (Pakinstan)	Punjabi, Eastern (India)	1
Czech	Russian	10
English	Malay	67
Hebrew	Czech	1
Italian	Chinese (Tradit.)	2
Spanish	Various	1

French (Canada)	Portuguese (Brazil)	1
Dutch	Chinese (Tradit.)	1
French (Belgium)	Lingala	1
English - AUS	Spanish	1
Italian	Greek	33
Lithuanian	Latvian	2
Oriya	English	5
English (US)	Bulgarian	29
Arabic (Classical)	Kurdish	5
English	Maldivian	1
Japanese	Vietnamese	3
Urdu	Arabic (Classical)	1
Fula	Hausa	1
Taiwanese	Chinese (Tradit.)	4
Arabic (Modern Standard)	Norwegian	1
Arabic (Modern Standard)	Pashto	1
English	Amharic	27
Spanish	Chinese (Tradit.)	3
Javanese	English	1
Akan	Tamil	1
Kirghiz	English	5
Spanish	Igbo	1
Mirpuri	English	5
Chinese (Simplified)	Mandarin	3
Norwegian	Spanish	4
Portuguese	German	16
Portuguese (Brazil)	French	8
French (Canada)	Italian	11
Afrikaans	Zulu	2
Polish	Bosnian	1
Sanskrit	English	7
Albanian	Italian	1
Farsi	Pashto	15

Spanish	Czech	10
Swahili	Somali	6
English (US)	Portuguese	35
Cantonese	Bahasa Malaysian	1
English	Punjabi, Eastern (India)	9
English	Braille	1
French	Armenian	6
French	Kazak	1
German	Latin	1
English (US)	Macedonian	2
French (Canada)	Turkish	1
Hungarian	Polish	3
Gaelic (Irish)	English	10
Italian	Georgian	2
Norwegian	Portuguese (Brazil)	1
Russian	Arabic (Modern Standard)	7
Russian	Farsi	2
Swahili	Portuguese	1
Dutch	Czech	5
English	Kirundi	1
English	Sylheti	19
Norwegian	Dutch	3
Serbian	Russian	3
Urdu	English (US)	3
Kurdish (Sorani)	Kurdish (Kurmanji)	3
English	Kurdish (Kurmanji)	11
Polish	Romanian	2
Urdu	Kiswahili	1
Slovenian	Japanese	1
English (US)	Somali	2
English	Sotho	6
French	Shona	1
Serbian	Albanian (Kosovo)	1

Arabic (Modern Standard)	German	4
Polish	Greek	1
Taiwanese	Mandarin	2
Asian	French	1
Macedonian	English	7
English - AUS	English (US)	1
Dutch	Finnish	1
Indonesian	Bahasa Malaysian	2
Marathi	Hindi	12
Pashto	Russian	1
Swiss French	Romanian	1
Turkish	Swedish	1
English (US)	Punjabi, Western (Pakinstan)	1
Portuguese (Angolan)	Portuguese	2
English	Polish	949
Flemish	English (US)	2
French (Canada)	Spanish	8
Chinese (Tradit.)	Italian	3
English	Turkmen	5
Flemish	Dutch	17
French	Lingala	12
German	Arabic (Modern Standard)	41
Spanish Latin America	Spanish Mexican	6
Bosnian	Serbo-Croat	4
Lao	Chinese (Tradit.)	1
Spanish	Finnish	13
English (US)	Kurdish (Sorani)	1
English - AUS	Portuguese (Brazil)	1
English	Aramaic	2
Slovak	Russian	3
Swedish	Lithuanian	3
Kurdish (Bahdini)	German	1
Chinese (Simplified)	English	123

English	Kanji (Japanese script)	2
Polish	Czech	5
Ukrainian	Sardinian	1
Urdu	French	2
Urdu	Bangla	1
Kurdish	Farsi	4
Farsi	Kurdish	9
Finnish	Spanish	2
Tigrigna	Arabic (Modern Standard)	1
English - AUS	Italian	1
English	English - AUS	1
Italian	Albanian	28
Polish	Japanese	1
Swedish	Danish	26
Croatian	Bosnian	11
Danish	Slovak	1
Dari	Russian	2
Maltese	English	5
Cebuano	Filipino	1
English (US)	Chinese (Simplified)	142
Czech	German	15
Hindi	Dari	1
Spanish Latin America	Welsh	1
English (US)	Arabic (Classical)	25
German	Korean	7
Lithuanian	French	1
Spanish	Serbian	4
Turkish	English (US)	3
Persian	Italian	1
Danish	Turkish	2
English	Shona	10
French	Thai	6
Turkish	Dutch	4

Hausa	Chinese (Tradit.)	1
Italian	Tigrigna	1
Korean	French	1
Latvian	English	16
Portuguese (Brazil)	Dutch	4
Vietnamese	Russian	2
Kurdish (Kurmanji)	Kurdish	1
Taiwanese	Cantonese	1
Danish	Lithuanian	1
Dutch	Norwegian	2
English	Sanskrit	13
Faroese	Persian	1
French	Vietnamese	11
Gaelic (Scottish)	Japanese	1
Hungarian	Bulgarian	1
Italian	Norwegian	3
Spanish	Hungarian	6
Spanish Latin America	Romanian	1
Afrikaans	Afar	2
Arabic (Modern Standard)	Urdu	19
Arabic (Classical)	Bahasa Malaysian	1
Bosnian	Albanian (Kosovo)	1
English	Finnish	159
French	Gaelic (Irish)	2
Greek	Macedonian	1
Russian	Khmer	1
English	Afar	1
Farsi (Western)	Farsi	3
Greek	Armenian	2
English - AUS	French	4
English	Latin	10
Greek	German	5
Spanish	Norwegian	5

Zulu	Ndebele	1
Hiragana (Japanese script)	English (US)	2
Dutch	Hungarian	5
English	Chechen	3
Estonian	English (US)	1
Thai	Vietnamese	3
Uzbek	Tajik	2
Arabic (Modern Standard)	Armenian	3
Spanish Latin America	English (US)	88
Arabic (Modern Standard)	Creole	1
Belarusian	Polish	2
Croatian	Italian	2
French	Lithuanian	9
Japanese	Latvian	1
Igbo	Spanish Latin America	1
Bosnian	German	5
Dutch	Pashto	3
English	Bengali	187
French	Danish	7
Latin	Chinese (Tradit.)	1
Tajik	Uzbek	1
Tigrigna	Tigrinya	1
Hebrew	Arabic (Modern Standard)	15
Nepali	English	8
English (US)	Khmer	4
English (US)	Portuguese (Brazil)	149
Austrian (German)	Akan	1
Other	Czech	1
Armenian	French	1
Malay	English (US)	2
Russian	Arabic (Classical)	2
Georgian	Polish	1
Hindi	English (US)	4

Italian	Japanese	5
Albanian	Albanian (Kosovo)	2
English	Slovenian	85
Farsi (Eastern)	Farsi (Western)	1
Italian	Various	1
Japanese	Thai	2
Polish	Russian	26
Romanian	German	8
Yiddish	English	6
English (US)	Spanish	172
English	Assamese	21
Russian	Slovak	9
Javanese	Indonesian	2
Chinese (Simplified)	Spanish	2
Dutch	Arabic (Modern Standard)	5
Italian	Russian	52
Latin	Spanish Latin America	1
Swahili	English	6
Deafblind (BSL hands-on / hand-under-hand)	British Sign	1
Catalan	English (US)	3
Malay	Thai	1
Spanish	French (Belgium)	4
Slovenian	Slovak	1
Kurdish	Arabic (Modern Standard)	4
Spanish	Farsi	2
Tibetan	Chinese (Tradit.)	1
Polish	Chinese (Tradit.)	1
Pahari-potwari	Urdu	17
Chinese (Tradit.)	Polish	1
English	Igbo	10
Marathi	Gujarati	3
Spanish	Arabic (Modern Standard)	27
Persian	Dari	1

Dutch	French (Belgium)	5
French	Flemish	13
German	Swedish	37
German	Sardinian	1
Serbo-Croat	English (US)	3
Albanian	Macedonian	2
Dutch	Farsi	2
Norwegian	Faroese	1
English (US)	Serbian	11
Kazakh	English	1
Chinese Traditional (Hong Kong)	Chinese (Simplified)	2
Arabic (Modern Standard)	Somali	9
Asian	German	1
Hindi	Nepali	4
Hungarian	Slovenian	1
Kashmiri	English	3
Serbo-Croat	Dutch	1
Tamil	Malayalam	3
Zulu	Shona	1
English (US)	English	54
Katakana (Japanese script)	Japanese	2
Japanese	English	164
Polish	Ukrainian	5
Portuguese	French (Belgium)	1
Romanian	Bulgarian	2
Spanish	Korean	5
English (US)	Lao	1
Arabic (Classical)	Kurdish (Bahdini)	1
Latin	Russian	4
Urdu	Pahari-potwari	1
Cantonese	Malay	1
Filipino	Tagalog	4
Russian	Portuguese (Brazil)	1

Moldovian	Romanian	1
Dari	Hindi	1
English	Czech	268
Greek	Arabic (Modern Standard)	1
Hindi	Croatian	1
Russian	Kazakh	2
Tigrinya	Amharic	4
French	Tamil	8
German	Serbian	14
Korean	Chinese (Simplified)	23
Portuguese (Brazil)	Greek	1
Punjabi	Pashto	11
Urdu	Dari	6
English (US)	Fula	1
Greek	English - AUS	1
Gujarati	English (US)	2
Spanish	French (Algerian)	1
English (US)	Turkish	51
Mandarin	Chinese (Simplified)	3
Croatian	Serbo-Croat	7
Korean	Indonesian	1
English (US)	Slovak	5
Arabic (Modern Standard)	English	93
Chinese (Simplified)	Chinese Simplified (Malaysia)	1
Fijian	Chinese (Simplified)	1
Tagalog	English	9
French (Belgium)	Portuguese	3
Czech	Arabic (Modern Standard)	1
Danish	Spanish	9
English	German	864
Greek	Bulgarian	5
Malay	Bahasa Malaysian	2
Swiss French	Italian	1

Afrikaans	German	2
Bulgarian	English (US)	2
Czech	Latin	1
English	Mandarin	18
Italian	Occitan	1
French (Belgium)	Flemish	5
Puular	Fula	1
Amharic	Hindi	1
English	Kirghiz	5
English	Macedonian	57
French	Mongolian	3
Japanese	Kannada	1
Russian	Estonian	16
Turkmen	Russian	2
Afar	Polish	1
English	Swati	2
English	Bahasa Indonesian	32
English	Bemba	1
Latin	Ukrainian	1
Breton	Bemba	1
Assyrian	Afrikaans	1
Kikongo	French	1
Swedish	Latvian	5
Haitian Creole French	English	1
English (US)	Spanish Mexican	30
Bahasa Malaysian	French	1
Bahasa Bali	Italian	1
Chinese (Simplified)	Khmer	1
German	Danish	22
Mandinka	German	1
Portuguese	Galician	2
Russian	English (US)	35
German	Vietnamese	3

Kirghiz	English (US)	1
English	Albanian	86
Finnish	Estonian	14
Luxembourgeois	Arabic (Modern Standard)	1
Bosnian	Macedonian	7
Bulgarian	Turkish	2
French	Kannada	1
German	Flemish	9
Spanish	Armenian	1
Montenegrin	Spanish	1
Chinese (Simplified)	Thai	1
English	Marathi	46
French	Kinyarwanda	2
Hungarian	German	10
Romanian	Czech	2
Spanish	Creole	1
Various	Italian	1
Basque	English	4
Catalan	Romanian	1
Chinese (Simplified)	Cantonese	30
English	Bulgarian	335
Norwegian	Polish	2
Breton	Bulgarian	1
Afrikaans	Bulgarian	1
Japanese	Chinese (Simplified)	51
Albanian (Kosovo)	Dutch	1
Chinese (Simplified)	Slovak	1
Dutch	Armenian	1
Dutch	Vietnamese	1
English	Gujarati	92
English	Russian	1137
Russian	Turkish	14
Kurdish	Swedish	1

English (US)	Kazakh	3
Armenian	Croatian	1
English	Swiss German	4
Russian	Burmese	1
Assyrian	English	1
Kurdish (Bahdini)	Arabic (Modern Standard)	1
Chinese Traditional (Hong Kong)	English	1
Galician	English	7
German	Spanish Mexican	2
Hebrew	Hungarian	3
Spanish Latin America	Chinese (Simplified)	1
Swedish	Serbian	1
Urdu	Sylheti	1
Afar	Akan	2
Dutch	Swedish	5
English	Acholi	1
Indonesian	Malay	4
Punjabi	Norwegian	1
Danish	Estonian	3
English	Icelandic	24
Luxembourgeois	Portuguese	1
Russian	Spanish	18
Slovak	Spanish Latin America	1
Arabic (Modern Standard)	Farsi	1
English	Various	4
English	Albanian (Kosovo)	8
German	Azerbaijani	1
Japanese	Tamil	4
Malay	Chinese (Simplified)	12
Romanian	Finnish	1
Kanji (Japanese script)	English	5
Farsi	English	22
Kannada	Telugu	1

Spanish	Swedish	32
Danish	English (US)	6
Dari	Faroese	2
Urdu	Polish	1
Sanskrit	English (US)	1
Bulgarian	Spanish	1
Danish	Portuguese (Brazil)	2
English	Tigrigna	12
Kiswahili	Swahili	1
Romanian	Albanian	1
Turkish	Arabic (Classical)	1
Croatian	French	2
Hebrew	Swedish	1
Portuguese	English	140
Serbian	Hungarian	3
Mandarin	English	6
English	Chinese Traditional (Hong Kong)	1
French	Latvian	10
Korean	English	30
Slovenian	Serbian	4
Bosnian	Albanian	3
Catalan	Chinese (Simplified)	1
English	Pashto	103
French	Serbian	10
Chinese (Simplified)	Vietnamese	5
English	Luo	1
Italian	Slovenian	5
Latvian	Lithuanian	2
Thai	English	11
Moldovian	English	1
English	Kazak	13
English (US)	Thai	16
Czech	Japanese	2

English	Gaelic (Scottish)	3
Gujarati	Kiswahili	1
Hungarian	Arabic (Modern Standard)	1
Spanish Latin America	Spanish	43
English (US)	Burmese	2
English (US)	Latvian	5
Punjabi, Western (Pakinstan)	Pashto	3
English	Dhivehi	2
Greek	Albanian	4
Spanish	Malayalam	1
English (US)	Afrikaans	1
French (Canada)	Greek	1
Albanian	Bulgarian	2
French	English	889
Greek	Hungarian	1
Punjabi	Urdu	120
Romanian	Russian	8
Serbian	Swedish	1
Herero	English	1
Arabic (Modern Standard)	Kurdish (Sorani)	21
Arabic (Classical)	French	7
French	Ghanian	1
German	Tamil	5
Portuguese	Slovak	2
Spanish	Slovenian	5
Esperanto	Portuguese (Brazil)	1
Karen (Thailand)	English	2
German	Portuguese	58
Hebrew	Danish	1
Slovak	Polish	12
Aymara	Albanian	1
Arabic (Modern Standard)	Dinka	1
Croatian	English (US)	3

English	French (Canada)	91
English	Tigrinya	24
German	Mongolian	1
Lingala	Portuguese	1
Norwegian	Greek	1
Portuguese	Lithuanian	1
French (Belgium)	Arabic (Modern Standard)	3
English - AUS	Spanish Latin America	2
Bengali	Urdu	5
Urdu	Mirpuri	7
English (US)	Hebrew	22
French (Belgium)	English	16
Danish	Tamil	1
Malayalam	Hindi	3
Sylheti	Bengali	25
Esperanto	English	4
Turkish	Kazakh	1
Sotho	Zulu	1
Kurdish (Bahdini)	Kurdish (Sorani)	6
Catalan	Spanish	124
Hindi	Katakana (Japanese script)	1
Italian	Icelandic	1
Tagalog	Turkish	1
Turkish	Uzbek	2
Acholi	Bulgarian	1
Chinese Simplified (Malaysia)	Chinese (Simplified)	1
Farsi (Eastern)	Russian	1
Italian	Bengali	1
Lithuanian	Estonian	1
Russian	Romanian	13
French (Algerian)	English	2
Albanian	Czech	1
Kirundi	Ganda	1

Russian	Kurdish	1
Swahili	Kinyarwanda	1
Dutch	Urdu	2
English	Balinese	1
Portuguese	Swedish	4
Serbian	Slovenian	6
Pahari-potwari	English	1
Creole	Portuguese	1
English	Southern Sotho (sesotho)	3
Norwegian	Czech	1
Welsh	English	19
English (US)	Ilongo	1
Akan	Dutch	1
Finnish	English (US)	3
German	Latvian	29
Japanese	Arabic (Classical)	1
Kannada	Hindi	2
Norwegian	Spanish Latin America	1
Spanish	Danish	9
Chinese (Tradit.)	Russian	4
English	Tsoonga	2
Italian	German	67
Kashmiri	Urdu	2
Spanish	Azerbaijani	1
Ilongo	Filipino	2
Assamese	Bengali	1
Dutch	German	25
French	Galician	1
English	Montenegrin	1
Macedonian	French	1
Ukrainian	Latvian	1
Jakartanese	Bahasa Indonesian	1
Dutch	Danish	2

English	Dzongkha	1
English	Tagalog	55
Estonian	Italian	1
Hindi	Oriya	4
Indonesian	Dutch	1
Russian	Latvian	44
Kanji (Japanese script)	Vietnamese	1
Arabic (Classical)	Italian	3
Dari	Farsi (Western)	2
French	French (Belgium)	2
Malay	Indonesian	2
Esperanto	Chinese (Simplified)	2
Farsi	Arabic (Classical)	1
Flemish	Czech	1
Punjabi	Gujarati	2
Luganda	English	1
Bosnian	Russian	3
Burmese	Catalan	1
Chinese (Simplified)	Lithuanian	1
Dutch	Flemish	4
English	Wolof	5
Italian	Latin	1
Norwegian	Finnish	6
Swahili	Kiswahili	2
Austrian (German)	Greek	1
Gujarati	Swahili	1
Hindi	Telugu	9
Russian	Hebrew	7
Serbo-Croat	Croatian	7
English (US)	Estonian	8
Bengali	Gujarati	1
Georgian	Russian	11
Samoan	English	1

Bahasa Malaysian	Dutch	1
Finnish	Hebrew	1
German	Armenian	1
Spanish	Flemish	7
Czech	Bulgarian	6
Danish	Romanian	1
English	Norwegian	132
Various	Swahili	1
Cebuano	English (US)	2
English (US)	Kiswahili	1
French (Canada)	Spanish Latin America	7
French (Belgium)	Spanish Mexican	1
Albanian	Russian	3
Hindi	Bangla	3
Swedish	Armenian	1
Kurdish	Kurdish (Sorani)	7
Catalan	Italian	10
English	Japanese	299
Galician	Spanish	41
Spanish Latin America	Portuguese (Brazil)	52
Ukrainian	English	26
Azerbaijani	Farsi (Western)	1
Bulgarian	English	22
Croatian	Greek	1
Spanish Latin America	Dutch	5
Urdu	Kashmiri	2
French (Canada)	Russian	2
German	Malayalam	1
Spanish	Bulgarian	21
Chechen	Russian	2
English (US)	Mongolian	5
Finnish	Lithuanian	1
Serbian	Macedonian	14

German	English	520
Kirghiz	Uzbek	1
Portuguese	Flemish	1
Serbo-Croat	Italian	1
German	Basque	1
Norwegian	Russian	8
Serbian	German	6
Turkish	Kurdish	2
French	Rwandan	4
Portuguese	Latvian	2
Spanish Latin America	French	39
French (Belgium)	Armenian	1
Icelandic	Russian	1
Thai	Khmer	1
English (US)	Lithuanian	8
German	Hungarian	65
Latin	Polish	1
Punjabi	Punjabi, Western (Pakinstan)	1
Swedish	French (Belgium)	1
Spanish	Portuguese	188
Finnish	English	29
French	Spanish Mexican	14
Italian	Tagalog	2
Japanese	English (US)	54
Turkish	Welsh	1
Indonesian	Chinese (Tradit.)	1
English (US)	Maltese	2
Albanian (Kosovo)	Bosnian	1
Chinese (Tradit.)	Spanish Latin America	1
Farsi (Western)	Arabic (Modern Standard)	1
French	Urdu	1
Hebrew	Portuguese	1
Serbian	Albanian	4

English (US)	Tamil	7
Catalan	French	11
English	Lingala	15
Italian	Bulgarian	13
Russian	English	177
Turkish	Italian	3
Sindhi	Urdu	4
Spanish Mexican	Portuguese	1
Akan	Belarusian	1
Dutch	Bulgarian	2
English	Persian	27
Norwegian	Icelandic	2
Portuguese (Brazil)	Italian	14
Slovak	Czech	79
Haitian Creole French	English (US)	2
Serbian	Bulgarian	3
Danish	English	55
Lithuanian	English (US)	3
Turkish	French	8
Cantonese	Mandarin	2
French	Creole	6
Lao	Russian	1
Montenegrin	Croatian	1
Chinese (Simplified)	Arabic (Classical)	3
Czech	Slovenian	1
Dutch	Somali	1
English (US)	Sardinian	1
British Sign	English	29
Spanish Mexican	Albanian	1
Chinese (Simplified)	Mongolian	1
English	Tajik	9
English	Occitan	1
Galician	English (US)	2

Russian	Chinese (Simplified)	7
Telugu	Tamil	4
Cantonese	Chinese (Tradit.)	8
Javanese	Chinese (Simplified)	2
Dutch	Portuguese	6
English	Zulu	12
Italian	Macedonian	2
Japanese	Turkish	1
Korean	Spanish	2
Kurdish (Kurmanji)	Turkish	4
German	French (Belgium)	3
Italian	Czech	11
Macedonian	Croatian	1
Swedish	English	61
Slovenian	Urdu	1
Estonian	French	1
French	Swedish	35
German	Farsi	3
German	Galician	1
Italian	Finnish	10
Spanish	Albanian	5
Spanish Latin America	Italian	28
English	Ndebele	5
Luo	English	1
Russian	Lithuanian	54
Mirpuri	Pahari-potwari	1
Azerbaijani	Russian	9
Burmese	Chinese (Tradit.)	1
Czech	Norwegian	1
Japanese	Spanish	6
Punjabi	Malayalam	1
Spanish	Macedonian	1
Swedish	Hungarian	5

Albanian	German	3
Bosnian	Slovenian	5
Dutch	Albanian	1
French	Afrikaans	1
Kiswahili	French	4
Portuguese (Brazil)	Spanish Latin America	61
Swiss German	German	4
Urdu	Nepali	2
Slovenian	English	18
Mandarin	English (US)	1
Karen (Thailand)	Thai	1
English	British Sign	16
Flemish	Russian	2
German	Lithuanian	25
Korean	English (US)	15
Persian	English (US)	2
Bangla	Hindi	1
French	Slovak	15
English	Kannada	40
Hebrew	English	54
Italian	Hungarian	13
Sanskrit	Latin	1
Tigrinya	Arabic (Modern Standard)	3
Mirpuri	Punjabi	10
English	Lithuanian	167
Flemish	Fijian	1
Greek	Latvian	1
Italian	Farsi	1
Lingala	Rwandan	2
Yiddish	Spanish	1
Sotho	Tswana	1
Bulgarian	Greek	3
Dutch	Serbian	2

English	Danish	143
French	Estonian	7
Galician	French	3
English (US)	Telugu	3
Croatian	Russian	3
French	Hebrew	15
Malagasy	English	2
Montenegrin	Serbo-Croat	2
Spanish Mexican	English	19
French	Yoruba	2
Spanish	Basque	4
Punjabi, Eastern (India)	Hindi	2
Greenlandic	Spanish	1
English	Azerbaijani	22
Estonian	Polish	1
French	English (US)	146
Marathi	Urdu	1
Portuguese	Italian	37
Amharic	Tigrigna	6
Arabic (Modern Standard)	Kurdish	22
Chinese (Simplified)	Chinese Traditional (Taiwan)	4
English (US)	Indonesian	13
Taiwanese	English	1
Arabic (Classical)	Spanish Latin America	1
Gujarati	Oriya	1
Indonesian	Russian	1
Spanish	English	610
English (US)	Filipino	5
Chinese (Tradit.)	German	3
Czech	Latvian	1
Dutch	Chinese (Simplified)	1
English	Swedish	239
Serbian	English	22

Slovak	Hungarian	4
Sindhi	English (US)	1
Gujarati	Punjabi	1
Thai	English (US)	3
English (US)	Pahari-potwari	1
French (Canada)	Portuguese	1
English	Ilongo	4
Portuguese	French	40
Romanian	Moldovian	1
Turkish	Albanian (Kosovo)	1
Kurdish (Kurmanji)	Kurdish (Bahdini)	1
Mandarin	French	1
Lithuanian	Russian	17
Spanish	Portuguese (Brazil)	126
Tamil	Kannada	2
Thai	Dutch	1
English (US)	Bosnian	5
Austrian (German)	Russian	1
Spanish	Chinese (Simplified)	17
Xhosa	English	1
Burmese	Breton	1
Aymara	Afrikaans	1
Taiwanese	Chinese (Simplified)	1
Arabic (Modern Standard)	Italian	9
Swedish	Slovak	1
Bahasa Malaysian	Malay	2
Georgian	Gujarati	1
Swati	Zulu	1
Spanish Mexican	Portuguese (Brazil)	1
Kurdish (Bahdini)	Kurdish	3
English	Hausa	12
Farsi	Dari	11
German	Slovak	40

Hausa	Igbo	1
Hindi	Marathi	9
Korean	Chinese Traditional (Taiwan)	1
Polish	Bulgarian	3
Chinese Traditional (Taiwan)	Cantonese	1
Arabic (Modern Standard)	French	29
Dari	Pashto	28
Slovak	Arabic (Modern Standard)	3
French (Canada)	Armenian	1
Dutch	Spanish	18
English	Punjabi, Western (Pakinstan)	6
Norwegian	Somali	2
Portuguese (Brazil)	English - AUS	1
Bété	Bosnian	1
English	Pangasinan	1
Hebrew	Chinese (Simplified)	3
Russian	Telugu	1
Slovak	Norwegian	1
Ukrainian	Arabic (Classical)	1
Urdu	Hindi	11
Chinese (Simplified)	Italian	11
English	Swiss Italian	2
English	Kurdish (Sorani)	49
Spanish	Spanish Mexican	4
Ukrainian	Slovak	1
Farsi	French	1
Norwegian	Portuguese	3
English	Malayalam	56
Farsi (Western)	English	4
Zulu	Tswana	1
English	Rwandan	6
English	Austrian (German)	1
French	Dutch	80

Kannada	Malayalam	2
Latin	Hungarian	1
Arabic (Classical)	Bengali	1
Haitian Creole French	French	9
English (US)	Croatian	6
French (Belgium)	Turkish	2
Chinese (Simplified)	Bosnian	1
Italian	Arabic (Modern Standard)	23
Portuguese (Brazil)	German	9
Afrikaans	Tswana	1
Italian	English	301
Spanish	Galician	4
Swiss French	Russian	1
Kurdish	English	5
Spanish Mexican	Spanish	12
Catalan	Dutch	2
Dutch	English	125
English	Vietnamese	143
Hebrew	Spanish	3
Hakka (Chinese)	Cantonese	3
Bantu	Bulgarian	1
Faroese	Pashto	2
Italian	French (Belgium)	3
Japanese	French	16
Russian	Belarusian	4
Slovenian	Serbo-Croat	2
Dari	Farsi	37
French	Fula	1
Galician	Italian	1
Italian	Serbian	8
Swedish	Turkish	3
Asian	Azerbaijani	1
English	Romany	1

Polish	Hungarian	2
Portuguese	Romanian	2
Russian	Georgian	17
Spanish	Spanish	1
Catalan	Polish	3
Dari	Persian	2
German	Arabic (Classical)	6
Urdu	Norwegian	1
English (US)	Hmong	3
English	Gaelic Manx (Isle of Man)	1
Polish	Danish	1
English	Kinyarwanda	5
Albanian	English	11
Dutch	Kurdish	1
Flemish	French (Belgium)	2
Swiss German	English	3
Albanian (Kosovo)	Albanian	5
English (Pidgin)	Chinese (Simplified)	1
Azerbaijani	Farsi	6
Hindi	Polish	1
Burmese	Japanese	1
Czech	Lithuanian	2
French	Belarusian	3
French	Kiswahili	1
German	Hebrew	7
Kazakh	Turkish	2
German	Estonian	22
Japanese	Chinese Traditional (Taiwan)	2
Portuguese	Chinese (Simplified)	3
French (Belgium)	Spanish	4
Arabic (Modern Standard)	Sylheti	1
English	Dinka	2
French	Romanian	140

Polish	Swedish	4
Spanish Latin America	Polish	4
Hawaiian	English	1
English (US)	Italian	158
Cantonese	Chinese Simplified (Malaysia)	2
French	Maltese	3
Turkish	Greek	1
Mandarin	Indonesian	2
Albanian	Hungarian	1
Dutch	Spanish Mexican	1
German	English (US)	80
Kurdish	Turkish	3
French (Belgium)	Arabic (Classical)	2
Dutch	Turkish	4
German	Portuguese (Brazil)	26
Hebrew	Kurdish	1
Icelandic	Arabic (Modern Standard)	1
Japanese	Polish	3
English (US)	French	222
Kanji (Japanese script)	Chinese (Simplified)	2
Hakka (Chinese)	Fijian	1
English	Oromo	5
English	Sardinian	1
French (Canada)	Hungarian	1
French (Belgium)	Romanian	1
Bulgarian	Dutch	1
Czech	English	41
Unknown	English	4
Kanji (Japanese script)	Indonesian	1
Arabic (Modern Standard)	Chinese (Simplified)	2
Kirghiz	Russian	5
Tagalog	Chinese (Simplified)	1
Ukrainian	English (US)	5

Chinese (Tradit.)	Arabic (Modern Standard)	1
Dari	Urdu	3
English	Flemish	36
Spanish	Turkish	14
Spanish Latin America	Haitian Creole French	1
Turkish	Chinese (Tradit.)	1
Afrikaans	Spanish	1
Arabic (Modern Standard)	Indonesian	1
German	Kazakh	1
Marathi	English	12
Swedish	Spanish	16
English	Latvian	105
Italian	Spanish Mexican	5
Maltese	Italian	1
Russian	Dutch	10
Arabic (Classical)	Kirghiz	1
English	Tahitian	1
German	Italian	282
Polish	Slovenian	1
Assamese	English	6
Bulgarian	Italian	1
English	Serbian	126
Tigrigna	English	2
French (Belgium)	English (US)	6
Afrikaans	Hebrew	1
Amharic	Tigrinya	13
Gaelic (Irish)	Russian	1
Javanese	Bahasa Indonesian	3
German	Turkish	47
Swedish	Estonian	10
Telugu	Hindi	4
Urdu	Punjabi, Eastern (India)	2
Italian	Swedish	13

Lao	English	3
Swahili	French	2
Azerbaijani	Persian	1
English	Xhosa	11
English	Assyrian	1
Romanian	Portuguese	1
Russian	Italian	42
Sinhala	Tamil	2
Belarusian	Czech	1
Hebrew	Afrikaans	1
Mongolian	Russian	1
Pashto	Urdu	11
Swedish	English (US)	10
Estonian	Finnish	1
Italian	Armenian	2
Slovenian	Spanish	2
Cantonese	Fijian	1
Dari	Swedish	1
Portuguese (Brazil)	Albanian	1
Asian	Bulgarian	1
Yoruba	Igbo	1
Bahasa Indonesian	English	6
Dutch	Slovak	2
English	Mongolian	18
English	Cambodian	6
Finnish	Italian	2
Haitian Creole French	Bosnian	1
British Sign	English (US)	1
Chinese (Simplified)	French	14
Flemish	Urdu	1
French	Swahili	2
Macedonian	Russian	1
Mongolian	Chinese (Tradit.)	1

Norwegian	Arabic (Modern Standard)	1
Swedish	Portuguese (Brazil)	3
English	Gaelic (Irish)	19
French	Arabic (Classical)	36
German	Spanish	164
Marathi	Tamil	1
English (US)	Dari	1
Latin	German	1
Norwegian	English - AUS	1
Pashto	English	11
Polish	Norwegian	1
English (US)	Serbo-Croat	6
Acholi	English	1
English - AUS	Japanese	1
Danish	Dutch	5
Spanish	Slovak	10
Norwegian	Farsi	1
Portuguese (Brazil)	Finnish	2
Tagalog	Filipino	4
Slovenian	English (US)	2
Oriya	Hindi	1
French (Canada)	Arabic (Modern Standard)	2
English	Somali	88
Norwegian	Bulgarian	2
Swedish	Croatian	2
Dutch	Afrikaans	2
Swedish	French	13
Tamil	English	19
Bosnian	Hungarian	1
Bulgarian	Romanian	2
Dutch	English (US)	10
Gujarati	Hindi	7
Spanish	Hebrew	6

Unknown	Spanish	1
Bahasa Malaysian	Mandarin	1
Bosnian	Farsi	1
German	Romanian	47
Romanian	Serbian	1
Spanish	Estonian	4
Danish	Italian	7
Portuguese	Turkish	1
Turkish	Russian	15
French (Canada)	Bulgarian	3
Filipino	English	2
Polish	Portuguese	1
Portuguese (Brazil)	Russian	4
Sindhi	English	2
Danish	Faroese	1
Lithuanian	Spanish Latin America	1
Polish	German	10
Spanish	English (US)	135
French (Belgium)	French	5
Tetum	Mandarin	1
Lithuanian	Polish	2
Russian	Tadjik	2
Turkish	Kurdish (Kurmanji)	2
Slovenian	Italian	6
Laotian	Malay	1
Asian	Pashto	1
Serbo-Croat	Bosnian	11
Slovenian	French	3
English	Lao	20
Swiss Italian	Russian	1
Sanskrit	Hindi	2
Arabic (Classical)	Russian	1
English	Ilocano	1

French	Portuguese (Brazil)	43
Khmer	English	4
Slovak	Slovenian	1
Kurdish (Sorani)	Arabic (Modern Standard)	5
Spanish Mexican	English (US)	22
Danish	French	6
Hebrew	English (US)	13
Spanish	Thai	1
Sanskrit	Marathi	1
Punjabi, Eastern (India)	Punjabi	2
Chinese (Simplified)	English (US)	40
English	Hiragana (Japanese script)	1
French	Uzbek	1
Karen (Thailand)	Akan	1
Arabic (Modern Standard)	Turkish	5
Arabic (Classical)	Kurdish (Kurmanji)	2
English	Arabic (Modern Standard)	671
Estonian	Russian	10
French	Chinese (Simplified)	45
Punjabi, Western (Pakinstan)	English	4
Dutch	Hebrew	2
English	Breton	1
Faroese	Armenian	1
Romanian	Hungarian	22
Frisian	German	1
Croatian	Polish	3
English	Fijian	2
French	Indonesian	6
Greek	English	42
Punjabi	English (US)	1
Spanish	Lithuanian	4
Tagalog	Cebuano	2
English (US)	Dutch	39

French (Belgium)	Tamil	1
French	Spanish	390
Italian	Urdu	2
Japanese	Indonesian	3
Albanian (Kosovo)	Macedonian	1
Swiss French	German	1
Urdu	Bengali	19
English (US)	Swiss French	1
Catalan	Russian	4
Farsi (Eastern)	Arabic (Modern Standard)	1
French	Croatian	6
English (US)	Luxembourgeois	1
Dutch	Lithuanian	2
Hindi	Punjabi, Eastern (India)	5
Luxembourgeois	English	2
English	Basque	6
German	Thai	2
Italian	Lithuanian	4
Swedish	Romanian	5
Yiddish	English (US)	1
Hebrew	Turkish	1
Italian	Danish	7
Spanish Latin America	Finnish	1
Swedish	Kurdish	1
Farsi (Eastern)	Farsi	2
Hindi	Russian	1
Sinhala	English	3
English	Kanjobal	1
Romanian	English	38
Ukrainian	Hebrew	1
Urdu	Punjabi	55
Ilongo	Tagalog	2
Afar	Bulgarian	1

Arabic (Classical)	Norwegian	1
Belarusian	Russian	26
Farsi (Eastern)	Persian	1
German	Twi	1
Italian	Flemish	2
Bahasa Bali	Bahasa Indonesian	1
Arabic (Modern Standard)	Bahasa Malaysian	1
Indonesian	Bahasa Indonesian	2
Russian	French	24
Sylheti	Urdu	1
Esperanto	Italian	1
English	Portuguese	481
English	Spanish Mexican	51
Ukrainian	French	2
Bosnian	English	15
Indonesian	English - AUS	1
Russian	Twi	1
Slovak	German	5
Swedish	Chinese (Simplified)	2
Uzbek	English	3
Arabic (Modern Standard)	Arabic (Classical)	26
Bulgarian	Amharic	1
Kazakh	English (US)	1
Arabic (Modern Standard)	Slovak	1
Bulgarian	French	3
Faroese	Urdu	1
Kashmiri	English (US)	1
Serbian	Turkish	1
Swedish	Italian	8
Bosnian	Serbian	28
Czech	Hungarian	4
German	French	164
Serbo-Croat	Russian	1

Finnish	Polish	4
Gaelic (Scottish)	English	2
Hebrew	Romanian	1
Italian	Tamil	1
Krio	Mandinka	1
Sotho	English	1
Persian	Farsi (Western)	1
Bengali	English	27
Dutch	Tamil	1
Hindi	Ukrainian	1
Kanji (Japanese script)	English (US)	6
Montenegrin	Bosnian	2
Amharic	Arabic (Modern Standard)	1
Arabic (Modern Standard)	Hebrew	3
English	Creole	8
Farsi	English (US)	4
French	Serbo-Croat	2
Kannada	Urdu	1
Kazak	Russian	5
English (US)	Bahasa Malaysian	3
Bahasa Malaysian	Chinese (Tradit.)	1
Arabic (Classical)	Malay	1
English	Armenian	41
Serbian	Spanish	1
Cantonese	Bemba	1
Bulgarian	Bosnian	1
Dari	Kurdish (Sorani)	2
Icelandic	Swedish	1
Lingala	English	4
Russian	Uzbek	8
Spanish	Maltese	2
English (US)	Nepali	1
Albanian	Serbian	1

English	Galician	9
Spanish	Romanian	55
Xhosa	Tswana	1
English (US)	Sinhala	1
Deafblind Manual	British Sign	1
Arabic (Modern Standard)	English (US)	17
Greek	Turkish	2
Icelandic	Danish	1
Slovak	Bulgarian	2
Tagalog	English (US)	6
Aramaic	Kurdish (Kurmanji)	1
Punjabi, Western (Pakinstan)	Urdu	17
Czech	Swedish	2
French	Kurdish	1
Bantu	Breton	1
English	French (Belgium)	20
French	Welsh	1
Tagalog	Dutch	1
Bosnian	Bété	1
Portuguese	Spanish	103
Gaelic	English	2
Spanish Latin America	Russian	6
Tamil	Urdu	3
Ukrainian	Croatian	1
Uzbek	Turkish	1
Arabic (Modern Standard)	Portuguese (Brazil)	1
Russian	Croatian	4
Russian	Polish	56
Croatian	Czech	1
French	Turkish	34
German	Indonesian	3
Turkmen	English	3
Kurdish (Sorani)	Farsi	2

English - AUS	German	1
Basque	Spanish	10
English	Farsi	194
French	Italian	473
Japanese	Dutch	1
Punjabi	English	25
English	Esperanto	1
Farsi (Western)	Farsi (Eastern)	1
Flemish	German	2
German	Chinese (Simplified)	32
German	Croatian	22
English	Jakartanese	1
Spanish Latin America	French (Canada)	2
Swedish	Filipino	1
Various	Polish	1
English (US)	Greek	23
Chinese Traditional (Taiwan)	English	1
Chinese (Simplified)	Bahasa Malaysian	1
Indonesian	Czech	1
English (US)	Chinese Traditional (Taiwan)	2
English - AUS	Russian	1
English	Korean	212
French	Ewe	1
Latvian	Estonian	1
Urdu	Marathi	1
English (US)	Georgian	4
French (Canada)	Norwegian	1
Hebrew	Arabic (Classical)	1
Portuguese	Portuguese (Brazil)	19
Swahili	Ganda	1
Urdu	Bulgarian	2
English (US)	Swahili	2
Belarusian	Ukrainian	1

Japanese	Italian	13
Belorussian	Russian	3
Italian	Somali	1
Latvian	English (US)	1
Kazakh	Uzbek	1
French	Dari	1
Malayalam	Urdu	1
Chinese (Simplified)	Cebuano	1
Chinese (Tradit.)	Slovenian	1
English	English	13
English	Mandinka	2
English	French (Algerian)	1
Norwegian	German	5
Breton	English	3
Yiddish	Romanian	1
English - AUS	Bulgarian	1
Afrikaans	English	23
Italian	Portuguese	37
Macedonian	Polish	1
Indonesian	Mandarin	2
Portuguese (Brazil)	French (Canada)	1
Russian	Bosnian	2
Shona	English	3
Swahili	Sinhala	1
Assyrian	English (US)	1
Kurdish	Arabic (Classical)	2
English (US)	Cebuano	2
Armenian	Russian	5
Dutch	Arabic (Classical)	1
English	Cantonese	54
Greek	Kurdish	1
Hindi	Punjabi	40
Tajik	Russian	3

Slovenian	Croatian	7
Danish	Polish	4
Portuguese	Estonian	1
Italian	Latvian	5
Zulu	English	5
Creole	English	6
English	Hungarian	243
English	Moldovian	1
Khmer	Thai	1
Spanish	Latvian	4
Persian	Russian	1
English	Urdu	281
Portuguese	English (US)	18
Spanish	Arabic (Classical)	10
English (US)	Romanian	18
French (Canada)	Bemba	1
Arabic (Modern Standard)	Spanish	7
Basque	Portuguese (Brazil)	1
English	Chinese Simplified (Malaysia)	4
Russian	Greek	5
Thai	French	1
Tok Pisin	English	1
Arabic (Modern Standard)	Karen (Thailand)	1
Hungarian	English	32
Portuguese	Dutch	6
Tongan	English	1
Bangla	Bengali	4
English - AUS	English (Pidgin)	1