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de&s

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WARPAINT

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Equipping and Supporting our Armed Forces

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Issue 54

The information on acceptable paint systems / coatings, given in this publication, updates WARPAINT Issue 53 – October 2023.

INTRODUCTION

1. WARPAINT is the main guidance document of acceptable paint coatings for all in-service and new-build Royal Naval Vessels. It is to be read in conjunction with Issue 5 of BR 3939 Hull Preservation Processes.
2. WARPAINT offers guidance on the various approved 'Commercial Off The Shelf' (COTS) protective coatings that have been assessed for their health and safety, fire characteristics and suitability when applied to various areas of Royal Naval Vessels in accordance with BR 3939 Issue 5.
3. WARPAINT is currently released biannually in April & October. It is used to disseminate changes to MOD policy or guidance in between major updates of BR 3939 or any of the other paint related Defence Standards.
4. Not all approved coatings are necessarily listed in WARPAINT as paint manufacturers are constantly striving to improve their current paint systems. Consequently, the Annexes are regularly updated. Should a coating therefore be proposed, which is not listed in the current issue of WARPAINT, confirmation of acceptance must be obtained from [DESShips-ENG-TES-husbandry](#) before it is used.
5. All paint coatings listed in the Annexes are to be applied strictly in accordance with their respective Product / Technical Data Sheets (PDS / TDS), Material Safety Data Sheets (MSDS) and Application Instructions. This includes all aspects of the preparation stage and post application. PDS's define a process that must be followed in conjunction with the TDS and MSDS. Full Quality Control (QC) data must be recorded to provide assurance and evidence that the specification has been satisfactorily achieved in accordance with BR 3939.
6. WARPAINT is only available electronically. It can be easily downloaded from the link below:
 - a. <https://www.gov.uk/government/publications/warpaint>

AMENDMENTS TO ISSUE 54

7. Front cover: In February 2024 Royal Navy warship HMS Richmond took over from HMS Diamond to ensure freedom of navigation in the Red Sea. HMS Diamond joined Operation Prosperity Guardian in December 2023, an international task force to protect merchant shipping in the region against Houthi attacks against commercial vessels.
8. DES Waterfront section updated to reflect the tasks that they undertake at the waterfront and the ships that the teams support.

9. Prohibited materials section updated to include Cybutryne which is banned In Accordance With (IAW) RESOLUTION MEPC.331(76).
10. Fire and toxicity standard and classification section updated to state that products that are C, D & U have been removed from Warpaint as previously communicated. Table 1 also updated.
11. Paint Information Cards (PIC) section has been updated to reflect the work that has been carried out over the past 6 months to reduce the number and reformat them to be more user friendly.
12. MAP 01-026 section updated to state that the document is being reviewed and updated in 2024 to align with 2023 IMO guidelines and RNTM _06-004/24.
13. Husbandry current work has been updated to include the new work that DES Husbandry team are focusing on over the next 12 months. The highlights are a major update of BR2203, BR3939 and Warpaint. Updates also include the conclusion of work carried out in the past 12 months.
14. Coating Manufactures contacts and reference section reformatted in to tables and content updated where necessary.
15. Annex Updates:
 - a. Annex A, B, C and D have been reviewed too ensure that all Nato Stock Numbers, BR 1326 references and Naval Authority Technical Group categories are correct and accurate.
 - b. ANNEX A now includes the NATG categories to support work regarding fire and toxicity testing of products.
 - c. ANNEX B and ANNEX C has been updated, removing paint systems that no longer meet the fire and toxicity requirements.
 - d. ANNEX E has been updated to reflect the manufacturer systems used in each major platfor area.
 - e. ANNEX F now includes all Warpaint areas to support the all submissions for new Warpaint products.

WARPAINT APPROVAL PROCESS

- 16. Paint coatings on all RN surface ships and submarines are to be WARPAINT compliant.
- 17. Figure 1 details the process for product inclusion in WARPAINT.
- 18. To raise a request contact DESShips-ENG-TES-husbandry who will provide a copy of the form found in ANNEX F. Requests are to include the Product/Technical Data Sheets, Material Safety Data Sheets and application instructions. All areas of the form are to be completed. Requests will not be processed without this information.

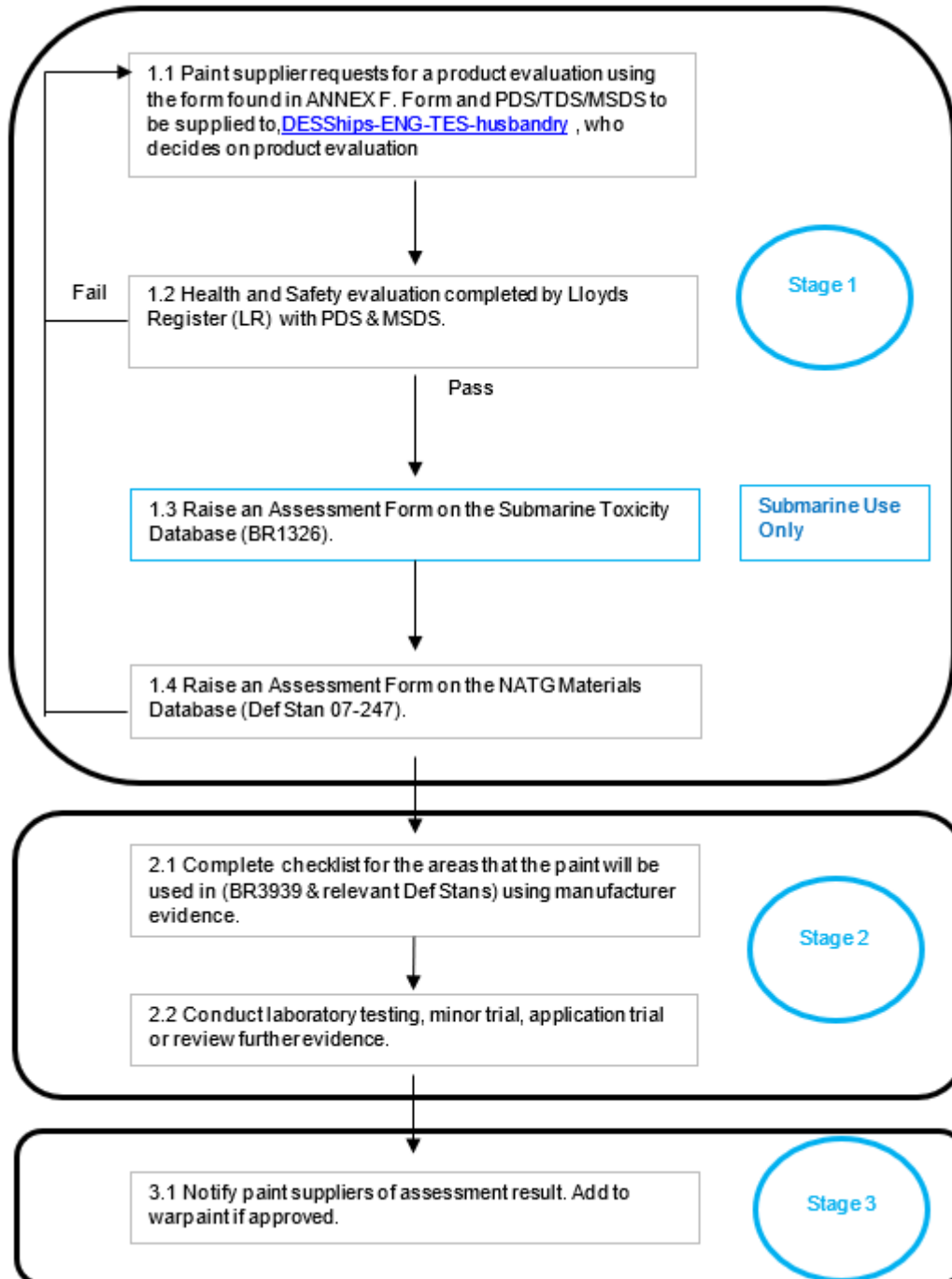


Figure 1 WARPAINT Approval Process

19. The Institute of Naval Medicine (INM) no longer complete the H&S assessment for the Warpaint Approval Process. Requests are not to be sent directly to INM. Requests sent directly to INM will not be actioned.
20. Manufacturers will be required to support DES Ships TES Husbandry in the completion of the relevant checklists for all areas that the paint will be used in. The manufacturer shall supply in confidence all type approval certification and relevant test data relating to a paint IAW BR3939 Issue 5.
21. If the data is not provided within 3 months from the initial request then the product will not be approved for inclusion in to Warpaint.
22. Post review, a WARPAINT Approval Reference (WAR) Number will be allocated to each product and will be included in ANNEX D.
23. As part of the approval process the manufacturer shall be required to submit in confidence Identification Characteristics (IC) In Accordance With (IAW) BR3939 Issue 5.
24. Manufacturers shall notify [DESShips-ENG-TES-husbandry](#) of any changes to the formulation or the withdrawal of the product as soon as it is known.
25. All paints shall be reassessed every 5 years to ensure they still meet Warpaint requirements. This may be carried out sooner if there has been a change in legislation, change of requirement or the manufacturer notifies [DESShips-ENG-TES-husbandry](#) of a change to the formulation. Products will not be removed from Warpaint during reassessment.
26. DES Ships-ENG-TES-husbandry have the right to remove a product from Warpaint if it no longer meets the requirements of BR3939 Issue 5 or has not performed to the requirements of BR3939 Issue 5 in service.

DE&S WATERFRONT ENGINEERING TEAM

27. The Waterfront Engineering Team's primary role is to provide oversight of platform material state in accordance with the process defined in BP145;
 - a. Working as part of the Ships Engineering, providing waterfront support across all platforms and engineering disciplines in line with the common support model and future maritime Support Contract (FMSP).
 - b. Defining and assure compliance to policy relating to Husbandry, Bio Security, Habitability and Flight deck safety.
 - c. Supporting collaborative working practices with key stakeholders in DE&S, industry, and our client (the Royal Navy).
 - d. Providing assurance that industry is fulfilling their contractual obligations.
 - e. Providing feedback on opportunities to improve processes, tasking priorities, defect rectification and material state reporting driving, where necessary, changes to policy and guidance information.
 - f. Producing material state reports/advice covering, flight deck, hull and structure, (husbandry), bio fouling, coating performance and habitability standards.

- g. Support aviation safety group with aviation inspections, including line out verification, flight deck safety checks, flight deck coatings assurance etc.
- h. Waterfront SME's supporting trials and inspection of new and existing coating including efficiencies and innovation initiatives.
- i. Investigate and report safety related defects.

28. WET Contact Details:

- a. Devonport Waterfront Engineering Team (DWET) – DESShips-Eng-TES-PWET@mod.gov.uk
- b. Portsmouth Waterfront Engineering Team (PWET) - DESShips-Eng-TES-DWET@mod.gov.uk

29. The Devonport and Portsmouth Engineering Teams will support platforms at their respective locations including Falmouth, Clyde & Rosyth, and all forward deployed platforms.

RN HUSBANDRY HABITABILITY DATABASE (RNHHD)

- 30. The RNHHD Application is located on the RLI network and can be found at <http://www.rnhhd.r.mil.uk> log ins are not required. The toolset is General Data Protection Records (GDPR) compliant and is MOD accredited.
- 31. RNHHD has been updated to include product data sheets and safety data sheets for all warpaint coatings. Links have been created between the Naval Authority Technology Group (NATG) Non-Metallic Materials Database where possible. This will continue to be updated as the two databases are aligned.
- 32. The sore thumbs section of RNHHD allows ships company and industry partners to raise issues and upload documents and photos of the problem. All users are encouraged to use this function so that issues can be captured and actioned.

MARITIME ASSURANCE SUPPORT TOOL (MAST)

- 33. MAST is a web-based software application. The application securely records the results of surveys conducted of platforms, the corrosion state of the surfaces within and work carried out to rectify or prevent corrosion issues. By centralising this data, a holistic view of the platform's material state can be maintained, performance of paints understood, and the impact of work undertaken or deprioritised can be reported on.
- 34. All survey documents and corresponding quality control records completed by prime contractors are to be sent to the relevant waterfront team as per para 29 using the correct multiuser email account para 28 & 28.b so that the records can be inputted in to MAST.
- 35. The application has been migrated on to MODCloud at www.mast.r.mil.uk Ships Husbandry Managers can request accounts to access their ships data where it exists. Requests are to be sent desships-eng-tes-mast@mod.gov.uk MAST will be continually updated with new information and will be further developed over time.

SHIPS RESPONSIBILITY FOR PAINT REPAIRS

36. Ships Company are responsible for paint repairs of up to 1m², referring to BR 3939 for specialist information, and utilise Preservation Application & Work Instruction Forms (PAWIF). A robust Ship Husbandry management organisation IAW BR2203 (Ship Husbandry) is a necessity to enable the smooth running and planning of all Ship Husbandry activities. These responsibilities are Fleet wide, and across all classes of vessels.

Note: Platforms running with the CLS / CFA contracts are required to liaise with their respective Platform Managers for approval before any preservation work is carried out.

37. The mixing of different supplier's coatings in any given paint system is prohibited. If it becomes essential, then it will only be permitted with the written approval of the relevant MOD Platform Project Group.
38. ANNEX E 'Naval Ships Support Paint Table' details the manufacturers whose products are used on each platform. Currently It does not include all surface ships. The table will be replaced in October 2024 when ships are issued with paint maintenance guides.

QUALITY

39. Quality is an important aspect to painting and cannot be underestimated. It is paramount that robust processes are in place and adhered to. BR 3939 Issue 5 Section 14 Quality Assurance & Quality Control outlines the requirement for a Preservation Quality Plan (PQP) and variable check points in the process as well as the qualification level of the paint inspectors. In addition, the requirements of ANNEX C of BR 3939 must also be noted.
40. PQPs are required ahead of all Fleet Time Support Periods (FTSP) and Upkeeps. Waterfront Engineering Team and DES Ships TES Husbandry are to be consulted during the development of the PQP and are to be signed by the Platform Authority.
41. Periodic checks should be carried out by the prime contractor to ensure that only qualified painters and blasters carry out work on RN vessels and that they are in date In Accordance With (IAW) BR3939 Issue 5 para 1408.
42. At the completion of any work undertaken on surface ships copies of the paint specification and QC data is to be forwarded to the relevant Waterfront Engineering Team as per paragraph 34 for inputting in to MAST.
43. New Submarine RDAR Deliverable. On completion of the maintenance period, all Certificate of Conformance (CofC) produced in accordance with BR3939 (Hull Preservation Process) to be forwarded to SDA-IS-Struc3.
44. For submarine docking maintenance periods, an additional request to forward a "Declaration letter of anti-fouling system compliance with AFS/CONF/26 to SDA-IS-Struc3 and SDA-IS-EnvMgr is required.
45. For additional advice of the deliverables in para 43 & 44 contact SDA-IS-Struc3 in advance of delivery.

SAFETY TOPICS (TO BE READ IN CONJUNCTION WITH BR 3939)**NEEDLE GUNS**

46. No ships should have needle guns onboard and no RN personnel are to use needle guns.
47. The use of needle guns is prohibited and has been for many years now as far back as issue 23 September 2006. Needle guns although effective at removing paint tend topeen the surface which can lead to entrapment of corrosion and other contaminants which leads to the premature failure of coatings.
48. There is also the HSE issue with regards to Hand Arm Vibration Syndrome (HAVS). Employers should check their obligations under the Control of Vibration at Work Regulations 2005. Details can be found on HSE website <https://www.hse.gov.uk/vibration/hav/index.htm>.
49. The surface preparation standard for cleanliness and profile must be met IAW BR3939 Issue 5. The use of needle guns by shipyards and their contrators should be kept to a minimum for the reasons stated in para 46 and 48. Alternative preparation tools should be used where possible.

PROHIBITED COATINGS

50. To clarify the Institute of Naval Medicine (INM) have advised in the past that the use of coatings containing, or based on the following, represent a significant health and safety risk:
 - Lead based pigments
 - Chromate based pigments
 - Bitumen
 - Coal Tar
 - Chlorinated, brominated and fluorinated Rubbers
 - Isocyanates
 - Cybutryne IAW RESOLUTION MEPC.331(76).
51. Therefore, IAW BR 3939 Section 3 material requirements, coatings containing these substances are prohibited for use on RN Surface Ships or Submarines. This includes both the ship's structure and equipment installed on board ships and submarines.

Fire and Toxicity Standard and Classification

52. Paint systems in the warpaint areas shown in Table 1 shall meet the fire and toxicity requirements in Defence Standard 07-247 Selection of Materials on the Basis of their Fire Characteristics.

Surface Ships (WSS)	Submarines (SS)	Annex A
G&H Above Water Hull and Superstructure Primer	S7 Internal Dry Spaces	A7 Peelable Corrosion-Inhibiting Encapsulated Membrane
J Above Water Hull and Superstructure Finish	S8 Internal Wet Spaces	A9 Flight Deck / Deck Markings
K Flight and Weather deck	S12 Reactor Compartment	A12 Instruments & Electronic Equipment Panels
L&M Interior dry compartments	S13 Interior Decks	A13 Galvanised Steel & Zinc Metal Spray (Repair)
N&O Interior wet compartments	S14 Battery Compartments	A14 Woodwork (High gloss, Clear, Protective Finish)
P Interior Decks	S15 Machinery Bilges & Rafts	A17 Heat Resistant Coatings (Below 175°C)
Q Battery Compartments	S21 Holding Primers	A18 Heat Resistant Coatings (Above 200°C)
R Cable Lockers & Cofferdams	S22 Primers for Non Ferrous Metals	A19 Heat Resistant Coatings (Above 400°C)
T Machinery Bilges		A26 Damp Surface Primer
Y Holding Primers		A27 Hanger Door Finish
Z Primers for Non Ferrous Metals & FRP		A30 Powder Coatings (Internal)
		A31 Powder Coatings (External)

Table 1 Warpaint areas that require Fire and Toxicity Certification

53. Fire & toxicity testing shall be carried out on a paint system and not the individual products. The following testing requirements shall be completed for all paint systems that fall in to the areas shown in Table 1:

- a. Fire propagation internal paint systems
- b. Resistance to surface spread of flame
- c. Smoke index of products of combustion
- d. Toxicity index of products of combustion

The acceptable tests can be found in Def Stan 07-247 which is available upon request.

54. The paint manufacturer shall provide all test data which will then be assessed by SDA NATG-Fire. Once assessed the paint system will be given a category and will be added to the Naval Authority System (NAS) materials database.
55. The six categories within Def Stan 07-247 are shown in Table 2. Paint systems shall only be used in Warpaint if they meet category A1 or A2. Paint systems that are categorised as B may be used if there is no suitable alternative and the Platform Authority accept the risk and have mitigation in place that meets the NATG requirements.

Category	Definition
A1	Approved for use on both submarines and surface ships from a fire characteristics points of view only. This does not imply that the material is fit for purpose.
A2	Not fully satisfactory but approved for use in both submarines and surface ships from a fire characteristic point of view only. This does not imply that the material is fit for purpose.
B	Not fully satisfactory but may be accepted in the situation(s) given.
C	Not approved for use in Surface Ships or Submarines.
D	Those materials which are no longer available, no longer specified or have not been fully fire tested.
U	Uncategorised. This might be because not all the evidence to support a category have been compiled, it might be awaiting test results from the lab or detail is yet to be confirmed.
PA	Pending Assessment

Table 2 Def Stan 07-247categories

56. ANNEX A has been updated to include the NATG fire categories in the respective areas, work will be carried out to understand the impact of the use of these paints onboard HM ships in the next 12 months.
57. As mentioned in the previous issue of Warpaint, systems with a category C, D and U have been removed. Paint systems that are currently being reviewed by the NATG will remain as Pending Assessment until a conclusion is drawn. Category B paint systems will be greyed out and a compliant system from an alternative manufacturer should be used unless the Platform Authority has agreed to its use with justification and the appropriate concession paperwork completed.
58. Please see Table 2 for a full breakdown of the NATG classifications for each system, it is to be noted that the NATG assesses products as a system and not as individual products.

DESIGN

59. During the design phase of a vessel either in build or in service it is essential that engineers are aware of the impact of corrosion and to use best practice when designing new structures and systems. A good guide for engineers is the Marine Paint Forums "Guidance information on design for preservation and corrosion control for steel hulled vessels". Membership of the Marine Paint Forum is made up of the Paint Suppliers, Paint Applicators, MOD, Consultants and UK Shipyards.
60. Where new ships are designed for forward deployment once in service it is essential that acquisition teams ensure paint systems used in build are appropriate for the environment that they will be operating in and are available world wide. [DESShips-ENG-TEs-husbandry](#) are to be consulted to support acquisition teams in developing paint schedules.
61. Ministry of Defence Ship Acquisition and in-service platform teams should refer to the following documents in line with Knowledge in Defence (KiD) when specifying paint requirements:
- Def Stan 21-005 Code of Practice for Protective Finishes
 - BR 3939 Hull Processes

c. WARPAINT

DESIGN TARGET LIFE OF COATINGS

62. The expected design life of coatings applied to Royal Naval Vessels, in accordance with the performance requirements of BR 3939 and ISO 12944 the paint manufacturer’s declaration, shall meet at least the following:

Description	Design Life
Holding Primer	6 Months
Hull Primer	20 Years
Anti-Fouling	5 Years
Anti-Fouling Foul Release	6 Years
Internal Primer	25 Years
Internal Finish	15 Years
External Finish	5 Years
Tank Coatings	15 Years
Bilges	25 Years

Table 3 Design Target Life of Coatings

63. Where Bilges are not zinc metal sprayed, they shall meet the 25-year design life using alternative approved coatings IAW BR3939 Issue 5.

THE 4 STAGES OF CORROSION

64. The table below is to assist surveyors to categorise the level of corrosion that has been identified through routine survey.

Stage 0	No visible signs of corrosion. No indications of paint system defects. No visible sign of oxidation products.
Stage 1	General surface corrosion is visible. Small blisters or cracks in the paint coating. Red / Orange rust staining becoming evident & deposits from water run-offs developing.
Stage 2	Heavy corrosion is visible. Severe blister or cracking in the paint coating. Prominent rust staining is now visible with medium to heavy deposits from water run-offs.
Stage 3	Severe corrosion has resulted in visible metal loss at the point of attack to the point that structural integrity may have been compromised. Very prominent rust staining is visible, with heavy deposits from water run-offs.
Stage 4	Complete perforation of the base metal has occurred, and structural integrity has been lost.

Table 4 Stages of Corrosion

PAINTING AND PRESERVATION HOT TOPICS

65. Relevant news stories, direct questions on approved coatings or paint systems and all matters regarding preparation standards, NATO stock numbers and MOD(N) Paint Policy can be directed to [DESShips-ENG-TES-husbandry](#). Minor trials are being consider for FY 24/25.

PAINT INFORMATION CARDS (PIC)

66. Paint Information Cards (PIC) can be found in BR3939 Issue 5 Annex H. There were 16 cards detailing how to carry out a painting tasks dependent on the area of the ship. These 16 have been condensed to 5, See Table 5 for areas covered by PICs. These information cards are not currently available however an RNTM will be issued when these cards have been updated.

PIC Card No.	PIC Card Description
1	Bilges
2	Internal Decks FRP
3	Internal Decks Steel
4	Weather Decks (FRP)
5	Weather Decks (Steel)

Table 5 Paint Information Cards BR3939 Annex H

HUSBANDRY QUESTIONNAIRE TO BE COMPLETED BY SHIPS

67. To ensure that the DES Ships-ENG-TES-Husbandry can focus on the areas of Husbandry that affect ships company a questionnaire has been created for for ships company to complete. The questionnaire is annonymus. The findings from the questionnaire will be used to develop Husbandry policy and to resolve the issues most affecting ships. The questionnaire can be accessed through the following link: [Husbandry Questionnaire](#)

ORDERING PAINTS FOR IN-SERVICE PLATFORMS

68. Update to BR3939 Issue 5 para 9. Due to the introduction of the FMSP contract, all paints available on an ALPHA or CHARLIE code are to be requested by Ship Staff with sufficient notice for Fleet Time Support Periods. BR3939 will be updated to reflect this at the update.

69. A new Warpaint Ministry Supplied Material (MSM) contract is now in place. The new contract is for the supply of warpaint products for in service Fleet Time Support Periods (FTSP) and Boat Maintenance Periods (BMPS). Paint required for upkeeps and dockings are to be Contractor Supplied Material (CSM).

70. Project teams are to notify DES LSOC-LS-MS-SIM of the paint requirements to support each BMP/FTSP in advance, so that sufficient stock can be allocated.

HOLDING PRIMERS

71. Holding primers are used to protect the blast profile of prepared carbon steel from corrosion. They are a temporary coating that can be used as part of a paint system as long as they are maintained IAW the manufacturers guidance.
72. Where the surface of the holding primer has been left for extended periods of time and exposed to ultraviolet, damp, dirt and grease as well as wear and tear from the build or maintenance processes it will be necessary to inspect the surface to ensure it is in a suitable condition for overcoating.
73. The surface shall be cleaned, free from dirt and grease and any areas of damage shall be repaired. Holding primers shall be removed if they have been left for ≥ 9 months unless the paint manufacturer guarantees there will be no failure in the paint system over its lifetime.

SUBMARINE BATTERY COMPARTMENT LINING REPAIR

74. The battery compartment lining is to be repaired using only specialist rubber compounds stated in ANNEX A, please note that the Pang/Truflex "SuperSolution" (A1344) must not be used while conducting rubber lining repairs as this item is prohibited for use on HM submarines. Repairs to battery lining should not be completed using a preservation coating, please contact SDA-IS-Struc3 for further information. Procurement of compounds should be sought well before maintenance period due to long lead times.

RUST/STAIN REMOVERS

75. Stain removers can have an effect on the life expectancy of coatings and therefore are to be used sparingly and only once the initial corrosion issue has been rectified.
76. International Interplus 614 is being replaced by Interplus 4101 & 4103. These products have been tested and are approved for removing rust stains. These products are special order and have a long lead time. Therefore they need to be ordered ahead of time.

IN WATER HULL CLEANING

77. Due to the threat posed by contaminants from hull cleaning and the risk of introducing non-native invasive species, it is necessary to restrict hull cleaning activities. It is also recognised that a fouled hull will have significant impact to the efficiency of the platform if it does not remain clean.
78. The need for hull cleaning has significantly reduced since the widespread use of Foul Release & Foul Defence coatings, but detrimental levels of fouling can build up particularly in warmer ambient conditions and following extended periods alongside. Full power runs in accordance with RNTM_04-018_23, as a minimum, will often resolve the issue but occasionally fouling will become so severe that hull cleaning is the only solution.
79. Under water cleaning is to be identified In Accordance with BR3939 chapter 5. Hull cleans shall be approved by the Platform Authority and agreed with NCHQ in consultation with either the Queen's Harbour Master (if in a UK naval base) or Salvage and Marine Operations (external to a UK naval base).

80. If a hull clean is required inside one of Her Majesty's Naval Bases, commercial diving support should be sought through the current MSDF arrangement with either BAES or Babcock Marine. Being cognisant of RNTM 04-032-19 Hull Cleaning in HMNB Portsmouth and Babcock FP14-31-000 Control of diving operations in the dockyard port of Plymouth.
81. If a hull clean is required outside of Her Majesty's Naval Bases, Authorities must use the Underwater Engineering Services contract managed by Salvage & Marine Operations (SALMO) for provision of accredited diving contractors who conduct hull cleaning and propeller polishing in accordance with the HSE Diving at Work Regulations 1997 and MOD Diving Policy.
82. Underwater cleaning is for provision of Underwater Engineering Support or advice; the Salvage & Marine Operations Underwater Engineering Desk can be contacted at E-mail: DESSAMO-UWE-OPS@MOD.UK Tel - Mil: 9679 87363 Civ: 030 679 87363.

INTERNATIONAL ANTIFOULING SYSTEM CERTIFICATES (IAFS)

83. To comply with Defence Safety Authority DSA02-DMR – Defence Maritime Regulations for Health, Safety and Environmental Protection regulation 616 Anti-fouling System; all platforms must carry an extant International Antifouling System Certificate (IAFS) as evidence of compliance with the International Convention on the Control of Harmful Anti-Fouling Systems on Ships, 2001.
84. Surveys and certification requirements for Anti-fouling Systems can be found in Annex 4 of International Convention on the Control of Harmful Anti-Fouling Systems on Ships, 2001.
85. S238 Report on Docking reports are to be completed when a platform is docked down. The completed form shall be forwarded to [DESShips-ENG-TES-husbandry](#) IAW BR3939.

MAP 01-26 SURFACE SHIP HULL FOULING MANAGEMENT

86. MAP 01-26 Issue 3 June 2022 will be updated in the next 12 months to capture changes in the IMO Resolution MEPC 378(80) 2023 Guidelines for the control and management of ships biofouling to minimize the transfer of invasive species and the introduction of RNTM_06-004/24 Guidance on the Management of Biofouling on Royal Navy Surface Ships.

HUSBANDRY - CURRENT WORK

87. There are a large number of paints currently being assessed for inclusion in to WARPAINT as well as the reassessment of the current products. The back log is now being processed and the support of paint manufacturers is greatly appreciated.
88. As part of a wider Project looking at improvements to availability of ships across the organisation DES Ships-ENG-TES-Husbandry will be reviewing the wholeship philosophy with an emphasis on the longevity of coating systems which are easier to maintain through life. This task will include looking at maintenance regimes to enable more work to be done outside of upkeep docking periods. It is envisaged that this will lead to a reformatting of the Warpaint document and a change in the requirements set out in BR 3939 as well as a change in the paint technologies currently used whilst maintaining safety first.

89. Antifouling systems have undergone both static and dynamic water testing that simulates the operational profile of RN ships. An approval process has been developed based on the results of the testing and will be used to support the selection of the optimum Antifouling system based on operational profile. The approval process will also be applied to the Warpaint Approval System and all antifouls will need to meet the requirements.
90. A small scale IWHC testing has been undertaken to understand the effects of cleaning on Antifouling systems. The testing used soft, medium brush hardness and a waterjet system. The results showed that the different brush types affected the paint coatings differently as did the waterjet system. The water from the cleaning was captured so that it could be analysed to understand the effects of cleaning on the water column. The final reports have been received and are now being reviewed to understand the next steps.
91. Defence Standard 80-134 Paint System issue 6 has now been released and is available at Stanmis. The title has changed to Paint System, Anti-Slip for Ships Decking, Multi-Pack Type 1: Rough Texture (Flight Decks, Hangar Decks and Weather Decks) Type 2: Smooth Texture and Deck Markings. The document has been re-written to include new requirements. Paint suppliers should check to see if their paint systems are still valid against the new requirements. The changes are to improve longevity of the coating systems to meet the design life criteria and reduce the maintenance and replacement of the coatings.
92. A laboratory assessment is being undertaken which replicates the harsh environment of diesel tanks compensated with sea water (area S16). This laboratory test cultivates sulphate reducing bacteria (SRB) and exposes the paint coating the corrosive effects caused by this type of microbial induced corrosion. The test intends to provide an insight into coating performance against SRB corrosion. This work will conclude in 1 year.
93. A NATO working group has been established for the review and update of STANAG 1278 and ANEP 88 'Standard for the Required Level and Measurement of Coefficient of Friction on Flight Decks' the DES Ships-ENG-TES-Husbandry on behalf of the UK are the lead nation and will be the chair of the working group. The process will take 2-3 years to complete and support from industry will be required.
94. BR 2203 Ship Husbandry Manual and BR3939 'Hull Preservation Processes' will be undergoing a major update in 2024 with both documents being issued by March 2025. Warpaint will also be undergoing a major update to align with the BR's and work being undertaken in para 88.

VOC COMPLIANT COATING SYSTEMS

95. EU Legislation changed the way VOC emissions are recorded. Notwithstanding this, there remains a MOD requirement for low VOC materials. Based on the guidance table below, Paint Manufacturers and Suppliers are reminded that any formulation changes to their existing products must be advised and reported to [DESShips-ENG-TES-husbandry](#). They will then be required to provide the Institute of Naval Medicine (INM) with full details of formulation changes, along with revised MSDS on request. Failure to do so will automatically result in the withdrawal of MOD(N) acceptance. INM forms can be provided on request and any submissions must go through [DESShips-ENG-TES-husbandry](#).

- 96. MOD(N) requires that paint manufacturers and suppliers quote VOC levels in accordance with local environmental regulations.
- 97. The MOD(N) maximum VOC target levels are shown in the following table and both paint manufacturers and applicators are encouraged to propose/apply coatings which at least meet or are lower than these target levels. These target levels are also specified in BR 3939.

Category No.	Category	VOC limit – gms/litre, Paint less Water (See Note 1)
(i)	Blast/Weldable Primer*	600
(ii)	Tie-coats/sealers	550
(iii)	General primer/undercoat	200
(iv)	External Finishes	420
(v)	Internal Finishes	200
(vi)	Anti-Fouling**	400
(vii)	AFFF Tanks	390
(viii)	Demineralised Water Tanks	390
(ix)	AVCAT, Dieso & Hydraulic Oil Tanks	390
(x)	All other tank coating systems Inc. cofferdams, engine room bilges & chain lockers	300
(xi)	Marine Varnish	530

Note 1. VOC calculations carried out in accordance with Def Stan 05-133 Part 1, Test 6.13.

***Blast or holding primers are typically applied to a specified thickness of 25 - 40 micrometres and are not considered to be weldable. Shop primers, or weldable primers, are applied by automatic spray, typically to a dft of 15 - 25 micrometres. It is recommended that the primer is removed before welding unless the user can demonstrate that the presence of the material does not affect weld integrity. This is particularly important where high strength steels, such as QN1, QN2, HY80 etc, with susceptibility to hydrogen cracking, are used. In all cases, the end user must establish whether the condition of supply of the coated steel substrate is suitable for their specific welding process conditions.**

****The balance between VOC level and toxic content (should there be any) will be assessed. It may prove necessary to accept a higher VOC material if the lower toxic content outweighs the release of VOC.**

Table 6 VOC Levels

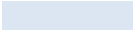

- 98. For the benefit of New-Building Specifications ONLY, if a paint system can offer cost benefits, but one part of it has a VOC level higher than the MOD(N) target value, this part of the scheme could be proposed on the assumption that it will be subsequently submitted for approval and inclusion in WARPAINT. In this instance, data will be required supporting the case, including a statement that the total VOCs to be emitted during application, will be equal to or less than when applying a paint scheme fully in accordance with the MOD(N) target values.

WHOLE SHIP SPECIFICATIONS

- 99. Whole Ship Specifications are being reviewed to better align with the Sumbarine ethos, further updates with be communicated in future editions of Warpaint.
- 100. The Whole Ship Specifications were submitted by seven major marine paint manufacturers / suppliers. **All** of these companies must be approached when tendering on a new build project to conform to EU competitive law and to achieve VFM for the taxpayer.

101. It is essential for acquisition teams to choose more than one company for an entire Class of RN vessel in order to engage more across all seven companies and put their differing products/technologies into service. New build paint specifications are no longer separately included as they so closely mirror upkeep, maintenance and repair.
- a. Submarine Systems ANNEX C does not use a Whole Boat Specification allowing freedom to use the most durable product from a multitude of companies. However, this does not prevent a Whole Boat Specification being presented and accepted.
 - b. The differing paint manufacturers 'Whole Ship Specification' are listed in alphabetical order and it is important to first determine your current paint supplier before ordering any specific coating. For example, there have been instances where coatings manufactured by Chugoku Paints (UK) Ltd have been ordered, simply because they are listed first (alphabetically) in the annexes.
 - c. The paint specifications in ANNEX B and ANNEX C are the recommendations of the respective paint manufacturers. They are based on performance requirements, VOC and health and safety criteria of MOD(N). They are not specifications prescribed by MOD(N) and their fitness for purpose remains the responsibility of the paint manufacturer.
102. To ensure that vessels allocated under the Whole Ship Specification concept receive paints from the selected supplier, their specific materials have been codified where necessary.

Annex Tables

103. Paint Products in the annex tables highlighted  with a Blue band do not fully meet MOD(N) criteria and are not to be used without prior confirmation from the relevant Platform Authority. Readers should always check their current approval status before applying.
104. Paint products in annex tables highlighted tables  highlighted with a Grey band have been categorised as B within the NAS Material Database. Those products Pending Assessment will also be highlighted grey.
105. Annex table explanations:
- a. These include Nominal Dry Film Thickness (NDFT) per coat in micrometres (μm), as well as both the minimum and maximum recoat intervals. The figures quoted are meant for guidance only. The manufacturers product data sheet should always be consulted.
 - b. The Wet Film Thickness (WFT) has been added alongside the Dry Film Thickness (DFT) for both ANNEX B and ANNEX C. The WFT is calculated with the following equation: $\text{WFT} = [(\text{DFT}) / (\text{Volume Solid } \%)] \times 100$. The Volume Solid percentage can be found in the TDS/PDS for that paint. In the same column there is both the NDFT and NWFT, the first value being the NDFT and the second value being the NWFT.
 - c. VOC grams per litre in the table highlighted thus in a box; do not comply with MOD VOC emission target levels.
 - d. Items with a '?' appearing in the boxes, indicate that manufacturer/supplier information is awaited.

- e. The paint manufacturers are listed in alphabetical order under each Ship and Submarine Area in ANNEX B and C as follows:
 - i. Acotec N.V
 - ii. Chugoku Paints (UK) Ltd
 - iii. Hempel Paints Ltd
 - iv. International Paint Ltd
 - v. Jotun Paints (Europe) Ltd
 - vi. Maker Coating Systems Ltd
 - vii. PPG Protective & Marine Coatings
 - viii. Sherwin Williams Protective & Marine Coatings
- f. NATO Stock Numbers (NSN's) for each manufacturer's products, where available, are listed in ANNEX D.
- g. BR 1326 – In the Specialist Coatings table 'N/A' depicts either not for use on Submarines or only assessed to be used on Submarines externally to the pressure hull.
- h. In ANNEX C where a coating has the designation EXT in the BR 1326 column it means that the coating has not been assessed and can only be used externally to the pressure hull.
- i. Breathable atmosphere (Axxxx) reference numbers are taken from the Submarine Material Toxicity Database discussed in paragraph 113.

106. LCUs and LCVP's

- a. In general, LCU's and LCVP's follow the Whole Ship Specifications except for Above Water Hull coatings where Chemical Agent Resistant Coatings (CARC) and Infra-Red Resistant coatings (IRR) are specified. For advice, review of proposed Paint Specifications and queries in relation to these vessels contact [DESShips-ENG-TEs-husbandry](#) or DESShipsWSpt-Amph-LC-TLM.

107. All information in the Annex tables was correct on the 30/04/2024.

SUBMARINE SPECIFICATION

- 108. Acceptable paint specifications are outlined in ANNEX C, together with a list of other acceptable materials.
- 109. SDA-IS-Struc3 Tel. No. 030 015 51130, is the Structures & Coatings POC for In-Service Submarines.
- 110. SDA-DNA-HullOutf2 Tel. No. 030 016 18097, is the Structures & Coatings POC for Future Submarines.
- 111. SDA-P-ENG-WB-Con3 Tel. No. 0300 157 1688, is the Structures & Coatings POC for Astute Class.
- 112. SDA-P-ENG-SP1, Tel. No. 0300 152 7984, is the POC for ANNEX C area S28 Lilo/Payload Bay Chamber.

113. BR 1326 Classification can be found in the ‘Submarine Material Toxicity Database’ located here - <http://www.tes-ssg-smt.d.r.mil.uk> SDA-TG-NATG-SMAtm-Tox is the sponsor of the hazard assessment process in line with the requirements set for submarine atmosphere control – This process is documented in BR 1326 Chapter 6. SDA-NATG-SMAtm-Tox has the responsibility for assessing materials for internal submarine use. Enquiries regarding material assessments should therefore in the first instance be directed to SDA-NATG-SMAtm-Tox at MOD Abbeywood South, Bristol, BS34 8JH. Tel. 030 679 35045.

Code	Hazard Category
BLI	Build / Maintenance
U	Hazards Unknown
S	Superseded
BCI / E / CF / CI	Controlled Item
03 YR	3 Year Review Pending
W	Withdrawn
V	Prohibited

Table 7 BR 1326 Edition 7 Hazard Categories

114. Detailed information on the BR1326 hazard categories can be found in chapter 6 annex B.
115. No painting is to be completed within the 10 days prior to closing the hatch and sailing to allow for products to dry and the atmosphere to be maintained as per BR1326.
116. In-Service Submarines then have to be contacted and provide a risk assessment to the whole boat, and Clearance for Use (CFU) of a product (This is for Vanguard, Trafalgar, and Astute classes). CFU is obtained through the nominated ISM Platform Safety Co-ordinator, SDATel (S4B). +44(0)300 168 5635.
117. Not all of the Astute class has been adopted by in service submarines so Clearance for Use can be sought from the Design Authority – BAE systems.
 Mr Steven Richardson
 Engineer Manager – Materials Assurance
 BAE Systems Submarines
 Phone: 01229 872657
 Email: steven.richardson4@baesystems.com
118. “WHOLE SHIP SPECIFICATIONS” & “SUBMARINE SYSTEMS” Annexes do not cover Specialist areas. Specialist coatings & their location of use can be found in ANNEX A.
119. Cleaning Materials and Rust Removers:
- [DESShips-ENG-TES-husbandry](#) is the Ship Husbandry (Inc. Paint) & Habitability desk officer. All enquiries regarding cleaning materials and rust removers should be emailed to [DESShips-ENG-TES-husbandry](#) alternatively telephone 030 679 35047.
 - BR2203 Ship Husbandry Manual dated Feb 2015 is now available on DII - http://web.apps.royalnavy.r.mil.uk/fpgo/BRd_0001_4999/BRd_2203/BRd_2203/01_Homepage.html

COATING SUPPLIERS CONTACT DETAILS:

Name	Manufacturer	Contact Details
Coppercoat	Aquarius Marine Coatings Ltd	Tel 01258 861059
BIOFIX 561LT	Maker Coating Systems Ltd	Tel 01392 822600
Interzone 101	International Paints	Tel 01489 775060
Alocit & Enviropeel	A&E Group	Tel 01362 694915
Chemi-Tech UW	Thortex Ltd	Tel 01609 780170
MMP Repairite	MMP International	Tel 08704 587781
Belzona	Belzona Polymerics Ltd	Tel 01423 567641
S*59	Trimite	Tel 01895 201444
IP3-6***	Indestructible Paint	Tel 01217 022485
Zinga	Maker Coating Systems Ltd	Tel 01392 822600
Subsea Industries	Sub Sea Industries	Tel +32 32135318
Gummipaint-Orange	Maker Coating Systems Ltd	Tel 01392 822600
Back to Nature VIII	N A Robson Ltd	Tel 01253 393406
Corroglass & Polyglass	Corrocoat Ltd	Tel 01132 760760
Kansai & ARC	Cactus Industrial Ltd	Tel 01698 591635
RapidShield	Quaker Chemical Ltd	Tel 01453 820800
ANNEX D paints	Acotec	Tel TBC
ANNEX D paints	Hempel Paints	Tel 01633 874024
ANNEX D paints	PPG	Tel 01924 354591
ANNEX D paints	Sherwin Williams	Tel 01204 556420
ANNEX D paints	Jotun Paints	Tel 01724 400000
ANNEX D paints	Chugokui	Tel 02077 780021

Table 8 Coating Supplier Contact Details

REFERENCES

BR1326 Air Purification in Submarines

BR2203 Ship Husbandry Manual

BR3939 Hull Preservation Processes

ISO 12944 Paints and varnishes — Corrosion protection of steel structures by protective paint systems

Def Stan 05-133 Methods for Testing Paints, Chemicals and Associated Products Part 1 Paints

Def Stan 07-247 Selection of materials on the basis of their fire characteristics

Def Stan 80-208 Paint, finishing, polyurethane, multi-pack, IRR, chemical agent resistant, non-aircraft use, low VOC. Withdrawn December 2018

Def Stan 80-122 Issue 4 Powder Coating, High Durability, Stoving

Def Stan 80-134 Issue 6 Paint System, Anti-Slip for Ships Decking, Multi-Pack Type 1: Rough Texture (Flight Decks, Hangar Decks and Weather Decks) Type 2: Smooth Texture and Deck Markings.

Def Stan 80-225 Paint system, low VOC, single or multi-pack.

DSA02 DMR Defence Maritime Regulations for Health, Safety and Environmental Protection

FP14-31-000 Control of diving operations in the dockyard port of Plymouth.

HSE Diving at Work Regulations 1997

International Convention on the Control of Harmful Anti-Fouling Systems on Ships 2001

IMO Resolution MEPC.331(76) Amendments to the International Convention on the Control of Harmful Anti-Fouling Systems on Ships 2001

IMO Resolution MEPC 378(80) 2023 Guidelines for the control and management of ships biofouling to minimize the transfer of invasive species

MOD Diving Policy

MAP 01-026 SURFACE SHIP HULL FOULING MANAGEMENT

RNTM_04-018_23 Procedure for shipboard monitoring of hull fouling

RNTM 04-032-19 Hull Cleaning in HMNB Portsmouth

RNTM_06-004/24 Guidance on the Management of Biofouling on Royal Navy Surface Ships

STANAG 1278 and ANEP 88 'Standard for the Required Level and Measurement of Coefficient of Friction on Flight Decks'

ANNEX A: SPECIALIST COATINGS AND PAINT REMOVERS

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
<u>A1 - ANTIFOULING FOR "ARCHER" CLASS & YACHTS</u>				
<u>Aquarius Marine Coatings Ltd</u> CopperCoat	Anti-Fouling	0	N/A	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
<u>A2 - RUDDER, STABILISERS & "A" FRAMES</u>				
Repair				
<u>Belzona</u> BELZONA 1311 Ceramic R-Metal (Fill and fair)	Epoxy	0	N/A	99-598-6837

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
<u>A3 - RUDDER, STABILISERS & "A" FRAMES</u>				
Cavitation Protection				
<u>Belzona</u> BELZONA 1341 Supermetalgilde (Cavitation protection) (2 coats. 3 coats if blasting prior to application of anti-foul)	Epoxy	5	N/A	99-322-3979
<u>Hempel Paints Ltd</u> Hempadur Multi-strength GF 35870	Epoxy	200	N/A	8010-99-861-4230
<u>Jotun</u> Marathon IQ 2	Epoxy	42	N/A	TBC
<u>PPG Protective & Marine Coatings</u> Sigmashield 1200	Epoxy	143	N/A	TBC
<u>Subsea Industries</u> Ecoshield	Glass Flake Reinforced Vinyl Ester	240	N/A	TBC

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
<u>A4 - HULL (Underwater-Applied Coatings) GENERAL REPAIR</u>				
<u>Alocit</u> ALOCIT 28.15	Epoxy	0	N/A	99-248-4702
<u>Belzona</u> BELZONA 5831	Epoxy	0	N/A	8010-99-980-0440
<u>Cactus Industrial</u> KANSAI SURESEAL 1208UWE	Epoxy Mastic	25	N/A	8010-99-847-3498
<u>International Paints Ltd</u> INTERZONE 101 Trowel Grade – WARNING: Contains Silica	Epoxy	0	N/A	99-915-9726
<u>Maker</u> BIOFIX 561 LT Black – Kevlar reinforced	Epoxy	0	N/A	99-133-9985

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
<u>A5 - HULL – LINK COATS FOR FOUL RELEASE PAINT</u>				
<u>International Paints Ltd</u> Link Coat for INTERSLEEK 737: INTERSLEEK 7180	Silicone	377	N/A	99-593-3810

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
<u>A6 - HPSW INTERNAL COATING FOR INTAKE PIPEWORK</u>				
<u>Belzona</u> BELZONA 1341	Epoxy	5	N/A	99-322-3979

Maker Coating				
Corroless RF35 Grey	Glass Flake Epoxy	93	N/A	99-337-0778
Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A7 - PEELABLE CORROSION-INHIBITING ENCAPSULATING MEMBRANE				
A&E Group Enviropeel E170 (External/Weather deck applications only. Not for internal use.)	Thermoplastic	0	PA	8030-99-598-8967
SPI Performance Coatings Ltd Staingard PF (Temporary coating for DSRV seat during maintenance periods only. Not a permanent fit to the submarine)		0	PA	TBC

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A8 - SEAWATER BALLAST TANK SPOT REPAIR				
Sherwin Williams Dura-Plate 301W	Epoxy	100 g/l	N/A	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A9 - FLIGHT DECK / DECK MARKINGS				
Chugoku Paints (UK) Ltd. Camideck Finish Type 1	Epoxy	374	U	See ANNEX D
Hempel Paints Ltd Hempels Non Skid 45340	Epoxy	347	U	See ANNEX D
Hempadur 45143	Epoxy	375	PA	See ANNEX D
International Paints Ltd INTERGARD 740	Epoxy	420	PA	See ANNEX D
Jotun Paints (Europe) Limited Hardtop CA	Acrylic	340	PA	See ANNEX D
Hardtop Optima	Poly-Siloxane	215	PA	See ANNEX D
PPG Protective & Marine Coatings Sigmacover 400	Epoxy	106	PA	See ANNEX D
Sigmadur 540	Epoxy Acrylic	411	PA	See ANNEX D
Sherwin-Williams Protective & Marine Coatings Epidek M377	Epoxy	330	PA	See ANNEX D
Macropoxy M262	Epoxy	354	PA	8010-99-133-8713

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A10 - LCU & LVCP – CARC & IRR A/W HULL FINISH				
Def Stan 80-208 has been replaced by Def Stan 80-225. Coatings to Def Stan 80-225 to be identified				
Trimite Trimite D00294			N/A	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A11 - NAVIGATION LIGHT ENCLOSURES Matte Black Finish				
International Paint Ltd INTERLAC 497	Alkyd Anti-Corrosive	391	N/A	See ANNEX D
[Primer – Intergard 5000 (150 DFT) & Tie-Coat – Intergard 263 (75DFT)]				
Sherwin-Williams Protective & Marine Coatings Kem-Kromik 155	Alkyd Anti-Corrosive	410	N/A	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A12 - INSTRUMENTS & ELECTRONIC EQUIPMENT PANELS				
Light Admiralty Grey BS381C 697				
Indestructible Paints				
IP3-6700 epoxy primer	Epoxy	350	A1	See ANNEX D
IP3-6971 epoxy finish	Epoxy	420	A1	See ANNEX D
Trimite				
Sp59 Primer	Stoved Epoxy	-	PA	8010-99-378-5631
S59 Topcoat	Stoved Epoxy	-	B	8010-99-564-4008

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A13 - GALVANISED STEEL & ZINC METAL SPRAYER (REPAIR)				
Hempel Paints Ltd				
Hempels Zinc Primer 16490	Zinc Phenoxy	567	PA	TBC
International Paints Ltd				
INTERZINC 22	Zinc Silicate	470	PA	99-927-5431
INTERZINC 72	Zinc Epoxy	410	PA	See ANNEX D
Maker Coatings				
Zinga	Polystyrene	539	PA	99-884-0220
PPG Protective & Marine Coatings				
Sigmazinc 19	Zinc Epoxy	584	PA	99-152-6131

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A14 - WOODWORK (High gloss, Clear, Protective finish)				
Chugoku Paints (UK) Ltd				
Spar Varnish	Varnish	433	PA	8010-99-157-1808
Hempel Paints Ltd				
Hempels Marine Varnish 02220	Alkyd	430	U	99-224-5783
International Paint Ltd				
Interlac 678	Alkyd	373	PA	99-328-9646
Jotun Paints (Europe) Limited				
Spontan Varnish	Urethane Alkyd	470	PA	99-161-6220
PPG Protective & Marine Coatings				
Sigmarine 42	Phenolic	393	PA	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A15 - CORROSION INHIBITOR GREASE				
Maker				
CORROLESS CCI 355	HD Grease	N/A	N/A	99-676-5736

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A16 - CONDUCTIVE GLANDS (QEC requirement)				
Parker Chomerics				
Cho-shield 610	Copper Epoxy EMI	591	N/A	5999-01-703-3871

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A17 - HEAT RESISTANT COATINGS (Below 175°C)				
International Paint Ltd (up to 250 °C)				
INTERTHERM 891	Oleoresinous Aluminium	425	PA	See ANNEX D
PPG Protective & Marine Coatings				
SIGMATHERM 500	Modified Alkyd	600	PA	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A18 - HEAT RESISTANT COATINGS (Above 250°C)				
Hempel Paints Ltd Galvosil 15700	Zinc Silicate	435	PA	99-593-8923
International Paint Ltd Intertherm 50	High Temp Silicone	495	A2	99-969-0549
PPG Protective & Marine Coatings Sigmatherm 500	Modified Alkyd	600	PA	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A19 - HEAT RESISTANT COATINGS (Above 400°C)				
International Paint Ltd Intertherm 50	High Temp Silicone	495	A2	99-969-0549
PPG Protective & Marine Coatings Sigmatherm 500	Modified Alkyd	600	PA	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A20 - SYSTEM FOR COATING NATURAL RUBBER MOUNTS <i>Applied by Mount OEM. Not to be touched up once fitted.</i>				

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A21 - PAINT REMOVER				
Indestructible Paints IPSTRIP 500	Biodegradable	N/A	N/A	TBC
N A Robson Ltd BACK TO NATURE VIII (not to be used on steel substrate)	Biodegradable	N/A	N/A	99-361-6273

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A22 - RUST STAIN REMOVER				
International Paint Ltd INTERPLUS 4101 (Yellow)	Biodegradable	N/A	N/A	8030-99-846-2819
INTERPLUS 4103 (Yellow) Corrosion source / issue must be rectified before use. 6 - 16hrs dwell time. Cover with Polythene to keep wet. Excessive orders require suitable justification.	Biodegradable	N/A	N/A	8030-99-369-2168

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A23 - SMTDUNIQUE IMMersed AREAS – PUMPS ETC				
Corrocoat Limited CORROCOAT ZIP E	Glass Flake Epoxy		N/A	See ANNEX D
POLYGLASS VE	Vinyl Ester Glass Flake		N/A	See ANNEX D
POLYGLASS VE HAND APPLIED	Vinyl Ester Glass Flake		N/A	See ANNEX D
POLYGLASS VEF	Vinyl Ester Glass Flake		N/A	See ANNEX D
POLYGLASS ZIPCOAT	Polyester Glass Flake		N/A	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A24 - MORDANT REAGENT				

Sherwin-Williams Protective & Marine Coatings MORDANT WASH L703 (Pre treatment for non-ferrous metals)	Blue Mordant Solution	307	N/A	6810-99-861-9824
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Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A25 - CLEANING DETERGENT				
Arrow Chemicals Ensign	Detergent Concentrate	0	N/A	6850-99-700-969

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A26 - DAMP SURFACE PRIMER				
PPG Protective & Marine Coatings Sigmacover 280	Anticorrosive	432	A1	8010-99-569-7697
Sherwin-Williams Protective & Marine Coatings Macropoxy M111	EpoxyZinc Phosphate	383	PA	8010-99-884-5957

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A27 - HANGAR DOORS FINISH				
HMG T-Phos 53 Pre-treatment	Primer	TBC	PA	TBC
Architectural Polyester 827 Series	Top Coat	TBC		TBC

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A28 - RUST INHIBITOR				
DURIEU S.A DURIEU RUSTOL OWATROL OIL	Alkyd resins	750	N/A	8030-14-605-5515

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A29 - EXTERNAL DECK BROW POSITIONS FOR MCM				
Belzona Belzona 4131 Magma Screed	Screed	N/A	N/A	8030-99-753-8764
Belzona 4911 Magma TX Conditioner	Resin	N/A	N/A	8030-99-811-6037
Belzona 5811 Immersion Grade	N/A	32	N/A	See ANNEX D
Belzona 9221 Surefoot Grit	Grit	N/A	N/A	5350-99-436-3070

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A30 - POWDER COATING (Internal)				
International Paints Ltd Interpon Redux Plus AL258F	Primer	TBC	A2	TBC
Interpon D1036 Satin (70)	Top Coat	TBC		TBC
PPG T-Phos 53 Pre-treatment	Primer	TBC	A2	TBC
Envirocron PCS P4 Series	Top Coat	TBC		TBC
Trimite T-Phos 53 Pre-treatment	Primer	TBC	A2	TBC
P9201	Top Coat	TBC		TBC

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
A31 - POWDER COATING (External)				
HMG T-Phos 53 Pre-treatment	Primer	TBC	N/A	TBC
Architectural Polyester 827 Series	Top Coat	TBC		TBC

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
<u>A32 - AIR CRAFT CARRIER METAL SPRAYED LANDING SPOT SEALANT</u>				
<u>Indestructible</u> CDCR2 Deck Coating	N/A	480	N/A	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
<u>A33 - DAZZLE PAINT SCHEME FOR OPV BATCH 1</u>				
<u>Hempel Paints Ltd</u> Hempels Pro Acrylic 55883	TBC	380	N/A	See ANNEX D

Specialist Systems/Materials	Generic Type	VOC g/l	NATG Cat	NATO Stock Number
<u>A34 - DAZZLE PAINT SCHEME FOR OPV BATCH 2</u>				
<u>International</u> Interfine 629 HS	Acrylic	339	N/A	See ANNEX D

ANNEX B: WHOLE SHIP SPECIFICATION

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
A&B and C								
<u>A&B – BELOW WATER HULL PRIMER</u>								
<u>C – ANTIFOULING FINISH (SELF POLISHING -SPC)</u>								
Colour - Red								
Chugoku	Primer: Bannoh 1500	Epoxy Primer	1	150/208	9 hrs	120 days	N/A	286
	Tie Coat: Bannoh 1500 RZ	Epoxy Tie Coat	1	100/156	8 hrs	5 days		319
	Finish: Sea Grandprix 1000L	Hydrolysing Silyl	2	150/268	5 hrs	#		408
Hempel	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	276
	Tie Coat: Hempadur 49183	Epoxy	1	TBC	TBC	TBC		397
	Finish: Hempels AF Globic 9000	SPC AF	2	100/172	10 hrs	#		370
Hempel (Diving Lines)	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	286
	Tie Coat: Hempadur 49183	Epoxy	1	TBC	TBC	TBC		397
	Finish: Hempassil 77300	Fouling Defence	1	150/225	TBC	#		287
International	Primer: Intergard 5000	Primer	1	175/213	12 hrs	2 months	N/A	155
	Tie Coat: Intergard 263	Epoxy Tie Coat	1	75/131	8 hrs	5 days		379
	Finish: Intersmooth 7460	SPC AF	2	125/231	12 hrs	28 days		425
Jotun	Primer: Jotacote Universal N10	Epoxy Primer	TBC	175/105	2 hrs	14 days	N/A	239
	Tie Coat: Safeguard Universal ES	Epoxy	1	75/161	10 hrs	3 days		330
	Finish: Seaquantum Ultra S	Hydrolysing Silyl	2	125/250	7 hrs	#		460
PPG Protective & Marine Coatings	Primer: Sigmaprime 700	Epoxy Tie coat	1	75	12 hrs	3 days	N/A	227
	Tie Coat: Sigmacover 555	Epoxy Tie coat	1	75	8 hrs	3 day		387
	Finish: Sigma Ecofleet 530	SPC AF	1	110/183	6 hrs	#		339

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
A&B and D A&B – BELOW WATER HULL PRIMER D – ANTIFOULING SYSTEM (Foul Release – FRC 5+ yr life) Colour - Red								
Chugoku (Can be used for Propeller & Rudder)	Primer: Bannoh 1500	Epoxy Primer	1	150/208	9 hrs	120 days	N/A	286
	Tie Coat: Bannoh 1500 RZ	Epoxy Tie Coat	1	100/156	8 hrs	5 days		319
	Finish: CMP Bioclean R	Silicone Elastomer	1	200/317	7 hrs	#		337
Chugoku (Biocide Free)	Primer: Bannoh 1500	Epoxy Primer	1	150/208	9 hrs	120 days	N/A	286
	Tie Coat: Bannoh 1500 RZ	Epoxy Tie Coat	1	100/167	4 hrs	#		385
	Finish: CMP Bioclean HB	Silicone Elastomer	1	200/253	#	#		261
Chugoku (Biocidal)	Primer: Bannoh 1500	Epoxy Primer	1	150/208	9 hrs	120 days	N/A	286
	Tie Coat: CMP Bioclean SG R	Epoxy Tie Coat	1	100/167	4hrs	#		385
	CMP Bioclean R	Silicone Elastomer	1	100/159	7hrs	#		337
	CMP Bioclean Plus	Silicone Elastomer	1	200	-	-		270
Hempel	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	276
	Tie Coat: Hempels Nexus II 27400	Silicon	1	100/175	#	#		400
	Hempasil X3+ 87500	Hydrogel Silicone	1	150/211	6 hrs	#		265

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Hempel (Repair)	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	276
	Tie Coat (Repair only): Hempassil Nexus X-Tend 27500	Silicone	1	120/185	8 hrs	48 hrs		259
	Hempassil X3+ 87500	Hydrogel Silicone	1	150/211	6 hrs	#		265
Hempel (Cold Water)	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	276
	Tie Coat: Hempels Nexus II 27400	Silicon	1	100/175	#	#		400
	Finish: Hempaguard X7 89900 (Cold Water)	Fouling Defence	1	150	6 hrs	48 hrs		262
Hempel (Warm Water)	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	276
	Tie Coat: Hempels Nexus II 27400	Silicon	1	100/175	#	#		400
	Finish: Hempaguard X7 89900 (Warm Water)	Fouling Defence	2	100	6 hrs	48 hrs		262
Hempel (Cold Water Repair only)	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	276
	Tie Coat (Repair only): Hempassil Nexus X-Tend 27500	Silicone	1	120/185	8 hrs	48 hrs		259
	Finish: Hempaguard X7 89900 (Cold Water)	Fouling Defence	1	150	6 hrs	48 hrs		262

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Hempel (Warm Water Repair only)	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	276
	Tie Coat (Repair only): Hempassil Nexus X-Tend 27500	Silicone	1	120/185	8 hrs	48 hrs		259
	Finish: Hempaguard X7 89900 (Warm Water)	Fouling Defence	2	100	6 hrs	48 hrs		262
Hempel (Divers Lines)	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	276
	Tie Coat: Hempels Nexus II 27400	Silicon	1	100/175	#	#		400
	Finish: Hempassil 77300	Fouling Defence	1	150/225	TBC	#		287
Hempel (Divers Lines Repair only)	Primer: Hempadur Quattro 17634	Epoxy Primer	2	125/173	6 hrs	90 days	N/A	276
	Tie Coat (Repair only): Hempassil Nexus X-Tend 27500	Silicone	1	120/185	#	#		400
	Finish: Hempassil 77300	Fouling Defence	1	150/225	TBC	#		287
International	Primer: Intergard 5000	Primer	2	125/152	12 hrs	2 months	N/A	155
	Tie Coat: Intersleek 737	Silicone	1	100/175	4 hrs	7 days		377
	Finish: Intersleek 1100SR	Slime Release Fluoropolymer	1	150/208	24 hrs	#		248
Jotun	Primer: Jotacote Universal N10	Epoxy Primer	1	175/105	2 hrs	14 days	N/A	239
	Tie Coat: Safeguard Universal ES	Epoxy	1	75/161	10 hrs	3 days		330
	Finish: Seaquest	AF Foul Release	1	170/225	#	#		247

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
PPG Protective & Marine Coatings	Primer: Sigmaprime 700	Epoxy Tie coat	1	75	12 hrs	3 days	N/A	227
	Tie Coat: Sigmaglidle 790	Silicone Tiecoat	1	150/190	12 hrs	5 days		187
	Finish: Sigmaglidle 1290	Silicone Foul Release	1	180	#	#		118

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
A&B and F								
<u>A&B – BELOW WATER HULL PRIMER</u>								
<u>F – BOOTTOP ANTIFOULING FINISH (SPC)</u>								
Colour - Black								
Chugoku	Primer: Bannoh 1500	Epoxy Primer	1	150/208	9 hrs	120 days	N/A	286
	Tie Coat: Bannoh 1500 RZ	Epoxy Tie Coat	1	100/156	8 hrs	5 days		319
	Finish: Sea Grandprix 660 HS	SPC AF	1	150/224	5 hrs	#		324
Hempel	Primer: Hempadur Quattro 17634	Epoxy Primer	1	125/173	6 hrs	90 days	N/A	276
	Tie Coat: Hempadur 49183	Epoxy	1	TBC	TBC	TBC		397
	Finish: Hempels AF Globic 9000 78952	SPC AF	2	100/172	10 hrs	#		370
Hempel (Divers Lines)	Primer: Hempadur Quattro 17634	Epoxy Primer	1	125/173	6 hrs	90 days	N/A	276
	Tie Coat: Hempadur 49183	Epoxy	1	TBC	TBC	TBC		397
	Finish: Hempasil 77300	Fouling Defence	1	150/225	TBC	#		287
International	Primer: Intergard 5000	Primer	1	175/213	12 hrs	2 months	N/A	155
	Tie Coat: Intergard 263	Epoxy Tie Coat	1	75/132	8 hrs	5 days		379
	Finish: Interspeed 6400	SPC AF	2	60/100	6 hrs	#		358
Jotun	Primer: Jotacote Universal N10	Epoxy Primer	TBC	175/105	2 hrs	14 days	N/A	239
	Tie Coat: Safeguard Universal ES	Epoxy	1	75/161	12 hrs	4 days		359
	Finish: Seaquantum Classic S	Silyl SPC AF	1 or 2	150/300	7 hrs	#		460
PPG Protective & Marine Coating	Primer: Sigmaprime 700	Epoxy Tie coat	1	75	12 hrs	3 days	N/A	227
	Tie Coat: Sigmacover 555	Epoxy Tie Coat	1	75	8 hrs	3 days		387
	Finish: Sigma Ecofleet 530	SPC AF	1	110/183	6 hrs	#		339

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
G&H and J Area G & H – ABOVE WATER HULL AND SUPERSTRUCTURE & PRIMER Area J – ABOVE WATER HULL & SUPERSTRUCTURE FINISH Colour – Light Weatherwork Grey BS381C 676								
Hempel	Primer: Hempadur Quattro 17634	Epoxy Primer	2	150/208	6 hrs	90 days	PA	276
	Finish: Proacrylic 55883	Acrylic	1	50/89	12 hrs	#		380
International	Primer: Intergard 5000	Primer	2	150/183	12 hrs	14 days	A1 (Without Tie Coat)	155
	Optional Tie Coat: Intergard 263	Epoxy Tie Coat	1	75/132	8 hrs	5 days		379
	Finish: Interfine 878	Polysiloxane	1	50/69	4 hrs	#		246
Jotun	Primer: Jotamastic 80	Anticorrosive	2	200/250	10 hrs	#	PA	145
	Finish: Hardtop CA	Acrylic	1	75/125	5 hrs	#		340
PPG Protective & Marine Coating	Primer: Sigmacover 400	Epoxy	2	125/147	16 hrs	3 months	PA	106
	Finish: PSX 700	Polysiloxane	1	75/83	13 hrs	unlimited		164
Sherwin Williams Protective & Marine Coatings	Primer: Macropoxy C425V2	Epoxy Zinc Phosphate	2	100/133	4 hrs	#	PA	186
	Tie Coat: Sherwin M671	Tie Coat	1	35/67	4 hrs	#		380
	Finish: Kem-Kromik A165	Silicone Alkyd	1	35/69	16 hrs	#		407
Sherwin Williams Protective & Marine Coatings	Primer: Macropoxy C425V2	Epoxy Zinc Phosphate	2	100/133	4 hrs	#	A1	186
	Finish: Acrolon 1850	Acrylic Epoxy	1	75/125	3 hrs	#		345

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area K								
FLIGHT AND WEATHERDECK SYSTEMS – DEF STAN 80-134								
Colour – Flight Deck (Extra Dark Sea Grey BS381C) Hanger Deck (Dark Admiralty Grey BS 381C)								
Chugoku (Hanger and Weather deck)	Primer: Umeguard HS	Epoxy	1	125/162	7 hrs	#	PA	158
	Finish: Camideck Finish type 1	Non Skid	2	190/352	6 hrs	30 days		414
	Hanger Deck Repair: Camideck Repair Kit Type 1	Non Skid						
Hempel (Hanger and Weather deck)	Primer: Hempadur 45880 MIO 12430	Epoxy	1	100/125	7 hrs	#	PA	198
	Finish: Hempels Non-skid 45340	Non Skid	2	200/317	6 hrs	30 days		335
	Repair: Hempels deck Repair Kit 942 GB ¹							
International (Flight and Weather deck)	Primer: Intergard 5000	Primer	1	150/183	12 hrs	14 days	A1	155
	Finish: Intershield 851	Non Skid	2	300/390	16 hrs	#		169
International (Hangar and Weather deck)	Primer: Intergard 5000	Primer	1	150/183	12 hrs	14 days	A1	155
	Hanger Deck Finish: Intershield 852	Non Skid	2	200/267	12 hrs	#		134
Jotun (Flight and Weather deck)	Primer: Jotamastic 87	Epoxy Primer	1	150/183	10 hrs	#	PA	150
	Finish: Jota Armour	Anti-Corrosive	2	375/417	14 hrs	#		70
Sherwin Williams Protective & Marine Coatings (Flight and Weather deck)	Primer: Macropoxy C425V2	Epoxy Zinc Phosphate	1	125/167	4 hrs	#	PA	186
	Finish: Epidek M339		2	200/282	4 hrs	#		250
	Repair: Epidek M339			282	4 hrs	#	250	

¹ Ordered through Maker Coatings

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area L&M INTERIOR DRY COMPARTMENTS Colour - Ash Grey BS4800 00A01								
Acotec	Humidur FP	Epoxy	1	400/400	24 hrs	Unlimited	A1	0
International	Primer: Intergard 5000	Primer	1	125/152	12 hrs	#	B	155
	Finish: Intergard 1735	Waterborne Epoxy	1	50/100	12 hrs	#		132
Sherwin Williams	Primer: Macropoxy C425V2	Epoxy Zinc Phosphate	1	125/167	5 hrs	#	PA	186
	Finish: Sher-Cryl M770	Sealercoat	1	25	3 hrs	#		78

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area N&O								
<u>INTERIOR WET COMPARTMENTS</u>								
Colour - Ash Grey BS4800 00A01 or BS381C 676 (Citadel lobbies)								
Acotec	Humidur FP	Epoxy	1	400/400	24 hrs	Unlimited	A1	0
International	Primer: Intergard 5000	Primer	1	125/152	24 hrs	#	B	198
	Finish: Intergard 1735	Waterbourne Epoxy	1	50/100	12 hrs	#		27
PPG Protective & Marine Coating (Cleansing Station)	Primer: Sigmacover 400	Epoxy	1	100/118	16 hrs	#	PA	106
	Finish: PSX 700	Polysiloxane	1	125/139	4.5 hrs	#		120
Sherwin Williams Protective & Marine Coatings	Primer: Macropoxy C425V2	Epoxy Zinc Phosphate	1	125/167	5 hrs	#	PA	186
	Finish: Macropoxy M630V2	Epoxy	1	75/150	24 hrs	#		0
Sherwin Williams Protective & Marine Coatings (Magazine Finish)	Primer: Macropoxy C425V2	Epoxy Zinc Phosphate	1	125/167	5 hrs	#	PA	186
	Finish: Macropoxy M630V2	Epoxy	1	75/150	24 hrs	#		0

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area P INTERIOR DECKS Colour - Green BS4800 14C39								
Acotec	Humidur FP	Epoxy	1	400/400	24 hrs	Unlimited	A1	0
Hempel (Cleansing Station)	Primer: Hempadur 45880 MIO 12430	Epoxy	1	125/156	7 hrs	#	PA	198
	Finish: Hempadur 45143	Epoxy	1	100/167	8 hrs	#		375
International	Primer: Intergard 5000	Primer	1	125/152	24 hrs	#	A1	155
	Finish: Intergard 1735	Epoxy	1	50/100	12 hrs	#		132
International (Cleansing Station)	Primer: Intergard 5000	Primer	1	125/152	24 hrs	#	A1	155
	Finish: Interfine 979	Polysiloxane	1	125/164	4 hrs	#		165
PPG Protective & Marine Coating	Primer: Sigmacover 400	Epoxy	1	100/118	16 hrs	3 months	PA	163
	Finish: Sigmacover 400	Epoxy	1	100/118	16 hrs	3 months		163
Sherwin Williams Protective & Marine Coatings	Primer: Macropoxy C425V2	Epoxy Zinc Phosphate	1	125/167	5 hrs	#	PA	186
	Finish: Macropoxy M630V2	Epoxy	1	75/150	24 hrs	#		0

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area Q BATTERY COMPARTMENTS Colour - Ash Grey BS4800 00A01								
International	Primer: Intergard 5000	Primer	1	150/183	12 hrs	#	B	155
	Finish: Intergard 1735	Waterborne Epoxy	1	50/100	12 hrs	#		132
Sherwin Williams	Primer: Macropoxy C425V2	Epoxy Zinc Phosphate	1	100/133	4 hrs	#	PA	197
	Finish: Macropoxy M630V2	Epoxy	1	75/150	24 hrs	#		0

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area R CABLE LOCKERS AND COFFERDAMS Colour – White RAL 9010								
Acotec	Humidur FP	Epoxy	1	400/400	24 hrs	Unlimited	A1	0
Chugoku	Bannoh 1500	Epoxy Primer	1	125/171	9 hrs	120 days	PA	286
International	Intergard 5000	Primer	1	150/183	12 hrs	#	B	155
Jotun	Jotacote Universal N10	Epoxy Primer	2	150/TBC	2 hrs	14 days	A1	239
Sherwin Williams	Macropoxy L524	Epoxy	2	125/195	12 hrs	#	PA	296

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area S								
BLACK/GREY & WATER BALLAST TANKS IMO PSPC								
Colour – Grey (manufacturer standard colour)								
Chugoku	Bannoh 1500	Epoxy Primer	2	160/219	9 hrs	120 days	N/A	286
	Spot Repair: CMP NOVA 5000 Barrier	MIO Epoxy	1	300/300	12 hrs	7 days		195
Hempel	Water Ballast: Hempadur Quattro 17634	Epoxy Primer	2	160/222	6 hrs	90 days	N/A	276
	Black & Grey Water: Hempadur 85671	Epoxy Phenolic	2	100/147	36 hrs	5 days		320
International	Water Ballast: Intergard 5000	Primer	2	160/195	12 hrs	3 months	N/A	155
	Black & Grey Water: Interline 850	Epoxy Phenolic	2	125/164	6 hrs	30 days		212
	Galley Grey Water: Interline 994		3	100/143	44 hrs	25 days		290
Jotun	Water Ballast: Balloxy HB Light	Anticorrosive	1	160/195	10 hrs	#	N/A	150
	Black & Grey Water: Tankguard Storage	Epoxy Phenolic	1	150/238	10 hrs	30 days		310
	Black & Grey Water: Tankguard DW	Epoxy	1	150/150	12 hrs	5 days		2
Maker	Corroless EPF	Epoxy	1	200	16 hrs	2 days	N/A	20
	Corroless RF35 Grey	Epoxy	1	200	16 hrs	3 days		18
PPG Protective & Marine Coatings	Black & Grey Water: Sigmashield 880	Polyamine	1	350	3.5 hrs	14 days	N/A	350
Sherwin Williams Protective & Marine Coatings	Water Ballast Tanks: Macropoxy L524	Epoxy	2	160/250	12 hrs	#	N/A	296

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area T <u>MACINERY SPACE BILGES</u> Colour – White RAL 9010								
Chugoku	Bannoh 1500	Epoxy Primer	2	125/171	9 hrs	30 days	PA	286
International	Finish: Intergard 5000	Primer	1	175/213	12 hrs	3 months	B	155
Sherwin Williams Protective & Marine Coatings	Macropoxy L524	Epoxy	2	125/195	12 hrs	#	PA	296
	Hygiene Coat: Macropoxy M630V2	Epoxy	1	75/150	12 hrs	#		0

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area U								
<u>AVCAT, DIESON, LUB & HYDRAULIC OIL TANKS SYSTEM DEF STAN 80-97 (HIGH SOLIDS)</u>								
Colour – White (Manufacturers standard colour)								
Chugoku	Epicon T-800	Epoxy Phenolic	2	125/192	16 hrs	21 days	N/A	359
Hempel	Hempadur 85671	Epoxy Phenolic	3	100/147	36 hrs	21 days	N/A	320
International	Interline 850	Epoxy Phenolic	2	125/164	6 hrs	30 days	N/A	212
Jotun	Tankguard Storage	Epoxy Phenolic	1	125/198	10 hrs	30 days	N/A	310
Maker	Corroless EPF	Epoxy	1	200	16 hrs	3 days	N/A	20
	Corroless RF35 White	Epoxy	1	200	16 hrs	3 days	N/A	34
PPG Protective & Marine Coatings	Sigmaguard CSF 650	Epoxy	1	350/350	24 hrs	20 days	N/A	143
Sherwin Williams Protective & Marine Coatings	Macropoxy M922	Epoxy	2	200	4 hrs	14 days	N/A	143

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area V								
<u>POTABLE WATER TANKS</u>								
Colour – White (manufacturers standard colours)								
Chugoku	Cleankeep 5000	Solvent Free Epoxy	1 (2)	300/300	32 hrs	14 days	N/A	0
Hempel	Hempadur 35560	Solvent Free Epoxy	2	200/200	24 hrs	30 days	N/A	0
International	Interline 925	Epoxy	1	300/300	18 hrs	3 days	N/A	1
Jotun	Tankguard DW	Epoxy	1	150/150	12 hrs	5 days	N/A	2
PPG Protective & Marine Coatings	Sigmaguard CSF 585	Epoxy	1	300	24 hrs	20 days	N/A	6

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area W								
<u>AQUEOUS FILM-FORMING FOAM (AFFF) TANKS</u>								
Colour – White (manufacturers standard colours)								
Chugoku	Epicon T-800	Epoxy Phenolic	2	125/192	16 hrs	21 days	N/A	359
Hempel	Hempadur 85671	Epoxy Phenolic	3	100/147	36 hrs	21 days	N/A	320
International	Interline 704	Epoxy	2	125/236	23 hrs	21 days	N/A	425
Jotun	Tankguard DW	Epoxy	1	150/150	12 hrs	5 days	N/A	2
Maker	Corroless EPF	Epoxy	1	200	16 hrs	2 days	N/A	20
	Corroless RF35 White	Epoxy	1	200	16 hrs	3 days		34
PPG Protective & Marine Coatings	Sigmaguard CSF 650	Epoxy	1	350/350	24 hrs	20 days	N/A	143

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area X								
<u>DEMINERALISED WATER TANKS (Max Temperature 90°C)</u>								
Colour – White (manufacturers standard colours)								
Chugoku	Epicon T-800	Epoxy Phenolic	2	125/192	16 hrs	21 days	N/A	359
Hempel	Hempadur 85671	Epoxy Phenolic	3	100/147	36 hrs	21 days	N/A	320
International	Interline 925	Epoxy	1	300/300	18 hrs	3 days	N/A	1
Jotun	Tankguard DW	Epoxy	1	125/125	10 hrs	30 days	N/A	2
Maker	Corroless EPF	Epoxy	1	200	16 hrs	2 days	N/A	20
	Corroless RF35 White	Epoxy	1	200	16 hrs	3 days		34
PPG Protective & Marine Coatings	Sigmaguard CSF 650	Epoxy	1	350/350	24 hrs	20 days	N/A	143

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area Y								
<u>EPOXY HOLDING PRIMER</u>								
Colour – See Annex D for available colours								
Hempel	Hempadur 15570	Epoxy	1	40/74	#	#	A2	420
International	Intergard 269	Epoxy	1	30/64	6 hrs	#	PA	420
PPG Protective & Marine Coatings	Sigmacover 280	Anticorrosive	1	50/88	8 hrs	TBC	A1	432

Manufacturer	System	Type	No. Of coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		NATG Category	VOC g/l
					Min	Max		
Area Z								
<u>PRIMERS FOR NON-FERROUS METALS & FRP</u>								
Colour – See Annex D for available colours								
Chugoku	Stainless Steel: Bannoh 1500	Epoxy Primer	1	125/171	9 hrs	120 days	PA	286
Hempel	Standard: Hempadur 15553	Epoxy	1	50/91	2 hrs	#	A2	388
International	Aluminium, Stainless Steel, Zinc Spray, Galvanise: Intergard 269	Epoxy Primer	1	30/64	6 hrs	#	PA	411
PPG Protective & Marine Coatings	Aluminium, Stainless Steel, Zinc Spray, Galvanise: Sigmacover 280	Anticorrosive	1	50/88	8 hrs	3 months	A1	432
	FRP Indicator Coat: Sigmacover 400	Epoxy	2	125/147	16 hrs	#	PA	106
Sherwin Williams Protective & Marine Coatings	Aluminium, Galvanise, Stainless Steel: Macropoxy L425	Epoxy Zinc Phosphate	1	35/58	5 hrs	#	PA	346

Notes:

1. The recoat intervals published above are based on the manufacturer's figures quoted for 20°C (Chugoku Paints, Hempel UK, Maker Coating Systems, PPG Protective & Marine Coatings), 23°C (Jotun Coatings, Sherwin Williams Protective & Marine Coatings) and 25°C (International Paints).
2. The number of coats stated in the above table, relate to airless spray application to achieve the stated nominal dry film thickness (NDFT). Should brush application be required for touch up and repair then additional coats may be necessary to achieve the required NDFT.
3. # = No recoat interval, see Manufacturer's Technical Data Sheet/Application Instructions for requirements.
4. It is important to ensure that surfaces are clean and free of contamination when overcoating materials, that have been left exposed, this is especially true for those products with an indefinite recoat interval.

ANNEX C: SUBMARINE SYSTEMS

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S1									
<u>PRESSURE HULL & SUPERSTRUCTURE PRIMER – Untiled Areas</u>									
Hempel Paints Ltd	Hempadur 45880	Epoxy	2	175/219	8 hrs	30 days	198	N/A	03 Yr (A7305)
International Paint Ltd	Intergard 5000	Primer	1	175/213	12 hrs	2 months	155	N/A	03 Yr (A5713)
Maker Coating Systems Ltd	Corroless EPF	Epoxy	2	200/-	16 hrs	3 days	80	N/A	03 Yr (A6857)
Sherwin Williams Protective & Marine Coatings	Macropoxy M922M	Epoxy	2	200/-	4 hrs	#	146	N/A	03 Yr (A6786)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S2a									
<u>ANTIFOULING SYSTEM(S) FOUL RELEASE / DEFENCE (FRC / FD) – Sonar Dome</u>									
Colour - Black									
Chugoku Paints (UK) Ltd	Primer: Bannoh 1500	Epoxy Primer	1	150/208	9 hrs	120 days	286	N/A	EXT
	Tie Coat: Bannoh 1500 RZ	Tie Coat	1	100/156	8 hrs	5 days	319	N/A	EXT
	Finish: CMP Bioclean R	Silicone Elastomer	1	100/154	4 hrs	24 hrs	278	N/A	EXT
Hempel Paints Ltd	Primer: Hempadur 15570	Epoxy	2	125/231	6 hrs	#	406	N/A	03 Yr (A2701)
	Tie Coat: Hempels Nexus II 27400	Silicone	1	100/175	#	#	400	N/A	EXT
	Finish: Hempaguard X7 89900	Fouling Defence	2	100/143	6 hrs	#	262	N/A	EXT
International Paint Ltd	Primer: Intershield 300	Epoxy	2	125/208	7 hrs	14 days	313	N/A	EXT
	Tie Coat: Intersleek 737	Silicone	1	100/175	4 hrs	7 days	377	N/A	EXT
	Finish: Intersleek 1100SR	Slime Release	1	150/208	24 hrs	#	248	N/A	EXT
PPG Protective & Marine Coatings	Primer: Sigmaprime 700	Universal Epoxy	1	125	4 hrs	60 days	313	N/A	EXT
	Tie Coat: Sigmaglide 790	Silicone Tie Coat	1	150/190	12 hrs	5 days	187	N/A	EXT
	Finish: Sigmaglide 1290	Silicone Foul Release	1	180/207	#	#	118	N/A	EXT

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S2b									
<u>ANTIFOULING SYSTEM(S) SELF POLISHING (SPC) – Sonar Dome</u>									
Colour - Black									
Chugoku Paints (UK) Ltd	Primer: Bannoh 1500	Epoxy Primer	1	150/208	9 hrs	120 days	286	N/A	EXT
	Tie Coat: Bannoh 1500 RZ	Tie Coat	1	100/156	8 hrs	5 days	319	N/A	EXT
	Sea Grandprix 660 HS	SPC AF	1	150/224	5 hrs	#	324	N/A	EXT
Hempel Paints Ltd	Primer: Hempadur 15570	Epoxy	2	125/231	6 hrs	#	406	N/A	03 Yr (A2701)
	Tie Coat: Hempels Nexus II 27400	Silicone	1	100/175	#	#	400	N/A	EXT
	Hempels AF Olympic+ (72950)	SPC AF	2	120/190	8 hrs	#	367	N/A	EXT
International Paint Ltd	Primer: Intershield 300	Epoxy	2	125/208	7 hrs	14 days	313	N/A	EXT
	Tie Coat: Intersleek 737	Silicone	1	100/175	4 hrs	7 days	377	N/A	EXT
	Interspeed 6400	SPC AF	2	90/150	6 hrs	#	358	N/A	EXT
PPG Protective & Marine Coatings	Primer: Sigmaprime 700	Universal Epoxy	1	125	4 hrs	60 days	313	N/A	EXT
	Tie Coat: Sigmaglide 790	Silicone Tie Coat	1	150/190	12 hrs	5 days	187	N/A	EXT
	Sigma Ecofleet 530	SPC AF	3	100/167	6 hrs	#	339	N/A	EXT

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S3									
<u>PRESSURE HULL & EXTERNAL SUPERSTRUCTURE FINISH</u> – Untitled areas									
Colour - Black									
Hempel Paints Ltd	Hempadur 49183	Epoxy	1	TBC	TBC	TBC	397	N/A	EXT
International Paint Ltd	Intergard 5000	Primer	1	125/152	12 hrs	2 months	155	N/A	03 Yr (A5713)
Maker Coating Systems Ltd	Corroless EPF	Epoxy	1	200/-	16 hrs	2 days	80	N/A	03 Yr (A6858)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S4									
<u>PERISCOPES & MASTS</u> – Visible portions outside the submarine									
Sherwin Williams Protective & Marine Coatings	Macropoxy L425	Epoxy Zinc Phosphate	1	35/-	5 hrs	#	346	N/A	BLI (A0565g)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S5 SUPERSTRUCTURE CASING – General steelwork Colour - Black									
Hempel Paints Ltd	Primer: Hempadur 45880 MIO 12430	Epoxy	1	175/219	8 hrs	30 days	198	N/A	03 Yr (A7305)
	Finish: Hempadur 49183	Epoxy	1	TBC	TBC	TBC	397		EXT
International Paint Ltd	Primer: Intergard 5000	Primer	1	175/213	12 hrs	2 months	155	N/A	03 Yr (A5713)
	Finish Intergard 5000 Black	Primer	1	125/152	12 hrs	2 months	155		03 Yr (A5713)
PPG Protective & Marine Coatings	Sigmacover 400	Epoxy	2	125/147	16 hrs	#	106	N/A	03 Yr (A6852)
Sherwin Williams Protective & Marine Coatings	Primer: Macropoxy M922M	Epoxy	2	200/-	4 hrs	#	146	N/A	03 Yr (A6786)
	Finish: Macropoxy M922	Epoxy	2	200	4 hrs	14 days	143		03 Yr (A6840)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S6 WALKWAYS ON CASING – Colour - Black									
Hempel Paints Ltd	Primer: Hempadur 45880 MIO 12430	Epoxy	1	100/125	7 hrs	6 hrs	168	PA	03 Yr (A7305)
	Finish: Hempels Non-Skid 45340 Type 1	Non Skid	2	200/317	6 hrs	30 days	335		03 Yr (A7264)
International Paint Ltd	Primer: Intergard 5000	Primer	1	150/183	12 hrs	4 days	144	B	03 Yr (A5713)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S7 INTERNAL DRY SPACES – Colour - White									
International Paint Ltd	Primer: Intergard 5000	Primer	1	125/152	12 hrs	#	155	A1	BLI (A5713)
	Finish: Intergard 1735	Waterborne Epoxy	1	50/100	12 hrs	#	132		BLI (A7312)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S8 INTERNAL WET COMPARTMENTS – (Complete Re-preservation) Colour - White									
International Paint Ltd	Primer: Intergard 5000	Primer	1	125/152	12 hrs	#	155	A1	BLI (A5713)
	Finish: Intergard 1735	Waterborne Epoxy	1	50/100	12 hrs	#	132		BLI (A7312)
Sherwin Williams Protective & Marine Coatings	Macropoxy C425V2	Epoxy Zinc Phosphate	1	125/167	5 hrs	#	186	PA	03 Yr (A6836)
	Macropoxy M630V2	Epoxy	1	75/-	24 hrs	#	0		BLI (A6830)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S9 GROUP EXHAUST VALVES – (Consult SDA-IS-Struc3 due to lack of paints)									

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S10									
<u>DSRV SEATING</u> – (No painting should be attempted without consultation with SDA-IS-Struc3)									

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S11									
<u>INTERIOR PRESSURE HULL SURFACE</u> – Emergency Cooling Tanks (RR Approved)									
Colour - White/Light Grey									
Hempel Paints Ltd (S class soft and saddle tanks)	Galvosil 15700	Zinc Silicate	1	75/-	36 hrs	#	434	N/A	03 Yr (A1982)
International Paint Ltd (Trafalgar Class Jacket Tank)	Intergard 5000	Primer	2	125/152	12 hrs	3 month	155	N/A	03 Yr (A5713)
Maker Coating Systems Ltd (Trafalgar Class Hard Tank)	Corroless EPF	Epoxy	1	200/-	16 hrs	2 days	20	N/A	03 Yr (A6857)
	Corroless RF35 Grey	Epoxy	1	200/-	16 hrs	3 days	24		03 Yr (A1772)
Maker Coatings Systems Ltd (Trafalgar Class Jacket Tank)	Corroless EPF	Epoxy	1	200/-	16 hrs	3 days	20	N/A	03 Yr (A6857)
	Corroless RF35	Epoxy	1	200/-	16 hrs	3 days	24		03 Yr (A1772)
Maker Coating Systems (External Surfaces)	Corroless EPF	Epoxy	1	200/-	16 hrs	2 days	20	N/A	03 Yr (A6857)
	Corroless RF35	Epoxy	1	200/-	16 hrs	3 days	24		03 Yr (A1772)
PPG Protective & Marine Coatings (Trafalgar Class Hard Tanks)	Phenguard 965	Epoxy Phenolic	3	100/147	8 hrs	14 days	329	N/A	03 Yr (A7390)
PPG Protective & Marine Coatings (Vanguard Class High Pressure Decay Heat Removal Tank (HPDR))	Phenguard 965	Epoxy Phenolic	3	100/147	8 hrs	14 days	329	N/A	03 Yr (A7390)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
PPG Protective & Marine Coatings (Astute Class)	Phenguard 965	Epoxy Phenolic	3	100/147	8 hrs	14 days	329	N/A	03 Yr (A7390)
Sherwin Williams Protective & Marine Coatings (Trafalgar Class Jacket Tank)	Primer: Macropoxy M922M	Epoxy	2	200/-	4 hrs	#	146	N/A	03 Yr (A6786)
	Finish: Macropoxy M922	Epoxy	2	200	4 hrs	14 days	143		03 Yr (A6840)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S12 REACTOR COMPARTMENT - Colour - White									
International Paint Ltd (Penetration) (Silver Heat Resistant Aluminium)	Intertherm 50	High Temp Silicone	1-2	25/-	12 hrs	#	495	A2	03 Yr (A3501)
International Paint Ltd	Primer: Intergard 5000	Primer	1	125/152	12 hrs	#	155	B	BLI (A5713)
	Finish: Intergard 1735	Waterborne Epoxy	1	50/100	12 hrs	#	132		BLI (A7312)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S13 INTERIOR DECKS Colour - Green									
International Paint Ltd	Primer: Intergard 5000	Primer	1	125/152	12 hrs	#	155	A1	03 Yr (A5713)
	Finish: Intergard 1735	Waterborne Epoxy	1	50/100	12 hrs	#	132		03 Yr (A7312)
PPG Protective and Marine Coatings	Sigmacover 400	Epoxy	2	125/147	16 hrs	3 months	106	PA	03 Yr (A6849)
Sherwin Williams Protective & Marine Coatings	Macropoxy C425V2	Epoxy Zinc Phosphate	1	175/233	8 hrs	#	186	PA	BLI (A6836)
	Macropoxy M630V2	Epoxy	1	75/-	24 hrs	#	0		BLI (A6830)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S14 BATTERY COMPARTMENTS Colour - BS4800 00A01 Ash Grey									
International Paint Ltd	Primer: Intergard 5000	Primer	1	125/152	12 hrs	#	155	B	03 Yr (A5713)
	Finish: Intergard 1735	Waterborne Epoxy	1	50/100	12 hrs	#	132		03 Yr (A7312)
Sherwin Williams Protective & Marine Coatings	Macropoxy C425V2	Epoxy Zinc Phosphate	1	175/233	8 hrs	#	186	PA	BLI (A6836)
	Macropoxy M630V2	Epoxy	1	75/-	24 hrs	#	0		BLI (A6830)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S15 <u>MACINERY SPACE BILGES & MOUNTED MACHINERY RAFTS</u> Colour - Yellow									
Hempel Paints Ltd (Finish for Mounted Machinery Rafts)	Hempadur 45880	Epoxy	1	150/188	5 hrs	#	220	A2	03 Yr (A7305)
International Paint Ltd	Intergard 5000	Primer	1	175/213	12 hrs	3 months	155	B	03 Yr (A5713)
International Paint Lts (Finish for Mounted Machinery Rafts)	Primer: Intergard 5000	Primer	1	125/152	12 hrs	3 months	155	A1	03 Yr (A5713)
	Finish: Intergard 1735	Waterborne Epoxy	1	50/100	12 hrs	#	132		03 Yr (A7312)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S16									
<u>BULK FUEL & OIL, LUBE OIL, HYDRAULIC & LP AIR TANKS</u> – Def Stan 80-97 (High Solids)									
Colour - White or Grey									
Chugoku Paints (UK) Ltd	Cleankeep 5000	Solventfree Epoxy	1	300/300	48 hrs	14 days	0	N/A	BLI (A1687)
Hempel Paints Ltd	Hempadur 85671	Epoxy Phenolic	3	100/147	36 hrs	5 days	320	N/A	03 Yr (A7290)
International Paint Ltd	Interline 850	Epoxy Phenolic	2	125/164	8 hrs	30 days	212	N/A	03 Yr (A2052)
Jotun Paints (Europe) Limited	Tankguard Storage	Epoxy Phenolic	2	125/198	10 hrs	30 days	310	N/A	03 Yr (A7288)
Maker Coating Systems Ltd	Primer: Corroless EPF	Epoxy	1	200/-	16 hrs	2 days	20	N/A	03 Yr (A6857)
	Finish: Corroless RF35 White	Epoxy	1	200/-	16 hrs	3 days	34		03 Yr (A1772)
Sherwin Williams Protective & Marine Coatings	Macropoxy M922	Epoxy	2	200/-	4 hrs	14 days	143	N/A	03 Yr (A6840)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S17									
<u>POTABLE WATER TANKS</u>									
Chugoku Paints (UK) Ltd	Cleankeep 5000	Solvent Free Epoxy	1	300/300	48 hrs	7 days	0	N/A	BLI (A1687)
International Paint Ltd	Interline 925	Epoxy	1	300/300	48 hrs	3 days	1	N/A	03 Yr (A2236)
Jotun Paints (Europe) Limited	Tankguard DW	Epoxy	2	150/150	12 hrs	5 days	2	N/A	03 Yr (A4764)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S18 <u>SLOP DRAIN TANKS</u> – (Alternatives being sought) Colour - Grey									
Maker Coating Systems Ltd	Primer: Corroless EPF	Epoxy	1	200/-	16 hrs	2 days	20	N/A	03 Yr (A6857)
	Finish: Corroless RF35	Epoxy	1	200/-	16 hrs	3 days	18		03 Yr (A1772)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S19 <u>AFFF TANKS</u> – (Supplied with Demin water) Colour - (Grey or White)									
Chugoku Paints (UK) Ltd	Cleankeep 5000	Solvent Free Epoxy	1	300/300	48 hrs	14 days	0	N/A	BLI (A1687)
International Paint Ltd	Interline 704	Epoxy	2	125/236	23 hrs	21 days	425	N/A	03 Yr (A7286)
Jotun Paints (Europe) Limited	Tankguard DW	Epoxy	2	150/150	12 hrs	5 days	2	N/A	03 Yr (A4764)
Maker Coating Systems Ltd	Primer: Corroless EPF	Epoxy	1	200/-	16 hrs	2 days	20	N/A	03 Yr (A6857)
	Finish: Corroless RF35 Grey	Epoxy	1	200/-	16 hrs	3 days	18		03 Yr (A1772)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S20									
<u>DEMINERALISED WATER TANKS (Max Temperature 90°C) – (Inc. Hotwells, Surge, Reserve Feed, Made Water, Reactor Water Storage Tanks)</u>									
Consult 'DES SM PG-NavArch3b' for latest approved coatings									
Colour – Grey or White									
Chugoku Paints (UK) Ltd	Cleankeep 5000	Solvent Free Epoxy	1	300/300	48 hrs	14 days	0	N/A	BLI (A1687)
Maker Coating Systems Ltd	Primer: Corroless EPF	Epoxy	1	200/-	16 hrs	2 days	20	N/A	03 Yr (A6857)
	Finish: Corroless RF35 Grey	Epoxy	1	200/-	16 hrs	3 days	18		03 Yr (A1772)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S21									
<u>HOLDING PRIMER – (Blasted steel work)</u>									
Chugoku Paints (UK) Ltd	NZ Primer S	Epoxy	1	25/83	16 hrs	#	659	N/A	03 Yr (A7303)
Hempel Paints Ltd	Hempadur 15570	Epoxy	1	40/74	#	#	414	N/A	03 Yr (A2701)
International Paint Ltd	Intergard 269	Epoxy Primer	1	30/85	6 hrs	#	411	N/A	03 Yr (A5954)
Jotun Paints (Europe) Limited	Muki EPS	Epoxy	1	20/80	7 hrs	7 days	659	N/A	BLI (A4527)
Sherwin Williams Protective & Marine Coatings	Macropoxy L574	Epoxy Primer	1	25/42	3 hrs	#	594	N/A	03 Yr (A0565f)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S22 PRIMERS FOR NON-FERROUS METALS									
Hempel Paints Ltd (Aluminium, Stainless Steel, Zinc Spray & Galvanise)	Hempadur 15553	Epoxy	1	50/91	2 hrs	#	388	A2	03 Yr (A7272)
International Paints Ltd (Aluminium, Stainless Steel, Zinc Spray & Galvanise)	Intergard 276	Epoxy	1	30/64	6 hrs	#	411	A1	03 Yr (A7304)
PPG Protective & Marine Coatings	Sigmacover 400	Epoxy	2	125/147	16 hrs	3 months	106	PA	03 Yr (A6854)
Sherwin Williams Protective & Marine Coatings (Aluminium, Stainless Steel & Galvanise)	Macropoxy L425	Epoxy Zinc Primer	1	35/58	5 hrs	#	346	PA	BLI (A0565g)
Sherwin Williams Protective & Marine Coatings (Zinc Spray)	Macropoxy L574	Epoxy Primer	1	25/-	4 hrs	#	594	PA	03 Yr (A0565f)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S23 HIGH EROSION AREAS Colour - Black									
Hempel Paints Ltd	Hempadur Multi-Strength GF 35870	Epoxy	1	300/-	16 hrs	30 days	180	N/A	03 Yr (A2816)
International Paint Ltd	Interzone 505	GF Epoxy	1	300/-	6 hrs	4 days	157	N/A	03 Yr (A7293)
Maker Coating Systems Ltd	Corroless EPF	Epoxy	2	200/-	16 hrs	2 days	20	N/A	03 Yr (A6857)
Sherwin Williams Protective & Marine Coatings	Macropoxy M922	Epoxy	1	400/-	#	#	143	N/A	03 Yr (A6841)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S24 BENEATH TILING									
Maker Coating Systems Ltd	Corroless EPF	Epoxy	2	200/-	16 hrs	2 days	20	N/A	03 Yr (A6857)
Wessex Resins	UW46 Primer							N/A	BLI (A6862)
	UW 46 Adhesive								

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S25 SYSTEM FOR COATING NATURAL RUBBER MOUNTS (Applied by mount supplier not to be touched up once finished)									

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S26 INTERNAL NUTS & BOLTS AND TO FILL GAPS BETWEEN CANNING PLATES & LEAD SHIELDING									
Maker Coating Systems Ltd	Corroless CCI 355 Corrosion Inhibitor	HD Grease	1	N/A		N/A	N/A	N/A	03 Yr (A2738)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S27 <u>SEA WATER TANKS</u> Colour - Light Grey									
Chugoku Paints (UK) Ltd	Umeguard HS	Epoxy	2	160/208	15 hrs	10 days	108	N/A	03 Yr (A1650)
	Bannoh 1500	Epoxy Primer	2	160/219	19 hrs	30 days	286	N/A	03 Yr (A7302)
Hempel Paints Ltd	Hempadur Quattro 17634	Epoxy Primer	2	160/222	6 hrs	90 days	275	N/A	03 Yr (A7289)
International Paint Ltd	Intergard 5000	Primer	2	160/195	12 hrs	3 months	155	N/A	03 Yr (A5713)
Jotun Paints (Europe) Ltd	Balloxy HB Light	Anti-corrosive	2	160/195	10 hrs	#	150	N/A	BLI (A1156)
Maker Coating Systems Ltd	Corroless EPF	Epoxy	2	200/-	16 hrs	2 days	20	N/A	03 Yr (A6857)
Sherwin Williams Protective & Marine Coatings	Macropoxy L524	Epoxy	2	160/250	12 hrs	#	296	N/A	03 Yr (A6839)

Manufacturer	System	Type	No. of Coats	NDFT/NWFT Per coat (µm)	20°C Recoat Interval		VOC g/l	NATG Category	BR 1326
					Min	Max			
AREA S28 <u>LIL0 / PAYLOAD BAY CHAMBER (Internal)</u> Consult 'SDA-IS-Struc3b for latest approved coatings'									

ANNEX D: PRODUCT STOCK NUMBERS (NSNs) AND BR 1326 REFERENCES

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
A&E GROUP					
Enviropeel E170	N/A	03 YR (A5207)	0	10 Kg	8030-99-598-8967

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
ACOTEC					
Humidur FP	125	TBC	0	TBC	TBC

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
ALOCIT					
Alocit 28.15	N/A	N/A	0	TBC	99-248-4702
Biofix 561 Lt Black	N/A	N/A	0	7.5 ltrs	99-133-9985

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
AQUARIUS MARINE COATINGS LTD					
CopperCoat	N/A	N/A	0	0.5 ltrs	8010-99-298-0192
CopperCoat	N/A	N/A	0	1 ltrs	8010-99-349-7150

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
ARROW CHEMICALS					
Ensign	N/A	N/A	0	TBC	TBC

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
BELZONA					
Belzona 1311	N/A	N/A	0	2 Kg	99-598-6837
BELZONA 1341	N/A	BLI (A0704)	5	5 Kg	99-322-3979
Belzona 4911 Magma TX Conditioner	N/A	N/A	N/A	450 g	8030-99-811-6037
Belzona 4131 Magma Screed	N/A	N/A	N/A	20 Kg	8030-99-753-8764
Belzona 5811 Immersion Grade Grey	N/A	N/A	32	4 ltrs	8010-99-988-4411
Belzona 5811 Immersion Grade Grey	N/A	N/A	32	16 ltrs	8010-99-879-5781
Belzona 5811 Immersion Grade Beige	N/A	N/A	32	4 ltrs	8010-99-217-6523
Belzona 5811 Immersion Grade Beige	N/A	N/A	32	16 ltrs	8010-99-847-3518
Belzona 5831	N/A	N/A	0	20 ltrs	8010-99-980-0440
Belzona 9221 Surefoot Grit	N/A	N/A	N/A	2 x 2 Kg	5350-99-436-3070

Product	Ref	BR 1326	VOC g/l	Pack Size	NSN
CACTUS INDUSTRIAL					
Kansai Sureseal 1208UWE	N/A	N/A	25	1.125 ltrs	8010-99-847-3498

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
CHUGOKU PAINTS (UK) LTD					
BANNOH 1500 Grey	202a	03 YR (A7302)	286	20 ltrs	8010-99-594-2828
BANNOH 1500 Red Brown	202b	03 YR (A7302)	286	20 ltrs	8010-99-671-4223
BANNOH 1500 RZ Black	024b	EXT	319	5 ltrs	8010-99-217-5165
BANNOH 1500 RZ Black	024b	EXT	319	20 ltrs	8010-99-671-3957
BANNOH 1500 RZ Grey	024c	EXT	319	5 ltrs	8010-99-851-0865
BANNOH 1500 RZ Grey	024c	EXT	319	20 ltrs	8010-99-476-7885
BANNOH 1500 RZ Plum	024a	EXT	319	5 ltrs	8010-99-499-0158
BANNOH 1500 RZ Plum	024a	EXT	319	20 ltrs	8010-99-993-2082
Camideck Finish Type 1 Black	203	BLI (A7186)	374	20 ltrs	99-543-0790
Camideck Finish Type 1 Green	N/A	N/A	374	5 ltrs	99-543-0791
Camideck Finish Type 1 Red	N/A	N/A	374	TBC	99-543-0793
Camideck Finish Type 1 White	N/A	N/A	374	5 ltrs	99-541-9583
CAMIDECK Repair Kit Type 1	N/A	N/A	TBC	TBC	TBC
Cleankeep 5000	209	BLI (A1687)	0	20 ltrs	8010-99-846-9828
CMP BIOCLEAR HB Black	210a	EXT	261	20 ltrs	8010-99-157-0240
CMP BIOCLEAR HB Red Brown	210b	EXT	261	20 ltrs	8010-99-976-4197
CMP Bioclean Plus	095	EXT	207	TBC	TBC
CMP BIOCLEAR R Black	211a	EXT	325	16 ltrs	8010-99-447-2539
CMP BIOCLEAR R Red Brown	211b	EXT	325	16 ltrs	8010-99-157-0242
CMP Bioclean SG R	212	N/A	385	TBC	TBC
EPICON T-800 Grey	213b	N/A	359	20 ltrs	8010-99-846-9834
EPICON T-800 Red Brown	213a	N/A	359	20 ltrs	8010-99-753-5350
NZ PRIMER S Red Oxide	216	03 Yr (A7303)	659	20 ltrs	8010-99-595-6056
SEA GRANDPRIX 660 HS - Black	218c	EXT	324	20 ltrs	8010-99-994-0641
SEA GRANDPRIX 660 HS - Brown	218b	EXT	324	20 ltrs	8010-99-362-2214
SEA GRANDPRIX 660 HS - Light Brown	218a	EXT	324	20 ltrs	8010-99-877-2315
SEA GRANDPRIX 1000L Brown	217a	N/A	408	20 ltrs	8010-99-671-5989
SEA GRANDPRIX 1000L Light Brown	217b	N/A	408	20 ltrs	8010-99-350-3772
Spar Varnish	N/A	N/A	433	5 ltrs	TBC
Spot Repair CMP NOVA 5000 Barrier	219	N/A	0	20 ltrs	8030-99-847-0896
UMEGUARD HS Grey	220a	03 YR (A1650)	158	5 ltrs	8010-99-126-9478
UMEGUARD HS Silver	220c	03 YR (A1651)	158	5 ltrs	8010-99-264-0145
UMEGUARD HS White	220b	03 YR (A1650)	158	5 ltrs	8010-99-564-2409

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
CORROCOAT LIMITED					
Polyglass VE	N/A	N/A	TBC	10 ltrs	8010-99-217-6714
Polyglass VE	N/A	N/A	TBC	20 ltrs	8010-99-969-5393
Polyglass VEF	N/A	N/A	TBC	10 ltrs	8010-99-443-6326
Polyglass VEF	N/A	N/A	TBC	20 ltrs	8010-99-472-2809
Polyglass VE Hand Applied	N/A	N/A	TBC	5 ltrs	8010-99-887-2418
Polyglass VE Hand Applied	N/A	N/A	TBC	10 ltrs	8010-99-157-2220
Polyglass VE Hand Applied	N/A	N/A	TBC	20 ltrs	8010-99-616-1935
Polyglass Zipcoat	N/A	N/A	TBC	10 ltrs	8010-99-407-7618
M Zipcoat	N/A	N/A	TBC	20 ltrs	8010-99-753-9548
Corrocoat Zip E	N/A	N/A	TBC	5 ltrs	8010-99-258-6049
Corrocoat Zip E	N/A	N/A	TBC	10 ltrs	8010-99-357-9661
Corrocoat Zip E	N/A	N/A	TBC	20 ltrs	8010-99-879-5783

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
DURIEU S.A					
Durieu Rustol Owatrol Oil	N/A	N/A	750	20 ltrs	8030-14-605-5515

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
HEMPEL PAINTS LTD					
AF GLOBIC 9000 78952 Black 19990	223c	N/A	370	20 ltrs	8010-99-496-6897
AF GLOBIC 9000 78952 Brown 60600	223b	N/A	370	20 ltrs	8010-99-182-3980
AF GLOBIC 9000 78952 Red 51110	223a	N/A	370	20 ltrs	8010-99-894-2161
Galvosil 15700	222	03 Yr (A1982)	434	20 ltrs	8010-99-593-8923
Hempadur 15553 Grey 11320	227a	03 YR (A7272)	388	5 ltrs	8010-99-753-1967
Hempadur 15553 Grey 11320	227b	03 YR (A7272)	388	20 ltrs	8010-99-671-3559
Hempadur 15570 Light Grey 12430	229c	03 YR (A2701)	430	5 ltrs	8010-99-943-1152
Hempadur 35560 Cream 20320	230a	N/A	0	19.4 ltrs	8010-22-626-9620
Hempadur 35560 Red 50900	230b	N/A	0	19.4 ltrs	8010-99-310-1262
Hempadur 45143 BS4800 14C39	231c	N/A	330	5 ltrs	8010-99-471-1920
Hempadur 45143 Red 50630	231a	N/A	330	5 ltrs	8010-99-535-5832
Hempadur 45143 White 10000	231b	N/A	330	5 ltrs	8010-99-602-7280
Hempadur 45880 Black 19990	233	03 YR (A7305)	220	5 ltrs	8010-99-414-4162
Hempadur 45880 Black 19990	233	03 YR (A7305)	220	20 ltrs	8010-99-350-3748
Hempadur 45880 MIO Grey 12430	234	03 YR (A7305)	198	5 ltrs	8010-99-803-7233
Hempadur 45880 MIO Grey 12430	234	03 YR (A7305)	198	20 ltrs	8010-99-479-5449
Hempadur 45880 White	232	03 YR (A7305)	220	5 ltrs	8010-99-264-0387
Hempadur 49183	N/A	EXT	397	TBC	TBC
Hempadur 85671 Light Grey 11150	238a	03 YR (A7290)	320	20 ltrs	8010-99-980-9800
Hempadur 85671 Light Red 50900	238b	03 YR (A7290)	320	20 ltrs	8010-99-864-6001

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
Hempadur Multi-Strength GF 35870 Black 19990	240a	03 YR (A2816)	180	18 ltrs	8010-99-671-3685
Hempadur Multi-Strength GF 35870 Grey 11480	240b	03 YR (A2816)	180	18 ltrs	8010-99-861-4230
Hempadur Quattro 17634 Buff 22090	241b	N/A	276	20 ltrs	8010-33-210-7050
Hempadur Quattro 17634 Red 50630	241a	N/A	276	20 ltrs	8010-33-210-7049
Hempaguard X7 89900 Hydrogel c/w Biocides Black 19740	243a	EXT	262	20 ltrs	8010-22-635-5462
Hempaguard X7 89900 Hydrogel c/w Biocides Red 59161	243b	EXT	262	20 ltrs	8010-33-213-1342
Hempasil Nexus X-Tend 27500 Yellow 23410	246	N/A	259	20 ltrs	8010-99-850-1509
Hempasil X3+ 87500 Hydrogel Silicone Black 19990	247b	N/A	265	20 ltrs	8010-99-269-5072
Hempasil X3+ 87500 Hydrogel Silicone Red 59151	247a	N/A	265	20 ltrs	8010-99-846-3921
Hempasil 77300	N/A	N/A	287	5 ltrs	8010-99-217-5181
Hempels AF Olympic +	TBC	EXT	365	TBC	TBC
Hempels Deck Repair Kit 942 GB	N/A	N/A	N/A	N/A	99-471-2960
Hempels Marine Varnish 02220	N/A	N/A	430	5 ltrs	99-224-5783
Hempels Nexus II 27400 Light Grey 11070	061	EXT	400	20 ltrs	8010-99-969-4772
Hempels Non Skid 45340 Black	N/A	N/A	347	5 ltrs	99-351-4222
Hempels Non-Skid 45340 BS381C 632 Type 1	258	03 YR (A7264)	335	20 ltrs	8010-99-670-9581
Hempels Non Skid 45340 White	N/A	N/A	347	5 ltrs	99-323-1118
Hempels Non-Skid 45340 Type 1 Black	259	N/A	335	20 ltrs	8010-99-480-7979
Hempels Pro Acrylic 55883 BS381C 676	468a	N/A	380	20 ltrs	8010-99-157-4045
Hempels Pro Acrylic 55883 BS381C 676	468b	N/A	380	5 ltrs	8010-99-296-4348
Hempels Pro Acrylic 55883 Pale Green	468c	N/A	380	5 ltrs	8010-99-847-8033
Hempels Pro Acrylic 55883 Pale Green	468d	N/A	380	20 ltrs	8010-99-472-3498
Hempels Pro Acrylic 55883 Pigeon Blue	468e	N/A	380	5 ltrs	8010-99-245-8686
Hempels Pro Acrylic 55883 Pigeon Blue	468f	N/A	380	20 ltrs	8010-99-217-7447
Hempels Zinc Primer 16490	N/A	03 YR (A3328)	567	TBC	8010-22-615-7231

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
HMG					
Architectural Polyester 827 Series	N/A	N/A	TBC	TBC	TBC

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
INDESTRUCTIBLE PAINTS					
CDCR2 Deck Coating Black	N/A	N/A	480	4 ltrs	8010-99-493-5807
CDCR2 Deck Coating Black	N/A	N/A	480	12 ltrs	8010-99-865-8970
CDCR2 Deck Coating Blue	N/A	N/A	480	4 ltrs	8010-99-191-1639
CDCR2 Deck Coating Blue	N/A	N/A	480	12 ltrs	8010-99-616-2200
CDCR2 Deck Coating CAT	N/A	N/A	TBC	1 ltrs	8010-99-847-6608
CDCR2 Deck Coating Grey	N/A	N/A	480	4 ltrs	8010-99-959-6403
CDCR2 Deck Coating Grey	N/A	N/A	480	12 ltrs	8010-99-403-4431
CDCR2 Deck Coating White	N/A	N/A	480	4 ltrs	8010-99-157-3122
CDCR2 Deck Coating White	N/A	N/A	480	12 ltrs	8010-99-918-6159
IP3-6700 Epoxy Primer Green	N/A	03 YR (A7138)	350	1 ltrs	TBC
IP3-6700 Epoxy Primer Green	N/A	03 YR (A7138)	350	5 ltrs	TBC
IP3-6971 Epoxy Finish	N/A	03 YR (A7139)	420	1 ltrs	8010-99-436-3103
IP3-6971 Epoxy Finish	N/A	03 YR (A7139)	420	5 ltrs	8010-99-868-0774
Ipstrip 500	N/A	N/A	N/A	5 KG	8010-99-564-1047

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
INTERNATIONAL					
Interfine 629 HS Black	286a	N/A	336	5 ltrs	8010-99-375-3200
Interfine 629 HS BS381C 225	286b	N/A	336	5 ltrs	8010-99-957-7410
Interfine 629 HS BS381C 537	286c	N/A	336	5 ltrs	8010-99-535-9034
Interfine 629 HS Dark Weather Work Grey	TBC	N/A	339	5 ltrs	8010-99-959-5324
Interfine 629 HS Dark Weather Work Grey	TBC	N/A	339	20 ltrs	8010-99-258-5551
Interfine 629 HS Dazzle Grey	TBC	N/A	339	5 ltrs	8010-99-564-1369
Interfine 629 HS Dazzle Grey	TBC	N/A	339	20 ltrs	8010-99-564-1371
Interfine 629 HS Light Weather Work Grey	286d	N/A	339	5 ltrs	8010-99-920-5440
Interfine 629 HS Light Weather Work Grey	TBC	N/A	339	20 ltrs	8010-99-156-9062
Interfine 629 HS Medium Sea Grey	TBC	N/A	339	5 ltrs	8010-99-380-1890
Interfine 629 HS Medium Sea Grey	TBC	N/A	339	20 ltrs	8010-99-940-7153
Intergard 1735 Deep Base Yellow	469	03 Yr (A7312)	132	4 ltrs	8010-99-753-1954
Intergard 1735 WB BS4800 00A01	289a	03 Yr (A7312)	132	5 ltrs	8010-99-255-0527
Intergard 1735 WB BS381C 640	297	03 Yr (A7275)	132	5 ltrs	8010-99-702-0607
Intergard 1735 WB BS4800 14C39	289b	03 YR (A4417)	132	5 ltrs	8010-99-483-1994
Intergard 1735 White	289	03 Yr (A4417)	132	5 ltrs	8010-99-615-7042
Intergard 263 Tie Coat Light Grey	290a	N/A	379	20 ltrs	8010-99-133-3854
Intergard 269 Protective Primer	291a	03 Yr (A5954)	411	20 ltrs	8010-99-983-0743
Intergard 276 Grey	292a	03 YR (A7304)	411	20 ltrs	8010-66-158-8437
Intergard 276 White	292b	03 YR (A7304)	411	20 ltrs	8010-99-564-0695
Intergard 5000 Aluminium	293e	BLI NF (A8104)	220	20 ltrs	8010-99-846-1310

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
Intergard 5000 Black	293a	BLI NF (A8103)	155	20 ltrs	8010-99-345-8079
Intergard 5000 Buff	293c	BLI NF (A8102)	155	20 ltrs	8010-99-156-8012
Intergard 5000 BS 4800 00A01	293b	03 Yr (A7312)	155	5 ltrs	8010-99-000-5256
Intergard 5000 Green	293f	03 Yr (A5713)	155	5 ltrs	8010-99-555-1384
Intergard 5000 White	293d	03 Yr (A5713)	155	20 ltrs	8010-99-366-6762
Intergard 740 Black	N/A	N/A	420	5 ltrs	99-488-7443
Intergard 740 Black ECY999/A	294a	N/A	420	20 ltrs	8010-99-285-3824
Intergard 740 BS381C 640	294b	N/A	420	5 ltrs	8010-99-182-2627
Intergard 740 Green	N/A	N/A	420	20 ltrs	99-262-7677
Intergard 740 Red Oxide	N/A	N/A	420	5 ltrs	99-377-5457
Intergard 740 Signal Red	N/A	N/A	420	20 ltrs	8010-99-277-2965
Intergard 740 White	N/A	N/A	420	5 ltrs	99-773-8674
Intergard 740 Yellow	N/A	N/A	420	5 ltrs	99-969-1037
Interlac 497	N/A	N/A	391	5 ltrs	8010-99-875-8190
Interlac 497	N/A	N/A	391	20 ltrs	8010-99-157-1768
Interlac 678	N/A	03 YR (A2107)	373	5 ltrs	99-328-9646
Interline 704	299	03 YR (A7286)	385	20 ltrs	8010-99-555-6072
Interline 850 Grey	300b	03 YR (A6860)	212	20 ltrs	8010-99-690-8481
Interline 850 White	300a	03 YR (A2052)	212	20 ltrs	8010-99-669-8513
Interline 925	301	03 YR (A2236)	1	20 ltrs	8010-99-131-8010
Interline 925 Cream	302	03 YR (A2236)	1	20 ltrs	8010-99-216-8379
Interline 994 Buff	303d	N/A	290	20 ltrs	8010-99-391-4659
Interline 994 Buff	303c	N/A	290	5 ltrs	8010-99-379-1407
Interline 994 Grey	303b	N/A	290	20 ltrs	8010-99-238-9885
Interline 994 Grey	303a	N/A	290	5 ltrs	8010-99-258-5403
Interplus 4101 Yellow	N/A	N/A	N/A	25 ltrs	8030-99-846-2819
Interplus 4103 Yellow	N/A	N/A	N/A	25 ltrs	8030-99-369-2168
Interpon D1036 Satin (70)	N/A	N/A	TBC	TBC	TBC
Interpon Redux Plus AL258F	N/A	N/A	TBC	TBC	TBC
Intershield 300	306	EXT	386	10 ltrs	8010-99-151-9594
Intershield 851 Black	307a	N/A	169	10 ltrs	TBC
Intershield 851 BS381C 640	307b	N/A	169	20 ltrs	8010-99-391-0953
Intershield 852 Black	308a	N/A	134	5 ltrs	8010-99-250-1864
Intershield 852 BS381C 632	308b	N/A	134	5 ltrs	8010-99-149-8996
Intershield 852 BS381C 640	308c	N/A	134	5 ltrs	8010-99-583-1344
Intershield 852 Green	308e	N/A	134	5 ltrs	8010-99-871-6360
Intershield 852 Red	308f	N/A	134	5 ltrs	8010-99-666-9269
Intershield 852 White	308g	N/A	134	5 ltrs	8010-99-968-9269
Intersleek 1100SR Black	309	EXT	248	10 ltrs	8010-99-615-7741
Intersleek 1100SR Red	310	EXT	248	10 ltrs	8010-99-841-5218
Intersleek 737 Grey	312	EXT	377	10 ltrs	8010-99-396-1959
Intersleek 737 Pink	312	EXT	377	10 ltrs	8010-99-918-1064
Intersleek 7180 Red Brown	N/A	N/A	377	20 ltrs	99-593-3810
Intersmooth 7460	313	N/A	425	20 ltrs	8010-99-216-8317
Interspeed 6400	316	EXT	358	20 ltrs	8010-33-209-1579

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
Intertherm 50	318	03 Yr (A3501)	495	10 ltrs	8010-99-969-0549
Intertherm 891	N/A	03 YR (A2104)	425	5 ltrs	8010-99-988-8802
Intertherm 891	N/A	03 YR (A2104)	425	20 ltrs	8010-99-753-8906
Interzinc 22	N/A	N/A	470	14 ltrs	99-927-5431
Interzinc 72 Blue	N/A	03 YR (A1593)	410	10 ltrs	8010-99-981-4272
Interzinc 72 Grey	N/A	03 YR (A1593)	410	10 ltrs	8010-99-993-5751
Interzone 101	N/A	N/A	0	12 ltrs	99-915-9726
Interzone 505 Off-White	319b	03 YR (A7293)	157	17.5 ltrs	8010-99-338-5354

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
JOTUN PAINTS (EUROPE) LTD					
Balloxy HB Light Green	320a	BLI (A1156)	150	18 ltrs	8010-17-108-7825
Hardtop CA BS381C 676	321a	N/A	340	5 ltrs	8010-99-846-3401
Hardtop CA BS381C 676	321b	N/A	340	20 ltrs	8010-99-368-1686
Hardtop CA BS4800 00A01	321c	N/A	340	5 ltrs	8010-99-577-8447
Hardtop CA BS4800 00A01	321d	N/A	340	20 ltrs	TBC
Hardtop Optima BS381C 676	322a	N/A	215	5 ltrs	8010-99-992-1998
Hardtop Optima BS381C 676	322b	N/A	215	20 ltrs	8010-99-436-0000
Jota Armour BS381C 640	323	N/A	70	10 ltrs	8010-99-690-8235
Jota Armour AS BS381C 640	324	N/A	70	20 ltrs	8010-99-226-7300
Jotacote Universal N10 Red	003a	N/A	239	20 ltrs	8010-99-754-5667
Jotacote Universal N10 Grey	003b	N/A	239	20 ltrs	8010-99-407-9318
Jotacote Universal N10 White	003c	N/A	239	20 ltrs	8010-99-616-2454
Jotamastic 80 Aluminium Red Tone	327a	N/A	145	20 ltrs	8010-99-235-5945
Jotamastic 80 Aluminium Red Tone	327b	N/A	145	5 ltrs	8010-99-226-7124
Jotamastic 87 Grey	328	N/A	150	5 ltrs	TBC
Jotamastic 87 Red Tone	329	N/A	150	6ltrs	TBC
Marathon IQ 2	146	N/A	42	TBC	TBC
Muki EPS Red	332a	BLI (A4527)	610	18.5 ltrs	8010-99-564-0809
Safeguard Universal ES Grey Plum	336	N/A	330	18 ltrs	8010-99-671-3575
Seaquantum Classic S Dark Red	340	N/A	460	20 ltrs	8010-99-156-7984
Seaquantum Ultra S Dark Red	342	N/A	460	20 ltrs	8010-99-690-8855
Seaquest Red	343	N/A	247	18.45 ltrs	8010-99-937-0885
Spontan Varnish	N/A	N/A	470	5 ltrs	99-161-6220
Tankguard DW Light Grey	345a	03 YR (A4764)	2	15 ltrs	8010-99-241-9602
Tankguard DW White	345c	03 YR (A4764)	2	15 ltrs	8010-99-846-3419
Tankguard Storage Light Grey	348	03 YR (A7288)	310	18.8 ltrs	8010-99-156-7988
Tankguard Storage Light Red	349	03 YR (A7288)	310	18.8 ltrs	8010-99-359-5632
Tankguard Storage Red	350	03 YR (A7288)	310	18.8 ltrs	8010-99-959-5076

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
MAKER COATING SYSTEMS LTD					
CORROLESS CCI 355	374	03 YR (A2738)	N/A	20 Kg	9150-99-676-5736
CORROLESS EPF Black	376	03 YR (A6858)	80	5 ltrs	8010-99-212-7555
CORROLESS EPF Buff	375	03 YR (A6857)	80	5 ltrs	8010-25-150-0972
CORROLESS RF35 Grey	378b	03 YR (A1772)	93	5 ltrs	8010-99-337-0778
CORROLESS RF35 White	378c	03 YR (A1772)	93	5 ltrs	8010-25-150-0973
Zinga	N/A	N/A	537	5 Kg	99-884-0220

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
PPG PROTECTIVE & MARINE COATINGS					
Ameron PSX 700 BS4800 14C39	368	N/A	164	5 ltrs	8010-17-113-6169
Ameron PSX 700 White	369	N/A	164	5 ltrs	8010-17-113-5689
Envirocron PCS P4 Series	N/A	N/A	TBC	TBC	TBC
Phenguard 965 Grey	053	03 YR (A7390)	329	20 ltrs	8010-99-671-3967
Phenguard 965 Off-white	TBC	03 YR (A7390)	329	20 ltrs	8010-99-671-6996
Phenguard 965 Pink	TBC	03 YR (A7390)	329	20 ltrs	8010-99-371-3796
91-92 Thinner (for Phenguard 965)	TBC	03 Yr (A4904)	TBC	5 ltrs	8010-17-054-9628
Sigma Ecofleet 530 Black	412	EXT	339	20 ltrs	8010-99-375-0408
Sigma Ecofleet 530 Brown	413	EXT	339	20 ltrs	8010-99-996-2266
Sigma Ecofleet 530 Red Brown	414	EXT	339	20 ltrs	8010-99-153-6929
Sigmacover 280 LT 7417 Yellow	404	TBC	432	20 ltrs	8010-99-569-7697
Sigmacover 400 Black	419a	03 YR (A6852)	106	20 ltrs	8010-99-507-5313
Sigmacover 400 Blue	419d	03 YR (A6855)	106	20 ltrs	8010-99-157-1462
Sigmacover 400 Bright Yellow	419e	03 YR (A6856)	106	20 ltrs	8010-99-671-6874
Sigmacover 400 Brunswick Green	419f	03 YR (A6854)	106	20 ltrs	8010-99-157-1463
Sigmacover 400 Grey	419c	03 YR (A6849)	106	20 ltrs	8010-99-156-8080
Sigmacover 400 Red	419g	03 YR (A6853)	106	20 ltrs	8010-99-847-2868
Sigmacover 400 Steel	419h	03 YR (A6850)	106	20 ltrs	8010-99-320-1413
Sigmacover 400 Storm	419i	03 YR (A6851)	106	20 ltrs	8010-99-564-3846
Sigmacover 400 White	419b	03 YR (A6848)	106	20 ltrs	8010-99-156-8092
Sigmacover 555	138	N/A	387	TBC	TBC
Sigmadur 540 BS381C 676	423a	N/A	411	20 ltrs	8010-99-671-3651
Sigmadur 540 Extra Dark Sea Grey	423b	N/A	411	20 ltrs	8010-99-846-3541
Sigmaglide 790	405	EXT	187	20 ltrs	8010-99-406-0976
Sigmaglide 1290	424	EXT	118	TBC	8010-99-217-0543
Sigmaguard CSF 585 Blue	428	BLI (A7300)	6	20 ltrs	8010-17-120-3206
Sigmaguard CSF 650 Grey	429a	BLI (A7301)	143	20 ltrs	8010-99-489-1723

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
Sigmaguard CSF 650 White	429b	BLI (A7301)	143	20 ltrs	8010-99-376-9810
Sigmaguard CSF 650 Red Brown	429c	BLI (A7301)	143	20 ltrs	8010-99-902-6226
Sigma Prime 700	N/A	EXT	313	TBC	TBC
Sigmarine 42	N/A	N/A	393	1 ltr	8010-99-364-1912
Sigmarine 42	N/A	N/A	393	5 ltrs	8010-99-157-1792
Sigmashield 880 Black	396	N/A	207	20 ltrs	8010-99-871-5235
Sigmashield 1200	147	N/A	143	TBC	TBC
Sigmatherm 500	N/A	03 YR (A4072)	600	5 ltrs	8010-99-858-6097
Sigmatherm 500	N/A	03YR (A4072)	600	20 ltrs	8010-99-371-3802
Sigmazinc 19	N/A	03 YR (A4968)	584	2 ltrs	99-152-6131
T-Phos 53 Pre-treatment	N/A	N/A	TBC	TBC	TBC

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
N A ROBSON					
Back To Nature VIII	N/A	03 YR (A1608)	N/A	TBC	99-361-6273

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
PARKER CHOMERICS					
Cho-Shield 610	N/A	N/A	591	7 ltrs	5999-01-703-3871

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
SHERWIN-WILLIAMS PROTECTIVE & MARINE COATINGS					
Acrolon 1850 White	81	N/A	345	5 ltrs	8010-99-217-7329
Duraplate 301W Grey	66	BLI, BP (A8731)	100	4 ltrs	8010-99-157-4065
Duraplate 301W Grey	66	BLI, BP (A8731)	100	16 ltrs	8010-99-355-5806
Epidek M339	434	03 YR (A6944)	250	2 ltrs	8010-99-383-4334
Epidek M339 Extra Dark Sea Grey	434a	03 YR (A6944)	250	20 ltrs	8010-99-215-4495
Epidek M377 BS381C 632	435	TBC	330	4 ltrs	8010-99-777-8689
Epidek M377 Green	N/A	N/A	330	4 ltrs	99-777-8691
Epidek M377 Non-Skid Type 1 Black	436	03 YR (A6782)	330	4 ltrs	8010-99-777-8692
Epidek M377 White	N/A	N/A	330	4 ltrs	99-777-8690
Kem-Kromik 155	N/A	N/A	410	5 ltrs	8010-99-753-8892
Kem-Kromik 155	N/A	N/A	410	20 ltrs	8010-99-184-8658
Kem-Kromik A165 Silicone Alkyd BS381C 676	438	N/A	407	5 ltrs	8010-99-982-2604
Macropoxy C425V2 Light Grey	440	BLI (A6836)	186	5 ltrs	8010-99-786-7949
Macropoxy C425V2 Light Grey	440	BLI (A6836)	186	20 ltrs	8010-99-126-6377
Macropoxy C425V2 Off White	441	BLI (A6837)	186	20 ltrs	8010-99-133-8714
Macropoxy L425	444	BLI (A0565g)	346	5 ltrs	8010-99-777-8688
Macropoxy L524 White	446	03 YR (A6928)	296	5 ltrs	8010-99-564-2934

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
Macropoxy L574	447	03 Yr (A0565f)	594	20 ltrs	8010-99-895-9894
Macropoxy M111 Red Oxide	448	BLI (A0662)	383	5 ltrs	8010-99-884-5957
Macropoxy M262	450	N/A	354	5 ltrs	8010-99-133-8713
Macropoxy M630V2 Black	452	N/A	0	5 ltrs	8010-99-739-8402
Macropoxy M630V2 BS381C 676	453a	BLI (A6833)	0	5 ltrs	8010-99-131-6908
Macropoxy M630V2 BS4800 00A01	454	BLI (A6833)	0	5 ltrs	8010-99-535-5105
Macropoxy M630V2 BS4800 14C39	453	N/A	0	5 ltrs	8010-99-255-5237
Macropoxy M630V2 Holly Green	TBC	N/A	0	20 ltrs	99-671-6651
Macropoxy M630V2 Fathom Blue	TBC	N/A	0	20 ltrs	99-753-8430
Macropoxy M630V2 Dark Admiralty Grey	TBC	N/A	0	20 ltrs	99-868-4125
Macropoxy M922	456	03 Yr (A6840)	143	5 ltrs	8010-99-834-8384
Macropoxy M922M Mastic Aluminium	457	03 Yr (A6786)	146	4 ltrs	8010-99-495-3873
Mordant Wash L703	N/A	N/A	307	5 ltrs	6810-99-861-9824
Sherwin M671 Medium Grey	463	N/A	380	5 ltrs	8010-99-872-1746
Sherwin M671 Medium Grey	463	N/A	380	20 ltrs	8010-99-862-7354

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
Subsea Industries					
Staingard PF	152	N/A	0	TBC	TBC
Ecoshield	149	N/A	240	TBC	TBC

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
TRIMITE					
P9201	N/A	N/A	TBC	TBC	TBC
S59 Topcoat	N/A	BLI, NF (A2009)	580	5 ltrs	8010-99-564-4008
Sp59 Primer	N/A	BLI, NF (A2009)	TBC	5 ltrs	8010-99-378-5631
Trimite D00294 Matt Black	N/A	N/A	538	5 ltrs	8010-99-354-1492
Trimite D00294 Matt Brown	N/A	N/A	538	5 ltrs	8010-99-579-8491
Trimite D00294 Matt DK Sandstone Camo	N/A	N/A	538	5 ltrs	8010-99-894-2220
Trimite D00294 Matt Grey Beige Ral	N/A	N/A	538	5 ltrs	8010-99-994-0685
Trimite D00294 Matt Light Stone	N/A	N/A	538	5 ltrs	8010-99-671-8238
Trimite D00294 Matt Nato Green	N/A	N/A	538	5 ltrs	8010-99-959-6392
Trimite D00294 Matt Tan	N/A	N/A	538	5 ltrs	8010-99-226-7983
Trimite D00294 Matt UK Army Brown	N/A	N/A	538	5 ltrs	8010-99-157-3098
Trimite D00294 Matt Yellow Olive	N/A	N/A	538	5 ltrs	8010-99-870-3865

Product	Ref	BR 1326	VOC (g/l)	Pack Size	NSN
WESSEX RESINS					
UW 46 Adhesive	N/A	BLI (A6862)	TBC	150 Kg	8040-99-297-7593
UW46 Primer	N/A	BLI (A6862)	TBC	3 Kg	8040-99-593-3008

ANNEX E: NAVAL SHIPS SUPPORT PAINT TABLE

Ship Name	Below Water	Topsides	Weather Decks	Tanks	Internals
AIRCRAFT CARRIERS					
HMS QNLZ	Hempel	Hempel	Hempel	International	Sherwin Williams
HMS PWLS	Hempel	Hempel	Hempel	International	Sherwin Williams
TYPE 45					
HMS Daring	International	International	International	International	International
HMS Dauntless	International	International	International	International	International
HMS Diamond	International	International	International	International	International
HMS Dragon	International	International	International	International	International
HMS Defender	International	International	International	International	International
HMS Duncan	International	International	International	International	International
TYPE 23					
HMS Argyll	International	International	International	International	International
HMS Lancaster	International	International	International	Sherwin Williams	International
HMS Iron Duke	International	International	International	Sherwin Williams	International
HMS Westminster	Sherwin Williams	Sherwin Williams	Sherwin Williams	Sherwin Williams	Sherwin Williams
HMS Northumberland	International	International	International	Sherwin Williams	International
HMS Richmond	Hempel	International	International	International	International
HMS Somerset	International	International	International	International	International
HMS Sutherland	International	International	International	International	International
HMS Kent	International	International	International	Sherwin Williams	International
HMS Portland	Hempel	International	International	International	Sherwin Williams
HMS St Albans	Sherwin Williams	International	Sherwin Williams	International	International

Ship Name	Below Water	Topsides	Weather Decks	Tanks	Internals
ALBION CLASS					
HMS Albion	International	Sherwin Williams	Sherwin Williams	Sherwin Williams	Sherwin Williams
HMS Bulwark	Hempel	International	Sherwin Williams	Sherwin Williams	Sherwin Williams
RIVER CLASS					
HMS Tyne (Batch 1)	International	International	International	International	International
HMS Severn (Batch 1)	International	International	International	International	International
HMS Mersey (Batch 1)	International	International	International	International	International
HMS Forth (Batch 2)	International	International	International	International	International
HMS Medway (Batch 2)	International	International	International	International	International
HMS Trent (Batch 2)	International	International	International	International	International
HMS Tamar (Batch 2)	International	International	International	International	International
HMS Spey (Batch 2)	International	International	International	International	International
HUNT CLASS					
HMS Brocklesby	Hempel	Sherwin Williams	Sherwin Williams	Sherwin Williams	Sherwin Williams
HMS Ledbury	International	Sherwin Williams	Sherwin Williams	Sherwin Williams	Sherwin Williams
HMS Middleton	Hempel	Hempel	Sherwin Williams	Jotun	Sherwin Williams
HMS Chiddingfold	Hempel	Hempel	Sherwin Williams	International	Sherwin Williams
HMS Hurworth	International	Sherwin Williams	Sherwin Williams	Sherwin Williams	Sherwin Williams
HMS Cattistock	Hempel	Sherwin Williams	Sherwin Williams	Sherwin Williams	Sherwin Williams

Ship Name	Below Water	Topsides	Weather Decks	Tanks	Internals
SANDOWN CLASS					
HMS Penzance	Hempel	International	International	International	International
HMS Pembroke	International	International	International	Jotun	International
HMS Grimsby	Hempel	International	International	International	International
HMS Bangor	Hempel	International	International	International	International
HMS Ramsey	International	International	International	International	International
HMS Blyth	Hempel	International	International	International	International
HMS Shoreham	Hempel	International	International	International	International

Areas for Use (Please Highlight/Circle the areas that the product is intended for use in)		
Specialist Area (ANNEX A)	Ships (ANNEX B)	Submarines (ANNEX C)
A1 - Antifouling for "Archer" class & Yachts	A&B - BELOW WATER HULL PRIMER	S1 - PRESSURE HULL & EXTERNAL SUPERSTRUCTURE PRIMER
A2 - Rudder, Stabilisers & "A" Frames (Corrosion and Erosion)	C - ANTIFOULING FINISH (Self Polishing – SPC)	S2 - ANTIFOULING SYSTEM(S) / FOUL RELEASE / DEFENCE (FRC / FD)
A3 - Rudder, Stabilisers & "A" Frames (Cavitation Protection)	D - ANTIFOULING SYSTEM (Foul Release – FRC 5+ yr life)	S3 - PRESSURE HULL & EXTERNAL SUPERSTRUCTURE FINISH
A4 - Hull (Underwater-applied coatings) General Repair	F - BOOTTOP ANTIFOULING FINISH (SPC)	S4 - PERISCOPES & MASTS
A5 - Hull – Link Coats for Foul Release Paint	G&H - ABOVE WATER HULL & SUPERSTRUCTURE & PRIMER	S5 - SUPERSTRUCTURE CASING
A6 - HPSW Internal Coating for Intake Pipework	J - ABOVE WATER HULL & SUPERSTRUCTURE FINISH	S6 - WALKWAYS ON STEEL CASING
A7 - Peelable Corrosion-Inhibiting Encapsulating Membrane	K - FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134	S7 - INTERNAL DRY SPACES
A8 - Seawater Ballast Tank Spot Repair	L&M - INTERIOR DRY COMPARTMENTS	S8 - INTERIOR WET COMPARTMENTS
A9 - Flight Deck / Deck Markings	N&O - INTERIOR WET COMPARTMENTS	S9 - GROUP EXHAUST VALVES
A10 - LCU & LVCP – CARC & IRR A/W Hull Finish	P - INTERIOR DECKS	S10 - DSRV SEATING
A11 - Navigation Light Enclosures	Q - BATTERY COMPARTMENTS	S11 - INTERIOR PRESSURE HULL SURFACE
A12 - Instruments & Electronic Equipment Panels	R - CABLE LOCKERS & COFFERDAMS	S12 - REACTOR COMPARTMENT
A13 - Galvanised Steel & Zinc Metal Sprayer (Repair)	S - BLACK/GREY & WATER BALLAST TANKS IMO PSPC	S13 - INTERIOR DECKS
A14 - Woodwork (High Gloss, Clear, Protective Finish)	T - MACHINERY SPACE BILGES	S14 - BATTERY COMPARTMENTS
A15 - Corrosion Inhibitor Grease	U - AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM DEF STAN 80-97 (HIGH SOLIDS)	S15 - MACHINERY SPACE BILGES & MOUNTED MACHINERY RAFTS
A16 - Conductive Glands	V - POTABLE WATER TANKS	S16 - BULK FUEL & OIL, LUBE OIL, HYDRAULIC & LP AIR TANKS
A17 - High Resistant Coatings (Below 175°C)	W - AQUEOUS FILM-FORMING FOAM (AFF) TANKS	S17 - POTABLE WATER TANKS
A18 - High Resistant Coatings (Above 250°C)	X - DEMINERALISED WATER TANKS (Max Temperature 90°C)	S18 - SLOP DRAIN TANKS
A19 - High Resistant Coatings (Above 400°C)	Y - EPOXY HOLDING PRIMER	S19 - AFF TANKS
A20 - System for Coating Natural Rubber Mounts	Z - PRIMERS FOR NON-FERROUS METALS & FRP	S20 - DEMINERALISED WATER TANKS (Max Temperature 90°C)
A21 - Paint Remover		S21 - HOLDING PRIMER (blasted steel work)
A22 - Rust Stain Remover		S22 - PRIMERS FOR NON-FERROUS METALS
A23 - SMTDUNIQUE Immersed Areas – Pumps ETC		S23 - HIGH EROSION AREAS
A24 - Mordant Reagent		S24 - BENEATH TILING
A25 - Cleaning Detergent		S26 - INTERNAL NUTS & BOLTS AND TO FILL GAPS BETWEEN CANNING PLATES & LEAD SHIELDING
A26 - Damp Surface Primer		S27 - SEA WATER TANKS
A27 - Hangar Doors Finish		S28 - LILO / PAYLOAD BAY CHAMBER (Internal)
A28 – Rust Inhibitor		
A29 – External Deck Brow Positions for MCM		
A30 – Powder Coating (Internal)		
A31 – Powder Coatings (External)		
A32 – Air Craft Carrier Metal Sprayed Landing Spot Sealant		
A33 – Dazzle Paint Scheme for OPV Batch 1		
A34 – Dazzle Paint Scheme for OPV Batch 2		

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