



Ministry
of Defence

de&s

WARPAINT



Issue 41
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Defence Equipment & Support

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The information on acceptable paint systems / coatings, given in this publication, updates BR3939 Issue 4 - February 2017.

1. INTRODUCTION

- 1.1 After four years as the editor of WARPAINT this will be my last issue. It is an extremely interesting subject and I am glad to have been able to build up my knowledge on corrosion and preservation in the marine environment, as well as work on this important contractual document. I cannot currently advise on the details of my replacement but I can say there will be a Deputy Chief Engineer (this posts line manager) in post when I leave. It is envisaged that my post will eventually be filled; however, realistically and practically this will take some time. Therefore in the interim, all I can suggest to readers is that if they have any questions on approved coatings or paint systems then in the short term they should contact their MOD sponsor or the relevant MOD Platform Project Group. I would like to thank all the contributors to WARPAINT for the help and assistance given to me in endeavouring to provide concise and accurate information and I wish everyone well for the future.
- 1.2 WARPAINT is the main guidance document of acceptable paint coatings for in-service and new-build Royal Naval Vessels. However, not all approved coatings are necessarily listed in WARPAINT as paint manufacturers are constantly striving to improve their current paint systems. Consequently the Whole Ship Specifications (WSS) / 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.
- 1.3 **NOTE:** 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 Instructions. This includes all aspects of the preparation stage and post application. TDS's are used to define a Paint Specification that must be followed *in conjunction with* the data sheets. Full Quality Control (QC) data must be recorded to provide assurance and evidence that the specification has been satisfactorily achieved.
- 1.4 The differing paint manufacturers 'Whole Ship Specification' annexes 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.
- 1.5 WARPAINT is only available electronically. The easiest way to obtain an e-copy is via the internet or intranet. From here it can be easily downloaded. Information on accessing these websites is detailed at 1.6 and 1.7.
- 1.6 The main aim of WARPAINT is to continue to offer 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. This issue should be a useful addition to the data required by projects for ship/submarine build or maintenance.
- 1.6 The latest copy of WARPAINT is available via the DE&S *intranet* website at:
<http://defenceintranet.diif.r.mil.uk/Organisations/Orgs/DES/Organisations/Orgs/CoMFleet/SHIPS/Pages/WARPAINT.aspx> or on the World Wide Web at:
<https://www.gov.uk/government/publications/warpaint>

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- 1.7 WARPAINT and extracts relative to areas of ship husbandry can also be found on the 'Ship / Submarine Husbandry & Habitability Information Portal' via the internet at: www.ShipShapeRN.com along with a full copy and current issue of BR3939. To gain access to this database you will require a user name and log in available by emailing your request and details to DESShipsWSpt-PEG-Husbandry@mod.uk

2. **AMENDMENTS TO ISSUE 40**

- 2.1 Front Cover: T45 in dry dock just prior to flooding up. Across the class the above water hull is being over coated with a polysiloxane product that offers excellent performance against UV light degradation and is easy to clean. The underwater hull receives the latest foul release anti-fouling product for increased efficiency.
- 2.2 Small amendments and additions throughout to offer better description, remove obsolete products, add some new products and NSN's where necessary.
- 2.3 BR3939 is also updated. Key updates are: -
- Mechanical preparation minimum surface profile is now 40microns (was 25).
 - This requires modern tooling to achieve - such as the Perago or Bristle Blaster as proven in a recent scientific study by BAe Barrow.
 - Chapter 14 amendments to ensure a more robust QA/QC process.

NOTES FROM THE DEPARTING TECHNICAL SPONSOR

- 2.3 If working in the marine sector you must aim to take some form of corrosion and preservation training to gain an appreciation. From the ship designers and COMs to the Equipment and Platform teams, if there is an understanding then the right questions can be asked from an early stage and avoid through life preservation woes.
Preservation starts at the design and procurement stage.
- 2.4 Quality Assurance and Quality Control cannot be underestimated yet it routinely is. Improvements must be made if the cost of corrosion is to reduce. It can be considered as risk mitigation. The risk of getting the preparation and application wrong can be as severe as a lost vessel but more likely an expensive programme delay or a large supplementary package of work 5 years later or operational downtime for the vessel. Regular QA reviews and audits should be undertaken with help from commercial experts where required. Quality Control has to modernise and become open and transparent. There are current systems available now as well as many that are in-development.
- 2.5 Other areas where preservation improvements can be made are: -
- Project planning in refits – rethink required for upper deck painting to conduct all work near the end using recommended methods i.e. spray.
 - Infrastructure in build and refit - the UK's inclement weather needs to be kept out during preservation tasks and to contain the work, lack of adequate infrastructure results in costly temporary enclosures and restricts coating selection.

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- Culture! Paint is often disregarded when pitted against high end weapon systems or propulsion. Yet paint is the only material preventing our multi-million pound assets rapidly corroding from the outside in and the inside out, helps store drinking water, allows helicopters to land safely on the flight deck, prevents marine fouling from reducing endurance whilst improving speed and can make a ship look fit to fight and impress. Should the fact it requires a good deal of effort to prepare and apply, affect the effort expended to get it right first time?

3. VOC COMPLIANT COATING SYSTEMS

- 3.1 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. They will then be required to provide the Institute of Naval Medicine (INM) with full product formulation data, 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 DES Ships WSpt-PEG-Husbandry.
- 3.2 MOD(N) requires that paint manufacturers and suppliers quote VOC levels in accordance with CEN or ISO Standards.
- 3.3 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.

Category No.	Category	VOC limit - gms/litre, Paint less Water
(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

* 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.

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- 3.4 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, the actual VOC value must be equal to or less than the stated value in Process Guidance Note 6/23 which can be found here: www.defra.gov.uk. 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 given off to the atmosphere during application, will be equal to or less than when applying a paint scheme fully in accordance with the MOD(N) target values.

4. SUBMARINE SPECIFICATIONS

- 4.1 Acceptable paint specifications are outlined in Annex J, together with a list of other acceptable materials.
- 4.2 DESSMPG-NavArch3bNNPPI@mod.uk, Tel. No. 030 679 33221, is the Structures & Coatings POC within In-Service Submarines.
- 4.3 BR1326 Classification can be found in the 'Submarine Material Toxicity Database' located here - <http://www.tes-ssg-smttd.r.mil.uk/>. DES NAG 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 BR1326 chapter 6. DES NAG 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 DESNAG-SMAtm-Tox@mod.uk at MOD Abbeywood South, Bristol, BS34 8JH. Tel. 030 679 35045.
- 4.4 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 and Trafalgar class, and Astute platform). CFU is obtained through the nominated ISM Platform Safety Co-ordinator, DESSMIS-SSG-Con1@mod.uk, Tel. 0117 9161435.
- 4.5 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.
Engineering Manager Non Metallic Materials BAE SYSTEMS - Submarine Solutions
Phone: 01229 873980
Mobile: 07525 079325
Fax: 01229 874294
Email: Derek.Scholes@baesystems.com

5. WHOLE SHIP SPECIFICATIONS

- 5.1 The Whole Ship Specifications were submitted by seven major marine paint manufacturers / suppliers and are detailed in their respective annexes to this document. **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 tax payer. It is considered advantageous 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 refit, maintenance and repair.
- 5.1.1. Submarines Annex J 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.

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- 5.1.2 The various paint manufacturers annexes were originally inserted into WARPAINT in alphabetical order, with Chugoku Paints (UK) Ltd being listed first. It is important when searching for any particular coating or paint system, to ensure that the correct paint manufacturer is sourced and not to just turn to the first annex (i.e. Chugoku) for convenience.
- 5.1.3 The paint specifications in the annexes 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.
- 5.2 Items in the tables highlighted with a grey band do not fully meet MOD(N) criteria and are not to be used without prior confirmation from the relevant Platform Project Group. A number of these items may have obtained approval prior to the next issue of WARPAINT and readers should always check their current approval status.
- 5.3 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.
- 5.4 Tables
- 5.4.1 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.
- 5.4.2 VOC grams per litre in the table highlighted thus in a box; do not comply with MoD VOC emission target levels.
- 5.4.3 Items with a '?' appearing in the boxes, indicate that manufacturer/supplier information is awaited.
- 5.4.4 Annexes are listed in alphabetical order as follows: -

Chugoku Paints (UK) Ltd	Annex A
Hempel Paints Ltd	Annex B
International Paint Ltd	Annex C
Jotun Paints (Europe) Ltd	Annex D
Maker Coating Systems Ltd	Annex E
PPG Protective & Marine Coatings (Sigma)	Annex F
Sherwin Williams Protective & Marine Coatings	Annex G

5.5 LCUs and LCVP's

- 5.5.1 In general LCU's and LCVP's follow the Whole Ship Specifications with the exception of 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 WSpt-PEG-Husbandry or DESShipsWSpt-Amph-LC-TLM@mod.uk.

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6. SPECIALIST COATINGS & PAINT REMOVERS

6.1 “WHOLE SHIP SPECIFICATIONS” & “SUBMARINES” Annexes do not cover Specialist areas. The following table lists specialist coatings & their location of use: -

SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC gms per ltr	NATO Stock Number	BR 1326
<u>ANTIFOULING FOR “ARCHER” CLASS & YACHTS</u>				
SUPERSPEED 52	Anti-Fouling	411	-	N/A
COPPERCOAT	Anti-Fouling	0	-	N/A
<u>RUDDERS, STABILISERS & ‘A’ FRAMES</u> Corrosion, Erosion & Cavitation Protection [Limpetite products use a proprietary Primer/Tie Coat system]				
LIMPETITE A3 (Multiple coat system – durable – high adhesion)	Liquid Synthetic Rubber	433		N/A
LIMPETITE PRC (Single coat spray applied – not as durable – lower adhesion)	Liquid Rubber / Polyurethane	0		N/A
BELZONA 1311 Ceramic R-Metal (fill and fair)	Epoxy	0	99-720-9644	N/A
BELZONA 1341 Supermetalgilde (cavitation protection) (2 coats. 3 coats if blasting prior to application of anti-foul)	Epoxy	5		N/A
<u>HULL (Underwater-Applied Coatings) GENERAL REPAIR</u>				
ALOCIT 28.15	Epoxy	0		N/A
BIOFIX 561 LT Black – Kevlar reinforced	Epoxy	0	99-133-9985	N/A
BELZONA 5831	Epoxy	0		N/A
INTERZONE 101 Trowel Grade – WARNING: Contains Silica	Epoxy	0		N/A
KANSAI SURESEAL 1208UWE	Epoxy Mastic	0		N/A
<u>HULL - LINK COATS FOR FOUL RELEASE PAINT SYSTEMS</u>				
<u>Hempel Paints Ltd</u> HEMPASIL NEXUS X-Seal 27600	Silicone	400		N/A
<u>International Paints Ltd</u> Link Coat for INTERSLEEK 737: INTERSLEEK 7180	Silicone	376		N/A
<u>HPSW INTERNAL COATING FOR INTAKE PIPEWORK</u>				
Belzona 1341	Epoxy	5		
Corroless RF35 Grey	Glass Flake Epoxy	93	99-337-0778	BLI
LIMPETITE A3 (Multiple coat system – slower application)	Liquid Synthetic Rubber	433		N/A
<u>PEELABLE CORROSION-INHIBITING ENCAPSULATING MEMBRANE</u>				
<u>A&E Group</u> Enviropeel (External/Weatherdeck applications only. Not for internal use.)	Thermoplastic	0	-	N/A
<u>Belzona</u> Belzona 8411 / 3411 (Includes approval for limited internal use)	Hybrid Polymer	0	-	TBC
<u>SEAWATER BALLAST TANK SPOT REPAIR</u>				
<u>Chugoku</u> NOVA Barrier 5000 (Surface tolerant – High build - Fast cure)	MIO Epoxy	0	TBC	TBC

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SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC gms per ltr	NATO Stock Number	BR 1326
<u>FLIGHTDECK / DECK MARKINGS</u> <u>Chugoku Paints (UK) Ltd</u> 521E0020 Type 1 White 521E0013 Type 1 Black 521E2947 Type 1 Red 521E0013 Type 1 Green yellow <u>Hempel Paints Ltd</u> HEMPELS DECK MARKING 453GB White HEMPELS DECK MARKING 453GB Black HEMPELS DECK MARKING 453GB Red BS381C 537 HEMPELS DECK MARKING 453GB Green BS381C 225 yellow	Epoxy Epoxy Epoxy Epoxy	374 374 374 374	99-541-9583 99-543-0790 99-543-0793 99-5430-791	N/A N/A N/A N/A
<u>International Paints Ltd</u> Use 852 for flight deck markings – Annex H. INTERSHIELD 740 White INTERSHIELD 740 Black INTERSHIELD 740 Red INTERSHIELD 740 Green INTERSHIELD 740 Yellow <u>Sherwin-Williams Protective & Marine Coatings</u> EPIDEK M377 White EPIDEK M377 Black EPIDEK M377 Green yellow red	Epoxy Epoxy Epoxy Epoxy Epoxy Epoxy Epoxy Epoxy	420 420 420 420 420 330 330 330	99-773-8674 99-488-7443 99-377-5457 TBC 99-969-1037 99-777-8690 99-777-8692 99-777-8691	N/A N/A N/A N/A N/A N/A N/A N/A
<u>LCU & LVCP – CARC & IRR A/W HULL FINISH</u> Def Stan 80-208 approved coating – applied over Intergard 5000. <u>Trimite</u> D00386 UK Army Brown D00341 Matt Black	Polyurethane Polyurethane	TBC TBC	TBC TBC	N/A N/A
<u>NAVIGATION LIGHT ENCLOSURES</u> Matte Black Finish <u>Sherwin-Williams Protective & Marine Coatings</u> LEIGHS Steel Spec TM M155 <u>International Paints Ltd</u> INTERLAC 497 [Primer – Intergard 5000 (150 DFT) & Tie-Coat – Intergard 263 (75 DFT)]	Alkyd Anti-Corrosive (150 DFT) Alkyd Finish Coat (40 DFT)	410 391	TBC TBC	N/A N/A
<u>INSTRUMENTS & ELECTRONIC EQUIPMENT PANELS</u> Light Admiralty Grey BS381C 697 <u>Trimite</u> SF59 Filler / SP59 Primer / S59 Top Coat <u>Onboard Repairs:</u> Q55 (X has been dropped now all products are lead free) <u>Indestructible Paints</u> IP3-6700 epoxy primer IP3-6971 epoxy finish	<u>Manufacturer Applied Coatings</u> Stoved Epoxy Synthetic Epoxy Epoxy	- 491 350 420	- 99-224-9624 - -	N/A BLI N/A N/A
<u>GALVANISED STEEL & ZINC METAL SPRAY (REPAIR)</u> <u>Maker Coatings</u> ZINGA M <u>Hempel Paints Ltd</u> HEMUDUR ZINC 18560 HEMPEL'S ZINC PRIMER 16490 <u>International Paints Ltd</u> INTERZINC 22 INTERZINC 72	Polystyrene Water-Based Epoxy Zinc Phenoxy Zinc Silicate Zinc Epoxy	539 60 590 470 410	13-113-7072	BLI B (CI, CF)

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SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC gms per ltr	NATO Stock Number	BR 1326
PPG Protective & Marine Coatings SIGMAZINC 19 Sherwin-Williams Protective & Marine Coatings EPIGRIP Zinc Clad® J984BS	Zinc Epoxy Zinc Epoxy	584 331	99-152-6131	B LI
WOODWORK (high gloss, clear, protective finish) Chugoku Paints Ltd SPAR VARNISH Hempel Paints Ltd HEMPEL'S MARINE VARNISH 02220 (prev. 022GB) International Paint Ltd INTERLAC 678 Jotun Paints (Europe) Limited SPONTAN VARNISH PPG Protective & Marine Coatings SIGMAVAR GLOSS 8103 Quaker Chemical Ltd RapidShield 0007-2 (pending INM assessment)	Varnish Alkyd Alkyd Urethane Alkyd Phenolic	433 430 373 470 393	99-224-5783 99-328-9646 99-161-6220	BLI BLI
	UV Cured Polymer	0		
CORROSION INHIBITOR GREASE CORROLESS CCI 355	HD Grease	N/A	99-676-5736	BLI
CONDUCTIVE GLANDS (QEC requirement) Parker Chomerics Cho-shield 610	Copper Epoxy EMI	591	N/A	N/A
HEAT RESISTANT COATINGS (below 175 °C) PPG Protective & Marine Coatings SIGMATHERM 175 International Paint Ltd (up to 250 °C) INTERTHERM 891	Modified Alkyd Oleoresinous Aluminium	561 425	- -	BLI -
HEAT RESISTANT COATINGS (above 250 °C) Hempel Paints Ltd HEMPEL'S GALVOSIL 15700 International Paint Ltd INTERTHERM 890 PPG Protective & Marine Coatings SIGMATHERM 500 Sherwin-Williams Protective & Marine Coatings Dex-Anode D5V2 Zinc-Clad II EU	Zinc Silicate Zinc Silicate Modified Alkyd Zinc Silicate	435 305 600 470	99-593-8923	BLI BLI BLI -
HEAT RESISTANT COATINGS (above 400 °C) Hempel Paints Ltd HEMPEL'S SILICONE ALUMINIUM 56910 International Paint Ltd INTERTHERM 50 PPG Protective & Marine Coatings SIGMATHERM 500	Polysiloxane Silicone Aluminium Modified Alkyd	585 495 600	99-969-0549	BLI BLI
SYSTEM FOR COATING NATURAL RUBBER MOUNTS <i>Applied by Mount OEM, not to be touched up once fitted.</i> Maker Coating Systems Ltd GUMMIPAIN – Orange & Black DUNLOP NPL-100- obsolete – alternatives to be sought	Single Pack		TBC	BLI

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SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC gms per ltr	NATO Stock Number	BR 1326
<u>PAINT REMOVER</u> <u>Cirrus Systems Ltd</u> REMOVALL 520 (Caution advised if using large quantities. Respiratory protection.) <u>N A Robson Ltd</u> BACK TO NATURE VIII <u>International Paint Ltd</u> INTERPLUS 634 <u>Maker Coating Systems Ltd</u> SEA TO SKY SPC-203	Biodegradable Biodegradable Biodegradable Biodegradable	N/A N/A N/A N/A	- 99-361-6273 99-551-8994 20-003-3432	BLI* BLI CI CI
<u>RUST STAIN REMOVER</u> <u>International Paint Ltd</u> INTERPLUS 614 (20L – Shelf Life 18months max.) (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	99-870-1799	N/A
<u>UNIQUE IMMERSSED AREAS - PUMPS ETC</u> <u>Corrocoat Limited</u> CORROGLASS 202 CORROGLASS 232 CORROGLASS 602 CORROGLASS 632 POLYGLASS VE POLYGLASS VE HAND APPLIED POLYGLASS VEF POLYGLASS ZIPCOAT CORROCOAT ZIP E	Polyester Glass Flake Polyester Glass Flake Vinyl Ester Glass Flake Vinyl Ester Glass Flake Vinyl Ester Glass Flake Vinyl Ester Glass Flake Vinyl Ester Glass Flake Polyester Glass Flake Glass Flake Epoxy			

*Advance BR1326 assessment from INM. Full request via SMTD required.

6.2 Cleaning Materials and Rust Removers

DES Ships WSpt-PEG-Husbandry is the Ship Husbandry (inc. Paint) & Habitability desk officer. All enquiries regarding cleaning materials and rust removers should be emailed to DESShipsWSpt-PEG-Husbandry@mod.uk alternatively telephone 030 679 36606.

BR2203 Ship Husbandry Manual dated Feb 2015 is now available on DII - <http://defenceintranet.diif.r.mil.uk/Organisations/Orgs/Navy/Organisations/Orgs/DRes/HdCO/MMS/Pages/BRs2000-2999.aspx>.

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6.3 Specialist Coatings Suppliers contact details:

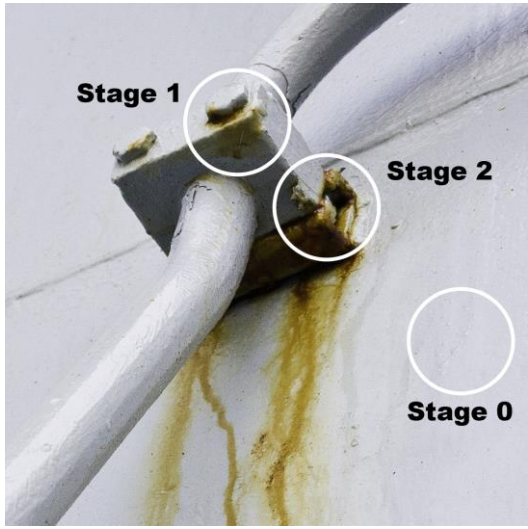
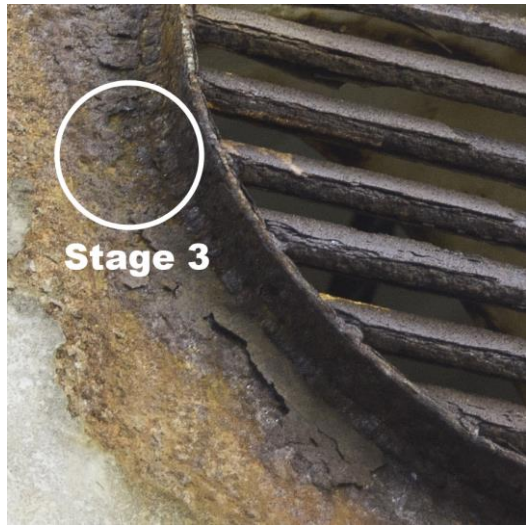
Superspeed 52	H Marcel Guest	Tel 01612 057631
Coppercoat	Aquarius Marine Coatings Ltd.	Tel 01258 861059
Limpetite	Bristol Metal Spraying & PC Ltd	Tel 01179 662206
BIOFIX 561LT	Maker Coating Systems Ltd	Tel 01392 822600
Interzone 101	International Paint	Tel 01489 775060
Alocit & Enviropeel	A&E Group	Tel 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
Gummipaint-Orange	Maker Coating Systems Ltd	Tel 01392 822600
Removall 510	Cirrus Systems Ltd	Tel 01305 822659
Back to Nature VIII	N A Robson Ltd	Tel 01253 393406
Sea to Sky SPC-203	Maker Coating Systems Ltd	Tel 01392 822600
Corroglass & Polyglass	Corrocoat Ltd	Tel 01132 760760
Kansai & ARC	Cactus Industrial Ltd	Tel 01698 591635
RapidShield	Quaker Chemical Ltd	Tel 01453 820800

7. PAINTING AND PRESERVATION HOT TOPICS

- 7.1 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 DES Ships WSpt-PEG-Husbandry.
- 7.2 MIXING OF PAINT SYSTEMS & USE OF CORROLESS QDR PRIMER
- 7.2.1 The mixing of different suppliers 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.
- 7.2.2 ***Corroless QDR primer is ONLY to be used for emergency repairs***, for example; when a vessel has to sail and welding of items has only just been completed or; there is insufficient time to apply the full WARPAINT specified paint system. Not more than 2 x 5 litre packs are to be carried onboard and ***general usage is forbidden***.

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8. THE 4 STAGES OF CORROSION: How to identify 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.

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ANNEX A
WHOLE SHIP SPECIFICATION
Proposed by

CHUGOKU PAINTS (UK) Ltd

Proposed Systems/Materials	Number of coats	NDFT per coat Microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
A & B. <u>BELOW WATER HULL PRIMER ~</u>							
<u>Standard:</u> BANNOH 1500	1	150	4.86	19 hrs	30 days	286	
<u>Alternative:</u> UMEGUARD HS SILVER	1	150	5.93	20 hrs	30 days	158	
<u>Tie-coat (for C, E & F):</u> BANNOH 1500 SZ	1	100	6.4	16 hrs	5 days	361	
C. <u>ANTIFOULING FINISH (Self Polishing - SPC)</u>							
SEA GRANDPRIX 1000L silyl hydrolysis	2	150	3.4	8 hrs	#	436	
D. <u>ANTIFOULING SYSTEM (Foul Release – FRC 5+ yr life)</u>							
BIOCLEAN SG R	1	125	4.86	6 hrs	24 hrs	406	
BIOCLEAN R	1	100	6.5	20 hrs	#	278	
BIOCLEAN HB pure silicone finish	1	150	3.55		#	261	
<u>Propeller & Rudder:</u> Etching Primer Epicon B100							
BIOCLEAN SG R	1	100	6	6 hrs	#	406	
BIOCLEAN R single pack silicone finish	1	200	3.25			278	
E. <u>ANTIFOULING FINISH (SPC 3+ yr life)</u>							
SEA GRANDPRIX 660HS fusion	1	150	4.46	8 hrs	#	324	
F. <u>BOOTTOP ANTIFOULING FINISH (SPC)</u>							
G & H. <u>ABOVE WATER HULL & SUPERSTRUCTURE PRIMER</u>							
<u>Standard:</u> BANNOH 1500	1	150	4.86	19 hrs	30 days	286	
<u>Alternative:</u> BANNOH 200 (for KEYSOL) - pending INM assessment							
<u>Alternative:</u> UMEGUARD SX HS GREY Surface Tolerant	1	125	5.92	28 hrs	30 days	233	
J. <u>ABOVE WATER HULL & SUPERSTRUCTURE FINISH</u> Light Weatherwork Grey BS381C 676							
CAMLAC HD WEATHERWORK FINISH silicone alkyd	1	40	11.80	16 hrs	#	400	
EPICON AE epoxy acrylic - pending INM assessment							
KEYSOL polysiloxane - pending INM assessment							

ANNEX A
WHOLE SHIP SPECIFICATION
Proposed by

CHUGOKU PAINTS (UK) Ltd

Proposed Systems/Materials	Number of coats	NDFT per coat Microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
K. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
<u>Primer:</u> UMEGUARD HS SILVER	1	125	7.40	20 hrs	30 days	158	
<u>(a). Hangar Doors Finish</u> Light Weatherwork Grey BS381C 676 [Factory finished - Interpon 610 – see International Paints WSS]							
<u>(b). Flight & Weatherdeck - Type 2 Non-Skid Finish (coarse)</u> CAMIDECK FINISH Type 2 Extra Dark Sea Grey BS381C 640 CAMIDECK REPAIR KIT Type 2 available to order (2l)	2	208	2.83	16 hrs	#	374	
<u>(c). Hangar & Weatherdeck -Type 1 Non-Skid Finish (fine)</u> CAMIDECK FINISH Type 1 Hangardeck: Dark Admiralty Grey BS381C 632 Weatherdeck: Extra Dark Sea Grey BS381C 640 CAMIDECK REPAIR KIT Type 1 available to order (2l)	2	190	2.84	16 hrs	#	374	
<u>(d). Gloss for Deck Margins:</u> Extra Dark Sea Grey BS381C 640 UMEGUARD HS GREY	2	75	11.86	20 hrs	30 days	158	
L & M. INTERIOR DRY SPACES							
<u>Primer:</u> BANNOH 1500	1	125	5.84	19 hrs	30 days	286	
<u>Finish:</u> AQUALIFE GLOSS FINISH BS4800 00A01	2	40	10	16 hrs	7 days	132	99-757-9334
N & O. INTERIOR WET SPACES							
<u>Primer:</u> BANNOH 1500	1	125	5.84	19 hrs	30 days	286	
<u>Standard Finish:</u> AQUALIFE GLOSS FINISH Ash Grey BS4800 00A01	2	40	10	16 hrs	7 days	132	99-757-9334
<u>Citadel Lobby Finish:</u> AQUALIFE GLOSS FINISH - Colour either BS4800 00A01 or Grey BS381C 676	2	40	10	16 hrs	7 days	132	99-757-9334
<u>Cleansing Stations Finish:</u> AQUALIFE GLOSS FINISH White	2	40	10	16 hrs	7 days	132	
<u>Magazine Finish:</u> AQUALIFE GLOSS FINISH BS4800 00A01	2	40	10	16 hrs	7 days	132	99-757-9334
P. INTERIOR DECKS Green 14C39							
<u>Standard Primer:</u> AQUALIFE WSE PRIMER	2	50	9	16 hrs	#	0	99-398-1182
<u>Finish:</u> AQUALIFE FINISH	2	40	10	16 hrs	7 days	132	99-755-6242
<u>Cleansing Stations Primer:</u> BANNOH 1500	1	125	5.84	19 hrs	30 days	286	
<u>Finish:</u> AQUALIFE GLOSS FINISH	2	40	10	16 hrs	7 days	132	99-755-6242

ANNEX A
WHOLE SHIP SPECIFICATION
Proposed by

CHUGOKU PAINTS (UK) Ltd

Proposed Systems/Materials	Number of coats	NDFT per coat Microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
Q. <u>BATTERY COMPARTMENTS</u>							
Primer: BANNOH 1500	1	125	5.84	19 hrs	30 days	286	99-757-9334
Finish: AQUALIFE GLOSS FINISH BS4800 00A01	2	40	10	16 hrs	7 days	132	
R. <u>CABLE LOCKERS & COFFERDAMS</u>							
BANNOH 1500	2	125	5.84	19 hrs	30 days	286	
S. <u>BLACK/GREY & WATER BALLAST TANKS IMO PSPC</u>							
BANNOH 1500 red	1	160	4.56	19 hrs	30 days	286	
BANNOH 1500 grey	1	160	4.56	19 hrs	30 days	286	
T. <u>MACHINERY SPACE BILGES</u>							
BANNOH 1500	2	125	5.84	19 hrs	30 days	286	
U. <u>AVCAT, DIESEL, LUB & HYDRAULIC OIL TANKS SYSTEM</u> <u>DEF STAN 80-97 (HIGH SOLIDS)</u>							
EPICON T-800	2	125	5.2	24 hrs	28 days	359	
BANNOH 1500	2	125	5.84	19 hrs	30 days	286	
V. <u>POTABLE WATER TANKS</u>							
CLEANKEEP 5000	1(2)	300(150)	3.33	48 hrs	7 days	0	
W. <u>AQUEOUS FILM-FORMING FOAM (AFFF) TANKS</u>							
EPICON T-800	2	125	4.56	12 hrs	7 days	407	
X. <u>DEMINERALISED WATER TANKS (Max Temperature 90°C)</u>							
EPICON T-800	2	125	4.56	12 hrs	7 days	407	
EPICON T-800 HS-GF glass flake	2	125	5.28	24 hrs	7 days	349	
Y. <u>EPOXY HOLDING PRIMER</u>							
NZ PRIMER S	1	25	15.9	16 hrs	#	641	

ANNEX A
WHOLE SHIP SPECIFICATION
Proposed by

CHUGOKU PAINTS (UK) Ltd

Proposed Systems/Materials	Number of coats	NDFT per coat microns	Theo SP m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
Z. PRIMERS FOR NON-FERROUS METALS & FRP							
<u>Aluminium</u> : ALP 500	1	50	11.6	10 hrs	#	414	99-967-8636
<u>Stainless Steel</u> : BANNOH 1500 or EPICON S100 pending INM assessment	1	125	5.84	19 hrs	30 days	286	
<u>Zinc Spray & Galvanise</u> : GALVANITE 200	1	30	14.10	4 hrs	30 days	587	99-290-5829
<u>FRP Indicator coat</u> : CLEANKEEP 5000	1	300	3.33	48 hrs	7 days	0	

Notes:

1. The recoat intervals published above are based on the manufacturer's figures quoted for 20°C
2. The number of coats stated in the above table, relate to airless spray application to achieve the stated 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 maximum 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.
5. The Theoretical Spreading Rate (TSR) quoted in the table above is calculated from the coatings physical constants and makes no allowance for loss and assumes a totally smooth surface. The actual spreading rate achieved Practical Spreading Rate (PSR) is dependent upon many factors and in practice the factor used may vary from as little as 1.05 up to as much as 4+. It is usual for paint manufactures to use figures of 1.3 or 1.4 for estimating purposes but they always add the caveat that actual consumption achieved may vary due to such factors as surface profile, wastage due to material left in the can, weather conditions, skill of operator etc.
6. ~ = Use blast primer Y. when appropriate

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ANNEX B
WHOLE SHIP SPECIFICATION
Proposed by

HEMPEL UK LTD

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
A & B. BELOW WATER HULL PRIMER ~							
<u>Standard:</u> HEMPADUR 45880 MIO 12430	1	175	4.6	8 hrs	30 days	198	99-803-7233
<u>Alternative:</u> HEMPADUR QUATTRO 17634	1	175	4.1	6 hrs	90 days	275	
<u>Tie Coat for C,E&F:</u> HEMPADUR 47182	1	100	6.2	9 hrs	5 days	364	
<u>Tie Coat for D:</u> HEMPEL NEXUS 27310	1	100	5.6	6 hrs	20 hrs	388	
<u>Tie Coat For D:</u> HEMPEL NEXUS 27500 (repair only)	1	125	5.2	8 hrs	48 hrs	259	
C. ANTIFOULING FINISH (Self Polishing - SPC)							
<u>5 year life:</u> HEMPEL GLOBIC 6000 (75950)	2	120	5.8	10 hrs	#	383	
<u>7 Year life:</u> HEMPEL GLOBIC 9000 (78950)	2	140	4.1	10 hrs	#	367	
D. ANTIFOULING FINISH (Foul Release - FRC 5+ yr life)							
HEMPASIL X3 87500 Silicone	1	150	4.7	6 hrs	#	265	
HEMPAGUARD X7 89900 Hydrogel c/w Biocides	1 *CW*	150	4.7	6 hrs	48 hrs	262	
Seek approval. Operational req'tment req'd due to additional H&S risks.	2 *VWV*	100	7	6 hrs	48 hrs	262	
* Cold & Warm Water systems provided *							
E. ANTIFOULING FINISH (SPC - 3+ year life)							
<u>Standard:</u> GLOBIC 6000 (75950)	2	100	5.8	8 hrs	#	383	
<u>Alternative:</u> OLYMPIC + (72950)	2	100	5.0	8 hrs	#	367	
F. BOOTTOP ANTIFOULING FINISH (SPC)							
<u>Standard:</u> GLOBIC 6000 (75950)	2	100	5.8	8 hrs	#	383	
<u>Alternative:</u> OLYMPIC + (72950)	2	100	5.0	8 hrs	#	367	
G & H. ABOVE WATER HULL & SUPERSTRUCTURE PRIMER							
<u>Standard:</u> HEMPADUR 45880 MIO 12430	1	150	4.6	8 hrs	30 days	198	99-803-7233
<u>Alternative:</u> HEMPADUR QUATTRO 17634	1	175	4.1	6 hrs	90 days	275	
<u>Touch-up:</u> HEMUCRYL PRIMER 18100	2	30	15.7	4 hrs	#	61	99-909-6026
J. ABOVE WATER HULL & SUPERSTRUCTURE FINISH Light Weatherwork Grey BS 381C 676							
<u>Acrylic:</u> HEMPEL'S PRO ACRYLIC 55880	1	50	11.0	12 hrs	#	380	99-772-5448
<u>Silicone Alkyd:</u> HEMPEL'S SILICONE ALKYD FINISH 536GB	1	35	15.4	8 hrs	1-2 days	410	
<u>Tie Coat – (if req'd):</u> HEMPEL'S UNDERCOAT 42460	1	40	12.5	8 hrs	7 days	385	
<u>Sealer for RASH:</u> HEMUCRYL 18100	1	30	15.7	4 hrs	#	61	

ANNEX B WHOLE SHIP SPECIFICATION Proposed by

HEMPEL UK LTD

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
K. FLIGHT & WEATHERDECK SYSTEMS - DSTAN 80-134							
(a) Hangar Doors							
[Factory finished - Interpon 610 – see International Paints WSS]							
(b) Flight & Weatherdeck - Type 2 Non-Skid Finish (coarse)							
Primer: HEMPADUR 45880 MIO 12430	1	100	8.0	7 hrs	#	198	99-803-7233
Finish: HEMPEL'S NON SKID 45710 Extra Dark Sea Grey BS 381C 640	2	400	1.9	6 hrs	30 days	206	99-831-0343
Type 2 Repair Kit: HEMPEL'S DECK REPAIR KIT	No longer supported – order primer and finish coat separately.						
(c) Hangar & Weatherdeck - Type 1 Non-Skid Finish (fine)							
Primer: HEMPADUR 45880 MIO 12430	1	100	8.0	7 hrs	#	198	99-803-7233
Hangar Deck - Finish: HEMPEL'S NON SKID 45340 Dark Admiralty Grey BS 381C 632	2	200	3.2	6 hrs	30 days	335	99-670-9581
Weatherdeck - Finish: HEMPEL'S NON SKID 45340 Extra Dark Sea Grey BS 381C 640	2	200	3.2	6 hrs	30 days	335	99-213-1121
Type 1 Repair Kit: HEMPEL'S DECK REPAIR KIT	No longer supported – order primer and finish coat separately.						
(d) Gloss for Deck Margins: HEMPADUR 45143 Extra Dark Sea Grey BS 381C 640	2	125	5.0	3 hrs	30 days	330	
L & M. INTERIOR DRY COMPARTMENTS							
Standard Primer: HEMPADUR 45880	1	125	6.4	7 hrs	#	198	99-803-7233
Alternative Primer: HEMUCRYL High Build 18032	1	75	5.7	2 hrs	#	45	
Standard Finish: HEMUCRYL ENAMEL 58100 BS 4800 00A01	2	30	13.7	6 hrs	#	63	99-660-9288
Alternative Finish: HEMUDUR FC 48582 BS 4800 00A01	1	80	6.9	12 hrs	15 days	27	99-988-2715
N & O. INTERIOR WET COMPARTMENTS							
Standard Primer: HEMPADUR 45880 MIO 12430	1	125	6.4	7 hrs	#	198	99-803-7233
Alternative Primer: HEMPADUR QUATTRO 17634	1	125	5.8	5 hrs	#	275	
Standard Areas Finish: HEMUDUR FC 48582 BS 4800 00A01	1	80	6.9	12 hrs	15 days	27	99-988-2715
Citadel Lobby Finish: HEMUDUR FC 48582 BS 4800 00A01 or Grey BS 381C 676	1	80	6.9	12 hrs	15 days	27	99-988-2715
Cleansing Stations Finish: HEMPADUR 45143 White	1	100	6.0	8 hrs	#	375	99-602-7280
Magazine Use Finish: HEMUDUR FC 48582 BS 4800 00A01	1	80	6.9	1 hrs	15 days	27	99-988-2715
P. INTERIOR DECKS BS 4800 Green 14C39							
Primer: HEMPADUR 45880 MIO 12430	1	125	6.4	7 hrs	#	198	99-803-7233
Finish: HEMUDUR FC 48582	1	80	6.9	12 hrs	15 days	27	99-279-8221
Cleansing Station Finish: HEMPADUR 45143	1	100	6.0	8 hrs	#	375	99-471-1920

ANNEX B
WHOLE SHIP SPECIFICATION
Proposed by

HEMPEL UK LTD

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
Q. <u>BATTERY COMPARTMENTS</u> BS 4800 00A01							
Primer: HEMPADUR 45880 MIO 12430	1	150	6.0	8 hrs	#	198	99-803-7233
Finish: HEMUDUR FC 48582	1	80	6.9	12 hrs	15 days	27	99-988-2715
R. <u>CABLE LOCKERS & COFFERDAMS</u>							
HEMPADUR 45880 White	1	150	6.0	8 hrs	#	217	99-264-0387
S. <u>BLACK/GREY & WATER BALLAST TANKS</u> IMO PSPC							
Water Ballast Tanks: HEMPADUR QUATTRO 17634	2	160	4.5	6 hrs	90 days	275	
Black & Grey Water Tanks: HEMPADUR 85671	3	100	6.8	36 hrs	5 days	320	
T. <u>MACHINERY SPACE BILGES</u>							
HEMPADUR 45880 White	2	125	6.4	7 hrs	#	217	99-264-0387
U. <u>AVCAT, DIESEL, LUB & HYDRAULIC OIL TANKS SYSTEM</u> - DEF STAN 80-97 (HIGH SOLIDS)							
HEMPADUR 85671	3	100	6.8	36 hrs	21 days	320	
V. <u>POTABLE WATER TANKS</u>							
Standard: HEMPADUR MULTI STRENGTH 35530	2	200	5.0	24 hrs	5 days	10	
Alternative: HEMPADUR MULTI STRENGTH 35560	2	200	5.0	24hrs	30 days	0	
W. <u>AQUEOUS FILM-FORMING FOAM (AFFF) TANKS</u>							
HEMPADUR 85671	3	100	6.8	36 hrs	21 days	320	
X. <u>DEMINERALISED WATER TANKS(MaxTemperature 90°C)</u>							
HEMPADUR 85671	3	100	6.8	36 hrs	21 days	320	
Y. <u>EPOXY HOLDING PRIMER</u>							
HEMPADUR 15570	1	40	13.5	#	#	420	99-943-1152
Z. <u>PRIMERS FOR NON-FERROUS METALS & FRP</u>							
<u>Aluminium, Stainless Steel, Zinc Spray & Galvanised surfaces:</u>							
Standard: HEMUCRYL TIE COAT 18200 (1 pack)	1	20	19	24 hrs	#	40	99-199-2908
Alternative: HEMPADUR 15553 (2 pack)	1	50	11	2 hrs	#	400	99-870-0653
FRP Indicator Coat: HEMPADUR MULTI STRENGTH 35530	1	200	5	24 hrs	5 days	10	
Using Y. Epoxy Holding Primer as tie coat for subsequent coats @	1	100/125		#	#	420	99-943-1152
HIGH PROTECT 35651 grey (repair only)	1	200	5	8 hrs	5 days	10	99-517-4318

ANNEX B
WHOLE SHIP SPECIFICATION
Proposed by

HEMPEL UK LTD

Notes:

1. The recoat intervals published above are based on the manufacturer's figures quoted for 20°C
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. # 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.
5. The Theoretical Spreading Rate (Theo SR) quoted in the table above is calculated from the coatings physical constants and makes no allowance for loss and assumes a totally smooth surface. The actual spreading rate achieved (Practical SR) is dependent upon many factors and in practice the factor used may vary from as little as 1.05 up to as much as 4+. It is usual for paint manufactures to use figures of 1.3 or 1.4 for estimating purposes but they always add the caveat that actual consumption achieved may vary due to such factors as surface profile, wastage due to material left in the can, weather conditions, skill of operator etc.
6. ~ = Use blast primer **Y**. when appropriate.

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ANNEX C
WHOLE SHIP SPECIFICATIONS
Proposed by

INTERNATIONAL PAINT LTD

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms Per ltr	NATO Stock Number
A & B. <u>BELOW WATER HULL PRIMER</u> ~							
<u>Standard:</u> INTERGARD 5000	1	175	4.68	12 hrs	2 months	155	
<u>Alternative:</u> INTERSHIELD 300 Foul Release only (Area D)	2	125	4.80	7 hrs	14 days	313	
<u>Tie Coat for C:</u> INTERGARD 263	1	75	7.60	8 hrs	5 days	379	99-133-3854
<u>Tie Coat for D (if req'd):</u> INTERSLEEK 737	1	100	6.5	4 hrs	7 days	325	
C. <u>ANTIFOULING FINISH (Self Polishing - SPC)</u>							
<u>5 year life:</u> INTERSMOOTH 7460	2	125	3.20	12 hrs	28 days	425	
D. <u>ANTIFOULING FINISH (Foul Release - FRC 5+ yr life) Red</u>							
INTERSLEEK 970 Fluoropolymer	1	150	4.8	24 hrs	#	248	
INTERSLEEK 1100SR Slime Release Fluoropolymer	1	150	4.8	24 hrs	#	248	
E. <u>ANTIFOULING FINISH (SPC)</u>							
<u>3 year life:</u> INTERSPEED 6400 Black	1	150	4	6 hrs	3 months	358	
F. <u>BOOTTOP ANTIFOULING FINISH (SPC) Black</u>							
INTERSPEED 6400	2	60	10	6 hrs	3 months	358	
<u>BOOTTOP ANTIFOULING FINISH (FR) Black</u>							
<u>Standard:</u> INTERSLEEK 1100SR	1	150	4.8	24 hrs		248	
<u>Repair:</u> INTERSLEEK RAPID	1	150	4	24 hrs		350	99-358-0224
G. <u>ABOVE WATER HULL & SUPERSTRUCTURE PRIMER</u>							
INTERGARD 5000 Dawn Grey BS 4800 00A01	1	150	5.47	12 hrs	14 days	155	99-000-5256
J. <u>ABOVE WATER HULL & SUPERSTRUCTURE FINISH</u> BS 381C 676							
<u>Polysiloxane:</u> INTERFINE 878	1	50	14.4	4 hrs	#	246	99-274-4682
<u>Epoxy Acrylic:</u> INTERFINE 691 HS	1	50	10.6	8 hrs	#	409	99-864-5322
<u>Undercoat / Tie Coat (if required):</u> INTERGARD 263	1	75	7.6	8 hrs	5 days	379	99-133-3854

ANNEX C
WHOLE SHIP SPECIFICATIONS
Proposed by

INTERNATIONAL PAINT LTD

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m²/litr	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms Per ltr	NATO Stock Number
K. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
<u>(a) Hangar Doors</u>							
[Factory finished - Interpon 610 - powder coating]	1	100	N/A	N/A	N/A	0	
Markings: <u>Epoxy Acrylic</u> : INTERFINE 691 HS	1	50	10.6	8 hrs	#	409	
<u>Polysiloxane</u> : INTERFINE 878	1	50	14.4	4 hrs	#	246	
<u>(b) Flight & Weatherdeck - Type 2 Non-skid Finish (coarse)</u>							
<u>Primer</u> : INTERGARD 5000 Dawn Grey BS 4800 00A01	1	150	5.47	12 hrs	14 days	155	99-000-5256
<u>Finish</u> : INTERSHIELD 851 Extra Dark Sea Grey BS 381C 640	2	300	1.28	16 hrs	#	169	99-391-0953
<u>Type 2 Repair Kit</u> : INTERSHIELD 851 REP KIT – Extra Dark Sea Grey BS 381C 640							99-325-0579
<u>(c) Hanger & Weatherdeck - Type 1 Non-skid Finish (fine)</u>							
<u>Primer</u> : INTERGARD 5000 Dawn Grey BS 4800 00A01	1	150	5.47	12 hrs	14 days	155	99-000-5256
<u>Hanger Deck</u> : INTERSHIELD 852 Dark Admiralty Grey BS 381C 632	2	200	1.92	12 hrs	#	134	99-149-8996
<u>Weatherdeck</u> : INTERSHIELD 852 Extra Dark Sea Grey BS 381C 640	2	200	1.92	12 hrs	#	134	99-583-1344
<u>Type 1 Repair Kit</u> : INTERSHIELD 852 REPAIR KIT – Dark Admiralty Grey BS 381C 632							99-993-9328
<u>(d) Gloss for Deck Margins</u>							
INTERGARD 740 Extra Dark Sea Grey BS 381C 640	1	50	10.2	16 hrs	#	420	99-182-2627
L & M. INTERIOR DRY COMPARTMENTS							
<u>Primer</u> : INTERGARD 5000 Dawn Grey	1	125	6.56	12 hrs	#	155	99-000-5256
<u>Finish</u> : INTERCRYL 700 BS 4800 00A01	1 or 2	35	11.42	60 mins	#	50	99-799-8832
<u>Alternative Finish</u> : INTERSHEEN 5579	1 or 2	35	11.29	60 mins	#	12	
N & M. INTERIOR WET COMPARTMENTS (Complete Finish colour either White BS 4800 00A01 or Grey BS 381C 676							
<u>Primer</u> : INTERGARD 5000 Dawn Grey	1	125	6.56	24 hrs	#	155	99-000-5256
<u>Standard Areas Finish</u> : INTERGARD 1735	1 or 2	50	11.20	12 hrs	#	132	99-255-0527
<u>Citadel Lobby Finish</u> : INTERGARD 1735	1 or 2	50	11.20	12 hrs	#	132	99-255-0527
<u>Cleansing Stations Finish</u> : INTERFINE 979 (overcoat primer within 4 days)	1	125	7.60	4 hrs	#	165	99-168-7337
<u>Magazines Finish</u> : INTERGARD 1735	1 or 2	50	11.20	12 hrs	#	132	99-255-0527

ANNEX C
WHOLE SHIP SPECIFICATIONS
Proposed by

INTERNATIONAL PAINT LTD

Proposed system Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
P. <u>INTERIOR DECKS</u> BS 4800 Green 14C39							
INTERGARD 5000	1	150	5.47	#	#	155	99-555-1384
<u>Cleansing Stations Finish:</u> INTERFINE 979 (overcoat primer within 4 days)	1	125	7.60	4 hrs	#	165	99-729-7357
Q. <u>BATTERY COMPARTMENTS</u>							
INTERGARD 5000 BS 4800 00A01	1	150	5.47	12 hrs	#	155	
R. <u>CABLE LOCKERS & COFFERDAMS</u>							
INTERGARD 5000	1	150	5.46	12 hrs	3 months	155	
S. <u>BLACK/GREY & WATER BALLAST TANKS</u> IMO PSPC							
<u>Water Ballast Tanks:</u> INTERGARD 5000	2	160	5.13	12 hrs	3 months	155	
<u>Black & Grey Water Tanks:</u> INTERLINE 850	2	125	6.08	8 hrs	30 days	212	
<u>Galley Grey Water Tanks:</u> INTERLINE 994	3	100	7	44hrs	25 days	290	
T. <u>MACHINERY SPACE BILGES</u>							
INTERGARD 5000 White	1	175	4.68	12 hrs	3 months	155	
U. <u>AVCAT, DIESEL, LUB & HYDRAULIC OIL TANKS SYSTEM</u> - DEF STAN 80-97 (HIGH SOLIDS)							
INTERLINE 850	2	125	6.08	8 hrs	30 days	212	
V. <u>POTABLE WATER TANKS</u>							
INTERLINE 925	1	300	3.33	18 hrs	3 days	1	
W. <u>AQUEOUS FILM-FORMING FOAM (AFFE) TANKS</u>							
INTERLINE 704	2	125	4.24	23 hrs	21 days	385	
X. <u>DEMINERALISED WATER TANKS (Max Temperature 90°C)</u>							
INTERLINE 925 (up to 60°C only)	1	300	3.33	18 hrs	3 days	1	
Y. <u>EPOXY HOLDING PRIMER</u>							
<u>Standard:</u> INTERGARD 269	1	30	15.67	6 hrs	#	411	99-983-0743
<u>Alternative & Maintenance:</u> INTERGARD 276	1	40	11.75	6 hrs	#	411	

ANNEX C
WHOLE SHIP SPECIFICATIONS
Proposed by

INTERNATIONAL PAINT LTD

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms Per	NATO Stock Number
Z. PRIMERS FOR NON-FERROUS METALS & FRP							
<u>Aluminium, Stainless steel, Zinc Spray or Galvanised surfaces:</u>							
<u>Standard:</u> INTERGARD 269	1	30	15.67	6 hrs	#	411	99-983-0743
<u>Alternative:</u> INTERGARD 276	1	40	11.75	6 hrs	#	411	
<u>FRP Indicator Coat:</u> INTERLINE 925 Cream	1	300	5.0	18 hrs	3 days	1	

Notes:

1. The recoat intervals published above are based on the manufacturer's figures quoted for 25°C
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. 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.
4. # See Manufacturer's Technical Data Sheet/Application Instructions for requirements.
5. The Theoretical Spreading Rate (Theo SR) quoted in the table above is calculated from the coatings physical constants and makes no allowance for loss and assumes a totally smooth surface. The actual spreading rate achieved (Practical SR) is dependent upon many factors and in practice the factor used may vary from as little as 1.05 up to as much as 4+. It is usual for paint manufactures to use figures of 1.3 or 1.4 for estimating purposes but they always add the caveat that actual consumption achieved may vary due to such factors as surface profile, wastage due to material left in the can, weather conditions, skill of operator etc.
6. ~ = Use blast primer Y. when appropriate

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ANNEX D
WHOLE SHIP SPECIFICATIONS
Proposed by

JOTUN COATINGS (EUROPE) LTD

Proposed Systems /Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per litre	NATO Stock Number
A & B. <u>BELOW WATER HULL PRIMER</u> ~							
<u>Standard:</u> JOTACOTE UNIVERSAL (alu. red toned)	1	200	3.6	4 hrs	#	240	
<u>Alternative:</u> JOTAMASTIC 87 ALUMINIUM (red toned)	1	200	4.4	10 hrs	#	110	
<u>Alternative:</u> MARATHON IQ (impact resistant - red)	1	500	2.0	10 hrs	3 days	30	
<u>Tie Coat:</u> SAFEGUARD UNIVERSAL ES (grey)	1	100	6.2	10 hrs	3 days	330	
C. <u>ANTIFOULING (Self Polishing - SPC 5 yr life)</u>							
<u>Standard:</u> SEAQUANTUM PLUS (light red)	1	125	3.8	7 hrs	#	460	
<u>Alternative:</u> SEAQUANTUM ULTRA (dark red)	2	125	3.8	7 hrs	#	460	
D. <u>FOUL RELEASE (Foul Release - FRC 5+ yr life)</u>							
SEALION TIECOAT (if req'd - light red)	1	90	6.6	15 hrs	4 days	406	
SEALION REPULSE Nano Repellant Silicone FR Topcoat	1	150	4.8	#	#	230	
E. <u>ANTIFOULING (SPC - 3 year life)</u>							
SEAFORCE 90 (light red)	1	105	5.5	7 hrs	#	370	
SEAFORCE 90 (dark red)	1	105	5.5	7 hrs	#	370	
F. <u>BOOTTOP ANTIFOULING</u> black							
<u>Standard SPC:</u> SEAQUANTUM CLASSIC	1 or 2	150	3.1	7 hrs	#	460	
<u>Alternative FRC:</u> SEALION TIECOAT (if req'd - light red)	1	90	6.6	15 hrs	4 days	406	
SEALION REPULSE	1	150	4.8	#	#	230	
G & H. <u>ABOVE WATER HULL & SUPERSTRUCTURE PRIMER</u>							
<u>Standard:</u> JOTACOTE UNIVERSAL (alu. red toned)	1	200	3.6	4 hrs	#	240	
<u>Alternative:</u> JOTAMASTIC 80 (alu. red toned)	1	200	4.0	10 hrs	#	145	
<u>Repair Kit (1:1 mix):</u> JOTAMASTIC SMART PACK (red)	2	70	10.7	7 hrs	#	230	
J. <u>ABOVE WATER HULL & SUPERSTRUCTURE FINISH</u> BS381C 676							
<u>Polysiloxane:</u> HARDTOP OPTIMA	1	75	10.1	4 hrs	#	215	
<u>Cured Acrylic:</u> HARDTOP CA	1	75	8	5 hrs	#	340	

ANNEX D
WHOLE SHIP SPECIFICATIONS
Proposed by

JOTUN COATINGS (EUROPE) LTD

<u>Proposed Systems /Materials</u>	Number of Coats	NDFT per coat microns	Theo SR m²/litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per litre	NATO Stock Number
K. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
<u>(a) Hanger Doors</u>							
[Factory finished - Interpon 610 – see International Paints WSS]							
<u>(b) Flight & Weatherdeck - Type 2 Non-skid Finish (coarse)</u>							
<u>Primer:</u> JOTAMASTIC 87 (grey)	1	150	5.5	10 hrs	#	150	
<u>Finish:</u> JOTA ARMOUR (BS381C 640)	2	375	2.4	14 hrs	#	70	
<u>Type 2 Repair Kit: JOTA ARMOUR REPAIR KIT (640)</u>	1	750	1.2	1.2	#	70	
<u>(c) Hangar & weatherdeck - Type 1 Non-Skid Finish (fine)</u>							
<u>Primer:</u> JOTAMASTIC 87 (grey)	1	150	5.5	10 hrs	#	150	
<u>Finish:</u> JOTA ARMOUR FINE (BS381C 632 or 640)	2	200	4.5	14 hrs	#	70	
<u>Type 1 Repair Kit: JOTA ARMOUR FINE REPAIR KIT (632 or 640)</u>	1	400	2.2	14 hrs	#	70	
<u>(d) GLOSS FOR DECK MARGINS</u>							
<u>Cured acrylic:</u> HARDTOP CA (BS381C 676)	1	75	8	5 hrs	#	340	
<u>Polysiloxane:</u> HARDTOP OPTIMA (BS381C 676)	1	75	10.1	4 hrs	#	215	
L & M. INTERIOR DRY SPACES							
<u>Standard Primer:</u> WATERFINE ACRYLIC PRIMER (white)	1	80	5.8	1 hrs	#	66	
<u>Alternative Primer(2 pack):</u> WATERFINE PRIMER (white)	1	80	5.8	1.5 hrs	#	60	99-462-9708
<u>Finish:</u> TBC							
N & O. INTERIOR WET SPACES INC. MAGAZINE & CITADEL LOBBY							
<u>Primer:</u> WATERFINE PRIMER (white)	1	100	4.6	1.5 hrs	#	60	99-462-9708
<u>Finish:</u> WATERFINE PRIMER (BS4800 00A01) (BS381C 676)	1 or 2	40	11.6	1.5 hrs	#	60	
<u>Cleansing Stations - Primer:</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
(Maker Coatings) <u>Finish:</u> AMERON PSX 700 White	1	125	7.2	4.5 hrs	#	120	17-113-5689
P. INTERIOR DECKS							
<u>Primer:</u> WATERFINE PRIMER (white)	1	100	4.6	1.5 hrs	#	60	99-462-9708
<u>Finish:</u> WATERFINE PRIMER (BS4800 14C39)	1 or 2	40	11.6	1.5 hrs	#	60	
<u>Cleansing Stations - Primer:</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
(Maker Coatings) <u>Finish:</u> AMERON PSX 700 BS4800 14C39	2	125	7.2	4.5 hrs	#	120	17-113-6169
Q. BATTERY COMPARTMENTS							
<u>Primer:</u> WATERFINE PRIMER (white)	1	100	4.6	1.5 hrs	#	60	99-462-9708
<u>Finish:</u> WATERFINE PRIMER (BS4800 00A01)	1 or 2	40	11.6	1.5 hrs	#	60	

ANNEX D
WHOLE SHIP SPECIFICATIONS
Proposed by

JOTUN COATINGS (EUROPE) LTD

<u>Proposed Systems /Materials</u>	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per litre	NATO Stock Number
R. <u>CABLE LOCKERS & COFFERDAMS</u>							
<u>Standard:</u> JOTAMASTIC 80 (alu. red toned)	1	175	4.6	10 hrs	#	145	
<u>Alternative:</u> JOTACOTE UNIVERSAL (alu. red toned)	1	200	3.6	4 hrs	#	240	
S. <u>BLACK/GREY & WATER BALLAST TANKS</u> IMO PSPC							
<u>Water Ballast Tanks</u>							
<u>Standard:</u> BALLOXY HB LIGHT (green)	1	160	5.1	10 hrs	#	150	
BALLOXY HB LIGHT (beige or grey)	1	160	5.1	10 hrs	#	150	
<u>Alternative:</u> JOTACOTE UNIVERSAL (alu. red toned)	1	160	4.5	4 hrs	#	240	
JOTACOTE UNIVERSAL (grey)	1	160	4.5	4 hrs	#	240	
<u>Black & Grey Water Tanks</u>							
<u>Standard:</u> TANKGUARD STORAGE (light red)	1	150	4.2	10 hrs	30 days	310	
TANKGUARD STORAGE (red)	1	150	4.2	10 hrs	30 days	310	
<u>Alternative:</u> TANKGUARD DW (light grey)	1	150	6.7	12 hrs	5 days	2	
TANKGUARD DW (white)	1	150	6.7	12 hrs	5 days	2	
T. <u>MACHINERY SPACE BILGES</u>							
<u>Primer:</u> JOTACOTE UNIVERSAL (alu. red toned)	1	125	5.8	4 hrs	#	240	
<u>Finish:</u> HARDTOP CA (BS4800 00A01)	1 or 2	75	10.1	4 hrs	#	215	
U. <u>AVCAT, DIESEL, LUB & HYDRAULIC OIL TANKS SYSTEM</u> <u>DEF STAN 80-97 (HIGH SOLIDS)</u>							
TANKGUARD STORAGE (light red)	1	125	5.0	10 hrs	30 days	310	
TANKGUARD STORAGE (light grey)	1	125	5.0	10 hrs	30 days	310	
V. <u>POTABLE WATER TANKS</u>							
TANKGUARD DW (light grey)	1	150	6.7	12 hrs	5 days	2	
TANKGUARD DW (white)	1	150	6.7	12 hrs	5 days	2	
W. <u>AQUEOUS FILM-FORMING FOAM (AFFF) TANKS</u>							
TANKGUARD DW (light grey)	1	150	6.7	12 hrs	5 days	2	
TANKGUARD DW (white)	1	150	6.7	12 hrs	5 days	2	
X. <u>DEMINERALISED WATER TANKS (Max Temperature 90 °C)</u>							
<u>Standard:</u> TANKGUARD STORAGE (light grey)	1	125	5.0	10 hrs	30 days	310	
TANKGUARD STORAGE (light red)	1	125	5.0	10 hrs	30 days	310	
TANKGUARD STORAGE (light grey)	1	125	5.0	10 hrs	30 days	310	
<u>Alternative:</u> TANKGUARD PLUS (white)	1	100	7.0	20 hrs	21 days	300	
TANKGUARD PLUS (buff)	1	100	7.0	20 hrs	21 days	300	
TANKGUARD PLUS (white)	1	100	7.0	20 hrs	21 days	300	

ANNEX D
WHOLE SHIP SPECIFICATIONS
Proposed by

JOTUN COATINGS (EUROPE) LTD

<u>Proposed Systems /Materials</u>	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per litre	NATO Stock Number
Y. EPOXY HOLDING PRIMER MUKI EPS (red)	1	20	12.5	7 hrs		610	
Z. PRIMERS FOR NON-FERROUS METALS & FRP <u>Aluminium, Stainless steel, Zinc Spray or Galvanised surfaces:</u> WATERFINE PRIMER (white)	1	60	7.6	1.5 hrs	#	60	99-462-9708
FRP Indicator Coat: PENGUARD HB (White)	2	150	3.6	8 hrs	#	390	

NOTES:-

1. The recoat intervals published above are based on the Manufacturer's figures quoted for 23°C
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. # = 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.
5. The Theoretical Spreading Rate (Theo SR) quoted in the table above, per coat, is calculated from the coatings physical constants and makes no allowance for loss and assumes a totally smooth surface. The actual spreading rate achieved (Practical SR) is dependent upon many factors and in practice the factor used may vary from as little as 1.05 up to as much as 4+. It is usual for Paint Manufacturers to use figures of 1.3 or 1.4 for estimating purposes but they always add the caveat that actual consumption achieved may vary due to such factors as surface profile, wastage due to material left in the can, weather conditions, skill of operator etc.
6. ~ = Use blast primer Y. when appropriate

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ANNEX E
WHOLE SHIP SPECIFICATION
Proposed by

MAKER COATING SYSTEMS LTD.
Incorporating: PPG, Ameron, Sigma & CORROLESS

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
A & B. <u>BELOW WATER HULL PRIMER</u> ~							
<u>Standard:</u> SIGMASHIELD 220 7922	1	125	6.4	3½ hrs	14 days	262	99-403-5015
<u>Alternative:</u> SIGMASHIELD 420 7951	1	150	5.6	3½ hrs	14 days	239	99-723-3658
<u>Tie-Coat (if req'd):</u> SIGMACOVER 525 7902	1	100	6.1	12 hrs	14 days	365	
C. <u>ANTIFOULING (Self Polishing – SPC 5yr life)</u>							
SIGMA ECOFLEET 530 (red brown) 7385	1	110	5.4	6 hrs	#	339	
SIGMA ECOFLEET 530 (brown) 7385	1	110	5.4	6 hrs	#	339	
D. <u>ANTIFOULING SYSTEM (Foul Release - FRC 5yr + life)</u>							
SIGMACOVER 295 7947	1	100	5.5	16 hrs	10 days	436	
SIGMASHIELD 610 7978	1	150	3.8	12 hrs	5 days	436	
SIGMAGLIDE 790 7386	1	150	5.3	12 hrs	5 days	187	
<u>SIGMAGLIDE 890:</u> Silicone FR Finish 7399	1	150	3.4	20 mins	#	215	
<u>SIGMAGLIDE 990:</u> High Efficiency FR Finish 7397	1	180	4.4	2 hrs	#	248	
E. <u>ANTIFOULING FINISH (SPC 3yr + life)</u>							
SIGMA ECOFLEET 530 (red brown) 7385	1	110	5.4	6 hrs	#	339	
SIGMA ECOFLEET 530 (brown) 7385	1	110	5.4	6 hrs	#	339	
F. <u>BOOTTOP ANTIFOULING FINISH (SPC)</u>							
SIGMA ECOFLEET 530 (black) 7385	1	110	5.4	6 hrs	#	339	
G & H. <u>A/W HULL & SUPERSTRUCTURE PRIMER</u>							
<u>Standard:</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
<u>Alternative:</u> SIGMASHIELD 220 7922	1	125	6.4	3½ hrs	14 days	262	99-403-5015
J. <u>A/W HULL & SUPERSTRUCTURE FINISH</u> Lt Weatherwork Grey							
<u>Polysiloxane:</u> AMERON PSX700	1	75	12	3 hrs	#	164	TBC
<u>Epoxy Acrylic:</u> SIGMADUR 540 7740	1	50	10.8	8 hrs	#	411	TBC

ANNEX E
WHOLE SHIP SPECIFICATION
Proposed by

MAKER COATING SYSTEMS LTD.
Incorporating: PPG, Ameron, Sigma & CORROLESS

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
K. FLIGHT & WEATHERDECK SYSTEMS - DEFSTAN 80-134							
<u>(a) Hangar Doors</u>							
[Factory finished - Interpon 610 – see International Paints WSS]							
<u>(b) Flight & Weatherdeck - Type 2 Non-skid Finish (coarse)</u>							
<u>Primer:</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
<u>Finish:</u> AMERLOCK 400 NS Extra Dark Sea Grey BS381C 640	2	400	2.3	16 hrs	#	106	99-940-6452
<u>Type 2 Repair Kit:</u> AMERLOCK 400 NS T2R							TBC
<u>(c) Hanger & Weatherdeck - Type 1 Non-skid Finish (fine)</u>							
<u>Primer:</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
<u>Hangar Deck:</u> AMERLOCK 400 NS Dark Admiralty Grey BS 381C 632	2	300	4	16 hrs	#	106	
<u>Weatherdeck:</u> AMERLOCK 400 NS Extra Dark Sea Grey BS 381C 640	2	300	4	16 hrs	#	106	99-940-6452
<u>Type 1 Repair Kit:</u> AMERLOCK 400 NS T1R							TBC
<u>(d) Gloss for Deck Margins:</u> AMERLOCK 400C BS 381C 640	1	125	7	16 hrs	#	106	TBC
L & M. INTERIOR DRY COMPARTMENTS							
<u>Primer:</u> AMERLOCK 400C	1	100	8.75	16 hrs	#	106	99-974-7400
<u>Finish:</u> AMERLOCK 400C BS4800 00A01	1	100	8.75	16 hrs	#	106	99-958-6062
<u>Alternative Primer:</u> SIGMA AQUACOVER 25 7150	1	75	5.7	4 hrs	#	25	TBC
<u>Finish:</u> SIGMA AQUACOVER 45 7250	1	50	6.8	24 hrs	#	10	99-236-5744
N & O. INTERIOR WET COMPARTMENTS							
<u>Primer:</u> AMERLOCK 400C BS4800 00A01	1	100	8.75	16 hrs	#	106	99-974-7400
<u>Standard Finish:</u> AMERLOCK 400C	1	100	8.75	16 hrs	#	106	99-958-6062
<u>Citadel Lobby Finish:</u> AMERLOCK 400C or Grey BS381C 676	1	100	8.75	16 hrs	#	106	99-958-6062
<u>Magazines Finish:</u> AMERLOCK 400C	1	100	8.75	16 hrs	#	106	99-958-6062
<u>Cleansing Stations Primer:</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
<u>Finish:</u> AMERON PSX 700	1	125	7.2	4.5 hrs	#	120	17-113-5689
P. INTERIOR DECKS BS4800 14C39							
<u>Primer:</u> AMERLOCK 400C	1	100	8.75	16 hrs	#	106	99-974-7400
<u>Finish:</u> AMERLOCK 400C	1	100	8.75	16 hrs	#	106	99-958-6062
<u>Cleansing Stations Finish:</u> AMERON PSX 700	1	125	7.2	4.5 hrs	#	120	17-113-6169

ANNEX E
WHOLE SHIP SPECIFICATION
Proposed by

MAKER COATING SYSTEMS LTD.
Incorporating: PPG, Ameron, Sigma & CORROLESS

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
Q. <u>BATTERY COMPARTMENTS</u> BS4800 00A01							
Primer: AMERLOCK 400C	1	100	8.75	16 hrs	#	106	99-974-7400
Finish: AMERLOCK 400C	1	100	8.75	16 hrs	#	106	99-958-6062
R. <u>CABLE LOCKERS & COFFERDAMS</u>							
SIGMASHIELD 880	1	350	2.9	3.5 hrs	14 days	207	TBC
S. <u>BLACK, GREY & SEAWATER BALLAST TANKS</u>							
CORROLESS EPF Black or Buff	1	200	4.8	16 hrs	#	80	25-150-0972
CORROLESS RF35 Grey	1	200	4.8	16 hrs		93	99-337-0778
T. <u>MACHINERY SPACE BILGES</u>							
AMERLOCK 400C WHITE	2	125	7	16 hrs	#	106	17-108-8248
U. <u>AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM</u> <u>DEF-STAN 80-97 (HIGH SOLIDS)</u>							
CORROLESS EPF Black or Buff	1	200	4.8	16 hrs	3 days	80	25-150-0972
CORROLESS RF35 White	1	200	4.8	16 hrs	3 days	93	25-150-0973
V. <u>POTABLE WATER TANKS</u>							
CORROLESS EPF Black or Buff	1	200	4.8	16 hrs	3 days	80	25-150-0972
CORROLESS RF35 Grey	1	200	4.8	16 hrs	3 days	93	99-337-0778
W. <u>AQUEOUS FOAM FORMING FLUID (AFFF) TANKS</u>							
<u>Standard:</u> CORROLESS EPF Black or Buff	1	200	4.8	16 hrs	3 days	80	25-150-0972
CORROLESS RF35 Grey	1	200	4.8	16 hrs	3 days	93	99-337-0778
<u>Alternative:</u> SIGMAGUARD CSF 650 7443	1	350	2.9	24 hrs	20 days	143	
X. <u>DEMINERALISED WATER TANKS (Max Temperature 60°C)</u>							
<u>Standard:</u> CORROLESS EPF Black or Buff	1	200	4.8	16 hrs	3 days	80	25-150-0972
CORROLESS RF35 Grey	1	200	4.8	16 hrs	3 days	93	99-337-0778
<u>Alternative:</u> SIGMAGUARD CSF 650 7443	1	350	2.9	24 hrs	20 days	143	
Y. <u>EPOXY HOLDING PRIMER</u>							
SIGMACOVER 280 7417	1	50	11.4	8 hrs	6 months	432	99-569-7697

ANNEX E
WHOLE SHIP SPECIFICATION
Proposed by

MAKER COATING SYSTEMS LTD.
Incorporating: PPG, Ameron, Sigma & CORROLESS

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
Z. PRIMERS FOR NON-FERROUS METALS & FRP							
<u>Stainless Steel:</u> SIGMACOVER 280	1	50	11.4	8 hrs	#	432	
<u>Aluminium / Zinc Spray / Galvanise:</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
<u>FRP Indicator coat:</u> AMERLOCK 400C Green RAL 6011	2	125	7	16 hrs	#	106	17-120-4829

Notes:

1. The recoat intervals published above are based on the manufacturer's figures quoted for 20°C
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 maximum 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.
5. The Theoretical Spreading Rate (TSR) quoted in the table above is calculated from the coatings physical constants and makes no allowance for loss and assumes a totally smooth surface. The actual spreading rate achieved Practical Spreading Rate (PSR) is dependent upon many factors and in practice the factor used may vary from as little as 1.05 up to as much as 4+. It is usual for paint manufactures to use figures of 1.3 or 1.4 for estimating purposes but they always add the caveat that actual consumption achieved may vary due to such factors as surface profile, wastage due to material left in the can, weather conditions, skill of operator etc.
6. ~ = Use blast primer Y. when appropriate

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ANNEX F
WHOLE SHIP SPECIFICATIONS
Proposed by

PPG Protective & Marine Coatings

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
A & B. BELOW WATER HULL PRIMER ~							
<u>Standard:</u> SIGMASHIELD 240 7991	1	175	5	5hrs	30 days	153	
<u>Tie Coat (for C, E & F if req'd):</u> SIGMACOVER 525 7902	1	75	8.2	12 hrs	14 days	365	
C. ANTIFOULING FINISH (Self Polishing - SPC 5yr life)							
SIGMA ECOFLEET 530 (red brown) 7385	1	175	3.4	6 hrs	#	339	
SIGMA ECOFLEET 530 (brown) 7385	1	175	3.4	6 hrs	#	339	
D. ANTIFOULING SYSTEM (Foul Release - FRC 5yr + life)							
SIGMASHIELD 240 7991	1	125	7	5hrs	30 days	153	
SIGMASHIELD 610 7978	1	150	3.8	12 hrs	5 days	437	
SIGMAGLIDE 790 7386	1	150	5.3	12 hrs	5 days	187	
<u>SIGMAGLIDE 890:</u> Silicone FR Finish 7399	1	150	3.4	20 mins	#	215	
<u>SIGMAGLIDE 990:</u> High Efficiency FR Finish 7397	1	180	4.4	2 hrs	#	248	
<u>SIGMAGLIDE 1290:</u> Low-speed Slime Release Finish Seek approval. Operational req'ment req'd due to additional H&S risks.	1	180	4.8	#	#	118	
E. ANTIFOULING (SPC 3yr life)							
SIGMA ECOFLEET 530 (red brown) 7385	1	110	5.4	6 hrs	#	339	
SIGMA ECOFLEET 530 (brown) 7385	1	110	5.4	6 hrs	#	339	
F. BOOTTOP ANTIFOULING (SPC)							
SIGMA ECOFLEET 530 (black) 7385	1	110	5.4	6 hrs	#	339	
G & H. ABOVE WATER HULL & SUPERSTRUCTURE PRIMER							
<u>Standard:</u> SIGMASHIELD 240 7991	1	150	5.8	5hrs	30 days	153	
<u>Alternative:</u> SIGMASHIELD 220 7922	1	150	5.3	3½ hrs	14 days	262	99-403-5015
J. ABOVE WATER HULL & SUPERSTRUCTURE FINISH BS 381C 676 Light Weatherwork Grey							
<u>Polysiloxane:</u> SIGMA PSX700 7777	1	75	12	3 hrs	#	164	
<u>Epoxy Acrylic:</u> SIGMADUR 540 7740	1	50	10.8	8 hrs	#	411	
<u>Urethane Polyester:</u> SIGMADUR ONE 7533	1	50	10.6	8 hrs	#	400	

ANNEX F
WHOLE SHIP SPECIFICATIONS
Proposed by

PPG Protective & Marine Coatings

<u>Proposed Systems/Materials</u>	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
K. <u>FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134</u>							
<u>(a) Hangar Doors</u>							
[Factory finished - Interpon 610 – see International Paints WSS]							
<u>(b) Flight Deck - Type 2 Non-skid Finish</u>							
Primer: AMERCOAT 137	1	125	3.9	12 hrs	3 days	264	
Finish: AMERCOAT 138L Extra Dark Sea Grey BS 381C 640	1	1300	0.6	24 hrs	#	168	1 coat?
Type 2 Repair Kit:							
<u>(c) Hanger Deck & Weatherdeck - Type 1 Non-Skid Finish</u>							
Primer: AMERCOAT 137 DECK PRIMER	1	125	3.9	12 hrs	3 days	264	
Hangar Deck: AMERCOAT 138G Dark Admiralty Grey BS 381C 632	1	1300	0.6	24 hrs	#	168	1 coat?
Weatherdeck: AMERCOAT 138G Extra Dark Sea Grey BS 381C 640	1	1300	0.6	24 hrs	#	168	1 coat?
Type 1 Repair Kit:							
<u>(d) Gloss for Deck Margins: SIGMADUR 540</u>	1	50	12	8 hrs	#	411	
L & M. <u>INTERIOR DRY SPACES</u> BS 4800 00A01							
Standard Primer: SIGMA AQUACOVER 25 7150	1	75	6.6	4 hrs	#	31	99-321-6318
Finish: SIGMA AQUACOVER 45 7250	1	50	6.8	6 hrs	#	17	99-277-8693
Alternative Primer: SIGMACOVER 240 7991	1	75	11.6	5 hrs	30 days	153	
Finish: SIGMACOVER 240 7991	1	75	11.6	5 hrs	30 days	153	
N & O. <u>INTERIOR WET SPACES</u> BS 4800 00A01							
Standard Areas Primer: SIGMACOVER 240 7991	1	100	8.7	5 hrs	30 days	153	
Finish: SIGMACOVER 240 7991	1	100	8.7	5 hrs	30 days	153	
Citadel Lobby Primer: SIGMACOVER 240 7991	1	75	11.6	5 hrs	30 days	153	
& Magazine Finish: SIGMASHIELD 420 7951	1	150	5.6	3½ hrs	14 days	212	99-549-3974
or Grey BS 381C 676							
Cleansing Stations: SIGMAGUARD CSF 650 7443	1	350	2.9	24 hrs	20 days	143	
P. <u>INTERIOR DECKS</u> BS 4800 Green 14C39							
Standard & Cleansing Stations							
Primer: SIGMACOVER 240 7991	1	100	8.7	5 hrs	30 days	153	
Finish: SIGMACOVER 400 7988	1	100	8.5	16 hrs	30 days	180	

ANNEX F
WHOLE SHIP SPECIFICATIONS
Proposed by

PPG Protective & Marine Coatings

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
Q. <u>BATTERY COMPARTMENTS</u> BS4800 00A01							
Primer: SIGMACOVER 240 7991	1	100	8.7	5 hrs	30 days	153	
Finish: SIGMACOVER 400 7988	1	100	8.5	16 hrs	30 days	180	
R. <u>CABLE LOCKERS & COFFERDAMS</u>							
SIGMACOVER 240 7991	1	150	5.8	5 hrs	30 days	153	
S. <u>BLACK, GREY & SEAWATER BALLAST TANKS</u> IMO PSPC							
<u>Water Ballast Tanks:</u> SIGMACOVER 240 7991	2	160	5.4	5 hrs	30 days	153	
<u>Black / Grey Water Tanks:</u> SIGMAGUARD CSF650 7443	1	350	2.9	24 hrs	20 days	143	
T. <u>MACHINERY SPACE BILGES</u>							
SIGMACOVER 240 7991	1	175	5	5 hrs	30 days	153	
U. <u>AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM</u> <u>DEF STAN 80-97 (HIGH SOLIDS)</u>							
SIGMAGUARD CSF 650 7443	1	350	2.9	24 hrs	20 days	143	
V. <u>POTABLE WATER TANKS</u>							
SIGMAGUARD CSF 585 7785	1	300	3.3	24 hrs	20 days	6	
W. <u>AQUEOUS FILM-FORMING FOAM (AFFF) TANKS</u>							
SIGMAGUARD CSF 650 7443	1	350	2.9	24 hrs	20 days	143	
X. <u>DEMINERALISED WATER TANKS (Max Temperature 60°C)</u>							
SIGMAGUARD CSF 650 7443	1	350	2.9	24 hrs	20 days	143	
Y. <u>REFIT / MAINTENANCE EPOXY HOLDING PRIMER</u>							
SIGMACOVER 280 7417	1	50	11.4	8 hrs		430	99-569-7697

ANNEX F
WHOLE SHIP SPECIFICATIONS
Proposed by

PPG Protective & Marine Coatings

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
<u>Z. PRIMERS FOR NON-FERROUS METALS & FRP</u>							
<u>Aluminium / Stainless Steel / Zinc Spray / Galvanise:</u>							
SIGMACOVER 280 7417	1	50	11.4	8 hrs	3 months	432	99-569-7697
<u>FRP Indicator coat:</u> AMERLOCK 400C Green RAL 6011	2	125	7	16 hrs	#	106	17-120-4829

Notes:

1. The recoat intervals published above are based on the manufacturer's figures quoted for 20°C
2. The number of coats, stated in the above table, relate to airless spray application to achieve the stated Nominal Dry Film Thickness (NDT). Should brush application be required for touch up and repair then additional coats may be necessary to achieve the required NDFT.
3. # = No maximum 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.
5. The Theoretical Spreading Rate (TSR) quoted in the table above is calculated from the coatings physical constants and makes no allowance for loss and assumes a totally smooth surface. The actual spreading rate achieved Practical Spreading Rate (PSR) is dependent upon many factors and in practice the factor used may vary from as little as 1.05 up to as much as 4+. It is usual for paint manufactures to use figures of 1.3 or 1.4 for estimating purposes but they always add the caveat that actual consumption achieved may vary due to such factors as surface profile, wastage due to material left in the can, weather conditions, skill of operator etc.
6. ~ = Use blast primer Y. when appropriate

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ANNEX G
WHOLE SHIP SPECIFICATIONS
Proposed by

SHERWIN WILLIAMS Protective & Marine Coatings

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
A & B. <u>BELOW WATER HULL PRIMER</u> ~							
EPIGRIP Macropoxy® C425V2	1	175	4.3	8 hrs	#	186	99-786-7949
<u>Tie Coat (if req'd):</u> RESISTEX M535	1	50	8.0	2 hrs	#	502	99-453-1479
C. <u>ANTIFOULING FINISH (Self Polishing - SPC 5yr life)</u>							
TBC							
D. <u>ANTIFOULING SYSTEM (Foul Release - FRC 5yr + life)</u>							
TBC							
E. <u>ANTIFOULING (SPC 3yr + life)</u>							
ENVOY TF 500 Brown	1	75	8.4	6 hrs	#	390	
ENVOY TF 500 Red	1	75	8.4	6 hrs	#	390	
F. <u>BOOTTOP ANTIFOULING (SPC)</u>							
ENVOY TF 500 Black	2	75	8.4	6 hrs	#	390	99-423-7738
G & H. <u>ABOVE WATER HULL & SUPERSTRUCTURE PRIMER</u> ~							
EPIGRIP Macropoxy® C425V2	1	100	7.5	4 hrs	#	186	99-786-7949
J. <u>AW HULL & SUPERSTRUCTURE FINISH</u> BS 381C 676							
<u>Silicone Alkyd:</u> Leight Steel Spec™ A165	1	35	14.6	16 hrs	#	407	99-982-2604
<u>Acrylic Epoxy:</u> Leight Acrolon™ C750V2	1	50	10.6	3 hrs	#	364	99-212-2175
<u>Tie Coat (if req'd):</u> Leight Steel Spec™ M671	1	35	14.9	4 hrs	#	380	99-872-1746
<u>Sealer for RASH:</u> (obsolete see Hempel WSS)							

ANNEX G
WHOLE SHIP SPECIFICATIONS
Proposed by

SHERWIN WILLIAMS Protective & Marine Coatings

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
K. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
(a) Hangar Doors							
[Factory finished - Interpon 610 – see International Paints WSS]							
(b) Flight & Weatherdeck - Type 2 Non-skid Finish (Coarse) BS 381C							
Primer: EPIGRIP Macropoxy® C425V2	1	125	6.0	4 hrs	#	186	99-786-7949
Finish: EPIDEK M339 Extra Dark Sea Grey	2	200	1.8	4 hrs	#	250	99-215-4495
Type 2 Repair Kit: EPIDEK F339							99-383-4334
(c) Hanger & Weatherdeck - Type 1 Non-skid Finish (fine) BS 381C							
Primer: EPIGRIP Macropoxy® C425V2	1	125	6.0	4 hrs	#	186	99-786-7949
Hangar Deck: EPIDEK M377 Dark Admiralty Grey BS 381C 632	2	250	2.5	4 hrs	#	330	99-777-8689
Weatherdeck: EPIDEK M377	2	250	2.5	4 hrs	#	330	
Type 1 Repair Kit: EPIDEK F377							99-087-4902
(d). Gloss for Deck Margins: EPIGRIP Macropoxy® M262	1	75			#	354	99-133-8713
L & M. INTERIOR DRY COMPARTMENTS							
Primer: EPIGRIP Macropoxy® C425V2	1	125	6.0	5 hrs	#	186	99-786-7949
Finish: ENVIROGARD Sher-Cryl™ BS 4800 00A01	1	25	15.6	3 hrs	#	78	99-517-5228
N & O. INTERIOR WET COMPARTMENTS							
Primer: EPIGRIP Macropoxy® C425V2	1	125	6.0	5 hrs	#	186	99-786-7949
Standard Areas Finish: BIOGARD Macropoxy® M630V2 BS4800 00A01	1	75	6.8	24 hrs	#	0	99-535-5105
Citadel lobby Finish: BIOGARD Macropoxy® M630V2 - Colour either: BS 4800 00A01 or Grey BS 381C 676	1	75	6.8	24 hrs	#	66	99-535-5105
Cleansing Stations Finish: EPIGRIP Macropoxy® H766 White	1	40	14.0	5 hrs	#	395	99-623-9946
Magazine Finish: BIOGARD Macropoxy® M630V2 BS 4800 00A01	1	75	6.8	24 hrs	#	0	99-535-5105
P. INTERIOR DECKS Finish - Green BS 4800 14C39							
Standard Primer: EPIGRIP Macropoxy® C425V2	1	125	6.0	5 hrs	#	186	99-786-7949
Finish: BIOGARD Macropoxy® M630V2	1	75	6.8	24 hrs	#	0	99-255-5237
Cleansing Stations Finish: EPIGRIP Macropoxy® H766	1	40	14.0	5 hrs	#	395	99-501-4661

ANNEX G
WHOLE SHIP SPECIFICATIONS
Proposed by

SHERWIN WILLIAMS Protective & Marine Coatings

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
Q. <u>BATTERY COMPARTMENTS</u>							
Primer: EPIGRIP Macropoxy® C425V2	1	100	7.5	4hrs	#	197	99-786-7949
Finish: BIOGARD Macropoxy® M630V2 BS 4800 00A01	1	75	6.8	24 hrs	#	0	99-535-5105
R. <u>CABLE LOCKERS & COFFERDAMS</u>							
EPIGRIP Macropoxy® L524 WHITE	2	125	5.1	12 hrs	#	296	99-564-2934
S. <u>BLACK/GREY & WATER BALLAST TANKS</u>							
Water Ballast Tanks: EPIGRIP Macropoxy® L524 (typical dft 125. care req'd on overlap at 160)	2	160	3.9	12 hrs	#	296	99-564-2934
Black & Grey Water Tanks: EPIGRIP Macropoxy® C251	2	125	5.9	24 hrs	28 days	235	99-284-3464
T. <u>MACHINERY SPACE BILGES</u> BS 4800 00A01							
EPIGRIP Macropoxy® L524	2	125	5.1	12 hrs	#	296	99-564-2934
Optional Hygiene Coat: BIOGARD Macropoxy® M630V2	1	75	6.8	12 hrs	#	0	99-535-5105
U. <u>AVCAT, DIESEL, LUB & HYDRAULIC OIL TANKS SYSTEM</u> <u>DEF STAN 80-97 (HIGH SOLIDS)</u>							
EPIGRIP Macropoxy® M922	2	200	5.4	4 hrs	14 days	143	99-834-8384
V. <u>POTABLE WATER TANKS</u>							
WATERLINE Macropoxy® P300	1	500	2.0	6 hrs	36 hrs	0	
W. <u>AQUEOUS FILM-FORMING FOAM (AFFF) TANKS</u>							
EPIGRIP Macropoxy® C251	2	125	5.9	24 hrs	28 days	235	99-284-3464
X. <u>DEMINERALISED WATER TANKS (Max Temperature 90°C)</u>							
EPIGRIP Macropoxy® C251	2	125	5.9	24 hrs	28 days	235	99-284-3464
Y. <u>EPOXY HOLDING PRIMER</u>							
METAGARD Macropoxy® L574	1	25	11.6	3 hrs	#	594	99-895-9894
Alternative & maintenance: EPIGRIP Macropoxy® M111	1	60	9.0	4 hrs	#	383	99-884-5957

ANNEX G
WHOLE SHIP SPECIFICATIONS
Proposed by

SHERWIN WILLIAMS Protective & Marine Coatings

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
<u>Z. PRIMERS FOR NON-FERROUS METALS & FRP</u>							
<u>Aluminium / Galvanise / Stainless Steel:</u>							
EPIGRIP Macropoxy® L425	1	35	17.1	5 hrs	#	346	99-777-8688
<u>Zinc Spray:</u> METAGARD Macropoxy® L574	1	25	11.6	3 hrs	#	594	99-895-9894
<u>FRP Indicator Coat:</u> EPIGRIP Macropoxy® C425V2 Off white	2	150	5	4 hrs	#	186	99-133-8714

Notes:

1. The recoat intervals published above are based on the manufacturer's figures quoted for 23°C
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. # = Indefinite but 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.
5. The Theoretical Spreading Rate (TSR) quoted in the table above is calculated from the coatings physical constants and makes no allowance for loss and assumes a totally smooth surface. The actual spreading rate achieved Practical Spreading Rate (PSR) is dependent upon many factors and in practice the factor used may vary from as little as 1.05 up to as much as 4+. It is usual for paint manufactures to use figures of 1.3 or 1.4 for estimating purposes but they always add the caveat that actual consumption achieved may vary due to such factors as surface profile, wastage due to material left in the can, weather conditions, skill of operator etc.
6. ~ = Use blast primer Y. when appropriate.

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ANNEX H

WHOLE SHIP STOCK NUMBERS (NSNs)

1. WHOLE SHIP MATERIALS

Material	Supplier	Pack size	NSN
REMOVALL 520	Cirrus Systems Ltd		
ALP 500	Chugoku Paints (UK) Ltd	5 litres	8010-99-967-8636
AQUALIFE GLOSS FINISH Ash Grey BS4800 00A01	Chugoku Paints (UK) Ltd	5 litres	8010-99-757-9334
AQUALIFE GLOSS FINISH BS381C 676 Light Weatherwork Grey	Chugoku Paints (UK) Ltd	5 litres	8010-99-375-9367
AQUALIFE GLOSS FINISH Green BS4800 14C39	Chugoku Paints (UK) Ltd	5 litres	8010-99-755-6242
AQUALIFE GLOSS FINISH White	Chugoku Paints (UK) Ltd	5 litres	8010-99-371-8400
AQUALIFE WSE PRIMER Grey	Chugoku Paints (UK) Ltd	5 litres	8010-99-398-1182
CAMACRYL FINISH MAC Ash Grey BS4800 00A01	Chugoku Paints (UK) Ltd	5 litres	8010-99-676-4126
CAMACRYL FINISH MAC Azure Blue BS381C 104	Chugoku Paints (UK) Ltd	5 litres	8010-99-366-5444
CAMACRYL FINISH MAC Canary BS381C 309	Chugoku Paints (UK) Ltd	5 litres	8010-99-446-0554
CAMACRYL FINISH MAC Dark Blue BS4800 18C39	Chugoku Paints (UK) Ltd	5 litres	8010-99-862-0034
CAMACRYL FINISH MAC Mid Brunswick Green BS381C 226	Chugoku Paints (UK) Ltd	5 litres	8010-99-794-2129
CAMACRYL FINISH MAC Wedgwood Blue BS4800 18D43	Chugoku Paints (UK) Ltd	5 litres	8010-99-665-3660
CAMACRYL FINISH MAC White	Chugoku Paints (UK) Ltd	5 litres	8010-99-380-7010
CAMSIL WB Black	Chugoku Paints (UK) Ltd	5 litres	8010-99-397-4388
CAMSIL WB GREY 541W 0224 Lt Weatherwork Grey BS381C 676	Chugoku Paints (UK) Ltd	5 litres	8010-99-327-9058
CAMSIL WB Lt Brunswick Green BS381C 225	Chugoku Paints (UK) Ltd	5 litres	8010-99-250-1029
CAMSIL WB Signal Red BS381C 537	Chugoku Paints (UK) Ltd	5 litres	8010-99-225-7163
GALVANITE 200 White	Chugoku Paints (UK) Ltd	5 litres	8010-99-995-4247
GALVANITE 200 White	Chugoku Paints (UK) Ltd	20 litres	8010-99-290-5829
NZ PRIMER S Red Oxide	Chugoku Paints (UK) Ltd	20 litres	8010-99-595-6056
UMEGUARD HS Grey	Chugoku Paints (UK) Ltd	5 litres	8010-99-126-9478
UMEGUARD HS White	Chugoku Paints (UK) Ltd	5 litres	8010-99-564-2409
HIGH PROTECT 35651 Cream	Hempel Paints Limited	2½litres	8010-99-517-4318
HEMPADUR 15550 Off White 11630	Hempel Paints Limited	5 litres	8010-99-870-0653
HEMPADUR 15550 Off White 11630	Hempel Paints Limited	20 litres	8010-99-700-4191
HEMPADUR 15570 Light Grey 12430	Hempel Paints Limited	5 litres	8010-99-943-1152

ANNEX H

WHOLE SHIP STOCK NUMBERS (NSNs)

Material	Supplier	Pack size	NSN
HEMPADUR 15570 Light Grey 12430	Hempel Paints Limited	20 litres	8010-99-170-5097
HEMPADUR 45143 White 10000	Hempel Paints Limited	5 litres	8010-99-602-7280
HEMPADUR 45143 Red 50630	Hempel Paints Limited	5 litres	8010-99-535-5832
HEMPADUR 45880 White	Hempel Paints Limited	5 litres	8010-99-264-0387
HEMPADUR 45880 MIO 12430	Hempel Paints Limited	5 litres	8010-99-803-7233
HEMPADUR 45880 MIO 12430	Hempel Paints Limited	20 litres	8010-99-479-5449
HEMPADUR 45143 GREEN BS4800 14C39	Hempel Paints Limited	5 litres	8010-99-471-1920
HEMPEL'S NON SKID (NO AGGREGATE) 45143 BS381C 640 (Extra dark sea grey)	Hempel Paints Limited	5 litres	8010-99-879-5150
HEMPEL'S NON SKID 45710 BS381C 640 (Extra dark sea grey) Type 2	Hempel Paints Limited	20 litres	8010-99-831-0343
HEMPEL'S NON SKID 45340 BS381C 640 (Extra dark sea grey) Type 1	Hempel Paints Limited	20 litres	8010-99-213-1121
HEMPELS NON SKID 45710 BLACK 19990	Hempel Paints Limited	20 Kg	8010-99-507-2851
HEMPELS DECK MARKING 453GB Black	Hempel Paints Limited	20 litres	8010-99-480-7979
HEMPELS ANTIFOULING OLYMPIC 8695 Black	Hempel Paints Limited	20 litres	8010-99-147-9828
HEMPELS UNDERCOAT 42460 Grey	Hempel Paints Limited	2½ litres	8010-99-244-6752
HEMPELS SILICONE ALKYD FINISH 536GB Light Weatherwork Grey BS381C 676	Hempel Paints Limited	2½ litres	8010-99-772-5448
HEMPELS DECK MARKING 453GB White	Hempel Paints Limited	5 litres	8010-99-323-1118
HEMPELS DECK MARKING 453GB Green BS381C 225	Hempel Paints Limited	5 litres	8010-99-986-6762
HEMPELS DECK MARKING 453GB Red BS381C 537	Hempel Paints Limited	5 litres	8010-99-724-9085
HEMPELS DECK MARKING 453GB Black	Hempel Paints Limited	5 litres	8010-99-351-4222
HEMPELS NON SKID 45340 Grey BS3813 632 Type 1	Hempel Paints Limited	20 litres	8010-99-670-9581
HEMPELS WATER BASED EPOXY 48582 Black	Hempel Paints Limited	5 Litres	8010-99-864-5046
HEMPELS WATER BASED EPOXY 48582 BS4800 00A01 (Ash Grey)	Hempel Paints Limited	5 litres	8010-99-988-2715
HEMPELS WATER BASED EPOXY 48582 BS4800 14C39 (Green)	Hempel Paints Limited	5 litres	8010-99-279-8221
HEMPELS WATER BASED EPOXY 48582 BS381C 676 (Light Weatherwork Grey)	Hempel Paints Limited	5 litres	8010-99-976-9118
HEMUCRYL ENAMEL 58100 Azure Blue BS381C 104	Hempel Paints Limited	5 litres	8010-99-382-4025
HEMUCRYL ENAMEL 58100 Black	Hempel Paints Limited	5 litres	8010-99-175-1334
HEMUCRYL ENAMEL 58100 Canary BS381C 309	Hempel Paints Limited	5 litres	8010-99-858-1263
HEMUCRYL ENAMEL 58100 Dark Blue BS4800 18C39	Hempel Paints Limited	5 litres	8010-99-290-5925
HEMUCRYL ENAMEL 58100 Lt Brunswick Green BS381C 225	Hempel Paints Limited	5 litres	8010-99-831-8959

ANNEX H

WHOLE SHIP STOCK NUMBERS (NSNs)

Material	Supplier	Pack size	NSN
HEMUCRYL ENAMEL 58100 Mid Brunswick Green BS381C 226	Hempel Paints Limited	5 litres	8010-99-162-2531
HEMUCRYL ENAMEL 58100 Signal Red BS381C 537	Hempel Paints Limited	5 litres	8010-99-250-8046
HEMUCRYL ENAMEL 58100 Wedgwood Blue BS4800 18D43	Hempel Paints Limited	5 litres	8010-99-317-6235
HEMUCRYL ENAMEL 58100 Ash Grey BS4800 00A01	Hempel Paints Limited	5 litres	8010-99-660-9288
HEMUCRYL ENAMEL 58100 Golden Brown BS381C 414	Hempel Paints Limited	5 litres	8010-99-562-6381
HEMUCRYL ENAMEL 58100 White	Hempel Paints Limited	5 litres	8010-99-299-0228
HEMUCRYL TI-COAT 18200 Red 50710	Hempel Paints Limited	5 litres	8010-99-199-2908
HEMUDUR 18500 Grey 12170	Hempel Paints Limited	20 litres	8010-99-867-8090
INTERCRYL 506 GREY WPA300	International Coatings Ltd	5 litres	8010-99-147-1269
INTERCRYL 507 Grey BS 4800 00A01	International Coatings Ltd	5 litres	8010-99-365-4243
INTERCRYL 700 Grey BS 4800 00A01	International Coatings Ltd	5 litres	8010-99-7998832
INTERCRYL 700 Azure Blue BS381C 104	International Coatings Ltd	5 litres	8010-99-551-3792
INTERCRYL 700 Golden Brown BS381C 414	International Coatings Ltd	5 litres	8010-99-314-8294
INTERCRYL 700 Mariner Blue BS4800 18C39	International Coatings Ltd	5 litres	8010-99-551-3791
INTERCRYL 700 Mid Brunswick Green BS381C 226	International Coatings Ltd	5 litres	8010-99-812-5614
INTERCRYL 700 Wedgwood Blue BS4800 18D43	International Coatings Ltd	5 litres	8010-99-248-4598
INTERCRYL 700 White QYZ028	International Coatings Ltd	5 litres	8010-99-979-7888
INTERCRYL 700 Yellow RAL 1018	International Coatings Ltd	5 litres	8010-99-774-1224
INTERFINE 629 HS Black	International Coatings Ltd	5 litres	8010-99-375-3200
INTERFINE 629 HS Signal Red BS 381C 537	International Coatings Ltd	5 litres	8010-99-535-9034
INTERFINE 629 HS Lt Brunswick Green BS 381C 225	International Coatings Ltd	5 litres	8010-99-957-7410
INTERFINE 629 Light Weatherwork Grey BS381C 676	International Coatings Ltd	5 litres	8010-99-664-5391
INTERFINE 878 Light Weatherwork Grey BS381C 676	International Coatings Ltd	5 litres	8010-99-274-4682
INTERFINE 878 Black	International Coatings Ltd	5 litres	8010-99-907-6683
INTERFINE 979 GREEN	International Coatings Ltd	5 litres	8010-99-729-7357
INTERFINE 979 WHITE	International Coatings Ltd	5 litres	8010-99-168-7337
INTERGARD 263 Tie Coat Light Grey	International Coatings Ltd	20 litres	8010-99-133-3854
INTERGARD 269 PROTECTIVE PRIMER	International Coatings Ltd	20 litres	8010-99-983-0743
INTERGARD1735 WB Dark Sea Grey BS381C 640	International Coatings Ltd	5 litres	8010-99-702-0607
INTERGARD 1735 WB Green BS4800 14C39	International Coatings Ltd	5 litres	8010-99-483-1994
INTERGARD 1735 WB Ash Grey BS4800 00A01	International Coatings Ltd	5 litres	8010-99-255-0527
INTERGARD 740 Dark Sea Grey BS381C 640	International Coatings Ltd	5 litres	8010-99-182-2627
INTERGARD 740 Black	International Coatings Ltd	5 litres	8010-99-488-7443

ANNEX H

WHOLE SHIP STOCK NUMBERS (NSNs)

Material	Supplier	Pack size	NSN
INTERGARD 740 Red	International Coatings Ltd	5 litres	8010-99-377-5457
INTERGARD 740 White	International Coatings Ltd	5 litres	8010-99-773-8674
INTERGARD 740 Green	International Coatings Ltd	5 litres	TBC
INTERGARD 740 Yellow	International Coatings Ltd	5 litres	8010-99-969-1037
INTERGARD 740 Black	International Coatings Ltd	20 litres	8010-99-285-3824
INTERGARD 840 Series Buff	International Coatings Ltd	20 litres	8010-99-909-6023
INTERGARD 840 White	International Coatings Ltd	5 litres	8010-99-279-8277
INTERGARD 5000 Ash Grey BS 4800 00A01	International Coatings Ltd	5 litres	8010-99-000-5256
INTERLAC 846 Light Weatherwork Grey BS381C 676	International Coatings Ltd	2½ litres	8010-99-700-8410
INTERSHEEN AQUACOAT Ash Grey BS4800 00A01	International Coatings Ltd	5 litres	8010-99-365-4243
INTERSHIELD 851 Black	International Coatings Ltd	10 litres	8010-99-371-6753
INTERSHIELD 851 Extra Dark Sea Grey BS381C 640	International Coatings Ltd	20 litres	8010-99-391-0953
INTERSHIELD 852 Black	International Coatings Ltd	5 litres	8010-99-250-1864
INTERSHIELD 852 White	International Coatings Ltd	5 litres	8010-99-968-9269
INTERSHIELD 852 Red	International Coatings Ltd	5 litres	8010-99-666-9269
INTERSHIELD 852 Green	International Coatings Ltd	5 litres	8010-99-871-6360
INTERSHIELD 852 Dark Admiralty Grey BS 381C 632	International Coatings Ltd	5 litres	8010-99-149-8996
INTERSHIELD 852 Extra Dark Sea Grey BS 381C 640	International Coatings Ltd	5 litres	8010-99-149-8996
INTERSLEEK RAPID Black	International Coatings Ltd	2.5 litre	8010-99-358-0224
INTERSPEED 340 Black	International Coatings Ltd	20 litres	8010-99-874-3193
INTERSPEED 642 Black	International Coatings Ltd	20 litres	8010-99-792-1990

ANNEX H

WHOLE SHIP STOCK NUMBERS (NSNs)

Material	Supplier	Pack size	NSN
VINYGUARD SILVERGREY	Jotun Paints (Europe) Limited	5 litres	8010-99-212-5888
JOTA-ARMOUR AS Extra Dark Sea Grey BS381C 640	Jotun Paints (Europe) Limited	20 litres	8010-99-226-7300
WATERFINE PRIMER Lt Grey	Jotun Paints (Europe) Limited	5 litres	8010-99-462-9708
WATERFINE TOPCOAT Azure Blue BS381C 104	Jotun Paints (Europe) Limited	5 litres	8010-99-186-9127
WATERFINE TOPCOAT Black	Jotun Paints (Europe) Limited	5 litres	8010-99-877-1641
WATERFINE TOPCOAT Dark Blue BS4800 18C39	Jotun Paints (Europe) Limited	5 litres	8010-99-347-9130
WATERFINE TOPCOAT Lt Brunswick Green BS381C 225	Jotun Paints (Europe) Limited	5 litres	8010-99-131-6457
WATERFINE TOPCOAT Lt Weatherwork Grey BS381C 676	Jotun Paints (Europe) Limited	5 litres	8010-99-989-6214
WATERFINE TOPCOAT Mid Brunswick Green BS381C 226	Jotun Paints (Europe) Limited	5 litres	8010-99-873-4271
WATERFINE TOPCOAT Signal Red BS381C 537	Jotun Paints (Europe) Limited	5 litres	8010-99-921-4654
WATERFINE TOPCOAT Wedgwood Blue BS4800 18D43	Jotun Paints (Europe) Limited	5 litres	8010-99-212-5714
WATERFINE TOPCOAT White	Jotun Paints (Europe) Limited	5 litres	8010-99-372-9140
WATERFINE TOPCOAT Golden Brown	Jotun Paints (Europe) Limited	5 litres	8010-99-997-4563
AQUACOVER 500 White (Exact same product as AMERCOAT 300A)	Maker Coating Systems Ltd	5 litres	8010-17-108-8249
AMERCOAT 5105 Light Grey	Maker Coating Systems Ltd	5 litres	8010-17-117-4697
AMERCOAT 300A BS4800 14C39 Green	Maker Coating Systems Ltd	5 litres	8010-17-113-5690
AMERON ABC #3 Black	Maker Coating Systems Ltd	20 litres	8010-17-113-7497
AMERON PSX 700 Green BS4800 14C39	Maker Coating Systems Ltd	5 litres	8010-17-113-6169
AMERON PSX 700 White	Maker Coating Systems Ltd	5 litres	8010-99-858-1159
AMERLOCK 400C White	Maker Coating Systems Ltd	5 litres	8010-17-108-8248
AMERLOCK 400C Ash Grey BS4800 00A01	Maker Coating Systems Ltd	5 litres	8010-99-958-6062
AMERLOCK 400C SAXE BLUE	Maker Coating Systems Ltd	5 litres	8010-17-117-6678
AMERLOCK 400C OXFORD BLUE	Maker Coating Systems Ltd	5 litres	8010-17-117-6677
AMERCOAT 65 THINNER	Maker Coating Systems Ltd	5 litres	8010-17-117-6680
AMERCOAT 911 THINNER	Maker Coating Systems Ltd	5 litres	8010-17-117-6681
NU-KLAD 114A FILLER	Maker Coating Systems Ltd	7.24 kg unit	8010-17-117-6679
SPC-203 (Sea To Sky) Paint Remover	Maker Coating Systems Ltd	5 litres	8010-20-003-3432
SIGMA EDGEGUARD 5428 White	Maker Coating Systems Ltd	5 litres	8010-99-495-3513
SIGMASHIELD 420 7951 Ash Grey BS4800 00A01	Maker Coating Systems Ltd	5 litres	8010-99-549-3974
SIGMASHIELD 420 7951 Light Weatherwork Grey BS381C 676	Maker Coating Systems Ltd	5 litres	8010-99-723-3658
SIGMAHIELD 220 7922 Light Green	Maker Coating Systems Ltd	5 litres	8010-99-403-5015
SIGMASHIELD 280 7417 Yellow	Maker Coating Systems Ltd	5 litres	8030-99-354-0443

ANNEX H

WHOLE SHIP STOCK NUMBERS (NSNs)

Material	Supplier	Pack size	NSN
SIGMACOVER 280 LT 7417 Yellow	Maker Coating Systems Ltd	20 litres	8010-99-569-7697
AQUACOVER 45 7250 Azure Blue BS381C 104	Maker Coating Systems Ltd	5 litres	8010-99-863-5457
AQUACOVER 45 7250 Ash Grey B4800 00A01	Maker Coating Systems Ltd	5 litres	8010-99-277-8693
AQUACOVER 45 7250 Black	Maker Coating Systems Ltd	5 litres	8010-99-500-7412
AQUACOVER 45 7250 Canary BS381C 309	Maker Coating Systems Ltd	5 litres	8010-99-182-2670
AQUACOVER 45 7250 Dark Blue BS4800 18C39	Maker Coating Systems Ltd	5 litres	8010-99-957-7697
AQUACOVER 45 7250 Lt Brunswick Green BS381C 225	Maker Coating Systems Ltd	5 litres	8010-99-338-4734
AQUACOVER 45 7250 Lt Weatherwork Grey B381C 676	Maker Coating Systems Ltd	5 litres	8010-99-236-5744
AQUACOVER 45 7250 Mid Brunswick Green BS381C 226	Maker Coating Systems Ltd	5 litres	8010-99-269-1301
AQUACOVER 45 7250 Signal Red BS381C 537	Maker Coating Systems Ltd	5 litres	8010-99-880-0100
AQUACOVER 45 7250 Wedgwood Blue BS4800 18D43	Maker Coating Systems Ltd	5 litres	8010-99-471-2071
AQUACOVER 45 7250 White	Maker Coating Systems Ltd	5 litres	8010-99-225-7360
AQUACOVER 25 7150 Buff	Maker Coating Systems Ltd	5 litres	8010-99-321-6318
SIGMA ALPHAGEN 20 Series Black 7384	Maker Coating Systems Ltd	20 litres	8010-99-280-8371
BIOGARD Macropoxy® M630V2 Light Weatherwork Grey BS381C 676	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-131-6908
BIOGARD Macropoxy® M630V2 Green BS4800 14C39	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-255-5237
BIOGARD Macropoxy® M630V2 Ash Grey BS4800 00A01	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-535-5105
BIOGARD Macropoxy® M630V2 Black	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-739-8402
BIOGARD Macropoxy® ARD M630V2 White	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-313-4440
ENVIROGARD Sher-Cryl™ M770 Ash Grey BS4800 00A01	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-517-5228
ENVIROGARD Sher-Cryl™ M770 Black	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-768-1426
ENVIROGARD Sher-Cryl™ M770 Azure Blue BS381C 104	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-878-8150
ENVIROGARD Sher-Cryl™ M770 Canary BS381C 309	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-726-4136
ENVIROGARD Sher-Cryl™ M770 Dark Blue BS4800 18C39	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-723-3650
ENVIROGARD Sher-Cryl™ M770 Lt Brunswick Green BS381C 225	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-313-9445
ENVIROGARD Sher-Cryl™ M770 Mid Brunswick Green BS381C 226	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-862-5170
ENVIROGARD Sher-Cryl™ M770 Signal Red BS381C 537	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-225-7155
ENVIROGARD Sher-Cryl™ M770 Light Weatherwork Grey BS381C 676	Sherwin-Williams Protective & Marine Coatings Paints	5 litres	8010-99-833-4765
ENVIROGARD Sher-Cryl™ M770 Wedgwood Blue BS4800 18D43	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-723-3651
ENVIROGARD Sher-Cryl™ M770 White	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-231-3852
ENVOY TF500 Black	Sherwin-Williams Protective & Marine Coatings	15 litres	8010-99-423-7738
EPIDEK M339NA	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-845-5203
EPIGRIP Macropoxy® C425V2 Light Grey	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-786-7949

ANNEX H

WHOLE SHIP STOCK NUMBERS (NSNs)

Material	Supplier	Pack size	NSN
EPIGRIP Macropoxy® C425V2 Light Grey	Sherwin-Williams Protective & Marine Coatings	20 litres	8010-99-126-6377
EPIGRIP Macropoxy® C425V2 Off White	Sherwin-Williams Protective & Marine Coatings	20 litres	8010-99-133-8714
EPIGRIP Macropoxy® H766 Green BS4800 14C39	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-501-4661
EPIGRIP Macropoxy® H766 White	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-623-9946
EPIGRIP Macropoxy® L425	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-777-8688
EPIGRIP Macropoxy® L524 Aluminium	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-216-0021
EPIGRIP Macropoxy® L524 White	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-564-2934
EPIGRIP Macropoxy® M111 Red	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-884-5957
EPIGRIP Macropoxy® M902 Aluminium	Sherwin-Williams Protective & Marine Coatings	2.5 litres	8010-99-421-0972
EPIGRIP Macropoxy® C251 White	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-284-3464
Leighs Steel Spec™ A165 Silicone Alkyd Light Weatherwork Grey BS381C 676	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-982-2604
Leighs Steel Spec™ M255 BLACK	Sherwin-Williams Protective & Marine Coatings	20 litres	8010-99-417-8341
Leighs Steel Spec™ M255 VANDYKE BROWN BS4800 08B29	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-905-0772
Leighs Acrolon™ C750V2 Light Weatherwork Grey BS381C 676	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-212-2175
Leighs Steel Spec™ M671 Medium Grey	Sherwin-Williams Protective & Marine Coatings	5 litres	8010-99-872-1746
Leighs Steel Spec™ M671 Medium Grey	Sherwin-Williams Protective & Marine Coatings	20 litres	8010-99-862-7354

INTENTIONALLY BLANK

INTENTIONALLY BLANK

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S1. PRESSURE HULL & EXTERNAL SUPERSTRUCTURE PRIMER Untiled areas							
<u>Chugoku Paints (UK) Ltd</u> UMEGUARD SX HS Black	1	150	5.13	28 hrs	7 days	232	
<u>Hempel Paints Ltd</u> HEMPADUR 45880 MIO Black	2	175	4.6	8 hrs	30 days	198	99-149-2439
<u>International Paint Ltd</u> INTERGARD 5000	1	175	4.68	12 hrs	2 months	155	99-000-5256
<u>Jotun Paints (Europe) Limited</u> PRIMASTIC UNIVERSAL R/T (STD)	1	200	3.75	10 hrs	#	194	99-509-7172
<u>Maker Coating Systems Ltd</u> CORROLESS EPF	1	200	4.8	16 hrs	3 days	80	25-150-0972
<u>PPG Protective & Marine Coatings</u> SIGMASHIELD 240 7991	1	175	5	5 hrs	30 days	153	
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® M922M Mastic Aluminium	2	200	4.2	4hrs	#	146	99-495-3873
S2. ANTIFOULING SYSTEM(S) Black Finish							
FOUL RELEASE / DEFENCE (FRC / FD) Sonar Dome							
<u>Chugoku Paints (UK) Ltd</u> BIOCLEAN SG R	1	125	4.86	6 hrs	24 hrs	406	
BIOCLEAN R	1	100	6.5	20 hrs	#	278	
BIOCLEAN HB pure silicone finish	1	150	3.55		#	261	
<u>Hempel Paints Ltd</u> Primer: HEMPADUR 15570	2	125	4	8 hrs	30 days	414	
Tie coat: HEMPASIL NEXUS X-SEAL 27600	1	120	4.5	TBC	TBC	405	
HEMPAGUARD X7 89900 Hydrogel c/w Biocides	2	150	4.7	6 hrs	48hrs	262	
<u>International Paint Ltd</u> Primer: INTERSHIELD 300	2	125	4.8	7 hrs	14 days	313	
Tie coat: INTERSLEEK 737	1	100	6.5	4 hrs	7 days	325	
INTERSLEEK 1100SR Slime Release Fluoropolymer	1	150	4.8	24 hrs	#	248	
<u>PPG Protective & Marine Coatings</u> Mid coat: SIGMASHIELD 610 7978	1	150	3.8	12 hrs	5 days	437	
Tie coat: SIGMAGLIDE 790 7386	1	150	5.3	12 hrs	5 days	187	
SIGMAGLIDE 1290 Low-speed slime release Silicone	1	180	4.8	#	#	118	
SELF POLISHING (SPC)							
<u>Hempel Paints Ltd</u> OLYMPIC + 72950 Black	2	120	5.0	8 hrs	#	367	
<u>International Paint Ltd</u> INTERSPEED 6400 Black	2	90	6.7	6 hrs	3 months	358	
<u>Sherwin-Williams Protective & Marine Coatings</u> ENVOY TF500 Black	3	75	8.4	6 hrs	#	316	99-423-7738
<u>PPG Protective & Marine Coatings</u> SIGMA ECOFLEET 530 7385 Black	3	100	6.6	6 hrs	#	331	

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S3. PRESSURE HULL & EXTERNAL SUPERSTRUCTURE FINISH Untiled areas							
<u>Hempel Paints Ltd</u> HEMPADUR 47182 Black	1	125	6	9 hrs	5 days	364	
<u>International Paint Ltd</u> INTERGARD 5000 Black	1	125	6.56	12 hrs	2 months	155	
<u>Sherwin-Williams Protective & Marine Coatings</u> RESISTEX Macropoxy® M535 Black	1	75	5.3	2	#	502	99-453-1479
<u>Maker Coating Systems Ltd/PPG</u> CORROLESS EPF Black	1	200	4.8	16 hrs	3 days	80	99-212-7555
S4. PERISCOPES & Masts							
Visible portions outside the submarine							
EPIGRIP Macropoxy® L425	1	35	17.1	5 hrs	#	346	99-777-8688
IRR Matt BS285	3						
S5. SUPERSTRUCTURE CASING General steelwork							
<u>Hempel Paints Ltd</u> HEMPADUR 45880 MIO 12430	1	175	4.6	8 hrs	30 days	198	99-149-2439
HEMPADUR 47132 Black	1	125	5	9 hrs	5 days	364	
<u>International Paint Ltd</u> INTERGARD 5000	1	175	4.68	12 hrs	2 months	155	99-000-5256
INTERGARD 5000 Black	1	125	6.56	12 hrs	2 months	155	
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® M922M Mastic Aluminium	2	200	4.2	4hrs	#	146	99-495-3873
RESISTEX Macropoxy® M535 Black	2	75	5.3	2	#	502	99-453-1479
<u>Maker Coating Systems Ltd/PPG</u> AMERLOCK 400C Black	2	125	7	16 hrs	#	106	17-106-6001
S6. WALKWAYS ON STEEL CASING Black							
<u>Chugoku Paints (UK) Ltd</u> UMEGUARD HS SILVER	1	125	7.4	20 hrs	30 days	158	
CAMIDECK FINISH TYPE 1	2	190	2.84	16 hrs	#	374	
<u>Hempel Paints Ltd</u> HEMPADUR 45880 MIO 12430	1	100	8.2	7hrs	6 hrs*	168	99-803-7233
HEMPEL'S NON SKID 45340 TYPE 1	2	200	3.2	6 hrs	30 days	347	99-480-7979
<u>International Paint Ltd</u> INTERGARD 5000	1	150	5.47	12 hrs	4 days	155	99-000-5256
INTERSHIELD 852 TYPE 1	2	200	1.92	12 hrs	#	134	99-250-1864
<u>Maker Coating Systems Ltd</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
AMERLOCK 400 NS TYPE 1	2	300	4	16 hrs	#	106	99-184-8542
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C425V2	1	125	76.0	5 hrs	#	186	99-786-7949
EPIDEK M377 TYPE 1	2	250	2.5	4 hrs	#	330	99-777-8692
<u>PPG Protective & Marine Coatings</u> AMERCOAT 137	1	125	3.9	12 hrs	3 days	264	
AMERCOAT 138G	1	1300	0.6	24 hrs	#	168	

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S7. INTERNAL DRY SPACES White							
<u>Chugoku Paints (UK) Ltd</u>							
UMEGUARD HS SILVER	1	125	7.4	20 hrs	30 days	158	
CAMACRYL FINISH	2	40	11	24 hrs	#	33	99-380-7010
<u>Hempel Paints Ltd</u>							
HEMUDUR PRIMER 18500	1	60	8.8	6 hrs	1 week	22	99-876-8090
HEMUCRYL ENAMEL 58100	2	30	13.7	6 hrs	2 hrs	53	99-229-0228
<u>International Paint Ltd</u>							
INTERGARD 5000	1	125	6.56	12 hrs	#	155	99-000-5256
INTERCRYL 700	1	35	11.42	60 mins	#	50	99-979-7888
<u>Jotun Paints (Europe) Limited</u>							
WATERFINE PRIMER	2	100	4.6	1.5 hrs	#	100	99-462-9708
WATERFINE TOPCOAT	2	50	7.2	1.5 hrs	#	195	99-372-9140
<u>Maker Coating Systems Ltd</u>							
AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
AQUACOVER 500 (same products as AMERCOAT 300A)	2	50	10.4	16 hrs	#	0	17-108-8249
<u>PPG Protective & Marine Coatings</u>							
SIGMA AQUACOVER 257150	2	75	6.6	4 hrs	#	31	99-321-6318
SIGMA AQUACOVER 457520	2	50	6.8	6 hrs	#	17	99-225-7360
<u>Sherwin-Williams Protective & Marine Coatings</u>							
EPIGRIP Macropoxy® C425V2	1	125	6.0	5 hrs	#	186	99-786-7949
ENVIROGARD Sher-Cryl™ M770	2	25	15.6	3 hrs	#	78	99-231-3852
S8. INTERIOR WET COMPARTMENTS (Complete Represervation) White							
<u>Chugoku Paints (UK) Ltd</u>							
UMEGUARD HS SILVER	1	125	7.4	20 hrs	30 days	158	
AQUALIFE GLOSS FINISH	2	40	10	16 hrs	7 days	132	99-371-8400
<u>Hempel Paints Ltd</u>							
HEMUDUR 45880 MIO 12430	1	125	6.5	5 hrs	#	198	99-803-7233
HEMPEL'S WATER BASED EPOXY 48582	1	80	6.7	12 hrs	15 days	0	
<u>International Paint Ltd</u>							
INTERGARD 5000 Grey	1	125	6.56	24 hrs	#	155	99-000-5256
INTERGARD 1735	1	50	11.2	12 hrs	#	132	
<u>Jotun Paints (Europe) Limited</u>							
WATERFINE PRIMER Grey	1	100	4.6	1.5 hrs	#	60	99-462-9708
WATERFINE PRIMER	1 or 2	40	11.6	1.5 hrs	#	60	
<u>Maker Coating Systems Ltd</u>							
AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
AQUACOVER 500 (same products as AMERCOAT 300A)	1	50	10.4	16 hrs	#	0	17-108-8249
<u>PPG Protective & Marine Coatings</u>							
SIGMACOVER 456 HS 7712	2	75	9.7	8 hrs	#	277	
SIGMASHIELD 420	1	150	5.6	3½ hrs	14 days	239	
<u>Sherwin-Williams Protective & Marine Coatings</u>							
EPIGRIP Macropoxy® C425V2	1	125	6.0	5 hrs	#	186	99-786-7949
BIOGARD Macropoxy® M630V2	1	75	6.8	24 hrs	#	0	99-313-4440

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S9. GROUP EXHAUST VALVES <u>Sherwin-Williams Protective & Marine Coatings</u> Dex-Anode D5V2 Zinc-Clad II EU	1	75	8.7	24 hrs	#	470	
S10. DSRV SEATING <u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C425V2 EPIDECK L716	1 2	175 75	4.3 6.8	8 hrs 4 hrs	# #	186 420	99-786-7949 99-225-0689
S11. INTERIOR PRESSURE HULL SURFACE <u>Emergency Cooling Tanks (NP approval req'd)</u> a) S Class Soft and Saddle Tanks <u>Hempel Paints Ltd</u> GALVOSIL 15700 – Approved by Rolls Royce <u>International Paint Ltd</u> INTERGARD 5000 – Pending Approval b) Trafalgar Class Hard Tank <u>International Paint Ltd</u> INTERGARD 5000 – Pending Approval <u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C251 – Pending Approval <u>PPG Protective & Marine Coatings</u> SIGMA PHENGUARD 930 Primer -Approved by Rolls Royce SIGMA PHENGUARD 935 Coating -Approved by Rolls Royce SIGMA PHENGUARD 940 Finish -Approved by Rolls Royce SIGMAGUARD 795 (Maintenance)	1 2 2 2 2 1 1 1 2	75 125 125 125 125 100 100 100 150	8.53 6.56 6.56 5.9 6.6 6.6 6.6 5.0	36 hrs 12 hrs 12 hrs 24 hrs 36 hrs 24 hrs 24 hrs 10hrs	# 3 months 3 months 28 days 21 days 21 days 21 days 21 days	434 155 155 235 300 300 300 273	99-593-8923 99-000-5256 99-000-5256 99-284-3464 99-667-6118 99-925-0882 99-976-1657
<u>Maker Coating Systems Ltd</u> CORROLESS EPF – Approved by Rolls Royce CORROLESS RF35 – Approved by Rolls Royce c) Trafalgar Class Jacket Tank <u>International Paint Ltd</u> INTERGARD 5000 - Approved by Rolls Royce <u>Maker Coating Systems Ltd</u> CORROLESS EPF – Approved by Rolls Royce CORROLESS RF35 – Approved by Rolls Royce AMERLOCK 400C – Approved by Rolls Royce <u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® M922 EPIGRIP Macropoxy® C251 – Pending Approval	1 1 2 1 1 2 2 2	200 200 125 200 200 125 200 125	4.8 4.8 6.56 4.8 4.8 7 4.2 5.9	16hrs 16hrs 12 hrs 16hrs 16hrs 16 hrs 4hrs 24 hrs	3 days 3 days 3 months 3 days 3 days 3 days # 28 days	80 93 155 80 93 106 143 235	25-150-0972 99-337-0778 99-000-5256 25-150-0972 99-337-0778 17-108-8248 99-834-8384 99-284-3464

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S11. (cont) INTERIOR SURFACES							
d) Vanguard Class High Pressure Decay Heat Removal Tank (HPDR)							
<u>International Paint Ltd</u> INTERGARD 5000 – Pending Approval	2	125	6.56	12 hrs	3 months	155	99-000-5256
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP C251 – Pending Approval	2	125	5.9	24 hrs	28 days	235	99-284-3464
<u>Maker Coating Systems Ltd</u> CORROLESS EPF – Pending Approval	1	200	4.8	16hrs	3 days	80	25-150-0972
CORROLESS RF35 – Pending Approval	1	200	4.8	16hrs	3 days	93	99-337-0778
AMERLOCK 400C – Pending Approval	2	125	7	16 hrs	3 days	106	17-108-8248
<u>PPG Protective & Marine Coatings</u> SIGMA PHENGUARD 930 Primer – Approved by Rolls Royce	1	100	6.6	36 hrs	21 days	315	99-667-6118
SIGMA PHENGUARD 935 Coating – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	99-925-0882
SIGMA PHENGUARD 940 Finish – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	99-976-1657
SIGMAGUARD 795 (Maintenance)	2	150	5.0	10hrs	21 days	273	
EXTERNAL SURFACES							
<u>International Paint Ltd</u> INTERGARD 5000 – Pending Approval	2	125	6.56	12 hrs	3 months	155	99-000-5256
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C251 – Pending Approval	2	125	5.9	24 hrs	28 days	235	99-284-3464
<u>Maker Coating Systems Ltd</u> CORROLESS EPF	1	200	4.8	16hrs	3 days	80	25-150-0972
CORROLESS RF35	1	200	4.8	16hrs	3 days	93	99-337-0778
AMERLOCK 400C	2	125	7	16 hrs	3 days	106	17-108-8248
<u>PPG Protective & Marine Coatings</u> SIGMA PHENGUARD 930 Primer - Approved by Rolls Royce	1	100	6.6	36 hrs	21 days	315	99-667-6118
SIGMA PHENGUARD 935 Coating - Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	99-925-0882
SIGMA PHENGUARD 940 Finish - Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	99-976-1657
SIGMAGUARD 795 (Maintenance)	2	150	5.0	10hrs	21 days	273	
e) Astute Class							
<u>Advanced Polymer Coatings</u> SILOXIRANE 2031LE – Approved by Rolls Royce	2	150	1.72	24 hrs	3 days	102	
<u>Sherwin-Williams Protective & Marine Coatings</u> DURAGLASS Magnalux 41V – Approved by Rolls-Royce	2	500	0.84	2½ hrs	#	150	

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S12. REACTOR COMPARTMENT White							
<u>a) Interior surfaces</u>							
<u>Hempel Paints Ltd</u> HEMPADUR NPP 55672-10000	3	75	8.5	24 hrs	21 days	327	
<u>International Paint Ltd</u> INTERGARD 5000	1	125	6.56	12 hrs	#	155	99-000-5256
INTERGARD 1735	1	50	11.20	12 hrs	#	132	
<u>Maker Coating Systems Ltd/PPG</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
AQUACOVER 500 (same products as AMERCOAT 300A)	2	50	10.4	16 hrs	#	0	17-108-8249
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C400V3	1	200	9.3	5 hrs	#	257	
EPIGRIP Macropoxy® H766	1	50	14	5 hrs	#	395	99-623-9946
<u>HEAT RESISTANT ALUMINIUM >250°C</u>							
<u>Firwood Paints Ltd</u> FIRGLO 64	1-2	25	15	4 hrs	#	620	
<u>International Paint Ltd</u> INTERTHERM 50	1-2	25	18	12hrs	#	495	99-969-0549
<u>b) External surfaces</u> Refer to S1. NOTE: - DFT not to exceed that stated in BR3939 Section 12.							
S13. INTERIOR DECKS							
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C425V2	1	175	4.3	8 hrs	#	186	99-786-7949
BIOGARD Macropoxy® M630V2	1	75	6.8	24 hrs	#	0	99-255-5237
<u>International Paint Ltd</u> INTERGARD 5000	1	125	6.56	12 hrs	#	155	99-000-5256
INTERGARD 1735	1	50	11.2	12 hrs	#	132	99-255-0527
<u>Maker Coating Systems Ltd/PPG</u> AMERLOCK 400C	2	125	7	16 hrs	#	106	99-383-2335
S14. BATTERY COMPARTMENTS BS4800 00A01							
<u>Chugoku Paints (UK) Ltd</u> UMEGARD HS SILVER	1	125	7.12	20 hrs	7 days	108	
AQUALIFE GLOSS FINISH	2	40	10	16 hrs	7 days	132	99-757-9334
<u>Hempel Paints Ltd</u> HEMPADUR 45880 MIO 12430	1	150	5.5	5 hrs	#	198	99-803-7233
HEMPEL'S WATERBASED EPOXY 48582	1	80	6.7	12 hrs	15 days	0	99-988-2715
<u>International Paint Ltd</u> INTERGARD 5000	1	125	6.56	12 hrs	#	155	99-000-5256
<u>Jotun Paints (Europe) Limited</u> POLYMASTIC 2000	1	200	4.8	9 hrs	#	80	99-395-8448
POLYMASTIC 2000	1	200	4.8	9 hrs	#	80	99-665-9772
<u>Maker Coating Systems Ltd/PPG</u> AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
AQUACOVER 500 (same products as AMERCOAT 300A)	1	50	10.4	16 hrs	#	0	99-535-8577
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C425V2	1	100	7.5	4 hrs	#	186	99-786-7949
BIOGARD Macropoxy® M630V2	1	75	6.8	24 hrs	#	0	99-535-5105

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S15. MACHINERY SPACE BILGES & MOUNTED MACHINERY RAFTS							
<u>Chugoku Paints (UK) Ltd</u>							
UMEGARD HS SILVER	1	125	6.5	15 hrs	10 days	108	99-126-9478
UMEGARD HS GREY	1	125	6.5	15 hrs	10 days	158	
<u>Finish for Mounted Machinery Rafts</u>							
CAMACRYL FINISH MAC Canary BS381C 309	1	40	11	24 hrs	#	33	99-446-0554
<u>Hempel Paints Ltd</u>							
HEMPADUR 45880 White	1	150	5.5	5 hrs	#	220	99-264-0387
<u>Finish for Mounted Machinery Rafts</u>							
HEMUCRYL ENAMEL 58100 Canary BS381C 309	1	30	13.7	6 hrs	#	70	99-858-1263
<u>International Paint Ltd</u>							
INTERGARD 5000	1	175	4.68	12 hrs	3 months	155	99-000-5256
<u>Finish for Mounted Machinery Rafts</u>							
INTERCRYL 700 Yellow RAL 1018	1	35	11.42	6 hrs	#	50	99-774-1224
<u>Jotun Paints (Europe) Limited</u>							
JOTACOTE UNIVERSAL	1	125	5.8	4 hrs	#	240	99-352-4369
JOTAPROOF TOPCOAT	1	60	10.5	4 hrs	#	310	
<u>Finish for Mounted Machinery Rafts</u>							
WATERFINE TOPCOAT Canary BS381C 309	1	40	9.2	8 hrs	#	105	99-352-4369
<u>Maker Coating Systems Ltd</u>							
CORROLESS EPF	1	200	4.8	16 hrs	3 days	80	25-150-0972
<u>Finish for Mounted Machinery Rafts</u>							
AMERLOCK 400C YELLOW	1	125	7	16 hrs	#	106	
<u>PPG Protective & Marine Coatings</u>							
SIGMA NOVAGARD 840 7468	1	400	2.5	24 hrs	2 months	13	99-182-2670
<u>Finish for Mounted Machinery Rafts</u>							
SIGMA AQUACOVER 45 7250 Canary BS381C 309	1	50	6.8	6 hrs	#	17	99-182-2670
<u>Sherwin-Williams Protective & Marine Coatings</u>							
EPIGRIP Macropoxy® M902	1	125	6.0	6.5 hrs	#	219	99-421-0972
EPIGRIP Macropoxy® L524	1	125	5.1	12 hrs	#	296	99-564-2934
<u>Finish for Mounted Machinery Rafts</u>							
ENVIROGARD Sher-Cryl™ M770 Canary BS381C 309	1	25	15.6	3 hrs	#	78	99-726-4136
S16. BULK FUEL & OIL, LUBE OIL, HYDRAULIC & LP AIR TANKS - DEF STAN 80-97 (HIGH SOLIDS)							
<u>Chugoku Paints (UK) Ltd</u>							
CLEANKEEP 5000	1	300	3.33	48 hrs	14 days	0	99-834-8384
<u>Hempel Paints Ltd</u>							
HEMPADUR 85671	3	100	6.8	36 hrs	5 days	320	
<u>International Paint Ltd</u>							
INTERLINE 850	2	125	6.08	8 hrs	30 days	212	
<u>Jotun Paints (Europe) Limited</u>							
TANKGUARD STORAGE	2	125	5.0	10 hrs	30 days	261	
<u>Maker Coating Systems Ltd</u>							
CORROLESS EPF	1	200	4.8	16 hrs	3 days	80	25-150-0972
CORROLESS RF35 Off White	1	200	4.8	16 hrs	3 days	93	25-150-0973
<u>PPG Protective & Marine Coatings</u>							
SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
<u>Sherwin-Williams Protective & Marine Coatings</u>							
EPIGRIP Macropoxy® M922	2	200	5.4	4 hrs	14 days	143	99-834-8384

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S17. POTABLE WATER TANKS							
<u>Chugoku Paints (UK) Ltd</u> CLEENKEEP 5000	1	300	3.33	48 hrs	7 days	0	25-150-0972 99-337-0778
<u>Hempel Paints Ltd</u> HEMPADUR MULTI STRENGTH 35560	2	200	5	24 hrs	5 days	0	
<u>International Paint Ltd</u> INTERLINE 925	1	300	3.35	48 hrs	3 days	1	
<u>Jotun Paints (Europe) Limited</u> TANKGUARD DW	2	150	6.7	12 hrs	5 days	2	
<u>Maker Coating Systems Ltd</u> CORROLESS EPF	1	200	4.8	16 hrs	3 days	80	
CORROLESS RF35	1	200	4.8	16 hrs	3 days	93	
<u>PPG Protective & Marine Coatings</u> SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
<u>Sherwin-Williams Protective & Marine Coatings</u> WATERLINE Macropoxy® P300	1	500	2.0	6 hrs	36 hrs	0	
S18. SLOP DRAIN TANKS (alternatives being sought)							
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C251	2	125	5.9	24 hrs	28 days	235	99-284-3464
S19. AFFE TANKS (supplied with Demin Water?)							
<u>Chugoku Paints (UK) Ltd</u> CLEENKEEP 5000	1	300	3.33	48 hrs	14 days	0	25-150-0972 99-337-0778
<u>Hempel Paints Ltd</u> HEMPADUR MULTI STRENGTH 35560	2	250	5.0	24 hrs	5 days	0	
<u>International Paint Ltd</u> INTERLINE 704	2	125	4.24	23 hrs	21 days	385	
<u>Jotun Paints (Europe) Limited</u> TANKGUARD DW	2	150	6.7	12 hrs	5 days	2	
<u>Maker Coating Systems Ltd</u> CORROLESS EPF	1	200	4.8	16 hrs	3 days	80	
CORROLESS RF35	1	200	4.8	16 hrs	3 days	93	
<u>PPG Protective & Marine Coatings</u> SIGMAGUARD CSF 585 7785	1	300	3.33	24 hrs	20 days	5	
<u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C251	2	125	5.9	24 hrs	28 days	235	99-284-3464

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S20. DEMINERALISED WATER TANKS (Max Temperature 90°C) (Inc.Hotwells, Surge, Reserve Feed, Made Water, Reactor Water Storage Tanks) Consult 'DES SM PG-NavArch3b' for latest approved coatings.							
<u>Chugoku Paints (UK) Ltd</u>							
CLEENKEEP 5000 – RR approved – Check with ISM before use.	1	300	3.33	48 hrs	14 days	0	
<u>Hempel Paints Ltd</u>							
HEMPADUR 85671 – RR to approve	3	100	6.8	36 hrs	21 days	320	
<u>International Paint Ltd</u>							
INTERLINE 925 – RR not approved – Seeking clarification.	1	300	3.33	18 hrs	3 days	1	
<u>Jotun Paints (Europe) Limited</u>							
TANKGUARD PLUS – RR to approve	3	100	7.0	20 hrs	21 days	300	
<u>Maker Coating Systems Ltd Limited to 60°C</u>							
CORROLESS EPF – Approved by Rolls Royce	1	200	4.8	16 hrs	3 days	80	25-150-0972
CORROLESS RF35 – Approved by Rolls Royce	1	200	4.8	16 hrs	3 days	93	99-337-0778
<u>PPG Protective & Marine Coatings Limited to 60°C (specialist coating)</u>							
SIGMA PHENGUARD 930 Primer – Approved by Rolls Royce	1	100	6.6	36 hrs	21 days	315	99-667-6118
SIGMA PHENGUARD 935 Coating – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	99-925-0882
SIGMA PHENGUARD 940 Finish – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	99-976-1657
SIGMAGUARD 795 (Maintenance) – RR to approve	2	150	5.0	10hrs	21 days	273	
<u>Sherwin-Williams Protective & Marine Coatings</u>							
EPIGRIP Macropoxy® C251 – Current performance issues not resolved – Seek alternative - Previously approved by Rolls Royce							
S21. HOLDING PRIMER (blasted steel work)							
<u>Chugoku Paints (UK) Ltd</u>							
NZ PRIMER S	1	25	15.9	16 hrs	#	641	
<u>Hempel Paints Ltd</u>							
HEMPADUR 15570 (damp surface tolerant)	1	40	13.5	#	#	414	99-943-1152
<u>International Paint Ltd</u>							
INTERGARD 269	1	30	15.67	6 hrs	#	411	99-983-0743
<u>Jotun Paints (Europe) Limited</u>							
MUKI EPS	1	20	12.5	7 hrs	7 days	610	
<u>PPG Protective & Marine Coatings</u>							
SIGMACOVER 280 7417	1	50	11.4	8 hrs	3 months	432	99-569-7697
<u>Sherwin-Williams Protective & Marine Coatings</u>							
METAGARD Macropoxy® L574	1	25	11.6	3 hrs	#	594	99-895-9894
or							
EPIGRIP Macropoxy® M111 (damp surface tolerant)	1	60	9.0	4 hrs	#	383	99-884-5957

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20 ^o Recoat Interval	Max@ 20 ^o Recoat Interval	VOC gms per ltr	NATO Stock Number
S22. PRIMERS FOR NON FERROUS METALS							
<u>Chugoku Paints (UK) Ltd</u>							
Aluminium: ALP 500	1	50	11.6	10 hrs	#	414	99-967-8636
Stainless Steel: UMEGUARD HS	1	125	7.40	20 hrs	30 days	158	99-126-9478
Zinc Spray & Galvanise: GALVANITE 200	1	30	14.10	4 hrs	30 days	587	99-290-5829
<u>Hempel Paints Ltd</u>							
Aluminium, Stainless Steel, Zinc Spray & Galvanise: HEMUCRYL TIE COAT 18200 (1 pack)	1	20	19.0	24 hrs	30 mins	40	99-199-2908
or HEMPADUR 15553 (2 pack)	1	50	8.6	2 hrs	#	515	99-870-0653
Indicator coat for FRP: HIGH PROTECT Cream	1	200	5.0	8 hrs	5 days	10	99-517-4318
<u>International Paint Ltd</u>							
Aluminium, Stainless steel, Zinc Spray & Galvanise: INTERGARD 269	1	30	15.67	6 hrs	#	411	99-983-0743
or INTERGARD 276	1	30	15.67	6 hrs	#	411	
Indicator Coat for FRP: INTERLINE 925 Cream	1	300	5	18 hrs	3 days	1	
<u>Jotun Paints (Europe) Limited</u>							
Aluminium, Stainless Steel, Zinc Spray & Galvanise: WATERFINE PRIMER	1	60	7.6	1.5 hrs	#	100	99-462-9708
FRP Indicator Coat: PENGUARD HB White	2	150	3.6	8 hrs	#	390	
<u>Maker Coating Systems Ltd / PPG</u>							
Aluminium & Zinc Spray: AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
Stainless Steel & Galvanise: SIGMACOVER 280 7417	1	50	11.4	8 hrs	6 months	432	99-569-7697
Indicator Coat for FRP: AMERLOCK 400C Green RAL 6011	2	125	7	16 hrs	#	106	17-120-4829
<u>Sherwin-Williams Protective & Marine Coatings</u>							
Aluminium, Stainless Steel & Galvanise: EPIGRIP Macropoxy® L425	1	35	17.1	5 hrs	#	346	99-777-8688
Zinc Spray: METAGARD Macropoxy® L574	1	25	11.6	4 hrs	#	594	99-895-9894
Indicator Coat for FRP: EPIGRIP Macropoxy® C425V2 Off White	2	150	5	4 hrs	#	186	99-133-8714
S23. HIGH EROSION AREAS							
<u>Hempel Paints Ltd</u>							
HEMPADUR MULTISTRENGTH GF35970	1	300	2.9	16 hrs	30 days	180	
<u>International Paint Ltd</u>							
INTERZONE 505	1	300	3.0	6 hrs	4 days	157	
<u>Maker Coating Systems Ltd</u>							
CORROLESS EPF	2	200	4.8	16 hrs	3 days	80	99-212-7555
<u>Sherwin-Williams Protective & Marine Coatings</u>							
EPIGRIP Macropoxy® M922	1	400	4.2	#	#	143	99-834-8384

ANNEX J SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min@ 20° Recoat Interval	Max@ 20° Recoat Interval	VOC gms per ltr	NATO Stock Number
S24. BENEATH TILING <u>Wessex Resins:</u> UW46 Primer UW 46 Adhesive							99-593-3008 99-297-7593
S25. SYSTEM FOR COATING NATURAL RUBBER MOUNTS (applied by mount supplier not to be touched up once fitted) DUNLOP-NPL 100 - Obsolete <u>Maker Coating Systems Ltd:</u> GUMMIPAINT - ORANGE	2	35					
S26. INTERNAL NUTS & BOLTS AND TO FILL GAPS BETWEEN CANNING PLATES & LEAD SHIELDING <u>Maker Coating Systems Ltd</u> CORROLESS CCI 355 CORROSION INHIBITOR (HD GREASE)	1	N/A			N/A	N/A	99-676-5736
S27. SEA WATER TANKS <u>Chugoku Paints (UK) Ltd</u> IMO PSPC UMEGUARD HS or BANNOH 1500 <u>Hempel Paints Ltd</u> IMO PSPC HEMPADUR QUATTRO <u>International Paint Ltd</u> IMO PSPC INTERGARD 5000 <u>Jotun Paints (Europe) Limited</u> IMO PSPC BALLOXY HB LIGHT <u>Maker Coating Systems Ltd</u> CORROLESS EPF <u>Maker Coating Systems Ltd/ PPG</u> IMO PSPC SIGMACOVER 240 7991 <u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® L524 (typical dft 125. care req'd on overlap at 160)	2 2 2 2 2 2 2	160 160 160 160 160 200 160	5.08 4.56 4.5 5.13 5.16 4.8 5.4	15 hrs 19 hrs 6 hrs 12 hrs 10 hrs 16 hrs 5 hrs	10 days 30 days 90 days 3 months # 3 days 30 days	108 286 275 155 150 80 153	99-000-5256 17-108-7824 25-150-0972 99-564-2934
S28. CHALFONT / LILO / PAYLOAD BAY CHAMBER (Internal) Consult 'DES SM PG-NavArch3b' for latest approved coatings. 'A'-Boat at build: - <u>Sherwin-Williams Protective & Marine Coatings</u> EPIGRIP Macropoxy® C425V2 EPIGRIP Macropoxy® M262 <u>International Paint Ltd</u> INTERZONE 505 (proposed coating) High abrasion resistant / immersion in sea water / low VOC / internal fire rated / black and white finish coats – systems desirable. Full test requirements are required in order to seek alternatives.	2 1 1	75 75 300	7.5 8 3.0	4 hrs 4 hrs 6 hrs	# # 4 days	186 354 157	99-786-7949 -

ANNEX J SUBMARINES

Supplier	Material	BR Class	VOC Compliant	NSN
Chugoku Paints (UK) Ltd	CAMACRYL FINISH MAC White	See 4.3	86 g/l	8010-99-380-7010
Chugoku Paints (UK) Ltd	CAMACRYL FINISH MAC Ash Grey BS4800 00A01	See 4.3	86 g/l	8010-99-676-4126
Chugoku Paints (UK) Ltd	ALP 500	See 4.3	414 g/l	8010-99-967-8636
Chugoku Paints (UK) Ltd	GALVANITE 200 White	See 4.3	495 g/l	8010-99-995-4247
Chugoku Paints (UK) Ltd	GALVANITE 200 White	See 4.3	495 g/l	8010-99-290-5829
Chugoku Paints (UK) Ltd	UMEGUARD HS Grey	See 4.3	158 g/l	8010-99-126-9478
Chugoku Paints (UK) Ltd	UMEGUARD HS White	See 4.3	158 g/l	8010-99-564-2409
Chugoku Paints (UK) Ltd	CAMACRYL FINISH MAC Canary BS381C 309	See 4.3	86 g/l	8010-99-446-0554
Chugoku Paints (UK) Ltd	CAMACRYL FINISH MAC Wedgewood Blue BS4800 18D43	See 4.3	86 g/l	8010-99-665-3660
Chugoku Paints (UK) Ltd	CAMACRYL FINISH MAC Dark Blue BS4800 18C39	See 4.3	86 g/l	8010-99-862-0034
Chugoku Paints (UK) Ltd	CAMACRYL FINISH MAC Mid Brunswick Green BS381C 226	See 4.3	86 g/l	8010-99-794-2129
Chugoku Paints (UK) Ltd	CAMACRYL FINISH MAC Azure Blue BS381C 104	See 4.3	86 g/l	8010-99-366-5444
Hempel UK Limited	HEMPADUR 15570 LIGHT GREY 12430	See 4.3	430 g/l	8010-99-170-5097
Hempel UK Limited	HEMPADUR 15553 Off White 11630 5ltr	See 4.3	515 g/l	8010-99-870-0653
Hempel UK Limited	HEMPADUR 15553 Off White 11630 20ltr	See 4.3	515 g/l	8010-99-700-4191
Hempel UK Limited	HEMUDUR 18500 Grey 12170	See 4.3	85 g/l	8010-99-867-8090
Hempel UK Limited	HEMPELS WATER BASED EPOXY 48580 BS4800 14C39 (Green)	See 4.3	25 g/l	8010-99-279-8221
Hempel UK Limited	HEMPELS WATER BASED EPOXY 48580 BS381C 676 (Light Weatherwork Grey)	See 4.3	25 g/l	8010-99-976-9118
Hempel UK Limited	HEMPELS WATER BASED EPOXY 48580 Black	See 4.3	25 g/l	8010-99-864-5046
Hempel UK Limited	HEMPELS WATER BASED EPOXY 48580 BS4800 00A01	See 4.3	25 g/l	8010-99-988-2715
Hempel UK Limited	HEMPELS NON-SKID 45340 Type 1 Black	See 4.3	347 g/l	8010-99-351-4222
Hempel UK Limited	HEMUCRYL TIE-COAT 18200 Red 50710	See 4.3	118 g/l	8010-99-199-2908
Hempel UK Limited	HEMPELS GALVOSIL 15700	See 4.3	535 g/l	8010-99-593-8923
Hempel UK Limited	HEMUCRYL ENAMEL 58100 White	See 4.3	150 g/l	8010-99-299-0228
Hempel UK Limited	HEMUCRYL ENAMEL 58100 Dark Blue BS4800 18C39	See 4.3	150 g/l	8010-99-290-5925
Hempel UK Limited	HEMUCRYL ENAMEL 58100 Wedgewood Blue BS4800 18D43	See 4.3	150 g/l	8010-99-317-6235
Hempel UK Limited	HEMUCRYL ENAMEL 58100 Canary BS381C 309	See 4.3	150 g/l	8010-99-858-1263
Hempel UK Limited	HEMUCRYL ENAMEL 58100 Lt Brunswick Green BS381C 225	See 4.3	150 g/l	8010-99-831-8959
Hempel UK Limited	HEMUCRYL ENAMEL 58100 Azure Blue BS381C 104	See 4.3	150 g/l	8010-99-382-4025
Hempel UK Limited	HEMUCRYL ENAMEL 58100 Mid Brunswick Green BS381C 226	See 4.3	150 g/l	8010-99-162-2531
Hempel UK Limited	HEMUCRYL ENAMEL 58100 BS4800 00A01	See 4.3	150 g/l	8010-99-660-9288
Hempel UK Limited	HEMUCRYL ENAMEL 58100 Signal Red BS381C 537	See 4.3	150 g/l	8010-99-250-8046
Hempel UK Limited	HEMUCRYL ENAMEL 58100 Black	See 4.3	150 g/l	8010-99-175-1334
Hempel UK Limited	HEMUCRYL ENAMEL 58100 BS381C 676 (Light Weatherwork Grey)	See 4.3	150 g/l	8010-99-149-2439
Hempel UK Limited	HEMUCRYL PRIMER 18100	See 4.3	200 g/l	8010-99-909-6026
International Paint Ltd	INTERGARD FWA274/FWA278 Red	See 4.3	166 g/l	8010-99-337-6056
International Paint Ltd	INTERGARD 5000 BS4800 00A01 Dawn Grey	See 4.3	155 g/l	8010-99-000-5256
International Paint Ltd	INTERGARD 1735 WB QDE000/QDA049 BS4800 00A01	See 4.3	45 g/l	8010-99-255-0527
International Paint Ltd	INTERGARD 1735 WB Dark Sea Grey BS381C 640	See 4.3	132 g/l	8010-99-702-0607
International Paint Ltd	INTERGARD 1735 WB Green BS4800 14C39	See 4.3	132 g/l	8010-99-483-1994
International Paint Ltd	INTERGARD 740 ECY999/A Black	See 4.3	420 g/l	8010-99-285-3824
International Paint Ltd	INTERCRYL 506 GREY WPA300	See 4.3	120 g/l	8010-99-147-1269
International Paint Ltd	INTERCRYL 700 White WXB000	See 4.3	50 g/l	8010-99-979-7888
International Paint Ltd	INTERCRYL 700 Yellow RAL 1018	See 4.3	50 g/l	8010-99-774-1224
International Paint Ltd	INTERSHIELD 852 NON-SKID Type 1 Black	See 4.3	134 g/l	8010-99-250-1864

ANNEX J SUBMARINES

Supplier	Material	BR Class	VOC Compliant	NSN
Jotun Paints (Europe) Limited	PRIMASTIC UNIVERSAL MD	See 4.3	240 g/l	8010-99-509-7172
Jotun Paints (Europe) Limited	WATERFINE PRIMER Light Grey	See 4.3	50 g/l	8010-99-462-9708
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT Signal Red BS381C 537	See 4.3	197 g/l	8010-99-921-4654
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT Lt Brunswick Green BS381C 225	See 4.3	197 g/l	8010-99-131-6457
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT White	See 4.3	197 g/l	8010-99-372-9140
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT Wedgwood Blue BS4800 18D43	See 4.3	197 g/l	8010-99-212-5714
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT Azure Blue BS381C 104	See 4.3	197 g/l	8010-99-186-9127
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT Dark Blue BS4800 18C39	See 4.3	197 g/l	8010-99-347-9130
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT Lt Weatherwork Grey BS381C 676	See 4.3	197 g/l	8010-99-989-6214
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT CANARY BS381C 309	See 4.3	197 g/l	8010-99-352-4369
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT Black	See 4.3	197 g/l	8010-99-877-1641
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT Mid Brunswick Green BS381C 226	See 4.3	197 g/l	8010-99-873-4271
Jotun Paints (Europe) Limited	WATERFINE TOPCOAT Ash Grey BS4800 00A01	See 4.3	197 g/l	8010-99-272-2784
Maker Coating Systems Ltd	SIGMA AQUACOVER 45 7250 Black	See 4.3	17g/l	8010-99-500-7412
Maker Coating Systems Ltd	SIGMA AQUACOVER 45 7250 Mid Brunswick Green BS381C 226	See 4.3	17g/l	8010-99-269-1301
Maker Coating Systems Ltd	SIGMA AQUACOVER 45 7250 Wedgwood Blue BS4800 18D43	See 4.3	17g/l	8010-99-471-2071
Maker Coating Systems Ltd	SIGMA AQUACOVER 45 7250 Azure Blue BS381C 104	See 4.3	17g/l	8010-99-863-5457
Maker Coating Systems Ltd	SIGMA AQUACOVER 45 7250 Canary BS381C 309	See 4.3	17g/l	8010-99-182-2670
Maker Coating Systems Ltd	SIGMA AQUACOVER 45 7250 Dark Blue BS4800 18C39	See 4.3	17g/l	8010-99-957-7697
Maker Coating Systems Ltd	SIGMA AQUACOVER 25 7150 Buff	See 4.3	37g/l	8010-99-321-6318
Maker Coating Systems Ltd	SIGMA AQUACOVER 45 7250 Lt Brunswick Green BS381C 225	See 4.3	17g/l	8010-99-338-4734
Maker Coating Systems Ltd	SIGMA AQUACOVER 45 7250 Signal Red BS381C 537	See 4.3	17g/l	8010-99-880-0100
Maker Coating Systems Ltd	SIGMA AQUACOVER 45 7250 White	See 4.3	17g/l	8010-99-225-7360
Maker Coating Systems Ltd	AQUACOVER 500 (same products as AMERCOAT 300A)	See 4.3	0 g/l	8010-17-108-8249
Maker Coating Systems Ltd	AMERLOCK 400C Grey	See 4.3	106 g/l	8010-99-974-7400
Maker Coating Systems Ltd	AMERLOCK 400C Black	See 4.3	106 g/l	8010-17-106-6001
Maker Coating Systems Ltd	AMERLOCK 400C White	See 4.3	106 g/l	8010-17-108-8248
Maker Coating Systems Ltd	AMERLOCK 400C RAL 6018 Yellow-Green	See 4.3	106 g/l	8010-99-383-2335
Maker Coating Systems Ltd	AMERLOCK 400C Non-Skid Type 1 Black	See 4.3	106 g/l	8010-99-184-8542
Maker Coating Systems Ltd	CORROLESS EPF Buff	See 4.3	80 g/l	8010-25-150-0972
Maker Coating Systems Ltd	CORROLESS EPF Black	See 4.3	80 g/l	8010-99-212-7555
Maker Coating Systems Ltd	CORROLESS RF 35 Off White	See 4.3	93 g/l	8010-25-150-0973
Maker Coating Systems Ltd	CORROLESS RF 35	See 4.3	93 g/l	8010-99-337-0778
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 White	See 4.3	128 g/l	8010-99-231-3852
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Black	See 4.3	128 g/l	8010-99-768-1426
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Signal Red BS381C 537	See 4.3	128 g/l	8010-99-225-7155
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Canary BS381C 309	See 4.3	128 g/l	8010-99-726-4136
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Dark Blue BS4800 18C39	See 4.3	128 g/l	8010-99-723-3650
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Azure Blue BS381C 104	See 4.3	128 g/l	8010-99-878-8150
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Ash Grey BS4800 00A01	See 4.3	128 g/l	8010-99-517-5228
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Lt Brunswick Green BS381C 225	See 4.3	128 g/l	8010-99-313-9445
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Mid Brunswick Green BS381C 226	See 4.3	128 g/l	8010-99-862-5170
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Grey BS381C 676	See 4.3	128 g/l	8010-99-833-4765
Sherwin-Williams P&MC	ENVIROGARD Sher-Cryl™ M770 Wedgwood Blue BS4800 18D43	See 4.3	128 g/l	8010-99-723-3651
Sherwin-Williams P&MC	EPIDEK L716 Black	See 4.3	420 g/l	8010-99-225-0689
Sherwin-Williams P&MC	EPIDEK M377 Non-Skid Type 1 Black	See 4.3	330 g/l	8010-99-777-8692
Sherwin-Williams P&MC	EPIGRIP Macropoxy® C251	See 4.3	235 g/l	8010-99-284-3464
Sherwin-Williams P&MC	EPIGRIP Macropoxy® C425V2	See 4.3	186 g/l	8010-99-786-7949
Sherwin-Williams P&MC	EPIGRIP Macropoxy® M111	See 4.3	383 g/l	8010-99-884-5957
Sherwin-Williams P&MC	EPIGRIP Macropoxy® M902 Aluminium	See 4.3	219 g/l	8010-99-421-0972
Sherwin-Williams P&MC	EPIGRIP Macropoxy® L425	See 4.3	346 g/l	8010-99-777-8688
Sherwin-Williams P&MC	EPIGRIP Macropoxy® L524 Aluminium	See 4.3	296 g/l	8010-99-216-0021
Sherwin-Williams P&MC	EPIGRIP Macropoxy® L524 White	See 4.3	296 g/l	8010-99-564-2934
Sherwin-Williams P&MC	EPIGRIP Macropoxy® M922M Mastic Aluminium	See 4.3	146 g/l	8010-99-495-3873
Sherwin-Williams P&MC	EPIGRIP Macropoxy® M630V2 Black	See 4.3	0 g/l	8010-99-739-8402
Sherwin-Williams P&MC	EPIGRIP Macropoxy® M630V2 White	See 4.3	0 g/l	8010-99-313-4440
Sherwin-Williams P&MC	EPIGRIP Macropoxy® M630V2 Green BS4800 14C39	See 4.3	0 g/l	8010-99-255-5237
Sherwin-Williams P&MC	EPIGRIP Macropoxy® M630V2 Grey BS381C 676	See 4.3	0 g/l	8010-99-131-6908
Sherwin-Williams P&MC	RESISTEX Macropoxy® M535 Black	See 4.3	502 g/l	8010-99453-1479

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