



WARPAINT

UPDATE ISSUE 30

March 2010



Defence Equipment & Support

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INDEX

ITEM	Page
1. INTRODUCTION	2
2. PERTINENT ITEMS FROM PREVIOUS ISSUES	3
3. VOC COMPLIANT COATING SYSTEMS	7
4. SUBMARINE SPECIFICATIONS	8
5. WHOLE SHIP SPECIFICATIONS	8
6. SPECIALIST COATINGS & PAINT REMOVERS	10
7. MIXING OF PAINT SYSTEMS & USE OF CORROLESS QDR PRIMER	12
8. DRY FILM THICKNESS	16
9. QUERIES ON PAINTING AND PRESERVATION	16
10. COMMENTS & REQUESTS FOR WARPAINT	17
ANNEXE A – CHUGOKU PAINTS (UK) LTD	A-1
ANNEXE B – HEMPEL PAINTS LTD	B-1
ANNEXE C – INTERNATIONAL PAINT LTD	C-1
ANNEXE D – JOTUN PAINTS (EUROPE) LTD	D-1
ANNEXE E – MAKER COATING SYSTEMS LTD	E-1
ANNEXE F – PPG PROTECTIVE & MARINE COATINGS (Ex Sigma)	F-1
ANNEXE G – LEIGHS PAINTS	G-1
ANNEXE H - WHOLE SHIP STOCK NUMBERS	H-1
ANNEXE J – SUBMARINE SYSTEMS	J-1
ANNEXE K - AMENDMENTS TO BR3939	K-1

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The information on acceptable paint systems/coatings, given in this publication, updates BR3939 Issue 1 September 2006.

1. INTRODUCTION

- 1.1 Warpaint is the DES SE Sea-MT main guidance document of acceptable paint coatings for in-service and new-build Royal Naval Vessels. However, not all approved coatings are listed in Warpaint as paint manufacturers' are constantly striving to improve their current paint systems. Consequently their Whole Ship Specifications/Annexes are regularly updated. Should a coating therefore be proposed which is not listed in Warpaint, confirmation of acceptance must be obtained from DES SE Sea-MT5.
- 1.2 Note that all paint coatings listed in the annexes are to be applied strictly in accordance with their respective paint manufacturers' technical, health & safety data sheets and instructions.
- 1.3 Due to the high demand for Warpaint only limited numbers of hard copies are available. The easiest way to obtain a copy is via the internet/intranet and the Sea Systems Group website. From here it can be easily downloaded. Information on accessing these websites is detailed at 1.7 and 1.8.
- 1.4 The main aim of Warpaint is to continue to offer guidance on the various approved commercial off the shelf (COTS) paint manufacturers' coatings that have been assessed for their health and safety, fire and toxicity and suitability when applied to various areas of Royal Naval Vessels.
- 1.5 The DES SE Sea-MT contract with Coating Consultants Limited (CCL), for the operation of a telephone Paint Helpline continues to be successfully and widely used. Details of this can be found on page 12 Item 9.2 **Note new contact details**
- 1.6 This issue should be a useful addition to the data required by projects for ship/submarine build or maintenance. For future editions of Warpaint readers are invited to comment on what they regard as errors, omissions or where they feel that more, or possibly less information is required. Please note that such comments should be emailed for consideration to: DESSESea-MT5@mod.uk with the subject heading "WARPAINT".
- 1.7 Warpaint is available via the DE&S *internet* website at:
<http://www.mod.uk/DefenceInternet/MicroSite/DES/OurPublications/Warpaint.htm>

1.8 It is also available via the DE&S *intranet* at:

<http://defenceintranet.diiweb.r.mil.uk/DefenceIntranet/Library/CivilianAndJointService/Browsing/eDocumentCategories/ResearchScienceAndTechnology/MaterialsScienceAndTechnology/CoatingsColourantsAndFinishes/Warpaint.htm>

1.9 Requests for Warpaint should be emailed to the DES SE Sea-MT5 e-address at 1.6 above and not to CCL.

2. PERTINENT ITEMS FROM PREVIOUS ISSUES

2.1 FLIGHT, WEATHERDECK & HANGAR DECKS PAINT SYSTEMS

2.1.1 The information given in the Whole Ship Annexes is provided by the relevant paint supplier and it has been noted in some instances there has been non-compliance with the requirements of Defence Standard 80-134, which specifies within the description for 1 coat of primer and 2 coats of the anti-slip finish. Notwithstanding the information which may appear in these Annexes the requirement for 1 coat of primer and 2 coats of anti-slip finish is mandatory!

2.1.2 Non-slip finishes approved to Def Stan 80-134 Type 2, in Extra Dark Sea Grey to BS381C 640 must be applied to all Flight Decks. Only non-slip finishes approved to Def Stan 80-134 Type 1 are to be applied to CVS Hangar Decks in Dark Admiralty Grey BS381C 632.

2.1.3 Hangar Decks (with the exception of CVS) and Weatherdecks of all surface fleet vessels may be coated with either Def Stan 80-134 Type 1 or Type 2 finishes in Dark Admiralty Grey BS381C 632 or Extra Dark Sea Grey BS381C 640. Type 1 finishes have been approved under strict control and selection on the basis of their ease of cleaning (cleanability) and lighter colour. In addition they and any Type 2 finish which is to be applied to hangar decks are also required to be approved for their Fire Characteristics. It is important to note that coatings tested to meet the requirements of Def Stan 07-247 are to be tested as full paint systems; therefore a change of primer will mean that full re-testing is required. Fire testing of the individual coatings whilst of interest, is not an acceptable alternative for the testing of the complete paint system.

2.1.3.1 The manufacturers listed below have products Categorised in Def Stan 07-247:

Camrex Chugoku Type 1	NSN 99-541-9580
Hempel Type 1	NSN 99-147-6634

Products that have been codified but for which only part or no fire test data is recorded in DEF STAN 07-247 are:

International Type 1 NSN 99-709-0239
Leigh's Type 1 NSN 99-777-8689

2.1.4 Flight Deck Repair Kits consisting of primer, and finish, are also available. Brushes are included. The kits are available in both Type 1 and Type 2 as follows:

Camrex Chugoku	Type 1	NSN 99-300-7241
Camrex Chugoku	Type 2	NSN 99-577-3550
Hempel	Type 2	NSN 99-340-2100
Hempel	Type 1	NSN 99-471-2960
International	Type 1	NSN 99-993-9328
International	Type 2	NSN 99-391-0953
Leigh's	Type 1	NSN 99-087-4902
Leigh's	Type 2	NSN 99-383-4334
Jotun	Type 1	to be codified
Jotun	Type 2	to be codified
PPG	Type 1	to be codified
PPG	Type 2	to be codified

No other non-slip coatings shall be used without the approval of DES SE Sea-MT5

2.2.5 FLIGHT DECK MARKINGS

- 2.2.5.1 DES SE Sea-MT5 is aware that one or two Flight Deck Markings have been previously painted incorrectly. The correct paint must comply with DEFSTAN 80-134 Type 1, in white or other appropriate colours. The relevant supplier's materials are listed under Specialist Coatings Item 6 'SPECIALIST COATINGS & PAINT REMOVERS'.

No other non-slip coatings must be used without approval of DES SE Sea-MT5

2.2.6 DECK MARGINS

- 2.2.6.1 *Flight deck margins* are to be painted with compatible epoxy paint and margin widths shall be as follows:
- 100mm from the hangar screen
 - 100mm from the periphery of the flight deck, spurnwater or upstand
 - 25mm around all other flight deck protrusions i.e. linkplates, power outlet boxes, flight deck net heel fittings (where they do not fall within areas at b.), bollards, GPMG gun mounts, Jack Staff fittings and aircraft winch systems that do not lie flush with the deck.

Weatherdeck margins are to be painted with compatible epoxy paint and margin widths shall be as follows:

- 100mm between bulwarks and ships side
- 25mm around deckhouses, hanger lifts, gun mountings and all other deck protrusions i.e. power outlet boxes, bollards, hatches, hatch coamings and deck filling connections

- 2.2.6.2 Chequer-plates are to be coated with same paint system as deck margins and not with non-slip finish

2.2.7 PREPARATION AND PAINTING OF FLIGHT DECKS

- 2.2.7.1** The following conditions apply to the surface preparation and coating of flight decks in accordance with BR3939.
 - 2.2.7.2** Where the work is to be carried out in the open air, in cold or wet weather conditions, suitable waterproof covers are to be erected over the deck areas being treated as protection from the weather elements.
 - 2.2.7.3** Work is not to be carried out where the relative humidity (RH) exceeds 70% or where the deck temperature is less than 3°C above the dew point. In addition the ambient temperature is to be maintained at not less than 10°C during application, drying and curing of the paint coatings.
 - 2.2.7.4** If necessary, conditions are to be brought about by using suitable flame proof dehumidifiers/heaters placed within the covered area. They should be set to work at least 24 hours before commencement of abrasive blasting. They should be kept continuously in operation during the whole course of the work, and for at least 48 hours after the final coat of non-slip finish has been applied.
 - 2.2.7.5** On no account are abrasive blasted surfaces to be allowed to become contaminated prior to being overcoated. (See BS ISO EN 8501-1 [BS7079: Part A1] water soluble salts, welding residues, foreign matter etc.)
- 2.2.8 COLOUR TOP? - COLOUR WASH? - COLOUR SEALANT?**
- 2.2.8.1** An investigation carried out by QinetiQ (sponsored by DES SE Sea-MT) into the performance of colour top/wash indicated that under laboratory conditions limited application could be applied successfully onto a previously newly coated surface. However, this was dependant on the original substrate being blasted to SA 2½, the required profile being achieved, and the weatherdeck paint system applied to obtain a uniform 'specified' dry film thickness. (In accordance with the manufacturers' technical data sheet) Only if these criteria are strictly adhered to could any single application of colour top/wash have no degrading effects.
 - 2.2.8.2** The important factors to note are:
 - 2.2.8.2.1** Under laboratory conditions, it is far easier to achieve the overall required profile.
 - 2.2.8.2.2** Under laboratory conditions, it is far easier to achieve the overall, required 'specified' dry film paint thickness on a test steel plate, as opposed to a weatherdeck.
 - 2.2.8.3** The QinetiQ investigation noted it is critical that both substrate profile and dry film paint thickness meet the required standards prior to the application of a colour top/wash, to ensure that there is no loss of non-slip properties so endangering Health and Safety.

- 2.2.8.4 The application of colour top/wash was acceptable on a newly blasted and coated surface. However the conformity with non-slip requirements severely reduced when colour top/wash was applied onto worn coatings.
- 2.2.8.5 The application of a colour top/wash is purely cosmetic and serves no practical purpose.
- 2.2.8.6 It should also be noted that as colour top/wash is a thin coating, the tendency is to over apply the material and therefore fill the troughs of the achieved non-slip surface, creating a Health and Safety hazard and negating the purpose of a non-slip coating.
- 2.2.8.7 With Health and Safety of critical importance, the policy should be to protect the weatherdecks on completion of painting rather than applying a cosmetic coating prior to hand over. Applicators must recognise the need for early protection rather than later disguising contaminated surfaces, or even compromising paint systems.
- 2.2.8.8 Another major issue is that approval for the application of colour top/wash, could possibly allow any existing damaged weatherdeck areas be hidden under a thin wash coating. This would ultimately then present a further Health and Safety hazard at a later date and possibly even a serious FOD Hazard.
- 2.2.8.9 DES SE Sea-MT5 cannot condone the application of any type of colour top, colour wash or colour sealant except in extreme circumstances approved and acknowledged by the Platform Project Group and/or DES SE Sea-MT5

2.2 ANTIFOULINGS

As a result of successful trials and proven fuel savings, MOD Policy is to now specify the application of an approved foul release antifouling paint system to the underwater hull areas of all surface ships.

2.2.1 BOOT TOPS

In-service evidence has shown that the boot top coatings of Royal Naval vessels suffer greatly from mechanical damage. The damage is mainly caused by; berthing cats, supply vessels, tugs, wicker fenders, mooring buoys etc. Consequently a considerable amount of repair and touch up of the boot top is required. Inevitably ship staff are often tasked with the damage repairs and typically this can occur when the ship is away on a high profile visit abroad.

The application and repair of foul release coatings is a particularly specialised activity, requiring unique repair techniques. These techniques are considered to be beyond the limited training and expertise of ship staff. Whereas the repair to damaged conventional boot top coatings is significantly more manageable.

As a consequence, the preference for RN vessel boot tops is currently for a conventional biocide coating to be applied instead of a foul release coating. This type of coating will enable far easier repairs of inevitable mechanical damage.

- 2.3 MIXING OF PAINT SYSTEMS & USE OF CORROLESS QDR PRIMER
- 2.3.1 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 DES SESea-MT5 or the relevant Platform Project Group.
- 2.3.2 Corroless QDR primer is only to be used for emergency repairs; e.g. when a vessel has to sail, the welding of items has only just been completed and/or there is insufficient time to apply the specified full paint system. No more than 2 x 5 litre packs are to be carried on board and general usage is forbidden.

3. VOC COMPLIANT COATING SYSTEMS

- 3.1 EU Legislation has 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 to DES SE Sea-MT5. They will then be required, on request, to furnish the Institute of Naval Medicine (INM), with full formulation data. Failure to do so will automatically result in the withdrawal of MOD (N) acceptance
- 3.2 MOD (N) requires that Paint Manufacturers and Suppliers quote VOC levels in accordance with CEN or ISO Standards
- 3.3 The DES SE Sea-MT5 maximum VOC target levels are shown in the table below 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 systems #	400
(vii)	AFFF Tanks	390
(viii)	Demineralised Water Tanks	390
(ix)	AVCAT, Dieso & Hydraulic Oil Tanks	390
(x)	All other tank coating systems, plus cofferdams, engine room bilges and chain lockers	300
(xi)	Marine Varnish	530

- * Blast primers are materials that are applied to a specified thickness of 40 microns. Weldable primers are shop-primers applied by automatic spray and the maximum specified thickness for these materials is 25 microns.
- # New-generation anti-fouling systems may have higher VOC values than currently existing. There must be a balance between VOC level and toxic content and it may prove necessary to accept a higher VOC material as the lower toxic content outweighs the release of VOC.

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 DES SE Sea-MT5 target value, the actual VOC value must be equal to or less than the stated value in PG6/23. This part of the scheme could be proposed on the assumption that it will be subsequently submitted to DES SE Sea-MT5 for approval and inclusion in Warpaint. In this instance DES SE Sea-MT5 will require data 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 DES SE Sea-MT5 target values.

4. SUBMARINE SPECIFICATIONS

- 4.1 All extant *technical* information previously found within Defence Standard 07-252 (NES 774) – Requirements for the Preparation and Painting of Submarines, has now been incorporated into BR3939 – Hull Preservation Processes (Issue 1 September 2006). The previous and now updated references to approved paint coatings can be found in Annex J of Warpaint.
- 4.2 Acceptable paint specifications are outlined in Annex J, together with a list of other acceptable materials.
- 4.3 In previous issues reference has been made to BR1326(A) Classification, now referred to as the 'Submarine Material Toxicity Database'. DES SE Sea-SM-Atm1 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 SE Sea-SM-Atm1 has the responsibility for assessing materials for internal submarine use. All enquiries regarding materials for use on board should therefore in the first instance be directed to DESSESea-SM-Atm1@mod.uk at MOD Abbey Wood South, Bristol. Telephone: 030679 35045.
- 4.4 Once a material toxicity hazard assessment has been conducted, clearance for use must be sought from DESSMIS-A-WS2a1@mod.uk Telephone: 030679 39170 prior to product embarkation.

5. WHOLE SHIP SPECIFICATIONS

- 5.1 The Whole Ship Specifications submitted by seven major paint manufacturers/suppliers, are detailed in their respective annexes to this document. New build paint specifications are no longer separately included as they so closely mirror refit, maintenance and repair.
 - 5.1.1 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 (Chugoku) for convenience.

- 5.1.2 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 DES SE Sea-MT5. 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 In previous Whole Ship Annexes listed under item J, the NSNs 99-225-0889 & 99-772-5449 shown, relate to Defence Standards' 80-165 (weatherwork grey undercoat) and 80-187 (weatherwork grey finish). To ensure that vessels allocated under the Whole Ship Specification concept receive paints from the selected supplier, their specific materials have been re-codified.

5.4 Tables

- 5.4.2 These are in a new format and now include nominal dry film thickness (ndft) per coat in microns, 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 no longer comply with DES SE Sea-MT5 VOC emission target levels.**
- 5.4.2 Items with a '?' appearing in the boxes, indicate that manufacturer/supplier information is awaited.
- 5.4.2 Annexes are as follows:

Chugoku Paints (UK) Ltd	Annexe A
Hempel Paints Ltd	Annexe B
International Paint Ltd	Annexe C
Jotun Paints (Europe) Ltd	Annexe D
Makers Coating Systems Ltd	Annexe E
PPG Protective & Marine Coatings	Annexe F
Leighs Paints	Annexe G

5.5 LCUs and LCVPs

- 5.5.2 In general LCUs and LCVPs follow the Whole Ship Specifications with the exception of weatherwork coatings where Chemical Agent Resistant Coatings (CARC) and Infra Red Resistant coatings (IRR) are specified

6. SPECIALIST COATINGS & PAINT REMOVERS

6.1 "WHOLE SHIP SPECIFICATIONS" & "SUBMARINES" Annexes do not cover Specialist areas.

The following table lists specialist coatings and their location of use.

SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC gms per ltr	NATO Stock Number	BR 1326
<u>ANTIFOULING FOR "ARCHER" CLASS BOATS & YACHTS</u> SUPERSPEED 52	Anti-Fouling	411		N/A
<u>RUDDERS, STABILISERS & 'A' FRAMES</u> (i) Reblast LIMPETITE PRC (ii) Touch-up Repair LIMPETITE A3	Elastomer Elastomer	0 433		N/A N/A
<u>HULL (Underwater-Applied) GENERAL REPAIR</u> BIOFIX 561 LT Black CHEMI-TECH UW EPIGRIP M216 JML 2000	Epoxy Epoxy Epoxy Epoxy	0 0 0 0	99-133-9985	N/A N/A N/A N/A

Specialist Coatings & Paint Removers - continued

SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC ams per ltr	NATO Stock Number	BR 1326
<u>FLIGHTDECK MARKINGS</u>				
<u>Chugoku Paints (UK) Ltd</u>				
521E0020 Type 1 WHITE	Epoxy	374	99-541-9583	N/A
521E0013 Type 1 BLACK	Epoxy	374	99-543-0790	N/A
521E2947 Type 1 RED	Epoxy	374	99-543-0793	N/A
521E0013 Type 1 GREEN	Epoxy	374	99-5430-791	N/A
<u>Hempel Paints Ltd</u>				
HEMPELS DECK MARKING 453GB WHITE	Epoxy	347	99-323-1118	N/A
HEMPELS DECK MARKING 453GB BLACK	Epoxy	347	99-351-4222	N/A
HEMPELS DECK MARKING 453GB RED BS381C 537	Epoxy	347	99-724-9085	N/A
HEMPELS DECK MARKING 453GB GREEN BS381C 225	Epoxy	347	99-986-6762	N/A
<u>International Paints Ltd</u>				
INTERSHIELD 852 WHITE	Epoxy	219	99-274-4430	N/A
INTERSHIELD 852 BLACK	Epoxy	219	99-250-1864	N/A
INTERSHIELD 852 RED	Epoxy	219	99-666-9269	N/A
INTERSHIELD 852 GREEN	Epoxy	219	99-871-6360	N/A
<u>Leighs Paints</u>				
EPIDEK M377 WHITE	Epoxy	330	99-777-8690	N/A
EPIDEK M377 BLACK	Epoxy	330	99-777-8692	N/A
EPIDEK M377 GREEN	Epoxy	330	99-777-8691	N/A

Specialist Coatings & Paint Removers - continued

SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC gms per ltr	NATO Stock Number	BR 1326
WOODEN FLIGHT DECKS & ASSOCIATED STEELWORK <i>Note adjacent steel decks to follow Flight Decks paint system</i>				
Hempel Paints Ltd				
HEMPADUR 4588 MIO 1243 HEMPADUR 457GB Dark Sea Grey BS381C 640	Epoxy Epoxy	198 198	99-479-5449 99-831-0343	N/A N/A
Gloss for Deck Margins: HEMPEL'S NON SKID 457GA	Epoxy	198	99-879-5150	N/A
Leighs Paints				
METAGARD L574 Red Oxide EPIGRIP M339 Extra Dark Sea Grey BS381C 640	Epoxy Epoxy	594 250	99-895-9894 99-215-4495	N/A N/A
Gloss for Deck Margins: EPIGRIP M262	Epoxy	354	99-133-8713	N/A
International Paints				
INTERSHIELD 300 (thinned 10%) INTERSHIELD 300 INTERSHIELD 851	Epoxy Epoxy Epoxy		99-391-0953	N/A N/A N/A
RAC COATING SYSTEM				
INTERGARD 3112 SYSTEM as specified in DEF STAN 08-205				
WEATHERWORK SYSTEMS OVER RAC				
Chugoku Paints Ltd				
CAMLAC UNDERCOAT CAMSIL FINISH	Alkyd WB Silicone Alkyd	380 116	99-327-9058	N/A N/A
Hempel Paints Ltd				
HEMUDUR 1850 HEMUCRYL ENAMEL 5810	Water-Based Epoxy Water-Based Acrylic	85 150	99-876-8090 99-149-2439	N/A N/A
International Paint Ltd				
INTERGARD 5000 INTERFINE 691HS	Epoxy Epoxy Acrylic	179 409	99-000-5256 99-864-5322	N/A N/A
Jotun Paints (Europe) Limited				
JOTAMASTIC 80 JOTAPROOF TOPCOAT	Epoxy Epoxy Acrylic	145 310	99-519-2253	N/A N/A
Leighs Paints				
EPIGRIP C425V2 EPIGRIP C750V2	Epoxy Epoxy Acrylic	200 364	99-126-6377 99-212-2175	N/A N/A
Maker Coatings				
AMERLOCK 400C SIGMADUR 540	Epoxy Epoxy Acrylic	106 411	99-974-7400	N/A N/A

Specialist Coatings & Paint Removers - continued

SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC gms per ltr	NATO Stock Number	BR 1326
<u>EMERGENCY REPAIR OF FRESH WATER TANKS</u>				
<u>Hempel Paints Ltd</u> Hempel's TAPECRETE 6818	Cemeticious Acrylic	0	99-302-2646	N/A
<u>GALVANISED STEEL & ZINC METAL SPRAY (REPAIR)</u>				
<u>Maker Coatings</u> ZINGA M	Polystyrene	539	13-113-7072	B (LI)
<u>Hempel Paints Ltd</u> HEMUDUR ZINC 18560 or HEMPEL'S ZINC PRIMER 16490	Water-Based Epoxy	60		
	Zinc Phenoxy	590		
<u>International Paints Ltd</u> INTERZINC 22 or INTERZINC 72	Zinc Silicate	470		B (CI, CF)
	Zinc Epoxy	410		
<u>Leighs Paints</u> EPIGRIP J984	Zinc Epoxy	331		
<u>VARNISHED WOODWORK</u>				
<u>Chugoku Paints Ltd</u> SPAR VARNISH	Varnish	433		
<u>Hempel Paints Ltd</u> HEMPEL'S MARINE VARNISH 022GB	Alkyd	430	99-224-5783	B (BLI)
<u>International Paint Ltd</u> INTERLAC 678	Alkyd	373	99-328-9646	
<u>Jotun Paints (Europe) Limited</u> SPONTAN VARNISH	Urethane Alkyd	470	99-165-7645	
<u>PPG Protective & Marine Coatings</u> SIGMAVAR GLOSS 8103	Phenolic	393		
<u>HEAT RESISTANT COATINGS (below 175 °C)</u>				
<u>PPG Protective & Marine Coatings</u> SIGMATHERM 175	Modified Alkyd	561		

Specialist Coatings & Paint Removers - continued

SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC gms per ltr	NATO Stock Number	BR 1326
<u>HEAT RESISTANT COATINGS (above 250 °C)</u> <u>Hempel Paints Ltd</u> HEMPEL'S GALVOSIL 15700 <u>International Paint Ltd</u> INTERTHERM 890 <u>PPG Protective & Marine Coatings</u> SIGMATHERM 500	Zinc Silicate Zinc Silicate Modified Alkyd	435 305		BLI BLI
<u>HEAT RESISTANT COATINGS (above 400 °C)</u> <u>Hempel Paints Ltd</u> HEMPEL'S SILICONE ALUMINIUM 56910 <u>International Paint Ltd</u> INTERTHERM 50 <u>PPG Protective & Marine Coatings</u> SIGMATHERM 500	Polysiloxane Silicone Modified Alkyd	585 495	99-257-1455	BLI
<u>SYSTEM FOR COATING NATURAL RUBBER MOUNTS</u> <i>Applied by Mount supplier not to be touched up once fitted</i> <u>Dunlop Precision Rubber Ltd</u> DUNLOP NPL 100 <u>Maker Coatings</u> GUMMIPAIN - Orange	Twin Pack Single Pack		99-541-9576	B BLI
<u>PAINT REMOVER</u> <u>Cirrus Systems Ltd</u> REMOVALL 510 (Formerly NAPIER-PMA) <u>N A Robson Ltd</u> BACK TO NATURE VIII <u>International Paint Ltd</u> INTERPLUS 634 <u>Maker Coatings</u> SEA TO SKY SPC-203	Biodegradable Biodegradable Biodegradable Biodegradable	N/A N/A N/A	99-871-5945 20-003-3432	CI

Specialist Coatings & Paint Removers - continued

SPECIALIST SYSTEMS/MATERIALS	Generic Type	VOC gms per ltr	NATO Stock Number	BR 1326
<u>UNIQUE IMMERSED AREAS, PUMPS ETC</u>				
Corrocoat Limited				
CORROGLASS 202	Glass flake epoxy			
CORROGLASS 232	Glass flake epoxy			
CORROGLASS 602	Glass flake epoxy			
CORROGLASS 632	Glass flake epoxy			
POLYGLASS VE	Glass flake epoxy			
POLYGLASS VE HAND APPLIED	Glass flake epoxy			
POLYGLASS VEF	Glass flake epoxy			
POLYGLASS ZIPCOAT	Glass flake epoxy			
CORROCOAT ZIP E	Glass flake epoxy			

6.2 Cleaning Materials and Rust Removers

DES SE Sea-ShipDes2a is the Ship Husbandry & Habitability desk officer. All enquiries regarding cleaning materials and rust removers should be emailed to DESSESea-ShipDes2a@mod.uk alternatively telephone 030679 39673. (Rust removers should only be used on un-painted surfaces and they are not a part of any approved paint system)

- 6.2.1 Details of all current and future approved products, that are compatible with RN approved paint coatings, can and will be found in BR2203 as well as in the Ship / Submarine Husbandry & Habitability Information Portal. This database can be accessed via the internet. Contact DES SE Sea-ShipDes2a for further details.

6.3 Specialist Coatings Suppliers contact details:

Superspeed 52	H Marcel Guest	Tel 0161 205 7361
Limpetite	Bristol Metal Spraying	Tel 0117 9662206
BIOFIX 561LT	Innovative Epoxy Solutions	Tel 01454 612445
Chemi-Tech UW	Thortex Ltd	Tel 01609 780170
JML 2000	Jones Marine Ltd	Tel 02380 448100
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

6.4 ROCOL Site Safety Systems have reluctantly decided that as a consequence of the impact of Whole Ship Specifications, they wish to withdraw their Epoxo materials from RN supply. Therefore all reference to Rocol and Epoxo has been removed from the tables above. They advise that they still hold limited stocks and can continue to supply in the short term if required.

7. DRY FILM THICKNESS

7.1 The question of dry film thickness measurement was FIRST addressed in Warpaint Issue 3, 1996, and in subsequent update editions when MOD(N) accepted the recommendations of the Marine Painting Forum for both ship building and ship repair. This document stated that at least 80 - 85% of all readings should be at or above the manufacturer's specified thickness and the remaining 15% of readings shall not be less than 80% of the specified thickness.

7.1.1 Reference was also made to BS 5493:1977 Section 3 Para19 which indicated that, the average of the readings taken should equal or exceed the nominal thickness and in no case should any one reading be less than 75% of the nominal thickness.

7.2 BS EN ISO 12944-5:2007 has been published in the UK as a National Standard and as such supersedes both the draft guide from the Marine Paint Forum and BS 5493 (which was issued as a Code of Practice). BS EN ISO 12944-5:2007 indicates that all individual readings shall be equal to or above the Nominal Dry film Thickness (NDFT). Further individual readings between 80% of the NDFT and the NDFT shall be less than 20% of the total number of individual readings taken.

7.2.1 In view of the above all film thicknesses listed in the Annexes are to be considered as Nominal Dry Film Thicknesses

8 QUERIES ON PAINTING AND PRESERVATION

8.1.1 Coating Consultants Limited (CCL), continue to operate the DES SE Sea-MT Paint Helpline under an enabling contract. All matters of a routine nature regarding approved materials, NATO stock numbers, and other general enquiries should be addressed to CCL. All matters concerning MOD(N) Paint Policy should be directed to DES SE Sea-MT5.

8.2 **CCL HELPLINE - TELEPHONE NUMBER**

CCL may be contacted on weekdays Monday - Friday between 09:00 - 17:00 hours

- **Office Telephone:** 01245 268406
- **Mobile Telephone:** 07941 015857

If the connection to the mobile number is not made, the user may be asked to leave a message. Please *remember* to state your name, organisation and a full contact telephone number - CCL will call you back as soon as possible.

If the enquiry is not urgent, outside office hours, or is complex, CCL would appreciate being contacted via email at the following e-address:

E-mail: cclservices1@btconnect.com

9 COMMENTS AND REQUESTS FOR WARPAINT

9.1 As stated in the Introduction all requests for copies of Warpaint or comments on any subject matter should be emailed *for consideration* to DESSESea-MT5@mod.uk

****Please mark the subject heading "WARPAINT"***



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ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
A. UNDERWATER PRIMER (Re-blast) ~							
(i) Standard: UMEGUARD HS SILVER*	1	150	5.93	20 hrs	30 days	158	99-264-0145 99-264-0145
(ii) Tie per coat: SILVAX SQ K	1	50	6.0	8 hrs	#	620	
B. UNDERWATER PRIMER (Touch Up at Docking)							
(i) Standard: UMEGUARD HS SILVER*	1	150	5.93	20 hrs	30 days	158	99-264-0145
(ii) Tie-coat: SILVAX SQ K	1	50	6.0	8 hrs	#	620	
C. ANTIFOULING (Tin Free - 5yr life)							
SEA GRANDPRIX 500	3	125	3.76	5 hrs	#	484	
D. ANTIFOULING (FOUL RELEASE 5+ yr life)							
E. ANTIFOULING (Tin Free 3+ yr life)							
TFA 10	2	125	5.44	5 hrs	#	383	
F. BOOTTOP ANTIFOULING (Tin Free)							
SEAJET 33	2	125	3.52	5 hrs	#	485	
G. A/W HULL & SUPERSTRUCTURE PRIMER (Reblast)							
UMEGUARD HS SILVER*	1	125	7.40	20 hrs	30 days	158	99-264-0145
H. A/W HULL & SUPERSTRUCTURE PRIMER (Touch Up)							
(i) Standard: UMEGUARD HS SILVER*	1	125	7.40	20 hrs	30 days	158	99-264-0145
(ii) Alternative: CAMACRYL ZP PRIMER	2	60	6.66	6 hrs	#	50	99-125-9909
J. A/W HULL & SUPERSTRUCTURE							
(i) Standard: CAMSIL WB GF WATERBASED FINISH Light Weatherwork GreyBS381C 676	2	25	14.40	16 hrs	#	116	99-327-9058
(ii) Alternative: HD WEATHERWORK FINISH Light Weatherwork GreyBS381C 676	1	40	11.80	16 hrs	#	400	
(iii) Tie-coat (if required): Weatherwork U/C	1	50	11.40	16 hrs	#	380	
(iv) Sealer for RASH							

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Proposed by

CHUGOKU PAINTS (UK) Ltd

Proposed Systems/Materials	Number of coats	NDFT per coat Microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
K.. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
(a). Hangar Doors							
<u>Primer:</u> UMEGUARD HS SILVER*	1	125	7.40	20 hrs	30 days	158	99-264-0145
<u>Finish:</u> CAMSIL WB GF WATERBASED FINISH Light Weatherwork Grey BS381C 676	2	25	14.40	16 hrs	#	116	88-327-9058
(b). Flightdeck - Type 2 Non-skid Finish							
<u>Primer:</u> UMEGUARD HS SILVER	1	125	7.40	20 hrs	30 days	158	99-264-0145
<u>Finish:</u> CAMIDECK FINISH TYPE II Extra Dark Sea Grey BS381C 640	2	208	2.83	16 hrs	#	374	99-147-1303
<u>Type 2 Repair Kit:</u>							99-577-3550
(c). Hangar Decks & Weatherdecks - Type 1 Non-skid Finish:							
<u>Primer:</u> UMEGUARD HS SILVER	1	125	7.40	20 hrs	30 days	158	99-264-0145
<u>Hanger Deck</u> CAMIDECK FINISH TYPE I Dark Admiralty Grey BS381C 632	2	190	2.84	16 hrs	#	374	99-541-9581
<u>Weatherdecks</u> CAMIDECK FINISH TYPE I Extra Dark Sea Grey BS381C 640	2	190	2.84	16 hrs	#	374	
<u>Type 1 Repair Kit:</u>							
(d). Gloss for Deck Margins: UMEGUARD HS GREY Extra Dark Sea Grey BS381C 640	2	75	11.86	20 hrs	30 days	158	99-126-9478
L. INTERIOR DRY SPACES (Complete Represervation)							
<u>(i) Standard Primer:</u> UMEGUARD HS SILVER	1	125	7.40	20 hrs	30 days	158	99-264-0145
<u>Finish:</u> CAMACRYL FINISH MAC BS4800 00A01	2	40	11	24 hrs	#	33	99-676-4126
or							
<u>Alternative Finish:</u> AQUALIFE GLOSS FINISH BS4800 00A01	2	40	10	16 hrs	7 days	132	99-757-9334
M. INTERIOR DRY SPACES (Touch up)							
<u>(i) Standard Primer:</u> UMEGUARD HS SILVER	1	125	7.40	20 hrs	30 days	158	99-264-0145
<u>Finish:</u> CAMACRYL FINISH MAC	2	40	11	24 hrs	#	33	99-676-4126
Or							
<u>Alternative Finish:</u> AQUALIFE GLOSS FINISH BS4800 00A01	2	40	10	16 hrs	7 days	132	99-757-9334
<u>(ii) Alternative Primer:</u> CAMACRYL ZP PRIMER	2	60	6.66	6 hrs	#	50	99-125-9909
<u>Finish:</u> CAMACRYL FINISH MAC	2	40	11	24 hrs	#	33	99-676-4126
Or							
<u>Alternative Finish:</u> AQUALIFE GLOSS FINISH BS4800 00A01	2	40	10	16 hrs	7 days	132	99-757-9334

ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
N. INTERIOR WET SPACES (Touch up)							
(i) Standard Primer: UMEGUARD HS SILVER Finish: AQUALIFE GLOSS FINISH Ash Grey BS4800 00A01	1 2	125 40	7.40 10	20 hrs 16 hrs	30 days 7 days	158 132	99-264-0145 99-757-9334
(ii) Citadel lobby Primer: UMEGUARD HS SILVER Finish: AQUALIFE GLOSS FINISH - Colour BS4800 00A01 or Grey BS381C 676	1 2	125 40	7.40 10	20 hrs 16 hrs	30 days 7 days	158 132	99-264-0145 99-757-9334
(iii) Cleansing Stations Primer: UMEGUARD HS Finish: AQUALIFE GLOSS FINISH White	1 2	125 40	7.40 10	20 hrs 16 hrs	30 days 7 days	158 132	
(iv) Magazine Primer: UMEGUARD HS Finish: AQUALIFE GLOSS FINISH BS4800 00A01	1 2	125 40	7.40 10	20 hrs 16 hrs	30 days 7 days	158 132	99-126-9478 99-757-9334
O. INTERIOR WET SPACES (Touch up)							
(i) Standard Primer: UMEGUARD HS SILVER Finish: AQUALIFE GLOSS FINISH Ash Grey BS4800 00A01	1 2	125 40	7.40 10	20 hrs 16 hrs	30 days 7 days	158 132	99-264-0145 99-757-9334
(ii) Citadel lobby Primer: UMEGUARD HS SILVER Finish: AQUALIFE GLOSS FINISH - Colour BS4800 00A01 or Grey BS381C 676	1 2	125 40	7.40 10	20 hrs 16 hrs	30 days 7 days	158 132	99-264-0145 99-757-9334
(iii) Cleansing Stations Primer: UMEGUARD HS Finish: AQUALIFE GLOSS FINISH White	1 2	125 40	7.40 10	20 hrs 16 hrs	30 days 7 days	158 132	
(iv) Magazine Primer: UMEGUARD HS Finish: AQUALIFE GLOSS FINISH BS4800 00A01	1 2	125 40	7.40 10	20 hrs 16 hrs	30 days 7 days	158 132	99-126-9478 99-757-9334
P. INTERIOR DECKS							
(i) Standard Primer: AQUALIFE WSE PRIMER Finish: AQUALIFE FINISH Green 14C39	2 2	50 40	9 10	16 hrs 16 hrs	# 7 days	0 132	99-398-1182 99-755-6242
(ii) Cleansing Stations Primer: UMEGUARD HS Finish: AQUALIFE FINISH Green 14C39	1 2	125 40	7.40 10	20 hrs 16 hrs	30 days 7 days	158 132	99-755-6242
Q. BATTERY COMPARTMENTS							
(i) Primer: UMEGUARD HS SILVER	1	125	7.40	20 hrs	30 days	108	99-264-0145
(ii) Finish: AQUALIFE GLOSS FINISH BS4800 00A01	2	40	10	16 hrs	7 days	132	99-757-9334

ANNEXE 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 Recoat interval	Max Recoat interval	VOC gms per ltr	NATO Stock Number
R. CABLE LOCKERS & COFFERDAMS							
(i) UMEGUARD HS SILVER* UMEGUARD HS GREY Or (ii) NOVA 2000	1 1 2	125 125 125	7.40 7.40 6.50	20 hrs 20 hrs 15 hrs	30 days 30 days 10 days	108 158 173	99-264-0145 99-126-9478
S. SEWAGE & WATER BALLAST TANKS.							
(i) UMEGUARD HS SILVER* UMEGUARD HS GREY Or (ii) NOVA 2000	1 1 2	125 125 125	6.50 6.50 6.50	15 hrs 15 hrs 15 hrs	10 days 10 days 10 days	108 158 173	99-264-0145 99-126-9478
T. MACHINERY SPACE BILGES							
(i) UMEGUARD HS SILVER UMEGUARD HS WHITE Or (ii) NOVA 2000	1 1 2	125 125 125	6.50 6.50 6.50	15 hrs 15 hrs 15 hrs	10 days 10 days 10 days	108 158 173	99-264-0145 99-564-2409
U. AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM DEF STAN 80-97 (HIGH SOLIDS)							
(i) Standard: NOVA 2000* (ii) Alternative: CLEANKEEP 5000*	2 1	125 300	6.50 3.33	15 hrs 48 hrs	10 days 7 days	173 0	
V. POTABLE WATER TANKS							
CLEENKEEP 5000*	1	300	3.33	48 hrs	7 days	0	
W. AQUEOUS FILM-FORMING FOAM (AFFF) TANKS							
EPICON T800 PRIMER EPICON T800 FINISH	1 2	25 125	13.80 4.56	8 hrs 12 hrs	15 days 7 days	422 407	
X. DEMINERALISED WATER TANKS (Max Temperature 90°C)							
EPICON T800 PRIMER EPICON T800 FINISH	1 2	25 125	13.80 4.56	8 hrs 12 hrs	15 days 7 days	422 407	
Y. EPOXY HOLDING PRIMER							
NZ PRIMER S (ex SHOT-o-KOTE)	1	25	15.9	16 hrs	#	641	

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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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
Z. PRIMERS FOR NON-FERROUS METALS							
(i) <u>Aluminium:</u> ALP 500	1	50	11.6	10 hrs	#	414	99-967-8636
(ii) <u>Stainless Steel:</u> UMEGUARD HS	1	125	7.40	20 hrs	30 days	158	99-126-9478
(iii) <u>Zinc Spray:</u> GALVANITE 200	1	30	14.10	4 hrs	30 days	587	99-290-5829
(iv) <u>Galvanise:</u> GALVANITE 200	1	30	14.10	4 hrs	30 days	587	99-290-5829
(v) <u>FRP Indicator coat:</u>							

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 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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ANNEXE B
WHOLE SHIP SPECIFICATIONS
Proposed by

HEMPPEL UK LTD

Hempel's proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
A. UNDERWATER PRIMER (Re-blast) ~							
(i) <u>Standard:</u> HEMPADUR 45880 MIO 1243	1	175	4.6	8 hrs	30days	220	99-803-7233
(ii) <u>Alternative:</u> HEMPADUR QUATTRO 17634	1	175	4.1	6 hrs	90 days	275	
(iii) <u>Tie Coat:</u> HEMPADUR 45182	1	75	6.1	6 hrs	5 days	485	99-893-9646
(iv) <u>Tie Coat For D:</u> HEMPEL NEXUS 27302	1	120	5.8	6 hrs	24 hrs	265	
B. UNDERWATER PRIMER (T/U at Docking)							
(ii) <u>Standard:</u> HEMPADUR 45880 MIO 12430	1	175	4.6	8 hrs	30 days	220	99-803-7233
(ii) <u>Alternative:</u> HEMPADUR QUATTRO 17634	1	175	4.1	6 hrs	90 days	275	
(iii) <u>Tie Coat:</u> HEMPADUR 45182	1	75	6.1	6 hrs	5 days	485	99-893-9646
(iv) <u>Tie Coat For D:</u> HEMPEL NEXUS 27302	1	120	5.8	6 hrs	24 hrs	265	
C. ANTIFOULING (Tin Free – 5 year life)							
HEMPELS ANTI-FOULING GLOBIC NCT 8195N	2	130	4.2	10 hrs	#	410	
D. ANTIFOULING (FOUL RELEASE 5+ yr life)							
HEMPASIL X3 87500	1	150	4.7	6 hrs	#	265	
E. ANTIFOULING (Tin Free 3+ year life)							
(i) <u>Standard:</u> OLYMPIC 86950	2	100	5.0	8 hrs	#	470	
(ii) <u>Alternative:</u> GLOBIC NCT 8195N	2	100	5.5	10 hrs	#	410	
F. BOOTTOP ANTIFOULING (Tin Free)							
OLYMPIC 86950	2	100	5.0	8 hrs	#	470	99-147-9828
G. A/W HULL & SUPERSTRUCTURE PRIMER (Reblast)							
(i) <u>Standard:</u> HEMPADUR 45880 MIO 12430	1	150	6.0	8 hrs	#	220	99-803-7233
(ii) <u>Alternative:</u> HEMPADUR QUATTRO 17634	1	150	4.8	6 hrs	#	275	

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WHOLE SHIP SPECIFICATIONS
Proposed by

HEMPPEL UK LTD

Hempel's proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
H. A/W HULL & SUPERSTRUCTURE PRIMER (Touch Up)							
(i) <u>Standard:</u> HEMPADUR 45880 MIO 12430	1	150	6.0	8 hrs	#	220	99-803-7233
(ii) <u>Alternative A:</u> HEMPADUR QUATTRO 17634	1	150	4.8	6 hrs	#	275	
(iii) <u>Alternative B:</u> HEMUCRYL PRIMER 18100	2	30	15.7	4 hrs	#	65	99-909-6026
J. A/W HULL & SUPERSTRUCTURE FINISH (Reblast)							
(i) <u>Standard:</u> HEMPEL'S PRO ACRYLIC 55880 Light Weatherwork Grey BS 381C 676	1	50	12.0	12 hrs	#	380	
(ii) <u>Alternative:</u> HEMPEL'S SILICONE ALKYD FINISH 536GB Light Weatherwork Grey BS 381C 676	1	35	15.4	8 hrs	1-2 days	410	99-772-5448
(iii) <u>Tie Coat – (if required)</u> HEMPEL'S UNDERCOAT 424GB	1	40	12.5	8 hrs	7 days	385	99-224-6752
(iv) <u>Sealer for RASH</u> HEMUCRYL 18100	1	30	15.7	4 hrs	#	65	99-909-6062
K. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
(a) Hangar Doors							
(i) <u>Primer:</u> HEMPADUR 45880 MIO 12430	1	100	8.0	7 hrs	#	220	99-803-7233
(iii) <u>Alternative Primer:</u> HEMPADUR QUATTRO 17634	1	100	7.2	5 hrs	#	275	
(iii) <u>Finish:</u> HEMPEL'S PRO ACRYLIC 55880 Light Weatherwork Grey BS 381C 676	1	50	12.0	12 hrs	#	380	
(b) Flight Deck - Type 2 Non-skid Finish:							
(i) <u>Primer:</u> HEMPADUR 45880 MIO 12430	1	100	8.0	7 hrs	#	220	99-803-7233
(iii) <u>Alternative Primer:</u> HEMPADUR QUATTRO 17634	1	100	7.2	5 hrs	#	275	
(iii) <u>Finish:</u> HEMPEL'S NON SKID 457GB Extra Dark Sea Grey BS 381C 640	2	400	1.9	6 hrs	30days	206	99-831-0343
(iv) <u>Type 2 Repair Kit:</u> HEMPEL'S DECK REPAIR KIT 941 GB Extra Dark Sea Grey BS 381C 640							99-340-2100
(c) Hangar Deck & Weatherdeck - Type 1 Non-skid Finish:							
(i) <u>Primer:</u> HEMPADUR 45880 MIO 12430	1	100	8.0	7 hrs	#	220	99-803-7233
(iii) <u>Alternative Primer:</u> HEMPADUR QUATTRO 17634	1	100	7.2	5 hrs	#	275	
(ii) <u>Hangar Deck – Finish:</u> HEMPEL'S NON SKID 45340 Dark Admiralty Grey BS 381C 632	2	200	3.2	6 hrs	30days	347	99-670-9581
(iii) <u>Weatherdeck - Finish:</u> HEMPEL'S NON SKID 45340 Extra Dark Sea Grey BS 381C 640	2	200	3.2	6 hrs	30days	347	99-213-1121
(iv) <u>Type 1 Repair Kit:</u> HEMPEL'S DECK REPAIR KIT 942GB Extra Dark Sea Grey BS 381C 640							99-471-2960
(d) Gloss for Deck Margins: HEMPEL'S NON SKID 457GA	2	125	5.0	5 hrs	#	330	99-879-5150

ANNEXE B
WHOLE SHIP SPECIFICATIONS
Proposed by

HEMPPEL UK LTD

Hempel's proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
L. INTERIOR DRY COMPARTMENTS (Complete Represervation)							
(i) <u>Standard Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(ii) <u>Alternative Primer A:</u> HEMPADUR QUATTRO 17634	1	125	5.8	5 hrs	#	275	
(iii) <u>Alternative Primer B:</u> HEMUCRYL Primer High Build 18032	1	75	5.7	2 hrs	#	45	
(iv) <u>Finish:</u> HEMUCRYL ENAMEL 58100 BS 4800	2	30	13.7	6 hrs	#	70	99-660-9288
(v) <u>Alternative Finish</u> HEMPEL'S WATER BASED EPOXY 48580 BS 4800 00A01	1	80	6.9	12 hrs	15 days	27	99-988-2715
M. INTERIOR DRY COMPARTMENTS (Touch up)							
(i) <u>Standard Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(ii) <u>Alternative Primer:</u> HEMUCRYL Primer High Build 18030	1	75	5.7	2 hrs	#	45	
(iii) <u>Finish:</u> HEMUCRYL ENAMEL 58100 BS 4800 00A01	2	30	13.7	6 hrs	#	70	99-660-9288
(iv) <u>Alternative Finish:</u> HEMPEL'S WATER BASED EPOXY BS 4800 00A01	1	80	6.9	12 hrs	15 days	27	99-988-2715
N. INTERIOR WET COMPARTMENTS (Complete Represervation)							
(a) <u>Standard areas</u>							
(i) <u>Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(ii) <u>Alternative Primer A:</u> HEMPADUR 17634	1	125	5.8	5 hrs	#	275	
(iii) <u>Alternative Primer B:</u> HEMUDUR 18500	1	60	8.8	6 hrs	1 week	25	99-867-8090
(iv) <u>Finish:</u> HEMPEL'S WATER BASED EPOXY 48580 BS 4800 00A01	1	80	6.9	12 hrs	15 days	27	99-988-2715
(b) <u>Citadel Lobby</u>							
(i) <u>Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(ii) <u>Alternative Primer:</u> HEMPADUR QUATTRO 17634	1	125	5.8	5 hrs	#	275	
(iii) <u>Finish:</u> HEMPEL'S WATER BASED EPOXY 48580 BS 4800 00A01 or Grey BS 381C 676	1	80	6.9	12 hrs	15 days	27	99-988-2715
(c) <u>Cleansing Stations</u>							
(i) <u>Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(ii) <u>Finish:</u> HEMPADUR 45143 White	1	100	6.0	8 hrs	#	375	99-602-7280

ANNEXE B
WHOLE SHIP SPECIFICATIONS
Proposed by

HEMPPEL UK LTD

Hempel's proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
N. INTERIOR WET COMPARTMENTS (cont)							
(d) <u>Aluminium Free Coatings for Magazine Use</u>							
(i) <u>Primer:</u> HEMPADUR 45880	1	100	8.0	7 hrs	#	220	99-803-7233
(ii) <u>Alternative Primer:</u> HEMPADUR QUATTRO 17634	1	100	7.2	5 hrs	#	275	
(iii) <u>Finish:</u> HEMPEL'S WATER BASED EPOXY 48580 BS 4800 00A01	1	80	6.9	1 hrs	15 days	27	99-988-2715
O. INTERIOR WET COMPARTMENTS (Touch up)							
(a) <u>Standard areas</u>							
(i) <u>Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(ii) <u>Alternative Primer:</u> HEMPADUR QUATTRO 17634	1	125	5.8	5 hrs	#	275	
(iii) <u>Finish:</u> HEMPEL'S WATER BASED EPOXY 48580 BS 4800 00A01	1	80	6.9	12 hrs	15 days	27	99-988-2715
(b) <u>Citadel Lobby</u>							
(i) <u>Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(ii) <u>Alternative Primer:</u> HEMPADUR QUATTRO 17634	1	125	5.8	5 hrs	#	275	
(iii) <u>Finish:</u> HEMPEL'S WATER BASED EPOXY 48580 BS 4800 00A01 or Grey BS 381C 676	1	80	6.9	12 hrs	15 days	27	99-988-2715
(c) <u>Cleansing Stations</u>							
(i) <u>Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(ii) <u>Finish:</u> HEMPADUR 45143 White 10000	1	100	6.0	8 hrs	#	375	99-602-7280
(d) <u>Aluminium Free Coatings for Magazine Use</u>							
(i) <u>Primer:</u> HEMPADUR 45880	1	100	8.0	7 hrs	#	220	99-803-7233
(ii) <u>Alternative Primer:</u> HEMPADUR QUATTRO 17634	1	100	7.2	5 hrs	#	275	
(iii) <u>Finish:</u> HEMPEL'S WATER BASED EPOXY 48580 BS 4800 00A01	1	80	6.9	12 hrs	15 days	27	99-988-2715

ANNEXE B
WHOLE SHIP SPECIFICATIONS
Proposed by

HEMPPEL UK LTD

Hempel's proposed Systems/Materials	Number of coats	NDFT per coat microns	Theo SR m ² /litre	Min recoat interval	Max recoat interval	VOC grms per litre	NATO Stock Number
P. INTERIOR DECKS							
(i) <u>Standard Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(ii) <u>Finish:</u> HEMPEL'S WATER BASED EPOXY 48580 BS 4800 Green 14C39	1	80	6.9	12 hrs	15 days	27	99-279-8221
(iii) <u>Cleansing Stations Primer:</u> HEMPADUR 45880	1	125	6.4	7 hrs	#	220	99-803-7233
(iv) <u>Finish:</u> HEMPADUR 45143 BS 4800 Green 14C39	1	100	6.0	8 hrs	#	375	99-471-1920
Q. BATTERY COMPARTMENTS							
(i) <u>Primer:</u> HEMPADUR 45880	1	150	6.0	8 hrs	#	220	99-803-7233
(ii) <u>Alternative Primer:</u> HEMUDUR 18500	1	60	8.5	6 hrs	1 week	20	99-867-8090
(iii) <u>Finish:</u> HEMPEL'S WATERBASED EPOXY 48580 BS 4800 00A01	1	80	6.9	12 hrs	15 days	27	99-988-2715
R. CABLE LOCKERS & COFFERDAMS							
HEMPADUR 45880 White	1	150	6.0	8 hrs	#	220	99-264-0387
S. SEWAGE & WATER BALLAST TANKS.							
(i) <u>Water Ballast Tanks:</u> HEMPADUR QUATTRO 17634	2	150	4.8	6 hrs	90 days	275	
(ii) <u>Sewage Tanks:</u> HEMPADUR 85671	3	100	6.8	36 hrs	5 days	320	
T. MACHINERY SPACE BILGES							
HEMPADUR 45880 White	2	125	6.4	7 hrs	#	220	99-264-0387
U. AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM - DEF STAN 80-97 (HIGH SOLIDS)							
(i) <u>Standard</u> HEMPADUR 85671	3	100	6.8	36 hrs	21 days	320	
(ii) <u>Alternative</u> HEMPADUR 35530	2	200	5.0	24 hrs	5 days	10	
V. POTABLE WATER TANKS							
(i) <u>Standard</u> HEMPADUR MULTI STRENGTH 35530	2	200	5.0	24 hrs	5 days	10	
(ii) <u>Alternative for touch up</u> HEMPEL'S TAPECRETE 68180	1	500	1.9	2-3 hrs	#	0	99-302-2646
W. AQUEOUS FILM-FORMING FOAM (AFFF) TANKS							
HEMPADUR 85671	3	100	6.8	36 hrs	21 days	320	

ANNEXE B
WHOLE SHIP SPECIFICATIONS
Proposed by

HEMPPEL UK LTD

Hempel's proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
X. DEMINERALISED WATER TANKS (Max Temperature 90°C) HEMPADUR 85671	3	100	6.8	36 hrs	21 days	320	
Y. EPOXY HOLDING PRIMER HEMPADUR 15570	1	40	13.5	#	#	420	99-943-1152
Z. PRIMERS FOR NON-FERROUS METALS							
(i) <u>Aluminium</u> HEMUCRYL TIE COAT 18200 (1 pack) or HEMPADUR 15553 (2 pack)	1 1	20 50	19.0 11.0	24 hrs 2 hrs	# #	40 400	99-199-2908 99-870-0653
(ii) <u>Stainless Steel</u> HEMUCRYL TIE COAT 18200 (1 pack) or HEMPADUR 15553 (2 pack)	1 1	20 50	19.0 11.0	24 hrs 2 hrs	# #	40 400	99-199-2908 99-870-0653
(iii) <u>Zinc Spray Galvanise</u> HEMUCRYL TIE COAT 18200 (1 pack) or HEMPADUR 15553 (2 pack)	1 1	20 50	19.0 11.0	24 hrs 2 hrs	# #	40 400	99-199-2908 99-870-0653
(iv) <u>Indicator Coat for FRP</u> GELPROTECT SFE200 Cream	1	200	5.0	8 hrs	5 days	10	99-517-4318

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 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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ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms Per ltr	NATO Stock Number
A. UNDERWATER PRIMER (Re-blast) ~							
(i) <u>Standard:</u> INTERGARD 5000	1	175	4.68	12 hrs	2 months	179	
(ii) <u>Alternative:</u> INTERSHIELD 300 Foul Release only (Area D)	2	125	4.80	7 hrs	14 days	313	
(iii) <u>Tie Coat for C:</u> INTERGARD 263	1	75	7.60	8 hrs	5 days	379	99-133-3854
(iv) <u>Tie Coat for D (if needed):</u> INTERSLEEK 737	1	100	6.5	4 hrs	7 days	325	
B. UNDERWATER PRIMER (T/U at Docking)							
(i) <u>Standard:</u> INTERGARD 5000	1	175	4.68	12 hrs	2 months	179	
(ii) <u>Alternative:</u> INTERSHIELD 300 Foul Release only (Area D)	2	125	4.80	7 hrs	14 days	313	
(iii) <u>Tie Coat for C:</u> INTERGARD 263	1	75	7.60	8 hrs	5 days	379	99-133-3854
(iv) <u>Tie Coat for D (if needed):</u> INTERSLEEK 737	1	100	6.5	4 hrs	7 days	325	
C. ANTIFOULING (Tin Free - 5yr life)							
(i) INTERSMOOTH 7460	2	125	3.20	12 hrs	28 days	474	
D. ANTIFOULING (FOUL RELEASE 5+ yr life)							
(i) <u>Standard</u> INTERSLEEK 757	1	150	4.80	24 hrs		325	
(ii) <u>Alternative</u> INTERSLEEK 970	1	150	4.8	24 hrs		248	
E. ANTIFOULING (Tin Free 3+ yr life)							
(i) <u>Standard:</u> INTERSPEED 340	1	75	8.00	6 hrs	3 months	358	99-495-5148
(ii) <u>Alternative:</u> INTERSWIFT 655	2	85	6.85	6 hrs	#	390	
F. BOOTTOP ANTIFOULING (Tin Free)							
(i) <u>Standard:</u> INTERSPEED 340 Black	2	60	10.00	6 hrs	3 months	358	99-847-3193
G. A/W HULL & SUPERSTRUCTURE PRIMER (Re-blast)							
(i) INTERGARD 5000	1	150	5.47	12 hrs	14 days	179	

ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms Per ltr	NATO Stock Number
H. A/W HULL & SUPERSTRUCTURE PRIMER (Touch Up)							
(i) INTERGARD 5000 Dawn Grey BS 4800 00A01	1	150	5.47	12 hrs	14 days	179	99-000-5256
J. A/W HULL & SUPERSTRUCTURE FINISH							
(i) <u>Standard:</u> INTERFINE 691 HS BS 381C 676	1	50	10.6	8 hrs	#	409	99-864-5322
(ii) <u>Alternative:</u> INTERLAC 846	1	35	15.14	24 hrs	4 days	325	99-700-8410
(iii) <u>Tie Coat (if required):</u> INTERPRIME 198 CPA098	1	35	11.71	24 hrs	3 days	419	
K. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
(a) Hangar Doors							
<u>Primer:</u> INTERGARD 5000	1	150	5.47	12 hrs	14 days	179	99-000-5256
<u>Finish:</u> INTERFINE 691 HS Grey BS 381C 676	1	50	10.6	8 hrs	#	409	99-864-5322
(b) Flightdeck - Type 2 Non-skid Finish							
<u>Primer:</u> INTERGARD 5000 Dawn Grey BS 4800 00A01	1	150	5.47	12 hrs	14 days	179	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 – Extra Dark Sea Grey (BS 381C 640)							99-325-0579
(c) Hanger Deck & Weatherdeck - Type 1 Non-skid Finish:							
<u>Primer:</u> INTERGARD 5000 Dawn Grey BS 4800 00A01	1	150	5.47	12 hrs	14 days	179	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 – Dark Admiralty Grey BS 381C 632							99-993-9328
(d) Gloss for Deck Margins:							
INTERGARD 740 Extra Dark Sea Grey BS 381C 640	1	50	10.2	16 hrs	#	420	99-182-2627

ANNEXE 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 Recoat interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
L. INTERIOR DRY COMPARTMENTS (Complete Represervation)							
(i) <u>Standard Primer:</u> INTERGARD 5000 Dawn Grey <u>Finish:</u> INTERCRYL 700 BS 4800 00A01	1 1 or 2	125 35	6.56 11.42	12 hrs 60 mins	# #	179 18	99-000-5256 99-799-8832
M. INTERIOR DRY COMPARTMENTS (Touch up)							
(i) <u>Standard Primer:</u> INTERGARD 5000 Dawn Grey <u>Finish:</u> INTERCRYL 700 BS 4800 00A01	1 1 or 2	125 35	6.56 11.42	12 hrs 60 mins	# #	179 18	99-000-5256 99-799-8832
N. INTERIOR WET COMPARTMENTS (Complete Represervation)							
(i) <u>Standard Primer:</u> INTERGARD 5000 Dawn Grey <u>Finish:</u> INTERGARD 1735 BS 4800 00A01	1 1 or 2	125 50	6.56 11.20	24 hrs 12 hrs	# #	179 132	99-000-5256 99-255-0527
(ii) <u>Citadel lobby Primer:</u> INTERGARD 5000 Dawn Grey <u>Finish:</u> INTERGARD 1735 Colour either: BS 4800 00A01 or Grey BS 381C 676	1 1 or 2	125 50	6.56 11.20	24 hrs 12 hrs	# #	179 132	99-000-5256 99-255-0527
(iii) <u>Cleansing Stations</u> <u>Primer:</u> INTERGARD 840 White <u>Finish:</u> INTERFINE 979	1 1	125 125	6.56 7.60	24 hrs 4 hrs	4 days #	134 165	99-279-8277 99-168-7337
(iv) <u>Magazines Primer:</u> INTERGARD 5000 <u>Finish:</u> INTERGARD 1735 BS 4800 00A01	1 1 or 2	125 50	6.56 11.20	24 hrs 12 hrs	4 days #	179 132	99-000-5256 99-255-0527
O. INTERIOR WET COMPARTMENTS (Touch up)							
(i) <u>Standard Primer:</u> INTERGARD 5000 Dawn Grey <u>Finish:</u> INTERGARD 1735 BS 4800 00A01	1 1 or 2	125 50	6.56 11.20	24 hrs 12 hrs	# #	179 132	99-000-5256 99-255-0527
(ii) <u>Citadel lobby Primer:</u> INTERGARD 5000 Dawn Grey <u>Finish:</u> INTERGARD 1735 Colour either: BS 4800 00A01 (or Grey BS 381C 676)	1 1 or 2	125 50	6.56 11.20	24 hrs 12 hrs	# #	179 132	99-000-5256 99-255-0527
(iii) <u>Cleansing Stations</u> <u>Primer:</u> INTERGARD 840 White <u>Finish:</u> INTERFINE 979	1 1	125 125	6.56 7.60	24 hrs 4 hrs	4 days #	134 165	99-279-8277 99-168-7337
(iv) <u>Magazines Primer:</u> INTERGARD 5000 Dawn Grey <u>Finish:</u> INTERGARD 1735 BS 4800 00A01	1 1 or 2	125 50	6.56 11.20	24 hrs 12 hrs	# #	179 132	99-000-5256 99-255-0527

ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms Per ltr	NATO Stock Number
P. INTERIOR DECKS							
(i) <u>Standard Primer:</u> INTERGARD 5000 Dawn Grey <u>Finish:</u> INTERGARD 1735 BS 4800 Green 14C39	1 1	125 50	6.56 11.20	12 hrs 12 hrs	# #	179 132	99-000-5256 99-483-1994
(ii) <u>Cleansing Stations</u>							
<u>Standard Primer:</u> INTERGARD 840 White <u>Finish:</u> INTERFINE 979 BS 4800 Green 14C39	1 1	125 125	6.56 7.60	24 hrs 4 hrs	4 days #	134 165	99-279-8277 99-729-7357
Q. BATTERY COMPARTMENTS							
<u>Primer:</u> INTERGARD 5000 Dawn Grey	1	125	6.56	12 hrs	#	179	99-000-5256
<u>Finish:</u> INTERGARD 1735 BS 4800 00A01	1	50	11.20	12 hrs	#	132	99-255-0527
R. CABLE LOCKERS & COFFERDAMS							
INTERGARD 5000	1	150	5.46	12hrs	3 months	179	
S. SEWAGE & WATER BALLAST TANKS.							
<u>Water Ballast Tanks:</u> INTERGARD 5000	2	125	6.56	12 hrs	3 months	179	
<u>Sewage Tanks:</u> INTERLINE 850	2	125	6.08	8 hrs	30 days	212	
T. MACHINERY SPACE BILGES							
(i) <u>Standard:</u> INTERGARD 5000 White	1	175	4.68	12 hrs	3 months	179	
U. AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM - DEF STAN 80-97 (HIGH SOLIDS)							
INTERLINE 850	2	125	6.08	8 hrs	30 days	212	
V. POTABLE WATER TANKS							
INTERLINE 925	1	300	3.33	18 hrs	3 days	1	
W. AQUEOUS FILM-FORMING FOAM (AFFF) TANKS							
INTERLINE 704	2	125	4.24	23 hrs	21 days	385	
X. DEMINERALISED WATER TANKS (Max Temperature 90°C)							
INTERLINE 925 (up to 60° C only)	1	300	3.33	18 hrs	3 days	1	

ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms Per ltr	NATO Stock Number
Y. EPOXY HOLDING PRIMER							
(i) <u>Standard:</u> INTERGARD 269	1	30	15.67	6 hrs	#	411	99-983-0743
(ii) <u>Alternative & Maintenance:</u> INTERGARD 276	1	40	11.75	6 hrs	#	411	
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>Indicator Coat for FRP:</u>							
<u>GELSHIELD 200</u>	1	100	4.55	3 hrs	#	458	

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 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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ANNEXE D
WHOLE SHIP SPECIFICATIONS
Proposed by

JOTUN PAINTS (EUROPE) LTD

Proposed Systems /Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per litre	NATO Stock Number
A. UNDERWATER PRIMER (Re-Blast) ~							
(i) <u>Standard</u> : JOTACOTE UNIVERSAL Aluminium	1	200	3.6	4 hrs	#	240	
(ii) <u>Tie Coat</u> : SAFEGUARD UNIVERSAL ES	1	100	6.2	10 hrs	3 days	330	
B. UNDERWATER PRIMER (T/U at Docking)							
(i) <u>Standard</u> : JOTAMASTIC 87 Aluminium	1	175	5.0	10 hrs	#	110	
(ii) <u>Alternative</u> : JOTACOTE UNIVERSAL Aluminium	1	175	4.1	4 hrs	#	240	
(iii) <u>Tie Coat</u> : SAFEGUARD UNIVERSAL ES	1	75	8.3	10 hrs	3 days	330	
C. ANTIFOULING (Tin Free - 5 yr life)							
SEAQUANTUM PLUS COAT 1	1	125	3.8	7 hrs	#	460	
SEAQUANTUM ULTRA COAT 2	1	125	3.8	7 hrs	#	460	
SEAQUANTUM ULTRA COAT 3	1	125	3.8	7 hrs	#	460	
D. FOUL RELEASE							
SEALION TIECOAT COAT 1	1	90	6.6	15 hrs	4 days	406	
SEALION TOPCOAT COAT 2	1	135	4.9	#	#	300	
E. ANTIFOULING (3 year life)							
SEAFORCE 90 COAT 1	1	105	5.5	7 hrs	#	370	
SEAFORCE 90 COAT 2	1	105	5.5	7 hrs	#	370	
F. BOOTOP ANTIFOULING							
(i) <u>Standard</u> : SEAQUANTUM CLASSIC Black	1 or 2	150	3.1	7 hrs	#	460	
(ii) <u>Alternative FRC</u> : SEALION TIECOAT COAT 1 SEALION TOPCOAT COAT 2	1 1	90 135	6.6 4.9	15 hrs #	4 days #	406 300	
G. A/W HULL & SUPERSTRUCTURE PRIMER (Re-blast)							
(i) <u>Standard</u> : JOTACOTE UNIVERSAL Aluminium	1	200	3.6	4 hrs	#	240	
(ii) <u>Alternative</u> : JOTAMASTIC 80 Aluminium	1	200	4.0	10 hrs	#	145	
(iii) <u>Alternative</u> : WATERFINE PRIMER (1 st coat Red, 2 nd coat Grey)	2	85	5.4	1.5 hrs	#	60	99-462-9708
H. A/W HULL & SUPERSTRUCTURE PRIMER (T/U)							
(i) <u>Standard</u> : JOTAMASTIC 80 Aluminium	1	150	5.3	10 hrs	#	145	
(ii) <u>Alternative</u> : JOTACOTE UNIVERSAL Aluminium	1	150	4.8	4 hrs	#	240	
(iii) <u>Alternative</u> : WATERFINE PRIMER (1 st coat Red, 2 nd coat Grey)	2	70	6.6* per coat	1.5 hrs	#	60	99-462-9708

ANNEXE D
WHOLE SHIP SPECIFICATIONS
Proposed by

JOTUN PAINTS (EUROPE) LTD

<u>Proposed Systems /Materials</u>	<u>Number of Coats</u>	<u>NDFT per coat microns</u>	<u>Theo SR m²/litre</u>	<u>Min Recoat Interval</u>	<u>Max Recoat Interval</u>	<u>VOC gms per litre</u>	<u>NATO Stock Number</u>
J. A/W HULL & SUPERSTRUCTURE FINISH							
(i) <u>Standard</u> : JOTAPROOF TOPCOAT (BS381C 676)	1 or 2	60	10.5	4 hrs	#	310	99-519-2253
(ii) <u>Alternative</u> : CORREX (BS381C 676)	1	40	12.0	14 hrs	#	390	
Tie Coat for CORREX Finish: VINYGUARD SILVERGREY 88	1	40	9.5	2 hrs	#	530	99-212-5888
K. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
(a) HANGAR DOORS							
(i) <u>Standard Primer</u> : JOTAMASTIC 80 Aluminium	1	150	5.3	10 hrs	#	145	
(ii) <u>Alternative Primer</u> : JOTACOTE UNIVERSAL Aluminium	1	150	4.8	4 hrs	#	240	
(iii) <u>Alternative</u> : WATERFINE PRIMER (1 st coat Red, 2 nd coat Grey)	2	70	6.6* per coat 10.5	1.5 hrs	#	60	99-462-9708
(i) <u>Standard Finish</u> : JOTAPROOF TOPCOAT (BS381C 676)	1 or 2	60	10.5	4 hrs	#	310	99-519-2253
(ii) <u>Alternative Finish</u> : CORREX (BS381C 676)	1	40	12.0	14 hrs	#	390	
Tie Coat for CORREX Finish: VINYGUARD SILVERGREY 88	1	40	9.5	2 hrs	#	530	99-212-5888
(b) FLIGHT DECK SYSTEM - TYPE 2 NON-SKID FINISH							
<u>Primer</u> : JOTAMASTIC 87 Grey	1	150	5.5	10 hrs	#	150	99-549-5820
<u>Finish</u> : JOTA ARMOUR (BS381C 640)	2	375	2.4* per coat	14 hrs	#	70	99-226-7300
<u>Type 2 Repair Kit</u> : JOTA ARMOUR T/U KIT (BS381C 640)							
(c) HANGAR DECKS & WEATHERDECKS - TYPE 1 NON-SKID FINISH							
<u>Primer</u> : JOTAMASTIC 87 Grey	1	150	5.5	10 hrs	#	150	99-549-5820
<u>Hangar Deck Finish</u> : JOTA ARMOUR RCF (BS381C 632)	2						
<u>Weatherdeck Finish</u> : JOTA ARMOUR RCF (BS381C 640)	2						
<u>Type 1 Repair Kit</u> : JOTA ARMOUR RCF T/U KIT (BS381C 640)							
(d) Gloss for Deck Margins							
JOTAPROOF TOPCOAT	1 or 2	60	10.5	4 hrs	#	310	99-519-2253
L. INTERIOR DRY SPACES (Complete Represervation)							
(i) <u>Standard Primer</u> : WATERFINE ACRYLIC PRIMER Grey	1	80	5.8	1 hrs	#	66	
(ii) <u>Alternative Primer</u> : WATERFINE PRIMER Grey	1	80	5.8	1.5 hrs	#	60	99-462-9708
<u>Finish</u> : WATERFINE TOPCOAT (BS4800 00A01)	1 or 2	40	9.2	8 hrs	#	105	99-272-2784

ANNEXE D
WHOLE SHIP SPECIFICATIONS
Proposed by

JOTUN PAINTS (EUROPE) LTD

<u>Proposed Systems /Materials</u>	<u>Number of Coats</u>	<u>NDFT per coat microns</u>	<u>Theo SR m²/litre</u>	<u>Min Recoat Interval</u>	<u>Max Recoat Interval</u>	<u>VOC gms per litre</u>	<u>NATO Stock Number</u>
M. INTERIOR DRY SPACES (Touch up)							
(i) <u>Standard Primer</u> : WATERFINE ACRYLIC PRIMER Grey	1	80	5.8	1hr	#	66	
(ii) <u>Alternative Primer</u> : WATERFINE PRIMER Grey	1	80	4.6	1.5 hrs	#	60	99-462-9708
<u>Finish</u> : WATERFINE TOPCOAT (BS4800 00A01)	1 or 2	40	9.2	8 hrs	#	105	99-272-2784
N. INTERIOR WET SPACES (Complete Represervation)							
(i) <u>Primer</u> : WATERFINE PRIMER Grey	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	
(ii) <u>Citadel Lobby Primer</u> : WATERFINE PRIMER Grey	1	80	5.8	1.5 hrs	#	60	99-462-9708
<u>Citadel Lobby Finish</u> : WATERFINE PRIMER (BS4800 00A01 or BS31C 676)	1 or 2	40	11.6	1.5 hrs	#	60	
(iii) <u>Cleansing Stations - Primer</u> : AMERLOCK 400C		125	7	16hrs	#	106	99-974-7400
<u>Cleansing Stations Finish</u> : AMERON PSX 700 White	1	125	7.2	4.5hrs	#	120	17-113-5689
(iv) <u>Magazine Primer</u> : WATERFINE PRIMER Grey	1	100	4.6	1.5 hrs	#	60	99-462-9708
<u>Magazine Finish</u> : WATERFINE PRIMER (BS4800 00A01)	1 or 2	40	11.6	1.5 hrs	#	60	
O. INTERIOR WET SPACES (Touch up)							
(i) <u>Primer</u> : WATERFINE PRIMER Grey	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	
(ii) <u>Citadel Lobby Primer</u> : WATERFINE PRIMER Grey	1	100	4.6	1.5 hrs	#	60	99-462-9708
<u>Citadel Lobby Finish</u> : WATERFINE PRIMER (BS4800 00A01 or BS31C 676)	1 or 2	40	11.6	1.5 hrs	#	60	
(iii) <u>Cleansing Stations - Primer</u> : AMERLOCK 400C	1	125	7	16hrs	#	106	99-974-7400
<u>Cleansing Stations Finish</u> : AMERON PSX 700 White	1	125	7.2	4.5hrs	#	120	17-113-5689
(iv) <u>Magazine Primer</u> : WATERFINE PRIMER Grey	1	100	4.6	1.5 hrs	#	60	99-462-9708
<u>Magazine Finish</u> : WATERFINE PRIMER (BS4800 00A01)	1 or 2	40	11.6	1.5 hrs	#	60	
P. INTERIOR DECKS							
(i) <u>Primer</u> : WATERFINE PRIMER Grey	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	
(ii) <u>Cleansing Stations - Primer</u> : AMERLOCK 400C	1	125	7	16hrs	#	106	99-974-7400
<u>Cleansing Stations Finish</u> : AMERON PSX 700 BS4800 14C39	2	125	7.2	4.5hrs	#	120	17-113-6169

ANNEXE D
WHOLE SHIP SPECIFICATIONS
Proposed by

JOTUN PAINTS (EUROPE) LTD

<u>Proposed Systems /Materials</u>	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per litre	NATO Stock Number
Q. BATTERY COMPARTMENTS <u>Primer:</u> WATERFINE PRIMER Grey <u>Finish:</u> WATERFINE PRIMER (BS4800 00A01)	1 1 or 2	100 40	4.6 11.6	1.5 hrs 1.5 hrs	# #	60 60	99-462-9708
R. CABLE LOCKERS & COFFERDAMS (i) <u>Standard:</u> JOTAMASTIC 80 Aluminium or other (ii) <u>Alternative:</u> JOTACOTE UNIVERSAL Aluminium or other	1 1	175 200	4.6 3.6	10 hrs 4 hrs	# #	145 240	
S. SEWAGE & WATER BALLAST TANKS (i) <u>Water Ballast Tanks Standard:</u> BALLOXY HB LIGHT (Light Green) BALLOXY HB LIGHT (Light Beige) (ii) <u>Water Ballast Tank Alternative:</u> JOTACOTE UNIVERSAL (Aluminium Red Toned) JOTACOTE UNIVERSAL (Grey or Buff Yellow)	COAT 1 COAT 2 COAT 1 COAT 2 COAT 1 COAT 2	1 1 1 1 1 1	160 160 160 160 150 150	5.1 5.1 4.5 4.5 4.2 4.2	10 hrs 10 hrs 4 hrs 4 hrs 10 hrs 10 hrs	# # # # 30 days 30 days	150 150 240 240 310 310
T. MACHINERY SPACE BILGES <u>Primer:</u> JOTACOTE UNIVERSAL <u>Finish:</u> JOTAPROOF TOPCOAT (BS4800 00A01)	1 1	125 60	5.8 10.5	4 hrs 4 hrs	# #	240 310	
U. AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM DEF STAN 80-97 (HIGH SOLIDS) TANKGUARD STORAGE (Light Red) TANKGUARD STORAGE (Light Grey)	COAT 1 COAT 2	1 1	125 125	5.0 5.0	10 hrs 10 hrs	30 days 30 days	310 310
V. POTABLE WATER TANKS TANKGUARD 412 (Red) TANKGUARD 412 (White)	COAT 1 COAT 2	1 1	150 150	6.7 6.7	12 hrs 12 hrs	48 hrs 48 hrs	40 40
W. AQUEOUS FILM-FORMING FOAM (AFFF) TANKS TANKGUARD 412 (Red) TANKGUARD 412 (White)	COAT 1 COAT 2	1 1	150 150	6.7 6.7	12 hrs 12 hrs	48 hrs 48 hrs	40 40

ANNEXE D
WHOLE SHIP SPECIFICATIONS
Proposed by

JOTUN PAINTS (EUROPE) LTD

<u>Proposed Systems /Materials</u>	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per litre	NATO Stock Number
<u>X. DEMINERALISED WATER TANKS (Max Temperature 90 °C)</u>							
TANKGUARD STORAGE (Light Grey) COAT 1	1	125	5.0	10 hrs	30 days	310	
TANKGUARD STORAGE (Light Red) COAT 2	1	125	5.0	10 hrs	30 days	310	
TANKGUARD STORAGE (Light Grey) COAT 3	1	125	5.0	10 hrs	30 days	310	
<u>Y. EPOXY HOLDING PRIMER</u>							
MUKI EPS	1	20	12.5	7 hrs		610	
<u>Z. PRIMERS FOR NON-FERROUS METALS</u>							
(i) <u>Aluminium Standard:</u> WATERFINE PRIMER	1	60	7.6	1.5 hrs	#	60	99-462-9708
(ii) <u>Stainless Steel Standard:</u> WATERFINE PRIMER	1	60	7.6	1.5 hrs	#	60	99-462-9708
(iii) <u>Zinc Spray / Galvanise Standard:</u> WATERFINE PRIMER	1	60	7.6	1.5 hrs	#	60	99-462-9708
(iv) <u>FRP Indicator Coat:</u> PENGUARD HB (White)	1	100	5.4	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 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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ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
A. UNDERWATER PRIMER (Re-blast)							
(i) <u>Standard:</u> SIGMA SHIELD 220 7922 SIGMA SHIELD 420 7951	1 1	125 150	6.4 5.6	3½ hrs 3½ hrs	14 days 14 days	262 239	99-403-5015 99-723-3658
(ii) <u>Tie Coat:</u> SIGMA COVER 525 7902	1	100	6.1	12hrs	14 days	365	
B. UNDERWATER PRIMER (T/U at Docking)							
(i) <u>Standard:</u> SIGMA SHIELD 220 7922 SIGMA SHIELD 420 7951	1 1	125 150	6.4 5.6	3½ hrs 3½ hrs	14 days 14 days	262 239	99-403-5015 99-723-3658
(ii) <u>Tie Coat:</u> SIGMA COVER 525 7902	1	100	6.1	12hrs	14 days	365	
C. ANTIFOULING (Tin Free >5yr life)							
SIGMA ECOFLEET 530 (red brown) 7385 SIGMA ECOFLEET 530 (brown) 7385 SIGMA ECOFLEET 530 (red brown) 7385	1 1 1	110 110 110	5.4 5.4 5.4	6hrs 6hrs 6hrs	# # #	339 339 339	
D. ANTIFOULING (FOUL RELEASE 5+ yr life)							
(i) <u>Standard</u> SIGMA COVER 295 7947 SIGMA SHIELD 610 7978 SIGMA GLIDE 790 7386 SIGMA GLIDE 890 7399	1 1 1 1	100 150 150 150	5.5 3.8 5.3 3.4	16hrs 12hrs 12hrs 20mins	10 days 5 days 5 days #	436 436 187	
(ii) <u>Alternative</u> SIGMA COVER 295 7947 SIGMA SHIELD 610 7978 SIGMA GLIDE 790 7386 SIGMA GLIDE 990 7397	1 1 1 1	100 150 150 180	5.5 3.8 5.3 4.4	16hrs 12hrs 12hrs 2 hrs	10 days 5 days 5 days #	436 436 187 248	
E. ANTIFOULING (Tin Free 3+ yr life)							
SIGMA ECOFLEET 530 (red brown) 7385 SIGMA ECOFLEET 530 (brown) 7385	1 1	110 110	5.4 5.4	6hrs 6hrs	# #	339 339	
F. BOOTTOP ANTIFOULING (Tin Free)							
SIGMA ECOFLEET 530 (black) 7385	1	110	5.4	6hrs	#	339	
G. A/W HULL & SUPERSTRUCTURE PRIMER (Reblast)							
(i) <u>Standard:</u> AMERLOCK 400C	1	125	7	16hrs	#	106	99-974-7400
(ii) <u>Alternative:</u> SIGMA AQUACOVER 25 7150	2	75	6.6	4hrs	#	37	99-321-6318
H. A/W HULL & SUPERSTRUCTURE PRIMER (Touch Up)							
(i) <u>Standard:</u> AMERLOCK 400C	1	125	7	16hrs	#	106	99-974-7400
(ii) <u>Alternative:</u> SIGMA SHIELD 220 7922	1	125	6.4	3½ hrs	14 days	262	99-403-5015

ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
J. A/W HULL & SUPERSTRUCTURE FINISH							
(I) Standard: SIGMADUR 540 Lt Weatherwork Grey BS381C 676 7740	1	60	9	8hrs	#	411	
(ii) Alternative: SIGMA AQUACOVER 45 7250	1	50	6.8	5hrs	#	10	99-236-5744
(iii) Tie Coat (if required):							
(iv) Sealer for RASH SIGMACOVER 566 7454	1	75	5.7	6hrs		494	
K. FLIGHT & WEATHERDECK SYSTEMS - DEFSTAN 80-134							
(a) Hangar Doors							
Primer: AMERLOCK 400C	1	125	7	16hrs	#	106	
Finish: SIGMADUR 540 7740	1	60	9	8hrs	#	411	99-974-7400
(b) Flight Deck - Type 2 Non-skid Finish:							
Primer: AMERLOCK 400C	1	125	7	16hrs	#	106	99-974-7400
Finish: AMERLOCK 400 NS Extra Dark Sea Grey BS381C	2	400	2.3	16hrs	#	106	99-940-6452
Type 2 Repair Kit: AMERLOCK 400 NS T2R							
(c) Hanger Deck & Weatherdeck - Type 1 Non-skid Finish:							
Primer: AMERLOCK 400C	1	125	7	16hrs	#	106	99-974-7400
Hangar Deck: AMERLOCK 400 NS Dark Admiralty Grey BS 381C 632	2	300	4	16hrs	#	106	
Weatherdeck: AMERLOCK 400 NS Extra Dark Sea Grey BS 381C 640	2	300	4	16hrs	#	106	99-940-6452
Type 1 Repair Kit: AMERLOCK 400 NS T1R							
(d) Gloss for Deck Margins: AMERLOCK 400C Extra Dark Sea Grey BS 381C 640	1	125	7	16hrs	#	106	
L. INTERIOR DRY COMPARTMENTS (Complete Represervation)							
Standard Primer: AMERLOCK 400C	1	100	7	16hrs	#	106	
Finish: AMERLOCK 400C BS4800 00A01	1	100	7	16hrs	#	106	99-974-7400
M. INTERIOR DRY COMPARTMENTS (Touch up)							
(i) Standard Primer: AMERLOCK 400C	1	100	7	16hrs	#	106	99-974-7400
Finish: AMERLOCK 400C BS4800 00A01	1	100	7	16hrs	#	106	
(ii) Alternative Primer: SIGMA AQUACOVER 20 7149	1	75	5.7	4hrs	#	25	
Finish: SIGMA AQUACOVER 45 7250	1	50	6.8	24hrs	#	10	

ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
<u>N. INTERIOR WET COMPARTMENTS (Complete Represervation)</u>							
(i) <u>Standard Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERLOCK 400C BS4800 00A01	1 1	100 100	7 7	16hrs 16hrs	# #	106 106	99-974-7400
(ii) <u>Citadel lobby - Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERLOCK 400C - Colour either: BS4800 00A01 or Grey BS381C 676	1 1	100 100	7 7	16hrs 16hrs	# #	106 106	99-974-7400
(iii) <u>Cleansing Stations - Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERON PSX 700 White	1 1	125 125	7 7.2	16hrs 4.5hrs	# #	106 120	99-974-7400 17-113-5689
(iv) <u>Magazines - Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERLOCK 400C BS4800 00A01	1 1	100 100	7 7	16hrs 16hrs	# #	106 106	99-974-7400
<u>O. INTERIOR WET COMPARTMENTS (touch-up)</u>							
(i) <u>Standard Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERLOCK 400C BS4800 00A01	1 1	100 100	7 7	16hrs 16hrs	# #	106 106	99-974-7400
(ii) <u>Citadel lobby - Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERLOCK 400C colours - BS4800 00A01 or Grey BS381C 676	1 1	100 100	7 7	16hrs 16hrs	# #	106 106	99-974-7400
(iii) <u>Cleansing Stations - Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERON PSX 700 White	1 1	125 125	7 7.2	16hrs 4.5hrs	# #	106 120	99-974-7400 17-113-5689
(iv) <u>Magazines - Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERLOCK 400C BS4800 00A01	1 1	100 100	7 7	16hrs 16hrs	# #	106 106	99-974-7400
<u>P. INTERIOR DECKS</u>							
(i) <u>Standard Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERCOAT 300A BS4800 14C39	1 1	125 50	7 10.4	16 hrs 16 hrs	# #	106 0	99-974-7400 17-113-5690
(ii) <u>Cleansing Stations - Primer:</u> AMERLOCK 400C <u>Finish:</u> AMERON PSX 700 BS4800	1 2	125 125	7 7.2	16hrs 4.5hrs	# #	106 120	99-974-7400 17-113-6169
<u>Q. BATTERY COMPARTMENTS</u>							
(i) <u>Primer:</u> AMERLOCK 400C	1	100	7	16hrs	#	106	99-974-7400
(ii) <u>Finish:</u> AMERLOCK 400C BS4800 00A01	1	100	7	16hrs	#	106	
<u>R. CABLE LOCKERS & COFFERDAMS</u>							
SIGMAGUARD CSF 650	7443	1	300	3.3	24hrs	20days	143
<u>S. SEWAGE & WATER BALLAST TANKS.</u>							
<u>Water Ballast Tanks:</u> CORROLESS EPF CORROLESS RF35	1 1	200 200	4.8 4.8	16hrs 16hrs	#	80 93	25-150-0972 25-150-0973
<u>Sewage Tanks:</u> CORROLESS EPF CORROLESS RF35	1 1	200 200	4.8 4.8	16hrs 16hrs	#	80 93	25-150-0972 25-150-0973
<u>Alternative:</u> SIGMAGUARD CSF650	7443	1	300	3.3	24hrs	20days	143

ANNEXE 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 Recoat Interva	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
T. MACHINERY SPACE BILGES							
(i) <u>Standard:</u> AMERLOCK 400C WHITE	2	125	7	16hrs	#	106	17-108-8248
U. AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM DEF-STAN 80-97 (HIGH SOLIDS)							
CORROLESS EPF CORROLESS RF35	1 1	200 200	4.8 4.8	16 hrs 16hrs	3 days 3 days	80 93	25-150-0972 25-150-0973
V. POTABLE WATER TANKS							
CORROLESS EPF CORROLESS RF35	1 1	200 200	4.8 4.8	16hrs 16hrs	3 days 3 days	80 93	25-150-0972 25-150-0973
W. AQUEOUS FOAM FORMING FLUID (AFFF) TANKS							
CORROLESS EPF CORROLESS RF35	1 1	200 200	4.8 4.8	16hrs 16hrs	3 days 3 days	80 93	25-150-0972 25-150-0973
<u>Alternative:</u> SIGMAGUARD CSF 650	7443	1	300	3.3	24hrs	20days	143
X. DEMINERALISED WATER TANKS (Max Temperature 90°C)							
(i) <u>Standard</u> CORROLESS EPF CORROLESS RF35	1 1	200 200	4.8 4.8	16hrs 16hrs	3 days 3 days	80 93	25-150-0972 25-150-0973
<u>Alternative:</u> SIGMAGUARD CSF 650	7443	1	300	3.3	24hrs	20days	143
Y. EPOXY HOLDING PRIMER							
SIGMACOVER 280	7417	1	50	11.4	8hrs	6 months	432
Z. PRIMERS FOR NON-FERROUS METALS & FRP							
(i) <u>Aluminium:</u> AMERLOCK 400C	1	125	7	16hrs	#	106	99-974-7400
(ii) <u>Stainless Steel:</u> SIGMACOVER 280	1	50	11.4	8hrs	#	432	
(iii) <u>Zinc Spray:</u> AMERLOCK 400C	1	125	7	16hrs	#	106	99-974-7400
(iv) <u>Galvanise:</u> AMERLOCK 400C	1	125	7	16hrs	#	106	99-974-7400
(v) <u>Indicator coat for FRP:</u> AMERLOCK 400C Green Ral 6011	1	125	7	16hrs	#	106	17-120-4829

ANNEXE E
WHOLE SHIP SPECIFICATION
Proposed by

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

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 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.

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ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
A. UNDERWATER PRIMER (Re-blast) ~							
(i) <u>Standard:</u> SIGMA SHIELD 220 SIGMA SHIELD 420	1 1	125 150	6.4 5.6	3½ hrs 3½ hrs	14 days 14 days	262 239	99-403-5015 99-723-3658
(ii) <u>Tie Coat:</u> SIGMACOVER 525	1	100	6.1	12 hrs	14 days	365	
B. UNDERWATER PRIMER (T/U at Docking)							
(i) <u>Standard:</u> SIGMA SHIELD 220 SIGMA SHIELD 420	1 1	125 150	6.4 5.6	3½ hrs 3½ hrs	14 days 14 days	262 239	99-403-5015 99-723-3658
(ii) <u>Tie Coat:</u> SIGMACOVER 525	1	100	6.1	12 hrs	14 days	365	
C. ANTIFOULING (Tin Free - 5yr life)							
SIGMA ECOFLEET 530 (red brown) SIGMA ECOFLEET 530 (brown) SIGMA ECOFLEET 530 (red brown)	1 1 1	110 110 110	5.4 5.4 5.4	6 hrs 6 hrs 6 hrs	# # #	339 339 339	
D. ANTIFOULING (FOUL RELEASE 5+ yr life)							
(i) <u>Standard</u>							
SIGMA SHIELD 220 SIGMA SHIELD 610 SIGMA GLIDE 790 SIGMA GLIDE 890	1 1 1 1	125 150 150 150	6.4 3.8 5.3 3.4	3½ hrs 12 hrs 12 hrs 20 mins	14 days 5 days 5 days #	262 437 187 215	99-403-5015
(ii) <u>Alternative:</u>							
SIGMACOVER 250 SIGMA SHIELD 610 SIGMA GLIDE 790 SIGMA GLIDE 990	1 1 1 1	125 150 150 150	4.6 3.8 5.3 4.4	8 hrs 12 hrs 12 hrs 2HRS	3 months 5 days 5 days #	436 437 187 248	
E. ANTIFOULING (Tin Free 3+ yr life)							
SIGMA ECOFLEET 530 (red brown) SIGMA ECOFLEET 530 (brown)	1 1	110 110	5.4 5.4	6 hrs 6 hrs	# #	339 339	
F. BOOTTOP ANTIFOULING (Tin Free)							
SIGMA ECOFLEET 530 (black)	1	110	5.4	6 hrs	#	339	
G. A/W HULL & SUPERSTRUCTURE PRIMER (Reblast)							
(i) <u>Standard:</u> SIGMACOVER 456 HS	2	125	5.8	8 hrs	#	227	
(ii) <u>Alternative:</u> SIGMA AQUACOVER 25	2	75	6.6	4 hrs	#	31	99-321-6318

ANNEXE F
WHOLE SHIP SPECIFICATIONS
Proposed by

PPG PROTECTIVE & MARINE COATINGS

<u>Proposed Systems/Materials</u>	<u>Number of Coats</u>	<u>NDFT per coat microns</u>	<u>Theo SR m²/litre</u>	<u>Min Recoat Interval</u>	<u>Max Recoat Interval</u>	<u>VOC gms per ltr</u>	<u>NATO Stock Number</u>
H. A/W HULL & SUPERSTRUCTURE PRIMER (Touch Up)							
(i) <u>Standard:</u> SIGMACOVER 456 HS 7712	1	125	5.8	8 hrs	#	227	
(ii) <u>Alternative</u> SIGMA SHIELD 220 7922	1	150	5.3	3½ hrs	14 days	262	99-403-5015
J. A/W HULL & SUPERSTRUCTURE FINISH							
(i) <u>Standard:</u> SIGMADUR 540 7740 BS 381C 676 Light Weatherwork Grey	1	60	9.0	8 hrs	#	411	
(ii) <u>Alternative:</u> SIGMA AQUACOVER 45 7250	1	50	6.8	6 hrs	#	10	99-236-5744
(iii) <u>Tie Coat:</u> (if required for Silicone Alkyd Finish)							
(iv) <u>Sealer for RASH:</u> SIGMACOVER 566 7454	1	75	5.7	6 hrs	#	494	
K. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
(a) Hangar Doors							
<u>Primer:</u> SIGMACOVER 456 HS 7712	2	75	9.7	8 hrs	#	277	
<u>Finish:</u> SIGMADUR 540 7740	1	50	12	8 hrs	#	411	
(b) Flight Deck - Type 2 Non-skid Finish							
<u>Primer:</u> SIGMARITE FLIGHT DECK PRIMER 7937	1	200	3.9	8 hrs	14 days	216	
<u>Finish:</u> SIGMARITE FLIGHT DECK COATING 7969 Extra Dark Sea Grey BS 381C 640	2	800	1.0	8 hrs	28 days	192	
<u>Type 2 Repair Kit:</u>							
(c) Hanger Deck & Weatherdeck - Type 1 Non-Skid Finish							
<u>Primer:</u> SIGMARITE FLIGHT DECK PRIMER 7937	1	200	3.9	8 hrs	14 days	216	
<u>Hangar Deck:</u> Dark Admiralty Grey BS 381C 632							
<u>Weatherdeck:</u> Extra Dark Sea Grey BS 381C 640							
<u>Type 1 Repair Kit:</u>							
(d) Gloss for Deck Margins:							
L. INTERIOR DRY SPACES (Complete Represervation)							
(i) <u>Standard:</u> <u>Primer</u> SIGMA AQUACOVER 25 7150 <u>Finish</u> SIGMA AQUACOVER 45 7250 BS 4800 00A01	1 1	75 50	6.6 6.8	4 hrs 6 hrs	# #	31 17	99-321-6318 99-277-8693
(ii) <u>Alternative:</u> <u>Primer</u> SIGMACOVER 456 HS 7712 <u>Finish</u> SIGMA AQUACOVER 45 7250 BS 4800 00A01	1 1	75 50	9.7 6.8	8 hrs 6 hrs	# #	227 17	99-277-8693

ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
M. INTERIOR DRY SPACES (Touch up)							
(i) <u>Standard Primer:</u> SIGMA AQUACOVER 25 <u>Finish:</u> SIGMA AQUACOVER 45 BS 4800 00A01	1 1	75 50	6.6 6.8	4 hrs 6 hrs	# #	31 17	99-321-6318 99-277-8693
(ii) <u>Alternative Primer:</u> SIGMACOVER 456 HS <u>Finish:</u> SIGMA AQUACOVER 45 BS 4800 00A01	1 1	75 50	9.7 6.8	8 hrs 6 hrs	# #	227 17	99-277-8693
N. INTERIOR WET SPACES (Complete Represervation)							
(i) <u>Standard Primer:</u> SIGMACOVER 456 HS <u>Finish:</u> SIGMA SHIELD 420 BS 4800 00A01	1 1	75 125	9.7 6.5	8 hrs 3½ hrs	# 14 days	227 212	99-549-3974
(ii) <u>Citadel lobby Primer:</u> SIGMACOVER 456 HS <u>Finish:</u> SIGMA SHIELD 420 colour either BS 4800 00A01 or Grey BS 381C 676	1 1	75 150	9.7 5.6	8 hrs 3½ hrs	# 14 days	227 212	99-549-3974
(iii) <u>Magazine Primer:</u> SIGMACOVER 456 HS <u>Finish:</u> SIGMA SHIELD 420 BS 4800 00A01	1 1	75 150	9.7 5.6	8 hrs 3½ hrs	# 14 days	227 212	99-549-3974
(iv) <u>Cleansing Stations Primer:</u> SIGMAGUARD CSF 650 7443 <u>Finish:</u> SIGMAGUARD CSF 650 7443 White	1 1	300 330	3.3 3.3	24 hrs 24 hrs	20 days 20 days	17 17	
O. INTERIOR WET SPACES (Touch up)							
(ii) <u>Standard Primer:</u> SIGMACOVER 456 HS <u>Finish:</u> SIGMA SHIELD 420 BS 4800 00A01	1 1	75 125	9.7 6.5	8 hrs 3½ hrs	# 14 days	227 212	99-549-3974
(ii) <u>Citadel lobby Primer:</u> SIGMACOVER 456 HS <u>Finish:</u> SIGMA SHIELD 420 colour either BS 4800 00A01 or Grey BS 381C 676	1 1	75 150	9.7 5.6	8 hrs 3½ hrs	# 14 days	227 212	99-549-3974
(iii) <u>Magazine Primer:</u> SIGMACOVER 456 HS <u>Finish:</u> SIGMA SHIELD 420 BS 4800 00A01	1 1	75 150	9.7 5.6	8 hrs 3½ hrs	# 14 days	227 212	99-549-3974
(iv) <u>Cleansing Stations Primer:</u> SIGMAGUARD CSF 650 7443 <u>Finish:</u> SIGMAGUARD CSF 650 7443 White	1 1	300 330	3.3 3.3	24 hrs 24 hrs	20 days 20 days	17 17	
P. INTERIOR DECKS							
(i) <u>Standard Primer:</u> SIGMACOVER 456 HS <u>Finish:</u> SIGMA AQUACOVER 45 BS 4800 Green 14C39	1 1	75 125	9.7 6.7	8 hrs 6 hrs	# #	227 17	99-269-1301
(ii) <u>Cleansing Stations Primer:</u> SIGMAGUARD CSF 650 7443 <u>Finish:</u> SIGMAGUARD CSF 650 7443 BS 4800 14C39	1 1	300 300	3.3 3.3	24 hrs 24 hrs	20 days 20 days	17 17	

ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
Q. BATTERY COMPARTMENTS							
(i) <u>Primer:</u> SIGMA SHIELD 220 7922	1	125	6.4	3½ hrs	14 days	230	99-403-5015
(ii) <u>Alternative:</u> SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
(iii) <u>Finish:</u> SIGMA SHIELD 420 BS 4800 00A01 7951	1	125	6.7	3½ hrs	14 days	212	99-723-3658
R. CABLE LOCKERS & COFFERDAMS							
SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
S. SEWAGE & WATER BALLAST TANKS.							
SIGMA EDGE GUARD PRIMER 5454 SIGMA EDGE GUARD White 5428	1 1	150 300	6.6 3.3	24 hrs 24 hrs	20 days 20 days	25 25	99-495-3513
T. MACHINERY SPACE BILGES							
(i) <u>Standard:</u> SIGMA NOVAGUARD 7453	1	300	3.3	24 hrs	2 months	13	
(ii) <u>Alternative:</u> SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
U. AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM DEF STAN 80-97 (HIGH SOLIDS)							
SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
V. POTABLE WATER TANKS							
SIGMAGUARD CSF 585 7785	1	300	3.3	24 hrs	20 days	5	
W. AQUEOUS FILM-FORMING FOAM (AFFF) TANKS							
SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
X. DEMINERALISED WATER TANKS (Max Temperature 90°C)							
SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
Y. REFIT / MAINTENANCE Epoxy Holding Primer							
SIGMACOVER 280 7417	1	50	11.4	8 hrs		430	99-569-7697

ANNEXE 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 Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number	
Z. PRIMERS FOR NON-FERROUS METALS & FRP								
(i) <u>Aluminium:</u> SIGMACOVER 280	7417	1	50	11.4	8 hrs	3 months	432	99-569-7697
(ii) <u>Stainless Steel:</u> SIGMACOVER 280	7417	1	50	11.4	8 hrs	3 months	432	99-569-7697
(iii) <u>Zinc Spray:</u> SIGMACOVER 280	7417	1	50	11.4	8 hrs	3 months	432	99-569-7697
(iv) <u>Galvanise:</u> SIGMACOVER 280	7417	1	50	11.4	8 hrs	3 months	432	99-569-7697
(v) <u>Indicator coat for FRP:</u>								

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 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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ANNEXE G
WHOLE SHIP SPECIFICATIONS
Proposed by

LEIGH'S PAINT'S

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
A. UNDERWATER PRIMER (Re-blast) ~							
(i) <u>Standard:</u> EPIGRIP C425V2	1	175	4.3	8 hrs	#	186	99 786 7949
(ii) <u>Tie Coat:</u> RESISTEX M535	1	50	8.0	2 hrs	#	502	99-453-1479
B. UNDERWATER PRIMER (T/U at Docking)							
(i) <u>Standard:</u> EPIGRIP C425V2	1	175	4.3	8 hrs	#	186	99 786 7949
(ii) <u>Tie Coat:</u> RESISTEX M535	1	50	8.0	2 hrs	#	502	99-453-1479
C. ANTIFOULING (Tin Free - 5yr life)							
D. ANTIFOULING (FOUL RELEASE 5+ yr life)							
E. ANTIFOULING (Tin Free 3+ yr life)							
ENVOY TF 500 Red ENVOY TF 500 Brown	1 1	75 75	8.4 8.4	6 hrs 6 hrs	# #	390 390	
F. BOOTTOP ANTIFOULING (Tin Free)							
ENVOY TF 500 BLACK	2	75	8.4	6 hrs	#	390	99-423-7738
G. A/W HULL & SUPERSTRUCTURE PRIMER (Re-blast) ~							
EPIGRIP C425V2	1	100	7.5	4 hrs	#	186	99 786 7949
H. A/W HULL & SUPERSTRUCTURE PRIMER (Touch Up)							
EPIGRIP C425V2	1	100	7.5	4 hrs	#	186	99 786 7949
J. A/W HULL & SUPERSTRUCTURE FINISH							
(i) <u>Standard:</u> LEIGHS A165 Light Weatherwork Grey BS 381C 676	1	35	14.6	16 hrs	#	407	99-982-2604
(ii) <u>Alternative:</u> EPIGRIP C750V2 Light Weatherwork Grey BS 381C 676	1	50	10.6	3 hrs	#	364	99-212-2175
(iii) <u>Tie Coat (if required):</u> LEIGHS M671	1	35	14.9	4 hrs	#	380	99-872-1746
(iv) <u>Sealer for RASH:</u> ENVIROGARD M260	1	35	12.5	2 hrs	#	49	99-660-9717

ANNEXE G
WHOLE SHIP SPECIFICATIONS
Proposed by

LEIGH'S PAINT'S

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
K. FLIGHT & WEATHERDECK SYSTEMS – DEF STAN 80-134							
(a) Hangar Doors							
<u>Primer:</u> EPIGRIP C425V2	1	125	6.0	5 hrs	#	186	99 786 7949
<u>Finish:</u> EPIGRIP C750V2	1	50	10.6	3 hrs	#	364	99-212-2175
(b) Flight Deck - Type 2 Non-skid Finish:							
<u>Primer:</u> EPIGRIP C425V2	1	125	6.0	4 hrs	#	186	99 786 7949
<u>Finish:</u> EPIDEK M339 Extra Dark Sea Grey BS 381C 640	2	200	1.8	4 hrs	#	250	99-215-4495
<u>Type 2 Repair Kit:</u> EPIDECK F339							99-383-4334
(c) Hanger Deck & Weatherdeck - Type 1 Non-skid Finish							
<u>Primer:</u> EPIGRIP C425V2	1	125	6.0	4 hrs	#	186	99 786 7949
<u>Hangar Deck:</u> EPIDEK M377 Dark Admiralty Grey BS 381C 632	2	250	2.5	4 hrs	#	330	99-777-8689
<u>Weatherdeck:</u> EPIDEK M377 Extra Dark Sea Grey BS 381C 640	2	250	2.5	4 hrs	#	330	
<u>Type 1 Repair Kit:</u> EPIDECK F377							99-087-4902
(d). Gloss for Deck Margins: EPIGRIP M262 Extra Dark Sea Grey BS 381C 640	1	75			#	354	99-133-8713
L. INTERIOR DRY COMPARTMENTS (Complete Represervation)							
<u>Primer:</u> EPIGRIP C425V2	1	125	6.0	5 hrs	#	186	99 786 7949
<u>Finish:</u> ENVIROGARD M770 BS 4800 00A01	1	25	15.6	3 hrs	#	78	99-517-5228
M. INTERIOR DRY COMPARTMENTS (Touch up)							
<u>Primer:</u> EPIGRIP C425V2	1	125	6.0	5 hrs	#	186	99 786 7949
<u>Finish:</u> ENVIROGARD M770 BS 4800 00A01	2	25	15.6	3 hrs	#	78	99-517-5228

ANNEXE G
WHOLE SHIP SPECIFICATIONS
Proposed by

LEIGH'S PAINT'S

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
N. INTERIOR WET COMPARTMENTS (Complete Represervation)							
(i) <u>Standard Primer:</u> EPIGRIP C425V2 <u>Finish:</u> BIOGARD M630V2 BS 4800 00A01	1 1	125 75	6.0 6.8	5 hrs 24 hrs	# #	186 0	99 786 7949 99-535-5105
(ii) <u>Citadel lobby - Primer:</u> EPIGRIP C425V2 <u>Finish:</u> BIOGARD M630V2 - Colour either: BS 4800 00A01 or Grey BS 381C 676	1 1	125 75	6.0 6.8	5 hrs 24 hrs	# #	186 66	99 786 7949 99-535-5105
(iii) <u>Cleansing Stations - Primer:</u> EPIGRIP C425V2 <u>Finish:</u> EPIGRIP H766 White	1 1	125 40	6.0 14.0	5 hrs 5 hrs	# #	186 395	99 786 7949 99-623-9946
(iv) <u>Magazine - Primer:</u> EPIGRIP C425V2 <u>Finish:</u> BIOGARD M630V2 BS 4800 00A01	1 1	125 75	6.0 6.8	5 hrs 24 hrs	# #	186 0	99 786 7949 99-535-5105
O. INTERIOR WET COMPARTMENTS (Touch-up)							
(i) <u>Standard - Primer:</u> EPIGRIP C425V2 <u>Finish:</u> BIOGARD M630V2 BS 4800 00A01	1 1	125 75	6.0 6.8	5 hrs 24 hrs	# #	186 0	99 786 7949 99-535-5105
(ii) <u>Citadel lobby - Primer:</u> EPIGRIP C425V2 <u>Finish:</u> BIOGARD M630V2 - Colour either: BS 4800 00A01 or Grey BS 381C 676	1 1	125 75	6.0 6.8	5 hrs 24 hrs	# #	186 0	99 786 7949 99-535-5105
(iii) <u>Cleansing Stations - Primer:</u> EPIGRIP C425V2 <u>Finish:</u> EPIGRIP H766 White	1 1	125 40	6.0 14.0	5 hrs 5 hrs	# #	186 395	99 786 7949 99-623-9946
(iv) <u>Magazine - Primer:</u> EPIGRIP C425V2 <u>Finish:</u> BIOGARD M630V2 BS 4800 00A01	1 1	125 75	6.0 6.8	5 hrs 24 hrs	# #	186 0	99 786 7949 99-535-5105
P. INTERIOR DECKS							
(i) <u>Standard Primer:</u> EPIGRIP C425V2 <u>Finish:</u> BIOGARD M630V2 Green BS 4800 14C39	1 1	125 75	6.0 6.8	5 hrs 24 hrs	# #	186 0	99 786 7949 99-255-5237
(ii) <u>Cleansing Stations - Primer:</u> EPIGRIP C425V2 <u>Finish:</u> EPIGRIP H766 Green BS 4800 14C39	1 1	125 40	6.0 14.0	5 hrs 5 hrs	# #	186 395	99 786 7949 99-501-4661
Q. BATTERY COMPARTMENTS							
(i) <u>Standard Primer:</u> EPIGRIP C425V2 <u>Finish:</u> BIOGARD M630V2 BS 4800 00A01	1 1	100 75	7.5 6.8	4hrs 24 hrs	# #	197 0	99 786 7949 99-535-5105
R. CABLE LOCKERS & COFFERDAMS							
EPIGRIP L524 WHITE	2	125	5.1	12 hrs	#	296	99-564-2934
S. SEWAGE & WATER BALLAST TANKS.							
<u>Water Ballast Tanks:</u> EPIGRIP L524	2	125	5.1	12 hrs	#	296	99-564-2934
<u>Sewage Tanks - Primer:</u> EPIGRIP H735 <u>Finish:</u> EPIGRIP H736	1 1	125 125	5.4 5.2	6 hrs 6 hrs	3 days 3 days	270 283	99-341-1160 99-850-0225

ANNEXE G
WHOLE SHIP SPECIFICATIONS
Proposed by

LEIGH'S PAINT'S

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
T. MACHINERY SPACE BILGES							
(i) <u>Standard:</u> EPIGRIP L524 WHITE	2	125	5.1	12 hrs	#	296	99-564-2934
(ii) <u>Alternative:</u> EPIGRIP L524 WHITE BIOGARD M630V2 BS 4800 00A01	2 1	125 75	5.1 6.8	7 days 12 hrs	# #	296 0	99-564-2934 99-535-5105
U. AVCAT, DIESO, LUB & HYDRAULIC OIL TANKS SYSTEM DEF STAN 80-97 (HIGH SOLIDS)							
EPIGRIP H735 EPIGRIP H736	1 1	125 125	5.4 5.2	6 hrs 6 hrs	3 days 3 days	270 283	99-341-1160 99-850-0225
V. POTABLE WATER TANKS							
HYDROGARD H20V2	1	400	2.5	12 hrs	36 hrs	0	
W. AQUEOUS FILM-FORMING FOAM (AFFF) TANKS							
EPIGRIP M251 EPIGRIP M253	1 1	125 125	4.4 4.4	16 hrs 16 hrs	7 days 7 days	390 390	99-301-1924 99-623-8463
W. AQUEOUS FILM-FORMING FOAM (AFFF) TANKS							
EPIGRIP M251 EPIGRIP M253	1 1	125 125	4.4 4.4	16 hrs 16 hrs	7 days 7 days	390 390	99-301-1924 99-623-8463
X. DEMINERALISED WATER TANKS (Max Temperature 90°C)							
EPIGRIP M251 EPIGRIP M253	1 1	125 125	4.4 4.4	16 hrs 16 hrs	7 days 7 days	390 390	99-301-1924 99-623-8463
Y. EPOXY HOLDING PRIMER							
METAGARD L574	1	25	11.6	3 hrs	#	594	99-895-9894
<u>Alternative & maintenance:</u> EPIGRIP M111	1	60	9.0	4 hrs	#	383	99-884-5957
Z. PRIMERS FOR NON-FERROUS METALS							
(i) <u>Aluminium:</u> EPIGRIP H795	1	35	10.9	4 hrs	#	575	99-225-0195
(ii) <u>Stainless Steel:</u> EPIGRIP H795	1	35	10.9	4 hrs	#	575	99-225-0195
(iii) <u>Zinc Spray:</u> METAGARD L574	1	25	11.6	3 hrs	#	594	99-895-9894
(iv) <u>Galvanise:</u> EPIGRIP H795	1	35	10.9	4 hrs	#	575	99-225-0195
(v) <u>Indicator Coat for FRP:</u> EPIGRIP C425V2 Off white	1	100	7.5	4 hrs	#	186	99-133-8714

ANNEXE G
WHOLE SHIP SPECIFICATIONS
Proposed by

LEIGH'S PAINT'S

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 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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ANNEXE H

WHOLE SHIP STOCK NUMBERS

1. WHOLE SHIP MATERIALS

Material	Supplier	Pack size	NSN
REMOVAL 510	Cirrus Systems Ltd	5 US gal	0810-99-871-5945
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 Dark Sea Grey BS381C 640	Chugoku Paints (UK) Ltd	20 litres	
UMEGUARD HS Grey	Chugoku Paints (UK) Ltd	5 litres	8010-99-126-9478
UMEGUARD HS SILVER	Chugoku Paints (UK) Ltd	5 litres	8010-99-763-0243
UMEGUARD HS SILVER	Chugoku Paints (UK) Ltd	20 litres	8010-99-264-0145
UMEGUARD HS White	Chugoku Paints (UK) Ltd	5 litres	8010-99-564-2409
BLAKES GELPROTECT SFE200 Cream	Hempel Paints Limited	2½ litres	8010-99-517-4318
HEMPADUR 1555 0 Off White 1163	Hempel Paints Limited	5 litres	8010-99-870-0653
HEMPADUR 1555 0 Off White 1163	Hempel Paints Limited	20 litres	8010-99-700-4191
HEMPADUR 1557 Light Grey 12430	Hempel Paints Limited	5 litres	8010-99-943-1152

ANNEXE H
WHOLE SHIP STOCK NUMBERS

Material	Supplier	Pack size	NSN
HEMPADUR 1557 Light Grey 12430	Hempel Paints Limited	20 litres	8010-99-170-5097
HEMPADUR 45143 White10000	Hempel Paints Limited	5 litres	8010-99-602-7280
HEMPADUR 4515o 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 LTC 45143 GREEN BS4800 14C39	Hempel Paints Limited	5 litres	8010-99-471-1920
HEMPEL'S NON SKID (NO AGGREGATE) 457GA BS381C 640 (Extra dark sea grey)	Hempel Paints Limited	5 litres	8010-99-879-5150
HEMPEL'S NON SKID (NO AGGREGATE) 457GA BS381C 640 (Extra dark sea grey)	Hempel Paints Limited	20 litres	8010-99-488-6439
HEMPEL'S NON SKID 45340 BS381C 640 (Extra dark sea grey) Type 2	Hempel Paints Limited	20 litres	8010-99-213-1121
HEMPELS NON SKID 457GB BLACK	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 424GB 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 DECK REPAIR KIT 941GB Type 2	Hempel Paints Limited	Pack	8010-99-340-2100
HEMPELS DECK REPAIR KIT 942GB Type 1	Hempel Paints Limited	Pack	8010-99-471-2960
HEMPELS NON SKID 45340 Grey BS3813 632 Type 1	Hempel Paints Limited	20 litres	8010-99-670-9581
HEMPELS WATER BASED EPOXY 48580 Black	Hempel Paints Limited	5 Litres	8010-99-864-5046
HEMPELS WATER BASED EPOXY 48580 BS4800 00A01 (Ash Grey)	Hempel Paints Limited	5 litres	8010-99-988-2715
HEMPELS WATER BASED EPOXY 48580 BS4800 14C39 (Green)	Hempel Paints Limited	5 litres	8010-99-279-8221
HEMPELS WATER BASED EPOXY 48580 BS381C 676 (Light Weatherwork Grey)	Hempel Paints Limited	5 litres	8010-99-976-9118
HEMUCRYL ENAMEL 5810 Azure Blue BS381C 104	Hempel Paints Limited	5 litres	8010-99-382-4025
HEMUCRYL ENAMEL 5810 Black	Hempel Paints Limited	5 litres	8010-99-175-1334
HEMUCRYL ENAMEL 5810 Canary BS381C 309	Hempel Paints Limited	5 litres	8010-99-858-1263
HEMUCRYL ENAMEL 5810 Dark Blue BS4800 18C39	Hempel Paints Limited	5 litres	8010-99-290-5925
HEMUCRYL ENAMEL 5810 Lt Brunswick Green BS381C 225	Hempel Paints Limited	5 litres	8010-99-831-8959

ANNEXE H
WHOLE SHIP STOCK NUMBERS

Material	Supplier	Pack size	NSN
HEMUCRYL ENAMEL 5810 Mid Brunswick Green BS381C 226	Hempel Paints Limited	5 litres	8010-99-162-2531
HEMUCRYL ENAMEL 5810 Signal Red BS381C 537	Hempel Paints Limited	5 litres	8010-99-250-8046
HEMUCRYL ENAMEL 5810 Wedgwood Blue BS4800 18D43	Hempel Paints Limited	5 litres	8010-99-317-6235
HEMUCRYL ENAMEL 5810 Ash Grey BS4800 00A01	Hempel Paints Limited	5 litres	8010-99-660-9288
HEMUCRYL ENAMEL 5810 Golden Brown BS381C 414	Hempel Paints Limited	5 litres	8010-99-562-6381
HEMUCRYL ENAMEL 5810 White	Hempel Paints Limited	5 litres	8010-99-299-0228
HEMUCRYL TI-COAT 1820 0 Red 50710	Hempel Paints Limited	5 litres	8010-99-199-2908
HEMUDUR 1850 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 Wedgewood 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 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

ANNEXE H
WHOLE SHIP STOCK NUMBERS

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 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	8010-99-274-4430
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
INTERSPEED 340 Black	International Coatings Ltd	20 litres	8010-99-874-3193
INTERSPEED 642 Black	International Coatings Ltd	20 litres	8010-99-792-1990
ANTI-FOULING SEAGUARDIAN MD	Jotun Paints (Europe) Limited	20 litres	8010-99-968-3624
EPOXY HOLDING PRIMER Red	Jotun Paints (Europe) Limited	20 litres	8010-99-817-2976
JOTA ARMOUR AS REPAIR KIT Extra Dark Sea Grey BS381C 640	Jotun Paints (Europe) Limited	Pack	
JOTA-ARMOUR AS Extra Dark Sea Grey BS381C 640	Jotun Paints (Europe) Limited	20 litres	8010-99-226-7300
JOTAMASTIC 87 Extra Dark Sea Grey BS381C 640	Jotun Paints (Europe) Limited	5 litres	8010-99-549-5820
JOTAPROOF TOPCOAT Light Weatherwork Grey BS381C 676	Jotun Paints (Europe) Limited	20 litres	8010-99-310-9229
JOTAPROOF TOPCOAT Light Weatherwork Grey BS381C 676	Jotun Paints (Europe) Limited	5 litres	8010-99-583-1344
POLYMASTIC 100 Grey	Jotun Paints (Europe) Limited	5 litres	8010-99-362-1638
POLYMASTIC 2000 Red	Jotun Paints (Europe) Limited	5 litres	8010-99-395-8448
POLYMASTIC 2000 Ash Grey BS4800 00A01	Jotun Paints (Europe) Limited	5 litres	8010-99-665-9772
POLYMASTIC 2000 Lt Weatherwork Grey BS381C 676	Jotun Paints (Europe) Limited	5 litres	8010-99-567-4198
POLYMASTIC 2000 Green BS4800 14C39	Jotun Paints (Europe) Limited	5 litres	8010-99-514-9385
PRE	Jotun Paints (Europe) Limited	5 litres	
PRIMASTIC UNIVERSAL MD	Jotun Paints (Europe) Limited	5 litres	8010-99-509-7172

ANNEXE H
WHOLE SHIP STOCK NUMBERS

Material	Supplier	Pack size	NSN
VINYGUARD SILVERGREY	Jotun Paints (Europe) Limited	5 litres	8010-99-212-5888
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
BIOGARD M630V2 Light Weatherwork Grey BS381C 676	Leighs Paints	5 litres	8010-99-131-6908
BIOGARD M630V2 Green BS4800 14C39	Leighs Paints	5 litres	8010-99-255-5237
BIOGARD M630V2 Ash Grey BS4800 00A01	Leighs Paints	5 litres	8010-99-535-5105
BIOGARD M630V2 Black	Leighs Paints	5 litres	8010-99-739-8402
BIOGARD M630V2 White	Leighs Paints	5 litres	8010-99-313-4440
ENVIROGARD M770 Ash Grey BS4800 00A01	Leighs Paints	5 litres	8010-99-517-5228
ENVIROGARD M770 Black	Leighs Paints	5 litres	8010-99-768-1426
ENVIROGARD M770 Azure Blue BS381C 104	Leighs Paints	5 litres	8010-99-878-8150
ENVIROGARD M770 Canary BS381C 309	Leighs Paints	5 litres	8010-99-726-4136
ENVIROGARD M770 Dark Blue BS4800 18C39	Leighs Paints	5 litres	8010-99-723-3650
ENVIROGARD M770 Lt Brunswick Green BS381C 225	Leighs Paints	5 litres	8010-99-313-9445
ENVIROGARD M770 Mid Brunswick Green BS381C 226	Leighs Paints	5 litres	8010-99-862-5170
ENVIROGARD M770 Signal Red BS381C 537	Leighs Paints	5 litres	8010-99-225-7155
ENVIROGARD M770 Light Weatherwork Grey BS381C 676	Leighs Paints	5 litres	8010-99-833-4765
ENVIROGARD M770 Wedgwood Blue BS4800 18D43	Leighs Paints	5 litres	8010-99-723-3651
ENVIROGARD M770 White	Leighs Paints	5 litres	8010-99-231-3852
ENVOY TF500 Black	Leighs Paints	15 litres	8010-99-423-7738
EPIDEK M339NA	Leighs Paints	5 litres	8010-99-845-5203
EPIGRIP C425V2 Light Grey	Leighs Paints	5 litres	8010-99-786-7949
EPIGRIP C425 Light Grey	Leighs Paints	20 litres	8010-99-126-6377
EPIGRIP C425V2 Off White	Leighs Paints	20 litres	8010-99-133-8714

ANNEXE H
WHOLE SHIP STOCK NUMBERS

Material	Supplier	Pack size	NSN
EPIGRIP H766 Green BS4800 14C39	Leighs Paints	5 litres	8010-99-501-4661
EPIGRIP H766 White	Leighs Paints	5 litres	8010-99-623-9946
EPIGRIP L524 Aluminium	Leighs Paints	5 litres	8010-99-216-0021
EPIGRIP L524 White	Leighs Paints	5 litres	8010-99-564-2934
EPIGRIP M111 Red	Leighs Paints	5 litres	8010-99-884-597
EPIGRIP M216 Black	Leighs Paints	5 litres	8010-99-799-8831
EPIGRIP M902 Aluminium	Leighs Paints	2.5 litres	8010-99-421-0972
LEIGHS A165 Silicone Alkyd Light Weatherwork Grey BS381C 676	Leighs Paints	5 litres	8010-99-982-2604
LEIGHS M255 BLACK	Leighs Paints	20 litres	8010-99-417-8341
LEIGHS M255 VANDYKE BROWN BS4800 08B29	Leighs Paints	5 litres	8010-99-905-0772
LEIGHS C750 Light Weatherwork Grey BS381C 676	Leighs Paints	5 litres	8010-99-212-2175
LEIGHS M671 Medium Grey	Leighs Paints	5 litres	8010-99-872-1746
LEIGHS M671 Medium Grey	Leighs Paints	20 litres	8010-99-862-7354
AMERCOAT 300A Black	Maker Coating Systems Ltd	5 litres	8010-17-115-8450
AMERCOAT 300A BS4800 00A01	Maker Coating Systems Ltd	5 litres	8010-99-535-8577
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 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

ANNEXE H
WHOLE SHIP STOCK NUMBERS

Material	Supplier	Pack size	NSN
SIGMA EDGEGUARD 5428 White	PPG Protective & Marine Coatings	5 litres	8010-99-495-3513
SIGMASHIELD 420 7951 Ash Grey BS4800 00A01	PPG Protective & Marine Coatings	5 litres	8010-99-549-3974
SIGMASHIELD 420 7951 Light Weatherwork Grey BS381C 676	PPG Protective & Marine Coatings	5 litres	8010-99-723-3658
SIGMAHIELD 220 7922 Light Green	PPG Protective & Marine Coatings	5 litres	8010-99-403-5015
SIGMASHIELD 280 7417 Yellow	PPG Protective & Marine Coatings	5 litres	8030-99-354-0443
SIGMACOVER 280 LT 7417 Yellow	PPG Protective & Marine Coatings	20 litres	8010-99-569-7697
AQUACOVER 45 7250 Azure Blue BS381C 104	PPG Protective & Marine Coatings	5 litres	8010-99-863-5457
AQUACOVER 45 7250 Ash Grey B4800 00A01	PPG Protective & Marine Coatings	5 litres	8010-99-277-8693
AQUACOVER 45 7250 Black	PPG Protective & Marine Coatings	5 litres	8010-99-500-7412
AQUACOVER 45 7250 Canary BS381C 309	PPG Protective & Marine Coatings	5 litres	8010-99-182-2670
AQUACOVER 45 7250 Dark Blue BS4800 18C39	PPG Protective & Marine Coatings	5 litres	8010-99-957-7697
AQUACOVER 45 7250 Lt Brunswick Green BS381C 225	PPG Protective & Marine Coatings	5 litres	8010-99-338-4734
AQUACOVER 45 7250 Lt Weatherwork Grey BS381C 676	PPG Protective & Marine Coatings	5 litres	8010-99-236-5744
AQUACOVER 45 7250 Mid Brunswick Green BS381C 226	PPG Protective & Marine Coatings	5 litres	8010-99-269-1301
AQUACOVER 45 7250 Signal Red BS381C 537	PPG Protective & Marine Coatings	5 litres	8010-99-880-0100
AQUACOVER 45 7250 Wedgwood Blue BS4800 18D43	PPG Protective & Marine Coatings	5 litres	8010-99-471-2071
AQUACOVER 45 7250 White	PPG Protective & Marine Coatings	5 litres	8010-99-225-7360
AQUACOVER 25 7150 Buff	PPG Protective & Marine Coatings	5 litres	8010-99-321-6318
SIGMA ALPHAGEN 20 Series Black 7384	PPG Protective & Marine Coatings	20 litres	8010-99-280-8371

INTENTIONALLY BLANK



INTENTIONALLY BLANK

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S1. AREAS BELOW THE WATERLINE							
a) <u>General and Untiled areas</u>							
<i>Chugoku Paints (UK) Ltd</i>							
UMEGUARD SX Black	1	150	4.33	20 hrs	30 days	470	
<u>Antifouling Tie coat</u> Hiper AC	1	50	10.2	6 hrs	None	493	
<i>Hempel Paints Ltd</i>							
HEMPADUR 4588 MIO Black	2	175	4.6	8 hrs	30 days	198	99-149-2439
<u>Antifouling Tie coat</u> HEMPADUR 45182 Black	1	75	6.1	6 hrs	3 days	490	99-893-9646
<i>International Paint Ltd</i>							
INTERGARD 5000	1	175	4.68	12 hrs	2 months	179	
<u>Antifouling Tie coat</u> INTERGARD 263	1	75	7.6	8 hrs	5 days	379	99-133-3854
<i>Jotun Paints (Europe) Limited</i>							
PRIMASTIC UNIVERSAL R/T (STD)	1	200	3.75	10 hrs	#	194	99-509-7172
<u>Antifouling Tie coat</u> SAFEGUARD UNIVERSAL ES	1	150	4.13	10 hrs	#	245	
<i>Maker Coating Systems Ltd/PPG</i>							
CORROLESS EPF	2	200	4.8	16 hrs	3 days	80	25-150-0972
<u>Antifouling Tie coat</u> SIGMACOVER 525 7902 3333	1	150	5.6	3½ hrs	14 days	239	
<i>PPG Protective & Marine Coatings</i>							
SIGMASHIELD 220 7922	1	125	6.4	3½ hrs	14 days	262	99-403-5015
SIGMASHIELD 420 7951	1	150	5.6	3½ hrs	14 days	239	99-723-3658
<u>Antifouling Tie coat</u> SIGMACOVER 525 7902 Black	1	100	7.0	8 hrs	14 days	272	
<i>Leighs Paint</i>							
EPIGRIP M922M Mastic Aluminium	2	200	4.2	4hrs	#	146	99-495-3873
RESISTEX M535 Black	1	75	5.3	2	#	502	99-453-1479
S2. ANTIFOULING							
<i>Hempel Paints Ltd</i>							
OLYMPIC 8695 Black	2	100	5.2	10 hrs	#	390	99-147-9828
<i>International Paint Ltd</i>							
INTERSPEED 340 Black	3	60	10	6 hrs	3 months	358	99-847-3193
<i>Leighs Paint</i>							
ENVOY TF500 Black	3	75	8.4	6 hrs	#	316	99-423-7738
<i>PPG Protective & Marine Coatings</i>							
SIGMA ECOFLEET 530 7385 Black	3	100	6.6	6 hrs	#	331	

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S3. HULL & SUPERSTRUCTURE							
(a) Untiled areas							
<i>Hempel Paints Ltd</i>							
HEMPADUR 4588 MIO 1234 HEMPADUR 45182 BLACK	2 1	175 75	4.6 6.1	8 hrs 6 hrs	30 days 3 days	198 490	99-149-2439 99-893-9646
<i>International Paint Ltd</i>							
INTERGARD 5000 INTERGARD 740M Black	1 1	175 50	4.68 10.02	12 hrs 16 hrs	2 months #	179 420	99-488-7443
<i>Leighs Paint</i>							
EPIGRIP M922M Mastic Aluminium RESISTEX M535 BLACK	2 1	200 75	4.2 5.3	4hrs 2	# #	146 502	99-495-3873 99-453-1479
<i>Maker Coating Systems Ltd/PPG</i>							
CORROLESS EPF	2	200	4.8	16 hrs	3 days	80	25-150-0972
S4. PERISCOPES & Masts							
Visible portions outside the submarine							
EPIGRIP H795 IRR Matt BS285	1 3	35	10.9	4 hrs	#	572	99-225-0195
S5. SUPERSTRUCTURE CASING							
(a) General steelwork							
<i>Hempel Paints Ltd</i>							
HEMPADUR 4588 MIO 1234 HEMPEL'S LOW SHEEN BLACK FINISH 510GB Def Stan 80-111	1 2	175	4.6	8 hrs	30 days	198	99-149-2439
<i>International Paint Ltd</i>							
INTERGARD 5000 INTERGARD 740M Black	1 1	250 50	3.28 10.02	12 hrs 16 hrs	2 months #	179 420	99-488-7443
<i>Leighs Paint</i>							
EPIGRIP M922M Mastic Aluminium RESISTEX M535 BLACK	2 2	200 75	4.2 5.3	4hrs 2	# #	146 502	99-495-3873 99-453-1479
<i>Maker Coating Systems Ltd/PPG</i>							
AMERLOCK 400C BLACK	2	125	7	16 hrs	#	106	17-106-6001

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S6. WALKWAYS ON STEEL CASING							
<i>Chugoku Paints (UK) Ltd</i>							
UMEGUARD HS SILVER CAMIDECK FINISH TYPE 1 Black	1 2	125 190	7.4 2.84	20 hrs 16 hrs	30 days #	158 374	99-763-0243 99-543-0790
<i>Hempel Paints Ltd</i>							
HEMPADUR 4588 MIO 1243 HEMPEL'S NON SKID 4534GB TYPE 1 Black	1 2	100 200	8.2 3.2	7hrs 6 hrs	6 hrs* 30 days	168 347	99-149-2439 99-480-7979
<i>International Paint Ltd</i>							
INTERGARD 5000 INTERSHIELD 852 TYPE 1 Black	1 2	150 200	5.47 1.92	12 hrs 12 hrs	4 days #	179 134	99-000-5256 99-250-1864
<i>Maker Coating Systems Ltd/PPG</i>							
AMERLOCK 400C AMERLOCK 400 NS TYPE 1 Black	1 2	125 300	7 4	16 hrs 16 hrs	# #	106 106	99-974-7400 99-184-8542
<i>Leighs Paint</i>							
PIGRIP C425V2 EPIDEK M377 TYPE 1 Black	1 2	125 250	76.0 2.5	5 hrs 4 hrs	# #	186 330	99-786-7949 99-777-8692
<i>PPG Protective & Marine Coatings</i>							
SIGMA SHIELD 220 7922 SIGMACOVER 456HS 7712 TYPE 1 Black	1 2	125 125	6.4 5.8	3½ hrs 8 hrs	14 days #	262 156	99-403-5015
S7. INTERNAL DRY SPACES							
<i>Chugoku Paints (UK) Ltd</i>							
UMEGUARD HS SILVER CAMACRYL FINISH White	1 2	125 40	7.4 11	20 hrs 24 hrs	30 days #	158 33	99-763-0243 99-380-7010
<i>Hempel Paints Ltd</i>							
HEMUDUR PRIMER 1850 HEMUCRYL ENAMEL 5810 White	1 2	60 30	8.8 13.7	6 hrs 6 hrs	1 week 2 hrs	25 150	99-876-8090 99-229-0228
<i>International Paint Ltd</i>							
INTERGARD 5000 BS 4800 00A01 INTERCRYL 700 White	1 2	125 35	6.56 11.42	12 hrs 60 mins	# #	179 135	99-000-5256 99-979-7888
<i>Jotun Paints (Europe) Limited</i>							
WATERFINE PRIMER WATERFINE TOPCOAT White	2 2	100 50	4.6 7.2	1.5 hrs 1.5 hrs	# #	100 195	99-462-9708 99-372-9140
<i>Maker Coating Systems Ltd/PPG</i>							
AMERLOCK 400C SIGMA AQUACOVER 500 White	1 1	125 50	7 10.4	16 hrs 16 hrs	# #	106 0	99-974-7400
<i>PPG Protective & Marine Coatings</i>							
SIGMACRYLIC AQUACOVER 25 7150 SIGMACRYLIC AQUACOVER 45 7520 White	2 2	75 50	6.6 6.8	4 hrs 6 hrs	# #	31 17	99-321-6318 99-225-7360
<i>Leighs Paint</i>							
PIGRIP C425V2 ENVIROGARD M770 White	1 2	125 25	6.0 15.6	5 hrs 3 hrs	# #	186 78	99-786-7949 99-231-3852

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S8. INTERIOR WET COMPARTMENTS (Complete Reservation)							
<i>Chugoku Paints (UK) Ltd</i>							
UMEGUARD HS SILVER AQUALIFE GLOSS FINISH White	1 2	125 40	7.4 10	20 hrs 16 hrs	30 days 7 days	158 132	99-763-0243 99-371-8400
<i>Hempel Paints Ltd</i>							
HEMUDUR 4588 HEMPEL'S WATER BASED EPOXY 4858 White	1 1	125 80	6.5 6.7	5 hrs 12 hrs	# 15 days	198 36	99-803-7233
<i>International Paint Ltd</i>							
INTERGARD 5000 Grey BS 4800 00A01 INTERGARD 1735 White	1 1	125 50	6.56 11.2	24 hrs 12 hrs	# #	179 132	99-000-5256
<i>Jotun Paints (Europe) Limited</i>							
WATERFINE PRIMER Grey WATERFINE PRIMER White	1 1 or 2	100 40	4.6 11.6	1.5 hrs 1.5 hrs	# #	60 60	99-462-9708
<i>Marker Coating Systems Ltd/PPG</i>							
AMERLOCK 400C SIGMA AQUACOVER 500 White	1 1	125 50	7 10.4	16 hrs 16 hrs	# #	106 0	99-974-7400
<i>PPG Protective & Marine Coatings</i>							
SIGMACOVER 456 HS 7712 SIGMA SHIELD 420 White	2 1	75 150	9.7 5.6	8 hrs 3½ hrs	# 14 days	277 239	
<i>Leighs Paint</i>							
EPIGRIP C425V2 BIOGARD M630V2 White	1 1	125 75	6.0 6.8	5 hrs 24 hrs	# #	186 0	99-786-7949 99-313-4440
S9. GROUP EXHAUST VALVES							
<i>Leighs Paint</i>							
DOX-ANODE 5V2	1	75	8.7	24 hrs	#	470	
S10. DSRV SEATING							
<i>Leighs Paint</i>							
EPIGRIP C425V2 EPIDECK 716	1 2	175 75	4.3 6.8	8 hrs 4 hrs	# #	186 420	99-786-7949 99-225-0689

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S11. INTERIOR PRESSURE HULL SURFACE Emergency Cooling Tanks							
a) <u>S Class Soft and Saddle Tanks</u>							
<u>Hempel Paints Ltd</u>							
GALVOSIL 1570 – Approved by Rolls Royce	1	75	8.53	36 hrs	#	535	99-170-5097 99-943-1152
<u>International Paint Ltd</u>							
INTERGARD 5000 – Pending Approval	2	125	6.56	12 hrs	3 months	179	99-000-5256
b) <u>Trafalgar Class Hard Tank</u>							
<u>International Paint Ltd</u>							
INTERGARD 5000 – Pending Approval	2	125	6.56	12 hrs	3 months	179	99-000-5256
<u>Leighs Paint</u>							
EPIGRIP M251 – Pending Approval	1	125	4.4	16	7 days	390	99-301-1924
EPIGRIP M253 – Pending Approval	1	125	4.4	16	7 days	390	99-623-8463
<u>PPG Protective & Marine Coatings</u>							
SIGMA PHENGUARD 930 (Primer) – Approved by Rolls Royce	1	100	6.6	36 hrs	21 days	300	
SIGMA PHENGUARD 935 (Coating) – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	300	
SIGMA PHENGUARD 940 (Finish) – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	300	
SIGMAGUARD 795 (Maintenance)	2	150	5.0	10hrs	21 days	273	
<u>Maker Coating Systems Ltd</u>							
CORROLESS EPF – Approved by Rolls Royce	1	200	4.8	16hrs	3 days	80	25-150-0972
CORROLESS RF35 Off White – Approved by Rolls Royce	1	200	4.8	16hrs	3 days	93	25-150-0973
c) <u>Trafalgar Class Jacket Tank</u>							
<u>International Paint Ltd</u>							
INTERGARD 5000 - Approved by Rolls Royce	2	125	6.56	12 hrs	3 months	179	99-000-5256
<u>Maker Coating Systems Ltd</u>							
CORROLESS EPF – Approved by Rolls Royce	1	200	4.8	16hrs	3 days	80	25-150-0972
CORROLESS RF35 Off White – Approved by Rolls Royce	1	200	4.8	16hrs	3 days	93	25-150-0973
AMERLOCK 400C – Approved by Rolls Royce	2	125	7	16 hrs	3 days	106	17-108-8248
<u>Leighs Paint</u>							
EPIGRIP M922	2	200	4.2	4hrs	#	143	99-834-8384
EPIGRIP M251	1	125	4.4	16	7 days	390	99-301-1924
EPIGRIP M253	1	125	4.4	16	7 days	390	99-623-8463
d) <u>Vanguard Class High Pressure Decay Heat Removal Tank (HPDR)</u>							
INTERIOR SURFACES							
<u>International Paint Ltd</u>							
INTERGARD 5000 – Pending Approval	2	125	6.56	12 hrs	3 months	179	99-000-5256
<u>Leighs Paint</u>							
EPIGRIP M251 – Pending Approval	1	125	4.4	16	7 days	390	99-301-1924
EPIGRIP M253 – Pending Approval	1	125	4.4	16	7 days	390	99-623-8463

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S11. (continued)							
<i><u>Maker Coating Systems Ltd</u></i>							
CORROLESS EPF – Pending Approval	1	200	4.8	16hrs	3 days	80	25-150-0972
CORROLESS RF35 Off White – Pending Approval	1	200	4.8	16hrs	3 days	93	25-150-0973
AMERLOCK 400C – Pending Approval	2	125	7	16 hrs	3 days	106	17-108-8248
<i><u>PPG Protective & Marine Coatings</u></i>							
SIGMA PHENGUARD 930 (Primer) – Approved by Rolls Royce	1	100	6.6	36 hrs	21 days	315	
SIGMA PHENGUARD 935 (Coating) – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	
SIGMA PHENGUARD 940 (Finish) – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	
SIGMAGUARD 795 (Maintenance)	2	150	5.0	10hrs	21 days	273	
<u>EXTERNAL SURFACES</u>							
<i><u>International Paint Ltd</u></i>							
INTERGARD 5000 – Pending Approval	2	125	6.56	12 hrs	3 months	179	99-000-5256
<i><u>Leighs Paint</u></i>							
EPIGRIP M251	1	125	4.4	16	7 days	390	99-301-1924
EPIGRIP M253	1	125	4.4	16	7 days	390	99-623-8463
<i><u>Maker Coating Systems Ltd</u></i>							
CORROLESS EPF	1	200	4.8	16hrs	3 days	80	25-150-0972
CORROLESS RF35 Off White	1	200	4.8	16hrs	3 days	93	25-150-0973
AMERLOCK 400C	2	125	7	16 hrs	3 days	106	17-108-8248
<i><u>PPG Protective & Marine Coatings</u></i>							
SIGMA PHENGUARD 930 (Primer) – Approved by Rolls Royce	1	100	6.6	36 hrs	21 days	315	
SIGMA PHENGUARD 935 (Coating) – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	
SIGMA PHENGUARD 940 (Finish) – Approved by Rolls Royce	1	100	6.6	24 hrs	21 days	315	
SIGMAGUARD 795 (Maintenance)	2	150	5.0	10hrs	21 days	273	
e) <i><u>Astute Class</u></i>							
<i><u>Advanced Polymer Coatings</u></i>							
SILOXIRANE 2031LE – Approved by Rolls Royce	Awaiting	Information					

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S12. REACTOR COMPARTMENT							
a) Interior surfaces							
<i>Hempel Paints Ltd</i>							
HEMPADUR NPP 55671-10000 White							
<i>International Paint Ltd</i>							
INTERGARD 5000 INTERGARD 1735 White	1 2	125 50	6.56 11.20	12 hrs 12 hrs	# #	179 132	99-000-5256
<i>Maker Coating Systems Ltd/PPG</i>							
AMERLOCK 400C SIGMA AQUACOVER 500 White	1 1	125 50	7 10.4	16 hrs 16 hrs	# #	106 0	99-974-7400
<i>Leighs Paint</i>							
EPIGRIP C400V3 EPIGRIP H766 White	1 1	200 50	9.3 14	5 hrs 5 hrs	# #	257 395	99-623-9946
<u>HEAT RESISTANT ALUMINIUM >250°C</u>							
<i>Firwood Paints Ltd</i>							
FIRGLO 64	1-2			4 hrs			
<i>International Paint Ltd</i>							
INTERTHERM 50	1-2	25	18	12hrs	#	495	99-257-1455
b) External surfaces							
See S1. but note dft not to exceed that stated in BR3939 Section 12							
S13. INTERIOR DECKS							
<i>Leighs Paint</i>							
EPIGRIP C425V2 BIOGARD M630V2	1 1	175 75	4.3 6.8	8 hrs 24 hrs	# #	186 0	99-786-7949 99-255-5237
<i>International Paint Ltd</i>							
INTERGARD 5000 INTERGARD 1735	1 1	125 50	6.56 11.2	12 hrs 12 hrs	# #	179 132	99-000-5256 99-255-0527
<i>Maker Coating Systems Ltd/PPG</i>							
AMERLOCK 400C	2	125	7	16 hrs	#	106	99-383-2335

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S14. BATTERY COMPARTMENTS							
<i>Chugoku Paints (UK) Ltd</i>							
UMEGARD HS SILVER AQUALIFE GLOSS FINISH GREY 00A01	1 2	125 40	7.12 10	20 hrs 16 hrs	7 days 7 days	108 132	99-264-0145 99-757-9334
<i>Hempel Paints Ltd</i>							
HEMPADUR 4588 HEMPEL'S WATERBASED EPOXY 4858 00A01	1 1	150 80	5.5 6.7	5 hrs 12 hrs	# 15 days	198 36	99-803-7233 99-988-2715
<i>International Paint Ltd</i>							
INTERGARD 5000	1	125	6.56	12 hrs	#	179	99-000-5256
<i>Jotun Paints (Europe) Limited</i>							
POLYMASTIC 2000 POLYMASTIC 2000 GREY 00A01	1 1	200 200	4.8 4.8	9 hrs 9 hrs	# #	80 80	99-395-8448 99-665-9772
<i>Maker Coating Systems Ltd/PPG</i>							
AMERLOCK 400C SIGMA AQUACOVER 500 White	1 1	125 50	7 10.4	16 hrs 16 hrs	# #	106 0	99-974-7400
<i>Leighs Paint</i>							
EPIGRIP C425V2 BIOGARD M630V2 GREY 00A01	1 1	100 75	7.5 6.8	4 hrs 24 hrs	# #	186 0	99 786 7949 99-535-5105
S15. MACHINERY SPACE BILGES & MOUNTED MACHINERY RAFTS							
<i>Chugoku Paints (UK) Ltd</i>							
UMEGARD HS SILVER UMEGARD HS GREY	1 1	125 125	6.5 6.5	15 hrs 15 hrs	10 days 10 days	108 158	99-264-0146 99-126-9478
<i>Finish for Mounted Machinery Rafts</i>							
CAMACRYL FINISH MAC Canary BS381C 309							99-446-0554
<i>Hempel Paints Ltd</i>							
HEMPADUR 4588 WHITE	1	150	5.5	5 hrs	#	220	99-264-0387
<i>Finish for Mounted Machinery Rafts</i>							
HEMUCRYL ENAMEL 5810 Canary BS381C 309							99-858-1263
<i>International Paint Ltd</i>							
INTERGARD 5000	1	175	4.68	12 hrs	3 months	179	99-000-5256
<i>Finish for Mounted Machinery Rafts</i>							
INTERCRYL 700 Yellow RAL 1018	1	35	11.42	6 hrs	#	18	99-774-1224
<i>Jotun Paints (Europe) Limited</i>							
JOTAMASTIC 87 WHITE	2	200	4.1	10 hrs	#	130	
<i>Finish for Mounted Machinery Rafts</i>							
WATERFINE TOPCOAT Canary BS381C 309							99-352-4369

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S15. MACHINERY SPACE BILGES & MOUNTED MACHINERY RAFTS (cont.)							
<i>Maker Coating Systems Ltd/PPG</i>							
CORROLESS EPF	1	200	4.8	16 hrs	3 days	80	25-150-0972
<i>Finish for Mounted Machinery Rafts</i>							
AMERLOCK 400C YELLOW	1	125	7	16 hrs	#	106	
<i>PPG Protective & Marine Coatings</i>							
SIGMA NOVAGARD 840 7468	1	400	2.5	24 hrs	2 months	13	
<i>Finish for Mounted Machinery Rafts</i>							
SIGMA AQUACOVER 45 7250 Canary BS381C 309							99-182-2670
<i>Leighs Paint</i>							
EPIGRIP M902	1	125	6.0	6.5 hrs	#	219	99-421-0972
EPIGRIP L524 WHITE	1	125	5.1	12 hrs	#	296	99-564-2934
<i>Finish for Mounted Machinery Rafts</i>							
ENVIROGARD M770 Canary BS381C 309							99-726-4136
S16. OIL TANKS, LUBE OIL, HYDRAULIC, LP AIR TANKS ETC							
<i>Chugoku Paints (UK) Ltd</i>							
CLEANKEEP 5000*	1	300	3.33	48 hrs	14 days	0	
<i>Hempel Paints Ltd</i>							
HEMPADUR 85671	3	100	6.8	36 hrs	5 days	320	
<i>International Paint Ltd</i>							
INTERLINE 850 (TLA850/A)	2	125	6.08	8 hrs	30 days	212	
<i>Jotun Paints (Europe) Limited</i>							
TANKGUARD STORAGE	2	125	5.0	10 hrs	30 days	261	
<i>Maker Coating Systems Ltd</i>							
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
<i>PPG Protective & Marine Coatings</i>							
SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
<i>Leighs Paint</i>							
EPIGRIP H735	1	125	5.4	6	3 days	270	
EPIGRIP H736	1	125	5.2	6	3 days	283	

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S17. POTABLE WATER TANKS							
<i>Chugoku Paints (UK) Ltd</i>							
CLEENKEEP 5000*	1	300	3.33	48 hrs	14 days	0	
<i>Hempel Paints Ltd</i>							
HEMPADUR 85671	3	100	6.8	36 hrs	5 days	320	
<i>International Paint Ltd</i>							
INTERLINE 925	1	300	3.35	48 hrs	3 days	1	
<i>Jotun Paints (Europe) Limited</i>							
TANKGUARD AQUA	2	225	4.44	10 hrs	7 days	?	
<i>Maker Coating Systems Ltd</i>							
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
<i>PPG Protective & Marine Coatings</i>							
SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
<i>Leighs Paint</i>							
HYDROGARD H20V2	1	400	2.5	12hrs	36 hrs	0	
S18. SLOP DRAIN TANKS							
<i>Leighs Paint</i>							
EPIGRIP M251	1	125	4.4	16	7 days	390	99-301-1924
EPIGRIP M253	1	125	4.4	16	7 days	390	99-623-8463
S19. AFFF TANKS							
<i>Chugoku Paints (UK) Ltd</i>							
CLEENKEEP 5000*	1	300	3.33	48 hrs	14 days	0	
<i>Hempel Paints Ltd</i>							
HEMPADUR MULTI STRENGTH 3553	2	250	4.0	24 hrs	5 days	0	
<i>International Paint Ltd</i>							
INTERLINE 704	2	125	4.24	23 hrs	21 days	385	
<i>Jotun Paints (Europe) Limited</i>							
TANKGUARD AQUA	2	225	4.44	10 hrs	7 days	?	
<i>Maker Coating Systems Ltd</i>							
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

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S19. <u>FFF TANKS (cont.)</u>							
<i>PPG Protective & Marine Coatings</i>							
SIGMAGUARD CSF 585 7785	1	300	3.33	24 hrs	20 days	5	
<i>Leighs Paint</i>							
EPIGRIP M251	1	125	4.4	16	7 days	390	99-301-1924
EPIGRIP M253	1	125	4.4	16	7 days	390	99-623-8463
S20. <u>DEMINERALISED WATER TANKS</u>							
<i>Chugoku Paints (UK) Ltd</i>							
CLEENKEEP 5000*	1	300	3.33	48 hrs	14 days	0	
<i>Hempel Paints Ltd</i>							
HEMPADUR MULTI STRENGTH 3553	2	250	4.0	24 hrs	5 days	0	
<i>International Paint Ltd</i>							
INTERLINE 925 (THA127/A)	1	300	3.33	18 hrs	3 days	1	
<i>Jotun Paints (Europe) Limited</i>							
TANKGUARD AQUA	2	225	4.44	10 hrs	7 days	?	
<i>Marker Coating Systems Ltd</i>							
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
<i>PPG Protective & Marine Coatings</i>							
SIGMAGUARD CSF 650 7443	1	300	3.3	24 hrs	20 days	17	
<i>Leighs Paint</i>							
EPIGRIP M251	1	125	4.4	16	7 days	390	99-301-1924
EPIGRIP M253	1	125	4.4	16	7 days	390	99-623-8463

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S21. HOLDING PRIMER							
a) Blasted steelwork							
<i>Chugoku Paints (UK) Ltd</i>							
NZ PRIMER S	1	25	15.9	16 hrs	#	641	
<i>Hempel Paints Ltd</i>							
HEMPADUR 1557	1	40	13.5	#	#	430	99-943-1152
<i>International Paint Ltd</i>							
INTERGARD 269	1	30	15.67	6 hrs	#	411	99-983-0743
<i>Jotun Paints (Europe) Limited</i>							
EPOXY HOLDING PRIMER	1	20	12.5	7 hrs	7 days	600	
<i>Marker Coating Systems Ltd/PPG</i>							
SIGMACOVER 280 7417	1	50	11.4	8 hrs	3 months	432	99-569-7697
<i>Leighs Paint</i>							
METAGARD L574	1	25	11.6	3 hrs	#	594	99-895-9894
b) Damp Surfaces							
<i>Hempel Paints Ltd</i>							
HEMPADUR 1557	1	40	13.5	#	#	430	99-943-1152
<i>Leighs Paint</i>							
EPIGRIP M111	1	60	9.0	4hrs	#	383	99-884-5957

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S22. PRIMERS FOR NON FERROUS METALS							
<i>Chugoku Paints (UK) Ltd</i>							
(a) <u>Aluminium</u> : ALP 500	1	50	11.6	10 hrs	#	414	99-967-8636
(b) <u>Stainless Steel</u> : UMEGUARD HS	1	125	7.40	20 hrs	30 days	158	99-126-9478
(c) <u>Zinc Spray</u> : GALVANITE 200	1	30	14.10	4 hrs	30 days	587	99-290-5829
(d) <u>Galvanise</u> : GALVANITE 200	1	30	14.10	4 hrs	30 days	587	99-290-5829
<i>Hempel Paints Ltd</i>							
a) <u>Aluminium</u> HEMUCRYL TIE COAT 1820 (1 pack) or HEMPADUR 1555 (2 pack)	1	20	19.0	24 hrs	30 mins	40	99-199-2908
	1	50	8.6	2 hrs	#	515	99-870-0653
b) <u>Stainless Steel</u> HEMUCRYL TIE COAT 1820 (1 pack) or HEMPADUR 1555 (2 pack)	1	20	19.0	24 hrs	30 mins	40	99-199-2908
	1	50	8.6	2 hrs	#	515	99-870-0653
c & d) <u>Zinc Spray</u> HEMUCRYL TIE COAT 1820 (1 pack) or <u>Galvanise</u> HEMPADUR 1555 (2 pack)	1	20	19.0	24 hrs	30 mins	40	99-199-2908
	1	50	8.6	2 hrs	#	515	99-870-0653
e) <u>Indicator coat for FRP</u> GELPROTECT SFE200 Cream	1	200	5.0	8 hrs	5 days	10	99-517-4318
<i>International Paint Ltd</i>							
a) - d) <u>Aluminium, Stainless steel, Zinc Spray or Galvanised</u>							
<u>Standard</u> INTERGARD 269		30	15.67	6 hrs	#	411	99-983-0743
<u>Alternative</u> INTERGARD 276		30	15.67	6 hrs	#	411	
<i>Jotun Paints (Europe) Limited</i>							
a) <u>Aluminium</u> : WATERFINE PRIMER	1	60	7.6	1.5 hrs	#	100	99-462-9708
b) <u>Stainless Steel</u> : WATERFINE PRIMER	1	60	7.6	1.5 hrs	#	100	99-462-9708
c & d) <u>Zinc Spray/Galvanise</u> : WATERFINE PRIMER	1	60	7.6	1.5 hrs	#	100	99-462-9708
e) <u>FRP Indicator Coat</u> : BALLOXY HB Light (Green)	1	200	4.1	10 hrs	#	167	17-108-7825

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S22. PRIMERS FOR NON FERROUS METALS (cont)							
<i>Maker Coating Systems Ltd/PPG</i>							
a) <u>Aluminium</u> : AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
b) <u>Stainless Steel</u> : SIGMACOVER 280 7417	1	50	11.4	8 hrs	6 months	432	99-569-7697
c) <u>Zinc Spray</u> : AMERLOCK 400C	1	125	7	16 hrs	#	106	99-974-7400
d) <u>Galvanise</u> : SIGMACOVER 280 7417	1	50	11.4	8 hrs	3 months	432	99-569-7697
e) <u>Indicator Coat for FRP</u> : AMERLOCK 400C Green Ral 6011	1	125	7	16 hrs	#	106	17-120-4829
<i>Leighs Paint</i>							
a) <u>Aluminium</u> : EPIGRIP H795	1	35	10.9	4 hrs	#	575	99-225-0195
b) <u>Stainless Steel</u> : EPIGRIP H795	1	35	10.9	4 hrs	#	575	99-225-0195
c) <u>Zinc Spray</u> : METAGARD I574	1	25	11.6	4 hrs	#	594	99-895-9894
d) <u>Galvanise</u> : EPIGRIP H795	1	35	10.9	4 hrs	#	575	99-225-0195
e) <u>Indicator Coat for FRP</u> : EPIGRIP C425V2 Off white	1	100	7.5	4 hrs	#	186	
S23. HIGH EROSION AREAS							
<i>Hempel Paints Ltd</i>							
HEMPADUR MULTISTRENGTH GF3597	1	300	2.9	16 hrs	30 days	180	
<i>International Paint Ltd</i>							
INTERZONE 505	1	300	3.0	6	4 days	157	
<i>Maker Coating Systems Ltd</i>							
CORROLESS EPF	2	200	4.8	16	3 days	80	25-150-0972
<i>Leighs Paint</i>							
EPIGRIP M922	1	400	2.1	3 hrs	#	143	99-834-8384
S24. BENEATH TILING							
<i>Wessex Resins</i>							
WRA 518							99-568-6036
UW 45 (WRA4501)							99-009-0811

ANNEXE J
SUBMARINES

Proposed Systems/Materials	Number of Coats	NDFT per coat microns	Theo SR m ² /litre	Min Recoat Interval	Max Recoat Interval	VOC gms per ltr	NATO Stock Number
S25. SYSTEM FOR COATING NATURAL RUBBER MOUNTS Applied by Mount supplier not to be touched up once fitted <i>Dunlop Precision Rubber Ltd</i> DUNLOP NPL 100 or <i>Yacht Systems UK Ltd</i> GUMMIPAIN - ORANGE	2	25					99-541-9576
	2	35					Not required
S26. SYSTEM FOR COATING INTERNAL NUTS AND BOLTS AND TO FILL GAPS BETWEEN CANNING PLATES AND LEAD <i>Maker Coating Systems Ltd</i> CORROLESS CCI 355 CORROSION INHIBITOR (HD GREASE)	1	N/A	-	-	N/A	N/A	99-157-9271
S27. SEA WATER TANKS <i>Chugoku Paints (UK) Ltd</i> (i) UMEGUARD HS SILVER* UMEGUARD HS GREY or (ii) NOVA 2000 <i>Hempel Paints Ltd</i> HEMPADUR 4507 <i>International Paint Ltd</i> INTERGARD 5000 <i>Jotun Paints (Europe) Limited</i> BALLOXY HB LIGHT <i>Maker Coating Systems Ltd</i> CORROLESS EPF <i>Maker Coating Systems Ltd/ PPG</i> SIGMAGUARD CSF650 <i>Leighs Paint</i> EPIGRIP L524	1 1 2	125 125 125	6.50 6.50 6.50	15 hrs 15 hrs 15 hrs	10 days 10 days 10 days	108 158 173	99-264-0145 99-126-9478
	2	150	4.8	16 hrs	10 days	270	99-149-2439
	2	125	6.56	12 hrs	3 months	179	
	2	150	5.5	10 hrs	#	150	17-108-7824
	2	200	4.8	16 hrs	3 days	80	25-150-0972
	1	300	3.3	24 hrs	20 days	143	
	2	125	5.1	12 hrs	#	296	99-564-2934

ANNEXE J
SUBMARINES

Supplier	Material	BR Class	VOC Compliant	NSN
Ameron BV (Maker Coating Systems Ltd)	AMERCOAT 300A BS4800 00A01	See 4.3	0 g/l	8010-99-535-8577
Chugoku Paints (UK) Ltd	CAMACRYL FINISH MAC White	See 4.3	86 g/l	8010-99-380-7010
Chugoku Paints (UK) Ltd	UMEGUARD HS SILVER	See 4.3	158 g/l	8010-99-264-0145
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
Chugoku Paints (UK) Ltd	UMEGUARD HS SILVER	See 4.3	158 g/l	8010-99-763-0243
Dunlop Precision Rubber Ltd (Dunlop Aerospace Ltd)	NPL100 ORANGE	See 4.3	No	8010-99-541-9576
Hempel Paints Limited	HEMPELS WATER BASED EPOXY 48580 BS4800 00A01	See 4.3	25 g/l	8010-99-988-2715
Hempel Paints Limited	HEMPADUR 15570 LIGHT GREY 12430	See 4.3	430 g/l	8010-99-170-5097
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 Dark Blue BS4800 18C39	See 4.3	150 g/l	8010-99-290-5925
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 Wedgewood Blue BS4800 18D43	See 4.3	150 g/l	8010-99-317-6235
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 Canary BS381C 309	See 4.3	150 g/l	8010-99-858-1263
Hempel Paints Limited	HEMPADUR 45150 White	See 4.3	180 g/l	8010-99-411-0494
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 White	See 4.3	150 g/l	8010-99-299-0228
Hempel Paints Limited	HEMPELS WATER BASED EPOXY 48580 BS4800 14C39 (Green)	See 4.3	25 g/l	8010-99-279-8221
Hempel Paints Limited	HEMUCRYL PRIMER 1810	See 4.3	200 g/l	8010-99-909-6026
Hempel Paints Limited	HEMPADUR 1555 0	See 4.3	515 g/l	8010-99-870-0653
Hempel Paints Limited	HEMPELS WATER BASED EPOXY 48580 BS4800 14C39 (Green)	See 4.3	25 g/l	8010-99-279-8221
Hempel Paints Limited	HEMPADUR 45150	See 4.3	180 g/l	8010-99-702-5502
Hempel Paints Limited	HEMPELS WATER BASED EPOXY 48580 BS381C 676 (Light Weatherwork Grey)	See 4.3	25 g/l	8010-99-976-9118
Hempel Paints Limited	HEMPELS WATER BASED EPOXY 48580 Black	See 4.3	25 g/l	8010-99-864-5046
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 Lt Brunswick Green BS381C 225	See 4.3	150 g/l	8010-99-831-8959
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 Azure Blue BS381C 104	See 4.3	150 g/l	8010-99-382-4025
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 Mid Brunswick Green BS381C 226	See 4.3	150 g/l	8010-99-162-2531
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 BS4800 00A01	See 4.3	150 g/l	8010-99-660-9288
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 Signal Red BS381C 537	See 4.3	150 g/l	8010-99-250-8046
Hempel Paints Limited	HEMUCRYL TI-COAT 1820 0	See 4.3	118 g/l	8010-99-199-2908
Hempel Paints Limited	HEMPADUR 1555 0 Off White 1163	See 4.3	515 g/l	8010-99-700-4191
Hempel Paints Limited	HEMUCRYL TI-COAT 1820 0 Red 50710	See 4.3	118 g/l	8010-99-199-2908
Hempel Paints Limited	HEMUDUR 1850 Grey 12170	See 4.3	85 g/l	8010-99-867-8090
Hempel Paints Limited	HEMPADUR 1555 0 Off White 1163	See 4.3	515 g/l	8010-99-870-0653
Hempel Paints Limited	HEMPADUR 45150 Red 50630	See 4.3	180 g/l	8010-99-535-5832
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 BS381C 676 (Light Weatherwork Grey)	See 4.3	150 g/l	8010-99-149-2439
Hempel Paints Limited	HEMUCRYL PRIMER 1810	See 4.3	200 g/l	8010-99-909-6026
Hempel Paints Limited	HEMPADUR 1555 0	See 4.3	515 g/l	8010-99-700-4191
Hempel Paints Limited	HEMUCRYL ENAMEL 5810 Black	See 4.3	150 g/l	8010-99-175-1334
International Paint Ltd	INTERGARD FWA274/FWA278 Red	See 4.3	166 g/l	8010-99-337-6056
International Paint Ltd	INTERGARD 1735 WB QDE000/QDA049 BS4800 00A01	See 4.3	45 g/l	8010-99-255-0527

ANNEXE J
SUBMARINES

Supplier	Material	BR Class	VOC Compliant	NSN
International Paint Ltd	INTERGARD 1735 WB Dark Sea Grey BS381C 640	See 4.3	132 g/l	8010-99-702-0607
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	135 g/l	8010-99-
International Paint Ltd	INTERCRYL 700 Yellow RAL 1018	See 4.3	135 g/l	8010-99-774-1224
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
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
Leighs Paints	ENVIROGARD M770 Ash Grey BS4800 00A01	See 4.3	128 g/l	8010-99-517-5228
Leighs Paints	ENVIROGARD M770 Lt Brunswick Green BS381C 225	See 4.3	128 g/l	8010-99-313-9445
Leighs Paints	EPIGRIP H795	See 4.3	575 g/l	8010-99-225-0195
Leighs Paints	EPIGRIP M251 PRIMER	See 4.3	390 g/l	8010-99-301-1924
Leighs Paints	EPIGRIP M902 Aluminium	See 4.3	219 g/l	8010-99-421-0972
Leighs Paints	BIOGARD M630V2 Green BS4800 14C39	See 4.3	0 g/l	8010-99-255-5237
Leighs Paints	ENVIROGARD M770 Signal Red BS381C 537	See 4.3	128 g/l	8010-99-225-7155
Leighs Paints	ENVIROGARD M770 White	See 4.3	128 g/l	8010-99-231-3852
Leighs Paints	BIOGARD M630V2 Green BS4800 14-C-39	See 4.3	0 g/l	8010-99-255-5237
Leighs Paints	ENVIROGARD M770 Black	See 4.3	128 g/l	8010-99-768-1426
Leighs Paints	EPIGRIP L524 Aluminium	See 4.3	296 g/l	8010-99-216-0021
Leighs Paints	ENVIROGARD M770 Canary BS381C 309	See 4.3	128 g/l	8010-99-726-4136
Leighs Paints	ENVIROGARD M770 Dark Blue BS4800 18C39	See 4.3	128 g/l	8010-99-723-3650
Leighs Paints	ENVIROGARD M770 Azure Blue BS381C 104	See 4.3	128 g/l	8010-99-878-8150
Leighs Paints	EPIGRIP L524 White	See 4.3	296 g/l	8010-99-564-2934
Leighs Paints	ENVIROGARD M770 Mid Brunswick Green BS381C 226	See 4.3	128 g/l	8010-99-862-5170
Leighs Paints	BIOGARD M630V2 White	See 4.3	0 g/l	8010-99-313-4440
Leighs Paints	ENVIROGARD M770 Grey BS381C 676	See 4.3	128 g/l	8010-99-833-4765
Leighs Paints	BIOGARD M630V2 Black	See 4.3	0 g/l	8010-99-739-8402
Leighs Paints	BIOGARD M630V2 Grey BS381C 676	See 4.3	0 g/l	8010-99-131-6908
Leighs Paints	ENVIROGARD M770 Wedgewood Blue BS4800 18D43	See 4.3	128 g/l	8010-99-723-3651
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 Black	See 4.3	17g/l	8010-99-500-7412
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 Mid Brunswick Green BS381C 226	See 4.3	17g/l	8010-99-269-1301
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 Wedgewood Blue BS4800 18D43	See 4.3	17g/l	8010-99-471-2071
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 Azure Blue BS381C 104	See 4.3	17g/l	8010-99-863-5457
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 Canary BS381C 309	See 4.3	17g/l	8010-99-182-2670
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 Dark Blue BS4800 18C39	See 4.3	17g/l	8010-99-957-7697
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 Buff	See 4.3	37g/l	8010-99-321-6318
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 Lt Brunswick Green BS381C 225	See 4.3	17g/l	8010-99-338-4734
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 Signal Red BS381C 537	See 4.3	17g/l	8010-99-880-0100
PPG Protective & Marine Coatings	SIGMA AQUACOVER 45 7250 White	See 4.3	17g/l	8010-99-225-7360

ANNEXE K
Amendments to BR3939 Issue 1: September 2006

AMENDMENTS TO BR 3939 Issue 1: September 2006

Warpaint 27 September 2008

The following amendments apply to the tables in Section 3 of BR3939

Item 0305 Additional Criteria for Specific Warship and Submarine Areas:

15	Adhesion	700 psi after 7 days air drying	BS EN ISO 4624 Hydraulic pull off testing.
16	Adhesion	Greater than 1500 psi on system/substrate interface	BS EN ISO 4624 Hydraulic test equipment or similar.
34	Resistance to humidity	Single coat, no blistering, corrosion or other signs of breakdown	BS EN ISO 6270-1 for 10 days, 7 days after application
51	Gloss	>60 gloss units	BS EN ISO 2813, 60° geometry gloss meter
57	Resistance to humidity	Single coat, no blistering, corrosion or other signs of breakdown	BS 3900: F9 for 10 days, 7 days after application BS EN ISO 6270-1
58	Contamination Resistance	No defects	BS 6920

Item 0306 Paint Identification Characteristics

1	Density Range	Declared in IC	BS EN ISO 2811-1
2	Viscosity Range (Not powder coatings)	Declared in IC	BS EN ISO 2884 or declared method
4	Opacity	Declared in IC	BS EN ISO 2814

Warpaint 28 March 2009

1 Front Page replace (TES-SSG/170/24/10/1) by (DES SE Sea-MT/170/24/10/1)

2 Page vii **Introduction**

Replace 1. with "Ministry of Defence (MOD), Defence Equipment & Support (DE&S), Safety Engineering (SE), Sea Systems Directorate, Materials Technology (DES SE Sea-MT5) sponsors this Book of Reference (BR)."

3. Page vii **Related Documents**

Replace 9c with

c. "Warpaint"

MOD - DES SE Sea-MT5, Elm 1c, #4314
Abbey Wood South. Bristol BS34 8JH

ANNEXE K
Amendments to BR3939 Issue 1: September 2006

4. Page viii Precautions

Replace items 14-16 with

- 14 Shipyards applying or removing coatings containing tributyltin or triphenyltin now require authorisation from the Environment Agency
- 15 It should be noted that HMIP and the National River Authority (NRA) were in England and Wales, subsumed into a new "Environmental Agency (DEFRA)". Similar arrangements apply in Scotland, where the appropriate authority is the Scottish Environment Protection Agency.
- 16 The appropriate Authority in Northern Ireland is, The Northern Ireland Environment Agency (NIEA)

5. Section1 Scope

Replace all reference to TES-SSG-MT5 by DES SE Sea-MT5

6. Section 2 Policy

Replace all reference to TES-SSG-MT5 by DES SE Sea-MT5

7. Section 3 Materials

Replace all reference to TES-SSG-MT5 by DES SE Sea-MT5

Add the following to table 0307 - Specified Whole Ship Specification (WSS) Areas:

:

Warpaint Designated Areas – Submarine Systems (SS)	
Warpaint Submarine Area	Description
S27	Paint system suitable for application to Seawater tanks

8. Section 4 PREPARATION OF SURFACES

Replace all reference to TES-SSG-MT5 by DES SE Sea-MT5

9. Section 5 PAINTING OF UNDERWATER HULLS OF SURFACE SHIPS AND SUBMARINES

Replace all reference to TES-SSG-MT5 by DES SE Sea-MT5

Replace all reference to TES-MSG-UWET by DES SANMO-UWESO1-SPEC

Replace all reference to TES-SSG-ShipHydro by DES SE Sea-ShipHydro

ANNEXE K
Amendments to BR3939 Issue 1: September 2006

10. Section 10 Tanks

Replace all reference to TES-SSG-MT5 by DES SE Sea-MT5

1033 Ballast Tanks & Sewage Tanks:

Replace **S16** by **S27**

1042 Other Submarine areas:

Replace **S1** by **S27**

Warpaint 29 September 2009

1. Page vii Related Documents

Replace 9c with

- | | | |
|----|------------|---|
| c. | "Warpaint" | MOD - DES SE Sea-MT5, Elm 1c, #4134
Abbey Wood South. Bristol BS34 8JH |
|----|------------|---|

Warpaint 30 March 2010

1. Section 3 item 0307 Specified Whole Ship Specification (WSS) Areas. Amend Warpaint Ship Area D to read:

D	Foul Release underwater hull coatings, which are tin free and have the ability to achieve 5 years' active life.
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ANNEXE K
Amendments to BR3939 Issue 1: September 2006

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