

- 11.4.2 In addition to the motors being presented for survey, any motor inspected ashore is to be presented to the Accepting authority for inspection when exposed and on functional test before return to the Vessel.

11.5 Wiring

- 11.5.1 Unless specifically required by individual requirements elsewhere in this specification, all new cables supplied by the Contractor are to be Ethylene Propylene Rubber (EPR) of Limited Fire Hazard (LFH) Halogen Class D to meet the requirements of BS 6833, IET Regulations for Ships and Classification Society Rules.
- 11.5.2 Where cables are disconnected and retained for re-use, the Contractor is to ensure that all cables are tallied and listed to enable correct re-connection later.
- 11.5.3 All new cabling is to be provided with wrap-around labelling stating the cable number/identification, destination and service.
- 11.5.4 Cable trays and clips made from plastics or other flammable materials are not to be used. Where cable trays and clips are used the possibility of electrolytic action occurring is to be avoided.
- 11.5.5 New runs of conduit are to be secured to welded support brackets over their entire length. Support brackets to be stood at least 50 mm off bulkheads, spaced a maximum of 1 m apart and drilled to take conduit clips.
- 11.5.6 Unless otherwise directed, all new cabling is to utilise existing cable trays, routes and penetrations as far as is practicable.
- 11.5.7 The rated voltage of cables is not to be lower than the nominal voltage of the circuit for which it is to be used.
- 11.5.8 On completion of installation, all electrical work is to be tested in accordance with Section 27 of the IEE Regulations for Ships. A copy of test results is to be passed to the MOD Representative.

12 Paint Specification

12.1 General Instructions for the Preparation and Application of Paint

Note: These instructions are to be read in conjunction with individual specification items, which determine scope of work.

- 12.1.1 All paints to be procured by the Vessel Repairer and must not be subcontracted out to the paint applicator. All paints are to be suitable for use in a marine environment and comply with current regulations. If paint systems are to be touched up, then the Contractor must ensure that the over-coating system is compatible with the existing paint system. All epoxy coatings used as primers are to be Surface Tolerant (ST) and suitable for application over mechanically prepared surfaces and compatible with existing paint schemes where applicable.
- 12.1.2 The following instructions are to be adhered to for the duration of this conversion:
- All paints are to be to the Vessel Repairer's account, except where otherwise stated in this specification.
 - A paint manufacturer is to be chosen such that all of the following instructions and conditions are adhered to, whilst still providing guarantees of quality and performance of all products supplied. All registered paint manufacturers are to be approached.
 - The paint systems chosen are to be of the highest quality marine standard for the application stated and are to comply with all current MARPOL

regulations. The Dry Film Thicknesses (DFT) of paint applied in all areas are to be of the stated thickness required by the Manufacturer for that paint system and for that application.

- The individual Specifications elsewhere in the specification may have specific requirements relating to paint application and must be adhered to accordingly. If no specific requirements are incorporated in individual Specifications, then the relevant standards defined in this general paint specification are to be applied to those individual specifications.
- The paint systems and work details are to be presented to the nominated MOD representative for final approval prior to any work commencing.
- All preparation, including blasting and machine scaling, to be carried out in accordance with the latest standards, using the appropriate and approved method for the area concerned, ie. Blasting to SA 2.5, Machine scaling to ST 3 and Hydro Blast to HB2.5. Upon completion of scaling / blasting, all areas of bare steel to have a surface profile compatible with that required by the paint manufacturer for the system under application, and in any case not finer than 35 to 50 Ra. Where the type of preparation used cannot guarantee such a condition, this to be achieved by other means.
- Areas of paintwork to be coated will be specified in individual specifications elsewhere in this document.
- All painting is to be carried out in accordance with this specification and to the requirements of the Authority's Authorised Representative.
- All Primers used are to be of the Surface Tolerant Two Pack Epoxy Type. All External Greywork is to be finished in Polyurethane.

12.2 External Coatings

12.2.1 Topsides

The following preparation and re-coating instructions apply:-

- Full Blast to SA2.5/HB2.5.
- One x Full Coat (F/C) of appropriate primer.
- One x F/C of undercoat/tie coat.
- One x F/C of finish coat.
- Repair system / Machine Scale to ST3.
- Two x Touch Up (T/U) of appropriate primer.
- One x F/C of undercoat/tie coat.
- One x F/C of finish coat.
- Finish colour to be to Grey BS 676
- Unless otherwise specified, ALLOW for 3% ST3 preparation.
- All Draught marks and Hull markings are to be re-instated on completion.

12.2.2 Bulkheads, Deckheads, Machinery, Equipment, Pipes, Handrails, Stanchions etc.

- Degrease, then high pressure fresh water wash at 3500p.s.i. minimum.
- Full Blast to SA2.5.
- One x F/C of appropriate primer.
- One x F/C of undercoat/tie coat. One x F/C of finish coat.
- Finish colour to be to Grey BS 676.
- Repair system. All bare and damaged areas to be blasted/machine scaled to SA2.5/ST3 and edges to disc to a firm edge and feather.
- Two x T/U coats of appropriate primer.
- One x F/C Undercoat / Tie Coat.

- One x F/C finish coat.
- Unless otherwise specified ALLOW for 3% ST3 preparation.

12.2.3 Decks

Degrease, high pressure water wash with water soluble detergent at 340 bar minimum, fresh water rinse and dry off on completion. All decks to be prepared to minimum ST3.

Full Blast SA2.5/Machine Scaled to ST3 Preparation/Hydro Blast to HB2.5 Coat using an approved epoxy system having non-slip finish as specified by the Paint Manufacturer. System used is to be fully compatible with existing coatings.

Colour to be Dark Grey BS 632.

For repairs, unless otherwise specified, ALLOW for 3% ST3 preparation.

12.3 Internal Coatings

12.3.1 Before painting internally, oil and grease, etc, are to be removed by emulsion cleaning. The entire area to be painted must be fresh water cleaned (high pressure) in order to remove salts and other contaminants. Rusty and damaged areas must be mechanically cleaned to ST 3 according to ISO 8501-1:2007.

12.3.2 The compartments are to be adequately ventilated and dried out prior to over-coating.

12.3.3 The first coat is to be applied within 8 hours of preparation to avoid surface build-up of rust. Light "gingering" is acceptable.

12.3.4 The coats to be applied in the compartments are as follows:

- One x F/C primer, Grey – DFT 125 microns.
- One x F/C primer, Off White – DFT 125 microns.
- One x F/C undercoat, White – DFT 40 microns.
- One x F/C enamel, White – DFT 40 microns.

12.3.5 The coats to be applied to internal decks are as follows:

- One x F/C primer, Grey – DFT 125 Microns.
- One x F/C primer, Off white – DFT 125 Microns
- One x F/C non-skid, Grey – DFT 125 Microns The preferred method application is by airless spray.

12.3.6 Bulkheads and Deckheads.

- Steam clean using water soluble detergent. Fresh water rinse and dry. All bare and damaged areas to be prepared to minimum ST3 and edges to be disked to a firm edge and feathered.
- One x T/U appropriate water based primer.
- One x F/C water based topcoat.
- After washing, the area should be thoroughly rinsed with clean fresh water. It should then be washed down again with miscible cleaner applied with stiff brushes and again thoroughly rinsed with clean fresh water.
- The area must then be allowed to dry. The cleaner should be used at a strength of approx. 20% in water. Rinsing should also be thorough to remove all traces of the cleaning solution before painting.
- Water based top coat should be high gloss with good hiding power when applied over existing coatings. Product to comply with the latest fire/smoke/toxicity regulations.
- Unless otherwise specified ALLOW for 1 % ST3 preparation.

12.3.7 New Steelwork

- All welds, burned and damaged areas to be manually prepared to ST3. All weldspatter and undercuts shall be removed by grinding or re-welding. Any oil or grease contamination shall be fully removed by solvent wiping with CLEAN dry rags followed by a wash with water-soluble detergent.
- To prepared areas apply one full stripe coat.
- Two x F/C water based primer.
- Two x F/C water based topcoat.

12.3.8 Exposed Steelwork

- To be primed to a minimum of two coats as recommended by the Paint Manufacturer then two full coats of top-coat to match existing system.

12.3.9 Steelwork Behind Linings

- To be primed with two coats of appropriate primer followed by a minimum of one top-coat of fire retardant paint.

12.3.10 Machinery, Equipment, Pipes, etc.

- Fresh water and detergent wash to remove all surface contamination.
- Fresh water rinse and dry.
- All bare and damaged areas to be machine scaled to ST3 and edges disked to a firm edge and feathered.
- One x T/U appropriate primer.
- One x F/C tie/undercoat.
- One x F/C Machinery enamel or fire retardant finish to latest standard.
- Finish colour for machinery to be 'eau-de-nil'.
- Full system to be fire retardant. Where aluminium heat resisting paint is specified one coat will suffice after above preparation.
- Unless otherwise specified ALLOW for 3 % ST3 preparation.

12.3.11 Decks

- Decks are to be prepared to a minimum of ST3.
- Primers are to be a minimum of 2 coats of recommended primer.
- Top coats to be 2 coats of approved top-coat non-skid deck paint.
- Unless otherwise specified ALLOW for 3 % ST3 preparation.
- Stripe coats are to be applied where required to attain the full, specified DFT.
- Paints as received from the manufacturer must not be thinned or diluted in excess of their recommendations. Only solvents approved by the manufacturer shall be used. Requisite adjustments to the wet film thickness are to be made to ensure dry film thickness requirement is met.
- All coatings are to be smoothly applied, free from sags and runs.
- No paint is to be applied outside of the manufacturers specified climatic conditions.

12.3.12 Overspray, paint splashes or drops will be removed at the vessel repairer's expense unless agreed with the nominated Authority's Authorised Representative that they were evident before painting operations commenced.

12.3.13 The vessel repairer is responsible for the supply and erection of all coverage as required for protection against overspray, etc. They are also responsible for the similar supply, erection, dismantling and disposal of all coverage necessary to protect against the results of actions which might cause a nuisance to others.