APPENDIX A COATING TABLES

Table A-1 Summary of the requirements: Coating system for external hull and ballast tanks

Coating System [1)]	Epoxy (e.g., pure epoxy or modified epoxy) based Other recognised hard coating which is pre-qualified [2)]
Coats and Thickness	2 to 3 coats [3)] Total nominal dry film thickness (NDFT) 300-400 microns[4)]
Primary surface preparation	Zinc containing, silicate based pre-fabrication primer on surface blast cleaned to minimum Sa 2,5 with surface roughness: ISO 8503 grade medium G(50 to 85 μm R)
Secondary surface preparation	Sharp edges to be removed Damaged shop primer blast cleaned to ISO 8501 Sa 2,5, including welds and burns. Intact shop primer to be sweep blasted. (Intact and sufficiently cleaned shop primer may be kept as the first coat in the paint system if recommended by the paint producer and accepted by the owner.) Mechanical cleaning to St 3 acceptable on block joints and damages to the applied coating system
Clean conditions	Any visible salt contamination, oil, grease, dust, weld smoke or dirt on shop primed or other surface to be coated, to be removed by cleaning The chloride content on surfaces to be coated shall be less than 30 mg/m^2 (as NaCl) according to Bresle conductimetric method, or an equally recognised method
Thermal and hygrometric conditions	Air humidity ≤ 85% and steel temperature ± 3°C above the dew point during blast cleaning and coating application operations
Comments to coating system 1) Light coloured coatings are recommended. Tar containing coatings are dark. If coal tar epoxy is used the epoxy to tar ratio shall not be less than 60 to 40. 2) The selection of a recognised coating may depend on the type of compartment and it's function. 3) One stripe coat to be applied prior to or after each full coat on edges, welds and in areas where spraying may not be fully effective. Stripe coating shall always be applied by brush. 4) Nominal dry film thickness shall follow the "90/5 rule" defined as follows: - The average DFT based on measurements shall always be equal to or larger than the NDFT. Up to 5% of the area (measured points) may have a thickness between 100% and 90% of the NDFT, but the measured dry film thickness shall always be larger than 90% of the NDFT. - The measured DFT shall not exceed the maximum dry film thickness defined by the paint manufacturer or as specified by the owner. 5) Only applicable for a reasonable amount of damages. Otherwise the basic surface preparation to be re-applied.	

Table A-2 External hull: Alternative coating systems

Allocation	*Coating type*	*Total average DFT microns*	*Number of coats*
External hull, under water including boot-top area up to ballasted water line[1)]	Abrasion resistant Epoxy or Aluminium pigmented Epoxy or other Epoxy anticorrosive + Anti-fouling paint[1)]	300 - 450 250 - 350	2 - 3 2 - 3
	Epoxy anticorrosive Aluminium pigmented Vinyl Anti-fouling paint[1)]	200 - 300 100 250 - 350	1 - 2 1 2 - 3
External hull, Adjacent to waterline in a zone of about +/- 2 m	Epoxy or Polyester based glass flake or glass fibre reinforced[2)]	600 - 1500	1 - 2
	Abrasion resistant Epoxy or Aluminium pigmented Epoxy or other Epoxy anticorrosive	300 - 350	2 - 3
External hull, above ballasted water, and deck, deckhouse, superstructure	Zinc Ethyl Silicate or Zinc Epoxy Epoxy Polyurethane, Acryl polyurethane or Polysiloxan topcoat	50 200 - 300 50 - 100	1 1 - 2 1
	Zinc Ethyl Silicate or Zinc Epoxy Polysiloxan[3)]	50 200 - 300	1 2
	Epoxy Polyurethane, Acryl polyurethane or Polysiloxan topcoat	250 - 300 50 - 100	2 1

Note:

1) The benefit of applying an antifouling needs to be evaluated.
2) To provide a flexible heavy duty coating with resistant to some mechanical impact on the hull in a zone around the water line may be considered e.g. glass flake reinforced epoxy 500 microns DFT.
3) Polysiloxan may be applied in thicker coats. Consequently, a higher film thickness may be achieved with a reduced number of coats.

Table A-3 Basic coating system: Ballast tanks and internal voids

Allocation	*Coating type*	*Total average DFT microns*	*Number of coats*
Ballast tanks and voids exposed to seawater	Epoxy based (pure epoxy or modified epoxy) or other recognized hard coating	300 - 400	2 - 3

Table A-4 Basic coating system: Oil tanks and miscellaneous areas

Allocation	*Surface preparation*	*Coating type*	*Nominal DFT microns*	*Number of coats minimum*
Oil cargo tanks	Sa 2.5	Epoxy based or other qualified hard coating	300 - 400	2 - 3
Fresh water tanks	Sa 2.5	Epoxy	200	2
Product tanks	Sa 3	Epoxy	300 - 350	2 - 3
		Phenolic Epoxy	300 - 350	2 - 3
		Zinc silicate	75 - 100	1
Accommodation and engine rooms	Sa 2 - St 3	Alkyd, etc.	100 - 150	2
Underneath thermal insulation on tank top or inner bottom plate	Sa 2.5	Epoxy	300	2
Void spaces (except dry, sealed-off compartments)	Sa 2.5 - St 3	Epoxy based	200 - 300	2
Exposed decks[1)]	Sa 2.5	Epoxy based with topcoat	300 - 350	2 - 3
Areas with restricted access for visual inspection and areas with restricted space for fitting of anodes or areas suffering from both corrosion impact and wear	Sa 2.5	Thermally sprayed aluminium (99.5 Al or Al5Mg9	200	[2)]

1) In walkways, escape routes a non skid epoxy should be used (particles in non skid areas should be 1 -5 mm).
2) See NORSOK M-501 coating system No. 2.