IMO Resolution MSC.288(87) / MSC.215(82) compliant coating

Marine Paint Manual

Issue date : November 2017
TDS Identification No. : 14-10COT

NOA 60 HS-LT

A superior grade pure epoxy with excellent abrasion resistant properties designed in full consideration of health & safety and environmental issues. The coating is suitable for crude oil tanks, marine ballast tanks, void spaces etc., land based storage tanks, and industrial storage facilities.
The coating is fully compliant with IMO Resolution MSC.288(87) and MSC.215(82). It is designed to provide excellent drying properties and workability under low temperature.

(1) Buff in color --- SI paint
The coating is distinguished by its unique and patented Self-indicating (SI) technology that enables the applicator to visually confirm that the correct film thickness has been applied by checking the color development from Lucent to Buff during the application process.
The full color is realized only when the correct dry film thickness has been applied, therefore any areas of low film thickness can easily be detected by visual inspection.

(2) Gray, Red Oxide in color --- Non-SI paint

【 Product Data 】

Suitable Use	Anti-corrosive coating for crude oil tanks, water ballast tanks, void spaces etc.									
Type	Pure Epoxy									
Ref. No.	LTC									
Color	[SI] Buff, Lucent (Lucent is a contrasting color.) [Non-SI] Gray, Red oxide									
Gloss	Flat									
Volume Solids	75 ± 2% (ISO3233:1998)									
Dry Film Thickness	320 μm by two (2) coats									
Approx. Wet Film Thickness	427 μm									
Theoretical Coverage	0.317 Kg / m^2 0.213 L / m^2 (160μ m)									
Specific Gravity	BASE : 1.55 ~ 1.65 HARDENER : 0.93 ~ 1.03 Mixed paint : 1.44 ~ 1.54									
Drying Time	Surface Dry	4 hours	(-5℃)	2 hours	(5℃)	$1^1/_2$ hours	(10℃)	30 minutes	(25℃)	
(DFT 160 μm)	Dry Hard	70 hours	(-5℃)	24 hours	(5℃)	18 hours	(10℃)	10 hours	(25℃)	
Interval before Overcoating	Min.	70 hours	(-5℃)	24 hours	(5℃)	18 hours	(10℃)	10 hours	(25℃)	
(by self)	Max.	12 days	(-5℃)	10 days	(5℃)	7 days	(10℃)	4 days	(25℃)	
Minimum Time before cargo loading / ballasting		14 days	(-5℃)	10 days	(5℃)	7 days	(10℃)	4 days	(25℃)	
Min. DFT	80 μm Film thickness shall be controlled as close as NDFT which should be evaluated by the 90 / 10 rule in accordance with PSPC 2.8.									
Max. DFT	1,800 μm Maximum dry film thickness is total thickness of coating systems.									

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【 Surface Preparation 】

Steel Preparation	Use in accordance with our standard painting manual. Where necessary, remove weld spatter, smooth weld seams and remove sharp edges by rounding to a minimum radius of 2mm or subjecting to three pass grinding technique or at least equivalent process.
Surface Cleaning	All surfaces to be coated should be clean, dry and free from contamination. High pressure fresh water wash or fresh water wash, as appropriate, and remove all oil / grease, soluble contaminants and other foreign matters. Water soluble salts limit equivalent to NaCl : ≦50 mg / m2 of sodium chloride. Dust quantity rating "1" for dust size class "3","4" or "5". Lower dust size classes to be removed if visible on the surface to be coated without magnification. (ISO8502-3:1993)
Shop Primers	*<u>Approved shop primers,</u> compatible with NOA60HS-LT, must be applied in accordance with PSPC MSC.288(87) and MSC.215 (82) to a minimum standard of Sa $2^1/_2$ (ISO 8501-1 :2007) and over blasting profile of 30 - 75 µm (ISO8503-1/2:1988)* *The shop primer which has passed a prequalification test shall be cleaned by sweep blasting, high-pressure water washing or equivalent method.* *Welding part, corroded and damaged area to the shop primer must be cleaned by abrasive blasting to Sa $2^1/_2$ (ISO8501-1:2007)* *<u>Non approved shop primers</u> must be cleaned by abrasive blasting to Sa 2 (ISO8501 -1 :2007) and at least 70% of the intact shop primer should be removed.* *Welding part, corroded and damaged area to the shop primer must be cleaned by abrasive blasting to Sa $2^1/_2$ (ISO8501-1:2007)* *The surface profile on any areas where abrasive blasting has been carried out must be in the range of 30 - 75 µm (ISO8503-1/2:1988)*
Repair coating & touching-up	NOA60HS-LT can be sprayed immediately after repair coating. The specified max. overcoating interval shall be maintained. When exceeding the specified overcoating intervals, surface to be overcoated, should be roughened with power-tool before application.
After Erection	Erection joint welds and adjacent areas must be abrasive blasted to Sa $2^1/_2$ (ISO8501 -1 :2007) or power tool cleaned to St 3 (ISO8501-1 :2007). <u>For inner bottom</u> Damages, up to 20% of the area to be coated, shall be prepared with power tool to St 3 (ISO8501-1 : 2007). Contiguous damages over 25sqm or over 20% of the area to be coated, shall be abrasive blasted to Sa $2^1/_2$ (ISO8501-1:2007). <u>For underdeck</u> Damages, up to 3% of the area to be coated, shall be prepared with power tool to St 3 (ISO8501-1 : 2007). Contiguous damages over 25sqm or over 3% of the area to be coated shall be abrasive blasted to Sa $2^1/_2$ (ISO8501-1:2007).

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【 Application 】

Mixing	Material is supplied in two components as a unit. Mix a complete unit in the proportions supplied. Once the units has been mixed it must be used within the specified pot life. (1) Agitate BASE with a power agitator. (2) Combine HARDENER with BASE and stir thoroughly with power agitator.		
Thinner	NIPPON MARINE THINNER 600 Max. allowable addition : 20% by weight.		
Application Method	Airless Spray	Tip range	: 0.53 ~ 0.79 mm (ex. GRACO 521 - 531, 621 - 631)
		Fan angle (For T/U)	: 45° ~ 55° 30° ~ 35°
		Output pressure	: 150 ~ 220 Kg / cm^2
	Brush / Roller	For touching up small areas and stripe-coating	
Mixing Ratio by Weight	BASE 88 / HARDENER 12		
Pot Life After Mixing	16 hours (-5℃) 9 hours (5℃) 6 hours (10℃) $2^1/_2$ hours (25℃) Since pot life is shortened at high temperature, avoid mixing excessive amounts at one time under such conditions.		
Application Procedure	NOA60HS-LT shall be applied as a two coat system with two spraying and two stripe coats.		
Stripe Coating	Due to the high volume solids of the product, stripe coating to the full specified film thickness may be easily achieved in two applications. However, the correct technique as outlined below must be used: 1. The roller or brush should be fully charged with paint for each application. A roller shall be used for scallops, rat-holes etc., but not for edges and welds. 2. Light pressure on the tool will deposit more paint to the area - repeated heavy movements will tend to spread the paint more thinly and also aerate the paint - this should be avoided. 3. In the case of rough 'return welds' in scallops, the fully charged tool should be pulled into the weld and a 'side to side' motion employed to ensure that the cavities are fully coated. 4. Generally, stripe coating should only be necessary in areas that are difficult to coat by spray such as rough up-hand welds, return welds, free edges, scallops, drain holes, air holes, behind angles, stiffeners and brackets, etc. Although NOA60HS-LT exhibits very good flexibility properties over other epoxy products it is 'good painting practice' not to over-apply coatings on welds that will be subject to stress. Stripe coating should also be avoided in areas where multiple passes by spray may be applied, such as corners or welds on right-angled structure. NOA60HS can be sprayed immediately after stripe coating. The specified max. overcoating interval shall be maintained.		

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【 Ambient Condition for Application 】

Ambient condition	Max relative humidity : 85% Min. steel temperature above Dew point : 3 ℃ Applicable ambient temperature : -5 ~ 25℃ Applicable surface temperature : 0 ~ 50℃

【 Unit Size 】

Japan : 20kg (BASE 17.6kg, HARDENER 2.4kg)
Worldwide : 16L (BASE 13.1L, HARDENER 2.9L)
Package may vary from country to country.

【 Flash Point 】

25℃

【 Shelf Life 】

BASE : 12 months under 25℃
HARDENER : 12 months under 25℃

【 ID Code 】

Buff BASE : HFV358C
Gray BASE : HFV637C
Red Oxide BASE : HFV143C
HARDENER : HFL404C

【 Safety 】

Take precautions to avoid skin and eye contact (i.e. gloves, goggles, face masks, barrier creams etc.)
Proper ventilation and protective measures must be provided during applications and drying to keep solvent vapor concentrations within safe limits.
Prior to use, obtain, consult and follow the SDS for this product concerning health and safety information.

＜Note＞

1) The information contained in this sheet is liable to modification from time to time in light of experience and our policy of continuous product development.
2) Store the paints in paint store.
3) Discoloration (blackening) may occur on the surface due to sulphide in ballast water / sludge. Its anti-corrosive performance is not adversely affected by the discoloration.
4) Prior to use, obtain, consult and follow the SDS of this product.
5) When amnient temperature is over 20 ℃, NOA60HS is recommended.