

NOA

Nippon Paint Marine
Optimised and Advanced
Anticorrosive Coating System



SELF-INDICATING EPOXY COATING



NIPPON PAINT MARINE

PRODUCT OVERVIEW

SEEING IS BELIEVING

NOA, unique, Self-Indicating (SI) technology to ensure the correct paint thickness is applied every time. Since its introduction in 1998, NOA has been improving application accuracy and performance on ships, extending their operational life.

The NOA series is designed to meet the anticorrosive needs of different areas of a ship. Our high-performance, anti-abrasive epoxy coatings feature pigments with varying opacities based on their thickness. This simple yet effective system allows owners and shipyards to visually confirm proper application thickness, crucial for optimal protection, especially on edges and corners where conventional measurement is challenging.

NOA's patented SI technology allows painters to visually judge if the desired film thickness is achieved during application. This innovation not only enhances coating quality but also reduces working time and costs, addressing the increasing demand for coatings and the decreasing availability of skilled applicators.

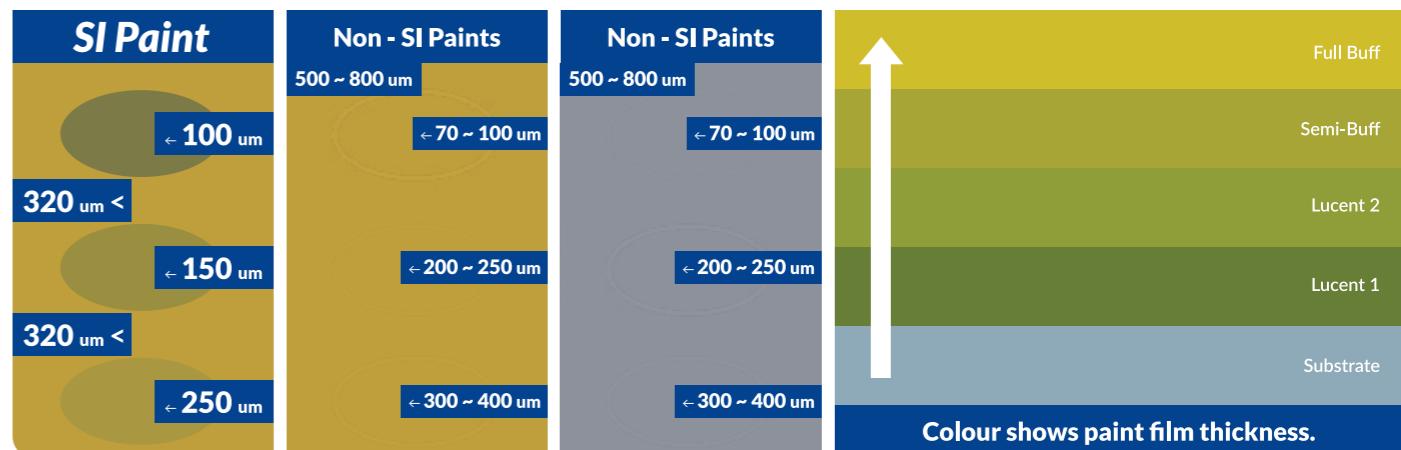
At Nippon Paint Marine, we are committed to designing coating systems that enhance performance, simplify processes, and protect the environment. NOA embodies this commitment by offering a reliable solution for maintaining anticorrosive quality, improving the working environment, and contributing to the long-term durability of ships.

SELF-INDICATING (SI) TECHNOLOGY

NOA SI Panel

Nippon Paint Marine's Self-Indicating (SI) technology is unique with its concept: "Colour shows paint film thickness." By formulating carefully selected colour differences and opacity, NOA enables painters to easily judge if the specified film thickness has been achieved during application. Nippon Paint Marine's innovative technology ensures that the correct paint thickness is applied every time, enhancing accuracy and performance.

The images below compare SI paint panels with non-SI paints, clearly showing that only SI paint can visually indicate areas with insufficient thickness.



Example of Application

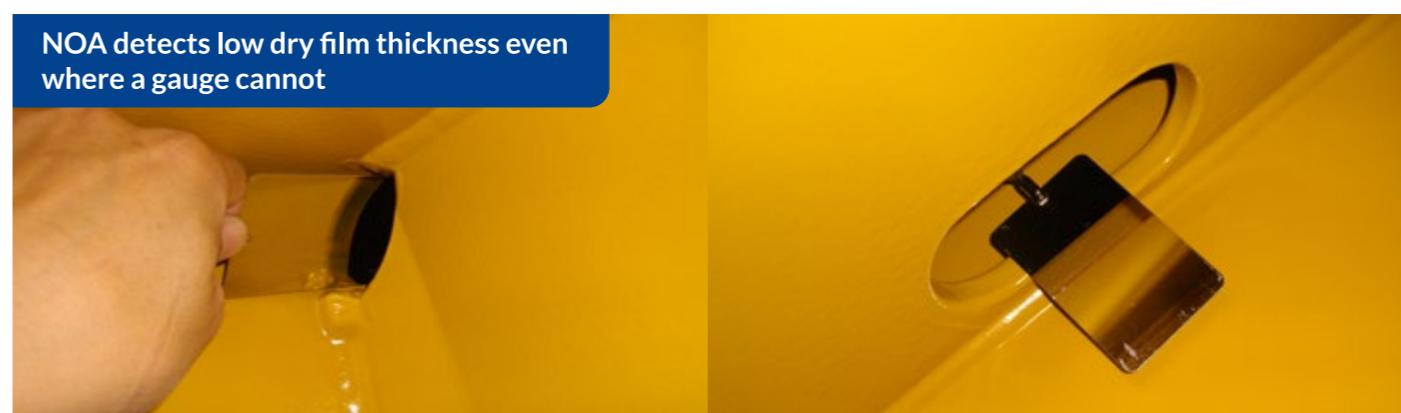
With SI function, sprayers have an easier time spraying and judging the correct film thickness. NOA has much better workability than conventional anticorrosive coating.



Coverage of Corners and Edges

With NOA applications, the paint film thickness can be visually judged even on edges and corners while this is not possible with conventional anticorrosive coating. Ensuring proper coverage and thickness on edges and corners is essential for the long-term protection of the ship. In these spaces, it's often difficult or impossible to check the thickness with a thickness gauge, NOA can show you. Seeing is Believing.

NOA detects low dry film thickness even where a gauge cannot



KEY FEATURES & BENEFITS



For Sprayers

- NOA simplifies the spraying process, allowing sprayers to easily achieve and judge adequate film thickness.
- Enhances workability compared to conventional anticorrosive coatings.
- Reduces the need for touch-ups after spraying.
- Improves painting efficiency with fewer coating layers and shorter drying times.



For Inspectors

Using NOA simplifies the inspection process, even in small areas such as edges and corners, and significantly shortens the inspection time.

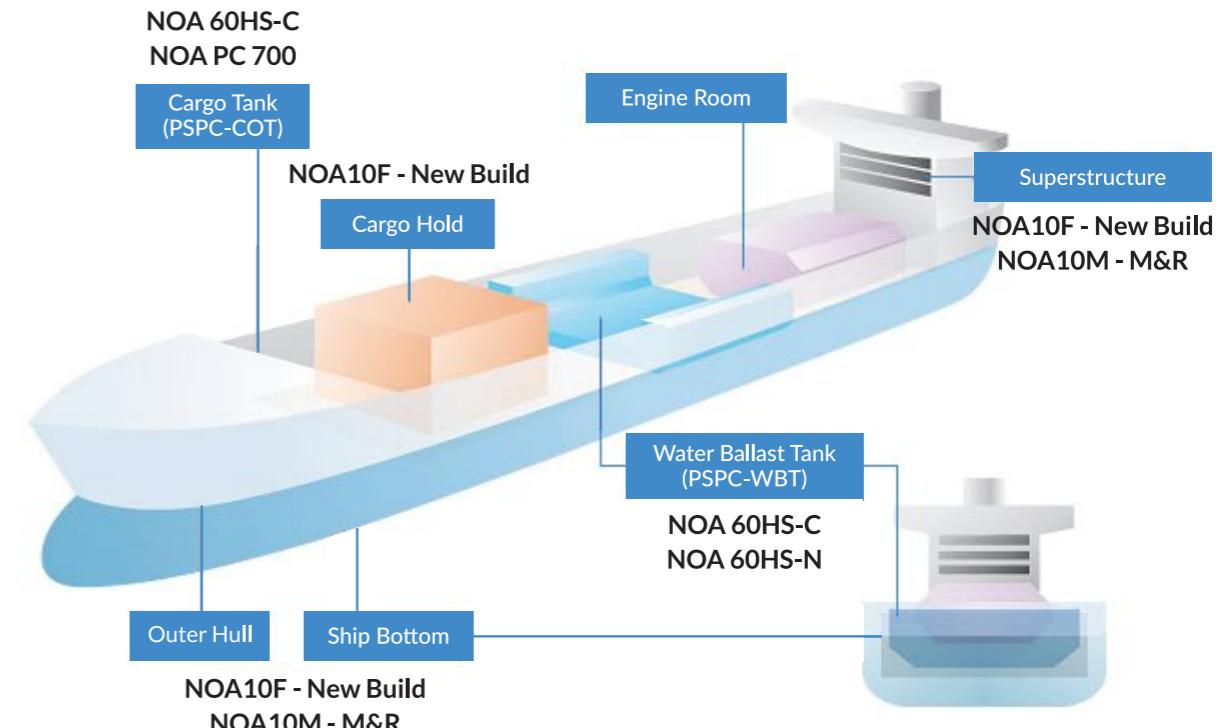


For Ship Owners & Shipyards

NOA helps to maintain the coating quality as sprayers can spray out with optimised thickness in a well-covered condition.

NOA SERIES BY APPLICATION AREA

The NOA series can be used for a wide range of purposes on the vessel, meeting all the requirements of each vessel area onboard.

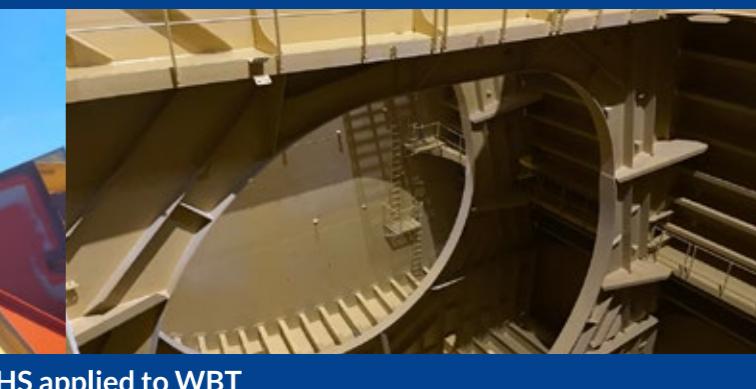


Please consult with Nippon Paint Marine's sales representative regarding the grain certificate, coating system for the cargo hold.

NOA Series Applied to Various Areas



NOA 10M applied to outer hull



NOA 60HS applied to WBT

PRODUCT TECHNICAL INFORMATION

	NOA 10 F RHEO	NOA 10 M ※20M is available in EU	NOA PC 700	NOA 1000 FWT SF	NOA FWT
Type	Epoxy	Epoxy	Phenolic Novolac Epoxy	Pure Epoxy	Pure Epoxy
Technology	Self-Indicating Technology				
Features	Extra smoothness + Low friction efficiency	1 coat system + Fast curing	Strong chemical resistance	Potable water tank (Solvent-free)	Potable water tank (Solvent type)
Certificate			IMO PSPC-COT	BS6920-1:2000/ 2014	BS6920-1:2000/ 2014
Outer Hull	★	★			
Water Ballast Tank					
Crude Oil Tank			★		
Cargo Tank			★		
Potable Water Tank				★	★
Solid Volume (%)	63 ± 2	63 ± 2	75 ± 2	98 - 100	69 ± 2
Dry Film Thickness	125 - 250 µm	250µm	100 - 150 µm	300µm	75 - 125 µm
Theoretical Coverage (m²/L)	3.60 (175µm)	2.52 (250µm)	7.50 (100µm)	3.33 (300µm)	5.52 (125µm)
Colour	[SI] Buff	[SI] Buff	[SI] Buff	[SI] Buff	[SI] Buff
※Non-SI colours are not standard stock			[Non-SI] Grey Red Oxide		[Non-SI] Blue White Cream

NOA FOR OUTER HULL

NOA 10M significantly streamlines the painting process by providing a 1-coat primer system, allowing for direct antifouling application without the need for a tiecoat on the ship bottom. Additionally, it offers the flexibility to be applied to the entire outer hull without the requirement for separating painting areas.

Process Productivity with Painting Scheme

NOA10M System			Min. Interval
1st Coat	Epoxy Primer	NOA 10M	4H
2nd Coat	Antifouling	FASTAR	4H
3rd Coat	Antifouling	FASTAR	12H (before flooding)

General System			Min. Interval
1st Coat	Epoxy Primer	E-Marine A/C	7H
2nd Coat	Epoxy Tiecoat	E-Marine A/C II	5H
3rd Coat	Antifouling	FASTAR	4H
4th Coat	Antifouling	FASTAR	12H (before flooding)

*Min. interval is min. overcoating intervals at each coat (20 °C)

*The required number of antifouling is subject to change depending on operation condition.

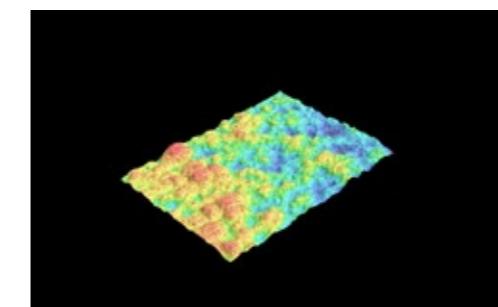
NOA 10 RHEO SYSTEM

Rheological Control is a special technology concerning flow of coatings. Nippon Paint Marine's teams developed a special version of our epoxy anticorrosive and antiabrasive coating that forms a smoother film than normal epoxies. Slowing down the initial curing mechanism by special chemistry delivers significantly smoother film. This smoother film gives a lower initial surface roughness for our antifouling coatings to perform to its fullest potential.

Regular NOA System (1st + 2nd)



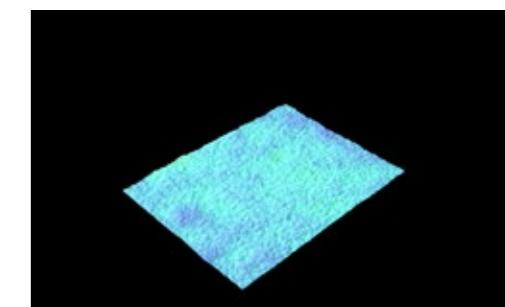
NOA 10F NOA A/C II H



NOA Rheo System (1st + 2nd)



NOA 10F Rheo NOA A/C II Rheo H



NOA FOR WATER BALLAST TANKS

NOA 60HS, a superior high-grade pure epoxy anticorrosive coating, is designed for application in ballast tanks, crude oil tanks, and voids. NOA 60HS provides long-lasting anticorrosive protection. Equipped with Self-Indicating (SI) technology, NOA 60HS provides precise coating thickness application, particularly crucial for narrow and confined spaces. Since its introduction in 1998, NOA 60HS has been applied to more than 2,000 vessels worldwide.

NOA 60HS applied in Water Ballast Tanks

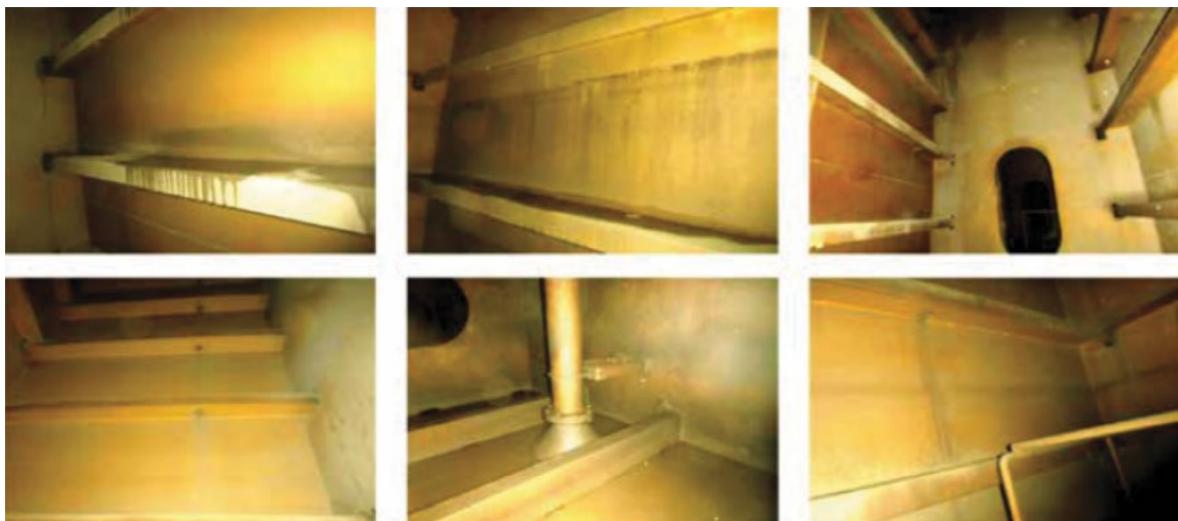
Below both references show that NOA 60HS has excellent anticorrosive performance after a long period of service. No corrosion was found even on critical areas.

Reference #1 The photos below were taken of systems applied as a single coat (pre-PSPC)

After 120 months (**10 years**) service

The irregular colours seen on the images are surface staining.

Vessel Type: Chemical Tanker
Tonnage: 26,180 DWT
Coating System: NOA 60HS 250um x 1 coat



Reference #2 The photos below were taken of systems applied as a single coat (pre-PSPC)

After 158 months (**13 years**) service

Vessel Type: Chemical Tanker
Tonnage: 26,180 DWT
Coating System: NOA 60HS 250um x 1 coat



NOA FOR CARGO TANKS

	NOA 60 HS-C	NOA PC	NOA PC700
Type	Pure Epoxy	Pure Epoxy	Phenolic Epoxy
Recommended use / Speciality	Excellent protection to crude oil. It conforms to both PSPC-WBT and PSPC-COT.	Excellent resistance to any type of oil products, crude oil, benzene, fats and gray & black water, applied as a two-coat system.	Excellent resistance to crude oil, product oils, wastewater, mud, brines and seawater. It conforms to IMO/PSPC regulations for cargo oil tanks (COT).
IMO*PSPC** for Cargo Oil Tank (COT) Regulation complied	★	-	★

NOA Cargo Resistance List

Cargo List	NOA 60HS-C	NOA PC	NOA PC 700
BENZENE	LA 1	LA 1	A
BUTYL ETHER	A	A	A
CAUSTIC SODA 50%	LA 2	LA 2	A
CRUDE OIL	A	A	A
ETHYLENE GLYCOL	A	A	A
GASOLINE	A	A	A
MTBE	A	A	A
PALM OIL	LA 5	LA 5	A
STYRENE	LA 1	LA 1	A
SUNFLOWER OIL	LA 5	LA 5	A
TOLUENE	A	A	A
XYLENE	A	A	A
BIO FUELS	LA 5	LA 5	A
METHANOL	NA	NA	LA 1,8
ETHANOL	NA	NA	LA 1,8
BUTANOL	LA 1,8	LA 1,8	A

A : Acceptable
LA : Limited Acceptance

LA 1	It is aggressive to the coating system. Therefore, the first loading (after fresh coating has been applied) should be avoided. For at least 1 month after tank coating, only products rated as " A " should be loaded in the tanks. These LA 1 products shall not be loaded either individually or in combination for any consecutive period totaling more than 1 month. LA 1 products should not be reloaded within 1 month.	LA 5	The free fatty acid content of oil and fats, such as animal / vegetable oils, and molasses, must not exceed free fatty acid (FFA) value 20.0. If the period of carriage is prolonged, and the FFA value is close to the maximum permitted, it is recommended that heating is restricted to loading and unloading only. When oils and fats are contaminated with water, they become more aggressive due to an increased FFA value. For this reason, moisture and insoluble impurities should not exceed the content of 1%.
LA 2	After carrying products rated as LA 2) the tanks should be thoroughly cleaned to remove all traces ensuring that no residue of diluted LA 2) products are left in the tanks.	LA 8	The paint film will be attacked by alcohol with any moisture present. Such products must therefore be free from moisture and carried in completely dry tanks which are protected against water leaks. Water content should not exceed 1%.

NOA PC 700 applied to Cargo Oil Tank



50,591 DWT CHEMICAL / PRODUCT TANKER

NOA PC 700 applied to Cargo Oil Tank



50,781 DWT CHEMICAL / PRODUCT TANKER

Nippon Paint Marine has been producing marine coatings since the 1880s and is widely regarded as a pioneer in the development of hull protection and antifouling paints.

Nippon Paint Marine is certified to ISO 14001 environmental standards and manufactures coatings in line with UN Sustainable Development Goals.



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