

The Ultimate Coating System for Your Ships

NOA

Coating Thickness Measured by the Painter's Eyes

NOA Website |||||

<http://www.nippe-marine.co.jp/noa/>



 **NIPPON PAINT MARINE**

NIPPON PAINT MARINE COATINGS believes that one of our most important roles as a paint manufacturer is to offer coating systems that improve coating performance, simplify the painting process and protect the environment. This is more and more important with the increase in the areas requiring coating and the reduction in availability of skilled applicators.

To meet these needs we have developed an OPTIMISED and ADVANCED coating system "NOA". This new and patented technology offers the opportunity to:—

IMPROVE COATING QUALITY

REDUCE WORKING TIME AND COST

IMPROVE WORKING ENVIRONMENT

based on

SI TECHNOLOGY

SELF INDICATING (SI) TECHNOLOGY enabling VISUAL JUDGEMENT OF FILM THICKNESS

INTEGRATION OF PRIMERS

REDUCED FREQUENCY OF COATS

TAR FREE

EXISTING SYSTEM

FIND OUT DEFECTIVE AREAS BY THICKNESS MEASUREMENT



SI TECHNOLOGY

VISUALLY JUDGE IF APPROPRIATE FILM THICKNESS(WET/DRY) IS ACHIEVED



PAINTER=QUALITY CONTROLLER

Product Carrier 99,990M.T.



—NOA was applied on whole outer hull and BWT—

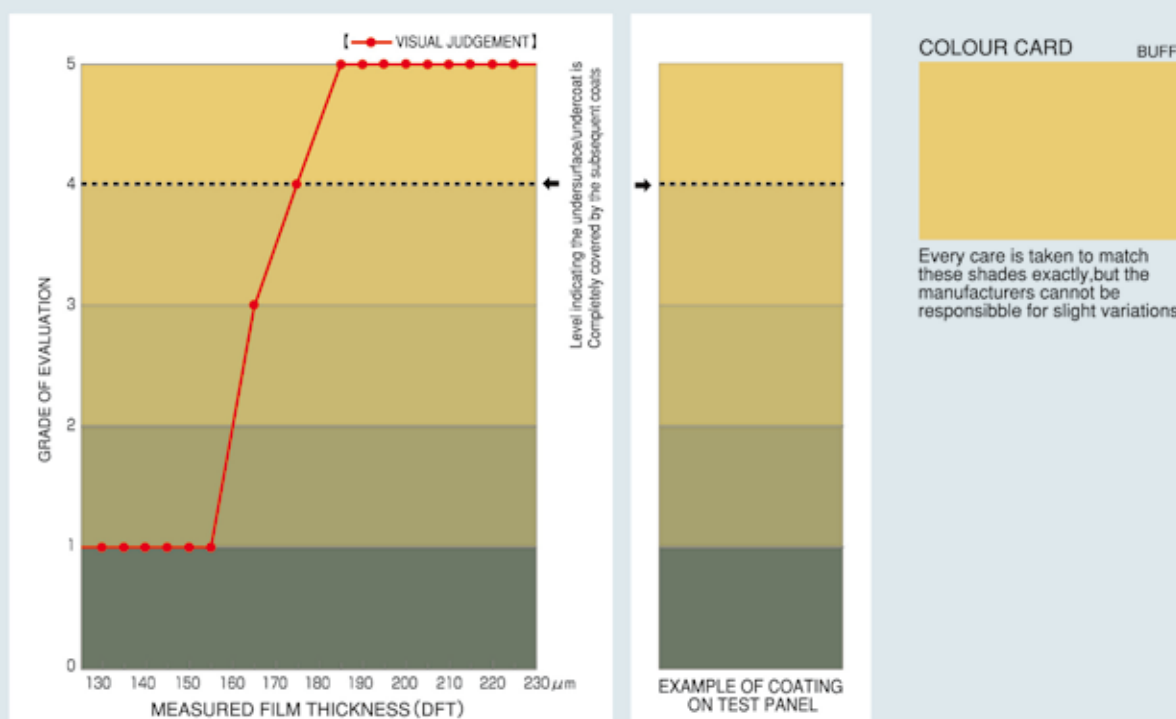
SI (Self Indicating) technology enables a painter to visually judge if the appropriate film thickness (wet/dry) has been achieved during application. In other words, NOA system is a film thickness controller which shows the applicator that the correct film thickness has been achieved.

SI TECHNOLOGY

Utilizing carefully selected colour differences and opacity, NOA coatings enable a painter to visually judge if the designed film thickness is achieved during application.

RELATIONSHIP BETWEEN VISUAL EVALUATION AND MEASURED DRY FILM THICKNESS

The following graph shows the correlation between the visual evaluation of film thickness and the measured dry film thickness in the 175 μ m type coating.

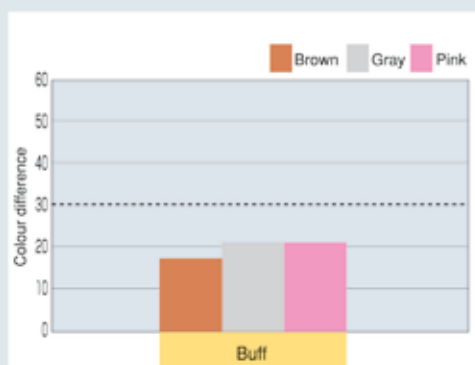


UTILIZATION OF COLOUR DIFFERENCE

1) Colour difference between blasted/shopprimed surface and first coat of NOA



2) Colour difference between 1st and 2nd coats



Buff was selected as being the most suitable colours for NOA coatings SI technology.

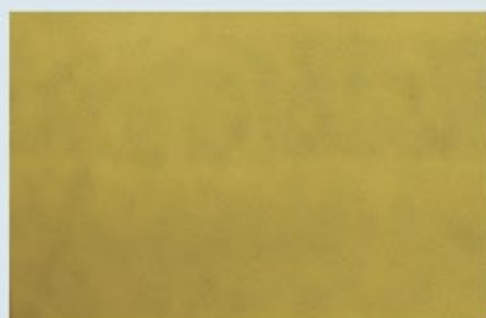
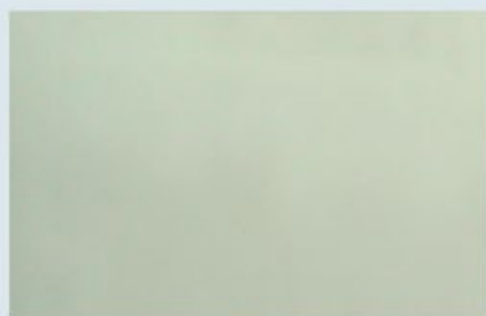
This colour is applicable to the other shop primer colours including gray(ex:NIPPON CERAMO's Green and Brown)

EXAMPLE OF APPLICATION

ACTUAL VESSEL



TEST PANEL



FEATURES

EFFECTS

BENEFITS



Under application of "NOA" in fully blasted area of outer shell.

SI TECHNOLOGY

Easy to judge visually if the necessary film thickness is obtained during application

Integration of primers (1~2 types)



Reduced Frequency of coats

Environmental

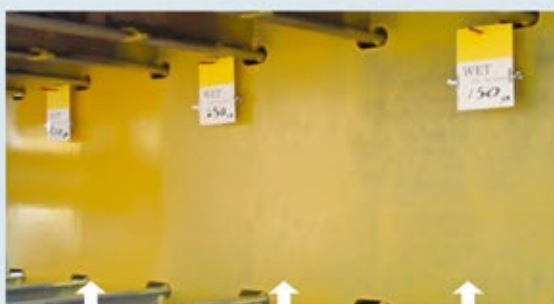
Reduce Waste

Low VOC

Tar Free



Sprayer can easily judge "see-through area" (not reached the specified film thickness).



Full buff colour

Semi-see-through

See-through

Improve coatings quality

- Easy to check the thickness visually
- Able to observe thickness during application
- Reduce defects in paint film caused by insufficient thickness
- Ensure specified film thickness

Reduce working time and cost

Direct

- Reduce painting work
- Reduce areas with excessive film thickness
- Reduce repainting work
- Reduce thickness measurement work
- Shorten inspection time

Indirect

- Reduce misapplication
- Simplify stock control
- Reduce Disposal Costs
- Reduce loss factors

For health and safety

- Light colour

SHIPOWNERS

- Simplify superintendents' working procedures
- Easier and safer inspection conditions
- Reduce defect areas
- Improve coating quality
- Reduce maintenance costs

SHIPYARDS

- Reduce labour
- Simplify application process allowing easier training of work force
- Realize visual check that correct thickness has been achieved during application (QA during painting)

Improve productivity at block stage/reduce construction period

- Improve working environment (tar free/light colour)
- Reduce material costs by :
1) Application with no excessive thickness
2) Simplified coating process limiting loss factors
- Reduce waste disposal cost

NOA was applied on : Whole Outer Hull and Outer Superstructure

12 Months after Construction

Tonnage : 4,651GT Type : Cement Carrier



24 Months after Construction



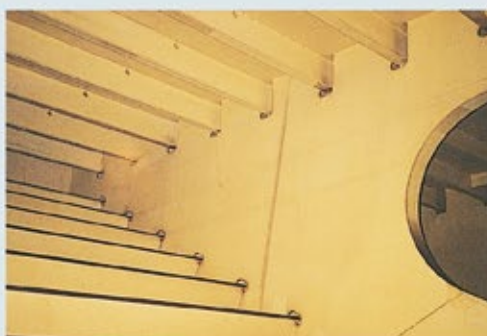
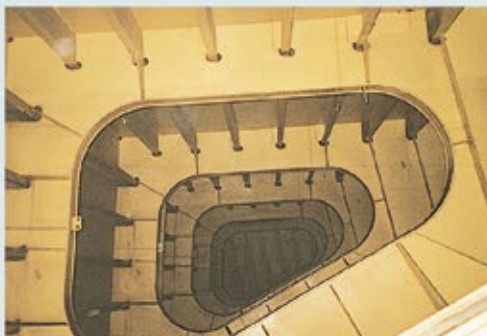
NOA was applied on : BWT

31 Months after Construction

Tonnage : 76,900DWT Type : Bulk Carrier

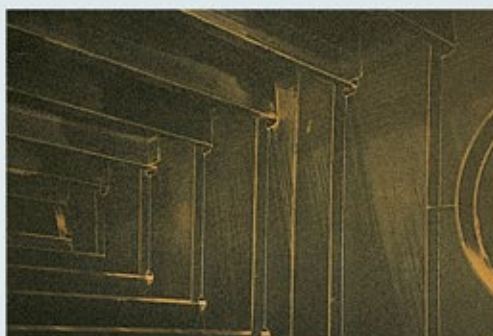
NOA Applied Area

Whole area is observable with an electric torch.



Coal Tar Epoxy Applied Area

Only a part is observable with an electric torch.



SAFETY PRECAUTIONS

This product is slightly more toxic than the other paints of ordinary use. Inhaling of the vapours and skin contact with the paint might cause poisoning and a rash. Therefore, when handling, please refer to the following precautions.

HANDLING AND STORAGE OF OUR PRODUCTS

- 1 Application must be conducted in an area equipped with local air exhausters and free from flame.
- 2 Take the preventive measures to electrostatic discharge.
- 3 While painting and drying, ventilate thoroughly and avoid inhaling the fumes or gases. During the application outdoors, seal the air vent etc. of houses in neighbourhood to keep the fumes or gasses out.
- 4 When handling, protect your skin wearing, for example, organic gas protection mask, air-supplied respirator, hood, safety glasses, long-sleeved work clothing, towels, gloves, aprons, and so on.
- 5 After the application, rinse your mouth and wash hands thoroughly so that the paint and so on are removed.
- 6 Keep the container closed and store at temperatures below 40°C.
- 7 Soak the paint dust and slag in water until they are disposed.
- 8 Store any product in the place out of children's reach.
- 9 Avoid suspending of the container. If necessary, use an appropriate device and lift it vertically.
- 10 Do not use the products for improper purposes.

EMERGENCY PROCEDURE

- 1 If a fire involving paint does occur, use CO₂, foam or dry chemical extinguisher.
- 2 If the paint and so on get in your eyes, wash off with water and take medical advice from a doctor immediately.
- 3 If the paint splashed on your skin, wash off with soap and water. When you feel pain or find any change in the appearance of the skin, consult a doctor immediately.
- 4 If you feel sick after inhalation of fumes, gases etc., lie quietly and, when necessary, consult a doctor immediately.
- 5 If you swallow the paints by mistake, consult a doctor immediately.
- 6 If the contents spill out of the container, wipe it with a piece of cloth and soak in water.

WHEN DISPOSING, TREAT THE WASTE MATERIALS AS INDUSTRIAL WASTES.

For detailed information, please refer to the Safety Data Sheet (TSDS). Please consult us beforehand when you are going to export them.

—24 Months of Service after Delivery—



NOA's coating film keeps damage and rust, caused by scratch of chains, off from the surface



NOA's anticorrosive property works well on the seamline

—NOA Applied Vessels—

