APPLICATION INSTRUCTIONS
For product description refer to product data sheet

HEMPADUR* 35500
(Formerly HEMPADUR 355D)

CURING AGENT 95500

Scope:

These Application Instructions cover surface preparation, application equipment, and application details for HEMPADUR 35500.

Surface preparation:

New steel: Remove oil and grease, etc. with suitable detergent. Remove salt and other contaminants by (high pressure) fresh water cleaning. Abrasive blasting to Sa 2½. After blasting, clean the surface carefully from abrasives and dust. For temporary protection, if required, use suitable shopprimer. All damaged shopprimer and contamination from storage and fabrication should be thoroughly cleaned prior to final painting.

As secondary surface preparation it is recommended to carry out abrasive spot-blasting of welds, burned and damaged shopprimer and abrasive sweep blasting of intact shopprimer.

Depending on conditions, mechanical cleaning of welds, burned and damaged shopprimer to minimum St 2 and light grinding of intact shopprimer by rotating discs may also be possible - **avoid polishing of the surface.**

Maintenance: Remove oil and grease, etc. with suitable detergent. Remove salt and other contaminants by (high pressure) fresh water cleaning. Remove all rust and loose material by wet or dry abrasive blasting or for minor areas, power tool cleaning to minimum St 2. Feather edges to sound and intact areas. After wet abrasive blasting, hose down the surface by hot water rinsing ("steam cleaning"). Touch up bare spots to full film thickness when the surface has become visually dry. After wet abrasive blasting it is recommended to use HEMPADUR 15570 as a primer.

On old pit-corroded surfaces, excessive amounts of salt residues may call for dry abrasive blasting, high pressure fresh water hosing, drying, and finally, dry abrasive blasting again, alternatively ultra-high pressure water jetting. In the case of water jetting, it is recommended to use HEMPADUR 15570 as a primer.

Application equipment:

Being a high-solid, high-viscosity material, HEMPADUR 35500 requires that special measures are taken during application.

Standard heavy duty airless spray equipment:

Pump ratio:	min 60:1 (see Note below)
Pump output:	min 12 litres/minute (theoretical)
Input pressure:	min 5 bar/70 psi
Spray hoses:	max 35 metres/115 feet, 3/8" internal diameter
	max 5 metres/16 feet, 1/4" internal diameter

Regular surfaces:

Nozzle size:	.021" through .023"
Fan angle:	40-60°

Complicated surfaces:

Nozzle size:	.019" through .021"
Fan angle:	40°

Note: Avoid the use of a suction hose. Use an interchangeable pipe, which makes it possible to remove cured paint.

Mixing:

Stir CURING AGENT 95500 well before mixing with BASE. Mix the entire content of both packings, do not subdivide. Continue mixing until a complete uniform appearance is achieved.

Pot life:

When measured under standard conditions, the pot life is one hour at 20°C/68°F. However, for a 20 litres/5 US gallons mix, the heat developed by the chemical reaction between BASE and CURING AGENT is so intense that the corresponding practical pot life is **reduced**.

Therefore:

- Irrespective of equipment, use the paint immediately after mixing. At a normal application speed, the 20 litres/5 US gallons are used in approx. 10 minutes.

- Keep an eye on the **paint** temperature frequently, for instance by touching the can with the hand. If it feels more than hand-warm, discard the paint and flush the equipment immediately irrespective of the type of spray equipment.

Paint temperature:

If the in-can temperature is below approximately 20°C/68°F, viscosity will be too high for application. If the paint temperature at the time of mixing is 25°C/77°F or higher, a substantial risk of reduced pot life and curing in can/spray equipment exists.

When working in warm, sub-tropical/tropical climates, a refrigerated container may be used to keep the paint material (base paint and curing agent) cool during application or to cool down paint material which was stored under too warm conditions prior to application

When working at low temperatures, the paint material (base paint and curing agent) must be heated to the recommended paint temperatures by suitable methods eg by keeping the paint material in temperated storage containers, preheating of drums in temperated water baths or direct heating with a suitable heating device.

Stripe coating:

Edges, corners, manual welds, and places difficult to cover properly by spray application should be stripe coated either before or after spray application.

One or two stripe coats will usually be necessary, but depends on the actual conditions. Rearsides of stiffeners, bulbnoses, etc. will typically need application by spray with fine, narrow-angled nozzles as an extra process.

Recoating intervals:

Maximum recoating interval: The maximum recoating interval is 48 hours (independent of actual air and surface temperatures) between the stripe coat and the full coat or between the first and second full coat if a too thin first coat has to be made good.

Application of an extra coat is only relevant if the first coat has been applied in an insufficient film thickness. To compensate for possible pinholes in the first, too thin coat, the extra coat is to be applied as a full coat in a dry film thickness of minimum 200 micron/8 mils, however, in ballast tanks minimum 300 micron/12 mils.

If the maximum recoating interval is exceeded, roughening of the surface is necessary to ensure intercoat adhesion.

In every case, the surface must be absolutely clean and dry and free from any kind of exudations. To remove possible exudations, see remarks under "Water resistance" below.

Curing table:

The following curing times apply:

Steel temperature	10°C/50°F	15°C/59°F	20°C/68°F	25°C/77°F	30°C/86°F	35°C/95°F	40°C/104°F
Fully cured	18 days	11 days	7 days	5 days	3½ days	2½ days	2 days
Initial curing	7½ days	5 days	3 days	2 days	1½ day	1 day	1 day

Filling of tanks:

Tanks should generally not be taken into use before HEMPADUR 35500 is fully cured (see above).

Exposure to ballast water may exceptionally take place after an "initial curing" time as listed above. However, it should be noted that in this case there is a certain risk of a reduced lifetime of the system depending on the actual curing conditions and later service conditions of the tank.

Water resistance:

HEMPADUR 35500 is resistant to light showers and condensation after an initial curing time as listed:

Steel temperature	10°C/50°F	15°C/59°F	20°C/68°F	25°C/77°F	30°C/86°F
Minimum time	60 hours	32 hours	24 hours	20 hours	15 hours

Note: HEMPADUR 35500 must not be exposed to water or high humidity between stripe coating and full coating respectively between full coating and any necessary second full coating as there is a certain risk of curing agent exudation which will hinder adhesion. If exudation is present on the surface this must be removed by very thorough cleaning. Cleaning should be carried out by hand-warm fresh water washing at a pressure of approx 60 bar. Such cleaning must not take place before the minimum curing time for obtaining water resistance as listed above has elapsed. Contact the nearest Hempel office for further details.

Ventilation during application:

Note: Dispite that HEMPADUR 35500 is produced without "added solvents", it gives off volatile compounds during application and drying which must be removed from the coated area by suitable ventilation in order to ensure proper film formation and curing.

The following ventilation is recommended during application and drying for full coating of tanks:

Size of tank:	Number of air shifts:
100 m³/3300 cub. feet	4-10 times per hour
400 m³/13300 cub. feet	2-5 times per hour
1000 m³/33000 cub. feet	1-3 times per hour
4000 m³/133000 cub. feet	1 time per hour

Safety precautions may require stronger ventilation than indicated above.

One litre undiluted HEMPADUR 35500 gives off in total 22 litres **vapour** of volatile matters until it is completely dry.

The lower explosive limit, LEL, is 0.7%.

Remarks:

Higher film thickness is recommended on areas with pittings.

Safety:

Handle with care. Before and during use, observe all safety labels on packaging and paint containers, consult HEMPEL Material Safety Data Sheets and follow all local or national safety regulations. Harmful or fatal if swallowed; immediately seek medical assistance if swallowed. Avoid inhalation of possible solvent vapours or paint mist, as well as paint contact with skin and eyes. Apply only in well ventilated areas and ensure that adequate forced ventilation exists when applying paint in confined spaces or when the air is stagnant. Always take precautions against the risks of fire and explosions.

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