

APPLICATION INSTRUCTIONS

For product description refer to the product data sheet

HEMPADUR* 35450

CURING AGENT 97400

Scope:

These Application Instructions cover surface preparation, application equipment, and application details for HEMPADUR 3545.

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 2½-3, ISO 8501-1:1988 and a roughness profile corresponding to Rugotest No. 3, BN 10a (Ra=12,5 micron), ISO Comparator Medium (G), Keane-Tator Comperator 3.0 G/S. After blasting, clean the surface carefully from abrasives and dust.

Pit-corroded surfaces (tank bottoms): Remove oil and grease with suitable detergent. Blasting to Sa 2, ISO 8501-1: 1988. Pittings on tank bottoms are often omega-shaped (typically in the case of chloride-induced corrosion) for which reason the following procedure is recommended:

After rough cleaning for dust and abrasives, the tank surfaces are to be thoroughly high pressure fresh water hosed. Let the water remain in the tank so that all pit corroded areas are covered by approx 5 cm/2" of water.

After 24 hours the water is removed by wet vacuum cleaning and the tank is dried. If needed, i.e. if there is still salt contamination to be found in the pits, the washing treatment has to be repeated. After cleaning, the surfaces are blasted to Sa 2½-3, ISO 8501-1: 1988, with a surface roughness profile corresponding to Rugotest No. 3, BN 10a. After blasting clean the surface carefully for abrasives and dust. Special care must be taken when cleaning the tank bottom.

Application equipment:

HEMPADUR 3545, being a high solids, high viscosity material, requires special measures to be taken at application.

Hot airless spray equipment:

Pump ratio:	min 45:1 (See Note below)
Pump output:	12 litres/minute (theoretical)
Input pressure:	min 6 bar/90 psi
Spray hoses:	max 30 metres/100 feet, 3/8" internal diameter max 5 metres/17 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°.

On the output side of the pump an electrically heated, explosion proof, high pressure, material heater is fitted. For instance GRACO Model No. 6.880-114, 2500 Watt, max. working pressure 312 Bar (4-1 safety factor) or similar equipment.

For many practical cases it may be necessary to raise the pump ratio to 60:1 or more, yet, the high output capacity of the pump must be maintained and the material heater must be fitted for higher working pressure.

Airless spray data are indicative and subject to adjustment.

Mixing:

Stir the CURING AGENT 97400 well before mixing with BASE 35459. Continue the mixing until a complete uniform colour is achieved.

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Paint temperature: In order to obtain the best application properties, the temperature of the paint must when mixed be 20-25°C/68-77°F. If the temperature of the paint exceeds 25°C/77°F it should be stored in cooled places (see pot life below).

Procedure for hot airless spray:

- a) Follow the pump supplier's instructions for the use of the heater.
- b) At surrounding temperatures below 10-15°C/50-59°F start by heating up the hoses by recirculation of THINNER 0845 or HEMPEL'S TOOL CLEANER 9961.
- c) Keep THINNER 0845 or HEMPEL'S TOOL CLEANER 9961 readily available for fast cleaning of the equipment.
- d) Start spraying immediately after proper mixing and mechanical stirring of BASE 35459 and CURING AGENT 97400.
- e) Adjust the heater to approximately 40°C/104°F and check this temperature at short intervals.
- f) The spraying should as far as possible run continuously. At any break longer than 2-3 minutes, switch off the heat and flush the equipment immediately and thoroughly with one of the solvents mentioned above under c).
- g) After finishing the application, switch off the heat and clean the equipment immediately with THINNER 0845 or HEMPEL'S TOOL CLEANER 9961. Continue the cleaning by re-circulation for at least 30 minutes.

Pit-corroded surfaces: In case of extensive pit corrosion (old tank bottoms) it is advisable to apply the first coat by brush. The coating must be worked well into all pits facilitating a good wetting of the steel and closing the porosities. The following coat(s) can be applied by brush as well as by airless spray (as per above) securing full covering of the uneven/rough surface.

Pot life:

When measured under standard conditions the pot life is 30 minutes at 20°C/68°F.

- 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 your hand. If it feels more than hand warm, discard the paint and flush the equipment immediately irrespective of type of spray equipment.

Stripe coating:

Edges, corners, uneven (manual) welds, and places difficult to cover properly by spray application should be stripe coated (touched up) either before or after the spray application. One or two stripe coats will usually be necessary, but depending on actual conditions.

Extra film thickness:

Extra thickness - extra coat(s) - may be necessary in case of severely pitted and/or where very high degrees of antiabrasive properties are needed.

RECOATING intervals:

Within a maximum of 90% Relative Humidity the following recoating intervals apply:

Steel temperature	10°C/50°F	15°C/59°F	20°C/68°F	25°C/77°F	30°C/86°F	40°C/104°F
HEMPADUR 3545 min	40 hours	27 hours	16 hours	11 hours	8 hours	5 hours
max	17 days	12 days	7 days	5 days	4 days	2 days

HEMPADUR 3545 should not be exposed to sunshine, water/condensation or any contamination before recoating. If necessary the surface is cleaned by vacuuming before recoating.

Curing table:

The following curing times apply:

Steel temperature	0C/°F	10/50	15/59	20/68	25/77	30/86	35/95	40/104
Fully cured		22 days	14 days	10 days	7 days	5 days	3½ days	3 days

Note: The above given temperatures are mean temperatures. Curing temperatures, however, should never be lower than 10°C/50°F.

Filling of tanks:

Tanks should generally not be taken into use before HEMPADUR 3545 is fully cured (see the previous page).

Ventilation during application:

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

Size of tank/void space	Number of airshifts	
100 m³/3300 cbft	approx.	4-10 times per hour
400 m³/13300 cbft	approx	2-5 times per hour
1000 m³/33000 cbft	approx	1-3 times per hour
4000 m³/133000 cbft	approx	1-2 times per hour

Ventilation is not required during drying/curing of the coating, but recommended in order to remove eg spray-dust from application.

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.

This Product Data Sheet supersedes those previously issued. For definition and scope, see explanatory notes to applicable Product Data Sheets.

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