

Application Instructions

HEMPADUR UNIQ 47741 /
HEMPADUR UNIQ 47743

High temperature 47741: BASE 47745 with CURING AGENT 98741

Low to medium temperature 47743: BASE 47747 with CURING AGENT 98743



For product description refer to product data sheet 47741 / 47743

Scope: These Application Instructions cover surface preparation, application equipment and application details for HEMPADUR UNIQ 47741/47743.

Surface preparation: The specific type and degree of surface preparation depends on type and condition of the actual substrate and on desired performance. The better the surface preparation the better the performance, but it will not always be economic feasible to go for the highest degree within a given type of surface preparation.

For use as a heavy duty coating:

Bulk cargo holds, fender areas, hulls of ice-going vessels, ramps, splash zones etc.:

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. For temporary protection, if required, use a suitable shopprimer. Damage of shopprimer and contamination from storage and fabrication should be thoroughly cleaned prior to final painting. Abrasive grit spot blasting to Sa 2½ of welds, damaged areas etc. Intact shopprimer to be thoroughly abrasive grit sweep blasted all over. For repair and touch-up use HEMPADUR UNIQ 47741/47743.

Old steel:

If relevant ask Hempel for specification.

For use as a ballast tank coating:

Reference is made to APPLICATION INSTRUCTIONS – BALLAST TANKS

As a general purpose primer:

For exterior hull including weather decks same surface preparation applies as for ballast tanks. For other areas usually as per normal new-building standard.

Application equipment: HEMPADUR UNIQ 47741/47743, being a high viscosity material, may require special measures to be taken at application.

Recommended airless spray equipment:

Pump ratio:	Preferably 60:1 or more	
Pump output:	12 litres/ minute (theoretical)	
Input pressure:	Min. 6 bar/ 90 psi	
Spray hoses:	Max. 100 metres/ 300 feet, 1/2" internal diameter Max. 30 metres/ 100 feet, 3/8" internal diameter Max. 6 metres/ 20 feet, 1/4" internal diameter	
Filter:	60 mesh	
Regular surfaces:	Ballast tanks	Exterior hull and similar large regular areas
Nozzle size:	0,021"-0,023"	0,023"-0,027"
Fan angle:	60°-80°	60°-80°

The above are guidelines and subject to local adjustments.

If bigger nozzles are used it is important that the output capacity and pressure of the spray equipment is sufficient to maintain a proper atomization. A good skill of the spray painter is furthermore a must in order to keep the film thicknesses within limits and maintaining a good film formation in each coat.

Note: Increasing spray hose diameter may ease paint flow thereby improving the spray fan. If longer hoses are necessary it may be necessary to raise the pump ratio to above 60:1, maintaining the high output capacity of the pump.

Alternatively up to approximately 5% THINNER 08450 may be added, but thinning must be done with care as the maximum obtainable film thickness is reduced significantly by overthinning.

Airless spray data are indicative and subject to adjustment.

After finishing the application, clean the equipment immediately with HEMPEL'S TOOL CLEANER 99610.

Application:

Film-build/continuity:

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It is especially important that a continuous, pinhole-free paint film is obtained at application of each spray applied coat. An application technique which will ensure good film formation on all surfaces must be adopted. It is very important to use nozzles of the correct size, not too big, and to have a proper, uniform distance of the spray gun to the surface, 30-50 cm should be aimed at. Furthermore, great care must be taken to cover edges, openings, rear sides of stiffeners etc. Thus, on these areas a stripe coat will usually be necessary. To obtain good and steady atomising, the viscosity of the paint must be suitable and the spray equipment must be sufficient in output pressure and capacity. At high working temperatures, use of extra thinner may be necessary to avoid dust-spray.

The paint layer must be applied homogeneously and as close to the specification as possible. Avoid exaggerated film thickness.

Saggings/"pools" of paint in corners are to be remedied to avoid later crackings and as a general rule highest acceptable dry film thickness will be 3 times the specified film thickness or 1000 micron.

The finished coating must appear as a homogeneous film with a smooth surface and irregularities such as dust, dry spray, abrasives, should be remedied.

Stripe coating:

May either be applied by airless spray, (relatively small, narrow-angled nozzles) or by hand-tools. For stripe coating with brush or roller HEMPADUR UNIQ 47742/47744 is recommended. Apply the stripe coat as a uniform, regular film without excessive brush or roller marks in order to avoid cratering by entrapped air.

Ventilation, relative humidity and temperature:

Sufficient ventilation must be established during application and drying of the coating to ensure proper film formation and to keep the steel temperature min. 3°C/5°F above the dew point.

First coat on steel substrates: Aluminium pigmented HEMPADUR UNIQ 47741/3 in shade 59690 (Red aluminium shade) is recommended as first coat when the product is applied directly to unprimed steel substrates - independent of method of surface preparation.

Pot life/ induction time: The indicated pot life is measured under standard conditions. However, for a 20 litres/5 US gallons mix, the heat developed by the chemical reaction between BASE and CURING AGENT may make the corresponding practical pot life shorter.

- Mix the entire content of corresponding base and curing agent packings. If it is necessary to mix smaller portions, this must be done properly by volume: 3.0 parts of base and 1.0 part of curing agent.
- Stir the mixed paint thoroughly by means of a clean mechanical mixer until a homogeneous mixture is obtained.
- Use all mixed paint before the pot life is exceeded. The pot life depends on the temperature of the paint as shown in table below (valid for a 20 litres can):

Temperature of mixed paint	5°C/41°F	10°C/50°F	15°C/59°F	20°C/68°F	30°C/86°F ¹⁾
Pot life, 47741	N.A.	N.A.	1 1/4 hour	1 hour	(1/2 hour)
Pot life, 47743	2 hours	1 1/2 hour	1 1/4 hour	1 hour	(1/2 hour)

1) Temperatures above 30°C/86°F should be avoided.

Induction time:

At application temperatures below 15°C/59°F allow the mixed paint to pre-react for 10-15 minutes and remix before spray application.

When twin-feed two-component spray equipment is used, heating may be relevant to obtain a proper spray fan and a uniform and smooth paint film. This can either be done by preheating the two-component paint or by using a flow-heater on the pressure side. As an indication, a paint temperature of approx 40°C/104°F will be relevant, but has to be adjusted according to the actual conditions.

Physical data versus temperature: HEMPADUR UNIQ 47741 in a dry film thickness of 150 micron/6 mils:

Surface temperature	15°C/59°F	20°C/68°F	30°C/86°F
Drying time	9 hours	6 hours	3 hours
Curing time*	11 days	7 days	3 1/2 days
Initial curing*	8 days	5 days	2 1/2 days

HEMPADUR UNIQ 47743 in a dry film thickness of 150 micron/6 mils:

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Surface temperature	-10°C/14°F	0°C/32°F	10°C/50°F	20°C/68°F	(30°C/86°F)
Drying time	32 hours	16 hours	8 hours	4 hours	(2 hours)
Curing time*	56 days	28 days	14 days	7 days	(3½ days)
Initial curing*	40 days	20 days	10 days	5 days	(2½ days)

*Filling of ballast tanks/exposure to water: ask for special instructions.

Overcoating:

Overcoating intervals related to later conditions of exposure:

150 micron/6 mils dry film thickness of HEMPADUR UNIQ 47741

Surface temperature	20°C/68°F	
MINIMUM overcoating interval related to later conditions of exposure:		
Interval for overcoating with HEMPADUR		
Atmospheric, medium	6 hours	
Atmospheric, severe	6 hours	
Immersion*	6 hours	
Interval for overcoating with HEMPATHANE		
Atmospheric, medium	4 hours	
Atmospheric, severe	5 hours	
Immersion	Not recommended	
Maximum overcoating interval related to later conditions of exposure:		
Interval for overcoating with HEMPADUR		
Atmospheric, Medium	30 days	
Atmospheric, severe	30 days	
Immersion*	30 days	
Interval for overcoating with HEMPATHANE		
Atmospheric, Medium	10 days	
Atmospheric, severe	3 days	
Immersion*	Not recommended	

150 micron/6 mils dry film thickness of HEMPADUR UNIQ 47743

Surface temperature	5°C/41°F	20°C/68°F
MINIMUM overcoating interval related to later conditions of exposure:		
Interval for overcoating with HEMPADUR		
Atmospheric, medium	12 hours	4 hours
Atmospheric, severe	15 hours	5 hours
Immersion*	18 hours	6 hours
Interval for overcoating with HEMPATHANE		
Atmospheric, medium	12 hours	4 hours
Atmospheric, severe	15 hours	5 hours
Immersion	Not recommended	Not recommended
Maximum overcoating interval related to later conditions of exposure:		
Interval for overcoating with HEMPADUR		
Atmospheric, Medium	30 days	Extended
Atmospheric, severe	30 days	Extended
Immersion*	30 days	30 days
Interval for overcoating with HEMPATHANE		
Atmospheric, Medium	20 days	10 days
Atmospheric, severe	6 days	3 days
Immersion*	Not recommended	Not recommended

* and heavy wear - eg bulk cargo holds and fender areas. If such areas are to be topcoated with HEMPATHANE, Same max as for atmospheric/severe apply.

The long maximum overcoating interval for HEMPADUR will be reduced if the coating is more than just scarcely exposed to direct sunshine before overcoating.
If the interval is exceeded, roughening of surface is necessary to ensure intercoat adhesion.

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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. Avoid inhalation, avoid contact with skin and eyes, and do not swallow. Take precautions against possible risks of fire or explosions as well as protection of the environment. Apply only in well ventilated areas.

Issued by: HEMPEL A/S – 47741/47743

These Application Instructions supersede those previously issued.

For explanations, definitions and scope see "Explanatory Notes" available on www.hempel.com. Data, specifications, directions and recommendations given in this data sheet represent only test results or experience obtained under controlled or specially defined circumstances. Their accuracy, completeness or appropriateness under the actual conditions of any intended use of the Products herein must be determined exclusively by the Buyer and/or User. The Products are supplied and all technical assistance is given subject to Hempel's general conditions of sales, delivery and service, unless otherwise expressly agreed in writing. The Manufacturer and Seller disclaim, and Buyer and/or User waive all claims involving, any liability, including but not limited to negligence, except as expressed in said general conditions for all results, injury or direct or consequential losses or damages arising from the use of the Products as recommended above, on the overleaf or otherwise. Product data are subject to change without notice and become void five years from the date of issue.