APPLICATION INSTRUCTIONS

For product description refer to the product data sheet

HEMPEL'S POLYESTER GF 35920/ HEMPEL'S POLYESTER GF 35923

High temperatures: 35920 with HARDENER 99020
Low to medium temperatures: 35923 with HARDENER 99420

Scope:

These Application Instructions cover surface preparation, application equipment, and application details for HEMPEL'S POLYESTER GF 3592.

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, ISO 8501-1:1988, SSPC-SP-10. Minimum surface profile corresponding to Rugotest No. 3, BN11, Keane-Tator Comparator, 5.5 G/S, or ISO Comparator Coarse (G). After blasting, clean the surface carefully from abrasives and dust.

On 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 as described above.

Application equipment:

HEMPEL'S POLYESTER GF 3592, being a solvent-free, high viscosity material, requires special measures to be taken at application.

Standard airless heavy-duty spray equipment:

Pump ratio:	min 45:1 (See Note below)
Pump output:	min. 12 litres/minute (theoretical)
Input pressure:	min. 6 bar/90 psi
Spray hoses:	max. 15 metres/50 feet, 3/8" internal diameter, nylon lined max. 3 metres/10 feet, 1/4" internal diameter
Regular surfaces:	
Nozzle size:	.030" through .060" reversible tip
Fan angle:	40-60°

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

The pump should preferably be fitted with leather seals although Teflon (PTFE) seals are acceptable for small jobs.

If longer spray hoses are necessary, up to 50 metres/150 feet hose (½" internal diameter) can be added. The pump ratio must be raised to 60:1 or more, yet, the high output capacity of the pump must be maintained. Before application starts, the filter should be removed and hoses should be washed with styrene.

Thinning:

Alternatively max. 5% styrene may be added, but thinning must be done with care as the anti-sagging properties are drastically reduced by overthinning. the gel time will be extended especially at low temperatures.

Airless spray data are indicative and subject to adjustment.

Mixing:

Steel temperature between 0°C/32°F and 10°C/50°F:
Add ½ a bottle of HARDENER 99420 into the BASE 35929 and mix for 1 minute. Add the second half of HARDENER 99420 and continue to stir until thoroughly mixed (approx. 2 minutes).

Before start-up, the pump must be flushed with styrene.

In the case of spray stop, the equipment should be flushed out using a small amount of styrene, followed by methyl ethyl ketone (MEK) for at least 15 minutes. Where spraying is to continue, flush with styrene.

The pump should work fast during flushing operations and care taken to ensure that equipment is throughly cleaned.

Steel temperature between 10°C/50°F and 20°C/68°F:
Add ½ a bottle of HARDENER 99020 into the BASE 35929 and mix for 1 minute. Add the second half of HARDENER 99020 and continue to stir until contents are thoroughly mixed (approx. 2 minutes).

Before start-up, the pump must be flushed with styrene.

At spray stop the equipment should be flushed out using a small amount of styrene, followed by methyl ethyl ketone (MEK) for at least 15 minutes. Where spraying is to continue, flush with styrene.

The pump should work fast during flushing operations and care taken to ensure that equipment is throughly cleaned.

Steel temperature at and above 20°C/68°F:
Add the content of 1 bottle of RETARDER 99190 and mix thoroughly with BASE 35929 only by mechanical agitation.

After mixing RETARDER 99190 with BASE 35929 it is essential that at least 5 minutes are allowed before commencing the addition of the HARDENER 99020. HARDENER 99020 should then be added as described above.

UNDER NO CIRCUMSTANCES RETARDER 99190 SHOULD BE ADDED AFTER THE HARDENER 99020 HAS BEEN ADDED. THIS WILL TOTALLY NEGATE THE CURING REACTION.

Pot life:

When measured under standard conditions the pot life is 45 minutes at 20°C/68°F. However, for a 20 litres/5 US gallons mix, the heat developed by the chemical reaction is so intense that the corresponding practical pot life is substantially shorter.

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

Paint temperature:

If the temperature in the can is below approximately 15°C/59°F, the viscosity will be too high for application. If the paint temperature when mixing is 25°C/77°F or higher, a substantial risk of shortened pot life and curing in can/spray equipment exists. When working in warm, subtropical/tropical climates a refrigerated container can be used for storing/cooling of the paint before application.

Stripe coating:

Edges, corners, 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 layer(s) - may be necessary in case of severely pitted and/or where very high degrees of antiabrasive properties are needed.

Indicated film thickness:

1500 micron on splash zone areas, 1000 micron on immersed areas below splash zone, and 750 micron on decks are recommend.

Recoating intervals:

Within a maximum of 85% Relative Humidity the following recoating intervals apply (d=days, h=hours):

Steel temperature	°C/°F	0/32	5/41	10/50	15/59	20/68	25/77	30/86	(35/95)
With 3592	Min	9h	6h	4h	3h	2h	1½h	1h	(45 min)
	Max	14d	9d	6d	4d	3d	2d	1½h	(1d)
With other paints (solvent-based)	Min	3d	2d	32h	24h	16h	12h	8h	(6h)
	Max	14d	9d	6d	4d	3d	2d	1½d	(1d)

The polyester MUST NOT be exposed to (steel) temperatures below 0°C/32°F nor to condensation or Relative Humidities higher than 85% before recoating.

Cleaning of tools:

The equipment should be flushed out and cleaned using styrene followed by methyl ethyl ketone (MEK).

Curing table:

The following curing times apply:

Steel temperature	°C/°F	0/32	5/41	10/50	15/59	20/68	25/77	30/86	(35/95)
Fully cured	days	32	21	18	11	7	5	3½	(2½)
Initial curing	days	14	9	7½	5	3	2	1½	(1)

Time before taking into service:

When the painted surface will be exposed to heavy duty service (e.g. exposure to chemicals, heavy wear and tear), the recommended minimum curing time is:

Steel temperature	°C/°F	0/32	5/41	10/50	15/59	20/68	25/77	30/86	(35/95)
Minimum	days	14	9	7½	5	3	2	1½	(1)

If not exposed to heavy duty service (eg exposure to light traffic only):

Steel temperature	°C/°F	0/32	5/41	10/50	15/59	20/68	25/77	30/86	(35/95)
Minimum	hours	108	72	60	40	24	16	12	(8)

HEMPEL'S POLYESTER GF 3592 is resistant to immersion in calm seawater after an initial curing time as listed hereunder.

Steel temperature	°C/°F	0/32	5/41	10/50	15/59	20/68	25/77	30/86	(35/95)
Minimum	hours	27	18	15	8	6	5	4	(3)

Note:

1. The temperatures in the tables above are mean values, but the temperature during curing should at no time come below 0°C/32°F.

2. Curing will proceed under water when the water temperature is above 0°C/32°F.

Remarks:

Stripe coating is recommended on surfaces difficult to cover properly by spray.
In case of deep pittings higher film thickness is recommended on areas with pittings.
To secure sufficient curing at low surface temperatures, the product should always be applied in a wet film thickness above 600 micron.

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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