

# Hempadur Avantguard 650

## Product characteristics

### Description

Hempadur Avantguard 650 is a two-component, activated zinc epoxy primer in compliance with the requirements for Level 3, type II in SSPC Paint 20, 2002. Hempadur Avantguard 650 functions as a zinc-rich epoxy featuring a higher mechanical strength. Can utilize ASTM D520, type II zinc dust.

### Recommended use

As a versatile primer for long-term protection of steel in severely corrosive environments.

### Service temperature:

- Maximum, dry exposure only: 160°C [320°F].

### Features

- Reduces the effect of corrosion and offers excellent protection.
- Good mechanical strength, also in cyclic temperatures, with improved crack resistance through high flexibility and self-healing of micro cracks.
- High tolerance to different climatic conditions (high temperature and humidity) during application, as well as, to high dry film thickness.

## Product safety

**Flash point** 28°C [82°F]

### VOC content mixed product

Legislation	Value
EU	327 g/L [2.73 lb/US gal]
US (coatings)	327 g/L [2.73 lb/US gal]
US (regulatory)	327 g/L [2.73 lb/US gal]
China	327 g/L [2.73 lb/US gal]

According to specific legislation, see details in the Explanatory Notes available at Hempel website, [hempel.com](http://hempel.com) or at your local Hempel website. VOC values may vary with shade, please consult the Safety Data Sheet, section 9.

### Handling

Handle with care. Before and during use, observe safety labels on packaging and paint containers and follow all local and national safety regulations. Always consult Hempel's Safety Data Sheet for this product along with the Product Data Sheet.

For professional use only.

## Product data

### Product code

1735G

### Product components

Base 1735U  
Curing agent 97043

### Standard shade / code

Grey 19840 \*

### Gloss

Flat

### Volume solids

65 ± 2%

### Specific gravity

2.1 kg/L [17 lb/US gal]

### Reference dry film thickness

60 micron [2.4 mils]

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## Surface preparation

### Cleanliness

- Remove oil, grease and other contaminants by suitable detergent cleaning.
- Remove salts, detergents and other contaminants by high pressure fresh water cleaning.
- All damage of shopprimer and contamination from storage and fabrication should be thoroughly mechanically/chemically cleaned prior to final painting.

### New build:

- Abrasive blasting to min. Sa 2½ (ISO 8501-1) / SP 10 (SSPC).
- Remove dust, blast media and loose materials.

### Maintenance and Repair

- Abrasive blasting to min. Sa 2½ (ISO 8501-1) / SP 10 (SSPC).
- Remove dust, blast media and loose materials.

### Roughness

- Surface profile Medium (G) (ISO 8503-2).

Consult Hempel's separate Surface Preparation Guidelines for more details.

## Application

### Mixing ratio

Base 1735U : Curing agent 97043  
(4 : 1 by volume)

Products containing floating or settling particles/pigments need to be continuously stirred during application. This is especially important in case of heavy thinning.

### Thinner

Hempel's Thinner 08450

### Cleaner

Hempel's Tool Cleaner 99610

### Pot life

**Product temperature** **20°C**  
[68°F]

Pot life 3 hours

## Application method

Tool	Application parameters
Airless spray	Nozzle pressure: 220 bar [3200 psi] Nozzle orifice: 0.017-0.021"

If brush or roller application is used, more coats will be necessary to achieve the specified dry film thickness. Keep thinning at an absolute minimum. Spray data are indicative and subject to adjustment. Pressure is for a material temperature of 20°C [68°F].

## Film thickness

Specification range	Low	High	Recommended
Dry film thickness	40 micron [1.6 mils]	100 micron [3.9 mils]	60 micron [2.4 mils]
Wet film thickness	60 micron [2.5 mils]	150 micron [6 mils]	90 micron [3.5 mils]
Theoretical spreading rate	16 m <sup>2</sup> /L [650 sq ft/US gal]	6.5 m <sup>2</sup> /L [260 sq ft/US gal]	11 m <sup>2</sup> /L [450 sq ft/US gal]

Product may be specified in another film thickness than indicated depending on purpose and area of use. This will alter spreading rate, drying and curing time and overcoating interval. Overthickness should be closely controlled and never locally exceed XX micron [YY mils] DFT. On irregular surfaces it is recommended to employ special care in avoiding over application.

## Application conditions

- Surface temperature must be above -10°C [14°F] during application and curing.
- Temperature of product must be above 15°C [59°F] during application.
- To avoid condensation, apply on a clean and dry surface with a temperature that is at least 3°C [5°F] above the dew point.

## Relative Humidity:

- Relative humidity must be below 95% during curing.
- Relative humidity must be below 95% during application.

## Application remarks

- If brush or roller application is used, more coats will be necessary to achieve the specified dry film thickness.

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## Drying and overcoating

### Product compatibility

- Previous coat: None.
- Subsequent coat: According to Hempel's Specification.

### Drying time

Surface temperature		20°C [68°F]
Surface dry	min	10
Through dry	min	90
Fully cured	days	7

Determined for dry film thickness 60 micron [2.4 mils] at standard conditions, see Hempel's Explanatory Notes for details.

### Overcoating

Hempel's specification supersedes any guidelines indicated in the overcoating table

Quality name		10°C [50°F]	20°C [68°F]	30°C [86°F]	40°C [104°F]
Atmospheric mild					
Hempel's Epoxy MIO	Min	90 min	60 min	45 min	30 min
	Max	Ext	Ext	Ext	Ext
Atmospheric medium					
Hempel's Epoxy MIO	Min	90 min	60 min	45 min	30 min
	Max	Ext	Ext	Ext	Ext
Atmospheric severe					
Hempel's Epoxy MIO	Min	90 min	60 min	45 min	30 min
	Max	60 d	30 d	14 d	7 d

Overcoating times are indicative for products of the same generic chemistry. Consult Hempel's specification for more information.

### Drying conditions

- To obtain the drying time stated, it is important to maintain sufficient ventilation during application, drying and curing.

### Overcoating details

- If the maximum overcoating interval is exceeded, roughening of the surface is necessary to ensure intercoat adhesion.
- The surface must be clean before overcoating.

### Other remarks

- Remove zinc salts or other contamination before overcoating.

## Storage

### Shelf life

Ambient temperature	25°C [77°F]	35°C [95°F]
Base	12 months	9 months
Curing agent	36 months	24 months

Shelf life from date of production, when stored in original, unopened containers. Thereafter, the product quality must be re-inspected. Always check the best before date or expiry date on the label.

### Storage conditions

- The curing agent is sensitive to moisture. Store in a dry place and keep the can tightly closed until use.

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## Additional documents

Additional information is available at the Hempel website [hempel.com](http://hempel.com) or at your local Hempel website:

- Explanatory Notes explaining the fields in this Product Data Sheet.
- Surface Preparation Guidelines.
- Application Guidelines for different application methods.
- General Application Guidelines

This Product Data Sheet ("PDS") relates to the supplied product ("Product") and is subject to updating from time-to-time. Accordingly, the buyer/applicator should have regard to the PDS supplied together with the relevant batch of the Product (and not an earlier version). In addition to the PDS, the buyer/applicator may receive some or all of the following specifications, statements and/or guidelines as listed below or as are available from the Hempel website under 'Products' at [www.hempel.com](http://www.hempel.com) (the "Additional documents"):

No.	Document description	Location/comments
1.	Technical Statement	One-off specific advice provided on request for specific projects
2.	Specification	Only issued for specific projects
3.	PDS	This document
4.	Explanatory Notes to the PDS	Available at <a href="http://www.hempel.com">www.hempel.com</a> and contain relevant information about the Product testing parameters
5.	Application Instruction	Where available, at <a href="http://www.hempel.com">www.hempel.com</a>
6.	Generic technical guidelines (e.g. on application and surface preparation)	Where available, at <a href="http://www.hempel.com">www.hempel.com</a>

In the event of a conflict of information between the PDS and the Additional documents, the order of priority of information shall be in the order as set out above. In such event you should also contact your representative at Hempel for clarification. Furthermore, the buyer/applicator must have full regard to the relevant Safety Data Sheet provided with each Product and which can also be downloaded from [www.hempel.com](http://www.hempel.com).

Hempel shall not be liable for defects where the application of the Product has not been made fully in accordance with the recommendations and requirements set out in the relevant PDS and the Additional Documents. The information and terms of this disclaimer apply to this PDS, the Additional documents and any other documents supplied by Hempel in respect of the Product. In addition, the Product is supplied and all technical assistance is given subject to Hempel's General Conditions of Sale, Delivery and Service, unless otherwise expressly agreed in writing.