Hempadur Avantguard 860

Product characteristics

Description
Hempadur Avantguard 860 is an activated zinc-rich epoxy primer in compliance with the requirements of Level 1, type II in SSPC Paint-20, 2019 and ISO 12944 Part 5, 2018. The product is in full compliance with ASTM D520 type II and EU Directive 2004/42/EC, The Paints Directive on the limitation of volatile organic compounds: subcategory j.

Recommended use
Hempadur Avantguard 860 is recommended as a general purpose for long-term protection of steel exposed to high to extreme corrosive environments (ISO 12944 Part 2). Suitable for offshore environment protection. The product is a fast curing alternative to the use of zinc rich silicates in atmospheric anticorrosion protections for temperatures below 160°C [320°F].

Certificates / Approvals
- Meets requirements to ISO 12944 when used as part of a predefined paint system. Part 6 C5, Part 9 CX.
- Meets requirements to NORSOK M-501 when used as part of a predefined paint system. Edition 6, System 1. Edition 7, System 1B.

Features
- Reduces the effect of corrosion and provides outstanding galvanic protection.
- Dries fast and has short minimum overcoating intervals.
- Excellent mechanical strength, also in cyclic temperatures, with improved tolerance to high film thickness through high flexibility and self-healing effect.
- Superior tolerance to high relative humidity during application.
- Cures down to -10°C [14°F].
- High-content zinc shade with min 90% zinc dust in the dry film 1984A.

Product safety

Flash point 26°C [78°F]

VOC content mixed product

Legislation	Value
EU	302 g/L [2.52 lb/US gal]
US (coatings)	358 g/L [2.99 lb/US gal]
US (regulatory)	358 g/L [2.99 lb/US gal]
China	358 g/L [2.99 lb/US gal]

According to specific legislation, see details in the Explanatory Notes available at Hempel website, hempel.com or at your local Hempel website.

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
17990

Product components
Base 17999
Curing Agent 98384

Standard shade / code
Grey 19840

Gloss
Flat

Volume solids
66 ± 2%

Specific gravity
2.6 kg/L [21 lb/US gal]

Hempadur Avantguard 860

Reference dry film thickness
60 micron [2.4 mils]

Zinc shade /code
Grey 1984A

Gloss
Flat

Volume solids
66 ± 2%

Specific gravity
3 kg/L [25 lb/US gal]

Reference dry film thickness
60 micron [2.4 mils]

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.

New build:
- 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 17999 : Curing Agent 98384
(8.5 : 1.5 by volume)

Products containing floating or settling particles/pigments need to be continuosly 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]	0°C [32°F]	40°C [104°F]
Pot life	6 hours	7 hours	5 hours

Application method

Tool	Thinning max vol.	Application parameters
Airless spray	10%	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. Spray data are indicative and subject to adjustment. Pressure is for a material temperature of 20°C [68°F].

Hempadur Avantguard 860

Film thickness

Specification range	Low	High	Recommended
Dry film thickness	40 micron [1.6 mils]	100 micron [4.0 mils]	60 micron [2.4 mils]
Wet film thickness	61 micron [2.4 mils]	152 micron [6.1 mils]	91 micron [3.7 mils]
Theoretical spreading rate	16 m²/L [652 sq ft/US gal]	6.6 m²/L [269 sq ft/US gal]	11 m²/L [448 sq ft/US gal]

Overthickness must be closely controlled and never locally exceed 200 micron [8.0 mils] DFT. On irregular surfaces it is recommended to employ special care in avoiding over application.

Application conditions

- 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.
- Surface temperature must be above -10°C [14°F] during application and curing.

Relative Humidity:

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

Drying and overcoating

Product compatibility

- Previous coat: None.
- Subsequent coat: None or according to Hempel's specification.

Drying time

Surface temperature		-10°C [14°F]	0°C [32°F]	20°C [68°F]	40°C [104°F]
Touch dry	hours	2½	1	¼	¼
Hard dry	hours	9	4½	1	¼
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

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.
- Condensation on the freshly applied coating should be avoided.

Overcoating details

- If the maximum overcoating interval is exceeded, roughening of the surface is necessary to ensure intercoat adhesion.
- Remove zinc salts or other contamination before overcoating.
- The surface must be dry and clean prior to application.

Other remarks

- Hempel's Specification supersedes any recommendations given in the Product Data Sheets.

Storage

Shelf life

Ambient temperature	25°C [77°F]
Base	12 months
Curing Agent	36 months

Shelf life from date of production, when stored in original, unopened containers. Thereafter, the product quality must be re-inspected. Storage at elevated temperatures may reduce shelf life. For advice, please consult Hempel.

Storage conditions

- The product must be stored in accordance with Safety Data Sheet, label and local regulations. Keep the containers in a dry, shaded, cool, well-ventilated space and away from sources of heat and ignition. Containers must be kept tightly closed. Handle with care.

Hempadur Avantguard 860

Carbon Footprint

Dry film thickness	1 µm	1 mil
GWP (Global Warming Potential)	12.9 g CO_2e/m^2	0.067 lb CO_2e/ft^2

The carbon footprint is for 1 square meter / square foot of surface area with a dry film thickness of 1 micron / mil.

The scope includes raw materials, in-bound transport to the Hempel factory, Hempel manufacturing processes, and any Volatile Organic Compounds emitted during and after the application of the product.

It is calculated based on the standard shade defined in this PDS. Values may vary with shade.

Additional documents

Additional information is available at the Hempel website https://www.hempel.com/service-and-support/technical-guidelines or at your local Hempel website:

- Explanatory Notes for Product Data Sheet.
- Application methods.
- Surface Preparation.
- Application Instruction for this product.
- Repair & maintenance.
- Inspection & quality control.