

Epoxy HR

Product description

This is a two component polyamine cured phenolic/novolac epoxy coating. Designed as a heat resistant coating, and it is resistant to low temperatures down to -196 °C and high temperatures up to 205 °C continuously. It may be used on insulated and non-insulated surfaces. This product may be used as a primer, mid coat or finish coat. Suitable for properly prepared carbon steel, galvanised steel, stainless steel and aluminium substrates. It can be applied on hot substrates up to 150°C. Please refer to the application guide for more detailed information. It will offer proper corrosion protection at ambient conditions during construction and shut-down periods. The product passes the standard tests used for qualifying coatings preventing corrosion under insulation (CUI).

Typical use

Protective:

Designed as corrosion protection for surfaces operating at elevated temperatures where long corrosion protection is desired. Suitable for insulated and non insulated surfaces.

Approvals and certificates

Passing CUI 3 multiphase test as described in ISO 19277-2018.

Tested in accordance with ISO 12944-9.

Tested in accordance with ISO 3248:2000 determination of the effect of heat 500 hours at 204°C on carbon steel.

Tested in accordance with ISO 3248:2000 determination of the effect of heat 1000 hours at 204°C on stainless steel (SS304).

Tested in accordance with ISO 3248:2000 determination of the effect of heat 1000 hours at 204°C on alloyed steel (P91).

Additional certificates and approvals may be available on request.

Colours

aluminium, light grey

Other colours available upon request

Product data

Property	Test/Standard	Description
Solids by volume	ISO 3233	63 ± 2 %
Gloss level (GU 60 °)	ISO 2813	matt (0-35)
Flash point	ISO 3679 Method 1	28 °C
Density	calculated	1.6 kg/l

Region	Regulation	Test Standard	VOC Value
US	CARB(SCM)2020 / SCAQMD rule 1113	US EPA Method 24	331 g/l
Hong Kong	Air Pollution Control (VOC) Regulation	US EPA Method 24	331 g/l
EU	European Paint Directive 2004/42/CE	Calculated	362 g/l
EU IED	Industrial Emission Directive 2010/75/EU	Calculated	362 g/l

Korea	Korea Clean Air Conservation Act	KS M ISO 11890-1	319 g/l
China	GB 30981-2020 Limit of harmful substances of industrial protective coatings	GB/T 23985-2009 8.3	330 g/l

The provided data is typical for factory produced products, subject to slight variation depending on colour.

Gloss description: According to Jotun Performance Coatings' definition.

Film thickness per coat

Typical recommended specification range

Dry film thickness	100 - 200 µm
Wet film thickness	160 - 320 µm
Theoretical spreading rate	6.3 - 3.2 m ² /l

Surface preparation

Surface preparation summary table

Substrate	Surface preparation	
	Minimum	Recommended
Carbon steel	St 2 (ISO 8501-1)	Sa 2½ (ISO 8501-1)
Stainless steel	The surface shall be hand or machine abraded with non-metallic abrasives or bonded fibre machine or hand abrasive pads to impart a scratch pattern to the surface.	Abrasive blast cleaning to achieve a surface profile using non-metallic abrasive media which is suitable to achieve a sharp and angular surface profile.
Aluminium	The surface shall be hand or machine abraded with non-metallic abrasives or bonded fibre machine or hand abrasive pads to impart a scratch pattern to the surface.	Abrasive blast cleaning to achieve a surface profile using non-metallic abrasive media which is suitable to achieve a sharp and angular surface profile.
Galvanised steel	The surface shall be clean, dry and appear with a rough and dull profile.	Sweep blast-cleaning using non-metallic abrasive leaving a clean, rough and even pattern.
Shop primed steel	Dry, clean and approved inorganic zinc shopprimer.	Sa 2½ (ISO 8501-1)
Coated surfaces	Clean, dry and undamaged compatible coating	Clean, dry and undamaged compatible coating

Optimum performance, including adhesion, corrosion protection, heat resistance and chemical resistance is achieved with recommended surface preparation.

Application

Application methods

The product can be applied by

- Spray: Use airless spray.
- Brush: Recommended for stripe coating and small areas. Care must be taken to achieve the specified dry film thickness.

Product mixing ratio (by volume)

Epoxy HR Comp A	6.5 part(s)
Epoxy HR Comp B	1 part(s)

Thinner/Cleaning solvent

- Thinner: Jotun Thinner No. 23
- Thinning max.: 10 %

Note: Korean VOC regulation "Korea Clean Air Conservation Act" and its corresponding thinning limit will prevail over recommended thinning volumes.

Guiding data for airless spray

- Nozzle tip (inch/1000): 17-21
- Pressure at nozzle (minimum): 150 bar/2100 psi

Drying and Curing time

Substrate temperature	10 °C	15 °C	23 °C	40 °C	100 °C
Surface (touch) dry	16 h	12 h	4 h	2 h	30 min
Walk-on-dry	26 h	20 h	10 h	4 h	30 min
Dry to over coat, minimum	26 h	20 h	10 h	4 h	30 min
Dried/cured for service	21 d	14 d	7 d	3 d	1 d

For maximum overcoating intervals, refer to the Application Guide (AG) for this product.

Due to the fast evaporation above 100°C, instant drying is expected.
Drying and curing times are determined under controlled temperatures and relative humidity below 85 %, and at average of the DFT range for the product.

Surface (touch) dry: The state of drying when slight pressure with a finger does not leave an imprint or reveal tackiness.

Walk-on-dry: Minimum time before the coating can tolerate normal foot traffic without permanent marks, imprints or other physical damage.

Dry to over coat, minimum: The recommended shortest time before the next coat can be applied.

Dried/cured for service: Minimum time before the coating can be permanently exposed to the intended environment/medium.

Induction time and Pot life

Paint temperature	23 °C
Induction time	20 min
Pot life	4 h

Reduced at higher temperatures.

Heat resistance

Carbon steel:
Continuous: 205°C

Stainless steel:
Continuous: 205°C

Alloyed steel (P91):
Continuous: 205°C

The continuous operational temperature limits are based on the substrate's heat resistant properties.

Product compatibility

Depending on the actual exposure of the coating system, various primers and topcoats can be used in combination with this product. Some examples are shown below. Contact Jotun for specific system recommendation.

Previous coat: inorganic zinc ethyl silicate, itself
Subsequent coat: phenolic/novolac epoxy, silicone acrylic

Packaging (typical)

	Volume (litres)	Size of containers (litres)
Epoxy HR Comp A	16.3	20
Epoxy HR Comp B	2.5	3

The volume stated is for factory made colours. Note that local variants in pack size and filled volumes can vary due to local regulations.

Storage

The product must be stored in accordance with national 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.

Shelf life at 23 °C

Epoxy HR Comp A	24 month(s)
Epoxy HR Comp B	24 month(s)

In some markets commercial shelf life can be dictated shorter by local legislation. The above is minimum shelf life, thereafter the paint quality is subject to re-inspection.

Caution

This product is for professional use only. The applicators and operators shall be trained, experienced and have the capability and equipment to mix/stir and apply the coatings correctly and according to Jotun's technical documentation. Applicators and operators shall use appropriate personal protection equipment when using this product. This guideline is given based on the current knowledge of the product. Any suggested deviation to suit the site conditions shall be forwarded to the responsible Jotun representative for approval before commencing the work.

Health and safety

Please observe the precautionary notices displayed on the container. Use under well ventilated conditions. Do not inhale spray mist. Avoid skin contact. Spillage on the skin should immediately be removed with suitable cleanser, soap and water. Eyes should be well flushed with water and medical attention sought immediately.

Colour variation

When applicable, products primarily meant for use as primers or antifoulings may have slight colour variations from batch to batch. Such products and epoxy based products used as a finish coat may chalk when exposed to sunlight and weathering.

Colour and gloss retention on topcoats/finish coats may vary depending on type of colour, exposure environment such as temperature, UV intensity etc., application quality and generic type of paint. Contact your local Jotun office for further information.

Disclaimer

The information in this document is given to the best of Jotun's knowledge, based on laboratory testing and practical experience. Jotun's products are considered as semi-finished goods and as such, products are often used under conditions beyond Jotun's control. Jotun cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with local requirements. Jotun reserves the right to change the given data without further notice.

Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.