Technical Data Sheet

SteelMaster 1200HPE

Product description

This is a two component solvent free amine cured epoxy intumescent coating. Independently approved for fire protection of structural steel exposed to cellulosic fire. Can be used direct to metal, as a mid coat or finish coat in atmospheric environments. Suitable on approved primers on carbon steel and hot dipped galvanised steel substrates.

Typical use

Specially designed as reactive fire protection for steel constructions. Suitable for structural steel exposed to external environments up to corrosivity category C5 (ISO 12944-2) with or without topcoat.

Where a durable aesthetic finish and colour scheme is required, it is recommended to overcoat with an approved topcoat. For a detailed coating specification please contact your local Jotun representative.

Approvals and certificates

This product contributes to the Green Buildings Standard credits. Please see section Green Building Standards.

BS 476 part 20/21: Certifire CF 5857
Cellular beams RT1356
EN 13381-8 and EN13381-10
CE marked product with European Technical Assessment ETA-21/1019
Certified to ANSI/UL263 (ASTM E119) and CAN/ULC-S101
Chinese GB14907:2018
Australia AS 4100:1998
Reaction to Fire: Class B-s1, d0 (EN 13501-1)
ASTM E84: Class A
Durability and Serviceability: Z2, Z1, Y, X (EAD 350402-00-1106)
Approved for UL 263 Exterior Use and UL 2431 Classification Category I-A

Additional certificates and approvals may be available on request.

Colours

light grey after mixing Comp A and Comp B

Product data

Property	Test/Standard	Description
Solids by volume	ISO 3233	99.5 ± 0.5 %
Flash point	ISO 3679 Method 1	100 °C

Region	Regulation	Test Standard	VOC Value
US	CARB(SCM)2020 / SCAQMD rule 1113	Calculated	15 g/l
Hong Kong	Air Pollution Control (VOC) Regulation	Calculated	15 g/l
EU	European Paint Directive 2004/42/CE	ISO 11890-2	20 g/l
EU IED	Industrial Emission Directive 2010/75/EU	Calculated	15 g/l
Korea	Korea Clean Air Conservation Act	Calculated	15 g/l

China	GB 30981-2020 Limit of harmful substances of industrial protective coatings	GB/T 34682-2017	9 g/l

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

Film thickness per coat

Typical recommended specification range

Dry film thickness:
0.5mm to 3mm per coat

Typical first coat thickness achievable is 3 mm with plural spray pump.
Subsequent coats of up to 4 mm can be applied in a continuous application process, typically carried out after 4 to 6 hours dependent on ambient conditions.
High film build can be achieved dependent upon steelwork configuration, geometry, ambient conditions, pump type and set up as well as primer used.

For single leg spray, thinning is required. Wet film thickness up to 1.5 mm can be achieved, however this is dependent upon the amount of thinners added, pump type, pump set up, application technique etc.

Surface preparation

Refer to the Application Guide (AG) for additional information.

Surface preparation summary table

	Surface preparation	
Substrate	**Minimum**	**Recommended**
Coated surfaces	Clean, dry and undamaged compatible coating	Clean, dry and undamaged compatible coating
Carbon steel	St 3 (ISO 8501-1) with surface profile	Sa 2½ (ISO 8501-1)

Application

Application methods

The product can be applied by

Spray:	Two component heated plural spray pump is recommended. Airless single leg spray pump can also be used. Refer to the Application Guide (AG) for additional information.
Brush:	For small area, touch up and block out.

Product mixing ratio (by volume)

SteelMaster 1200HPE Comp A	2.35 part(s)
SteelMaster 1200HPE Comp B	1 part(s)

Individual components must have been stored at 20 to 30 °C (68 to 86 °F) prior to use. Stir/mix thoroughly with a power agitator before application.

Thinner/Cleaning solvent

Thinner: Jotun Thinner No. 7 / Jotun Thinner No. 17 / Jotun Thinner No. 10

Thinning max.: 4 %

No thinning is required for plural spray or brush application. Thinning is typically 1-3 % by volume for single leg airless spray with hopper, recommended maximum 4 %.
Depending on pump type and ambient conditions thinning may not be required, e.g. spray pump with hydraulic ram and follower plate in a warm climate. Thinning will affect sag resistance and can delay drying times.

Cleaning solvent: Jotun Thinner No. 7 or Jotun Thinner No. 17

When thinners are used as a cleaning solvent, the use must be in accordance with prevailing local regulations.

Guiding data for airless spray

Nozzle tip (inch/1000): 23-27

Drying and Curing time

Substrate temperature	10 °C	15 °C	23 °C	40 °C
Surface (touch) dry	14 h	12 h	8 h	3 h
Dry to handle	30 h	16 h	16 h	8 h
Dry to over coat, minimum	8 h	6 h	4 h	4 h
Dried/cured for service	30 h	24 h	24 h	16 h

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

Dry to overcoat minimum is with self. See additional guidance for Topcoating.
For maximum overcoating intervals, refer to the Application Guide (AG) for this product.

All drying times have been measured at a wet film thickness of 4000 µm under controlled temperature and relative humidity below 85 %.

Topcoating:
The minimum overcoating interval of this product with approved topcoats is 16 hours. The system should be dry to handle and coating thickness gauge should not to leave an indentation on the coating. Prior to application of topcoat, the applicator must ensure that the specified dry film thickness has been achieved.

The product can be applied at minimum temperatures down to 5 °C (41 °F). For optimum application and drying, steel and air temperatures should be above 10 °C (50 °F).

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

Dry to handle: Minimum time before the coated objects can be handled without 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	15 °C	23 °C	40 °C
Pot life	45 min	40 min	25 min

Working pot life is not applicable for plural airless spray application.
For single leg airless spray, mixed material should be applied with minimum delay. Due to exothermic reaction, the larger the volume of mixed material, the shorter the pot life will be.

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: epoxy, epoxy zinc phosphate, epoxy mastic, zinc epoxy

Subsequent coat: acrylic, acrylic polyurethane, polysiloxane

Primers and topcoats used with this product must be approved by Jotun. For the list of approved primers, please consult Jotun.

Packaging (typical)

	Volume (litres)	Size of containers (litres)
SteelMaster 1200HPE Comp A	11.2 / 17.6	20 / 20
SteelMaster 1200HPE Comp B	4.8 / 14.9	10 / 20

Kit sizes:
Small - 16L: 1 x Comp A (11.2L) + 1 x Comp B (4.8L)
Medium - 50L: 2 x Comp A (17.6L) + 1 Comp B (14.9L)
Large - 520L: 2 x Comp A (182.4L) + 1 x Comp B (155.2L) (made to order)

Please contact your local sales representative for more information.

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.

Storage temperature: 5 °C - 35 °C. Store away from direct sunlight. Protect from frost.

Shelf life at 23 °C

SteelMaster 1200HPE Comp A	18 month(s)
SteelMaster 1200HPE Comp B	18 month(s)

Shelf life for 200L drums is **9 months** for Comp A and **6 months** for Comp B.
Drum agitators are recommended to be used as part of good practice.

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.

Green Building Standards

This product contributes to Green Building Standard credits by meeting the following specific requirements:

LEED®v4 (2013)
EQ credit: Low emitting materials
- VOC content for Fire Resistive Coatings (350 g/l) (CARB(SCM)2007) and emission ≤ 0.5 g/l (CDPH method 1.2)
MR credit: Building product disclosure and optimization
- Material Ingredients, Option 2: Material Ingredient Optimization, International Alternative Compliance Path - REACH optimization: Fully inventoried chemical ingredients to 100 ppm and not containing substances on the REACH Authorization list – Annex XIV, the Restriction list – Annex XVII and the SVHC candidate list.
- Environmental Product Declarations. Product-specific Type III EPD (ISO 14025;21930, EN 15804).

BREEAM® International (2016)
- Hea 02: VOC exemplary emission ((ISO 16000-9/10 or CDPH method 1.2 (2017)) and the VOC content for Two-pack reactive performance coatings for specific end use such as floors (80 g/L)
- Mat 01: Product-specific Type III EPD (ISO 14025;21930, EN 15804).

BREEAM® International (2013)
- Hea 02: VOC content for Two-pack reactive performance coatings for specific end use such as floors – SB (500 g/L) (EU Directive 2004/42/EC)

BREEAM® NOR (2016)
- Mat 01: The product Safety Data Sheet confirms that the product does not contain any substances on the Norwegian A20 list.
- Hea 9: VOC emission demands (ISO 16000-9/10 or CDPH method 1.2) and the VOC content demands of Two-pack reactive performance coatings for specific end use such as floors - SB (500 g/L) (EU Directive 2004/42/EC)

This product is tested by RISE Research Institutes of Sweden/SP Technical Research Institute of Sweden or Eurofins in accordance with California Department of Public Health (CDPH) Standard Method 1.2 (2017).

The EPDs are available at www.epd-norge.no

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.