

SteelMaster 90SB

Product description

This is a one component solvent based acrylic thin film intumescent coating. Independently approved for fire protection of structural steel exposed to cellulosic fire. Can be used as mid coat or finish coat in atmospheric environments. Suitable on approved primers on carbon steel substrates.

Typical use

Specially designed as a reactive fire protection system for steel constructions. Suitable for structural steel up to corrosivity category C4 (ISO 12944-2) with an approved topcoat; for dry internal (C1) environments, topcoat is optional.

SteelMaster 90SB can be exposed without topcoat for 9 months during construction phase, provided it has had adequate drying, and reasonable hardness achieved prior to exposure. However, whether topcoated or not, the coating must be protected from condensation, ponding/pooling water due to rainfall or running water during construction and in service. This also extends to snow and ice. Topcoat must be continuous and free from any defects.

Approvals and certificates

BS 476 part 20/21: Certifire CF 10246
Cellular beams RT1356
Tested and assessed to EN 13381-8 and EN13381-9
CE marked product with European Technical Assessment ETA 24/0096
Reaction to Fire: Class C-s1, d0 (EN 13501-1)
Durability and Serviceability: Z2, Z1, Y, X (EAD 350402-00-1106)
ASTM E84: Class A

Additional certificates and approvals may be available on request.

Colours

White

Product data

Property	Test/Standard	Description	
Solids by volume	ISO 3233	75 ± 4 %	
Flash point	ISO 3679 Method 1	25 °C	
Density	calculated	1.3 kg/l	
Region	Regulation	Test Standard	VOC Value
EU	European Paint Directive 2004/42/CE	Calculated	345 g/l

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

Volume solids measured according to ISO 3233 and ASFP-BCF Guidance Method

Film thickness per coat

Typical recommended specification range

Dry film thickness	200 - 750 µm
Wet film thickness	270 - 1000 µm

All steel sections must be coated with correct film thickness to achieve the required fire rating. Please refer to the current loading tables. For further advice please contact your local Jotun office.

Note: The recommended film thickness is achievable by airless spray application in one coat. For higher film thickness, multiple coats will need to be applied. It can be possible to apply the product up to a wet film thickness (WFT) of 2000 µm, depending upon steelwork configuration, geometry, primer used and ambient conditions. A typical WFT of 1000 µm per coat is recommended. If thicker coats are applied sagging may occur and also the overcoating, drying and handling time will be extended. Refer to Application Guide for more detailed information.

Maximum allowable Dry Film Thickness (BS & EN certification)

If measured mean thicknesses are in excess of these values, action needs to be taken to reduce the measured thickness to below the maximum allowable for the particular member shape and orientation.

I/H beams, 3 sided: 3760 µm
I/H beams, 4 sided: 3656 µm
I/H columns, 4 sided: 3656 µm
CHS & RHS columns, 4 sided: 5591 µm
RHS beams, 4 sided: 2771 µm
RHS beams, 3 sided: 2771 µm

Surface preparation

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

Surface preparation summary table

Substrate	Surface preparation	
	Minimum	Recommended
Coated surfaces	Clean, dry and undamaged compatible coating	Clean, dry and undamaged compatible coating

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.

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

Product mixing

Single pack

Thinner/Cleaning solvent

Do not add thinner. The product is ready to use and should not be thinned.

Cleaning solvent: Jotun Thinner No. 7

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): 19-23

Pressure at nozzle (minimum): 200 bar/2900 psi

Drying and Curing time

Substrate temperature	5 °C	10 °C	23 °C	40 °C
Surface (touch) dry	2 h	1 h	30 min	20 min
Dry to handle	48 h	24 h	16 h	8 h
Dry to over coat, minimum	24 h	8 h	6 h	6 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.

All drying times have been measured at a wet film thickness of 1000 µm under controlled temperature and relative humidity below 85 %.

Drying times will depend on local environmental conditions such as air and substrate temperature, relative humidity, weather conditions, ventilation and also the number of coats, total dry film thickness applied, etc.

Drying time, over coating and topcoating intervals may be extended if there is a drop in temperature, high humidity, poor ventilation or if multi-coat system is applied. It is good practice to determine the condition of the paint prior to overcoating. The SteelMaster layer should be dry hard, which means no mark can be easily made in the paint by pressing firm with a thumb. Refer to Application Guide (AG) for multi-coat application method and additional information. Refer to AG for multi-coat application method.

Topcoating

The recommended minimum overcoating interval of this product with approved topcoats is 24 hours. For approved two component topcoats, if the dry film thickness (DFT) of SteelMaster exceeds 2000 µm or when ambient temperature is expected to be above 30°C, the minimum overcoating interval of 48 hours is recommended.

Earlier overcoating with an approved acrylic topcoat is possible, such as for on-site application: Dry film thickness of SteelMaster;

- 750 µm, minimum 1 hour at 23°C, minimum 2 hours at 10°C.
- 1500 µm, minimum 2.5 hours at 23°C, minimum 4 hours at 10°C.
- 3000 µm, minimum 3 hours at 23°C, minimum 8 hours at 10°C.

Note that early overcoating with a topcoat may delay the drying of the total coating system.

In regions where drying temperatures can be expected to be above 30°C and/or with high humidity conditions, recommended minimum overcoating with approved acrylic topcoat is 24 hours.

Prior to application of topcoat, the applicator must ensure that the specified dry film thickness has been achieved. The system should be dry to handle and coating thickness gauge should not leave an indentation on the coating when readings are taken.

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.

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: alkyd, epoxy, epoxy zinc phosphate, zinc epoxy (with epoxy tie coat)

Subsequent coat: approved list of topcoats

To ensure fire performance, primers and topcoats must be compatible with: SteelMaster 90SB

Contact your local Jotun office for a list of approved Jotun primers and topcoats.

Packaging (typical)

	Volume (litres)	Size of containers (litres)
SteelMaster 90SB	20	20

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

SteelMaster 90SB 18 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.

Environmental Documentation

This product can contribute to Green Building Standard credits. Please refer to Jotun.com for more information or contact your local Jotun representative.

Environmental Product Declaration (EPD) is 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.
