



FIRE PROTECTION COATING FOR STRUCTURAL STEEL SECTIONS

TECHNICAL DATA SHEET HENSOTHERM® 310 KS outdoor

- Approved according to EN 13501-2
- Focused mainly on: R30 – R60; R30 up to U/A 470 m⁻¹
- Solvent-based, free from borates and silicones
- Top coat free from halogens



HENSOTHERM® 310 KS outdoor

BENEFITS

Environmental Benefits

- Solvent-based 1C system
- Free from borates and silicones
- Top coat free from halogens

Technical Performance

- Smooth surface and low coating thicknesses
- Assessed also for use on galvanized profiles
- Top coat in RAL/NCS or individual colour shades available
- Maintenance-free
- Physical life according to ETAG 018-1 up to 25 years, can be prolonged for special projects
- R30 for columns/I-/H-sections up to U/A 470 m⁻¹, for beams/I-/H-sections up to U/A 435 m⁻¹, for hollow sections up to U/A 316 m⁻¹ (Tcrit. 500 °C)
- R60 for columns/I-/H-sections up to U/A 260 m⁻¹, for beams/I-/H-sections up to U/A 325 m⁻¹, for hollow sections up to U/A 160 m⁻¹ (Tcrit. 500 °C)
- Specific gravity: 1,33 kg/l, volume solids: 75 % ± 3 % (measured acc. to ISO 3233)

Additional

- High efficiency due to low material consumption/low coverage rates and fast drying times
- Monitored by independent third party institutes



Our HENSOTHERM® and HENSOMASTIK® fire protection coating systems are developed and manufactured exclusively at our company base in Börsen near Hamburg.

QUALITY MARKS



TECHNICAL INFORMATION

Approval / Classification

- Approved according to DIN EN 13381- 8
- ETA-No. 11/0456
- CE marking according to 93/68/EWG

Application Area

- Focused mainly on R30 – R60
- For outdoor and indoor use
- Open steel profiles: R30 – R60 for columns, beams and tension members (utilization factor in cold condition $\leq 78\%$)
- Hollow profiles: R30 – R60 for columns
- Assessed also for use on galvanized profiles
- According to ETAG 018-2 durability class X/Y/Z1/Z2
- Structural steel according to EN 10025-1 (class S, not S185) machine-building steel (class E) is not permitted
- Excluded are steel constructions permanently stressed by ponding water due to rainfall, condensation or aggressive gases
- Standing moisture is to be constructively excluded.
We don't recommend the application for balcony systems, staircases and arcades.
- Coated steel components shall not be receive coverings or miscellaneous jackets which prevent the intumescent fire protection coating from foaming/expanding! Only those components may be connected force-fit, which comply with the same fire resistance rate.

Instructions for Application

- The coating system consists of the primer HENSOGRUND*, the fire protection coating HENSOTHERM® 310 KS outdoor and the top coat HENSOTOP 84 AUSSEN*
- The coating system should only be applied by trained staff!
- The coating system shall be protected against weather effects until it is fully dried/completed! By housing for example.
- System should be preferably applied and dried at a temperature above +5 °C and at a relative humidity below 80 %
- Surface temperature should be at least +3 °C above dew point during application, see Corrosion Protection Standard EN ISO 12944-7
- Steel surfaces should not be warmer than +35 °C during application and drying time
- **The ambient conditions during application must be documented in a report according to EN ISO 12944-7 and -8**

Surface Preparation / Primer

Bare Profiles

- Sandblasting Sa 2.5 according to EN ISO 12944-4, then application of primer HENSOGRUND 1966 E* or HENSOGRUND 2K EP* recommended for cast steel
- Manual cleaning possible, Pst 2 according to EN ISO 12944-4, after manual cleaning application of HENSOGRUND 1K AK*

Primed Profiles

- HENSOTHERM® 310 KS outdoor is designed to be applied over suitable-prepared and primed substrate
- The compatibility between HENSOTHERM® 310 KS outdoor and unknown already applied primers need to be checked; any damage (corrosion, impact e.g.) must be repaired carefully e.g. with HENSOGRUND 1966 E*, HENSOGRUND 1K AK* or other compatible primers

Before the application of HENSOTHERM® 310 KS outdoor already primed surfaces must be checked for damages and dry film thickness if they have been exposed to the weather for longer. If necessary, repair work is needed! For further information see Technical Data Sheets for HENSOGRUND primers.

Galvanized Profiles

- Surface has to be cleaned to remove contamination and to ensure adhesion, then priming with HENSOGRUND 2K*
- Galvanized components must be tempered (heated) before coating with HENSOGRUND 2K (Blistering!)

Application

Before application stir up thoroughly with slow speed! Immediate cleaning of the equipment after use by means of thinner HENSOTHERM® V45*

Airless Spraying

- A material temperature of about +20 °C is recommended for achieving an optimal spraying behaviour and result
- If needed thinning with max. 5 % thinner HENSOTHERM® V 45*
- Recommended operation pressure 200 – 250 bar
- Nozzle size 0.017" – 0.025"; flow rate > 4l/min
- Machine filters can remain, all other filters should be removed
- Recommended coverage rate for the 1st layer on a primed surface 500 g/m² (approx. 275 µm dry film thickness)
- Up to 1.000 g/m² (approx. 550 µm dry film thickness) can be applied in one layer
- Typical coverage rate of HENSOTHERM® 310 KS outdoor applied in one layer depends on the type of steel profile and the position within construction

Brushing and Rolling

- Brushing with long-bristled brushes, resistant to solvents
- Rolling by lambskin or mohair roller, resistant to solvents

Drying Time

- The drying time depends on temperature and relative humidity
- At a temperature of approx. +20 °C and a relative humidity of approx. 65 % the drying time of each layer (up to 1,000 g/m²) is at least 24 hours till next application
- Each layer must be dried through (fingernail test positive) before the next application
- Lower temperatures, higher relative humidity and insufficient air movement can prolong drying time

Note: Due to thermoplasticity of the product the mechanical resistance is reduced in temperature ranges above +40 °C! With temperature decrease the original mechanical resistance will be achieved.

* Please consult the respective technical data sheet!

TECHNICAL INFORMATION

Top Coats

HENSOTOP top coats offer the possibility of colored design, protection against moisture and should be applied when the surfaces, during the usage, are exposed to environmental influences, regular cleaning and similar external influences. Do not apply the top coat before the HENSOTHERM® fire protection coating is fully dried! At the earliest after 24 hours and after a positive fingernail test.

For HENSOTHERM® 310 KS outdoor the following top coats* are compatible: HENSOTOP SB, HENSOTOP 2K PU

Note: For steel constructions permanently exposed to the weather the use of HENSOTOP 2K PU is mandatory!

Storage and Transport

- Storage and transport at min +5 °C and max +30 °C
- Shelf life of unopened pails: 12 months
- Opened pails must be sealed carefully after use!

Packaging

25 kg tinplate pails

Precautions for Safety Use

Use HENSOTHERM® 310 KS outdoor in accordance with all applicable local and national regulations.

Giscode: BS60

Environment, Health and Safety

As regulations are often revised please request for the actual Material Safety Data Sheet before using the product.

* Please consult the respective technical data sheet!

In case of any questions please contact our technical support team!

For full product documentation and other information to download please visit our website www.rudolf-hensel.de

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