FIRE PROTECTION COATING FOR STRUCTURAL STEEL SECTIONS

TECHNICAL DATA SHEET HENSOTHERM® 320 KS outdoor

- Approved according to EN 13501-2
- Focused mainly on: R 90 – R 120; R 90 up to U/A 307 m^{-1}
- Free from borates and silicones
- Top coat free from halogens
- Suitable for shop application

certifire

Deutsches Institut für Bautechnik DIBt

Z-200.4-33

CE ETA 11/0252 ETA

HENSOTHERM® 320 KS outdoor
BENEFITS

Environmental Benefits
- 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
- Suitable for shop application
- Physical life according to ETAG 018-1 up to 25 years, can be prolonged for special projects
- R 90 for columns / I- / H-sections up to U/A 307 m^{-1}, for beams up to U/A 395 m^{-1}, for hollow sections up to U/A 60 m^{-1} (Tcrit. 500 °C)
- Specific gravity: 1,29 kg/l, volume solids: 74 % ± 3 % (measured acc. to ISO 3233)

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

Our fire protection coating systems **HENSOTHERM®** and **HENSOMASTIK®** are developed and produced exclusively at our headquarters in Börnsen near Hamburg. Our products carry the certified origin **Made in Germany** by TÜV NORD CERT standard A75-S018 (Certificate Registration No. 44 771 130042).

SEALS OF QUALITY

European Organisation for Technical Assessment

Member of DGNB
Deutsche Gesellschaft für Nachhaltiges Bauen
German Sustainable Building Council

Deutsches Institut für Bautechnik

Z-200.4.33

CE
1121
Rudolf Hensel GmbH
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Germany
11
1121-CPD-GA5007
ETA No. 11/0252
ETAG 18, Parts 1 and 2
Product for Fire Protection
HENSOTHERM® 320 KS
- outdoor -
Declared performance see DoP No. EN 2013-07-008

TECHNICAL INFORMATION

Approval / Classification

- Approved according to DIN EN 13381-8
- ETA-No. 11/0252
- Certificate of applicability abZ No. Z-200.4-33
- CE marking according to 93/68/EWG

Application Area

- Focused mainly on R 90 – R 120
- For outdoor and indoor use
- Open steel profiles: R 90 – R 120 for columns, beams and tension members (utilization factor in cold condition ≤ 78%)
- Hollow profiles: R 90 – R 120 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

Instructions for Application

- The coating system consists of the primer HENSOGRUND*, the fire protection coating HENSOTHERM® 320 KS outdoor and the top coat HENSOTOP 84 AUSSEN*
- The coating system should only be applied by trained staff!
- 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**

Shop Application

Please contact our technical support team.

Surface Preparation / Primer

Bare Profiles

- Sandblasting Sa 2.5 according to EN ISO 12944-4
- Application of HENSOGRUND 1966 E* (solvent-based), coverage rate: 120 – 190 g/m², wet film thickness 90 – 130 µm, dry film thickness 40 – 60 µm, next application at the earliest after 24 hours (+20 °C/65 % relative humidity), cleaning of equipment after use by means of thinner e.g. HENSOTHERM® V 45*
- Manual cleaning possible, PSt 2 according to EN ISO 12944-4, after manual cleaning application of HENSOGRUND AK Primer*

Primed Profiles

- HENSOTHERM® 320 KS outdoor is designed to be applied over suitable-prepared and primed substrate
- The compatibility between HENSOTHERM® 320 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 AK Primer* or other compatible primers

Before the application of HENSOTHERM® 320 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
- Application of HENSOGRUND 2K*
- Next application at the earliest after 24 hours (+20 °C/65 % relative humidity) and after fingernail test positive

Application

Before application stir up thoroughly with slow speed!
Immediate cleaning of equipment after use by means of thinner e.g. HENSOTHERM® V 45*

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® 320 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

* Please notice Technical Data Sheet.

TECHNICAL INFORMATION

Top Coat HENSOTOP 84 AUSSEN

- Provides protection from moisture and other environmental influences
- Usage without top coat possible in dry indoor conditions without condensation
- No top coat application before through-drying of HENSOTHERM® 320 KS outdoor, thus after at least 24 hours and after fingernail test positive
- HENSOTOP 84 AUSSEN* (solvent-based)
- Coverage rate depending on the selected colour shade: 2 x 130 – 150 g/m², wet film thickness 2 x approx. 125 µm, dry film thickness 2 x approx. 40 – 50 µm alternative: 1 x 260 – 300 g/m², wet film thickness 1 x 250 µm, dry film thickness approx. 80 – 100 µm
- Available in RAL or NCS colour shades and on request in individual colour shades
- Notice: If steel surfaces are regularly exposed to intense heat / high temperatures, do not use dark colours as top coating
- Equipment must be cleaned immediately by means of thinner HENSOTHERM® V 45*

Storage and Transport

- Storage and Transport free from frost! Preferably at a minimum of +5 °C to a maximum of +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® 320 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 notice 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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