FIRE PROTECTION COATING FOR CONCRETE

TECHNICAL DATA SHEET HENSOTHERM® 820 KS

- Tested in compliance with the European standard EN 13381-3:2015, analogous to prEN 13381-3:2012
- External and in-house monitoring / building material approval no. Z-19.11-2196
- Easy to process, low film thicknesses, no loads on surrounding structure, maintenance free
- BETON-CARBONSPERRE prevents contaminant and water penetration
- Fulfils the requirements under DIBt (October 2010) and AgBB (June 2012)

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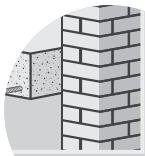
green product HENSEL

ÉMISSIONS DANS L'AIR INTÉRIEUR A+ A+ A B C

LEED
Ecological building material
Fulfilment of requirement in
LEED credit EQ c4.2

TÜV NORD CERT GmbH Made in Germany



HENSOTHERM® 820 KS

Benefits

Environment

- Water-based system
- Free of halogens, APEO (alkyl phenol ethoxylate), borates, fibres, and plasticisers
- LEED confirmation

Germany: The analysed product fulfils the requirements in the 10/2010 DIBt reports on "Zulassungsgrundsätzen zur gesundheitlichen Bewertung von Bauprodukten in Innenräumen" ("Approval principles for the health assessment of building products in interior rooms") in conjunction with the LCI values issued in June 2012 by the AgBB (Committee for Health-related Evaluation of Building Products).

France: CMR substances: The tested product fulfils the requirements of the French directives DEVP0908633A of 30 April 2009 and DEVP0910046A of 28 May 2009.

VOC classification: The product fulfils **VOC emissions class A+**. The recommended classification is based on the French regulation for labelling building products, wall panelling, floorings, paints, and lacquers with respect to their emissions of volatile contaminants, including those of 25 March 2011 (décret DEVL1101903D) and of 13 April 2011 (arrêté DEVL1104875A).

Belgium: The analysed product fulfils the requirements set down in the "Royal Decree establishing threshold levels for the emissions to the indoor environment from construction products for certain intended uses" (draft December 2012).

Technology

- Coating for upgrading hollow concrete slabs, flat concrete ceilings, concrete beams, concrete supports, concrete walls, and ribbed ceilings for an enhanced fire resistance duration of up to 240 minutes
  The bare concrete patches take the insulation-layer-forming fire protection coating system HENSOTHERM® 820 KS. The consumption is calculated as a function of the required fire resistance class and concrete coverage.
- Easy to process, visually appealing surface, maintenance free
- No loads on the surrounding structure, space saving = no headroom loss
- Suitable for areas with high emission levels, e.g. in underground car parks
- Very low film thicknesses for considerable cost and building time savings:
  0.42 – 1.7 mm (Exova), 1.5–3.5 mm (Efectis). see "Application areas"
- Optional RAL, NCS, or custom colours or samples provided by the top coat HENSOTOP WB
- Optimised light efficiency: the brighter the chosen colour, the better ambient light is reflected from the coated surfaces, reducing lamp use and power consumption
- BETON-CARBONSPERRE prevents contaminant and water penetration

General

- External and in-house monitoring
- Low material consumption for high cost effectiveness:
  approx 840 g/m² to 3,382 g/m² depending on building requirements
- No flaking when drilled afterwards for suspended loads and installations

Our fire protection coating systems **HENSOTHERM®** and **HENSOMASTIK®** are developed and produced exclusively at our headquarters in Börnsen near Hamburg. Our products bear the certification **"Made in Germany"** in compliance with TÜV NORD CERT Standard A75-S018 (certificate registration no. 44 771 130042).

Quality marks

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TECHNICAL INFORMATION

Approval/classification

- Exova Warringtonfire WF report no. 339814 + 339816[1)]
- Efectis Nederland B.V. | Report: 2012-Efectis-R0556 [Rev1] [2)]
- LEED confirmation
- Building material approval no. Z-19.11-2196

Application areas

HENSOTHERM® 820 KS is a single component thin-film water-based fire protection coating for applications in dry indoor rooms.

[1)] The fire resistance duration can be extended up to **240 minutes** on **flat concrete ceilings** (Exova WF report no. 339814).

[1)] The fire resistance duration can be extended up to **150 minutes** on **concrete beams, columns and walls** (Exova WF report no. 339816).

[2)] The fire resistance duration of **hollow concrete slabs** can be improved up to **120 minutes** (2012-Efectis-R0556 [Rev1]).

Also possible on request are ribbed ceiling upgrades with expertises.

We recommend that you consult with the responsible planning authority or architect before installing the fire protection system. On request, a project based expertise can be drawn up that serves as a basis for the approval of individual cases.

Product features

- HENSOTHERM® 820 KS is a pseudoplastic, non-hygroscopic, intumescent, fire-resistant coating.
- HENSOTHERM® 820 KS greatly delays the build-up of heat in concrete. At temperatures over 330°C, concrete and steel reinforcements expand at different rates.
- HENSOTHERM® 820 KS prevents concrete from bursting off. The product complies with the requirements under DIBt (October 2010) and AgBB (June 2012).
- Water-based system
- Free of APEO (alkyl phenol ethoxylate), halogens, and borates
- No fibre or other particulate emissions
- VOC emissions class A+
- No loads on the surrounding structure, space saving, no headroom loss
- Only small coating thicknesses needed: 0.42–1.7 mm (Exova), 1.5–3.5 mm (Efectis)
- Easy to process, maintenance free
- Under the optimal conditions, a wet film thickness up to 1,500 µm thick can be applied in the one operation
- Optimal surface look
- Colour: white, approx RAL 9010

Surface preparation / primer

Surface requirements

- The concrete surfaces must be rough, have good grip, and be free of dusts, oils, and greases
- Free of efflorescences and cement clouds
- The concrete must be dry (test as defined in ASTM D 4263) and/or residual moisture of max 4% according to CM
- Priming: BETON-CARBONSPERRE*

Preparations on damaged concrete surfaces

The compatibility of the following products has been verified for the repair of various imperfections:

- Defects: Disbocret 505 Feinspachtel or Disbocret 506 Planspachtel (with 15–20% sand filler)
- Cracks: Disbocret 505 Feinspachtel or Disbocret 506 Planspachtel

Application

Before application, the material must be thoroughly mixed with a slow agitator!

HENSOTHERM® 820 KS should be processed preferably at a room temperature of ≥ +10 °C and a relative air humidity of < 80 %. The processing temperature may not drop below the dew point. Good ventilation is essential if the relative air humidity is too high, e.g. 80%.

The surface temperature should be at least 5°C higher than the determined dew point, and in all cases above 0°C. HENSOTHERM® 820 KS may only be applied by trained personnel.

Airless spraying

- Recommended nozzle sizes: 0.017"–0.025"
- Recommended working pressure: 200 – 250 bar
- Discharge > 4.5 l/min
- Detach intake hose from airless sprayer
- Filters can be left in the airless pump and spraying gun.
- Recommended wet film thickness per operation: max 1,500 µm
- Apply a wet film thickness no thicker than 750 µm in the first operation.
- Applied quantity according to expertise in the ratio 1.00 mm dry film thickness ≙ 1.4 mm wet film thickness≙ 2 kg/m^2
- Dilution: max 5% water

Brushing and rolling

- Apply with a long-bristled brush; Chinex brushes are recommended
- Rollers of synthetic material or lambskin

* Please consult the respective technical data sheet!

Drying times

The drying time depends on temperature and air humidity. Material, room, and building temperatures of +20°C and a relative air humidity of about 65% result in the following drying times for about 2,000 g/m² or a 1.0 mm dry film thickness:

- dust-dry after approx. 6 hours
- ready for recoating after approx. 12 hours
- dried through after approx. 48 hours

Low temperatures, a higher air humidity, inadequate air circulation, and varying coating thicknesses can increase the above drying times.

Top coat HENSOTOP WB

The (water-based) top coat HENSOTOP WB* can provide a surface with an optional RAL, NCS, or custom colour or samples.

Storage and transport

- Storage and transport at min +5°C and max +30°C. Protect against frost!
- Unopened packaging has a 12-month shelf life.
- Opened packaging must be sealed carefully!

Packaging

25 kg plastic bucket, other packaging sizes on request

Work safety

Processing must comply with the work safety regulations!
GISCODE: M-DF01

Labelling and environmental protection

As regulations are often revised please request the current safety data sheet before using the product.

* Please consult the respective technical data sheet!

Applications of HENSOTHERM ® 820 KS

Concrete hollow core slabs

Flat concrete ceilings

Concrete beams, columns and walls

Ribbed ceilings

Our customer services will be pleased to assist you with your enquiries!
Complete product portfolios and further details can be downloaded from: **www.rudolf-hensel.de**

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