

protect your values

svt
FIRE PROTECTION



High-performance fire protection for rolling stock

PYRO-SAFE® DG - Intumescent coatings and fabrics

safety via technology

Picture © Siemens AG

PYRO-SAFE® DG-S and PYRO-SAFE® DG-SKN

High-performance intumescent coatings

PYRO-SAFE DG-S and PYRO-SAFE DG-SKN are svt's innovative intumescent firestop coatings that are based on expandable graphite. They are used as fire-resistant coatings to improve the material performance in a fire and provide increased resistance to fire. Their specific material formulation has been optimized for use in rail vehicles.

Characteristics

Environmentally friendly expandable graphite is used as a basis for the insulation coating. This material can expand to many times its original size when exposed to heat. At temperatures of +150 °C and more, PYRO-SAFE DG-S and PYRO-SAFE DG-SKN form a protective insulation coating with a high foaming pressure of up to 1.65 N/mm² and an up to 50-fold expansion rate.

Special substances stabilise and glue the high temperature stable graphite inclusions together. A number of reaction steps proceed during the different stages in a developing fire, so a coherent insulation coating is produced, which provides effective fire protection.

Product features

PYRO-SAFE DG-S and PYRO-SAFE DG-SKN are single-component aqueous dispersions. The VOC content is clearly below the limitation values specified in Chem VOC Paint V (2001/24/EC).

The products are moisture and UV resistant and resistant against many chemicals. They possess excellent adhesion properties for application on timber, metal, plastic and fabric-based materials.

The coating is viscoplastic after drying and offers very high resistance to mechanical impact.

PYRO-SAFE DG-S and PYRO-SAFE DG-SKN are available in anthracite (standard), grey, black or red.

Application

Owing to their excellent properties, PYRO-SAFE DG-S and PYRO-SAFE DG-SKN can be used in a wide range of indoor and outdoor applications on different material surfaces.



Handling

PYRO-SAFE DG-S and PYRO-SAFE DG-SKN will be applied preferably by spray gun.

Testing

The material properties of PYRO-SAFE DG-S and PYRO-SAFE DG-SKN have been tested by the accredited RST Rail System Testing GmbH in Berlin, Germany according to DIN EN 45545-2 (02/2016).

Both products fulfill the requirements R1 / R7 for hazard levels HL1 – HL3.



PYRO-SAFE DG-SKN has been successfully tested by a number of institutes.

- EXOVA Warringtonfire: The results demonstrate that PYRO-SAFE DG-SKN complies with the exterior vertical surface requirements (detailed in table 5 of BS 6853:1999) and the exterior horizontal prone surface requirements (detailed in table 6 of BS 6853:1999) for a category Ia, category Ib and category II vehicle
- 2000 hours condensation according DIN EN ISO 6270-1, by the accredited institute iLF Research & Development Company Coatings and Paints GmbH
- Sound deadening, determination of the loss factor according to EN ISO 6721-3 by the accredited institute Müller-BBM GmbH

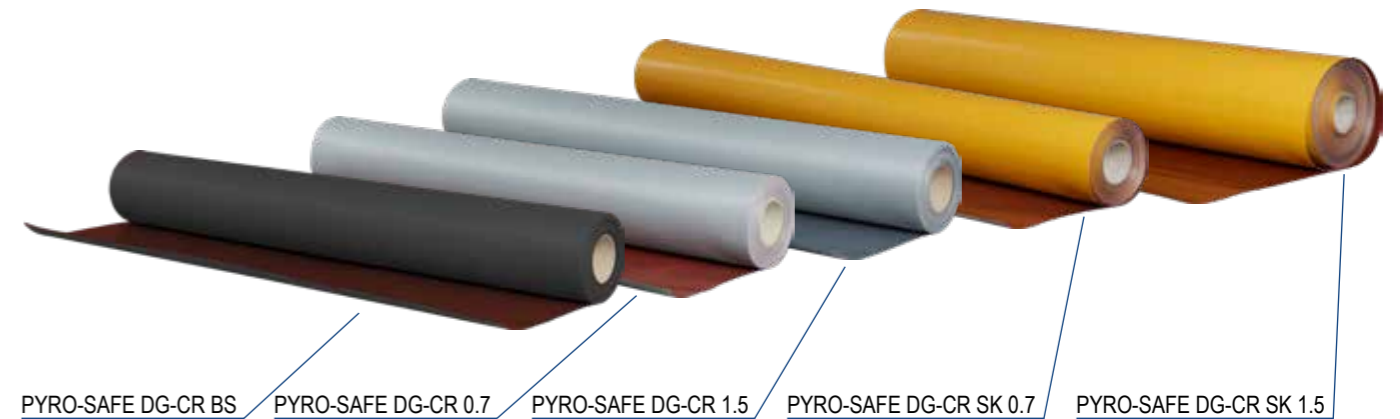


PYRO-SAFE DG-S and PYRO-SAFE DG-SKN at a glance:

- VOC content clearly below the limitation values specified in Chem VOC Paint V (2001/24/EC)
- Viscoplastic
- High resistance to mechanical impact
- Customized viscosity adjustment possible
- Suited for indoor and outdoor applications
- Moisture and UV resistant
- Weather resistant
- Can be used on many different material surfaces (metal, timber, plastic, fabric)
- Resistant against many chemicals
- Early and very rapid foaming at +150 °C
- High foaming pressure (up to 1.65 N/mm²)
- Up to approx. 50-fold expansion rate
- Sound deadening
- No Topcoat necessary
- Flexible
- Light weight
- 1K-Material
- High stability grade



PYRO-SAFE® DG-CR High-performance intumescent fabric



PYRO-SAFE DG-CR BS PYRO-SAFE DG-CR 0.7 PYRO-SAFE DG-CR 1.5 PYRO-SAFE DG-CR SK 0.7 PYRO-SAFE DG-CR SK 1.5

Characteristics

- PYRO-SAFE DG-CR (0.7 and 1.5) is a flexible composite fibre glass fabric with external PU coating and internal intumescent coating PYRO-SAFE DG.
- PYRO-SAFE DG-CR SK (0.7 and 1.5) is a flexible composite fibre glass fabric with intumescent coating PYRO-SAFE DG on one side and a self-adhesive foil on the other side.
- PYRO-SAFE DG-CR BS is a flexible composite fibre glass fabric with intumescent coating PYRO-SAFE DG on both sides.

Environmentally friendly expandable graphite is used as a basis for the fireproof fabric. This material can expand to many times its original size when exposed to heat. At temperatures of +150 °C and more, the products forms a heat-insulating foam layer with a high foaming pressure of up to 2.00 N/mm² and an up to 50-fold expansion rate which fills the free space between the structural component to be protected and the fabric thereby preventing the fire from spreading.

Product features

PYRO-SAFE DG-CR SK offers good adhesion on metal surfaces and different plastics. In addition to the standard lengths and widths customized sizes are available on request.

Product	Roll length	Roll width
PYRO-SAFE DG-CR 1.5	10 m	1,400 mm; pre-cut parts on request
PYRO-SAFE DG-CR 0.7	10 m, 20 m	1,100 mm; pre-cut parts on request
PYRO-SAFE DG-CR SK 1.5	10 m, 20 m	1,400 mm; pre-cut parts on request
PYRO-SAFE DG-CR SK 0.7	10 m, 20 m	1,100 mm; pre-cut parts on request
PYRO-SAFE DG-CR BS	10 m	1,400 mm; pre-cut parts on request



Handling

Processing temperature +5 °C up to +50 °C. Cuttable with ordinary tools, e.g. scissors or utility knives.

Testing

PYRO-SAFE DG-CR, PYRO-SAFE DG-CR SK and PYRO-SAFE DG-CR BS have been successfully tested by a number of institutes.



- European Technical Assessment ETA-16/0268 for intumescent products for sealing and fire stopping purposes by the German institute DIBt, Approval body for construction products
- PYRO-SAFE DG-CR SK (0.7 and 1.5): Classification report according to DIN EN 45545-2:2016-02, R22/23 HL 1 – HL 3
- PYRO-SAFE DG-CR: Proof of aging resistance (10 years) by Materialprüfanstalt (MPA) für das Bauwesen - IBMB TU Braunschweig

PYRO-SAFE DG-CR, PYRO-SAFE DG-CR SK and PYRO-SAFE DG-CR BS at a glance:

- Insulating foam layer in case of fire
- No impact on other building materials like polyethylen (PE) and polyvinyl chloride (PVC) according to EOTA TR 024
- Can be painted over with approved coatings on the basis of acrylic dispersion, alkyd resin, polyurethan acryl and epoxy resin according to EOTA TR 024
- Weather resistant for indoor and outdoor applications (Type X EOTA TR 024)
- Can be used on many different material surfaces (metal, timber, plastic, fabric)
- Thermoplastic features
- Resistant against many chemicals
- Early and very rapid foaming at +150 °C
- High foaming pressure (up to 2.00 N/mm²)
- Up to 50-fold expansion rate
- Customized blanks available
- Coating on one or both sides available
- Self-adhesive available
- High tear strength
- Easy processing
- Suitable to close openings in case of fire



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References

- ICE 3 by SIEMENS
- Desiro RUS by SIEMENS
- Ulf tramway Vienna by SIEMENS
- AGT VAL 208 by SIEMENS
- DESIRO Thameslink by SIEMENS
- Singapore Downtown Line by Bombardier
- Metro Riad, Inspiro Trains by SIEMENS Austria
- INNOVIA Monorail 300 – SPET São Paulo / KAFD Saudi Arabia by Bombardier
- INNOVIA Metro 300 – KLAV Malaysia / Vancouver Canada by Bombardier
- Articulated railcar GTW DMU-2 for Bay Area Rapid Transit (BART), California, USA by STADLER
- DMU FLIRT 3 for TexRail, Texas, USA by STADLER
- Shanghai (8 lines), Lanzhou, Wuhan (4 lines), Xuzhou, Changzhou, Singapore (2 lines), Boston (USA) by China CRCC



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Efficient fire protection solutions

We put our almost 50 years of experience as a supplier and licence owner in the field of passive fire protection at your service! We offer extensive technical assistance, in addition to innovative developments and special solutions.

Our vast know-how, broad product portfolio, and our own fire test facility that allows us to perform fundamental pre-approval tests form the basis on which we can offer cost-effective solutions to your specific fire protection requirements.



↑ Way out
← Lift  
to exit



Subject to errors and changes. At time of printing (02/2018) all details correspond to current state of technology or standard. If not otherwise stated data is based on German standard.
Upon request we are happy to inform you about the valid legal and technical framework or manufacturer specifications of your specific case.
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