



Effective Fire-protecting Solution

August 2020





Effective Fire Protection

SiCoat is effective all-purpose intumescent fire-protection material that can be used for:

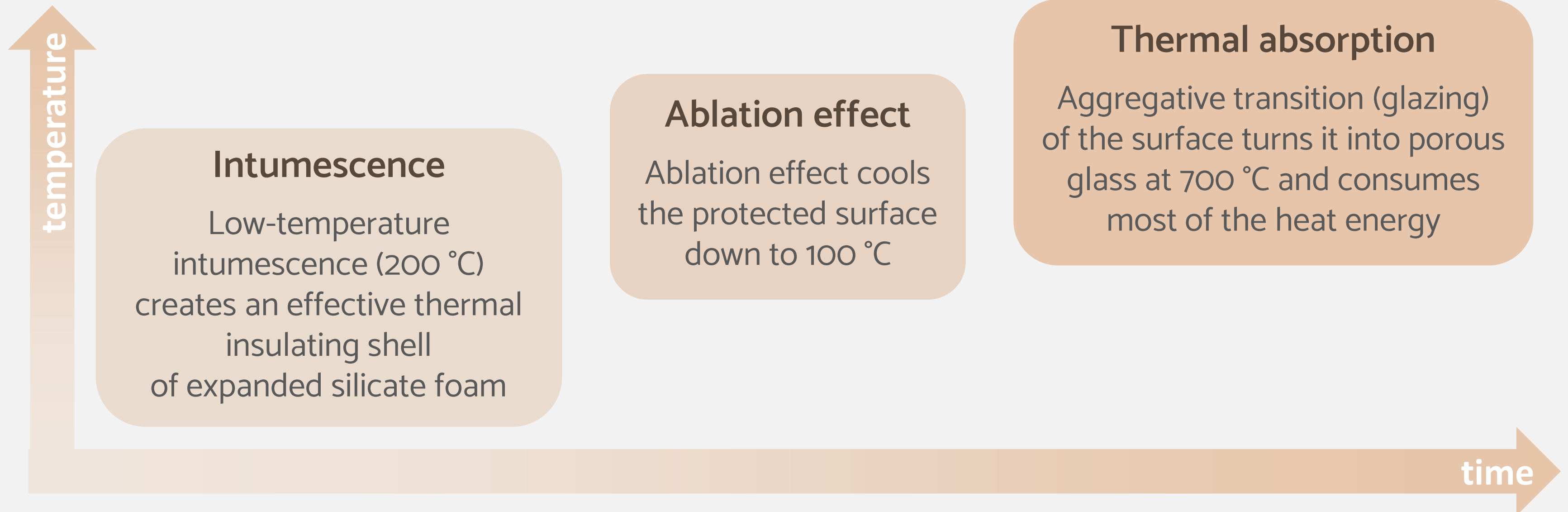
- 🔥 **Fireproofing of construction elements**
(pillars, girders, doors, air ducts, cable conduits etc.)
- 🔥 Fireproofing of construction elements made of steel, wood, concrete, polymer, composite materials
- 🔥 Allows **improving the flammability class** of polymers
- 🔥 Allows reaching almost **any fire-resistance rating**





Effective Fire Protection

While most of the fire-protecting products have only one action, **SiCoat** is very effective due to its **triple action**:





Effective Fire Protection

You may also choose **SiCoat** for its distinct functional performance:

- 🔥 **100% non-organic**, does not contain organic solvents
- 🔥 **No toxic emission** during application and fire
- 🔥 **Perfect adhesion** to metal, wood and EPS
- 🔥 **High pH=10** protects metal from rust, wood from mold/mildew/fungus
- 🔥 **Can be stored 3-4 years** retaining its properties
- 🔥 **Freezing/defrosting** cycles do not affect the quality





How Does SiCoat Work?

- 🔥 **SiCoat is sodium hydro-silicate**
in the form of colloid or hard gel powder
- 🔥 Under the temperature of 200 °C and higher
intumescence of SiCoat forms a hard shell of silicate foam
with very low thermal conductivity ($\lambda=0.045$ W/m °K)
- 🔥 **SiCoat contains chemically bound
(crystallization) water up to 20%** by weight,
and during the heating water releases, boils
and cools the surface down to 100 °C





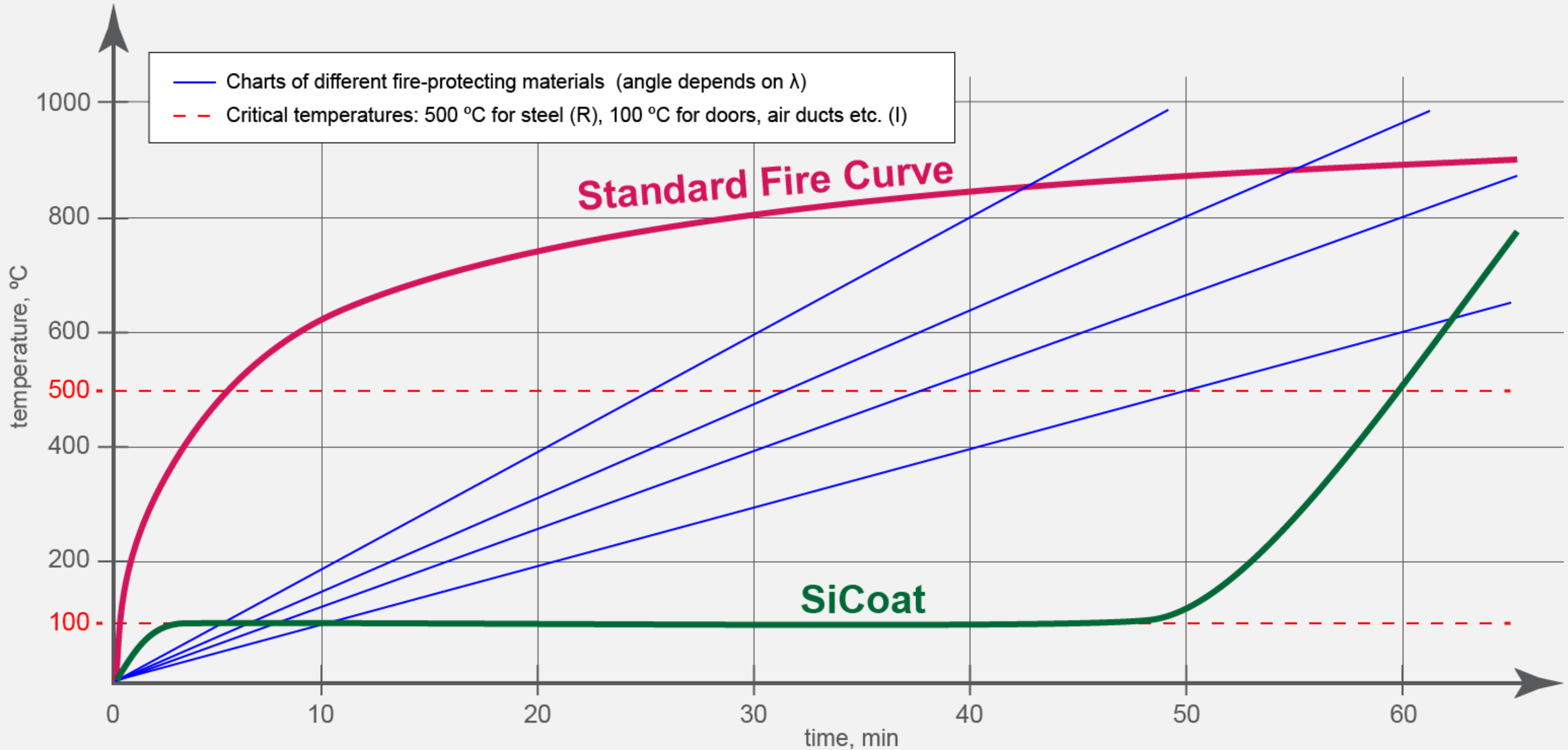
How Does SiCoat Work?

- 🔥 The ablation effect of **SiCoat** is similar to the one used in flight recorders and spacecraft shells
- 🔥 The ablation effect allows the **surfaces protected with SiCoat not getting hotter than 100 °C** during a significant time interval
- 🔥 During the fire, **the SiCoat surface gets glazed and consumes most of the heat energy** protecting the subject





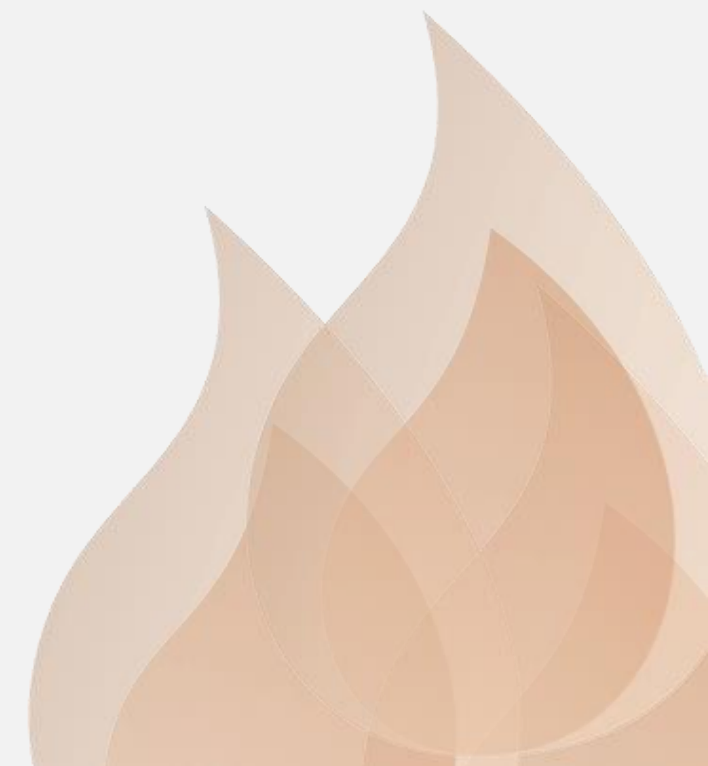
How Does SiCoat Work?





How Does SiCoat Work?

These **SiCoat** properties are of utmost importance for **construction elements and fire retarding barriers** that have a loss of thermal insulating ability as a specified parameter – e.g. doors, gates, air ducts, cable conduits etc.





SiCoat Formats

3 formats of **SiCoat** are used for fire protection:

- 🔥 **SiCoat C** – intumescent colloidal paint/paste/glue
- 🔥 **SiCoat B** – fire-protecting bandage
- 🔥 **SiCoat P** – sodium hydro-silicate hard gel powder





SiCoat Formats – SiCoat C

- 🔥 Can be applied with a brush, paint roller, spatula, sprayer or cartridge
- 🔥 Can be used for **protection of surfaces**
- 🔥 Can be used for **gluing or tightening joints of soft refractory materials**, fire-protecting and thermal insulating mats
- 🔥 Can be used for **tightening joints/collars of hot air ducts/pipelines**
- 🔥 Adding **SiCoat** to composite mat used for **inner lining in car production** allows to significantly **reduce combustibility and burning behavior** of the whole car

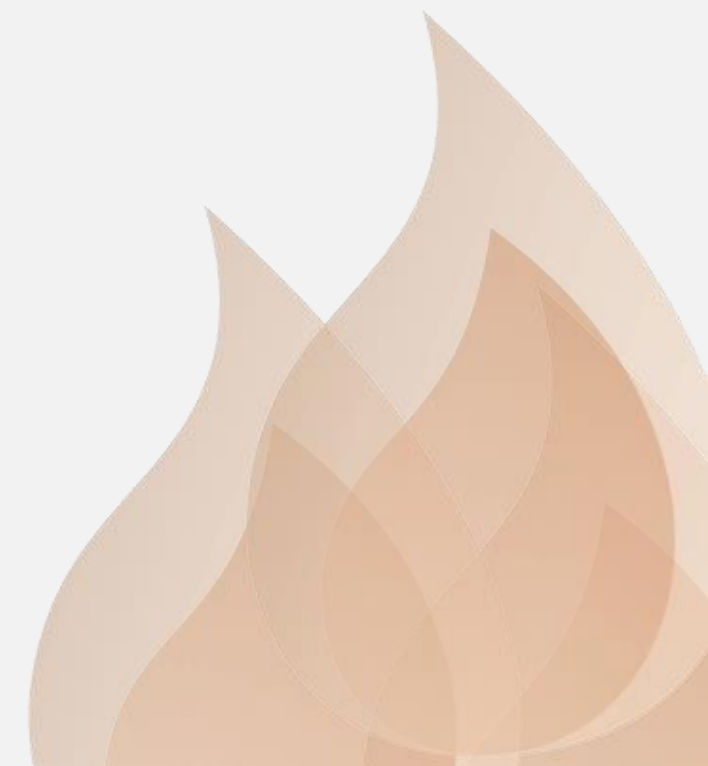




SiCoat Formats – SiCoat C



SiCoat C applied
to EPS board
surface
with spatula





SiCoat Formats – SiCoat B

SiCoat B is a roll material consisting of 3 layers:

- 🔥 **The base** of a nonwoven or woven fabric – vlies, cotton, basalt etc.
- 🔥 Colloidal **SiCoat** layer
- 🔥 **Liner** or separating film





SiCoat Formats – SiCoat B

SiCoat B fire-protecting bandage is an **all-purpose solution** for metal, wooden, polymeric or composite construction elements:

- 🔥 Fire protection of **steel elements** – pillars, girders, beams etc.
- 🔥 Fire protection of **wooden elements**
- 🔥 **Improving fire-endurance** of air ducts, cableways, doors and gates

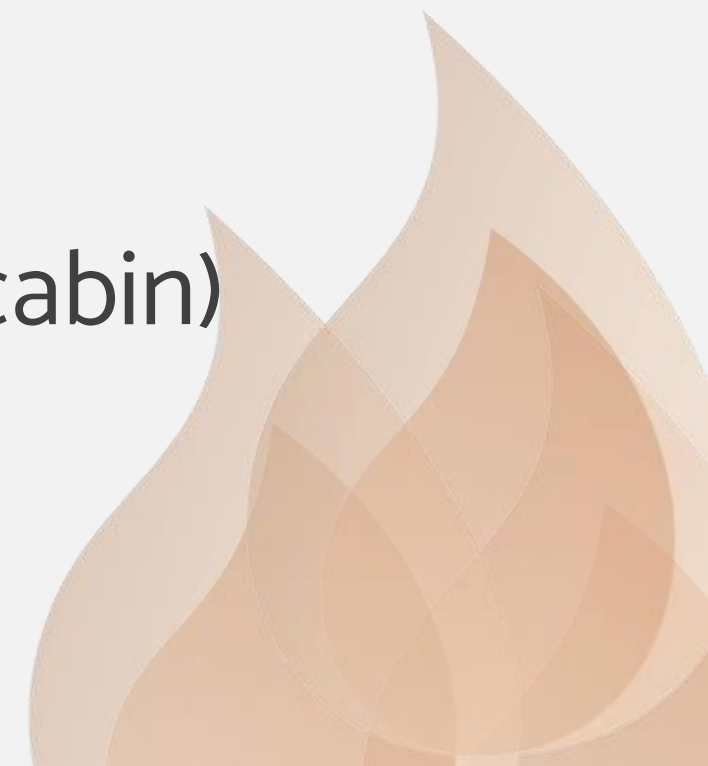




SiCoat Formats – SiCoat B

The range of possible applications for **SiCoat B** also includes:

- 🔥 Fire protection of **concrete ceilings** of parking zones and other communal areas
- 🔥 Equipping fire-protecting shells for **pipelines and cableways** in walls and floors
- 🔥 **Improving fire-endurance** of thin-wall metal elements (e.g. floor between aircraft baggage bellyhold and passenger cabin)

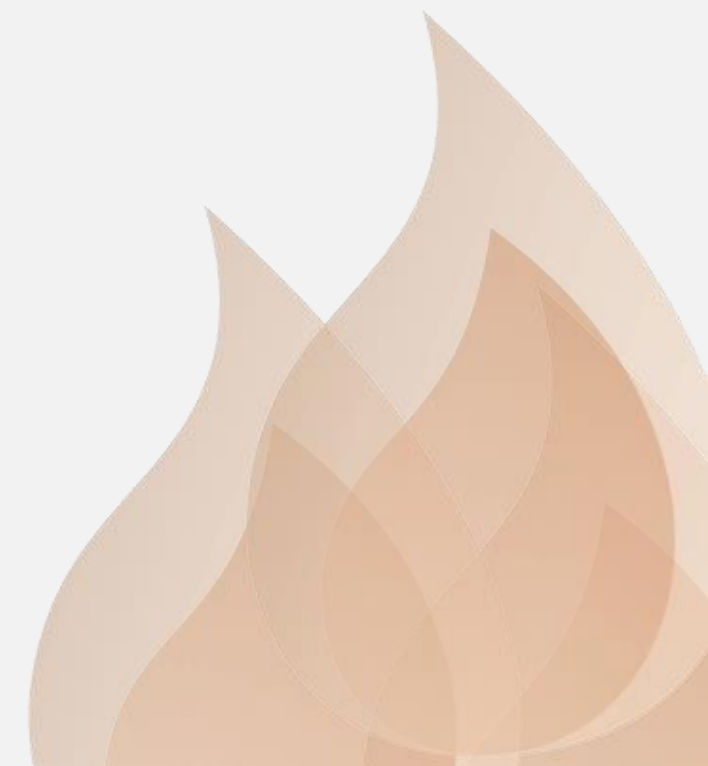




SiCoat Formats – SiCoat B

SiCoat B fire-protecting bandage has a very **convenient** application:

- 🔥 It can be applied to the surface as one operation reaching the **fire-protecting layer of any thickness**
- 🔥 Just unseal the bandage and layer by layer apply it to the surface removing the liner
- 🔥 The application process is **safe**, creates no splash, no drops, no bounce and no toxic emission
- 🔥 Can be applied in living/industrial areas during their operation





SiCoat Formats – SiCoat B

SiCoat B is the ideal solution for **improving fire-endurance** of elements that among REI requirements have the main focus on I – loss of thermal insulating ability.

Due to the **ablation effect** the temperature of surfaces protected with **SiCoat B** can remain under 100 °C during a significant time interval.





SiCoat Formats – SiCoat P

SiCoat P is sodium hydro-silicate hard gel powder that contains **up to 20% of chemically bound (crystallization) water** and can be used as active filler for:

- 🔥 **Fire-protecting paints/varnishes** based on alkyd and/or acrylic resins
- 🔥 **Fire-protecting coat gel** based on a polyester resin to improve fire-endurance of fiberglass elements in shipbuilding, aircraft construction and railway coach manufacturing interior trim
- 🔥 **Protection of thermoplastic polymers** (PE, PP, PVC) to get fire-resistant cable sheaths and cable ducts





SiCoat Applications

Regardless of the application required **SiCoat** delivers **outstanding fire-protecting performance** and improving fire-endurance of construction elements or making them non-combustible.

This presentation allows us to reveal very few typical applications of **SiCoat**.

So, if **you have any special needs in fire-protection** for a specific project, element or material, we will be happy to discuss them and to find the proper solution for you.





Contacts

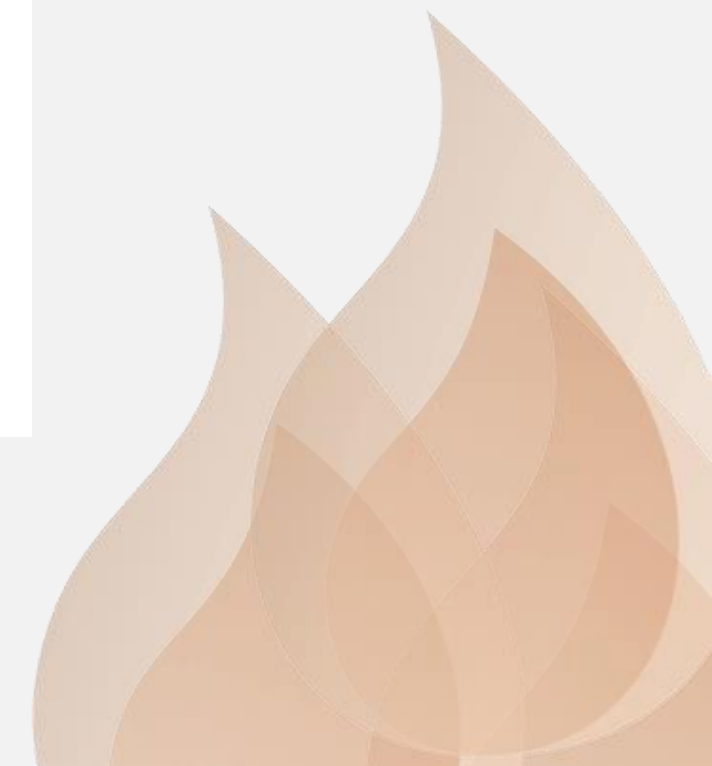
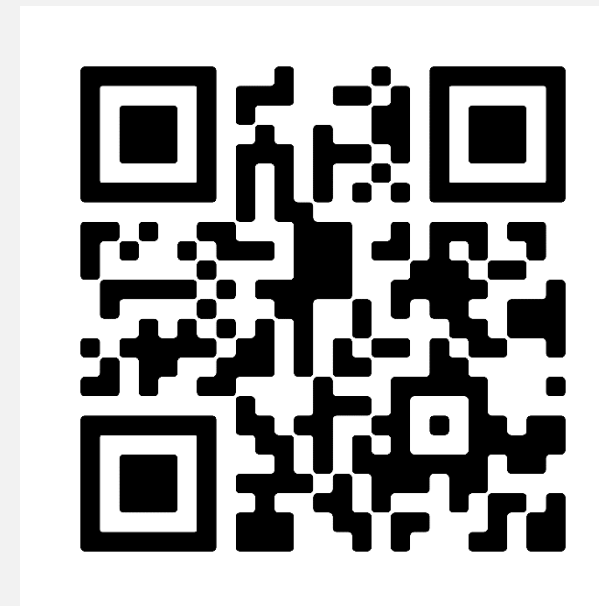
Visit our website to see info about our products and solutions:

<https://si-tech.solutions/sicoat>



Visit our YouTube channel for product demo videos:

<https://youtu.be/vZTSJtodPjg>





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