SiCoat

Effective Fire-protecting Solution

August 2020

SiCoat

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**

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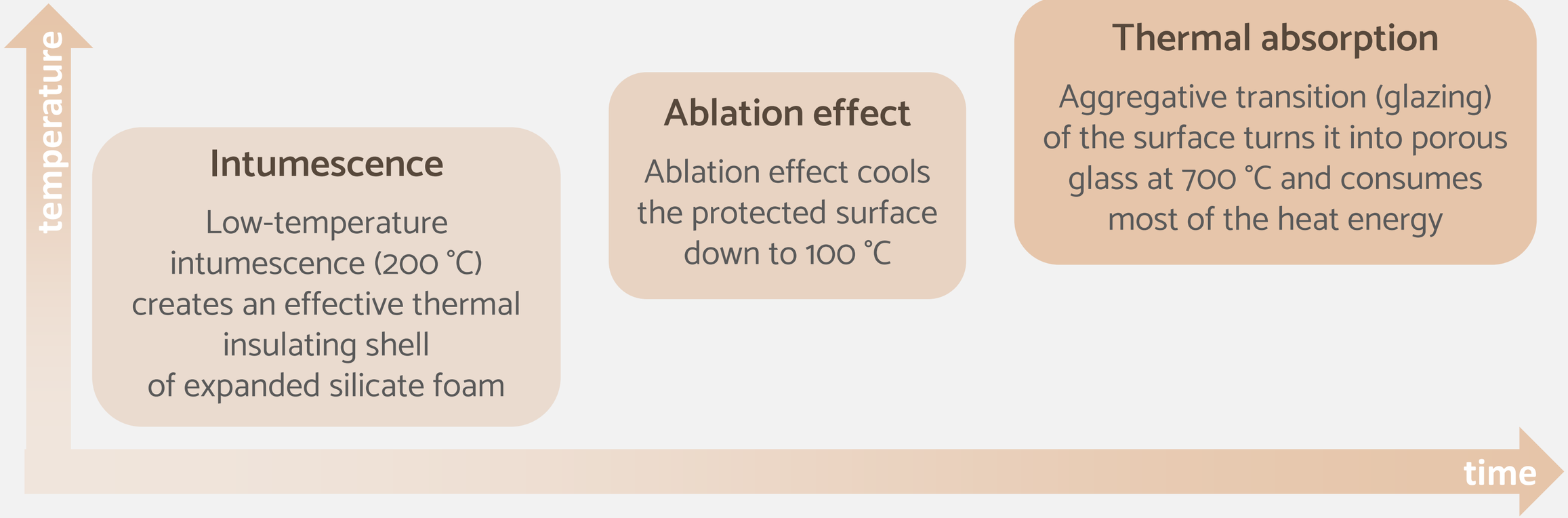
Effective Fire Protection

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



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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

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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 (λ=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

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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

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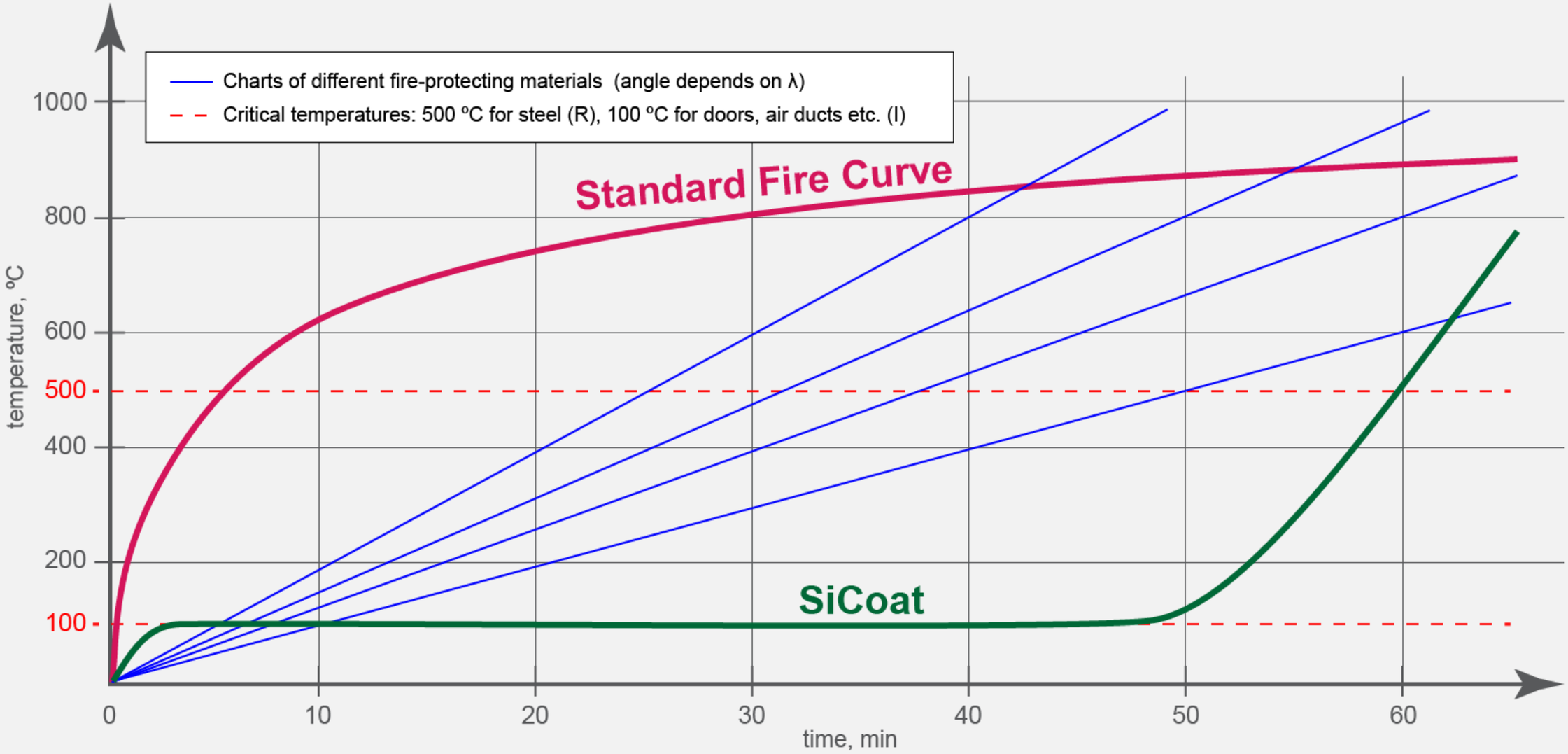
How Does SiCoat Work?



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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.

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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

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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

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SiCoat Formats – SiCoat C

SiCoat C applied
to EPS board
surface
with spatula

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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

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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

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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)

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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

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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.

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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

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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.

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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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