

Construction



**Sika® Unitherm®**  
**Fire proofing that works**  
For steel, wood and cables



# Sika® Unitherm® fire-proofing systems, preventing fire worldwide

Whether on steel constructions, wooden construction elements, electric cables, flammable pipes or plastics – **Sika® Unitherm®** provides reliable protection in compliance with international standards. That is why **Sika® Unitherm®** can be found today in many major plants and buildings right around the globe.

## Know-how

The principle behind the **Sika® Unitherm®** function is based on a complex composition of chemical products. The thermal energy of the fire is converted and the original millimeter-thick coating becomes a centimetre-thick, micro-porous layer of foam which insulates the structure against the heat and prevents it burning.

## Experience

Our experience with highly-effective fire-proofing agents goes back to over 40 years ago. Our own intensive research and development activities in this important field of protecting life and assets resulted in a high-performance product bearing the name **Sika® Unitherm®**. Fire proofing systems are internationally renowned and today can be found as part of the safety equipment in civil and industrial construction, for example airports, theatres, federal and other buildings throughout the world.

## Quality

Development, applications technology, production and sales are all directed towards the most stringent of quality specifications. That is why **Sika® Unitherm®** is certified in compliance with ISO 9001.

## Safety

Prior to a **Sika® Unitherm®** product being put to use, it goes through a network of strict safety controls. For this purpose we have our own fire test facility in which the effect of all products is thoroughly tested. In officially approved furnaces, fire tests are carried out under similar conditions as those found in practice. Each batch is checked for

compliance with the specified technical data. But that is not all: all the results of these tests are controlled, checked and registered in external monitoring carried out by the German Federal Institute for Material Research and Testing.

## Aesthetics

Contemporary architecture means elegance, transparency and lightness. **Sika® Unitherm®** combines maximum protection with aesthetic advantages. It emphasizes design-oriented forms and the thin coatings, excellent surface properties and a wide range of colours allow the placing of accents and enhance room design. A perfect synthesis of quality, safety and aesthetics.



## Environmental awareness

The finished **Sika® Unitherm®** coating generates no hazardous substances in daily use as the fire-proofing active coating and varnishing are in the form of an aqueous dispersion and thus environmentally-friendly. And even in the event of fire, **Sika® Unitherm®** effectively inhibits to a high degree the development of hazardous substances from the base materials.

## Service

Years of practical experience in numerous different types of projects and permanent technical training form the basis of the wide range of experience of the **Sika® Unitherm®** workforce. All are specialists in their job and are there to share their competence with you if you need individual solutions for your fire-proofing projects.



# For steel maintaining stability, saving lives with functional aesthetics

Although steel cannot burn, it can lose its structural strength after just a few minutes of exposure to great heat. The result is that the static stability is no longer guaranteed and the building collapses.

So the aim of a fire-proofing system is to delay the critical temperature of 500° C under full load as long as possible in order to gain time and ensure that the building can be evacuated in good time.

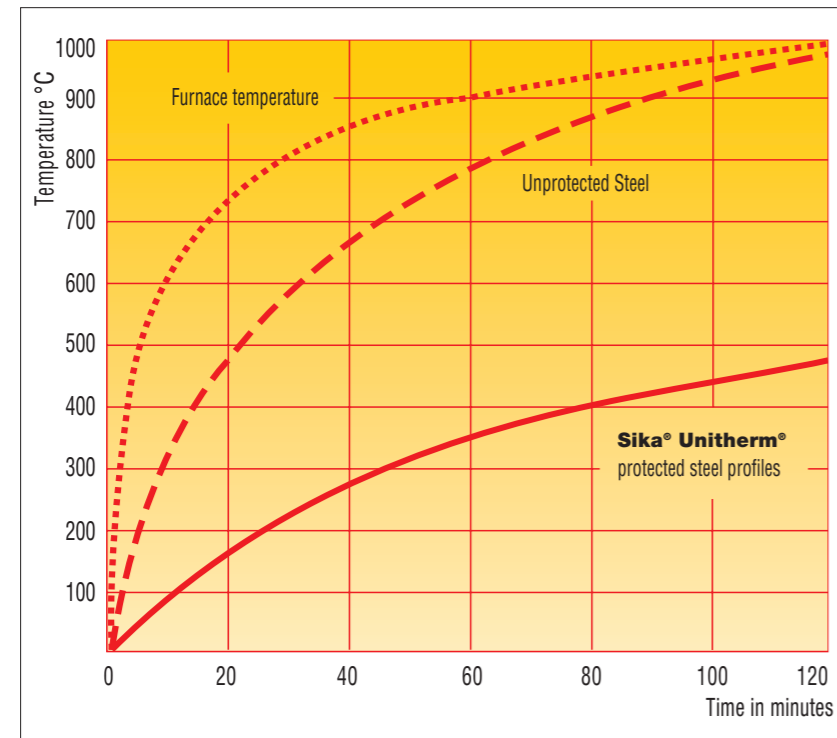
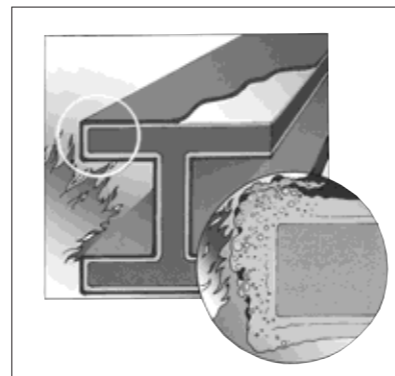
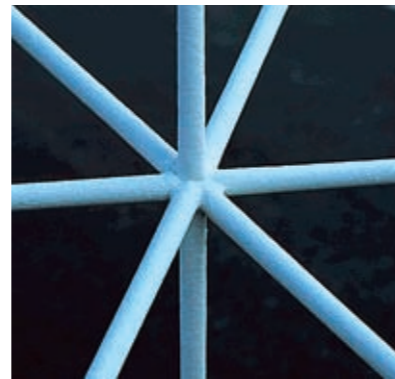
**Sika® Unitherm®** is highly effective against fire and heat and can emphasize the architectural beauty of steel constructions. Without the influence of thermal, chemical or mechanical impact no changes take place in the composition of the dried coating; the fire-proofing effect is conserved for an unlimited length of time.

## **Sika® Unitherm® – simply ingenious!**

The **Sika® Unitherm®** layer is scarcely 1 mm thick so it wraps itself around the steel like a layer of skin thus ideally emphasizing the design of the construction even in very difficult detail solutions. And coloured **Sika® Unitherm®** top coats add impressive accents.

## **Sika® Unitherm® – foam protection**

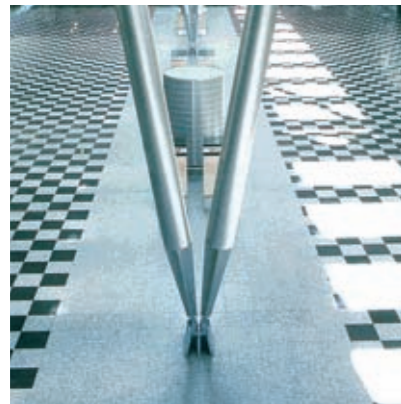
The thin layer of **Sika® Unitherm®** on steel reacts under the effect of great heat. An energy-consuming reaction of the fire-proofing coating forms a centimetre-thick, insulating layer on the surface of the steel. Highly-effective protection to delay reaching the critical temperature.



# All-round protection for steel construction

Pertinent fire-proofing regulations require that every construction element in a building is effectively protected from losing its load-bearing strength too soon in the event of fire. Steel components must therefore also be equipped with a complete coating of heat-insulating material.

The function, profile, length, thickness and material of the steel component determine the necessary composition and design of the fire-proofing coating.



**Sika® Unitherm®** has a solution for universal use as the coating can be applied directly on to the component and can meet various requirements by adjusting the thickness and the system. No additional coating is necessary, thus saving time and money and even visible steel constructions are effectively protected.



## The construction determines the coating

The partial closing of a steel column within either external or internal walls will reduce the exposure of the steel to heat and thereby reduce the thickness of coating necessary to achieve a given fire rating.

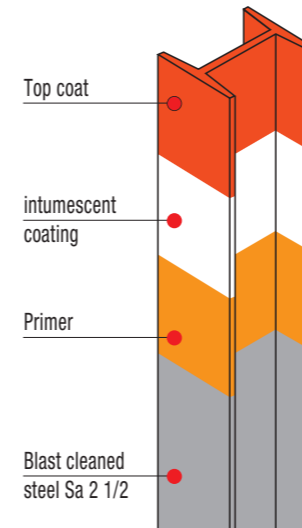


Hollow round, or square sections are most frequently chosen for their visual appearance. **Sika® Unitherm®** intumescent coatings give protection against fire without affecting the appearance of the structure. The range of **Sika® Unitherm®** decorative finishes will also enhance the appearance of the structure.



## It's easy!

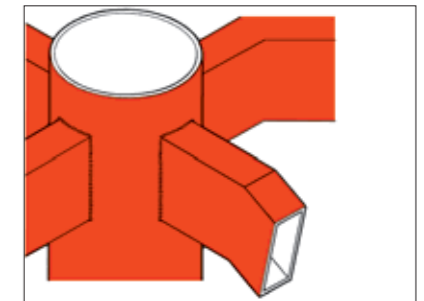
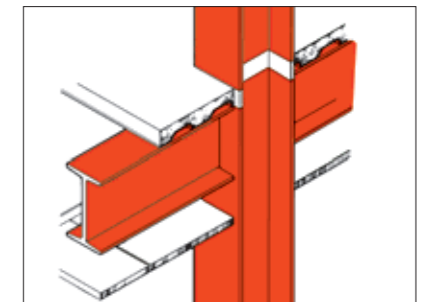
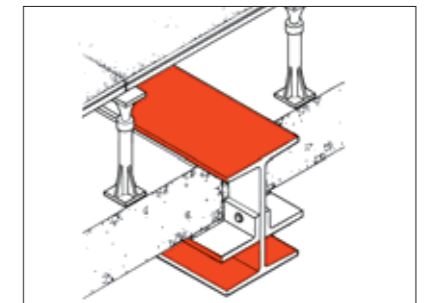
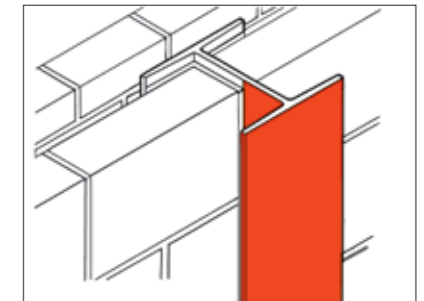
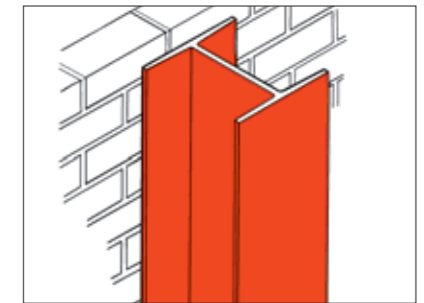
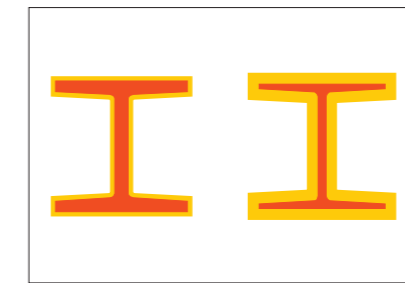
**Sika® Unitherm®** is simple to apply using an airless spray gun or by conventional spraying, painting or by rolling on the surface to be protected. **Sika® Unitherm®** fire-proofing coatings for steel are also suitable for use in off-site application.



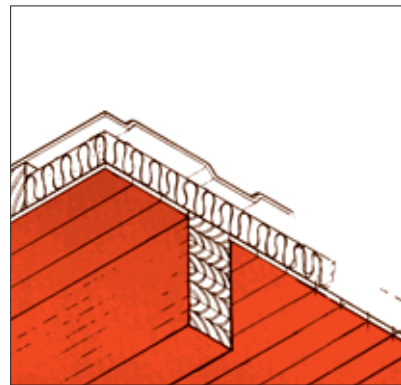
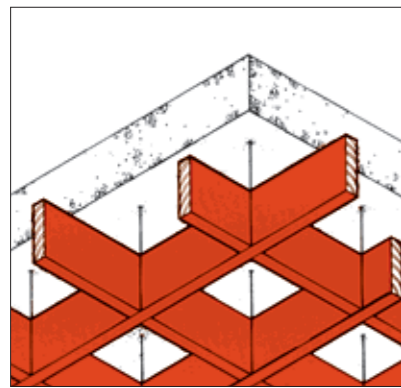
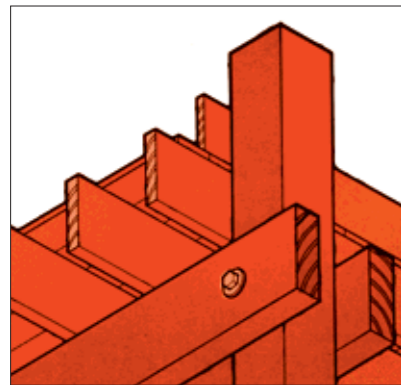
Connecting elements can be coated directly with **Sika® Unitherm®** to provide them with a 100% protection from heat.

**Sika® Unitherm®** can be used with a vast variety of different steel constructions with no loss in the fire-proofing effect.

The thinner the steel profile, the more quickly it heats up. Thinner profiles therefore require a thicker coating in order to maintain their load-bearing properties over the desired length of time.



# For wood defying fire



The natural beauty of wood makes it a building material with a multitude of uses. However, it is easily flammable and requires effective means of protection especially when used in public buildings.

A correctly dimensioned wooden construction can withstand fire for longer than is thought. **Sika® Unitherm®** can inhibit or delay inflammation on the surface and the spread of fire.

**Sika® Unitherm®** is a fire-proofing coating which is simply painted or sprayed on to the wood either in a transparent or pigmented form. Although the coating is so thin it does not conceal the natural beauty of the wood it nevertheless has exactly the properties to prevent the wood from burning too soon and also inhibits the rapid spread of fire. So the load-bearing function of the overall structure is maintained longer.

On exposure to heat, the coating is converted into a centimetre-thick layer of foam which is heat-insulating and thus prevents the wood from catching alight. Furthermore, this micro-porous carbon mass acts as an oxygen barrier on the flammable surface of the wood and so prevents flames from spreading even over large areas of wooden surfaces.

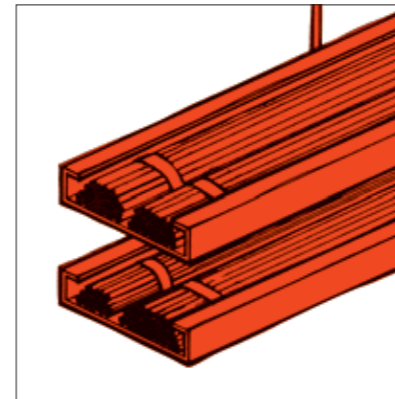
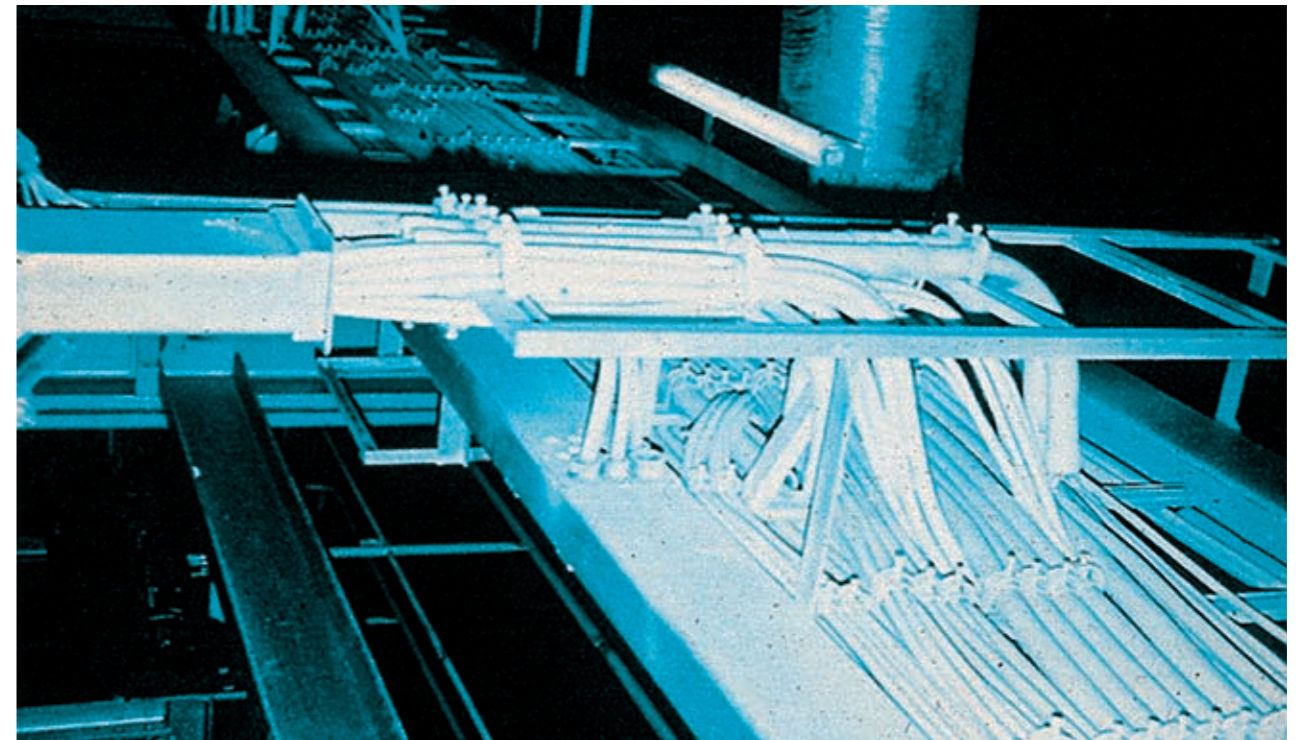
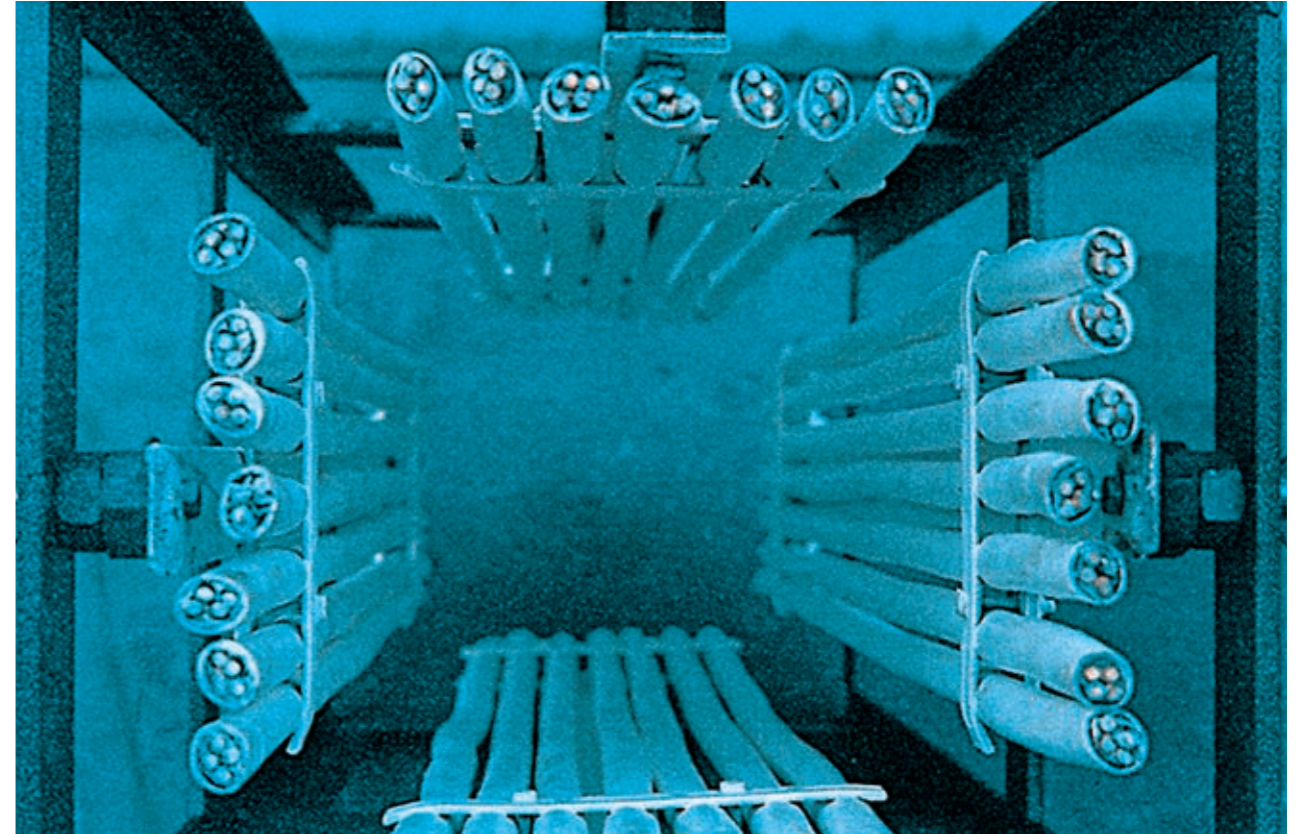


# Stopping cables becoming fuses!

Buildings full of technical equipment and the necessary cable harnesses pose a particular threat of fire hazard. It is not unusual for the cables to carry the fire into even the most remote areas of a building. And on top of that danger, the burning cables also generate health-damaging and corrosive gases such as HCL, not to mention the smoke!

Cable fire-proofing coating with **Sika® Unitherm®** is an unsurpassable obstacle for fire. When exposed to heat, it swells up to 40 times its original thickness forming a protective layer which reduces the flammability of the cable insulation. It is also self-extinguishing in the event of short-circuit fires.

**Sika® Unitherm®** also prevents flames developing from radiant heat, reduces dramatically the speed of the fire and the development of flue gases. Toxic gases are neutralised by up to 80% and current-carrying capacity is available for a longer period without having to increase operating temperature.



# Competence – wherever, whenever

## From roof to basement.



Sika offers the right solution for every task in any area.

Sika is always available for you – by phone, mail or fax. Our partner stores will be pleased to assist you as well with competent advice.

E-Mail: [info@de.sika.com](mailto:info@de.sika.com)  
 Internet: [www.sika.de](http://www.sika.de)

All mentioned test are laboratory test results only. For technical products data relevant to everyday use, please consult our technical data sheets. Our technical data sheets may be obtained from your nearest Sika office or at [www.sika.de](http://www.sika.de).



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