

# FIRE PROTECTION

Coating Solutions for Steel



Teknos coating solutions for

# FIRE & CORROSION PROTECTION OF STEEL STRUCTURES

## Challenge

Steel structures are the skeleton of the building, keeping it up. When a fire breaks out, the temperature rises rapidly to a level where the steel structures lose their stability and in consequence, collapse. With public buildings it is essential to ensure people using the building have enough time to escape in case of fire. Once applied, intumescent paint is put to the test only when a hazard strikes, meaning there is no room for bad quality or second guessing.

## Teknos solution

With fire protection/intumescent paint systems, we can slow down the heating process of steel. The intumescent paint forms an insulating layer on steel surface by foaming due to heat. The insulating foam provides steel stability for 30-120 minutes, depending on the selected paint system.

Steel can take on average 350-750 °C depending on the load on it. The more there are heavy structures, from the type of the roof to the number of floors in the building, the bigger the load. Thus, the required fire protection system depends on the load on the structures: If the building has only one floor and there are many exits, like in shopping malls and stadiums, a 30min system is often adequate. If there are more floors and the load is higher, 60min or 90min fire protection paint systems are required.

Teknos' selected range of advanced, high-performance protective coatings together with HENSOTHERM® intumescent paints form an inclusive range of paint systems for fire and corrosion protection, for different environments, including both interior and exterior use, for open and closed profiles, and for corrosion-protected and galvanised sections.

Teknos' technical service professionals have vast experience in industrial painting and are happy to help you. For further information check [teknos.com](https://www.teknos.com)



The foam insulant forms (intumescent) under the action of fire. This foam slows the passage of heat defined for each of the fire resistance classes.

## WHEN FIRE-PROTECTING STEEL STRUCTURES:

- Observe the load on the structures / Critical steel temperature
- Type of steel profiles to be coated
- Fire classification, from R30 to R120 (mins)
- Outdoor use, solvent borne
- Indoor use, both water borne & solvent borne (usage 100% indoor, no outdoor transportation or storing)
- Pre-treatment is essential to reach the right corrosivity category
- High quality is essential as maintenance painting is usually not done
- We recommend paints approved by both Teknos and Hensel in accordance with ETA approval document



# Paint Systems

## Indoor Water-based

		Fire class	VOC g/l	Vol. solids %
--	--	------------	---------	---------------

Primer	<b>Water-based acrylic primers, Alkyd primers &amp; Epoxy primers</b>			
Intumescent paint	<b>HENSOTHERM® 410/421 KS</b> <ul style="list-style-type: none"> <li>Contains no halogens, APEO, borates, plasticisers or silicones</li> <li>Non-VOC, A+ VOC emission class, AgBB-tested, LEED v4</li> <li>Outstanding surface finish possible with airless spraying</li> </ul>	R30-R120	about 0	70
Top coat	<b>TEKNOCRYL 100, TEKNOCRYL AQUA COMBI 2780, BIORA series, TEKNOLAC COMBI 151</b>			

## Outdoor Solvent-based

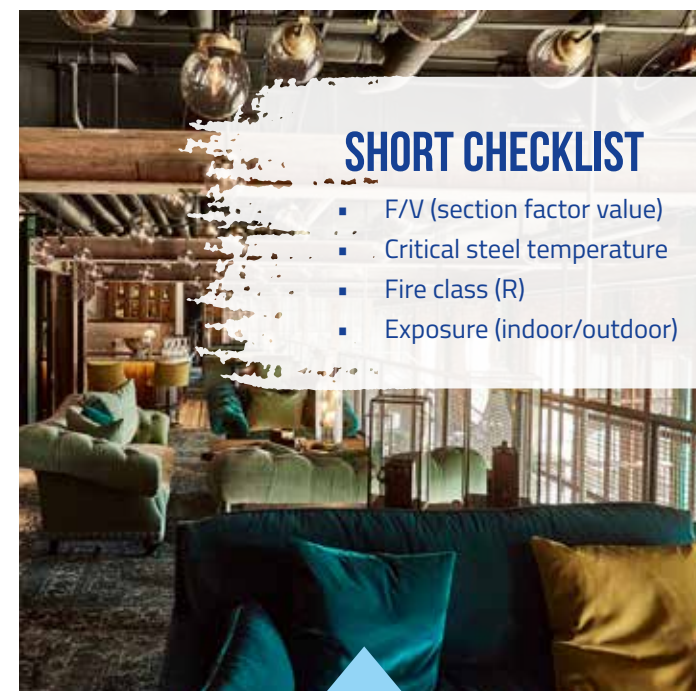
		Fire class	VOC g/l	Vol. solids %
--	--	------------	---------	---------------

Primer	<b>Alkyd primers &amp; Epoxy primers</b>			
Intumescent paint	<b>HENSOTHERM® 310/320 KS</b> <ul style="list-style-type: none"> <li>1 component system</li> <li>For exterior &amp; interior use</li> <li>Maintenance-free</li> <li>Outstanding surface finish possible with airless spraying</li> </ul>	R30-R120	350	73
Top coat	<b>TEKNOCRYL 100, TEKNODUR 0050, TEKNOLAC COMBI 151, Emapur PS 60 5</b>			

## Outdoor/Indoor Solvent-free

		Fire class	VOC g/l	Vol. solids %
--	--	------------	---------	---------------

Primer	<b>TEKNOPLAST PRIMER 5</b> (when primer is needed)			
Intumescent paint	<b>HENSOTHERM® 910 KS</b> <ul style="list-style-type: none"> <li>2 component system</li> <li>Economical due to high coverage rate &amp; fast drying time, short lead times</li> <li>Corrosion protection requirements up to C3 without primer &amp; up to C5 with TEKNOPLAST PRIMER 5</li> <li>High mechanical strength during transportation, assembly and use</li> <li>100% solvent-free 2C epoxy fire protection coating for indoor and outdoor applications</li> <li>AgBB-tested, VOC-emission class A+, free of halogens, free of alkylphenol and benzyl alcohol, plasticiser-free</li> </ul>	R30-R60	0	100
Top coat	<b>TEKNOCRYL 100, TEKNODUR 0050, Emapur PS 60 5 &amp; BIORA Series</b>			



### SHORT CHECKLIST

- F/V (section factor value)
- Critical steel temperature
- Fire class (R)
- Exposure (indoor/outdoor)

### HENSOTHERM® intumescent paints for steel CE

are approved by the construction authorities in accordance with the EN European standard and DIN standard of the German Institute for Standardisation, and have further international certificates in accordance with the Vereinigung Kantonalen Feuerversicherungen VKF for use in Switzerland, British standard BS 476 for use in Europe and the Middle East, Underwriters Laboratories UL 263 for use in the USA and Canada, and Gossudarstvenny Standard GOST for use in the areas belonging to the Russian Federation.

For a complete list of certificates, check [teknos.com](http://teknos.com).