



Protective & Marine Coatings

FIRETEX[®] FX

Cellulosic passive fire
protection solutions

FIRETEX[®]

INTUMESCENT PASSIVE FIRE PROTECTION



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Cellulosic passive fire protection solutions

Solvent based intumescent materials FX2005



- Formulated using solvent borne acrylic resin technology these materials offer a highly versatile solution to meet fire protection requirements from 15 minutes up to 120 minutes. The testing of these products includes elemental multi temperature evaluation meaning they can be used on simple rolled steel members and also beams including complex arrangements of openings (cellular beams).
- Available in both on-site and off-site applied versions. These products offer excellent application characteristics giving a quick and trouble free application, with an aesthetically pleasing standard of finish. They can be used in both internal and external* environments to give long term fire protection up to C4, ISO 12944-2 corrosive category.
- FIRETEX[®] FX2005 Off-site – has certified loadings for periods of 15 to 120 minutes and is specifically formulated for use in a paint shop environment, using a solvent blend developed to minimise the drying time and maximise shop throughput.

Water based intumescent materials FX5090



- Sherwin-Williams' latest generation water based acrylic coatings provide highly competitive solutions for the protection of structural steelwork for periods of 15 minutes up to 120 minutes. Designed for application to erected steelwork they are suitable for use in internal environments; C1 and C2 categories, C3 categories can be achieved with appropriate Acrolon top coat. These provide a long term cost effective fire protection solution, including complex arrangements of openings (cellular beams).
- Formulated for ease of application FIRETEX® water based intumescent coatings can be used to provide a great visual appearance on steelwork which will be visible in the finished building.
- The three variants complement each other to ensure that Sherwin-Williams' product offer is as competitive as possible across different fire protection periods and steel shapes and sizes.
- FIRETEX® FX5090 – has certified loadings for time periods from 15 to 120 minutes, it is primarily designed to meet the needs of 90 minute fire protection projects, but also finds use on 120 minute projects.



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Ultra fast drying intumescent material FX6002



- We innovate to ensure that our customers are the first to benefit from pioneering advancements in products, coatings and their application.
- This unique, patented, technology allows even a two hour fire protection system to be applied in a single coat and be ready to handle in around one hour. Where maximum throughput is a paint shop's priority there is nothing on the market which can match FIRETEX[®] FX6002.
- Designed for off-site application, FIRETEX[®] FX6002 can be used in environments up to C5 (ISO 12944-2). It has excellent mechanical properties which minimise damage from handling and erection of the coated steelwork.
- At Sherwin-Williams we understand the growth drivers for your business and strive to deliver coatings solutions without compromise.

Ultra durable intumescent material FX9500



- Derived from Sherwin-Williams' hydrocarbon fire protection materials which have proven durability in the most harsh environments known, including Northern Canada, the Arctic and the FIRETEX® FX9500 is a two component epoxy coating for projects where durability in a challenging environment is the primary concern.
- Formulated to allow application, on-site or off-site using standard airless spray equipment FIRETEX® FX9500 provides fire protection for up to two hours in all environments for simple rolled steel items and cellular beams. Not only is the material highly durable, its mechanical characteristics make it tough and resistant to the mechanical damage which can be caused by handling and erecting steelwork coated with other fire protection products.



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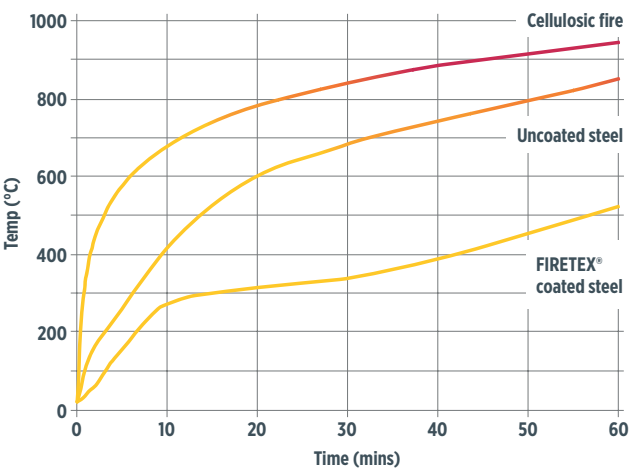
Why choose intumescent coatings?



FIRETEX[®] intumescent coatings can provide a smooth, durable finish that allows flexibility and creative exposure of structural steel surfaces in building design, whilst also providing essential fire protection of steelwork from 15-120 minutes. In the event of a cellulosic fire, FIRETEX[®] coatings expand through chemical reaction to produce a tough and resilient insulating char. This char reduces the rate of temperature rise in the steel for up to two hours. Providing structural integrity and time for building evacuation.

Cellulosic fire curve graph

Below shows the standard fire curve graph depicting the rate of temperature rise over a one hour time period.



What is cellulosic fire?

A fire with a fuel source predominantly of cellulose (e.g. timber, paper, cotton). These fires reach a temperature of 950°C after 60 minutes and with steel losing around 50% of its structural strength at 550°C, structural failure of unprotected steel could occur after as little as 15 minutes of exposure.

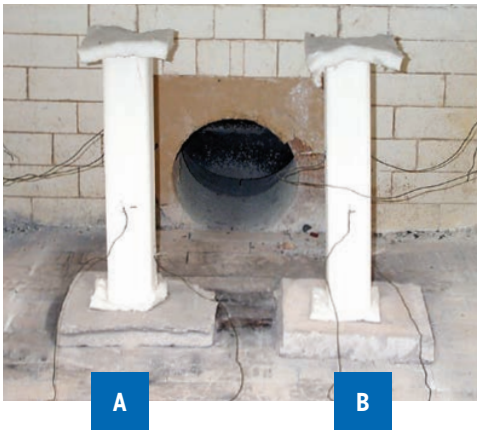
Intumescent reaction



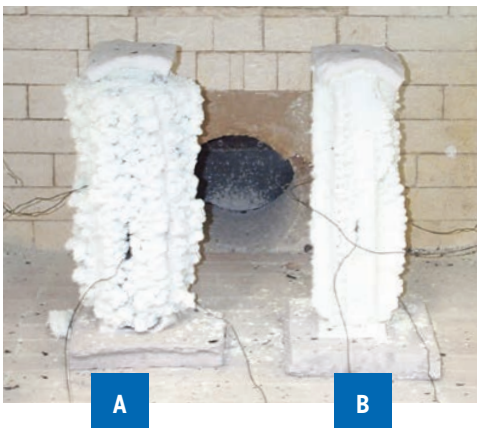
Applied dry film thickness

Column A has 3200 μm (3.2mm) of coating applied.

Column B has 1070 μm (1.07mm) of coating applied.



Steel columns applied with FIRETEX® FX range, before fire test burn



Steel columns after fire test burn, with intumesced 'char'



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Intumescent system types



We offer a comprehensive portfolio to meet the specific requirements of a wide variety of projects.

FIRETEX[®] solvent based systems are fast drying and well suited for application all year round.

FIRETEX[®] water based systems meet the requirements of international environmental standards, have low odour and are ideal for confined areas.

FIRETEX[®] methacrylate based systems employ patented technology to facilitate ultra-fast curing of the intumescent coating.

FIRETEX[®] epoxy based systems deliver the ultimate in intumescent durability for long term service in harsh environments.

Ease of use



Whether you need to coat in shop, or on site in all types of climate, FIRETEX[®] systems are designed with your considerations in mind.

- Application can be done by airless spray or brush, providing applicators with ease of use and control.
- Fast application by airless spray provides minimal disruption to project contract schedules.
- Good viscosity allows for a smoother, more aesthetically pleasing finish.
- FIRETEX[®] M72 Mastic allows contractors to quickly repair damaged areas with no adverse effect on the overall fire protection.
- Over coating can be done after just four hours.
- Excellent storage stability saves time during the application process as it ensures minimum mixing or preparation before application - be it by brush or airless spray.

Intumescent reaction



Explosion proof intumescent materials

Although there is no legislative requirement anywhere in the world regarding explosion testing in civil construction, we have carried out gas explosion tests to ensure FIRETEX® thin film intumescent coatings enhance the safety of tall buildings. Witnessed by Bodycote Warrington Fire at Advantica Technology, Spadeadam UK, steel sections were protected using FIRETEX® range of cellulosic products and were subjected to a 104 msec explosive blast that generated 1697 mbar of overpressure. The sections were subsequently subjected to hydrocarbon fire.

The results reported by Advantica indicate that FIRETEX® intumescent coatings were unaffected by the gas explosion and Bodycote Warrington Fire concluded that the FIRETEX® products provided a significant level of hydrocarbon fire resistance.

Third party verified

All FIRETEX® materials are independently tested, verified and certified to the most stringent international standards, including:

- UL263/ASTM E119
- EN 13381-8 & 9
- BS476 Part 20/21
- DIN 4102 Part 2
- GOST 53295-2009
- The Certifire Scheme
- AS4100-1998.



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Primers and top coats

Sherwin-Williams coatings have been designed for optimum use in conjunction with our specially formulated primers and top coats. See the chart overleaf for Sherwin-Williams certified protection systems.

Primers

The key purpose of a primer is to protect blast prepared steel substrates from decay and in the event of mechanical damage to the coating, a primer will stop the spread of corrosion.

Macropoxy™ Series - multi-purpose coatings provide excellent application properties by airless spray, and can provide low temperature curing down to 5°C. Suitable for use with both shop and site applied intumescent.

Top coats

A top coat keeps a coating looking at its best and ensures the full life of a coating is reached.

All intumescent coatings contain certain key ingredients necessary for the intumescent reaction. These ingredients are moisture sensitive and alongside careful formulation it is also essential to apply protective sealant coats to protect the properties of the fire protection from the weather. Sealer coats must be used for external environments to achieve durability, they also offer a decorative finish to intumescent coatings.

Acrolon™ C137V2, Acrolon™ C237, Acrolon™ 7300, Acrolon™ 770 & Acrolon™ 775 – high performance, two pack, fast drying acrylic urethane gloss finishes for use where long term exterior gloss and colour retention characteristics are required.

In C1 & C2 environments a single component top coat may be used, for C3 & C4 environments a two component top coat will be specified.

In a C5, highly corrosive environment a high durability intumescent i.e. FIRETEX® FX9500 and FIRETEX® FX6002) should be used and a two component top coat specified for decorative reasons. (Acrolon™ C237 is a sheen finish).

Sherwin-Williams Fire Engineering and Estimation Team

The Sherwin-Williams Fire Engineering and Estimation Team (FEET) offers expert advice on which coatings can be used in different sections of a building in order to optimise the passive fire protection of the structural steelwork. The team comprises of highly qualified engineers who are dedicated only to fire. The service offered by the team coupled with our third party verified design software solutions is unique within the industry and is available around the clock from our three separate global engineering offices.

The process

When a project's details are submitted, via almost any format (including 3D BIM Tekla Structures models), along with the specification for the environment, the highly trained engineers in Sherwin-Williams 'FEET' calculate thicknesses across multiple fire rating time frames against our extensive product range to provide the most economical, cost effective and fire safe solution for the project. This also includes advanced structural fire engineered approaches. The team design for both cellulosic and hydrocarbon fire scenarios. Data can be seamlessly shared back to the 3D BIM model for future building maintenance and fire management.

Services offered by our Fire Engineering and Estimation Team:

Technical advice	•
Training	•
Early concept advice	•
Bespoke fire protection calculating industry leading software	•
Standard FIRETEX® design	•
	•



The Sherwin-Williams Company

With over 150 years experience in the coatings industry we understand how critical it is that your investment gives you a quality, long term fire protection system, which performs in demanding environments.

The world class FIRETEX® range can provide a visually pleasing finish, that allows flexibility and creative exposure of structural steel surfaces in building design, whilst also providing essential protection of steelwork from 15-120 minutes. Whether you specify FIRETEX® alone or in conjunction with our exceptional primers and top coats, you can be assured that you are selecting a passive fire protection system that has been researched, developed and tested to the highest international standards.

Speak to your Sherwin-Williams representative to get an estimate on your next project using our FIRETEX® intumescent materials.



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[To learn more, contact us](#)

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