

CHAR 21 Plus

**Waterborne
intumescent coating
for fire protection of
steel structures.**

CHAR 21 Plus

is a very low VOC,
waterborne, high performance intumescent
coating providing a very effective fire barrier
thanks to high active solids content,
char strength and the use of nanofillers.
Fast development of a stable, low heat transfer
char provides effective and long term
protection to flammable and
non-flammable substrates.

CHAR 21 Plus is used for fire protection of steel structures and in other application fields.

In structural resistance-to-fire applications it provides protection against fire for up to 90 minutes.

CHAR 21 Plus

comes with the most recent

European certifications based on the standard **EN 13381-8** and with an **ETA** (European Technical Approval n°17/0180), **CE** mark and **DoP**.

Intumescence means "swelling while charring". Special chemicals in the coating react in excess of 200°C generating a low-density expanded char up to 100 times thicker than the original dry film. This char provides a very effective barrier to heat transfer protecting the substrate.

Structural resistance to fire plays a key role in fire safety. In commercial and industrial facilities, hotels, airports, supermarkets, schools, hospitals, cinemas, theatres, multi-storey parkings, any large building, the use of intumescent coatings extends the resistance of structures in the event of fire preserving lives and property, allowing people evacuation and the safe operation of the fire brigade.



CHAR 21 Plus

DENSITY: 1.37 ± 0,05 kg/dm³ at 20°C

SOLIDS CONTENT:
71% ±2%w/w

COLOUR: white

STANDARD PACKING: 25kg steel drums

SHELF LIFE: 12 months
in original packing and proper environment

SPREADING RATE: 0,50 ± 0,05mm
dry film thickness with 1kg/m² wet (theoretical)

APPLICATION: Normally by airless spray.
For small surfaces or retouching by roller or brush

WET THICKNESS PER COAT:
Airless spray: max 1300 µm (650 µm DFT)
Brush or roller: max 500 µm (250 µm DFT)

THINNING: Not recommended
If necessary with water max 5%

DRYING TIME *
8 hours - touch / 24 hours - complete

MIN APPLICATION TEMPERATURE +5°C

MAX APPLICATION TEMPERATURE +45°C

(*) @ +20°C and 60% RH. Drying time depends on DFT, temperature, relative humidity.

USE AND APPLICATION

Proper substrate preparation is requested depending on conditions including cleaning, degreasing and removal of loose particles. Steel surfaces are normally sandblasted SA 2 1/2 then a proper anticorrosive primer is applied.

Spray application is performed in at least two coats, crossing wet on wet, with airless systems. A typical application of 1,5 mm dry = 2,7 kg/m² wet is made in two coats of about 1 mm wet thickness. Suitable equipment is an airless spray piston pump with minimum compression rate = 40:1, minimum pressure 150 bar (e.g. GRACO MARK V or WAGNER ProSpray PS34), Reverse-A-Clean self-cleaning tips, nozzle diameter 45-50 mils = approx. 1 mm, flexible feeding pipe 3/8" of maximum length 30m.

Average volumetric flow rate in common airless spray applications ranges from 3 to 6 l/min. Gun, line and feed filters should be removed.

Application can also be done by brush or roller with long single strokes, not overworking. Application by brush/roller requires more coats than airless spray.

Proper environmental condition must be kept during application and drying.



RECOMMENDED PRIMERS AND TOPCOATS

Eposol Primer 100: 2K epoxy for steel, stainless steel, aluminium and non-ferrous metals.

Primer 036: fast drying modified phenolic alkyd primer for steel and zinc coated steel.

Wall Primer 3500: for concrete and renderings.

Numerous other commercially available primers have been tested and proved compatible. A list is available from our technical service.

According to the principles of **ETAG 018** and our tests CHAR 21 Plus is compatible with alkyd and epoxy primers.

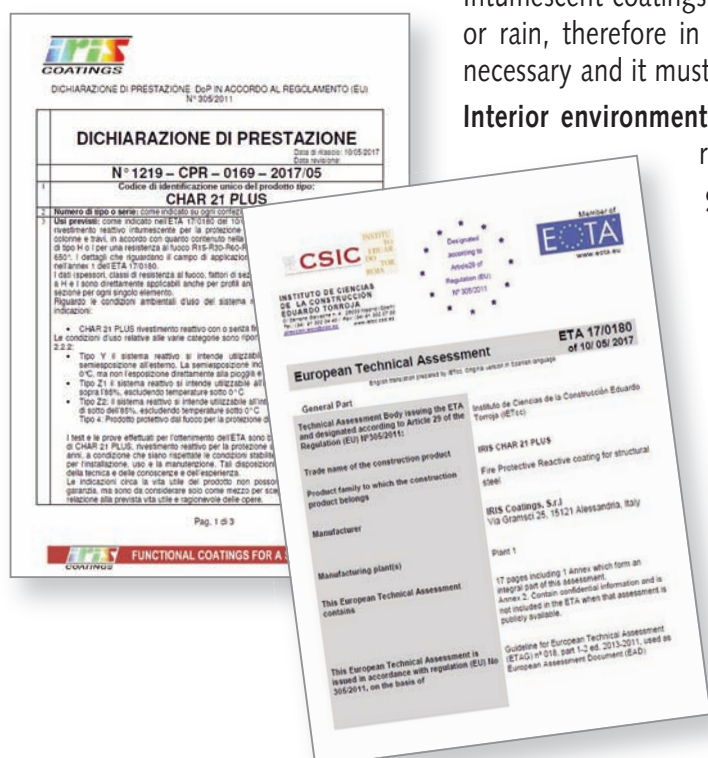
Topcoating can be useful in any environment to improve aesthetic and reduce dirt pick-up. Intumescent coatings are not suitable for use in the presence of condensing moisture or rain, therefore in moist environments and when exposed outdoors a topcoat is necessary and it must have proper characteristics of water barrier.

Interior environments according to **ETAG 018** classes Z1 and Z2 do not generally require any topcoat.

Semi-exposed environments according to **ETAG 018** class Y require our **IRISOL** acrylic solventborne topcoat or our **PURETHAN** solventborne 2K polyurethane topcoat.

Application must be particularly accurate in this case.

AVAILABLE CERTIFICATIONS AND APPROVALS:



CERTIFICATIONS AND APPROVALS

CHAR 21 Plus

has European approval for passive fire protection of steel structures in conformity with **EN 13381-8** and is **CE marked** according to the **ETA 17/0180** issued by **CSIC** and **EOTA**.

DISCLAIMER: Though based on the results of long term testing and experience the information given here is informative only. We cannot accept any liability for use of this information and the product unless a proper check has been done of the specific application, verified by the end-user. Accurate preliminary testing and definition of an application protocol and system is highly advisable to obtain full advantage of this product.