

CHAR 17

Intumescent clearcoat for fire protection of wood and flammable substrates.

CHAR 17 is a waterborne intumescent clearcoat providing a very effective fire barrier with fast activation at low temperature.

The thin transparent film develops in case of fire a coherent char particularly suitable for fire protection of flammable substrates.

CHAR 17 is used for fire protection of wood and other flammable substrates, while preserving their natural appearance. Applications include reaction to fire and flame retardancy as well as resistance to fire.

CHAR 17 has peculiar characteristics of transparency and is highly effective at low temperatures on flammable substrates.

From its native application on wood and wood composites, new applications on plastics, polymers and many flammable substrates are now developing.

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.

Flame retardancy and reaction-to-fire properties are related to the ability of a coating to reduce spread of flame in a fire, avoid flammable substrates to catch fire and self-extinguish flames. In commercial and industrial facilities, hotels, airports, supermarkets, schools, hospitals, cinemas, theatres, as well as in smaller wood constructions, the use of intumescent coatings hinders ignition of fire or reduces its spread, preserving lives and property, allowing people evacuation and the safe operation of the fire brigade.

CHAR 17

DENSITY: 1.30 ± 0,05 kg/dm³ at 20°C

SOLIDS CONTENT:

60% ±5%w/w - 75% ±5%v/v

COLOUR: transparent

STANDARD PACKING: 20kg plastic drums

SHELF LIFE: 12 months

in original packing and proper environment

COATING SYSTEM: CHAR 17 is sensitive to moisture. Must be protected with own topcoat CHAR 17 FINISH.

SPREADING RATE: 300 g/m²
+50 g/m² topcoat.

APPLICATION: by airless or airmix spray,
by roller or brush.

NUMBER OF COAT: Typical application:
2 coats x 150 g/m² active layer
+ 1 coat topcoat.

THINNING: Not recommended

If necessary with water max 5% for CHAR17;
with synthetic thinner max 5% for CHAR17 FINISH

DRYING TIME *

8 hours - touch / 24 hours - complete

MIN APPL.TEMPERATURE +15°C RH max 60%

MAX APPL.TEMPERATURE +35°C RH max 70%

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

TEST, ASSESSMENT AND CLASSIFICATION REPORTS INCLUDE:

7720DC0030/11.1 LAPI

7720DC0040/11.1 LAPI

7720DC0050/11.1 LAPI

FMB-82/2005 GTC

PR-01-02-093 PAVUS

90ST07 PROPLAST

T.A.C.1026 SWEDCERT

MOI 2065 004 2013 NRC Cairo

LAPI S.p.A. is Notified Body N°0987

USE AND APPLICATION

CHAR 17 is designed for fireproofing treatment of wood structures and panels in interior environment and which are not subjected to strong wear and tear, e.g. beams and columns, boards, studs and joists, decorative panels or walls. It is not recommended for high-wear surfaces like parquet floorings.

Recent applications proved successful in fireproofing a number of polymers.

Proper substrate preparation is requested depending on conditions, including cleaning, sandpapering and removal of loose particles and waxes.

Application on wood will normally require smooth sandpapering for removing raised grain after the first coat. Application on plastics may require specific pre-treatment, e.g. plasma or flame pre-oxidation.

Spray, brush or roller application is performed in at least two crossed coats of the active layer **CHAR 17**. After perfect drying the solventborne sealing topcoat **CHAR 17 FINISH** will be applied. Care should be taken for environmental conditions during application and drying. Temperature should be within 15°C and 35°C, relative humidity should not be in excess of 70%. Coated parts should not be handled by bare hands until fully dried, then topcoated to avoid fingerprints.

Wood moisture should be lower than 15% to avoid the risk of formation of white spots. Drying times are strongly dependent on film thickness, ambient temperature and especially ambient moisture.

Overcoating with **CHAR 17 FINISH** solventborne sealing topcoat is always recommended to ensure durability. It is absolutely necessary in the presence of high moisture and advised in any case to avoid surface stickiness, dirt pick-up and fingerprints.

The use of **CHAR 17** outdoors is not advised.

CERTIFICATIONS AND APPROVALS

CHAR 17 is mostly used for reaction to fire applications.

Resistance to fire performance is also possible.

Available certificates and test reports are in accordance to European fire standards.

Reaction to fire: **CHAR 17** is rated **Euroclass B-s1, d0** according to **EN 13501-1**.

Classification tests are performed according to **EN ISO 11925-2** and **EN 13823** on wood particleboard rated according to **EN 312-2**.

Therefore according to **EN 13823** paragraph 5.2 results apply to all types of wood and wood-based substrates and also on all flammable substrates rated A2 or better.

This performance is achieved with 300 g/m² active layer.

A number of recent cone calorimeter tests have shown excellent fireproofing performance of several polymers including HIPS, unsaturated polyesters, epoxies and others.

Resistance to fire: the amount will depend on load and size of wood members, ranging from 600 to 2000 g/m² to cover a wide range of beams/joists and columns from R30 to R90.

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.

