



# FIRE RETARDANT (R451 EAU)

## General Description:

A two component anti-fire polyurethane cycle which consists of the basecoat R451 EAU and the relative protective topcoat R451 EAU TOP available in different RAL/NCS colours. Its fire-retardant properties are based on decomposition reactions that start when, under the action of heat or temperature, the coating releases substances able to slow the process of carbonization of the wood. In addition to its fire-retardant reaction, the complete coating system is

characterized by hardness, good resistance to stains and scratching, softness of the finish and rapidity of hardening of the various coats ensuring the user of excellent times and results for this type of product.

## Fields of Application:

Anti-fire protective system to reduce the reaction to fire of wood and wood derivatives and can be used on matchboard fitted on walls or ceilings, furniture, furnishings, scenography, stands, etc.

## Characteristics and Physical Properties:

Characteristic	BASE	TOP
Paint cycle	Two (2) Component	
Colour	White	RAL / NCS / APS
Gloss	Satin	Dull Matt (10-15) Matt (32-38) Satin (57-63) Gloss (>85)
Specific weight: Component A Component B	1.320 kg/L 1.000 ± 0.05 kg/L	1.240 ± 0.20 kg/L 1.000 ± 0.05 kg/L
Viscosity (mPas) – A (DIN 4) – B	1200 - 1500 10 - 15 s	1500 - 2500 10 - 15 s
Solid content (w) Component A Component B	80 - 82% 25 ± 0.5%	55 - 65 % 25 ± 0.5%
Flash point	20°C	20°C
Mixing Ratio	1 : 1	1 : 1
Pot life	2 hours	2 – 3 hours
Drying time: Dust dry Sandable Cured	15 min 6 – 8 hours 24 hours	20 min 12 hours 24 hours
Overpainting	After 24 hours	After 24 hours
Application condition: Air temperature Relative humidity	5 – 35°C 85% max	5 – 35°C 85% max
Storage	At least one (1) year in the original closed packaging	

## Technical Performances:

The fire-retardant product has been classified in EUROCLASS B, s1, d0 based on data from fire reaction tests carried out in conformity with the European norm EN 13501-part 1 and in CLASS 1 based on the norm UNI 9796/2014 according to D.M. 6/3/92 (BL158PVI100020). This classification is for the protection of all types of wooden-based

supports either walls or ceilings, as specified in EN 13823 - Reaction to fire tests for building products exposed to thermal heat of one single burning item and EN ISO 11925 Reaction to fire tests - Ignitability of building products subjected to direct impingement of flame - Part 2: Single-flame source test.

*The above information is given to the best of our knowledge based on laboratory test and practical experience. However, as the paint is often used under condition beyond our control, we cannot guarantee anything but the quality of the paint itself. We reserve the right to change the given data without prior notice.*

## MAS PAINTS & CHEMICAL INDUSTRY

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## Technical Information:

The above data is purely indicative and refers to the test of a white cycle. The application characteristics of the product have been obtained with an application of 150 micron (20°C, relative humidity 60%). Different thickness and/or temperature and/or humidity might imply data variation.

Information about the utilization and consumption of R451 EAU in every step of the product life cycle is detailed in the relative Material Safety Data Sheet (MSDS). All technical documentation is available on [www.mas-paints.com](http://www.mas-paints.com) for download. A concise presentation of standard operative conditions is given below in order to carry out a correct application and installation of this protective product.

### Surface preparation:

Ensure that the wood is clean and dry, with no traces of resin, grease, dust etc. and that the humidity is lower than 18%; high humidity could cause a patina to form on the dried film. The product can also be used on surfaces previously painted with other products, even if not anti-fire. We recommend that product compatibility is verified before proceeding by carrying out an application test on a small area.

### Quantity to be applied:

The required quantity of intumescent paint to be applied is set out by fire test performance results. Any wastage and loss of thickness due to intermediate sanding between the coat of primer and the coat of top coat must however be added to the consumption indicated in the respective test certificates in the case of application by spraying. The quantity of paint to be applied (practical consumption) is therefore equal to 300 g/m<sup>2</sup> of R451 EAU completed by 150 gr/m<sup>2</sup> of R451 EAU TOP.

### Preparation of the product:

Mix component A well, then add the catalyst and mix thoroughly.

#### Dilution:

The products are supplied ready to use; if necessary, dilute with max. 5% polyurethane thinner, stirring the product well whilst the thinner is being added.

#### Application:

Application may be carried out by curtain-coating and spraying systems either with traditional drop feed or airless. A brush may also be used, keeping in mind however that the final result may not be optimum. If curtain-coating is used, the pot life could be shorter, and the viscosity increase due to solvent evaporation (ensure that the product is not left in the machine for any length of time). We therefore recommend the following application cycle:

- Apply 150 g/m<sup>2</sup> of the fire-retardant R451 EAU in one coat.
- After at least 1 hour and within 3 hours, apply the second coat of 150 g/m<sup>2</sup> of the base coat R451 EAU without sanding (if the above period is exceeded, then it is necessary to sand the previous coat).
- After 24 hours sand with medium sandpaper grit 180-200 and apply in one coat 150 g/m<sup>2</sup> of the protective top coat R451 EAU TOP.

A good adhesion between two coats can be achieved by accurate sanding. The use of warm air during application can accelerate drying times.

#### Tools cleaning:

Tools can be cleaned with Thinner 105 (or wash thinner) immediately after use.

#### Protective finish:

The application of the top coat R451EAU TOP is an integral part of the application cycle and the fire reaction characteristics of the protective system R451EAU have been verified in combination with the proposed finish. The use of different top coats to those indicated in our paint cycles could compromise the fire protection performance of the anti-fire product and the efficacy of the whole thermal insulation of the system in question.

#### ADVICE :

When storing the product, the fire retardant substances tend, over time, to deposit on the bottom of the tin. We therefore recommend that the product is stirred thoroughly with an agitator or metal stick before use.

The product is sensitive to damp therefore in order to avoid aesthetic defects, we recommend that it is not applied in very humid areas and that the humidity level of the support is verified before application.

Some types of wood with a high oil content (iroko, palisander etc.) or others like mahogany etc. can cause defects such as air bubbles, patina on the paint film etc. For this reason we recommend that a test is always carried out on this kind of wood and/or that a coat of polyurethane primer is applied.

#### Physiological Hazards:

R451 EAU and TOP and their corresponding Catalyst do not contain dangerous solvents, nevertheless, good ventilation in working rooms is recommended as well as the use of safety tools and equipment.

R451 EAU and TOP are flammable and harmful if swallowed. If contact with eyes or skin occurs, wash well with fresh water and seek immediate medical advice.

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