



VERNICI PER LEGNO

Iridea

FIRE RETARDANTS

FIRE-RETARDANT
COATINGS



Iridea

FIRE RETARDANTS

ICA's fire-retardant coatings for wood comply fully with the strict Italian guidelines on the prevention of fires and, in addition to their high levels of chemical and physical performance, also deliver an excellent quality of finish.

BEHAVIOR IN THE PRESENCE OF FIRE

Any evaluation of a product's behavior in the presence of fire should be based on two separate measures: its resistance to fire and its reaction to fire.

Fire resistance is indicated by the **REI** rating. The numbers used in this rating indicate the expected duration, in minutes, of the fire-retardant element in the product (i.e. the length of time for which the construction materials are likely to resist catching fire). The number of minutes shown is the length of time for which the load-bearing capacity (R), integrity (E) and insulation of the sides not exposed to the flames (I) can be guaranteed.

In contrast, **fire reaction** is classified as the propensity of the elements in a product to participate in a fire. It is particularly important in buildings such as theaters, hospitals, hotels, etc. – where there is a serious risk of a small fire triggering a large-scale blaze – that the internal furnishings and decoration are made from self-extinguishing materials, so that as soon as the source of the fire has been removed, combustion will stop.

The Italian legislation on this matter places non-combustible substances (stone, chalk, metals) in Class 0, whereas combustible materials, which – when properly treated – pass the standard tests – are placed in Class 1. As such, the higher the rating, the lower the fire-retardancy. This classification system, which was originally designed to improve the safety of concert venues, has since been extended to cover other buildings (hotels, schools, etc.) with considerable success. The use of fire-retardant coatings is highly effective even against arson attacks, because once the source of the fire has been removed or extinguished, it is very difficult for the flames to propagate.





THE ITALIAN REGULATORY FRAMEWORK

In accordance with Regulation UNI 9796, **fire-retardant coating products** can alter the fire-reaction class of the wooden materials to which they are applied.

This regulation relates to fire-retardant coatings intended for application on all wooden materials with the following exceptions:

- materials veneered with sliced or rotary-cut veneer using thermoplastic resin-based glues.
- cellular or blockboard constructions that include air pockets or are filled with heterogeneous material.

In accordance with current Italian legislation (Ministerial Decree of March 6, 1992), all fire-retardant coatings used within premises that are subject to fire-prevention regulations are required, in themselves, to be certified. **Certification** is granted by the Italian Home Office once the fire-reaction class test certificate has been verified.

Through simple application to any type of wooden surface – with the exception of those types indicated above – ICA's fire-retardant coating cycles can improve the surface's fire-reaction rating to Class 1.

THE CERTIFICATION TEST

In compliance with Italian Ministerial Decree 6/3/92, the procedure for determining fire reaction is carried out using the UNI 9796 method, which can be summarized as follows:

- 1 - The product is applied to a 4 mm panel of MDF that has been certified as non-flammable (Class 4 or 5).
- 2 - The panel is placed next to a white-hot slab and, simultaneously, a flame is placed in direct contact with the surface of the panel in order to simulate both the triggering of combustion and the conditions that are typical of fires in enclosed spaces.
- 3 - By measuring certain parameters – including, amongst others, the speed of the spread of the flames and the extent of the burnt area – the fire-reaction class of the fire-retardant coating may be defined.

INSTRUCTIONS FOR USE

ICA endeavors to supply the user with a certificate confirming that the product is identical to the sample approved by the relevant government ministry. The certificate also features the details of the conformity marking (which must be affixed to the container) and an indication of the effective validity of the product from the time when it is applied.

Users should then provide the end customer with a written statement in which they declare that the coating has been professionally applied in accordance with the manufacturer's guidelines, together with the certificate of conformity.

PLEASE NOTE

The manufacturer is responsible for ensuring that the coating supplied corresponds to the tested and approved sample. For their part, users are responsible for ensuring that the instructions for use supplied by the manufacturer are followed to the letter.

FIELDS OF APPLICATION

ICA's fire-retardant polyurethane coating cycles can be adapted for application to various types of internal furnishings and fittings such as doors, beading, furniture and other items. ICA coating cycles are applied in much the same way as traditional coating cycles and deliver levels of performance that compare favorably with them.



FIRE-RETARDANT LACQUERED CYCLES AND THE TINTOMETRIC SYSTEM

ICA has developed a system based on lacquered fire-retardant coating cycles with **Class 1** fire-reaction. The cycles can be carried out using the colors in the ICA, RAL and NCS color charts, or in any sample color.

The exceptional flexibility of the system is such that fire-retardancy certification can be issued even for top coats of different gloss levels and for special-effect top coats.

Each FRP cycle is composed of 2 products: a white base coat (pigment may be added with the top coat) and a white or pigmented top coat, with the total quantity to be applied amounting to 450 g/m².



ADVANTAGES

- Makes it easy to achieve a lacquered finish in any color.
- Makes it easy to achieve finishes in various gloss levels, including gloss.
- Makes it easy to achieve special-effect finishes (for example: textured, metallic, soft-feel, etc.).



FRP PIGMENTED CYCLE - CERTIFIED CLASS 1

PRODUCT	DESCRIPTION	CATALYSTS*	NO. OF COATS AND QUANTITY**	TOTAL QUANTITY
FP460FR	White polyurethane base coat	C376A at 30%	2 x 175 g/m ²	450 g/m ²
OP471FR... ...OP481FR	Pigmented polyurethane matt top coat	C376A at 40%	1 x 100 g/m ²	

*% by weight ** of wet product

FRPB WHITE CYCLE - CERTIFIED CLASS 1

PRODUCT	DESCRIPTION	CATALYSTS*	NO. OF COATS AND QUANTITY**	TOTAL QUANTITY
FP460FR	White polyurethane base coat	C376A at 30%	2 x 175 g/m ²	450 g/m ²
OP461FR	White polyurethane matt top coat	C376A at 40%	1 x 100 g/m ²	

*% by weight ** of wet product



CYCLE

Sand the wood, then apply 2 coats (175 g/m² each) of white base coat FP460FR, 30% catalyzed with C376A.

After sanding the base coat, apply (100 g/m²) of white or pigmented top coat (OP461FR-OP471FR ...-...OP481FR), 40% catalyzed with C376A.

FIRE-RETARDANT TRANSPARENT CYCLE

With the **FRT** transparent fire-retardant coating cycle, compliance with **Class 1** fire reaction requires the application of a substantially reduced quantity of coating (400 g/m²). Moreover, this cycle also has enhanced chemical/physical properties and transparency.

ADVANTAGES

- Fire retardancy can be achieved by the application of a reduced amount of coating.
- High-quality finish with excellent uniformity.
- Increased surface durability and scratch resistance.
- Excellent anti-yellowing and elasticity.

FRT TRANSPARENT CYCLE - CERTIFIED CLASS 1

PRODUCT	DESCRIPTION	CATALYSTS*	NO. OF COATS AND QUANTITY**	TOTAL QUANTITY
FP456FR	Transparent polyurethane base coat	C457 at 100%	2 x 150 g/m ²	400 g/m ²
OP457FR	Transparent polyurethane matt top coat	C457 at 100%	1 x 100 g/m ²	

*% by weight ** of wet product



CYCLE

Sand the wood, then apply 2 coats (155 g/m² each) of transparent base coat FP456FR, 100% catalyzed with C457.

After sanding the base coat, apply (100 g/m²) of transparent top coat OP457FR, 100% catalyzed with C457.



PLEASE NOTE

- Current Italian legislation states that **rattan** – because its tubular structure contains air cavities – cannot be effectively fireproofed by any type of certified fire-retardant coating. As such, rattan cannot be certified as fire-safe.
- Similarly, coating manufacturers are not permitted to issue fire-safety certification for rigid wooden **chairs** (without padding), as the certification is legally required to cover the coated product in its entirety and not just the coating. In such cases, certification should be sought directly from the manufacturer of the chair.





Industria Chimica Adriatica SpA

Via Sandro Pertini, 52 - Zona Ind.le A - 62012 Civitanova Marche (MC) - Italy
Tel. +39 0733 8080 - Fax +39 0733 808140 www.icaspa.com e-mail: info@icaspa.com

COMPANY WITH CERTIFIED MANAGEMENT SYSTEMS UNI EN ISO 9001:2008 - UNI EN ISO 14001:2004