EF1

Euro-Fire EF1 Flame Retardant System

FEATURES

- **Maintaining system to Euro Class B-s1d0**
- **Upgrading system on ALL timbers to Euro Class B-s1d0**
- **Two pack PU Acrylic system**
- **Good flow & excellent film clarity**
- **Available in Clear & Promatch systems**

USES

Interior wooden structures, panels, walls & ceilings

TOPCOAT

Euro-Fire EF1 Clear Topcoat
Euro-Fire EF1 Promatch Topcoat

BASECOAT

Euro-Fire EF1 Clear Basecoat
Euro-Fire EF1 White Basecoat
Euro-Fire EF1 Grey Basecoat
Euro-Fire EF1 Black Basecoat

ISOLATOR (OPTIONAL)

Euro-Fire EF1 Clear Isolator (Exotic timber species / Pre-treated fumed timbers).

THINNER FOR SYSTEM

Euro-Fire EFT Thinners

CLEANER FOR EQUIPMENT

ISF Spray Gun & Brush Cleaner

APPLICATION EQUIPMENT

Conventional airless / airmix or HVLP spray equipment.

Do not apply on substrates containing over 12% humidity levels.

MIX RATIO / POT LIFE

Euro-Fire EF1 Basecoat & Topcoat - 10:1 (24 hours) / Euro-Fire EF1 Clear Isolator - 5:1 (4 hours)

Stir & Mix the products well prior to use. Once mixed with **Euro-Fire EF1 Catalyst** the viscosity may be adjusted with **Euro-Fire EFT Thinners** by up to 10%.

APPLICATION

Maintain System:

The below system process enables the maintaining of the European fire reaction classification B-s1,d0 of fire retarded wooden substrates classified as B according to UNE-EN 13501-1:2007 + A1:2010 standard

Apply 80-100 gr/m^2 (50-75 microns WFT) of **Euro-Fire EF1 Basecoat Clear, White, Grey or Black.**
Allow to cure overnight (24 hours) and lightly sand with 320 grit sandpaper.
Blow over with pressurized air / Tak rag accordingly.
Apply 80-100 gr/m^2 (50-75 microns WFT) of **Euro-Fire EF1 Topcoat Clear or Promatch.**

Maintaining Coverage:

Euro-Fire EF1 Clear Basecoat ..... Approx 9-11 sqm/lt
Euro-Fire EF1 Clear Topcoat ..... Approx 10-12 sqm/lt
Euro-Fire EF1 Promatch Topcoat ..... Approx 10-12 sqm/lt

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Upgrade System:

APPLICATION

The below system process enables the upgrade fire reaction B-s1,d0 classification of ALL non-fire retarded wooden supports classified as D-s2,d0 with a density equal to or higher than 510kg/m^3. The same classification B-s1,d0 is obtained for this process applied on any metallic substrate or any A2-s1,d0 classified substrate (fiber cement, calcium silicate board or gypsum plasterboard type). Adhesion tests must be carried out on the different supports.

Apply 50-70 gr/m^2 (55-75 microns WFT) of **Euro-Fire EF1 Clear Isolator (Optional).**
Allow 2-3 hours to fully dry – *No requirement to denib unless left longer than 16 hours.*
Apply 220-240 gr/m^2 (150-170 microns WFT) of **Euro-Fire EF1 Basecoat Clear, White, Grey or Black.**
Allow 1-2 hours to flash off - *If left longer than 4-6 hours after the application of the first "Euro-Fire EF1" Basecoat, a light denib with 320 grit sandpaper is required.*
Apply 220-240 gr/m^2 (150-170 microns WFT) of **Euro-Fire EF1 Basecoat Clear, White, Grey or Black.**
Allow to cure overnight (24 hours) and lightly sand with 320 grit sandpaper.
Blow over with pressurized air / Tak rag accordingly.
Apply 80-100 gr/m^2 (50-75 microns WFT) of **Euro-Fire EF1 Topcoat Clear or Promatch.**

Upgrading Coverage:

Euro-Fire EF1 Clear Isolator …….. Approx 10-12 sqm/lt (Optional)
Euro-Fire EF1 Clear Basecoat …… Approx 4-6 sqm/lt (Per Coat)
Euro-Fire EF1 Clear Topcoat …….. Approx 10-12 sqm/lt
Euro-Fire EF1 Promatch Topcoat …… Approx 10-12 sqm/lt

FURTHER INFORMATION

Euro-Fire EF1 Topcoat Clear is available in 10%, 30% and 85% gloss levels.
Euro-Fire EF1 Topcoat Promatch is available in 10%, 30% and 70% gloss levels and can be formulated to any colour using the ISF Solvent Promatch tinting system.

Euro-Fire EF1 Clear Basecoat can be tinted using ISF Promatch or ISF Light Fast Woodstain (300 Range Solvent) to a concentration of no more than 5% volume to help with colour shading.

Easy to apply with any type of spraying equipment (conventional, airmix and airless).
The product inhibits excellent wetting properties, transparency, smoothness, and appearance.
Good resistance to abrasion, rubbing and scratching and meets **FIRA 6250 Severe Use rating**.
The Acrylic-aliphatic nature of the product is characterised by an excellent yellowing resistance.
HFR (Halogenated Flame Retardants) compounds are not used within these products.

Cleaning and Maintenance:
Clean regularly with a soft dry cloth and when needed wipe with a moist cloth.
Neutral cleaning detergents with low amounts of alcohol or waxes can also be used.

Euro-Fire EF1 Flame Retardant System

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Euro-Fire EF1 Extended Tests – Air-Gaps:

The below results are based on the current system application weights above for (Maintain & Upgrade) with the face side coated only … there is no requirement to coat the rear side of the panels to achieve the rating below.

Maintaining (40 mm air-gap) with steel fixing: B-s1,d0.
Maintaining (80 mm air-gap / free standing) with steel fixing: B-s1,d0.
Maintaining (40 mm air-gap) with wooden fixing (fire treated): B-s1,d0.

Upgrading (40 mm air-gap) with steel fixing: B-s2,d0.
Upgrading (80 mm air-gap / free standing) with steel fixing: B-s2,d0.

*****Upgrading (40 mm air-gap) with a wooden fixing **non-fire treated**: will only achieve a **C-s2-d0** so it is advised that either Steel fixings are used, or the wooden fixings are of a Euro Class B spec or coated with 1 coat of the **Euro-Fire EF1 basecoat**.

Euro-Fire EF1 Extended Tests – Veneer:

To obtain a 'B', 'C' or 'D' classification, EN ISO 11925-2 and EN 13823 standards must be performed. The results obtained will designate the classification, depending on the criteria specified in EN 13501-1 standard.

Taking into consideration the information described above, ISF Group Ltd selected 'FIMAPAN' particle board as a standard substrate to perform the different fire tests according to the Euro classes. This substrate fulfils the different conditions which appear in the standard EN 13238 to be a standard substrate highlighted in the table 'List of standard substrates for wall and ceiling surface products' and 'Rules applying to standard substrates for wall and ceiling surface products'.

FIMAPAN particle board is a non-fire retardant treated board with a thickness of 12 mm, a density of 710kg/m3, and classified as D-s2,d0 (verified compliance within the EN 13238 standard).

Moreover, according to what the standard specifies, this standard substrate (particle board) represents **ALL** wooden substrates with a density greater than **510kg/m^3** and any substrate classified as A1 and A2-s1, d0.

To satisfy independent enquires we have 'Indicative tested' an **Oak Veneered substrate** to ensure our system does meet the above standard criteria.

Classification of tested substrate achieved:

Euro-Fire EF1 Upgrade system (without Air-Gap): B-s1,d0.

Product Update – Euro-Fire EF1 Clear Isolator:

The clarity of the process is influenced by the clarity of the Euro-Fire EF1 basecoat and the influence of other parameters (most of which is influenced by the moisture content of the substrate).

If the Euro-Fire EF1 basecoat is not evenly applied since this product is not completely clear differences could also be observed.

The presence of moisture in the timber may have different origins: not properly dried or conditioned, high humidity during application of the products, use of water-based glues in veneered panels, water-based stains, etc.

With the '**Euro-Fire EF1 Clear Isolator'** we prevent the contact of this moisture with the sensitive fire-retardant ingredients of the EF1 Euro-Fire basecoat. So, the initial clarity of the coating and the clarity during the lifetime of the coated product will be improved.

Furthermore, the Euro-Fire EF1 Clear Isolator "wets" the timber better than the Euro-Fire EF1 basecoat so the aspect for darker timbers is improved.

Classification of tested substrate achieved:

Euro-Fire EF1 Upgrade system + Isolator (without Air-Gap): B-s2,d0.

Standards followed within the classification:
EN 13238:2010*: Reaction to fire tests for building products. Conditioning procedures and general rules for selection of substrates.*
EN 13823:2010 + A1:2014*: Reaction to fire tests for building products. Building products excluding floorings exposed to the thermal attack by a single burning item.*
EN ISO 11925-2:2010*: Reaction to fire tests - Ignitability of building products subjected to direct impingement of flame - Part 2: Single-flame source test.*
EN 13501-1:2007 + A1:2009*: Fire classification of construction products and building elements. Classification using test data from reaction to fire tests*

Coverage	Touch Dry	Recoat Time	Max Fire Resistance	Pot Life	Mix Ratio	Shelf Life	Pack Size
As Above	20 mins	As Above	28 Days	As Above	As Above	12 months	5 litres