



FIRE-RETARDANTS COATINGS

European and Italian classification



THE CERTIFIED RANGE OF WOOD FIRE-RETARDANTS

Solutions in accordance with

European classification EN 13501-1

A crucial choice

There are decisions that are made only once. The coating used to protect wood is one of them. Because when everything is working as it should, nobody notices it. It remains invisible on a wall, a ceiling, a cladding, a flooring or a door. But if a fire were to break out, that choice would suddenly become the most important one in the entire building. A fire-retardant coating does not extinguish the fire, it does not make the wood non-combustible. However, it does something just as valuable: it buys time. The time needed for people to evacuate safely. And it is precisely that time that often makes the difference between a minor fire and an accident with serious consequences.



From coating to protective system

With Firewall range, Renner Italia does not merely produce fire-retardant coatings. It develops certified systems. Each coating system is designed to meet a specific requirement, for a precise use and for a specific fire reaction classification. In fire safety engineering, in fact, there are no products that are suitable for everything. There are only right solutions. This is the difference between applying coating and implementing a passive protection system.

The technical response

Firewall fire-retardant solutions are a technical choice rather than a commercial one. Each project involves a various combination of substrates, regulatory constraints, intended uses, application methods and responsibilities. It is not easy to answer the question: which is the right coating system for this project? Firewall was created to provide a precise answer to this question.

A complete range

Renner Italia range offers fire-retardant solutions for wood, certified in accordance with the main regulatory standards, providing stained and lacquered systems, both water and solvent-based, to be applied on walls, ceilings, floors, claddings and furniture. A comprehensive system, designed for architects, designers, contractors, painters and owners of businesses open to the public who need to address the issue of passive fire protection with rigor, clarity and proper documentation. Thanks to Renner Italia tinting system, Firewall solutions can be produced in any color, opening up fire protection to endless design, color and aesthetic possibilities.



From consultancy to certified system

Renner Italia works alongside professionals in choosing the most suitable system, understanding technical requirements, assessing substrate needs, ensuring correct installation and managing the necessary documentation. Because when it comes to fire safety, the product alone is not enough. Expertise, experience and a partner who can transform a complex regulatory framework into a practical and certified solution are needed.

The strength of Renner Italia laboratories

Renner Italia laboratory stands behind every Firewall coating system: research, formulation, testing, performance monitoring and development of solutions that combine protection, aesthetic quality and reliability in application. Firewall offers a comprehensive system to approach fire protection for wood with the right strategy: from the choice of the system to the finished surface, from consultancy to the peace of mind that comes with the result and the certification.

A technical partner for wood passive protection

By choosing Firewall, you're choosing much more than just fire-retardant coating. It means choosing Renner Italia as your technical partner for passive fire protection of wood. In the following chapters, the European Classification and Italian Class 1 will be dealt with as two distinct processes: the regulatory references, abbreviations and documentation procedures differ. However, the Renner Italia method remains unchanged: understanding the project, interpreting the regulatory requirements, selecting the appropriate cycle and ensuring its correct application.

EUROPEAN CLASSIFICATION EN 13501-1

The European classification establishes a common language amongst designers, fire safety professionals, project managers, contractors, applicators and clients. Choosing a Firewall fire-retardant coating, certified in accordance with the main European fire reaction standards means having a technical solution that is recognised throughout the EU and understood in international markets as well.

European classification of Firewall coating system

Field of application	Classifications available within Firewall range	Characteristics of the classification
Walls and ceilings	B-s1,d0	High fire reaction class, with low smoke emission and no dripping of burning particles. This is the highest-performing classification for treated wooden surfaces.
Walls and ceilings	B-s2,d0	High fire reaction class, with higher smoke emission than s1 but no dripping of burning particles. A solution suitable for systems and substrates that require significant fire performance.
Walls and ceilings	C-s1,d0	Intermediate classification, with good fire reaction, low smoke emission and no dripping. Suitable for specific coating systems and substrates where the required performance is in line with this class.
Floorings	BFL-s1	High classification for floorings with low smoke emission. The abbreviation 'FL' indicates the specific category of floorings.
Floorings	CFL-s1	Intermediate classification for floorings, with low smoke emission. A solution for system and substrates where the required classification applies to horizontal surfaces intended for foot traffic.





A common language for safety

In the European system, the reference for the reaction to fire of construction products is EN 13501-1 standard. This is the framework of the Euroclasses: a harmonized classification system that enables the contribution of a material to the ignition and spread of fire to be described. Reaction to fire measures precisely how a material contributes to a fire. It should not be confused with fire resistance, which instead concerns the ability of a building component to maintain certain performance levels for a specific period of time under fire conditions. Firewall operates in the field of fire reaction of coated wood: it protects wooden surfaces and products intended for use in walls, ceilings, floors, claddings and furniture.

How to read the European classification

The European classification, in accordance with EN 13501-1, describes the reaction to fire of a construction product using a code comprising several elements. Each element indicates a specific performance characteristic: fire behavior, smoke development, dripping of burning particles and, where applicable, the field of application.

Class	Description	Technical analysis
A1	Non-combustible material	Highest performance of fire reaction. The product does not contribute significantly to the fire.
A2	Essentially non-combustible material	Very limited contribution to the fire. High performance.
B	Very limited contribution to the fire	High class for combustible products that have been treated or formulated to provide fire-retardant performances.
C	Limited contribution to the fire	Intermediate performance, with improved behavior compared to more combustible materials.
D	Intermediate contribution to the fire	The material contributes significantly to fire development.
E	Minimum acceptable fire reaction	Low performance, with limited behavior compared with exposure to a small flame alone.
F	Undetermined or unclassified performance	The product does not have the requirements for the higher classes or has not been classified.

The “s” indicator: smoke emission

Indicator	Description	Technical analysis
s1	Low smoke production	This is the most favorable level. It indicates low smoke emissions during the test.
s2	Intermediate smoke production	It indicates a smoke level lower than s1, within the limits defined by the classification.
s3	High smoke production or smoke production not included in s1/s2	This is the least favorable level among the smoke indicators.

The “d” indicator: dripping of burning particles

Indicator	Description	Technical analysis
d0	No significant burning dripping	This is the most favorable level. It indicates the absence of burning droplets or particles within the limits specified by the test.
d1	Limited dripping	It indicates limited presence of burning droplets or particles, within defined conditions.
d2	Critical dripping or not included in d0/d1	This is the least favorable level among the dripping indicators.

The “FL” suffix: floorings classification

For floorings, the classification uses the suffix ‘FL’, which indicates that the performance of fire reaction is specifically related to a product intended for floorings. In this case, the classification is not expressed using classes A1, A2, B, C, D, E and F, but using dedicated classes: A1FL, A2FL, BFL, CFL, DFL, EFL and FFL.

Class for floorings	Description	Technical analysis
A1FL	Non-combustible flooring	Highest performance of fire reaction for flooring products.
A2FL	Substantially non-combustible flooring	Very low contribution to the fire. High performance.
BFL	Flooring with a very limited contribution to the fire	High class for combustible floorings treated or formulated to provide significant fire-resistant properties.
CFL	Flooring with a limited contribution to the fire	Good performance for flooring with improved behavior compared to more combustible materials.
DFL	Flooring with an intermediate contribution to the fire	The material contributes significantly to the fire development.
EFL	Flooring with the minimum fire resistance accepted	Low performance, with limited behavior compared with exposure to a small flame alone.
FFL	Unclassified flooring or flooring with undetermined performances	The product does not have the requirements for the higher classes or has not been classified.

The main flooring class may be accompanied by the ‘s’ indicator, which describes the level of smoke emission.

Indicator	Description	Technical analysis
s1	Low smoke production	It is the most favorable level in the smoke emission classification for flooring.
s2	High smoke production	It indicates a smoke emission level higher than s1.





Beyond the coating, the difference lies in the method

When it comes to fire-retardant treatment of wood, there is no single system that works for everything. A wall is not the same as a flooring. MDF is not the same as oak. A lacquered system is not the same as a stained one. Spray application is not the same as roller or brush application. Certification comes from the correct match between the substrate, intended use, coating weight, application method, coating system and the required standard.

For this reason, Firewall does not merely offer certified products. Choosing Renner Italia means adopting a methodological approach to identify the correct process. Professionals are supported in selecting the most suitable coating system, assessing the substrate, interpreting regulatory requirements and planning the project correctly. This is a crucial part of the process.

The advantages

Designer	To be able to include wood protection into the architectural design from the very beginning, with clear technical data and recognisable classifications.
Contractor	To work using defined, documented systems that are consistent with the project requirements.
Painter	To apply a precise system, with detailed technical instructions.
Business owner	To be able to address the issue of fire safety with a structured solution, rather than a single approach.

Another significant advantage for everyone is that Firewall does not require you to choose between certification and aesthetics. Fire-retardant protection for wood can be seamlessly integrated into the design. The entire range allows you to work with transparent, stained and lacquered systems, both water and solvent-based, whilst maintaining the surface's aesthetic quality and offering wide color choices. Thanks to Renner Italia tinting system, Firewall solutions can be produced in a wide range of colors, including the main color schemes used in architectural design. European certification therefore becomes an integral part of the project, rather than a constraint imposed on it. Firewall enables wood to be protected, compliance with requirements to be met, and the creative freedom of architects and interior designers to be preserved. Whether for a hotel, a restaurant, a library, a retail space, a professional practice or a contract environment, this means being able to combine safety, aesthetic consistency and technical accountability.





THE FIREWALL RANGE

WALLS/CEILINGS/FURNITURE SYSTEMS

SYSTEM CODE	DESCRIPTION	COUNTRY	CLASSIFICATION	GR/SQM	NOTES
RAF-AT1 EU	TRANSPARENT BASECOAT AND TOPCOAT	EU	B-s1,d0	340	ALL WOODEN SUBSTRATES
RAF-AT2 EU	TRANSPARENT BASECOAT AND TOPCOAT	EU	B-s2,d0	340	ALL WOODEN SUBSTRATES
RAF-ATB2/EFFEK	TRANSPARENT BASECOAT AND TOPCOAT	EU	B-s1,d0	240	FIRE-RETARDANT MDF B-s2,d0, VENEERED
RAF-AP	1K WHITE WALL-EFFECT	EU	B-s1,d0	400	MDF
RAF-AP1	CATALYZED WHITE	EU	B-s2,d0	400	MDF
RAF-AT1 EU MULTICOLOR	PIGMENTED BASECOAT AND TOPCOAT	EU	B-s1,d0	340	ALL WOODEN SUBSTRATES
RAF-AT2 EU MULTICOLOR	PIGMENTED BASECOAT AND TOPCOAT	EU	B-s2,d0	340	ALL WOODEN SUBSTRATES
RAF-ACP EU MULTICOLOR	ACRYLIC PIGMENTED BASECOAT AND TOPOCOAT	EU	B-s1,d0	350	WOODEN SUBSTRATES
RAF-ACT	ACRYLIC TRANSPARENT BASECOAT AND TOPCOAT	EU	C-s1,d0	240	WOODEN SUBSTRATES
RAF-ACT EU	ACRYLIC TRANSPARENT BASECOAT AND TOPCOAT	EU	B-s1,d0	350	WOODEN SUBSTRATES
RAF-T	PU TRANSPARENT BASECOAT AND TOPCOAT	EU	B-s1,d0	400	FIRE-RETARDANT MDF B-s2,d0, VENEERED
RAF-T2 EU	PU TRANSPARENT BASECOAT AND TOPCOAT	EU	B-s2,d0	390	WOODEN SUBSTRATES
RAF-P MULTICOLOR	PU DARK PIGMENTED BASECOAT AND TOPCOAT	EU	B-s1,d0	400	FIRE-RETARDANT MDF B-s2,d0,
RAF-P MULTICOLOR B	PU LIGHT PIGMENTED BASECOAT AND TOPCOAT	EU	B-s1,d0	400	FIRE-RETARDANT MDF B-s2,d0,

FLOORINGS SYSTEMS

SYSTEM CODE	DESCRIPTION	COUNTRY	CLASSIFICATION	GR/SQM	NOTES
RAF-ATB PAV	TRANSPARENT BASECOAT AND TOPCOAT	EU	BFL-s1	120	NON-ADHERENT OAK DECKING
RAF-AC	ACRYLIC TRANSPARENT BASECOAT AND TOPCOAT	EU	BFL-s1	240	ADHERENT OAK DECKING
RAF-AC	ACRYLIC TRANSPARENT BASECOAT AND TOPCOAT	EU	CFL-s1	240	ADHERENT OAK DECKING

 WATER-BASED  SOLVENT-BASED

When it comes to fire protection, the choice of coating system depends on a number of variables: the type of wooden substrate, the intended use of the space, the required classification, the location of the structure, the application method, the intended coating weight, the desired aesthetic effect and the necessary documentation. The European standard EN 13501-1 on reaction to fire stipulates that every finished product installed on site must be tested, as it is assumed that each element is different from all the others. Renner Italia technical team works alongside designers, contractors, painters and business owners to identify the most suitable system, helping to transform a complex regulatory requirement into a practical, documentable solution that is consistent with the project. Contact us at +39 051 661 8211.

ITALIAN STANDARD

In the Italian system, the fire reaction of materials is expressed in terms of classes that indicate the material's behaviour regarding the ignition and spread of fire. Class 0 refers to non-combustible materials. Wood, by its very nature, is a combustible material. For this reason, when discussing timber products treated with fire-retardant coatings, Class 1 represents the highest and most significant standard. Renner Italia offers Class 1 fire-retardant coating systems for timber, designed to protect timber surfaces such as walls, ceilings, floors, claddings and furniture with stained and pigmented finishes, both water-based and solvent-based. Firewall systems certified to Class 1 under Italian regulations do not make the wood non-combustible. However, they ensure that the wood behaves significantly more safely than untreated wood, reducing the substrate's contribution to the spread of fire.

Italian classification of reaction to fire

Class	General meaning	Technical analysis
Class 0	Non-combustible material	This is the classification given to materials that do not contribute to combustion. It does not normally apply to wood, as wood is a combustible material.
Class 1	Material with significantly improved fire reaction	This is the highest classification that can be achieved by a wooden product treated with a suitable fire-retardant coating system.
Class 2	Improved fire reaction	This indicates a performance level lower than Class 1, but better than that of more combustible materials.
Class 3	Intermediate fire reaction	The material plays a more significant role in the development of the fire.
Class 4	Poor fire reaction	A class frequently associated with combustible materials that are untreated or inadequately protected.
Class 5	More critical fire reaction	This indicates the least favourable performance on the Italian scale.

The reference in Italian legislation

The Ministerial Decree of 6 March 1992 sets out the technical and procedural standards for the classification of fire reaction and for the type approval of fire-retardant coatings intended for application to wooden materials. Classification is carried out in accordance with standard UNI 9796/CNVVF/CCI, which is specific to fire-retardant coatings applied to wood. Class 1 cannot be achieved with just any coating. It is achieved through a process that has been assessed, tested and approved in accordance with the procedure laid down for this specific application.





Firewall brings wood to Class 1

The approved Firewall coating systems enable the fire reaction class of treated wooden surfaces to be raised to Class 1. This means reducing their contribution to the spread of fire. It means protecting surfaces, environments and people through a proven technical solution.

Firewall solution in Class 1

Field of application	Firewall solutions
Walls	Fire-retardant systems for vertical wooden surfaces.
Ceilings	Specific systems for wooden surfaces at high altitudes.
Floorings	Systems for flat walkable surfaces.
Claddings	Solutions for panelling, claddings and decorative surfaces.
Furniture	Systems for wooden products integrated into the project.
Spaces open to the public	Solutions for hotels, restaurants, libraries, shops, professional practices, accommodation facilities and contract spaces.

Firewall range naturally includes translucent and pigmented finishes, both water-based and solvent-based. Because even in Class 1, the challenge is not finding a fire-retardant coating, but identifying the right system. With an endless range of colors, even the Class 1 systems, like all Renner Italia solutions, enhance the design and architectural identity of the space.

Firewall method

Phase	What does Firewall do?
Needs analysis	Understanding the environment, the intended use and the required classification according to the regulatory framework.
Evaluation of the substrate	Check the type of wood or woodworks to be treated.
Choice of the coating system	Identification of the solution that best aligns with the substrate, regulation and aesthetic result.
Application instructions	Guidance on weights, application methods and operating conditions.
Document management	Assistance in the proper compilation of the necessary technical documentation.
Final result	Surface treated with a suitable coating system, complying with the required Class 1 standard.

The advantages

Designer	Incorporate wood protection into the design with a precise Italian reference.
Fire safety expert	Have systems and documents that comply with regulatory requirements.
Project management	Determine the technical approach before implementation.
Contractor	Reduce uncertainties and disputes relating to system compliance.
Painter	Apply a defined system, with precise technical instructions.
Business owner	Tackling fire safety compliance with a structured and documentable solution.

WALLS/CEILINGS/FURNITURE SYSTEMS

SYSTEM CODE	DESCRIPTION	COUNTRY	GR/SQM	NOTES
RAF-ATB2	TRANSPARENT BASECOAT AND TOPCOAT	IT (DM 06/03/92)	400	ALL WOODEN SUBSTRATES
RAF-ATB2/EFFEK	TRANSPARENT BASECOAT AND TOPCOAT	IT (DM 06/03/92)	400	ALL WOODEN SUBSTRATES
RAF-AT2 EU	TRANSPARENT BASECOAT AND TOPCOAT	IT (DM 06/03/92)	340	ALL WOODEN SUBSTRATES
RAF-A MULTICOLOR	DARK PIGMENTED BASECOAT AND TOPCOAT	IT (DM 06/03/92)	400	ALL WOODEN SUBSTRATES
RAF-A MULTICOLOR B	LIGHT PIGMENTED BASECOAT AND TOPCOAT	IT (DM 06/03/92)	400	ALL WOODEN SUBSTRATES
RAF-AP	1K WHITE WALL-EFFECT	IT (DM 06/03/92)	400	ALL WOODEN SUBSTRATES
RAF-AP1	CATALYZED WHITE	IT (DM 06/03/92)	400	ALL WOODEN SUBSTRATES
RAF-ACT	ACRYLIC TRANSPARENT BASECOAT AND TOPCOAT	IT (DM 06/03/92)	240	ALL WOODEN SUBSTRATES
RAF-T	PU TRANSPARENT BASECOAT AND TOPCOAT	IT (DM 06/03/92)	450	ALL WOODEN SUBSTRATES
RAF-P MULTICOLOR	PU DARK PIGMENTED BASECOAT AND TOPCOAT	IT (DM 06/03/92)	450	ALL WOODEN SUBSTRATES
RAF-P MULTICOLOR B	PU LIGHT PIGMENTED BASECOAT AND TOPCOAT	IT (DM 06/03/92)	450	ALL WOODEN SUBSTRATES

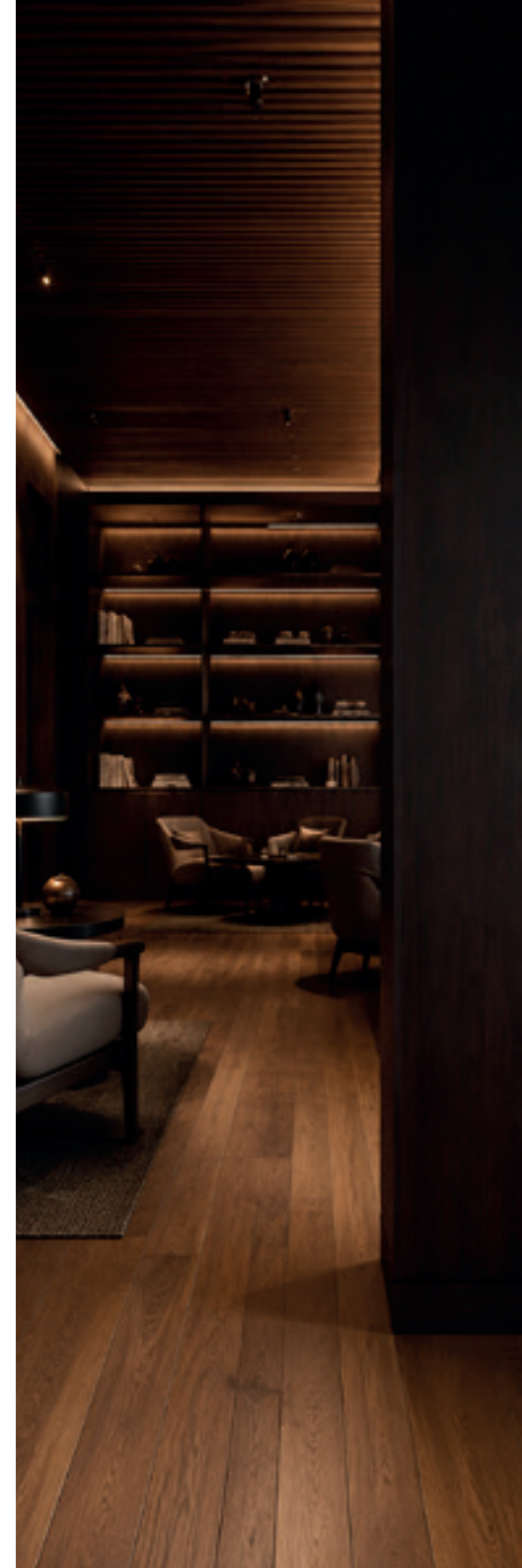
FLOORINGS SYSTEMS

SYSTEM CODE	DESCRIPTION	COUNTRY	GR/SQM	NOTES
RAF-ATB PAV	TRANSPARENT BASECOAT AND TOPCOAT	IT (DM 06/03/92)	120	ALL WOODEN SUBSTRATES
RAF-ATB OIL PAV	TRANSPARENT BASECOAT AND TOPCOAT	IT (DM 06/03/92)	80	ALL WOODEN SUBSTRATES
RAF-AC	ACRYLIC TRANSPARENT BASECOAT AND TOPCOAT	IT (DM 06/03/92)	240	ALL WOODEN SUBSTRATES

WATER-BASED

SOLVENT-BASED

When it comes to fire protection, the choice of coating system depends on a number of variables: the type of wooden substrate, the intended use of the space, the required classification, the location of the structure, the application method, the intended coating weight, the desired aesthetic effect and the necessary documentation. The European standard EN 13501-1 on reaction to fire stipulates that every finished product installed on site must be tested, as it is assumed that each element is different from all the others. Renner Italia technical team works alongside designers, contractors, painters and business owners to identify the most suitable system, helping to transform a complex regulatory requirement into a practical, documentable solution that is consistent with the project. Contact us at +39 051 661 8211.





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