AMOTHERM® WOOD 450 SB

Fire protection system for wood

Rev. July 2025

Transparent paint coating consisting of a primer and topcoat

Characteristics: paint coating system consisting of a primer formulated with special solvent-based polyurethane resins and specific reactive substances which, when exposed to the action of flames or the heat of a fire, decompose chemically, generating inert gases and other extinguishing compounds which reduce flame propagation and slow down carbonisation of the wood.
The protective topcoat, an integral part of the system, is formulated with special solvent-based polyurethane resins and is available in different degrees of gloss. It must be applied to ensure the integrity of the layer underneath.
Applications: special protective system to protect indoor wooden structures from fire and to reduce the reaction to fire of items in wood or its derivatives, such as wall- or ceiling-mounted matchboard, furniture and fittings, scenery, stands, etc.
Technical performance: the coating cycle is classified as:

- ***REACTION TO FIRE:***
  - *EUROCLASS B-s1,d0* in accordance with EN 13501- part 1. The classification is valid for the protection of all wood-based substrates used on walls or ceilings, in compliance with the technical requirements specified in EN 13823 (reaction to fire tests for building products exposed to thermal attack by a single burning item) and EN ISO 11925-2 (reaction to fire tests for building products – Part 2: ignitability when exposed to a small flame). CLASS 1 in accordance with UNI 9796/2014 pursuant to Italian Ministerial Decree of 06/03/1992, with approval number BL158PVI100021.
  - The classification is valid for the protection of all wood-based substrates used on walls or ceilings, subject to the limitations specified in the UNI 9796 standard concerning substrates containing air cavities or assembled with thermoplastic adhesives.
  - *ASTM E84 FLAME SPREAD INDEX (FSI): 45 and SMOKE-DEVELOPED INDEX (SDI): 100* – corresponding to CLASS B as per the International Building Code (IBC) 2018, Section 803.1.2.

Technical Data

Characteristics	BASE	TOPCOAT
Protective system:	AMOTHERM WOOD 450 SB	AMOTHERM WOOD 450 SB TOP
Components:	Dual-component	Dual-component
Colour:	Transparent, colourless	Transparent, colourless
Gloss:	---	dull matt (8– 12 GLOSS) matt (12 - 18 GLOSS) satin gloss (57 - 63 GLOSS)
Density:	➢ 1,11 +/- 0,02 g/cm^3 comp. “A” ➢ 0,99 +/- 0,02 g/cm^3 comp. "B"	➢ 1,10 +/- 0,02 g/cm^3 comp. “A” ➢ 0,99 +/- 0,02 g/cm^3 comp. "B"
Test viscosity:	➢ 600–900 mPa s (BROOK) comp. “A” ➢ 50–60 s (DIN 2) comp. "B"	➢ 1500–2500 mPas (BROOKFIELD) comp. “A” ➢ 50 – 60 s (DIN 2) comp. "B"
Dry residue in weight:	➢ 70–74 % comp. “A” ➢ 28–32 % comp. "B"	➢ 65–69 % comp. “A” ➢ 28–32 % comp. "B"
Catalysis ratio:	1:1	1:1
Pot life	3 h	At least 3 hours
Recoatable:	after 1-4 hours with same product	---

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Topcoat:	---	• within 8 hours of the last coat, without intermediate sanding • after at least 12 hours from the last coat, with intermediate sanding
Storage:	at least 1 year in the original closed container at a temperature of >5°C	
Packaging:	as per price list	

The technical data given above refer to the results obtained for the transparent formula in the mate version. The product application details were obtained in normal environmental conditions (temperature 20 °C and relative humidity 60%) and refer to the application of a wet film of thickness 150 micron. Application of different thicknesses and/or in different environmental conditions may lead to considerable variations in the technical features given above.

How to apply

All technical product documentation is available on the company website and can be downloaded from www.amonncolor.com and from the dedicated section of My Amonn.
A summary of the standard operating conditions for the correct application of this protective system is given below.
Surface preparation: the base coat must be applied directly onto bare wood or wood treated with a non-film-forming impregnating agent, free from waxes or water-repellent products.
The surfaces to be treated must be clean and dry; we recommend carefully removing dust and any traces of oil and grease.
As the fire-protection system is a film-forming treatment (closed pore), it is important to check that the moisture content of the surface does not exceed 15% before it is applied.
The coating system can also be applied to aged wood and/or wood previously treated with other products, even if not fire-retardant, provided that compatibility, adhesion and final appearance are verified in advance. Preliminary tests are recommended on small sections of the surface to be treated.
Application quantity: the amount of product to be applied is determined by the reaction to fire requirements.

- **REACTION TO FIRE**:
  - **EUROCLASS B-s1,d0**: 200 g/m² of AMOTHERM WOOD 450 SB base coat + 160 g/m² of AMOTHERM WOOD 450 TOP SB protective topcoat. If intermediate sanding is carried out between base coat and topcoat, the total base coat quantity must be increased to 300 g/m².
  - **CLASS 1**: Minimum 200 g/m² of AMOTHERM WOOD 450 SB base coat + 150 g/m² of AMOTHERM WOOD 450 TOP SB protective topcoat. If intermediate sanding is carried out between base coat and topcoat, the total base coat quantity must be increased to 300 g/m².

Product preparation: Stir component "A" thoroughly, then add the catalyst and mix well to make the product homogeneous.
Dilution: the products are ready to use. If dilution is necessary, follow the instructions in the table below.
Application methods: The product can be applied by spraying, using either conventional or airless systems. Brush application is possible, although it does not provide an optimal surface finish.
For other application systems, please contact our technical service.
Respect the specified quantities and avoid product build-up, which may result in clouding.

For applications requiring optimal aesthetic results (e.g. furniture):

- Apply one coat of at least 150 g/m² of AMOTHERM WOOD 450 SB
- After at least one hour and before 4 hours, apply a second coat of min. 150 g/m2 of AMOTHERM WOOD 450 SB without sanding (if more than 4 hours elapse, the surface will have to be sanded as per the following point)

- After at least 12 hours, sand down with medium grain (220-240) sandpaper and apply a coat of min. 160 g/m2 of AMOTHERM WOOD 450 SB TOP protective topcoat.

For other applications, follow the application cycle below:

- Apply 200 g/m² of AMOTHERM WOOD 450 SB in one or two coats (vertical application).
- After at least 1 hour and within 8 hours, apply one coat of at least 160 g/m² of AMOTHERM WOOD 450 SB TOP without intermediate sanding. (If this interval is exceeded, intermediate sanding is required and an additional 100 g/m² of product must be applied.)

BASE COAT	+ 23°C	+ 40°C
Dust-dry after	15-20 min	5-10 min
Touch-dry after	60-70 min	15-20 min
Sandable after	14 h	4 h

TOPCOAT	+ 23°C	+ 40°C
Dust-dry after	15-20 min	5-10 min
Touch-dry after	40-50 min	15-20 min
Dry to handle after	12 h	2 h

The drying process can be accelerated using forced drying systems; in this case, a flash-off time of 10–20 minutes is recommended.
Proper adhesion between coats is ensured if overcoating intervals and sanding steps are correctly observed. The use of hot air during application accelerates curing.
Application is recommended at a substrate and ambient temperature of at least 10°C and relative humidity below 60%.

METHOD	**% dilution (based on A+B mixture)** **(for applications excluded by legislative decree 161/2006)**	**Air pressure**	**nozzle**
Brush/roller	*0 - 5%* *(PU thinner or PU retardant thinner**)*	**---**	**---**
Air spray (cup spray gun)	*0 - 5%* *(PU thinner or PU retardant thinner**)*	*2.5 – 3.0 bar*	*1.5 – 2.0 mm*
Airmix spray	*0- 5% (PU thinner or PU retardant thinner**)*	*2.5- 3.0 bar (pump)* *1.8 – 2.3 bar (pistol)*	*0.011 - 0.013 inch*
*Airless spray**	---	*60 – 120 bar*	*0.011 - 0.015 inch*

* Use an airless spray pump with:
  - – Pneumatic drive (compression ratio 15:1)
  - – Electric drive (motor power ≥1.9 kW)

** For ambient temperatures above 25°C

Tool cleaning: with Stufex 003 thinner (or nitro thinner) immediately after use.

Warnings:

- During prolonged storage, the fire-retardant components in the product may settle at the bottom of the container. Always mix the product thoroughly with a paddle mixer or metal rod before use.
- Applying quantities per coat higher than those indicated in this technical data sheet may cause defects such as clouding, whitening of the varnish film, runs, etc.
- High humidity during application or drying can negatively affect the product. Do not apply in environments with high moisture levels.
- Typical defects such as air bubbles or clouding of the paint film may occur when applying the product to wood species rich in oily substances (e.g. Iroko, rosewood, mahogany, Tanganyika walnut veneer). For this reason, preliminary testing and/or the application of a polyurethane insulating primer is always recommended on these types of wood.
- The system does not provide biological protection or resistance to UV radiation; therefore, an appropriate impregnating primer must be used for such purposes.

The instructions provided in this document represent the most recent state of the information, development and use of the product. The application of the materials is out of our control and, therefore, we can only guarantee the constant quality of the product supplied.