



ALCOLIN WATERPROOF GLUE

Description

ALCOLIN WATERPROOF GLUE is a one-component professional-strength, waterproof polyurethane adhesive specifically designed for assembly work and for use with hardwoods, softwoods and non-flammable building boards. It is also specifically suited for window-frame stock, windows and shutters. ALCOLIN WATERPROOF GLUE provides a longer open time than PVA glues, offers good sand-ability and is unaffected by finishes. As moisture causes the glue to foam, it has the ability to fill gaps and bridge irregularities in the substrates. It works well on exotic or oily woods and will not become brittle with age. The non-brittle glue line is ideal for bonding dissimilar materials.

Features & Benefits

- 100% waterproof
 - Epoxy like strength
 - Outstanding versatility
 - Good creep resistance
 - Tough glue line
 - Chemical resistant
 - Long open time
 - Excellent heat resistance
 - Fast setting time
 - Gap filling
 - Fire resistant
 - Solvent free
- passes EN12765 C4 water-resistance.
 - bond stronger than wood.
 - excellent for bonding dissimilar substrates, oily woods.
 - ideal for high stress joints found in tables and chairs.
 - excellent sand-ability.
 - unaffected by finishes.
 - more time for assembling of parts.
 - use in areas subject to heat up to 120°C.
 - reduced clamp time, increasing turnaround time.
 - ideal for use where parts are not 100% flush fitting.
 - suitable for building of fire doors in accordance with EN 13501.
 - low VOC.



Applications

- ALCOLIN WATERPROOF GLUE can be used for water-resistant and weatherproof bonding of wood-based materials, stone, ceramic, insulation materials and concrete. It forms a complete waterproof bond making it ideal for all exterior applications where a waterproof and/weatherproof joint is required.
- Suitable for applications below the waterline. Ideal for marine applications such as boat building.
- Excellent for exterior furniture and doors, window frame assembly, shutters, garage doors, parquet flooring, cutting blocks, bent wood laminations, table tops, birdhouses, etc.
- Ideal for interior furniture with frequent long-term exposure to running or condensed water and high humidity e.g. sauna rooms.
- Excellent for bonding composites together, such as polystyrene to metal, wood to metal, plywood to concrete, stone to tile, etc.
- Suitable for assembly of non-flammable building boards to EN13501 (with appropriate materials and constructions).
- Suitable for edge gluing, face gluing, doweling & general assembly.

Adhesion

ALCOLIN WATERPROOF GLUE displays excellent adhesion to a variety of materials. In addition to its superior wood-to-wood performance where it is suitable for softwoods, hardwoods and oily exotics, it is ideal for processed boards composites (hardboard, chipboard, supawood, high

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pressure laminates), metal, ceramic, most plastics, Corian, stone and other porous/non-porous materials.

Performance properties – industry standards

- EN12765 C4 water-resistance.
- Fire resistant in accordance with EN 13501.

Limitations

- ALCOLIN WATERPROOF GLUE is not for structural applications below the waterline.
- Do not bond in temperatures lower than 10°C. Freezing will not affect the performance of the product but may cause it to thicken. Agitation should restore product to original form.
- Compatibility tests must be conducted with hardwoods and tropical woods, especially for outdoor applications.

Safety instructions

ALCOLIN WATERPROOF GLUE is combustible. Keep away from naked flames and ignition sources. Safe handling practices should be implemented to avoid irritating sensitive skin. It is advisable to wear gloves in order to avoid direct skin contact. May temporarily stain skin. If glue comes into contact with skin or eyes, flush thoroughly and immediately with water. If irritation continues, seek medical attention. Glue is slippery when wet, so care should be taken when cleaning spillages that occur. Always work in a well ventilated area. Do not breathe in vapors. For unventilated areas, a NIOSH approved respirator will be necessary. Refer to our Safety Data Sheets for further toxicological information and comprehensive handling instructions.

Surface preparation

- The surface must be clean, dry, and free from all loose materials, dust, dirt, rust and any other contaminants. When working with woods that are oily or high in tannic acid, wipe the joints with acetone before gluing. Acetone clears the contaminants from the wood pores on the bonding surface and dries quickly without leaving any residue.
- When working with non-porous surfaces such as plastic or metal, it helps to roughen the surface and moisten it before applying the glue. If the surface is thick enough on the non-porous surface, you may consider drilling some small holes to give the glue a greater mechanical hold.
- For the best result, planing of the wood should take place within 24 hours of gluing. After this time, the cell structure of the wood closes, which may significantly reduce the ability of the glue to penetrate sufficiently, resulting in a poor bond.
- The moisture content of the wood should be between 8 – 18%. Wood of higher moisture content up to 25% can be successfully bonded, however, one is cautioned that high moisture contents can lead to risk of delamination and wood splitting due to shrinkage of the wood on either side of the bond-line. Because ALCOLIN WATERPROOF GLUE needs moisture to cure, lightly dampen the joint with water before gluing. For dense woods, lightly dampen both surfaces prior to gluing. This helps open up the pores of wood and speeds up the curing process.
- To avoid wood shrinkage or swelling after processing, it is very important to ensure that the wood is dried to a moisture content corresponding to the equilibrium moisture content (EMC) at the site where the article will be used. EMC is the moisture content of the wood that corresponds to a given relative humidity. If the moisture content of the wood is higher than EMC, it will lose moisture until it reaches EMC. A corresponding shrinkage in the wood will occur which may result in delamination along the glue line and/or wood splitting. Consult with your Alcolin Rep for further information.
- To prevent “stepped joints”, it is important to ensure that all the wood has similar moisture content. This can be achieved by allowing the wood to acclimatize in your shop for 7 – 14 days.
- Care should be taken to ensure a tight fit between wood pieces with no saw marks and no burnishing of the surfaces to be glued. Poor surface preparation may result in the delamination of the glued joint.

Directions for use

1. Ensure that surfaces are prepared as above and ensure that all joints fit tightly.
2. For a successful gluing operation, consideration must be given to each of the following points discussed

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below: Glue spread rate, Assembly time, Press time, temperature & pressure, and Post press conditioning.

3. Apply glue with a roller, wheel, toothed trowel or brush. Apply a Spread Rate of approximately 200g/m² (glue “squeeze out” should be seen coming from the joint). The glue spread rate is dependent on the object of gluing and the wood species, and must be determined in each specific case. When gluing hard and oily wood species, the substrates should be newly planed and the adhesive should be spread on both surfaces. Veneering applications will require a lower spread rate of approximately 100g/m².
4. The assembly time refers to the time lapse between glue spreading and application of pressure. In the case of WATERPROOF GLUE, this is approx. 15min at 20°C and 65% relative humidity. It is recommended that only the amount of adhesive that can be used within this time be applied at any one time. The assembly time is influenced by the glue-spread rate, environmental conditions and wood species. Assembly time is increased cold weather, low humidity; high spread rate and high-density wood species.
5. Press time is dependent on wood species, moisture content and environmental conditions. Cold temperatures and higher humidity levels may require longer press times. Denser wood species and those with higher moisture content will also require longer press times. We recommend pressing an unstressed joint for 45 minutes to an hour. Stressed joints, such as bent laminations, need to be pressed for 24 hours.
6. Press temperatures can be set to ambient room temperature. Temperature in the glue line can be between 10 - 30°C. Use of the adhesive below 10°C, the adhesive will be difficult to apply, and the curing time will be long.
7. Appropriate press pressure is essential for a successful bond. Sufficient press pressure is required to bring the joint tightly together. Too high pressure and short assembly times when gluing hard wood species may cause the glue to be squeezed out of the glue line, resulting in glue starvation and delamination. Too little pressure will not bring the surfaces together closely enough to form a strong bond along the glue line. 100-150 psi (7-10 bar or kg/cm²) is recommended for soft woods, 125-175 psi (9-12 bar or kg/cm²) for medium woods, and 175-250 (12 – 17 bar or kg/cm²) for hardwoods. Clamps should be positioned a minimum of 4cm away from the sides, and evenly spaced at 20-30cm throughout the piece.
8. Glue joint “squeeze out” may make the area around the joint difficult to stain. Although sanding the area will help, we recommend using masking tape to cover the areas that you do not want exposed to glue. Remove excess glue immediately by wiping with a clean damp cloth.
9. Post Press Conditioning: after a minimum clamping period, the panel will develop enough handling strength to permit it to be removed from the press. Further processing can be done after 2 hours. A storage period of 3-4 days may be required to eliminate sunken joints caused by residual moisture in the glue line.

Cleaning

- Machines and tools can be cleaned with water. Warm soapy water or use of acetone will increase cleaning effectiveness. Dried glue will need to be mechanically chipped to remove.
- Cleaning clamps, jigs, press platens and fixtures is much easier if equipment is regularly coated with ALCOLIN RELEASE AGENT before using it. The release agent will prevent the adhesive from sticking to the equipment and will help dried glue to flake off quickly and easily.

Storage stability

ALCOLIN WATERPROOF GLUE has a shelf life of at least 9 months if stored in a cool, dry place below 25°C in its original sealed moisture-tight container. If the material is kept beyond the recommended shelf life, it is not necessarily un-usable; a check should be performed to observe whether the product is still workable, apply-able and uncured. To maximize the shelf life of the opened cartridge, we recommend that the nozzle be removed and a piece of plastic placed over the cartridge tip, after which the nozzle must be screwed back on. If the packaging is left open for long periods, the glue will thicken due to solvent evaporation. Store in a cool environment.

Product packaging

- 280ml cartridge

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Product data

i. Physical data

Type	Polyurethane, moisture curing
Appearance	Viscous brown liquid drying to a beige rigid film
Density	Approximately 1.14g/cm ³
Solids	Approximately 100%
Viscosity	Approximately 11000cPs (#4/20rpm/20°C)

ii. Application data

Minimum application temperature	10°C
Application temperature	10 - 30°C
Spread rate	Approximately 200 – 250g/m ² for assembly Approximately 150 - 200g/m ² for laminating Approximately 100 - 150g/m ² for veneering
Assembly time (20°C at 65% RH)	Approximately 15 minutes
Press time (20°C at 65% RH)	Unstressed joints :45 - 60 minutes Stressed joints :24 hours
Press pressure	HPL :3 – 6 Bar Soft woods :7 – 10 Bar Medium woods :9 – 12 Bar Hard woods :12 – 17 Bar

**Please refer to "Instructions for use" section for further details*

iii. Performance data

Glue line	EN12765 C4 water-resistance Fire resistant in accordance with EN 13501
Tensile strength (wood failure)	7.6N/mm ² (100%) – beech wood, 2hrs clamping; 24hrs condition
Heat resistance @ 90°C	5.9N/mm ² (0%) – beech wood, 2hrs clamping; 48hrs condition
Service temperature range	-5°C to + 120°C
Chemical resistance	Resists mild caustic solutions, acids, and solvents

The above information is only offered, as a guide to the use of this product. Furthermore, users should satisfy themselves that it is suitable for their needs. Since we have no control over the conditions under which it is used, we cannot accept responsibility for problems caused by the use and/or application of this product.

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