

medite[®]

tricoya [®]

STORAGE, HANDLING and USER INSTRUCTIONS

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STORAGE, HANDLING and USER INSTRUCTIONS

Medite Tricoya MDF Packages

All Medite Tricoya MDF undergoes inspection before leaving the plant. Medite Tricoya is strapped with binding tape into standard labelled packs, each with a unique number.

Storage and Handling

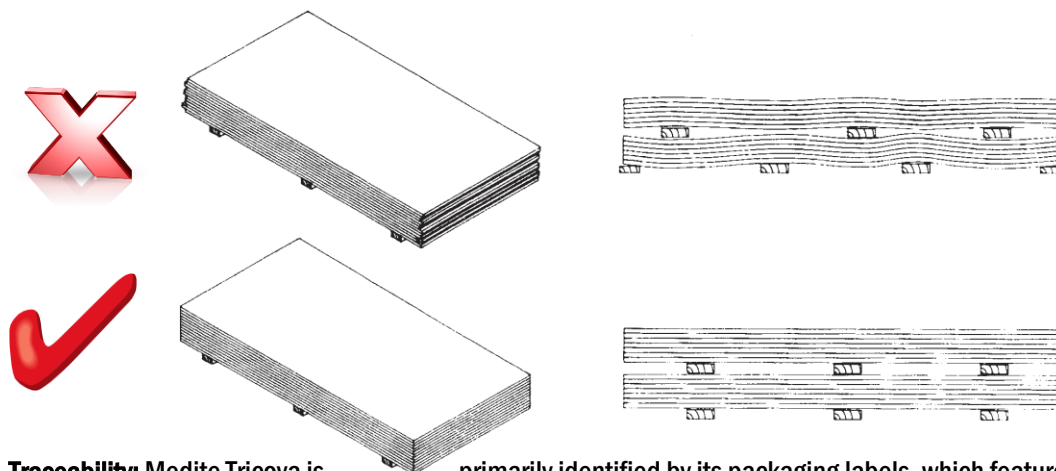
The method of manufacturing Medite Tricoya MDF ensures a balanced construction resulting from the uniform distribution of fibres throughout the panel thickness. The maintenance of this inherent flatness is dependent upon the use of correct storage and handling procedures. Without these, boards may develop a permanent set under their own weight, particularly if not adequately supported on a flat pallet or by insufficient bearers during any storage period.

The following procedures must be observed:

1. Medite Tricoya MDF sheets should be stored horizontally in dry conditions and lifted clear of the floor using dry bearers as supports.
2. Where individual bearers are used, they should be of equal thickness and placed at not more than 800mm centres for boards of 15mm thickness and upwards, subject to a minimum of three bearers. Closer spacing is required for thinner boards.
3. The bearers supporting successive layers should be in vertical alignment.
4. Stacks of boards should have flush sides to minimise damage to protruding edges or over-hanging corners.
5. The storage area should be well ventilated and the conditions should be reasonably dry.
6. To prevent the boards getting wet during storage and on site, it is recommended that Medite Tricoya is covered with a "vapour-open" plastic.
7. As with general storage conditions, storage at the building site should be a minimum of 10cm above concrete flooring and 30cm above ground.

Figure 1: Storage

and Handling



Traceability: Medite Tricoya is primarily identified by its packaging labels, which feature the Medite Tricoya and Coillite Panel Products logos. In addition there is a single white 5cm stripe line marked on both long sides of the board pack and reference number printed on the corner of the board. In case of doubt, we will verify the product's authenticity. Medite Tricoya can be traced by this reference number and its packaging label. It is therefore imperative to retain all relevant documents and to record the movements of each package through to

the manufacture of the products. This tracking is also needed if you intend to offer products with certified sustainable wood certifications. The board printed reference number is to be quoted in the case of any queries, complaints or warranty claims.

Information Transfer: It may be important to inform the principal and third parties doing installation that Medite Tricoya has been used in the production of your product. Portions of this guide such as proper storage to the building site, appropriate fasteners and fixtures to use for final installation and related considerations should be communicated.

Usage

Medite Tricoya may be used in exterior or interior wetted applications. It may be used as a substitute for treated softwoods, hardwoods, high grade exterior plywood's, plastic, cement based, metal or composite materials. It may be used for a wide range of applications including exterior cladding or facades, shop fronts, signage, exterior doors, garden or outdoor furniture, playground equipment, backing boards, cubicles & wet rooms, flooring, marine fit out and more. Medite Tricoya is inherently stable and durable.

Wood releases moisture in dry climates and absorbs moisture in humid conditions. The moisture within wood takes two forms: "free water", which is contained in the cell cavities (or lumen), and "bound water", which is contained in the cell wall matrix. While Medite Tricoya in any conditions will have minimal bound water, which is what accounts for many of its superior properties, it can still contain free water. Final product quality can be harmed by excessive free water; it is therefore essential that the moisture content of the wood is determined prior to processing, gluing and coating.

Wood Moisture Content

Medite supplies Medite Tricoya from the factory in a dry condition (wood moisture content 3–5%). If the measurement shows a moisture content of 8% or more this may indicate the presence of "free water" and the Medite Tricoya should be allowed to dry before processing, gluing or coating.

Processing of Medite Tricoya does not affect its unique properties, such as durability and dimensional stability, as the Medite Tricoya is modified throughout the cross section. Medite Tricoya is easy to process and can be compared, in general, to standard MDF. Special tools are not required, for example, to do cross cutting, ripping, planing, routing, or drilling. Sanding before finishing is often not required, but is dependent on required end finish.

It should be noted that a light vinegar smell may become apparent when using Medite Tricoya. With proper suction/ventilation this can be reduced to a minimum. Health and safety tests have been successfully performed against a wide range of tests in many countries and have shown no issues.

As with other wood species with higher acid levels, caution should be taken to prevent long term exposure of wood machinery and exhaust systems to dust and shavings to prevent corrosion.

Prior to machining or further processing, the board moisture content should be checked. A moisture content reading, showing < 8%, indicates suitability for processing.

Cutting and Machining

Medite Tricoya can easily be cut, shaped, routed, moulded and bored with conventional wood working equipment and tools.

Tool wear rates on Medite Tricoya are similar to wear rates on Medite MDF. In general, Medite Tricoya is denser and slightly more abrasive than common hardwoods. As steel-tipped tools dull quickly, carbide-tipped tools are recommended for normal work on any scale. Diamond-tipped tools may be best for very high volume operations. The greater cost of these cutters is offset by less re-sharpening and more consistent cut edges.

Saw blades used for particleboard are normally satisfactory. Compared to saw blades for solid wood, all types of MDF saw blades require higher clearance and increased tooth angles (Consult tool suppliers for further guidance).

One of the prime features of Medite Tricoya is its clean edge and face machining characteristics. Contoured designs are almost unlimited. However, care must be taken in the selection of profiles, as the presence of sharp corners or narrow sections will alter the uniformity of paint coverage and reduce the resistance of profiled edges to impact damage.

When machining Medite Tricoya, as with any MDF, cutter angles are important. A large hook angle is required to ensure clean cutting with minimum wear of the cutting tip. A large clearance angle prevents the back of the cutter from rubbing against the machined edges. The increase in both these angles is limited by the requirement to maintain adequate strength at the tool tip.

Cutters for all types of MDF are normally supplied with angles in the following ranges:

Cutting (hook) angle: 10 to 20 degrees Clearance angle: 20 to 22 degrees

To minimise sanding after machining, feed speed should be selected to produce at least 8 cutter marks per cm. This can be compared to 6 cutter marks per cm which would be acceptable in a typical solid wood machining operation. Achieving the recommended cutter marks per cm is a function of material feed speed, the number of cutters and the rotational speed of the cutting block. The optimal feed speed for each cutting block can be calculated as follows:

$$\text{Feed Speed (m/min.)} = \frac{\text{RPM} \times \text{No. of cutter edge}}{100 \times \text{cutter marks / cm}}$$

At lower feed speeds, the cutters will compress and abrade the MDF. The resulting high pressure on the tips and increasing temperature due to frictional heat will reduce the life of the cutters between sharpening. At higher speed, a greater spacing between cutter marks will increase roughness, thereby necessitating more sanding to achieve the required level of smoothness before finishing.

Dust Removal During Machining: Efficient dust removal for all cutting and machining operations helps to prolong tool life, by reducing potential overheating of the cutting tool. A minimum air velocity of 23-30 m/sec is recommended for dust extraction

Sanding: Carbide-based abrasives are generally recommended for sanding Medite Tricoya MDF. A modified “closed coat” abrasive is also recommended. This combines the smoother finishing properties of “closed coat” systems with resistance to fine dust clogging of “open coat” systems.

Face Sanding: Medite Tricoya is shipped with a 150 grit final factory finish. This provides an excellent smooth surface, ideally suited to the direct application of most veneers, plastic foils, HPL’s and painting. Scuff sanding, with the object of increasing adhesion may be detrimental to surface quality. Deep sanding of the faces of Medite Tricoya with the object of reducing thickness is not recommended. Heavy one-side sanding should also be avoided to prevent warping.

Edge Sanding: Cut edges may require sanding with a 150-240 grit paper. This sanding is useful for cleaning up “fibre nap”.

Dust Extraction During Sanding: During the sanding operation, Medite Tricoya produces a very fine light dust, in common with all MDF material. As with all fine dusts, a common sense approach to safe working conditions must be adopted.

An efficient dust extraction system is essential during automatic sanding, both for performance and life of sanding belts and operative comfort. A minimum air velocity of 23-30 m/sec is recommended for dust extraction.

During hand sanding, the wearing of dust masks is recommended, to protect the operative from inhalation of fine particles.

Screws and Fasteners

All wood contains organic acids, although the quantity varies by species. These organic acids are the main cause of corrosion of metal fasteners used in wood. Medite Tricoya being manufactured from an Acetylated wood contains very small acid levels comparable to other durable species such as oak and western red cedar.

Always attach Medite Tricoya with stainless steel fasteners with A2 or A4 (EN 10088-1) quality or AISI type 304 or 316 when possible.

Screws should be of parallel core type. Pilot holes are required to 85-95% of screw root diameter, unless self-piloting screw types are used. Pilot holes are of particular importance when screwing into board edges and should be drilled a minimum of 1 mm beyond the depth of the screw into the board.

Screws should not be located too closely to the corners of panels. In general, a screw driven through the face of a board should be at least 25mm from the edge and at least 75mm from corners on the edges. Where other methods of fixing are not practicable, small diameter Stainless Steel nails can be used successfully provided they are not closer than 70mm to a corner when inserted into board edges. They should be spaced at least 150mm apart to reduce the risk of core delamination. Improved holding power in the edges can be achieved by using ring shank nails and inserting them at a small angle to the perpendicular

Tests have shown that base metals and galvanized metals that are in direct or indirect contact with wood containing acids will corrode in damp climatic conditions. It is therefore recommended that high quality stainless steel products be used where possible. When stainless steel is not available, metals and/or the Medite Tricoya should be coated or otherwise separated to avoid the two coming into direct contact. Indirect contact issues can occur in non-ventilated areas where condensation related corrosion is possible (for example, lock rebates). As with any installation, pit or galvanic corrosion must also be avoided by using fasteners that are compatible with the metals used in hinges, locks and other hardware. Testing and experience to date with the use of brass, common types of anodized aluminium (6063, 6082) and chrome plated steel have been very positive. However your fixings supplier should be consulted to avoid any issues.

Panels should be fitted with spacers and not fitted flush to any masonry or brickwork. Expansion gaps MUST be fully filled with an elastic sealant (suitable mastics or silicone) at the time of fixing.

Fixing Centres: Medite Tricoya is a non-structural panel and therefore the distances between the supports can be crucial to its ultimate performance. It is essential that in the design, an allowance for a small degree of movement (see Technical Specification Sheet) be provided. Maximum recommended spans between fixing centres in non-wind exposed areas are shown in table 2. If Medite Tricoya is to be used as a panel in wind exposed areas, professional advice should be sought from a suitably qualified person as to the spacing and number of fixings required due to wind loadings.

TABLE 2 - RECOMMENDED FIXING CENTRES (non-wind exposed)		
Thickness		Recommended fixing centres
6 - 9 mm	-	300mm
12 mm	-	450mm
15 mm	-	600mm
18 mm	-	750mm

Gluing

As with all wood species, the right choice of glue will depend on the application and the required performance of the glue bond.

Wood adhesives are classified according to EN204 into 4 main classifications, classes D1-D4. The applications

that Medite Tricoya will be experiencing lead to a requirement for D3 & D4 class adhesives.

Medite Tricoya has been tested with various types of adhesives for many applications. In general Medite Tricoya can be glued using PVA, PU, RPF, or EPI wood adhesive systems.

PVA (polyvinyl acetate): gives thin joint, thermoplastic, some flexibility (depending on classification), easier application and cleaning. Comes in all classifications D1-D4.

PU (polyurethane): Classification D4. The joint will swell slightly as the adhesive swells when curing, so need a very clean surface to lay a material onto it, and may need to cut the excess depending on finish required. The joint will be rather flexible but "full of air" as it will swell.

RPF (Resorcinol phenol formaldehyde): D4 waterproof and resistant to some chemicals. Two part adhesive, gives a reddish brown glue line. Excellent mechanical strength; can be used hot or cold.

EPI (Emulsion polymer isocyanate): D4 two part adhesive, high strength, high water resistance, good resistance to creep.

Changed Properties: Comprehensive testing has shown that Medite Tricoya has good gluing properties. However, it is imperative that the product's modified properties are taken into account. This is of particular importance because common wood adhesives (PVA, EPI, PU, and PRF) either harden on contact with moisture or part of the water content of the adhesive needs to be absorbed by the MDF.

The acetylation process substantially reduces the ability of the wood to swell. This can impact properties such as the ability of joints to 'self-clamp'. Another effect is that the equilibrium moisture content of Medite Tricoya is substantially lower than untreated MDF in the same climatic conditions. While this makes Medite Tricoya dimensionally very stable, it can mean that absorption properties of the MDF are different due to the hydrophobic nature of the surface in its first minutes. Adhesives that require water as a catalyst and those consisting of two or more components that could migrate differently may have weaker bonds.

When gluing Medite Tricoya it is strongly recommended to test first and if needed contact your adhesive supplier(s) as they have in-depth knowledge of the gluing process and their adhesives.

Painting

Water based paint systems may be used to decorate Medite Tricoya. To achieve a good painted surface finish, edge sealing is recommended. Because of Medite Tricoya's exceptional dimensional stability, extended paint guarantees are available from some paint Manufacturers. - See download section on Coating Guarantees.

Medite Tricoya's compatibility with various coating systems compares well with standard MDF in general and it may be finished with commonly used products.

Note: Coating formulations vary from supplier to supplier and, processes vary depending on the application equipment used and end-product design. It is recognised that formulations of some suppliers' products also vary by geography. Despite Medite Tricoya's excellent record of compatibility, it is recommended that your coating supplier is involved in the process. The coating supplier will have in-depth knowledge of its products, application and how to determine the performance of the finished product from a technical performance perspective, in respect of attributes such as durability and dimensional stability.

Outdoor Use

Medite Tricoya does not require finishing to maintain its durability and dimensional stability. However, as with all natural woods, Medite Tricoya is susceptible to weathering in outdoor exposure, and this can detract from its aesthetic appeal.

When used unfinished, weathering causes Medite Tricoya boards to discolour and develop a rougher surface texture. Discolouration can also occur around metal fasteners or through exposure to aggressive cleaning agents, foods and other substances.

A suitable external wood primer, applied to the manufacturer’s specification, will protect against staining and discolouration during shipment and installation, while a high quality exterior topcoat, either factory or site applied will provide extended decorative performance in service.

Weathering Effects on uncoated Tricoya

Used outdoors, uncoated Medite Tricoya, eventually “greys” due to biological processes taking place within the wood fibres on the board surface:

- UV light partly degrades substances in the Medite Tricoya’s structure. These substances are water-soluble and the surface of the Medite Tricoya pales when, for example, they are washed off by rain. Similar processes occur on all natural timbers which, depending on the species, become lighter or darker on weathering.
- UV degraded wood has a more open/rough structure and under certain conditions becomes more susceptible to moulds, mosses and algae settling and growing on the surface

Though unsightly, moulds, stains, mosses and algae do not cause rot within Medite Tricoya. Where a good aesthetic appearance is required, a good quality coating system will protect against weathering and minimise discolouration.

Enhanced Dimensional Stability

Medite Tricoya exhibits enhanced dimensional-stability but this does not mean it is completely inert. Changes in temperature and humidity can cause slight changes in Medite Tricoya’s volume and linear dimensions.

When fixing the product to various substrates consideration should be given to the combined dimensional movement of both the substrate and Medite Tricoya. As a general rule of thumb allow an expansion gap of 5 mm/2440 length of board for ease of maintenance and any combined system expansion that may take place.

Thermal Resistance

	Thickness (mm)	R Value (m ² K/W)
Medite Tricoya	6	0.056
Medite Tricoya	9	0.085
Medite Tricoya	12	0.114
Medite Tricoya	15	0.150
Medite Tricoya	18	0.180

Waste Wood and End of Life Considerations

Medite Tricoya waste can be handled in the same way as normal MDF. Medite Tricoya is non-toxic and does not require any special disposal considerations. Given its long life, multiple applications and non-toxicity, Medite Tricoya is suited to re-use and recycling.

As we continually update our technical literature, please check on www.meditetricoya.com that you have the latest version.



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