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TUFF
GLOSS **MR+**

MERINO TUFF GLOSS MR+ LAMINATES

TECHNICAL GUIDE

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1 INTRODUCTION

Merino Tuff Gloss MR+ Laminates are performance laminates specially engineered to have high gloss along with exceptional resistance to scratches. They are classified as HDS/VDS grade as per EN438 standards and offer enhanced properties making them highly resistant to microscratches and abrasions (mar and scuff).

2 PRE-FABRICATION

Please follow the Pre-fabrication guidelines to ensure the high gloss finish of Tuff Gloss MR+ laminates does not get damaged prior to fabrication.

2.1 TRANSPORT, STORAGE & HANDLING

All transport, storage and handling guidelines of Merino HGS-grade, decorative laminates are also applicable to Tuff Gloss MR+ laminates.

Key points to consider-

- **TRANSPORT**

Tuff Gloss MR+ can be transported rolled up or laid flat.

When rolled up, the decorative surface must remain on the inside. For laminates that are being transported in rolls, ensure that the rolled-up cylinder is at least 550 mm in diameter.

Merino recommends that laminate sheets over 1 mm are transported flat, instead of being rolled up.

- **HANDLING**

Tuff Gloss laminates should be handled carefully to avoid damage to the product- especially the surface and the edges. Decorative faces may get damaged on sliding over other surfaces, including other laminate sheets. Therefore, sliding the sheets IS NOT recommended, the sheets need to be lifted instead.

Merino recommends the use of 2 workmen to lift the sheet, especially if the sheets are sized over 3.5 feet. Always ensure the workmen walk at a steady pace, holding the sheet with limited slack, as excessive bowing can strain the surface of the laminate.

Never allow the laminates to touch the ground or the walls while they are being carried.

If forklifts and similar mechanized vehicles are used to load or unload a vehicle, ensure that the pallets are clean and structurally sound.

- **STORAGE**

Tuff Gloss MR+ sheets should be gently stacked over each other in a horizontal manner, in a back-to-back configuration. The sheet at the bottom of the stack must have the decorative face downwards, with a flat, protective layer.

A board with similar size may be placed over the topmost sheet of the stack, to maintain a uniform pressure on the underlying sheets and prevent any warpage in bulk stock. In case such a board is not readily available, the topmost sheet may be placed with the sanded side upwards instead.

2.2 PRECONDITIONING & THE ENVIRONMENT

Preconditioning is one of the most important considerations for achieving a quality product installation.

Follow the preconditioning guidelines as laid down in the document for standard grade High Pressure Laminates. The best approach is to make sure both sides of the laminate panel as well as the substrate experience the exact same conditions. In most cases the recommended conditions are storing the entire stock (liner, backer, adhesives, substrate) at 24C temperature and 55% relative humidity for 48 hours. These numbers may vary slightly depending on general environment conditions in the geographical area.

Stored stock of laminate should be rotated such that older sheets are used first. The place of storage should be well ventilated and protected from moisture. Laminates should never be in direct contact with the floor or outside walls.

All preconditioning should be performed at the fabrication site.

2.3 SUBSTRATES & ADHESIVES GUIDANCE

Most substrates that are recommended for standard grade decorative laminate can also be used for TUFF GLOSS MR+ laminates. The choice of the substrate mostly depends on the chosen application area and any resulting limitations.

Common substrates recommended for laminates include- MDF, Particleboard, Plywood. The recommended substrates for Merino TUFF GLOSS MR+ laminates are MDF and high-grade Particleboard (at least Type 1 – Medium Density as per CS 236-66). Plywood may be used provided at least one face of the substrate is A grade.

Tuff Gloss MR+ laminates are routinely used in kitchens, where there may be high amounts of oil fumes and moisture. For best protection of the assembled panel, use similar TUFF GLOSS MR+ laminate sheet or phenolic sheet as backer. This will prevent any fumes, runoff or spillage from damaging the substrate.

In addition, care should be taken to ensure proper balancing of the final panel by opting for a high pressure balancing or high-pressure phenolic laminate known as Backer, on the other side of the substrate.

3 FABRICATION

Tuff Gloss MR+ laminates use a special Aluminum Oxide layer to allow for 3-4 times better resistance to abrasion and scuff. The gloss is protected 4 times longer as compared to standard high-gloss laminates.

Generally, fabrication of Tuff Gloss MR+ laminates can be done by following guidelines for HGS grade standard decorative laminates.

To improve the quality of the finished product and optimize tool life, keep in mind the following guidelines.

3.1 CUTTING

Merino TUFF GLOSS MR+ laminates can be cut with the cutting tools recommended for Merino's HGS grade laminates, keeping in account the slight increase in hardness of the surface.

Some guidelines to get best results and prolong tool life-

- Use sharp, TCT blades with a low or negative hook angle.
- High tools speeds and low feed speeds are recommended.
- TUFF GLOSS MR+ laminates should always be cut slightly oversized. Keeping a margin helps achieve a better result while edge trimming.
- The use of a scoring blade in a climb cut configuration can help improve the quality of the cut and reduce the possibility of damage to the laminate. Such a scoring blade is smaller in size than the main blade, cuts to limited depth and rotates in opposite direction (along the direction of the feed) to that of the main blade. Care must be taken to prevent kickback or backlash.

3.2 BONDING AND TRIMMING ADVICE

Before bonding the laminate to the substrate, follow the Prefabrication checklist to ensure the right selection of substrate and adhesives for the project.

Some key points for bonding-

- Use dowels or separators to line up coated surfaces before allowing them to bond together.
- In case plywood is used as a substrate for laminates, check to see if the first coat of adhesives has been mostly absorbed by the plywood. In such a scenario, apply a second coat.
- If using a liquid adhesive, ensure that the adhesive is homogenous. Always apply an even layer of adhesive, using a roller or brush. In case a spray adhesive is used, ensure an even spray all over the surface in a controlled fashion.
- When using contact adhesive, don't allow the coated surfaces to touch until both the surfaces have dried.
- Always lay the laminate onto the substrate with even pressure. Complete the bond by using a wooden block or J roller to force any air bubbles from between the two surfaces.

Once bonding of the panel assembly is complete, trimming is needed to remove the oversized edges of the assembled panel. Follow the trimming advice of standard, decorative HPL.

Always trim the edges flush with the laminate surface. The tools used for trimming must be sharp and well maintained.

Routers are commonly used to trim the edges, though a hand trimer such as a bevel cutter can also be used. Generous bevels and radii up to 2.5 mm may be produced at the arrises, but it

should be remembered that such large bevels and radii require more finishing to blend with the surrounding surface.

Following the trimming process, edges must be routed smooth.

3.3 CUT-OUTS, HOLES AND ADDING FASTENERS

Do not use square-cut inside corners, otherwise stress cracking or breakage may occur. All internal corners and cut-outs should be rounded as far as possible. A radius of 3 mm (1/8") or larger in the corners is recommended to minimize stress cracking. For larger sized cuts, the radius must also be increased. All cut-outs should be routed or filed to ensure smooth edges.

The use of non-rigid, elastomeric adhesives such as contact adhesives may cause stress cracking. When contact adhesives are used, the minimum radius for inside corners must be 5mm.

3.4 DRILLING

- When it comes to tool selection, an electric drill with HSS bits is the tool of choice for most kinds of drilling applications. Another important selection to be made is the type of bits used in the drill. While TCT bits may prove to be economical due to their long life, rectified HSS bits are sharper. Longer tool life helps improve reproducibility while sharper blades improve the quality of the cuts.
- In case of non-stationary drills, it is important to ensure the appropriate pressure is applied. Pressure should be scaled up and down in a gradual manner, especially during entering and exiting the laminate.
- Drill oversize holes for screws and bolts. This allows the screw to adjust with the slight dimensional movements of both the laminate and the screw, preventing cracks around the hole.
- At least 1.5mm of material should be left while blind drilling. When drilling into the edge, at least 3mm clearance should remain on all sides of the hole.
- Screws and bolts should be slightly countersunk. Use a lower rotational speed to make countersunk holes.
- When drilling through-holes, ensure a hardwood panel or block of wood is placed at the exit face. This prevents any splintering or shocks to the material surface when the drill exits the material.
- Edges of the hole should be smooth and cleaned after drilling. Otherwise stress cracking may occur.

3.5 EDGE PROFILING & FINISHING

A final finishing may be required on the edges, done using use a sanding belt be no coarser than 100 grit, taking care to always work towards the substrate to prevent surface chipping. Hand files may also be used to create a smooth edge.

4 POST FABRICATION

Once the fabrication of TUFF GLOSS MR+ laminates is completed, it is safe to remove the peelcoat protective film. Please ensure the film doesn't stay on the surface beyond a few months as it may leave a residue on the surface that can become hard to remove with time.

5 MAINTENANCE & CARE

Merino Tuff Gloss MR+ laminates are high gloss laminates that are commonly used in high-wear application areas such as kitchens. Follow the maintenance and care guidelines closely to ensure the beauty of the laminates is maintained over time.

- Care

Do not place frying pans or dishes directly from the oven or cook top on the laminate surface.

Protect the surface from heat generating appliances by using trivet, protector rods or insulation pads. Do not use knife, keys or other sharp objects directly on the decorative surface. A chopping block, cutting board or counter saver is recommended.

- Cleaning

Clean the surface gently with a clean, damp, soft cloth. For persistent stains like coffee or tea, use a mild cleaner/detergent followed by wiping with a clean cloth. Do not use brushes or scourers at any time.