

LAMINEX® DIAMONDGLOSS®

ACRYLIC EDGING



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DIAMONDGLOSS® ACRYLIC EDGING PROCESSING INFORMATION

A unique process has been developed for the manufacture of Laminex DiamondGloss® Acrylic Edging, resulting in a whole new generation of edging materials for furniture and kitchen benchtops.

THE CHARACTERISTIC FEATURES

Laminex DiamondGloss Acrylic Edgings are manufactured from ultra transparent acrylic (PMMA = polymethyl methacrylate). A special three-dimensional effect is achieved by applying the decorative finish to the back of the edging, which results in an all-round uniform appearance. This means there is no framelike effect, just a seamless transition between the edging and the decorative surface of the board. It is also fully protected against abrasion or damage, even when subjected to high levels of wear and tear.

Physical damage to the acrylic surface, in the form of scratches or small pressure marks is easily rectified by rebuffering.

Laminex DiamondGloss Acrylic Edging is impact resistant, hygienic and resistant to normal room humidity levels.

APPLICATIONS FOR LAMINEX DIAMONDGLOSS ACRYLIC EDGING

Laminex DiamondGloss Acrylic Edging is suitable for practically all interior joinery applications including furniture in the kitchen and living areas, bathrooms, benchtops, office desks and shop fittings.

MACHINING

The special material formula and excellent processing characteristics means Laminex DiamondGloss Acrylic Edging can be processed easily either by hand or machine.

Throughfeed processing

Laminex DiamondGloss Acrylic Edging can be straight-processed on all standard edging gluing machines. It is important to prevent any damage to the edging from the edging conveyor or feed rollers. For this reason, specially designed rubber-fitted edging feed rollers are available from edgebanding machinery agents and are the most suitable for this purpose.

Spiked feed rollers should not be used as they can damage the print on the back of the edging.

Work Station processing

A new material formula has been developed. Laminex DiamondGloss Acrylic Edging is specially suited for the processing of curved boards and panels on CNC-controlled machining centres or semi-automatic manual edging processing machines.

Laminex DiamondGloss Acrylic Edging features a material formula that is particularly suitable for machining, and in particular on tight radii.

As for every thermoplastic material, it is essential to make sure that the material is properly warmed to ensure a good radius. The colour finish of the Laminex DiamondGloss Acrylic Edging plays an essential role in this. Standard colours, such as unicolours or wood finishes, for instance, easily absorb heat through the infrared radiation of the machining centres. Hot air units and/or edging preparation ovens are excellent aids to processing.

For work station edging processing, many machine manufacturers (such as IMA or HOMAG) recommend applying hot melt adhesive directly to the edging. To avoid damage to the edging finish, special gluing rollers have been developed in tandem with the machine manufacturers. These gluing rollers are in effect a modification of the standard steel rollers. Edging processing, including that of any other primed edging materials, has proved particularly successful using these special rollers. Machining centres on which hot melt adhesive is applied to the board or panel (such as the BIESSE Millennium or MORBIDELLI Planet) do not need special gluing rollers. As a rule, rubber-fitted rollers should be used for conveying and feeding the Laminex DiamondGloss Acrylic Edging through the processing machines.

Bonding

Laminex DiamondGloss Acrylic Edging is fully coated with a universal bonding agent giving perfect bonding with all suitable hot melt adhesives.

Adhesives suppliers should be consulted for "non-hotmelt" manual application of Acrylic edgebandings.

Laminex DiamondGloss Acrylic Edging can be processed with most EVA, PA, APAO or PUR based hot melt adhesives. Generally speaking, adhesion is best when using unfilled or partially filled adhesives. We strongly recommend the use of these adhesives.

Together with highly heat resistant glue types, such as PUR, APAO and PA hot melt adhesives, the low shrinkage material formulae of Laminex DiamondGloss Acrylic Edging gives good adhesion even if higher temperatures are encountered in use.

This feature is of particular benefit, for instance, in the vicinity of cooking appliances and ovens in kitchens, or for exporting furniture in containers.

Even before gluing, Laminex DiamondGloss Acrylic Edging has good shrinkage values. Another good point here is the dimensional stability of Laminex DiamondGloss Acrylic Edging – on Vicat B 50 testing, softening of the material only occurs above 90(±3)°C.

When machine gluing, checks need to be carried out that there is sufficient glue in the container. It is essential that the adhesive is applied evenly and in sufficiently small quantities so that no beads of adhesive get pressed out from the edges of the freshly glued edging, and that any gaps in the wood of the boards or panels are filled and equally that full-surface adhesion takes place.

The amount of glue required depends on the density of the chipboard or MDF – the lower it is, the greater the amount of hot melt adhesive required. The adhesive manufacturers' recommended processing guidelines should be followed.

Depending on adhesive type and composition, the application temperature recommended by the manufacturer can vary between 90 and 210°C. It should be borne in mind that the thermostats in the hot melt container are often inaccurate and may vary considerably from the actual temperature on the application roller.

Laminex DiamondGloss Acrylic Edging cannot be glued using ordinary white glues.

Working temperature

For best results when applying edging, boards or panels and the edging should be processed at room temperature (not below 18°C).

If the materials have been stored outdoors, they should be warmed up overnight. If the boards or edgings are too cold, the hot melt adhesive will set before the edging is applied to the board. For this reason draughts should also be avoided.

Wood moisture

For processing, optimum wood moisture in the boards is between 7 and 10%.

Feed rate

A maximum feed speed of 20 metres per minute is recommended, but this should also be assessed in conjunction with the recommended operating conditions of the specific hotmelt adhesive being used.

Trials should always be undertaken by the fabricator to develop the best settings to achieve optimum bond strength.

Press rollers

Depending on the specifics of the machine, the correct number and setting of the press rollers is critical for optimum seam appearance on bonding. To prevent formation of gaps or cavities, the pressure of the rollers should be set high enough for full surface adhesion of the edging on the boards. The press rollers themselves must always be completely clean to impart even pressure and also to prevent pressure marks occurring on the edging.

Cross-cut knives

Cross-cut knives should have a sharp blade to separate the edging material without splintering, leaving a minimum of excess material behind for cross-cut milling and thereby making the final milling off easier.

Cross-cut saws

Cross-cut saws should have their cutting rate properly adjusted so that they can cut into the edging material without causing splintering. Single-edged fine-toothed "ES" type saws are to be preferred, because they give a neater cut through the edging material than cross-cut saw blades with "WS" type alternating teeth.

Flush or radius milling

The excess length for cutting should be the same on each side and not protrude for more than 1.5 mm. If possible the protruding edging excess should not exceed the actual edging thickness. Excessive protrusions increase the risk of splintering. Using chamfer bits on the Laminex DiamondGloss Acrylic Edging allows special design effects to be achieved. As a rule, multiblade tools with at least 4 to 6 blades and an operating speed of 12,000-18,000 r.p.m. are recommended for chamfering.

Scraping

Laminex DiamondGloss Acrylic Edgings are highly suitable for scraping without whitening occurring. To further prevent any possibility of whitening, the scraper blade should be set to remove a maximum of 0.1 mm swarf.

Extraction

Thermoplastic edging generally require higher extraction power than duroplastic edging or melamine edging. One advantage of the Laminex DiamondGloss Acrylic Edging is their lower static charge compared to other thermoplastic edging materials.

IN GENERAL, SOLVENT-BASED CONTACT ADHESIVES SHOULD NOT BE USED

In applications such as kitchen worktops where properties such as waterproofing and good resistance to warping is required, PUR adhesives are preferred, or else systems that have similar adhesive characteristics.

Generally speaking, for manual processing, it is recommended that the chipboard be masked off at the join to prevent staining from excess glue.

Thermoforming the radii

The areas for forming are carefully heated up with hot air or infrared heaters to the thermoelastic temperature range (100°C to 120°C). While still soft, the edging is smoothed to fit the board shape using a block of wood and fixed with a positioning device. Care needs to be taken not to overstretch the material.

The edging must be held in shape until it cools down. Once completely cool, it can be bonded in the usual way (pressing time according to the manufacturer's instructions). This procedure can be used both for BAZ coded items as well as standard edgings.

The excess edging can be removed, for example with a manual router. Due to their durability, diamond-edged tools or carbide cutters should be used. If any smears occur, generally the rpm needs to be adjusted, or possibly the direction of rotation of the cutter. Generally best results are achieved with reverse rotation or climb milling.

Any chatter marks remaining after milling can be removed or smoothed out with emery paper or abrasive sponge (240 to 400 grain). The very best results are achieved by subsequent buffing with a polishing wheel, and, if required, using polishing agents as well. This makes it easy to obtain the level of sheen required both on the milled edge and on the facing itself.

SEAM APPEARANCE

Because the Laminex DiamondGloss Acrylic Edgings are supplied with factory set pretensioning, the seam will always be tight and as good as invisible to the eye.

Pretensioning also ensures optimum bonding in that any excess adhesive is taken up at the midpoint of the back of the edging.

CHEMICAL CHARACTERISTICS

Laminex DiamondGloss Acrylic Edgings have been tested to DIN 68 861 in conjunction with many standard household cleaners. However, contact with aggressive substances such as alcohol or solvent additives in any form should be avoided (see cleaning instructions). Laminex DiamondGloss Acrylic Edgings have also been tested at the LGA in Nuremberg. Laminex DiamondGloss Acrylic Edging is also combustible just as any other wood materials. Thermal decomposition starts at around 300°C.

SURFACE QUALITY

The Laminex range includes satin and high gloss finishes. To change from a satin to high sheen, buff the edging with a soft foam polishing pad (or similar material) using a high quality polishing agent that is suitable for acrylic surfaces. Best results for polishing are achieved using a high density foam buffing pad with a high quality cut and polish paste (or finishing polish). Closely follow polish manufacturers instructions and ensure no solvent or alcohol based polishes are used.

CLEANING

Laminex DiamondGloss Acrylic Edging should be cleaned in ordinary soapy water or using special cleaners that are designed specifically for use on acrylic materials.

Solvent-based substances or those containing alcohol should not generally be used.

STORAGE

Avoid storage where exposure to extreme hot or cold temperatures is possible.

DISPOSAL

Any remnants of Laminex DiamondGloss Acrylic Edging's can be incinerated with other wood shavings. No chlorine compounds are produced.



SUMMARY OF TECHNICAL DATA

CHARACTERISTICS	TEST STANDARD	LAMINEX DIAMONDGLOSS ACRYLIC EDGING
USEFUL CHARACTERISTICS		
LIGHTFASTNESS FOR INDOOR APPLICATIONS	DIN 53 384 c/ DIN 53 388	7-8 on blue wool colour scale. Due to its excellent colour fastness, ideal for indoor applications.
INDENTATION HARDNESS	DIN 53 456	> 70 (N/mm ²)
SHORE HARDNESS D (SENSITIVITY TO MECHANICAL FORCES)	DIN 53 505/ISO 868 DIN 52 328	83(+3) Good scratch resistance and surface hardness. Physical damage can be easily rectified by buffing.
LINEAR THERMAL EXPANSION COEFFICIENT		90 - 110 (1/K x 10 ⁻⁶) Dimensional stability of the glued edgeband is good (if the appropriate adhesive systems are used).
RESISTANCE TO WARP UNDER HEAT VICAT B 50	DIN 53 460/ISO 306	90(+3)°C Ideally suited to applications in the furniture industry.
SHRINKAGE	Edging manufacturers standard	< 1.5 %
RESISTANCE TO CHEMICALS		Good - LGA tested. Resistant to most standard household cleansing products. Limited resistance to substances containing solvents and alcohol.
BEHAVIOUR IN FIRE	DIN 68 861	Combustible
SURFACE QUALITY		Silk matt to high sheen, achieved by buffing with high density foam pads using polishing agents suited to acrylic materials.
STATIC CHARGE		Low
PROCESSING CHARACTERISTICS ¹		
CROSS CUTTING		Good
MILLING DIRECTION²	DIN 68 861	Climb milling/Conventional milling ²
ROUGHING		Good
RADIUS MILLING		Good
PROFILING		Good
SCRAPING		Good
BUFFING		Good
GLUING RADII		Good
BONDING WITH HOT MELT ADHESIVES		All standard types (EVA, PA, PUR, APAO)
BUFFABILITY¹		Very good ¹
SUSCEPTIBILITY TO STRESS WHITENING		Low
CNC COMPATIBILITY³		Good for 3D BAZ quality ³
DISPOSAL CHARACTERISTICS		
		Edgeband remnants can be incinerated with shavings in suitable plant.
PHYSIOLOGICAL CHARACTERISTICS		
		Safe in contact with food. No known source of harm to general health.

¹Optimisation of machines may be required.


²Climb milling is recommended.

³The adhesive must be applied to the board. If HOMAG or IMA machines are used, then a special gluing roller is needed.

Unless otherwise indicated, the data specified were taken from standardised test items at room temperature. The data serves as a guide, but not as binding minimum. Please remember that characteristics may vary considerably under certain circumstances due to the tool used, specific processing and colour (please see previous page as well).



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For a sample call 1800 002 204. For more information visit laminex.com.au or call 132 136.

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