Laminex™
Laminate

ABS Edgetape for Benchtops Technical Data Sheet

Laminex™ Formica® ABS (Acrylonitrile- Butadiene-Styrene) is a widely used thermoplastic material with excellent processing properties. The high impact strength and good mechanical and thermal properties makes Laminex™ Formica® ABS a widely used material in the furniture industry since 1980. In many areas chlorine-free thermoplastics, such as Laminex™ Formica® ABS, are specified because of their disposal properties.

Handling And Storage

Laminex™ Formica® ABS edgetape rolls can be stored either horizontally or vertically. If stored horizontally all rolls should be stacked evenly without upper rolls overlapping the lower rolls. If stored vertically the rolls should be rotated frequently to ensure the rolls remain circular thus ensuring their application is a smooth process. Laminex™ Formica® ABS edgetapes are resistant to aging and can therefore be stored in an area protected from the weather at a room temperature greater than18°C for a long period of time. It is recommended that Laminex™ Formica® ABS edgetapes be stored in an enclosed cabinet with a large wattage light bulb (150-200W subject to cabinet volume and draught exclusion) or a low wattage heater to maintain a consistent temperature to keep the ABS flexible and warm to aid the heat retention of the adhesive and hence the strength of the bond between the ABS and the panel. The improved flexibility will aid in allowing the ABS to travel through the edging machine. An external heat source (if not incorporated on the machine) may be needed to maintain the ambient temperature around 18°C or above.

Composition

Laminex™ Formica® ABS edgetape is a thermoplastic, which due to its chemical composition, belong to the high-impact polystyrene group. As a result of the specific combination of the individual monomers a high-impact, mechanically resistant, high quality, cadmium and lead-free polymer material is created. In addition to this, the ABS material formulation demonstrates improved heat resistance, mechanical stability, chemical resistance and surface gloss compared to impact resistant polystyrene.

Fire Performance

Laminex™ Formica® ABS is NOT fire rated due to its combustibility. Laminex™ Formica® ABS edgetape waste can be burned or placed in domestic refuse without any problems. No by-products that are harmful to health are produced if it is burned in the correct way.

Areas Of Application

The spectrum of applications for Laminex™ Formica® ABS edgetape is almost limitless. From the office to the bathroom and kitchen, exhibition stand, construction and shop fitting, the living area through to commercial construction. The Laminex™ Formica® ABS edgetape formulation affords both smooth processing and easy application to straight furniture panels or those with a suitable radii.

Laminex™ Formica® ABS edgetape is coated on the back with a universal primer which guarantees adhesion of the edgetape to the substrate. This primer allows processing with all suitable hot melt adhesives such as EVA, PA and PUR.

Specifying

Laminex™ Formica® ABS edgetape can be specified by colour and, in some instances, finish and thickness. Laminex™ Formica® edgetape is available in 53mm width and 1mm thickness. These can all be supplied as either unglued or pre-glued.

Product Characteristics

Laminex™ Formica® ABS edgetape is manufactured to suit international requirements of the kitchen and joinery industries.

Shore Hardness D of 70 +/- 4 to EN ISO 868

Laminex™ Formica® ABS edgetapes achieve excellent results with a Shore Hardness D of 70+/- 4 to EN ISO 868.

Heat Resistance / Vicat softening temperature

Laminex™ Formica® ABS edgetapes achieve excellent results with a Vicat softening point to ISO 306, Method B50 to 95°C.

Abrasion and Chemical resistance

Laminex™ Formica® ABS edgetapes have a UV lacquer that protects the pattern or colour against scratches. Laminex™ Formica® ABS edgetapes are chemically resistant to all household cleaners to DIN 68861 Part 1 and meet stress group 1B.

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Light fastness
Laminex™ Formica® ABS edgetapes are regularly tested in an accredited laboratory in line with EN ISO 4892-2 regarding light fastness. With a light fastness of greater than 6 on the blue scale these edgetapes are suited for interior application. An analysis of the colour deviation is then carried out using EN ISO 105-A02 against the grey scale which has a maximum of 8.

Cleaning
Special cleaners for plastic such as Citrus cleaners, PS Solvent, Woodlok Glaze-Away or turpentine are recommended for the cleaning of Laminex™ Formica® ABS edgetapes. The use of substances containing abrasives, solvents or alcohol is NOT recommended.

In all cleaning, any product should be applied to a soft cloth or sponge first and then applied to the surface of the ABS edgetape. Once the ABS edgetape is cleaned, the residue of the cleaning product should be removed with a dampened soft cloth. Any residual liquid should be removed immediately to avoid any interaction with adhesives and panel substrates.

	ABS
Light fastness to EN ISO 4892-2	> 6
Shrinkage Edgeband 3mm 1h @ 110° C	< 1.7%
Notched tensile impact strength (Uni-Edgeband) to ISO 852	> 40kJ/m2
Vicat softening point to ISO 306, Method B50	Ca.95°C
Hardness Shore D to EN ISO 868	70 +/- 4
Chemical resistance to DIN 68861-1	Good- 1B
Thermal conductivity to DIN 52612	0.18 W/km

Working Recommendations
Manual application
Laminex™ Formica® ABS edgetape can be applied manually by using a PUR adhesive that will need to be held in place securely until the adhesive is cured.

The surface of the board that is to accept the Laminex™ Formica® ABS edgetape should be inspected to ensure it is smooth and that there are no protrusions that may show through the ABS edgetape, a mid-slow curing PUR adhesive should then be applied to one surface. The Laminex™ Formica® ABS edgetape should then be clamped into position using a rigid board and sash cramps or similar. Masking tapes or similar tapes are not recommended.

It is recommended that all surfaces are protected from the glue and that any glue that gets onto the face of any surfaces be removed immediately as per the manufacturer's recommendations.

In some cases a quality contact adhesive can be used to adhere the edging to the benchtop, follow the manufacturer's instructions to apply. It is important to apply the adhesive in an even pattern to prevent telegraphing through the ABS edgetape, particularly with a gloss surface. Laminex New Zealand® recommends testing the adhesive prior to completing the project.

Note: The use of a clear adhesive applied correctly should minimise the visibility of the glue line at the join between the ABS edgetape and the high pressure laminate benchtop.

Where the edgetape will be subject to moisture as in front of a sink or basin the join must be waterproof, either by sealing the substrate or using a waterproof adhesive.

Once the glue has dried the excess edging can be removed by a router using a copy ball bearing roller and then finished to a smooth effect by sanding with fine sandpaper 240 grit or finer or with a file. If the router cutter has left a significant amount of tape untrimmed it can be carefully removed by using a sharp chisel or knife blade before sanding or filing.

Clean off excess adhesive with a mild solvent, refer to cleaning instructions. Strong solvents may damage the surface of the ABS edgetape, testing is advised before applying to a finished benchtop.

Machine processing
Laminex™ Formica® ABS edgetape can be processed on all edgeband machines including BAZ processing centres using hot melt adhesives. The various processing steps such as gluing, capping, milling, scraping also reworking with buffing wheels and hot air are possible.

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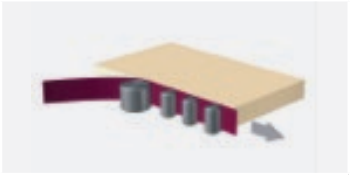
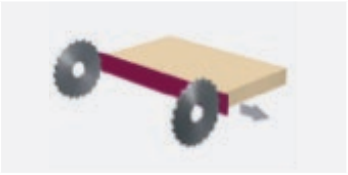
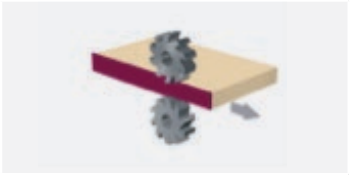
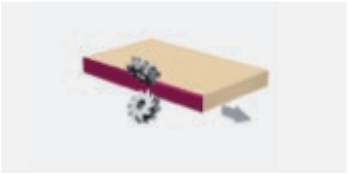
Process steps


Gluing


Capping


Pre-milling


Radius Milling


Scraping


Buffing

To achieve a high-quality and durable edgetape application several important processing parameters have to be considered which depend on the components used (edgetape, glue and boards), the edgebander and the ambient temperature. In order to identify the ideal conditions it is recommended that trials are carried out and that the reference values specified by the relevant manufacturer are observed.

Adhesive application

To achieve the best results the information provided by the adhesive manufacturer should be observed. The adhesive application should produce small beads of adhesive pressing out from the edges of the freshly glued edgetapes and the voids between the substrate particles filled. The amount of adhesive in each case depends on the type of board, the substrate density, the edgetape material, the processing speed and the type of adhesive.

For products exposed to high ambient temperatures (e.g. containerised transport) hot melt adhesives with a high softening temperature are recommended. Due to the high heat resistance of the Laminex™ Formica® ABS edgetapes (approx. 95°C) material softening during general application does not occur.

During adhesion ensure that the adhesive is applied consistently and that the glue spreading rollers do not extend too far into the line of the board.

The processing temperature of the adhesive varies depending on the type of the adhesive. Be aware that the thermostats in the melt containers are often inaccurate and the temperature of the applicator roller can vary significantly.

The quantity of adhesive in each case depends on the type of board, the board density, the edgetape material, the processing feed and the type of adhesive.

Processing temperature

To achieve the best possible results during edgetape application the board and edgetapes should be processed at a room temperature greater than 18°C otherwise the adhesive sets too quickly. Draughts should also be excluded for this reason.

Processing feed

Laminex™ Formica® ABS edgetapes are designed for the processing feeds of both small fabricators and those of the industry. Depending on the type of machine, speeds of up to 10 to 100m/min are possible. With modern processing centres, speeds of 30m/min can be achieved depending on the part geometry.

Milling

It is recommended to use a 3-6 tooth milling tool with a diameter of 70mm at 12,000 to 18,000 RPM counter to the board travel (up cutting). Inappropriate speeds or blunt tools can damage the edgetape. If a smear effect occurs the speed of the milling tool or the number of the teeth should be reduced. The quality of the milled surface (e.g. chatter marks) can be improved by adjusting the feed, speed and number of blades.

Scraping

Laminex™ Formica® ABS edgetapes tend to become slightly lighter after scraping, therefore the chip produced by the scraper should be a maximum of 0.1-0.15mm. To obtain a high-quality surface after scraping, aim for a milling finish with as few chatter marks as possible.

Buffing

Laminex™ Formica® ABS edgetapes can be buffed to generate a high quality edge radius. Colour deviation (stress whitening) caused by scraping of the edge radius can be eliminated to achieve a constant finish by using a down-cutting buffer wheel set-up i.e. the wheels rotate with the travel of the board. Additionally if a release or cleaning agent are used during board processing, the buffing wheels will remove any unwanted glue residue.

		ABS
Capping		Good
Milling direction	Post Line processing	Up-cutting
	Processing centre	Down-cutting/Up-cutting
Pre-milling		Good
Radius milling		Good
Contour milling		Good
Scraping		Good
Buffing		Good
Gluing		Standard market hotmelts
Polishability		Good
Stress whitening tendency		Average
Processing centre capability		Good

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PROBLEM SOLVING

	Problem	Diagnosis of the problem
1	The edgetape can easily be removed by hand. The hot melt material remains in the board (straight line) or on the edgetape (processing centre). It is possible to see the marking made by the adhesive application roller.	Adhesive application not sufficient. Room or edgeband temperature too low. Draughty environment. Hot melt adhesive temperature too low. Processing feed too slow. Contact pressure of the pressure roller too low.
2	The edgetape can easily be removed by hand. The hot melt material remains in the board (straight line). The hot melt adhesive surface is completely smooth.	Board and/or edgetape is too cold. Check hot melt adhesive type. Check primer application.
3a	Glue joint not sealed (straight line).	Adhesive too cold. Adhesive application too low. Contact pressure too low. Edgetapes have incorrect pre-tensioning. Scoring saw alignment is incorrect. Contact between the adhesive application roller and board. Debris not removed from board cross-section.
3b	Glue joint not sealed (processing centre).	Contact pressure too low. Curvature of the edgetape too high - Application of external heat. Check hot melt adhesive type (insufficient heat adhesion). Edgetape pre-tensioning is incorrect. Adhesive does not set in good time - Reduce the adhesive temperature.
4	The glued edgetape does not show sufficient adhesion at the start.	Adhesive application roller is not adjusted correctly. Increase the amount of adhesive.
5	Milling lines are visible.	Feed too high. Number of blades too low. Speed too low - Rework with scraper and buffing station.
6	Edgetape splits during the milling process.	Edgetape vibrates during the milling process. Adhesion insufficient. Edgetape protection too large - Check for adhesion parameters - Check adhesive type.
7	Stress whitening of the edgetape in the milled area, principally after scraping.	Chip of the scraper too thick. Scraper set up incorrectly - Blunting of the scraper edges - Rework the buffing station.
8	Stress whitening occurs during processing centre processing.	Micro-cracks appear in the radius area due to processing temperature being too cold - Application of external heat in radius area - Use of larger radiuses edgetapes.

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Design Considerations
Laminex™ Formica® ABS edgetape is manufactured to suit most applications, including straight lines and both internal and external curves. Trials should be made to ensure the thickness of the edgetape is capable of being applied to any tight radius prior to final manufacture. If the Formcia and Laminex ABS does not bend sufficiently then a larger radius is recommended.

Health And Safety
Laminex™ Formica® ABS edgetape has outstanding durability. The disposal of ABS edgetape should generally be carried out at a specialist disposal site which caters for the specific materials properties. ABS edgetape can be disposed in domestic refuse without any problems. No by-products that are harmful to health are produced if burned in the correct way.

Limitations
Laminex New Zealand® will not be liable to any person if the instructions as to storage, use and application Laminex™ Formica® ABS as outlined in this document are not complied with.

Any proprietary products referred to in this document must be used in accordance with the relevant manufacturer's instructions. Laminex New Zealand® accepts no liability for these proprietary products. Nothing contained in the paragraph or elsewhere in this document affects any rights a person may have under the Consumer Guarantees Act 1993.

This document supersedes all previous issues.

All Acts, Codes and Standards referred to in this document are the current editions at the date of publication.

Technical Support
For all technical support phone 0800 303 606.