

## LAMINATING – SUSTAINABLE THERMAL FILMS

# Thermal Cellulosic Matt 35 Micron

- Luxurious deep Matt finish
- High scratch/scuff resistance
- Plastic free, Wood Pulp based/EVA Construction
- Biodegradable/Home + Industrially compostable
- Available core sizes 3" core

Sustainable thermal films deliver exceptional quality and versatility

Thermal Cellulosic is available in both matt and gloss

Fantastic environmental option to set your product apart from the competition

## Typical Properties

PROPERTY		UNIT	TEST METHOD	VALUE
THICKNESS		( $\mu\text{m}$ )	GB/T6672	35
SPECIFIC GRAVITY				1.13
UNIT WEIGHT		$\text{gm}^2$		39.2
YIELD		$\text{m}^2/\text{kg}$		25.5
EQUILIBRIUM MOISTURE CONTENT		%	(23c & 50% RH)	Circa 2
DYNAMIC FRICTION COEFFICIENT				0.4 – 0.65
ELONGATION AT BREAK AT BREAK		%	ASTM D8882	MD 25 – 45
TENSILE STRENGTH		$\text{Nmm}^2$	ASTM D8882	MD 50 – 60
E-MODULUS		$\text{Nmm}^2$	ASTM D8882	1300 – 1500
WETTING TENSION		Dynes/cm	GB/T14216	38 – 42
TEAR INITIATION		(N)	ASTM D1938	MD 0.11
TEAR PROPAGATION		(N)	ASTM D1938	MD 0.06
LINEA SHRINKAGE		%	115°C 10mins	MD 1 – 1.5
ACETATE SOFTENING TEMPERATURE			(0°C)	130
ACETATE GLASS TRANSITION TEMPERATURE			(0°C)	120
EVA PEAK MELTING TEMPERATURE			ASTM D3418	83
EVA VICAT SOFTENING TEMPERATURE			ASTM D1525	56
CHEMICAL RESISTANCE			ASTM D543 – 87	Low resistance to Ketones, Attacked by esters, moderate to concentrated strong acid and bases. Resistant to non-polar solvents
APPLICATION TEMPERATURE	A	°C		90 – 140

*The Adhesive of the film (EVA) is not bio-degradable or compostable – Shelf Life 12 months*

The above information is indicative only. The results shown are a general guide to the material properties which are subject to change and do not act as a guarantee.



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# Thermal Cellulosic Matt 35 Micron

## PRODUCT DESCRIPTION

Thermal Cellulose Acetate film with a **Matt** finish - Low melt EVA coating inside. The Thermal film is composed of cellulose diacetate films and EVA, manufactured by the extrusion coating process. This product supports the global supply chain's increasing requirement for sustainable packaging and compostable packaging solutions. Cellulose, the primary raw material used in the Acetate Thermal Film is derived from wood pulp which is a naturally renewable resource. As would be expected of a market-leading sustainable packaging material, the Acetate Thermal Film can be safely incinerated. As compostable packaging, it is categorized alongside paper and board for return and recovery purposes and can be sent to landfill without any risk of toxic leachate. The Acetate Thermal Film is usually laminated to the surface of printed paper or board, (mixed waste). With mixed waste, usually the most sensible disposal option is to incinerate at a high temperature with energy recovery. Fully combusted the Acetate Thermal Film produces only carbon dioxide, water and a little non-toxic inorganic ash. Despite its inherent biodegradability, the Acetate Thermal Film is very stable and does not break down in normal end-use conditions.

## TROUBLE SHOOTING

**Curl in Transverse Direction (across film width)** – Temperature is too high. Many lamination machines report temperatures that are lower than the drum actually is, meaning that the Customer is running the laminator with a greater temperature than needed.

- Measure the actual temperature using an Infrared Thermometer, before starting running lamination for conditions.
- Use less heat for thinner boards; slightly more for the thicker boards.

**Paper grain orientation** – Generally, it is recommended to feed lamination boards in the same direction as the paper grain, however changing paper grain orientation feed, could result less curl. Paper grain is very important for printing jobs, as it influences swelling of the paper.

**High humidity** – The curl will appear in perpendicular to paper grain orientation – Curl in Machine Direction.

- Running tension is too high.

**High humidity** – The curl will appear perpendicular to the paper grain orientation

- Thermal lamination machine accessories for one-sided lamination
- de-curling bar • de-curling roller – Both solutions are used after one-sided lamination, to flatten the sheet. This counteracts the natural curl due to paper grain orientation and “breaks” paper grain fibres, flattening the sheets.