



Product Data Sheet – PERMANENT LABEL



Description

LL2P tape is a tamper evident laminate that “voids” when removed. LL2P is designed for use on cardboard boxes in the packaging industry and other similar surfaces.

Roll Data

	Metric	Imperial
Material Width	Customer Specific	Customer Specific
Roll Length	Customer Specific	Customer Specific
Core I/D	76mm	3"

Material Data

	Test Method	Metric	Imperial
Film		BOPP	BOPP
Thickness	n/a	50 μ	0.00196"
Tensile strength _(MD)	ASTM D 882 @ 50%/min	210 MN/m ²	
Tensile strength _(TD)	ASTM D 882 @ 50%/min	175 MN/m ²	
Elongation at break _(MD)	ASTM D 882 @ 50%/min	85%	85%
Elongation at break _(TD)	ASTM D 882 @ 50%/min	105%	105%

Adhesive Data

Adhesive	Formulated hot melt	Formulated hot melt
Adhesive thickness	40-60 gsm (~40-60 μ)	1.57 – 2.36 thou
Softening point _(Mettler drop point)	92 $^{\circ}$ C	197.6 $^{\circ}$ F
SAFT	59 $^{\circ}$ C	138.9 $^{\circ}$ F
Peel (20 min, glass)	35N / 25mm	309 inch pounds
Peel (24 hours, glass)	37N / 25mm	327 inch pounds
Tack (glass)	60N / 25mm	531
Shear _(25mm x 25mm, 23$^{\circ}$C, glass)	3 Days	3 Days _(1" x 1", 73.4$^{\circ}$F, glass)
Shear _(25mm x 25mm, 40$^{\circ}$C, steel)	1.5 hours	1.5 hours _(1" x 1", 104$^{\circ}$F, steel)

Note #1: Tests carried out using 50 μ PET, 40gsm – tests cannot be carried out using tamper evident product as the tape is designed to “split” into 2 parts.

Note #2: The ingredients of the adhesive meet the compositional requirements of the American Food & Drug Administration regulations 21 CFR 175.105

Note #3: This product is not designed for food contact.

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Packaging

Depending upon customer order.

Application

Apply the labels to the box using pressure by rubbing your hand over the labels. Care should be taken when applying the labels. If the labels are removed from the paper liner too fast, pre-voiding may occur. For high speed automatic label dispensing, trials should take place. We are able to modify release levels and adhesive to suit individual applications.

Recommended application temperature +15°C to 25°C

Quality of voiding is dependent upon the quality of the board the tape is applied to. The customer should always evaluate the tape on the board used to confirm suitability. If in doubt, please contact Le Mark Group and we will run tests and trials.

Testing Procedure

- Collect a samples set of 3 labels from various rolls
 - Record the info located in the core of each roll that samples are gathered from if applicable
 - Record serial numbers of the labels if applicable
 - Record time/date/ambient temperature
 - Remove any dirt, grit, or loose material from surface to be tested
 - Peel backing from one side
 - Apply portion of label to the testing surface evenly and smooth with hand
 - Peel backing from other side of label
 - Apply remaining label to the testing surface evenly and smooth with hand
 - To ensure appropriate bonding, wait 90 seconds,
 - Peel label that is affixed to testing surface from nearest corner,
 - Observe voided message and tamper evident residue, if more than 50% triggers then label performs adequately
 - File results for reference
- *Testing can be performed on a semi-annual basis, as long as labels are stored according to instructions.

Storage

For the storage of LL2P it is recommended that dry conditions between 10–20°C (50–68°F), kept in the box, out of direct sunlight.

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