

# PEARLTHANE® 12K85LB

Thermoplastic Polyurethane Elastomer

PEARLTHANE® 12K85LB is a polyester based TPU, supplied in form of translucent, colourless pellets, combining excellent mechanical and abrasion properties along with very good processability in calendaring and extrusion applications.

## TYPICAL PROPERTIES

Property	Test Method	Typical Values *
Specific gravity	DIN 53.479	1.19 g/cm <sup>3</sup>
Shore Hardness	DIN 53.505	83 A
Tensile Strength	DIN 53.504	35 MPa
Elongation @ Break	DIN 53.504	590 %
Modulus @ 100% Elongation	DIN 53.504	5 MPa
Modulus @ 300% Elongation	DIN 53.504	9 MPa
Tear Strength	DIN 53.515	80 kN/m
Abrasion Loss	DIN 53.516	30 mm <sup>3</sup>
Compression Set (24h. @ 70°C)	ASTM D395B	49 %
Moisture Content	DIN 53.517	< 0.1 %
Melting Range* (MFI= 10)	DIN 53.517	138 – 148 °C
Tg (DSC, 10 °C / min)	MQSA 44	- 28 °C

\* These are typical values & should not be used for establishing specifications.

\*\* Temperature at which MFI=10 g/10 min at 21.6 kg

## WORKING INSTRUCTIONS

In accordance with our experience, the characteristics of the extruder that is suitable for processing PEARLTHANE® 12K85LB are the following:

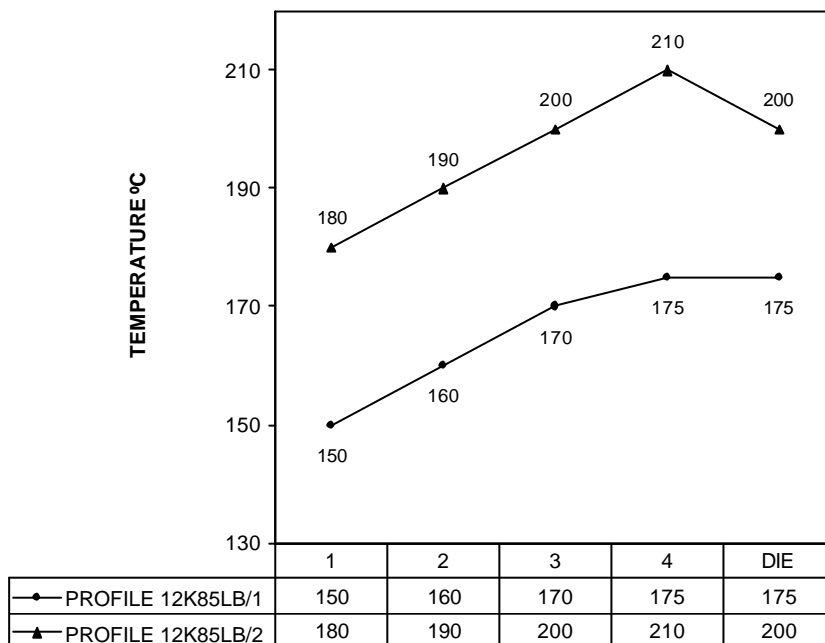
1. L/D ratio between 25:1 and 30:1
2. The extruder screw must have 3 zones and a compression ratio between 2:1 and 3:1. (Usually, the screws that are used for Polyethylene extrusion give good results).
3. The extruder screw should have a continuous regulation device and a working power higher than for processing other plastics.
4. The speed of the extruder should be low (12 to 60 rpm, depending on its diameter), so as to avoid material degradation due to shearing.
5. The filters used should be disks with holes of 1.5 to 5 mm. (depending on the screw and the die), and screen packs (the no. of meshes /cm<sup>2</sup> will depend on the end product which is processed), so as to create a pressure built-up.

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For optimum results, previous drying of the product during 1-2 hours at 80 – 95 ° C is advisable, in a hot air circulatory, vacuum or desiccant-air dryer.

The suggested processing-temperature profiles for film extrusion (flat film) are depicted in the figure below:



**EXTRUDER & CONDITIONS**  
 TYPE.- 30/25D (L/D=25:1), COOLING.- Air, SCREW.- 3:1, SPEED.- 25 rpm  
 BREAKER PLATE.- --, FILTER PACK.- --, THICKNESS DIE.- 0,2 mm, PRE-DRYING.- 1h @105 °C

## CHARACTERISTICS OF THE FILM

Appearance : Colourless, elastic, translucent  
 Dry cleaning resistance : Excellent

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## APPLICATIONS

PEARLTHANE® 12K85LB can be used for calendering applications and for the extrusion of film and sheet in general, either by flat film or blown film extrusion.

## HEALTH AND SAFETY

A safety data sheet on PEARLTHANE® 12K85LB is available, with all the information related to safety.

The ingredients of PEARLTHANE® 12K85LB comply with F.D.A. regulations, as described under 21 CFR, §177.2600 "Rubber Articles intended for Repeated Use" when PEARLTHANE® 12K85LB is used in coatings and adhesives which are in contact with food.

## PACKAGING

PEARLTHANE® 12K85LB is packaged in heat-sealed, moisture proof multi-layer bags of 25 Kg net weight made of PE/Aluminium/PE. Bags are shipped on pallets of 750 Kg. Additionally, PE-lined cardboard gaylords of 700 Kg net weight are available.

## STORAGE

Material received from Merquinsa should be inspected to assure containers are not damaged during transportation before being stored prior to use.

PEARLTHANE® 12K85LB should be kept in a cool (15-25°C) and dry environment prior to being processed. Standard practice of consuming resin on first-in first-out basis should be employed.

For more information, please feel free to contact us at [www.merquinsa.com](http://www.merquinsa.com)