

General Product information

Elastollan® L 1160 D 12 000

® = registered trademark of BASF Polyurethanes GmbH



Characteristic:

High transparency, aliphatic polyether polyurethane with outstanding hydrolysis resistance, low temperature flexibility and good resistance to micro-organisms.

Property	Unit	Value	Test method according to
Hardness	Shore D	56	DIN ISO 7619-1 (3s)
Density	g/cm ³	1.1	DIN EN ISO 1183-1-A
Tensile strength	MPa	30	DIN 53504-S2
Elongation at break	%	400	DIN 53504-S2
Stress at 20% elongation	MPa	9	DIN 53504-S2
Stress at 100% elongation	MPa	11	DIN 53504-S2
Stress at 300% elongation	MPa	16	DIN 53504-S2
Tear strength	N/mm	70	DIN ISO 34-1Bb

Test plaques are manufactured by injection moulding from pre-dried granules (water content less 0,02%). Specimens are cut from test plaques.
Test conditions: 23°C ± 2°C and 50% ± 6% rel. humidity.

These are general guidance data. No statement regarding specific properties. All supplies are subject to detailed specifications to be agreed-up in each individual case and containing, among others, the tolerances to be specified therein.

Delivery form and packing:

Pellets; the packaging dependent upon grade and agreement.

Drying:

Predrying is not recommended.



Injection moulding:

When injecting the melt should be bubble and foam free, if not we recommend to adjust the drying temperature accordingly.

Following temperatures are guide values, showing the tendency of temperature profile. These may vary depending on kind of machine and mould design.

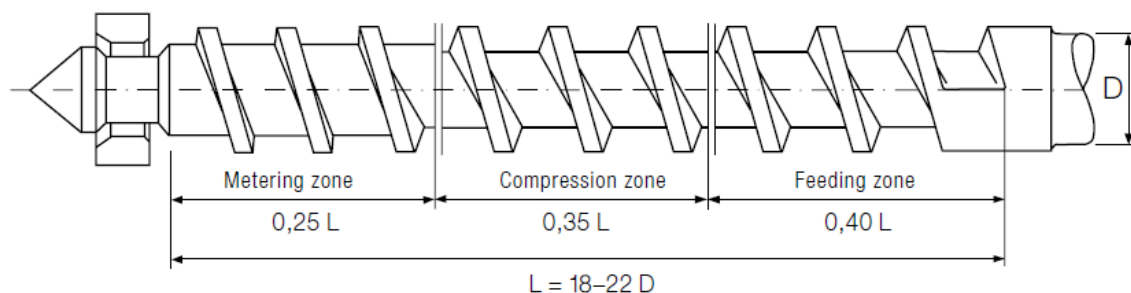
Feeding [°C]	Zone1 [°C]	Zone2 [°C]	Zone3 [°C]	Zone4 [°C]	Die [°C]	Melt-temp [°C]	Mould-temp. [°C]
40	195-205	200-210	205-215	205-215	210-220	205-215	20-40

General Recommendations:

Circumferential speed (screw speed)		< 0,2 m/s 12 m/min			
Specific back pressure		50-150 bar			
Injection speed		rel. low			
Retention time of melt (including hot-runner)		< 10 min			
Screw speed	d_{screw} [mm]	30	45	50	60
	n_{max} [min ⁻¹]	135	85	70	60

Machine Design:

The injection moulding machines with single-flighted, 3-zone screws are suitable for the processing of Elastollan® L 1160 D 12 000. Short compression-zone screws are not suitable. The compression ratio should be around 1:2 and should not exceed 1:3. A check ring (shut-off ring) should be incorporated.



Extrusion:

Following temperatures are guide values, showing the tendency of temperature profile. These may vary depending on kind of machine and mould design.

Feeding [°C]	Zone1 [°C]	Zone2 [°C]	Zone3 [°C]	Zone4 [°C]	Adaptor [°C]	Gead [°C]	Die [°C]
cooled*	170-190	180-200	190-210	200-220	210-230	210-230	200-220

*in case of using a grooved feeding zone

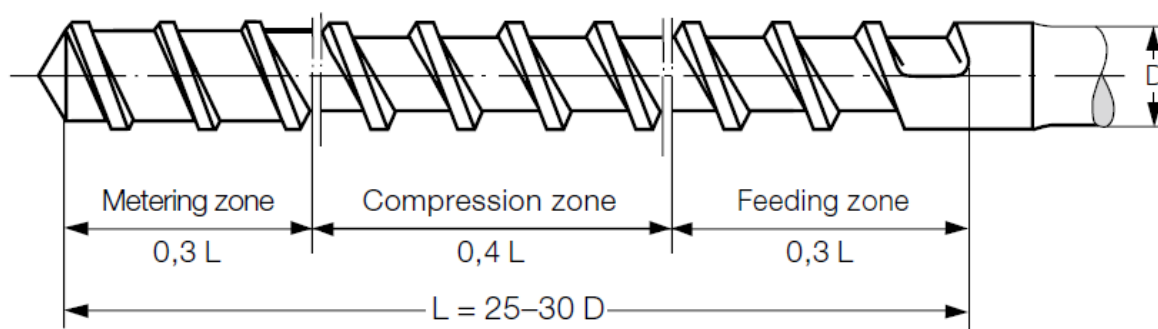
General Recommendations: circumferential speed 0,15m/s max.

Screw speed	d_{screw} [mm]	30	45	50	60
	n_{max} [min ⁻¹]	80	60	50	45

For start-up use screw-speed of about 0,05m/s and starve feeding in order to control screw torque and engine power consumption.

Machine Design:

Single screw extruder with a compression ratio of 1:2 to 1:3, preferably 1:2,5, are recommended for processing Elastollan® L 1160 D 12 000. BASF experience shows that three section screws with L/D ratio of 25 to 30 are most suitable. Three-section screws should have continued constant pitch of 1D. The radial clearance between screw and barrel should be 0,1 to 0,2mm. For processing Elastollan® L 1160 D 12 000, multizone screws, e.g. barrier screws, have also proven suitable. Short screws with high compression ratio are unsuitable for Elastollan®.



Processing:

In cool and dry storage and in the original, undamaged and sealed containers, the products are processable for at least 6 months from delivery date. Thereafter, we do not give any warranty or guarantee regarding the processability and/or shelf life of the products. Warranties regarding buyer's rights in case of defects remain unaffected hereby.

Storage:

Elastollan® L 1160 D 12 000 is hygroscopic, therefore storage in dry conditions and original container is recommended. Additional information about drying, processing temperatures and post-treatment are given in our product brochure "Thermoplastic Polyurethane Elastomers (TPU) Elastollan®-Processing Recommendations".

Hazard indication:

No particular hazards known. Please have a look at the Material Safety Data Sheet before handling.

Waste Disposal:

More detailed information is provided in our country-specific pamphlet and the Material Safety Data Sheet.

