

Polybutylene Terephthalate (PBT)

DURANEX®

750LD

EF2001/ED3002

Low Warpage, LD
Series

General Properties of 750LD

table1-1 General Properties (ISO)

Item	Unit	Test Method	Low Warpage, LD Series
			750LD
			GF30% Reinforced
Color			EF2001/ED3002
ISO(JIS)quality-of-the-material display:		ISO11469 (JIS K6999)	>PBT+ABS- GF30FR(17)<
Density	g/cm ³	ISO 1183	1.60
Water absorption (23°C,24hrs,1mmt)	%	ISO 62	0.2
Tensile strength	MPa	ISO 527-1,2	135
Strain at break	%	ISO 527-1,2	1.8
Flexural strength	MPa	ISO 178	206
Flexural modulus	MPa	ISO 178	10,100
Charpy notched impact strength (23°C)	kJ/m ²	ISO 179/1eA	7.9
Temperature of deflection under load (1.8MPa)	°C	ISO 75-1,2	205
Coefficient of linear thermal expansion (23 - 55°C、Flow direction)	x10 ⁻⁵ /°C	Our standard	2
Coefficient of linear thermal expansion (23 - 55°C、Transverse direction)	x10 ⁻⁵ /°C	Our standard	7
Electric strength (3mmt)	kV/mm	IEC 60243-1	18
Volume resistivity	Ω・cm	IEC 60093	4 × 10 ¹⁶
Volume resistivity (Our standard)	Ω・cm		-
Tracking resistance (CTI)	V	IEC 60112	225
Rockwell hardness	M(Scale)	ISO2039-2	90
Flammability		UL94	V-0
The yellow card File No.			E213445
Appropriate List number of Ministerial Ordinance for Export Trade Control			Item 16 of Appendix -1

All figures in the table are the typical values of the material and not the minimum values of the material specifications.

2. Mold shrinkage ratio of DURANEX® 750LD

Processing parameters

Injection machine: Sumitomo SG150U SYCAP-MIV

Mold: 120□ flat plate mold shrinkage mold (2 mm ϕ)

Cylinder temperature: 260-260-260-260-230°C

Mold temperature: 65°C

Hold pressure: 49.0, 58.8, 68.6 MPa

Injection speed: 17mm/sec

Cycle: (inj. + hold) 25 s + cooling 10 s

Screw rotation: 100 rpm

Screw backpressure: 5.9 MPa

* Molding was carried out with position switching.

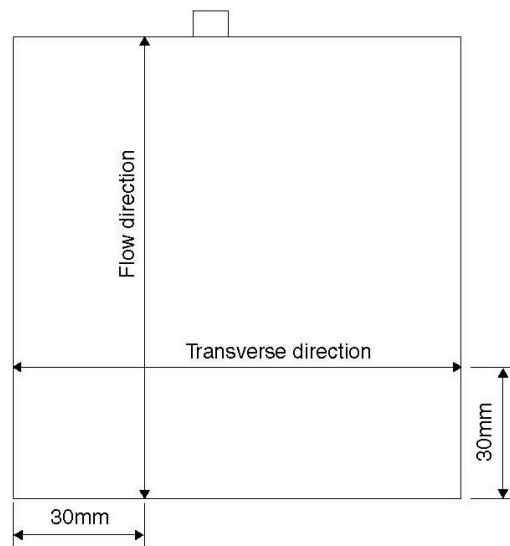
Measurement method

Measuring apparatus: Mitutoyo three-dimensional coordinate measuring machine FN704

Probe dia. = ϕ 1.0 mm

Air conditioning: 23°C, 50% RH \times 48 hrs-plus

Measurement points: Flow direction and transverse direction



Mold flow shrinkage (%) = (Mold dimensions-part dimensions)/mold dimensions \times 100

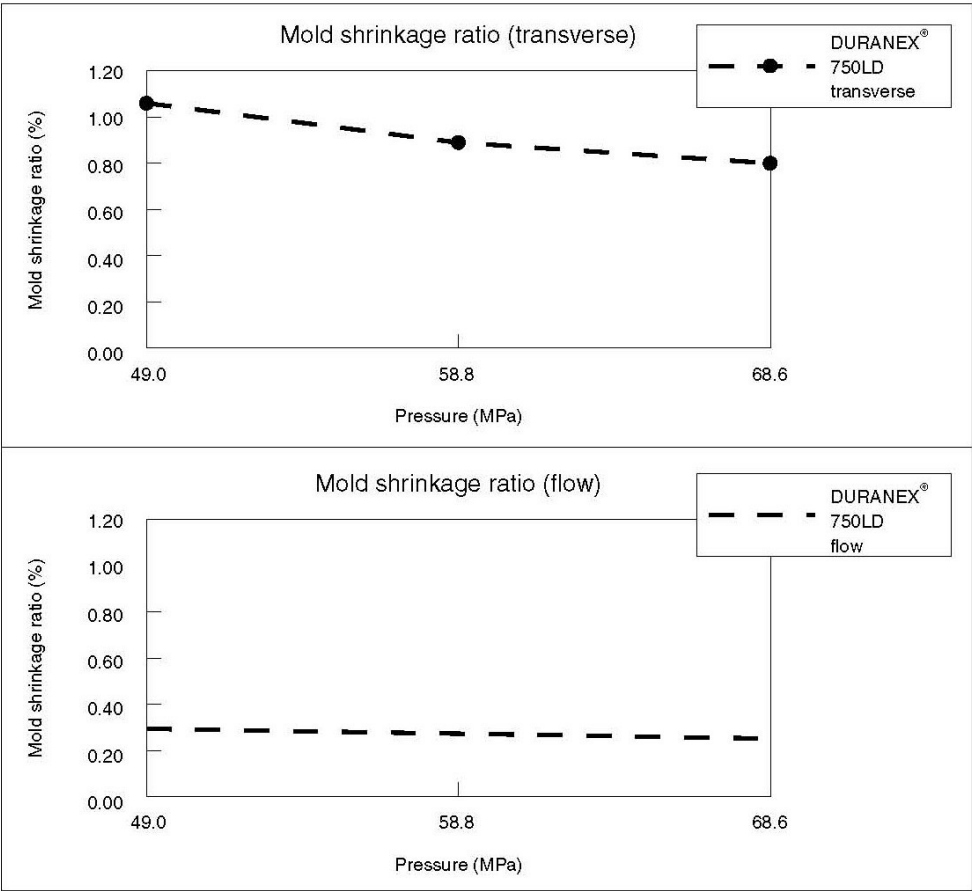
Mold dimensions: Flow direction: 119.978 mm

Transverse direction: 119.986 mm

120×2 mmt flat plate (gate: 4(W)×2t) mold shrinkage ratio evaluation results. Unit: %

Material		Holding pressure (MPa)		
		49.0	58.8	68.6
DURANEX® 750LD	Transverse	1.06	0.90	0.76
	Flow	0.27	0.23	0.23
	Anisotropy	0.79	0.67	0.53

n = 5



3. Flow characteristics of DURANEX® 750LD

Processing parameters

Injection machine: Sumitomo SG150U SYCAP-MIV

Mold: Bar flow mold (2 mm ϕ)

Cylinder temperature: 260-260-260-230°C

Mold temperature: 65°C

Hold pressure: 49.0, 73.5, 98.0, 122.5 MPa

Injection speed: 67mm/sec

Cycle: (inj. + hold) 25 s + cooling 10 s

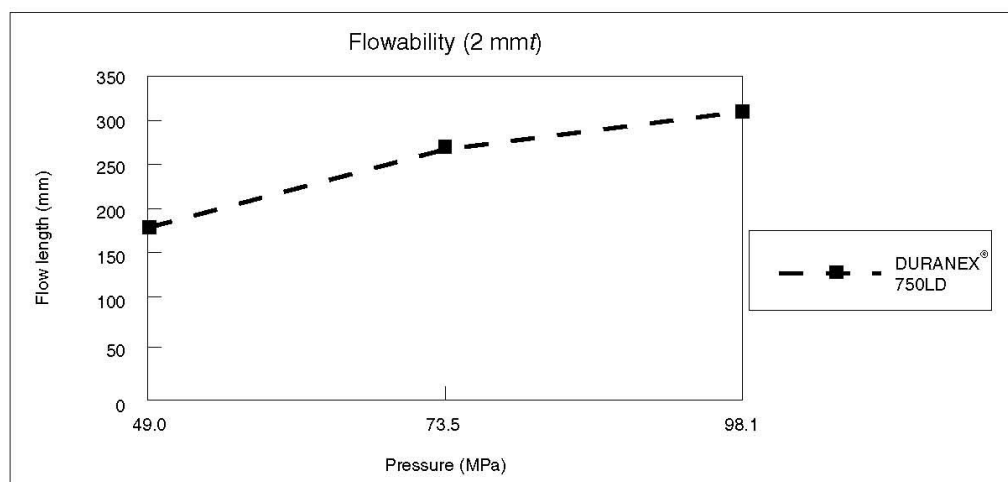
Screw rotation: 100 rpm

Screw backpressure: 5.9 MPa

Flowability 2 mmt evaluation results Unit: mm

Material	Pressure (MPa)		
	49.0	73.5	98.1
DURANEX® 750LD	179	261	325

n = 10



4. Surface flatness of DURANEX® 750LD

Processing parameters

Injection machine: Sumitomo SG150U SYCAP-MIV

Mold: 120° flat plat shrinkage mold (2 mm ϕ)

Cylinder temperature: 260-260-260-260-230°C

Mold temperature: 65°C

Hold pressure: 68.6 MPa

Injection speed: 50mm/sec

Cycle: (inj. + hold) 15 s + cooling 10 s

Screw rotation: 100 rpm

Screw backpressure: 5.9 MPa

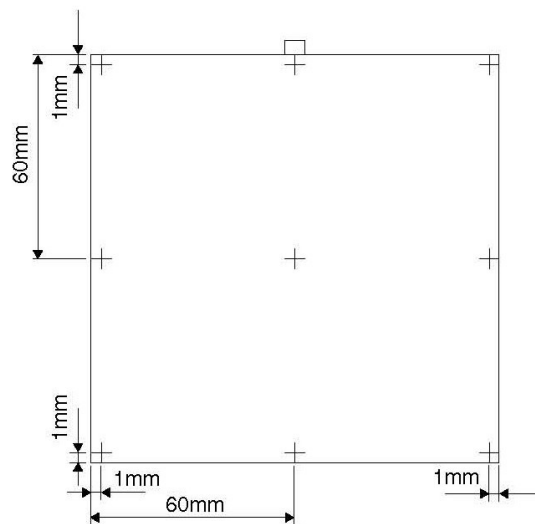
*)Molding was carried out with position switching.

Measurement method

Measuring apparatus: Nikon 2.5-D coordinate measuring machine μ -STAFF

Air conditioning: 23°C, 50% RH \times 48 hrs-plus

Measurement points: moving platen side (nine points)



120° flat plate surface flatness evaluation results Unit: mm

	DURANEX® 750LD
Surface flatness	7.20 (68.6MPa)

n = 5

Outer warpages: The distance between the straight line connecting reference points A and B and the reference point C.
Inner warpage: The distance between the straight lines that pass through the two " " (A to D are on the top side of the diagram and E to H are on the bottom side) in the above diagram and the respective points.

Connector deformation evaluation results Unit mm

Evaluation parameter	Measurement point	DURANEX® 750LD
Connector Outer warpage		0.080
Connector inter-hole pitch		134.737
Connector inner warpage	A	0.120
	B	0.083
	C	0.163
	D	0.140
	E	0.080
	F	0.068
	G	0.024
	H	0.044
	C + E	0.243
	D + E	0.220

nn = 5

Measurement points C + E show the maximum inner warpage.

Measurement points D + E show the total inner warpage extent of the TCS standard measurement points.



NOTES TO USERS

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