EUROMAP 7	Injection moulding machines Determination of the maximum clamping force

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(4 pages)

This **recommendation** has been prepared by the Technical Commission of EUROMAP.

1 Scope

This recommendation defines the determination of the maximum clamping force for comparison reasons.

2 Definitions

2.1 Maximum clamping force

The maximum clamping force is the maximum force applied by the clamping unit of an injection moulding machine, determined by a measuring method as specified below.

3 Measuring method

3.1 Test block

The test block is made of steel, Fe 360 B or better (see EN 10025). It is either a hollow cylinder (see figure 1) or a welded four bars construction (see figure 2). The dimensions are given in table 1.

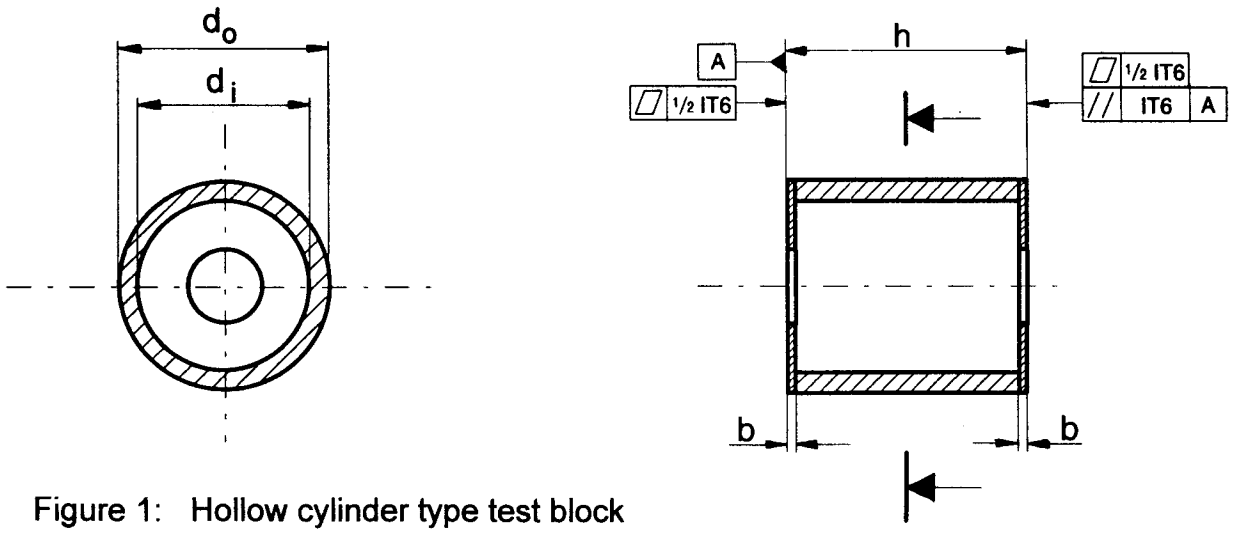

Figure 1: Hollow cylinder type test block

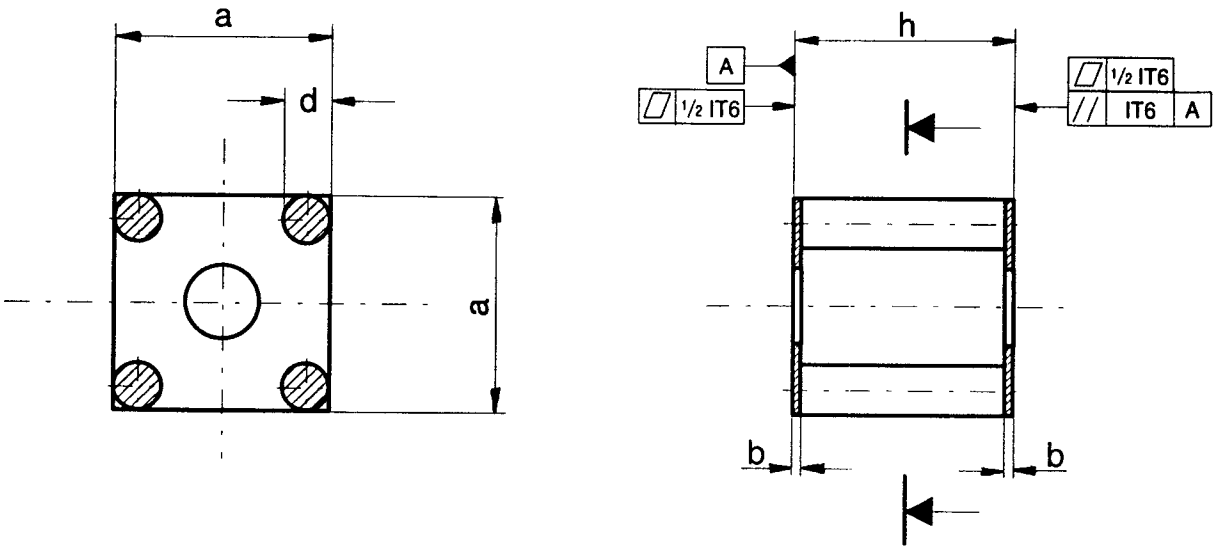

Figure 2: Four bars type test block

e_1	d_o	d_i	a	d	h	IT6
160	125	100	125	37	125	0,025
180	160	125	160	50	160	0,025
200						
224	200	160	200	60	200	0,029
250						
280	250	200	250	75	250	0,029
315						
355	315	250	315	95	315	0,032
400						
450	400	315	400	120	400	0,036
500						
560	500	400	500	150	500	0,040
630						
710	630	500	630	190	630	0,044
800						
900	800	630	800	250	800	0,050
1000						
1120	1000	800	1000	300	1000	0,056
1250						
1400	1250	1000	1250	370	1120	0,066
1600						
1800	1600	1250	1600	500	1250	0,078
2000						
2240	2000	1600	2000	600	1400	0,092
2360						
2500						
2650						
2800	2500	2000	2500	750	1600	0,110
3000						
3150						
3350						
3550						

Table 1: Test block dimensions (in mm)

Explanations:

e_1	=	maximum clearance between neighbouring tiebars or equivalent dimension for tiebarless machines (see EUROMAP 2)
d_o	=	outside diameter
d_i	=	inside diameter
a	=	length, width of baseplate
d	=	bar diameter
h	=	height
IT6	=	basis tolerance according to ISO 286-1
b	=	baseplate thickness

Where necessary the height of the test block may be modified.

To avoid marks on the moving platen thin protection plates or a split design of the test block may be used.

The baseplate thickness b shall not exceed 5 % of the height of the test block.

3.2 Measurement

The test block shall be mounted on the fixed platen. The maximum clamping force shall be applied and measured by means of load cells or determined by the elongation of the tiebars or by the compression of the test block, using strain gauges.

4 Indication of values

The maximum clamping force of an injection moulding machine as determined by one of the methods described above may not be less than the value indicated in technical documents.

Example: Maximum clamping force (EUROMAP 7) : 17800 kN

If the height of the test block is different from the one specified in table 1, this shall be indicated:

Example: Maximum clamping force (EUROMAP 7) : 2500 kN ; h = 250 mm.

EUROMAP

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