

DIN EN ISO 4590:2016-12 (E)

Rigid cellular plastics - Determination of the volume percentage of open cells and of closed cells (ISO 4590:2016)

Contents	Page
European foreword	3
Foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Principle	7
5 Test specimens	7
5.1 Number	7
5.2 Preparation	8
5.3 Dimensions	8
5.4 Sectioning of test specimens	8
6 Conditioning and test atmospheres	8
7 Measurement of surface area S and geometrical volume V_g	8
8 Determination of impenetrable volume V_i by method 1: pressure variation (pycnometer)	9
8.1 Principle of method 1	10
8.2 Description of apparatus for method 1	10
8.3 Calibration of pycnometer apparatus	12
8.4 Procedure for method 1	13
8.5 Calculation for method 1	14
9 Determination of impenetrable volume V_i by method 2: volume expansion	14
9.1 Principle of method 2	14
9.2 Description of apparatus for method 2a	15
9.3 Calibration of apparatus for method 2a	16
9.4 Procedure and calculation for method 2a	19
9.5 Description of apparatus for method 2b	19
9.6 Calibration of apparatus for method 2b	20
9.7 Test procedure for method 2b	20
9.8 Test sequence for method 2b	21
9.9 Calculations and expression of results for method 2b	22
10 Correction for specimen surface cells opened during specimen preparation	22
10.1 For the pressure-variation method (see Clause 8)	22
10.2 For the volume-expansion method (see Clause 9)	22
11 Expression of results	23
11.1 Apparent volume percentage of open cells	23
11.2 Corrected volume percentage of open cells	23
12 Precision	24
13 Test report	25
Annex A (normative) Notes on procedure	26