

DIN EN 1873:2016-07 (E)

Prefabricated accessories for roofing - Individual rooflights of plastics - Product specification and test methods (includes Amendment :2016)

Contents	Page
European foreword.....	6
1 Scope.....	7
2 Normative references.....	10
3 Terms and definitions	11
4 Symbols and abbreviations	13
5 Requirements	15
5.1 Radiation properties.....	15
5.1.1 General.....	15
5.1.2 Light transmission	15
5.1.3 Solar direct transmittance τ_e	16
5.1.4 Total solar energy transmittance g	16
5.2 Durability	16
5.3 Water tightness.....	16
5.4 Mechanical performances.....	16
5.4.1 Resistance to upward loads.....	16
5.4.2 Resistance to downward loads.....	16
5.4.3 Impact resistance	17
5.5 Reaction to fire	17
5.6 Resistance to fire	18
5.7 External fire performance	18
5.8 Air permeability	18
5.9 Thermal resistance.....	18
5.10 Airborne sound insulation.....	19
5.11 Release of dangerous substances.....	19
6 Testing and classification.....	19
6.1 General.....	19
6.2 Radiation properties.....	19
6.2.1 Total luminous transmittance.....	19
6.2.2 Determination of solar direct transmittance τ_e	20
6.2.3 Determination of total solar energy transmittance g	20
6.3 Durability	20
6.3.1 Classification for durability.....	20
6.3.2 Conditions for accelerated ageing.....	22
6.3.3 Variation of light transmission	22
6.3.4 Variation in yellowness index	23
6.3.5 Variation of mechanical properties with ageing.....	23
6.3.6 Test specimen.....	23
6.4 Watertightness.....	24
6.4.1 Principle	24
6.4.2 Procedure.....	24
6.4.3 Apparatus.....	24
6.4.4 Test specimen.....	24

Dimensions in millimetres	25
6.5 Mechanical performances	26
6.5.1 Resistance to upward and downward loads	26
6.5.2 Impact resistance.....	27
6.6 Fire behaviour	29
6.7 Air permeability	29
6.8 Thermal transmittance.....	30
6.9 Relationship between characteristics, families and test specimens.....	30
6.10 Test report	32
7 Assessment and verification of constancy of performance - AVCP.....	32
7.1 General	32
7.2 Type testing	33
7.2.1 General	33
7.2.2 Test reports	33
7.3 Factory production control (FPC).....	33
7.3.1 General	33
7.3.2 General requirements.....	34
7.3.3 Product specific requirements	36
7.3.4 Initial inspection of factory and of FPC.....	37
7.3.5 Continuous surveillance of FPC.....	38
7.3.6 Procedure for modifications.....	38
8 Designation and marking	38
Annex A (informative) Guidelines for safety, application, use and maintenance	40
A.1 General	40
A.2 Guidelines for safety.....	40
A.3 Guidelines for application and use.....	40
A.4 Maintenance	41
Annex B (normative) Alternative test method for the determination of light transmission	42
B.1 General	42
B.2 Apparatus	42
B.3 Test pieces.....	43
B.4 Procedure	43
B.5 Expression of results	43
Annex C (normative) Test method for air permeability	44
C.1 General	44
C.2 Test apparatus.....	44
C.3 Test specimen	44
C.4 Test procedure	45
C.5 Evaluation of the results	45
C.6 Rounding off to be used for the air permeability.....	45
C.7 Test report	46
Annex D (normative) Determination of thermal transmittance of rooflight.....	47

D.1	General.....	47
D.2	Determination of thermal transmittance of rooflight components.....	47
D.2.1	Determination by measurement	47
D.2.2	Determination by calculation.....	47
D.2.2.1	General.....	47
D.2.2.2	Thermal transmittance of the upstand U_{up} and $U_{up,e}$	47
D.2.2.3	Thermal transmittance of the edge profile U_e	47
D.2.2.4	Thermal transmittance of the junction part U_j	47
D.2.2.5	Thermal transmittance of the translucent parts U_t	47
D.2.2.6	Linear thermal transmittances Ψ_e, Ψ_j, Ψ_t	48
D.2.2.7	Definition of starting point for calculation of thermal transmittance.....	48
D.3	Determination of areas of a rooflight	49
D.3.1	Components	49
D.3.2	Area of the rooflight upstand.....	50
D.3.3	Area of the edge profile.....	51
D.3.4	Area of the junction part.....	53
D.3.5	Area of the translucent part A_t	54
D.3.6	Surface of the rooflight.....	54
D.4	Total thermal transmittance of individual rooflights.....	55
D.4.1	General.....	55
D.4.2	Total thermal transmittance U_r of individual rooflights including the edge profile	56
D.4.3	Total thermal transmittance U_{rc} of individual rooflights including the edge profile and upstand.....	57
D.4.4	Total thermal transmittance U_{rc} of individual rooflights including the edge profile and upstand (alternative method).....	59
D.4.5	Total thermal transmittance U_{rc} of individual rooflights including the upstand without edge profile	60
D.4.6	Total thermal transmittance U_{rc} of individual rooflights including the edge profile and upstand with more than one translucent part.....	62
D.4.7	Rounding off to be used for thermal transmittance in calculation and classification	63
D.5	Test specimen for evaluation of thermal transmittance: $U_{r,ref}, U_{rc,ref300}$	63
D.5.1	General.....	63
D.5.2	Reference models.....	64
D.5.2.1	Individual rooflight without upstand	64
D.5.2.2	Individual rooflight with upstand	64
D.6	Characteristics for supplied rooflight.....	65
Annex E (normative)	Reaction to fire test.....	66

E.1	Class E	66
E.1.1	General	66
E.1.2	Mounting and fixing for the small flame test in accordance to EN ISO 11925-2	66
E.2	Class A2 to class D.....	67
E.2.1	General	67
E.2.2	Mounting and fixing for the SBI test.....	67
E.3	Class A1.....	67
Annex ZA	(informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Regulation.....	68
ZA.1	Scope and relevant characteristics	68
ZA.2	Procedure for AVCP of prefabricated accessories for roofing – individual rooflights of plastics.....	70
ZA.2.1	Systems of AVCP	70
ZA.2.2	Declaration of performance (DoP).....	72
ZA.2.2.1	General.....	72
ZA.2.2.2	Content.....	73
ZA.2.2.3	Example of DoP	74
ZA.3	CE marking and labelling.....	77
Bibliography	79