

ISO 10077-2:2003-10 (E)

Thermal performance of windows, doors and shutters - Calculation of thermal transmittance - Part 2: Numerical method for frames

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms, definitions, symbols and units	2
4	Calculation method	2
4.1	General principle	2
4.2	Validation of the calculation program	3
4.3	Determination of the thermal transmittance	3
5	Treatment of solid sections and boundaries	3
5.1	Solid materials	3
5.2	Boundaries	3
6	Treatment of cavities	3
6.1	General	3
6.2	Cavities in glazing	3
6.3	Unventilated air cavities in frames	3
6.3.1	Definition	3
6.3.2	Unventilated rectangular cavities	4
6.3.3	Unventilated non-rectangular air cavities	6
6.4	Ventilated air cavities and grooves	7
6.4.1	Slightly ventilated cavities and grooves with small cross section	7
6.4.2	Well ventilated cavities and grooves with large cross section	7
7	Report	8
7.1	General	8
7.2	Geometrical data	8
7.3	Thermal data	8
7.3.1	Thermal conductivity	8
7.3.2	Emissivity	8
7.3.3	Boundary conditions	8
7.4	Results	8
Annex A (informative) Design thermal conductivity of selected materials		9
Annex B (normative) Surface resistances for horizontal heat flow		11
Annex C (normative) Determination of the thermal transmittance		12
C.1	Thermal transmittance of the frame section	12
C.2	Linear thermal transmittance of the junction with the glazing or opaque panel	13
Annex D (normative) Examples for the validation of the calculation programs		14
D.1	General	14

D.2	Figures	14
D.3	Results	24
Annex ZA (normative)	Normative references to international publications with their corresponding European publications	25
Bibliography		26