

DIN EN ISO 10077-2 :2008-08 (E)

Thermal performance of windows, doors and shutters_ - Calculation of thermal transmittance_ - Part_2:
Numerical method for frames (ISO 10077-2:2003)

Contents

	Page
Foreword.....	3
Introduction	4
1 Scope	4
2 Normative references	4
3 Terms, definitions, symbols and units	5
4 Calculation method.....	5
4.1 General principle.....	5
4.2 Validation of the calculation program	6
4.3 Determination of the thermal transmittance	6
5 Treatment of solid sections and boundaries	6
5.1 Solid materials.....	6
5.2 Boundaries	6
6 Treatment of cavities	6
6.1 General.....	6
6.2 Cavities in glazing.....	6
6.3 Unventilated air cavities in frames.....	6
6.3.1 Definition.....	6
6.3.2 Unventilated rectangular cavities.....	7
6.3.3 Unventilated non-rectangular air cavities	9
6.4 Ventilated air cavities and grooves.....	10
6.4.1 Slightly ventilated cavities and grooves with small cross section.....	10
6.4.2 Well ventilated cavities and grooves with large cross section.....	10
7 Report.....	11
7.1 General.....	11
7.2 Geometrical data	11
7.3 Thermal data.....	11
7.3.1 Thermal conductivity.....	11
7.3.2 Emissivity	11
7.3.3 Boundary conditions	11
7.4 Results	11
Annex A (informative) Design thermal conductivity of selected materials	12
Annex B (normative) Surface resistances for horizontal heat flow	14
Annex C (normative) Determination of the thermal transmittance	15
C.1 Thermal transmittance of the frame section	15
C.2 Linear thermal transmittance of the junction with the glazing or opaque panel	16
Annex D (normative) Examples for the validation of the calculation programs.....	17
D.1 General.....	17
D.2 Figures	17
D.3 Results	27
Annex ZA (normative) Normative references to international publications with their corresponding European publications	28
Bibliography	29