

DIN EN ISO 10211:2008-04 (E)

Thermal bridges in building construction - Heat flows and surface temperatures - Detailed calculations (ISO 10211:2007)

Contents		Page
Foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms, definitions, symbols, units and subscripts	7
3.1	Terms and definitions	7
3.2	Symbols and units	11
3.3	Subscripts	12
4	Principles	12
5	Modelling of the construction	12
5.1	Dimension systems	12
5.2	Rules for modelling	12
5.3	Conditions for simplifying the geometrical model	18
6	Input data	22
6.1	General	22
6.2	Thermal conductivities of materials	23
6.3	Surface resistances	23
6.4	Boundary temperatures	23
6.5	Thermal conductivity of quasi-homogeneous layers	23
6.6	Equivalent thermal conductivity of air cavities	23
6.7	Determining the temperature in an adjacent unheated room	24
7	Calculation method	24
7.1	Solution technique	24
7.2	Calculation rules	24
8	Determination of thermal coupling coefficients and heat flow rate from 3-D calculations ..25	
8.1	Two boundary temperatures, unpartitioned model	25
8.2	Two boundary temperatures, partitioned model	25
8.3	More than two boundary temperatures	26
9	Calculations using linear and point thermal transmittances from 3-D calculations	26
9.1	Calculation of thermal coupling coefficient	26
9.2	Calculation of linear and point thermal transmittances	27
10	Determination of thermal coupling coefficient, heat flow rate and linear thermal transmittance from 2-D calculations	28
10.1	Two boundary temperatures	28
10.2	More than two boundary temperatures	28
10.3	Determination of the linear thermal transmittance	28
10.4	Determination of the linear thermal transmittance for wall/floor junctions	29
10.5	Determination of the external periodic heat transfer coefficient for ground floors	30
11	Determination of the temperature at the internal surface	31

11.1	Determination of the temperature at the internal surface from 3-D calculations	31
11.2	Determination of the temperature at the internal surface from 2-D calculations	32
12	Input and output data	33
12.1	Input data	33
12.2	Output data	33
Annex A (normative) Validation of calculation methods		35
Annex B (informative) Examples of the determination of the linear and point thermal transmittances		42
Annex C (informative) Determination of values of thermal coupling coefficient and temperature weighting factor for more than two boundary temperatures		45
Bibliography		50