

DIN EN ISO 13370:2018-03 (E)

Thermal performance of buildings - Heat transfer via the ground - Calculation methods (ISO 13370:2017)

Contents		Page
European foreword		4
Foreword		6
Introduction		7
1 Scope		11
2 Normative references		11
3 Terms and definitions		12
4 Symbols and subscripts		13
4.1 Symbols		13
4.2 Subscripts		13
5 Description of the method		14
5.1 Output		14
5.2 General description		14
5.3 Periodic coefficients		15
6 Calculation of heat transfer via the ground		14
6.1 Output data		14
6.2 Calculation time intervals		16
6.3 Input data		17
6.4 Thermal properties		17
6.4.1 Thermal properties of the ground		17
6.4.2 Thermal properties of building materials		18
6.4.3 Surface resistances		18
6.5 Internal temperature and climatic data		18
6.5.1 Internal temperature		18
6.5.2 Climatic data		18
6.6 Thermal transmittance and heat flow rate		19
6.6.1 Thermal transmittance		19
6.6.2 Thermal bridges at edge of floor		19
6.6.3 Calculation of heat flow rate		19
6.6.4 Effect of ground water		19
6.6.5 Special cases		20
6.7 Parameters used in the calculations		20
6.7.1 Characteristic dimension of floor		20
6.7.2 Equivalent thickness		21
7 Calculation of thermal transmittances		21
7.1 Slab-on-ground floor		21
7.2 Suspended floor		23
7.3 Heated basement		25
7.3.1 General		25
7.3.2 Basement floor		27
7.3.3 Basement walls		27
7.3.4 Heat transfer from whole basement		28
7.4 Unheated basement		28
7.5 Partly heated basement		29
7.6 Effective thermal resistance of floor construction		29

Annex A (normative) Input and method selection data sheet — Template	30
Annex B (informative) Input and method selection data sheet — Default choices	33
Annex C (normative) Calculation of ground heat flow rate	36
Annex D (normative) Slab-on-ground with edge insulation	42
Annex E (informative) Heat flow rates for edge and central regions of a building	47
Annex F (normative) Application to dynamic calculation programmes	48
Annex G (normative) Ventilation below suspended floors	50
Annex H (normative) Periodic heat transfer coefficients	53
Bibliography	59