

ISO 9869-1:2014-08 (E)

Thermal insulation - Building elements - In-situ measurement of thermal resistance and thermal transmittance - Part 1: Heat flow meter method

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms, definitions, symbols and units	2
3.1	Terms and definitions	2
3.2	Symbols and units	2
4	Apparatus	4
4.1	Heat flow meter (HFM)	4
4.2	Temperature sensors	4
5	Calibration procedure	5
5.1	Calibration of the HFM	5
5.2	Temperature sensors	6
5.3	Measuring equipment	7
6	Measurements	7
6.1	Installation of the apparatus	7
6.2	Data acquisition	8
7	Analysis of the data	8
7.1	Average method	8
7.2	Storage effects	10
7.3	Comparison of calculated and measured values	12
8	Corrections for the thermal resistance and the finite dimension of the HFM	12
9	Accuracy	12
10	Test report	13
Annex A (normative) Heat transfer at surfaces and U-value measurement		15
Annex B (normative) Dynamic analysis method		18
Annex C (normative) Examination of the structure of the element		23
Annex D (informative) Perturbations caused by the heat flow meter		25
Annex E (informative) Checking the accuracy of the measurement system of heat flow rate		31
Annex F (informative) Heat storage effects		34
Bibliography		36