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