

ISO 9869-2:2018 (E)

Thermal insulation — Building elements — In-situ measurement of thermal resistance and thermal transmittance — Part 2: Infrared method for frame structure dwelling

Contents

	Foreword	
	Introduction	
1	Scope	
2	Normative references	
3	Terms and definitions	
4	Symbols and units	
5	Principle	
6	Requirements for apparatus	
6.1	General	
6.2	Infrared camera	
6.3	Heat transfer coefficient sensor	
6.4	ET sensor	
6.5	Thermocouple	
6.6	Data logger	
7	Measurement method	
7.1	Building	
7.2	Location of the measured area	
7.3	Measurement conditions	
7.4	Measurement of heat transfer coefficient	
7.5	Measurement of environmental temperature	
7.6	Surface temperature distribution of building elements	
7.7	Measurement time and measurement interval	
7.8	Measurement terms	
7.9	Measurement period	
8	Calculations	
8.1	Heat transfer area	
8.2	Calculation of heat flow rate	
8.3	Calculation of thermal transmittance	
9	Measurement accuracy	
10	Test reports	
Annex A	(informative) Measurement principle	
A.1	Background	
A.2	Measurement principle	
A.3	Applications and limitations	
Annex B	(informative) Calculation of environmental temperature, structure of ET sensor	
B.1	Determining the environmental temperature	
B.2	Construction of the ET sensor	
Annex C	(informative) Structure and calibration of heat transfer coefficient sensor	

- C.1 Explain/define this term
- C.2 Calibration of heat transfer coefficient sensor

Annex D (informative) Uncertainty analysis

- D.1 Mathematical model

Annex E (informative) The calculation example of uncertainty analysis

- E.1 Listing of uncertainty factors
- E.2 The example of uncertainty estimation
- E.3 Preparation of uncertainty calculation sheet
- E.4 Uncertainty calculation for different conditions
- E.5 Conclusions and recommendations

Page count: 31