

ISO 16957:2016-06 (E)

Measurement of apparent thermal conductivity of wet porous building materials by a periodic method

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols and units	2
5	Determination of thermal conductivity of a wet porous material by non-steady-state method (periodic method)	3
6	Measurement by periodic method	3
6.1	Test procedure	3
6.2	Measuring apparatus	4
6.2.1	Overall design	4
6.2.2	Generator of the sinusoidal or stepwise electric wave	4
6.2.3	Heater	5
6.2.4	Specimen	5
6.3	Specimen preparation and preconditioning	5
6.3.1	Initial uniform moisture content and adiabatic and impermeable boundaries	5
6.3.2	Embedding and the position of the thermocouples	5
6.4	Derivation of thermal diffusivity from measured temperatures (see Annex B)	5
6.4.1	Solution for heat flow without moisture	5
6.4.2	Solution for heat flow with moisture	6
6.5	Estimation of measuring uncertainty due to moisture (vapour) movement	7
6.6	Thermal conductivity	7
7	Test report	7
Annex A (informative)	Theoretical background	9
Annex B (informative)	Derivation of thermal conductivity from measured temperatures	11
Annex C (informative)	Example of measurement by periodic method	17
Bibliography		20