

INTERNATIONAL STANDARD

ISO
10051

First edition
1996-04-01

Thermal insulation — Moisture effects on heat transfer — Determination of thermal transmissivity of a moist material

*Isolation thermique — Effets de l'humidité sur les propriétés relatives au
transfert de chaleur — Détermination de la transmissivité thermique d'un
matériau humide*



Reference number
ISO 10051:1996(E)

Contents

	Page
1 Scope	1
2 Normative references	1
3 Definitions	1
4 Symbols and units	2
5 General considerations	2
5.1 Introduction	2
5.2 Description of heat and mass transfers	3
5.3 Determination of thermal transmissivity of a moist material	3
6 Test apparatus	5
7 Test procedure	5
7.1 General	5
7.2 Specimen preparation and conditioning	5
7.3 Selection of phase A or C	6
7.4 Derivation of thermal transmissivity from measured values of heat flow and temperatures	6
7.5 Flow chart of possible test procedures	8
7.6 Sources of error	9
7.7 Calculations	9
8 Test report	9

Annexes

A Theoretical background	11
B Evaluation of moisture flow and cases for which $g_v \cdot h_e$ is small	15
C Approximate solutions of $\lambda^*(w)$ with negligible movement of liquid	17
D Derivation of λ^* from measured values of heat flow and temperatures in phase C with movement of liquid in the test specimen	18

© ISO 1996

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland