
**Fine ceramics (advanced ceramics,
advanced technical ceramics) —
Measurement method for normal
spectral emissivity using blackbody
reference with an FTIR spectrometer**

*Céramiques techniques — Méthode de mesure de l'émissivité spectrale
normale utilisant un corps noir de référence avec un spectromètre FTIR*





COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms, definitions and symbols	1
4 Principle	2
5 Apparatus	2
5.1 Measurement system	2
5.2 Fourier transform infrared spectrometer (FTIR)	2
5.3 Specimen heating device	2
5.4 Blackbody furnace	4
5.5 Temperature measuring devices and thermometer	4
5.6 Mirror	4
6 Test specimens	4
7 Measurement preparation	6
7.1 Position of a blackbody furnace and a specimen	6
7.2 Wavelength calibration	6
7.3 Verification of linearity	6
7.4 Verification of stability	6
7.5 Validation of measurement system	6
8 Test condition	7
9 Test procedure	7
9.1 Background infrared radiance spectrum measurement	7
9.2 Specimen installation	7
9.3 Infrared radiance spectrum measurement	7
10 Calculations	7
10.1 Normal spectral emissivity	7
10.2 Normal quasi-total emissivity	8
11 Test report	9
Annex A (informative) Calculation of theoretical infrared radiance spectrum $L(\lambda, T)$ using Planck's blackbody radiation function	10
Annex B (informative) Christiansen effect	11
Annex C (informative) Validity of normal quasi-total emissivity	12
Bibliography	13