
**Rotary shaft lip-type seals incorporating
thermoplastic sealing elements —**

**Part 4:
Performance test procedures**

*Bagues d'étanchéité à lèvres pour arbres tournants incorporant des
éléments d'étanchéité thermoplastiques —*

Partie 4: Modes opératoires des essais de performance



COPYRIGHT PROTECTED DOCUMENT

© ISO 2011

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 either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction.....	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Pre-test procedure.....	2
5 Dynamic normal temperature test	2
5.1 Test apparatus	2
5.2 Installation.....	4
5.3 Test conditions	5
5.4 Test procedure.....	5
5.5 Post-test measurements.....	5
5.6 Recording.....	5
5.7 Acceptance criteria	5
6 Dynamic low temperature test	5
6.1 General	5
6.2 Test apparatus	5
6.3 Installation.....	6
6.4 Test procedure.....	6
6.5 Post-test measurements.....	7
6.6 Recording.....	7
6.7 Acceptance criteria	7
7 Material testing of the rotary shaft seal components	7
7.1 General	7
7.2 Metallic components (cases)	7
7.3 Non-metallic components.....	7
7.3.1 Thermoplastic sealing elements.....	7
7.3.2 Elastomeric sealing elements — gaskets, protection lip and sealant.....	7
8 Identification statement (Reference to this part of ISO 16589).....	7
Annex A (informative) Typical example of seal test report for the dynamic normal temperature test	8
Annex B (informative) Typical example of a seal test report for the dynamic low temperature test	10
Annex C (informative) Typical example of a material test report (thermoplastic element)	12
Annex D (informative) Typical example of a material test report (elastomeric element)	13
Bibliography.....	15

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16589-4 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 7, *Sealing devices*.

This second edition cancels and replaces the first edition (ISO 16589-4:2001), which has been technically revised.

ISO 16589 consists of the following parts, under the general title *Rotary shaft lip-type seals incorporating thermoplastic sealing elements*:

- *Part 1: Nominal dimensions and tolerances*
- *Part 2: Vocabulary*
- *Part 3: Storage, handling and installation*
- *Part 4: Performance test procedures*
- *Part 5: Identification of visual imperfections*