
Fasteners — Torque/clamp force testing

Éléments de fixation — Essais couple/tension

www.iso.org



Reference number
ISO 16047:2005(E)

© ISO 2005

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2005

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 0111
Fax + 41 22 749 0947
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Symbols and their designations	3
5 Principle of test	4
5.1 General	4
5.2 Determination of coefficients of friction	4
5.3 Determination of torque coefficient K (K -factor)	5
5.4 Determination of ratio T/F	5
6 Apparatus	5
6.1 Testing machine	5
6.2 Test fixture	5
7 Test parts	6
7.1 General	6
7.2 Test-bearing plates or test washers	7
7.3 Test nuts for testing bolts, screws and studs	8
7.4 Test bolts or test screws for testing nuts	8
8 Testing under standard conditions	9
9 Testing under specific conditions	9
10 Evaluation of results	9
10.1 Determination of torque coefficient K	9
10.2 Determination of coefficient of total friction μ_{tot}	10
10.3 Determination of coefficient of friction between threads μ_{th}	10
10.4 Determination of coefficient of friction between bearing surfaces μ_{b}	11
10.5 Determination of yield clamp force F_{y}	11
10.6 Determination of yield tightening torque T_{y}	11
10.7 Determination of ultimate clamp force F_{u}	11
10.8 Determination of ultimate tightening torque T_{u}	11
11 Test report	11
11.1 General	11
11.2 Description of fasteners to be tested	12
11.3 Description of test parts	13
11.4 Testing machine	13
11.5 Test fixture	14
11.6 Environmental conditions	14
11.7 Specific conditions	14
11.8 Test results	14
Bibliography	15