

ISO 16047:2005-02 (E)

Fasteners - Torque/clamp force testing

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