

## 1.0 Scope.

**1.1** This standard establishes a conformance test procedure for the performance of metric adhesive coated prevailing-torque screws in nominal thread diameters M3 thru M20 inclusive.

Torque values given in this standard are conformance requirements for adhesive coated prevailing-torque screws and apply only to the combination of test conditions described in the performance test procedure (Para. 5.1). If the conditions of the actual service application differ from those of Para. 5.1 (e.g., length of thread engagement, class of internal thread tolerance, different coating on screw or mating part) the torque values may differ. Such values can only be determined through testing the prevailing-torque screw in its actual assembly.

This standard is not concerned with dimensional features such as head styles, or with other mechanical or performance capabilities such as strength properties, corrosion resistance, sealing, suitability for use in high or low temperatures, and/or consistency of torque-to-tension relationships during assembly. Such features and properties are covered in other standards and specifications, and must be referenced when specifying an adhesive coated prevailing-torque screw to ensure that all of the service conditions of the particular engineering application are properly met.

## 1.2 Definitions.

**1.2.1** An adhesive coated prevailing-torque screw (hereinafter called "screw") is an externally threaded fastener which is resistant to rotation due to a adhesive coating, and not because of compressive load developed against the underhead bearing surface of the screw or a tensile load developed in the shank of the screw.

## 2.0 Referenced Standards.

### 2.1 ASME Standards.

These may be obtained from ASME; Three Park Avenue; New York, NY 10016-5990.

- ASME B1.3M, *Screw Thread Gaging Systems for Dimensional Acceptability—Inch and Metric Screw Threads (UN, UNR, UNJ, M, and MJ)*.

- ASME B1.13M, *Metric Screw Threads — M Profile*

- ASME B18.2.4.1M, *Metric Hex Nuts, Style 1*

- ASME B18.18.2M, *Inspection and Quality Assurance for High-Volume Machine Assembly Fasteners*

### 2.2 ASTM Standards.

ASTM standards are available from The American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

- ASTM A563, *Standard Specification for Carbon and Alloy Steel Nuts*

### 2.3 ISO Standards.

ISO standards may be obtained from the International Organization for Standardization, Case postale 56, CH-1211 Geneva 20, Switzerland

- ISO 4032 *Hexagon Nuts, Style 1 – Product Grades A and B*

## 3.0 Designations.

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| <p style="text-align: center;">IFI<br/>STANDARD ®</p> <p>Published and issued by the<br/>Industrial Fasteners Institute<br/>of Independence, OH</p> | <p style="text-align: center;"><b>TEST PROCEDURE FOR THE PERFORMANCE<br/>OF METRIC ADHESIVE COATED<br/>PREVAILING-TORQUE SCREWS</b></p> | <p style="text-align: center;"><b>IFI-525</b><br/>Page 1 of 4</p> <p>Revised: Aug. 1, 2007<br/>Reaffirmed: 2013</p> |
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**Table 1 Torque Values for Screws With Preapplied Adhesive Coatings**

| Nom<br>Screw Size<br>and<br>Thread Pitch | Prevailing-On<br>Torque<br>N•m | Breakaway<br>Torque<br>N•m | Prevailing-Off<br>Torque<br>N•m |
|------------------------------------------|--------------------------------|----------------------------|---------------------------------|
|                                          | Max                            | Min                        | Min                             |
| M3 × 0.5                                 | 0.3                            | 0.15                       | 0.07                            |
| M3.5 × 0.6                               | 0.5                            | 0.3                        | 0.15                            |
| M4 × 0.7                                 | 0.7                            | 0.4                        | 0.3                             |
| M5 × 0.8                                 | 1                              | 0.8                        | 0.5                             |
| M6 × 1                                   | 1.8                            | 1.5                        | 0.8                             |
| M8 × 1.25                                | 2.8                            | 4.0                        | 2.0                             |
| M10 × 1.5                                | 5.5                            | 11                         | 4.0                             |
| M12 × 1.75                               | 7.2                            | 16                         | 7.0                             |
| M14 × 2                                  | 11                             | 22                         | 10                              |
| M16 × 2                                  | 14                             | 33                         | 16                              |
| M20 × 2.5                                | 22                             | 45                         | 22                              |

**NOTE:**

Values are based on nut engagement in chemical area for a distance of one nominal screw diameter.

**Table 2 Torque Values for Screws With Applied Liquid Coatings**

| Nom<br>Screw Size<br>and<br>Thread Pitch | Prevailing-On<br>Torque<br>N•m | Breakaway<br>Torque<br>N•m | Prevailing-Off<br>Torque<br>N•m |
|------------------------------------------|--------------------------------|----------------------------|---------------------------------|
|                                          | Max                            | Min                        | Min                             |
| M6 × 1                                   | —                              | 0.56                       | 0.34                            |
| M8 × 1.25                                | —                              | 2.0                        | 1.0                             |
| M10 × 1.5                                | —                              | 3.4                        | 1.1                             |
| M12 × 1.75                               | —                              | 4.8                        | 1.2                             |
| M14 × 2                                  | —                              | 6.0                        | 2.0                             |
| M16 × 2                                  | —                              | 6.8                        | 2.8                             |
| M20 × 2.5                                | —                              | 13                         | 5.5                             |
| See Notes                                | 1                              |                            | 2                               |

**NOTES:**

1. Prevailing-on torque for screws with liquid coatings applied at the time of assembly is essentially zero.
2. Minimum value for any of the available liquid coatings. Higher removal torques may be obtained through selective choice of liquid coating used.

**Tables 1 & 2 note: Values apply to those listed. For the performance using other pitches contact the supplier.**

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