INDUSTRIAL FASTENERS INSTITUTE

March 23, 2016

March 2016 Fastener Industry Technology Update from the IFI

This update contains information about activities in fastener standards and other technical issues relevant to the fastener industry.

Standards Organizations Activities

1. ***Standards published recently:***
   - ***ASTM A193/A193M-16*** *Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications.*
   - ***ASTM A962/A962M-16*** *Standard Specification for Common Requirements for Bolting Intended for Use at Any Temperature from Cryogenic to the Creep Range.*
   - ***ASTM F3125 / F3125M - 15a*** *Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions.*
   - **ASME B18.31.1** *Metric Continuous and Double End Studs*.

2. ***Standards that have passed committee balloting and have begun the publication process:***
   - ***ASME B18.16.6*** *Prevailing Torque Locknuts (Inch Series)*. The B18.16 sub-committee made a revision to lower the proof load values of thin insert lock nut to 45% of the regular height nuts and to correct the errors in the NTM series of nut heights. Publication is expected in middle of 2016.

3. ***Standards under revision:***

SAE

- ***SAE J1237*** *Metric Thread Rolling Screws*. At the meeting in September 2015 the negatives from the previous ballot were resolved and a final ballot was approved for processing in early 2016.
- **SAE J2270** *Ship Systems and Equipment-Threaded Fasteners-Inspection, Test, and Installation Requirements*. Document is in 14-day reaffirmation ballot.
- **SAE J2656** *Fastener Part Standard - Hexagon Socket, Square Head, and Slotted Headless Set Screws - Inch Dimensioned*. Document is in 14-day reaffirmation ballot.
- **SAE J2295M** *Fasteners - Part Standard - Cap Screws, Hex Bolts, and Hex Nuts (Metric)*

ASME

- **ASME B18.2.1** *Bolts and Cap Screws (inch series)*. Work has begun to add a missing Lg/Lb table for hex flange head screws and correct a few other minor issues and to add “Tap Bolts”. Completion is expected in 2016.
- **ASME B18.2.6** *Structural Fasteners (inch series)*. Work has begun to revise this standard to incorporate a critical table note currently covered by a Supplement and to make minor revisions to the DTI portion of the standard. Completion is expected in 2016.
- **ASME B18.6.5M** *Metric Thread-Forming and Thread-Cutting Tapping Screws*. This standard will be balloted for withdrawal for users to transition to the comparable ISO and DIN standards.
- **ASME B18.6.7M** *Metric Machine Screws*. This standard will be balloted for withdrawal for users to transition to the comparable ISO and DIN standards.
- **ASME B18.13-2008 (R1996)** *SEMS (inch series)*. This standard will now undergo a complete revision to reflect changes and additions to the metric version B18.13.1M.

- ***B18.1.1-1972 (R2006)*** *Small Solid Rivets* is being balloted for re-approval.
- ***B18.1.2-1972 (R2011)*** *Large Rivets* is being balloted for re-approval.
- ***B18.1.3M-1983 (R2011)*** *Metric Small Solid Rivets* is being balloted for re-approval.
- ***B18.10-2006 (R2011)*** *Track Bolts and Nuts* is being balloted for re-approval.

ASTM

- ***ASTM A354*** *Standard Specification for Quenched and Tempered Alloy Steel Bolts*, Studs, and Other Externally Threaded Fasteners. Some weaknesses in the standard were discovered as a result of the threaded rod failures on the Bay Bridge. The committee is proposing that a higher grade of alloy steel be required for sizes over 2-1/4 inches to assure better hardenability plus Charpy testing and cross-sectional hardness testing for sizes over 2-1/4 in. A fourth ballot is in process.
- ***ASTM F606/F606M*** *Standard Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, Direct Tension Indicators, and Rivets*. A ballot opened October 2, 2015 to clarify that a single bolt or screw cannot be tested for both yield strength and then wedge tensile testing. The ballot received one negative that is being resolved. Simultaneously a task group was created to address the misuse of the term "yield strength" for testing full size fasteners.
- **ASTM F2282** *Standard Specification for Quality Assurance Requirements for Carbon and Alloy Steel Wire, Rods, and Bars for Mechanical Fasteners***.** The proposal for addition of a note related to the presence of abnormal large exogenous inclusions is in ballot process.

ISO

- **ISO 4042**, *Electroplating* was reviewed at the ad hoc working group meeting in February in Paris. A CD ballot will be circulated in time for review of comments in July in Montreal.
- **ISO DTR 20491** *Fundamentals of Hydrogen Embrittlement in Steel Fasteners*. The document underwent review in February at the Paris meeting. The final document will be reviewed in July in Montreal before being submitted for publication.
- **ISO 15330** Fasteners — Preloading test for the detection of hydrogen embrittlement — Parallel bearing surface method. Revision process will begin in July in Montreal.
- ***ISO 3269***, Fastener acceptance. At the ad hoc meeting in Paris in June, 2014, it was agreed to use the c=0 plan (similar to ASTM F1470 and ASME B18.18) as a receiving inspection plan at the purchaser's option. At the ad hoc working group meeting in June 2015 in Paris it was decided that ISO 3269 will be revised once more by the working group. This was discussed at the October 11 – 17 ISO TC2 meeting in New Orleans and it was agreed that more work will be undertaken at a July 2016 ad hoc meeting in Montreal.
- ***ISO 6157*****,** *Fastener surface discontinuities.* Work will continue in 2016.
- ***ISO 1891-4,*** *Terms and terminology related to quality assurance*. This is being balloted for approval to begin the formal balloting process in the near future. This is likely to be approved and the first content ballot should be voted on before the end of 2016.
- ***ISO 898-2*** *Nuts.* A general revision was initiated in Paris in February. This will be a slow revision process.

4. Standards Organization Meetings (for info contact techinfo@indfast.org):

- ***ISO TC2*** **Fastener Committee** *Ad-hoc April 14-15, 2016, Milan, Italy (WG 13)*
- **ASTM F16 Fastener Committee**, May 2-3, 2016, San Antonio, Texas.
- **ASME B18 Fastener Committee** May 4, 2016, San Antonio, Texas.
- ***ASME B1 Screw Thread Committee***, May 3-5, 2016, Orlando, Florida.

TRAINING OPORTUNITES:

Future IFI Members Only Programs:

MAY 10	Fastener Standards 101 (New for 2016!)	Cleveland, OH
MAY 11	Fundamentals of Fastener Metallurgy and Heat Treating	Cleveland, OH
JUN 7	Fastener Standards 101 (New for 2016!)	Troy, MI
JUN 8	Fundamentals of Fastener Manufacturing	Troy, MI
JUN 21	Fastener Standards 101 (New for 2016!)	Chicago, IL
JUN 22	Fundamentals of Fastener Metallurgy and Heat Treating	Chicago, IL
OCT 18	TBD	Cleveland, OH
OCT 19	Why Fasteners Fail	Cleveland, OH
DEC 6	TBD	Troy, MI
DEC13	TBD	Santa Ana, CA
DEC 14	Aerospace Fasteners – The Basics (New for 2016!)	Santa Ana, CA

Future Fastener Training Institute (FTI) Programs:

APR 05	Fastener Manufacturing Plant Tour (CFS)	Los Angeles, CA
APR 15	Certifications, Test Reports and Lot Traceability	**Webinar**: 11:00 a.m. PST
APR 20-21	FTI/IFI Automotive Fastener Technology	Embassy Suites, Troy, MI
MAY 03	Secondary Processes Plant Tour (CFS)	Los Angeles, CA
MAY 23-27	FTI/IFI Fastener Training Week – (CFS)	IFI Independence, OH
JUN 14	Fastener Specifications & Terminology (CFS)	Holiday Inn, La Mirada, CA
JUL 12	Understanding the Bolted Joint (CFS)	Holiday Inn, La Mirada, CA
JUL 19	Fastener Basics	Santa Fe Springs, CA
AUG 09	Dimensional & Material Specifications (CFS)	Holiday Inn, La Mirada, CA
AUG 22-26	FTI/IFI Fastener Training Week – (CFS)	Elk Grove Village, IL
SEP 07	QA-Print Reading & Inspection (CFS)	Holiday Inn, La Mirada, CA
SEP 13	Product Training Part 1	Santa Fe Springs, CA

For full schedule see: www.fastenertraining.org

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