

The Importance of Fastener Specifications

By Joe Greenslade

Fasteners are engineered components. They are described in detail in either industrial, government, international, or individual company specifications. A fastener supplier must possess and understand the specifications applicable to the parts he supplies before he can have the ability to know if the product he is supplying is correct. After having and understanding these important documents the supplier must verify their compliance either by the review of the certifications of quality which accompany the parts, sending the parts to outside laboratories for inspection, or he must inspect them himself in accordance with the specifications. Unless a fastener supplier has done one of these procedures he can not legitimately assure his customer that the hardware he is shipping is good and will perform as intended.

These points seem very obvious, but in the past few years we have been asked for assistance by fastener suppliers who have been in this business for many years who either did not have or did not understand the requirements of the fasteners they were supplying. This is understandable because of the way fasteners have been thought of in the past and treated as insignificant, indistinguishable commodities instead of engineered components designed to perform certain mechanical functions. The assumption has been that if it looks like a fastener it must be a conforming fastener.

Sources for Fastener Specifications

IFI FASTENER STANDARDS,
6th Edition, 1988
Industrial Fastener Institute
1505 East Ohio Building
1717 East Ninth Street
Cleveland, Ohio 44114

SAE HANDBOOK Volumes 1 and 2
Society of Automotive Engineers, Inc.
400 Commonwealth Drive
Warrendale, PA 15096

ANNUAL BOOK OF ASTM
STANDARDS, Section 15
American Society of Testing and
Materials
1916 Race Street
Philadelphia, Pennsylvania 19103-1187

ANSI/ASME B1 and B18
American Society of Mechanical
Engineers (ASME)
United Engineering Center
345 East 47th Street
New York, New York 10017

I80 STANDARDS HANDBOOK 18,
Fasteners and Screw Threads (metric)
International Standards Organization
(this can be obtained through ASME)

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Recent events have created a new perspective on fasteners and their specifications. Specifications are designed so that a fastener user can review them and select the fasteners to do a specific job in his assembly. When the customer orders fasteners from a particular specification or standard he expects to receive what was clearly and carefully described in the

specification he selected. He does not want and can not accept "look like" fasteners. He must receive the "exact" fasteners he specified. If he does not receive exactly what he specified his entire assembly may fail possibly causing manufacturing inefficiency, warranty problems, and possibly liability claims. Many fastener users, both large and small, have awakened to these realities. That is why more users are requiring fastener suppliers to inspect and/or provide bona fide certificates for the fasteners they are supplying.

A fastener supplier should never quote a fastener or take an order for a fastener which refers to a specification he is unfamiliar with. There are some seemingly small, but in fact, very significant differences in the testing requirements when bolts are specified per MIL-S-1222 versus SAE J429. There are significant differences in testing requirements for tapping screws specified as ANSI B18.6.4 versus

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GM 6010M. If the fastener supplier does not clearly know the differences, but accepts the order because he assumes "a bolt is a bolt" and "a tapping screw is a tapping screw" he can be setting his company up for major problems. These are only two examples of the kinds of situations which exist throughout fastener specifications and standards.

Fastener suppliers should decide on the specification they will follow if the option is theirs. They should advise customers in their literature and/or in their written quotations which specifications you are following if the customer does not designate another.

Those fastener suppliers who are purchasing the fasteners for resale should do two things for their own protection:

1. Always pass on all of the details regarding specification requirements to your source when getting your quotation. If you fail to clearly and completely convey all of the requirements of the cus-

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tomers and a problem occurs the parts are yours and not the sources. Suppliers can not be expected to read your mind or the mind of your customer. Suppliers can only be expected to understand and comply with exactly what you ask for.

2. Always refer to the specification you want product made to when purchasing it from your source. If you do not do this you will have no recourse if the fasteners do not perform for your cus-

tomers as you and he assumed they would. You must decide what you want and specifically designate it on your inquiries and on your purchase orders to your vendors.

Suppliers of military hardware should have as a minimum the following specifications:

MIL-STD-45208A
MIL-STD-45662
MIL-S-1312
MIL-S-7742
MIL-S-8879
MIL-S-1222
FED-STD-H28

These can be obtained from the government free of charge at the addresses listed on page 58 or from Global Engineering Documents for a fee. Global will deliver specifications immediately and the government office sometimes takes up to six months to send them out.

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For military hardware specifications:

Standardization Document Order Desk
700 Robbins Avenue
Building #4, Section D
Philadelphia, Pennsylvania 19111-5094

Global Engineering Documents
Box 19539
Irving, California 92714
800-624-3974

Specifications and standards designate the requirements of fasteners. Fastener users and suppliers must have the latest copies of the documents which cover the fasteners they use or sell to be sure that they know the product's requirements and know how to determine if the parts are in compliance or not. Specifications must not be taken for granted or ignored. They are important and they must be complied with. If you do not understand the language in a document you must seek an explanation you can understand. The rule regarding supplying fasteners is the same as the rule for following our basic laws, "Ignorance is no excuse for violations!"

Specifications must not be taken for granted or ignored.

Many honest fastener suppliers may find themselves in legal trouble with the government for supplying fasteners which have not conformed to the specifications they were bought to. Suppliers had better make sure they understand the specifications and standards they are shipping against to protect themselves and their company against financial loss and possible prosecution. □

Joe Greenslade is President of Greenslade and Company, Inc., of Rockford, Illinois, which specializes in supplying manufacturing and inspection products to the fastener industry. He has been active in the fastener industry since 1970. Prior to starting his firm in 1978 he worked in two major fastener producing companies in a variety of engineering, marketing, and management positions.

Mr. Greenslade is an Associate Member of the Industrial Fastener Institute (IFI) serving on several technical subcommittees relative to fastener quality. He is also a Member of the American Society of Mechanical Engineers serving on the ANSIIASME B1 Thread Subcommittees and is an alternate member of the ANSIIASME B18 Fastener Supplier Accreditation Subcommittee.

Mr. Greenslade is the author of over 40 fastener technology related articles, and is the inventor of several innovative patented fastener inspection devices. He is one of the industry's most frequent speakers on fastener quality subjects.