

## SPECIFICATIONS

### MIL

A United States Military Standard, used to help achieve standardization objectives by the U.S. Department of Defense.

### Specifications

MIL-I-45208A	This specification covers inspection system requirements which are an addition to those inspections and tests set forth in applicable specifications and other contractual documents.
MIL-S-1222H3	This specification covers studs, bolts, hex cap screws and nuts in diameter of 1/4" and larger for applications where a high degree of reliability is required.
MIL-S-21472C	This specification covers hexagon socket-head shoulder screws and slotted-head shoulder screws.
MIL-DTL-18240F	This specification covers the requirements for self-locking elements for use in externally threaded fasteners where temperatures will not exceed 250°F.
MIL-C-81562B	This specification covers the requirements for three types and three classes of mechanically deposited cadmium, tin-cadmium, or zinc coatings on metallic surfaces by impacting (peen-plating).
MIL-DTL-83488D	This specification establishes the requirements for coating low alloy steel, stainless steel, aluminum alloy, copper alloy, and titanium alloy parts with high purity aluminum (99% plus).
MIL-S-22698C	This specification covers ordinary strength and higher strength steel plates, shapes and bars.
MIL-P-10971E	This specification covers tubular-shaped spring pins constructed to resist reduction in pin diameter by means of spring action.
MIL-A-46193	This specification covers materials requirements for control rolled, quenched and tempered high-strength wrought steel armor plate for lightweight armor applications (up to 1/2").
MIL-P-16610B	This specification covers carbon, alloy, and corrosion-resisting steel taper pins.
MIL-P-21143B	This specification covers solid, cylindrical, steel, headless straight pins, which are commonly referred to as a dowel or machine pins.
MIL-HDBK-131A	This handbook illustrates identification markings for fasteners. This military handbook was published to minimize the possibility of introducing duplicate markings.
MS-24692	This specification covers socket-head cap screws with optional hexagon and spline socket configurations.

### ASTM

The American Society for Testing and Materials is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services.

### Specifications

ASTM-F606-07	This specification covers standard test methods for determining the mechanical properties of externally and internally threaded fasteners, washers, direct tension indicators, and rivets.
ASTM-F593	This specification covers the mechanical and chemical requirements for stainless steel bolts, hex cap screws, and studs in diameters ranging from 1/4" to 1 1/2" inclusive.

<b>ASTM continued</b>	
ASTM-F594	This specification covers the mechanical and chemical requirements for stainless steel nuts in diameters ranging from 1/4" to 1-1/2" inclusive and for use with fasteners conforming to ASTM-F593.
ASTM-A563	This specification covers the mechanical and chemical requirements for carbon and alloy steel nuts used on bolts, studs, and externally threaded fasteners.
ASTM-A564	This specification covers hot-rolled and cold-rolled age-hardening stainless steel bars and shapes.
ASTM-F468	This specification covers non-ferrous bolts, hex cap screws, socket head cap screws, and studs for general use.
ASTM-B633	This specification covers electro-deposited coatings of zinc on iron and steel.
ASTM-A193-11	This specification covers alloy and stainless steel bolting for high temperature or high pressure service and other special purpose applications.
ASTM-B695	This specification covers coatings of Zinc mechanically deposited on iron and steel.
ASTM-A354-17	This specification covers the chemical and mechanical requirements of quenched and tempered alloy steel bolts, studs, and other externally threaded fasteners 4" and under in diameter.
ASTM-B644	This specification covers the requirements for copper nickel, ferro copper, phosphor copper, and silicon copper master alloys in ingot, shot, and waffle form to be used as addition agents for cast and wrought alloys.
ASTM-A574	This specification covers the requirements for quenched and tempered alloy steel hexagon socket-head cap screws, under 4" in diameter where high strength is required.

## **FEDERAL SPECIFICATION**

The Federal Specifications, Standards and Commercial Item Description Program (Federal Standardization Program) is a standardization program developed for the purpose of coordinating civilian and military standardization functions to avoid unnecessary duplication.

### **Specifications**

FF-S-86E	This specification covers externally threaded fasteners, designed to be driven into tapped holes with a hexagon or spline key or setter, in applications which require high strength precision products.
FF-S-92B	This specification covers slotted, cross-recessed and hexagon head machine screws.
FF-S-200B	This specification covers hexagon socket and spline socket headless set screws.
FF-P-386D	This specification covers split cotter pins.
FF-W-92B	This specification covers plain, flat washers.
FF-N-836D	This specification covers various types of nuts which are designed for assembly with bolts and screws for application at normal atmospheric temperatures.
FF-S-85C	This specification covers round, flat, countersunk, fillister slotted heads and hexagon plain heads.
FF-N-845D	This specification covers the complete general and dimensional data for various types of wing nuts designed in inch and metric systems.

## FEDERAL SPECIFICATION Continued

FF-W-84	This specification covers a helical spring type washer for use with nuts, bolts, screws, and studs to prevent them from loosening.
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## NAS

The National Aerospace Standards are voluntary standards developed by the aerospace industry. Subject matter experts from Aerospace Industries Association (AIA) member companies participate in committees and working groups to develop and maintain the NAS library. These standards cover a wide variety of subject areas.

### Specifications

NAS-1283	The specification covers is applicable to asll self-lcoking male threaded parts when specified. These details apply only to the locking element and do not define any other feature of the fastener.
NAS-1160	Technical Data Sheet
NASM-1312-5	This specification covers a standard procedure for testing the stress durability of externally, threaded fasteners. This procedure applies to all types of externally threaded fasteners which may be subject to any type of embrittlement and is not limited by configuration or size.
NASM-21472	This specification covers socket-head shoulder screws and slotted-head shoulder screws.

## EB

Electric Boat vision is to be the preferred provider for concept development, engineering and design, construction, modernization, and sustainment for all U.S. Navy submarine programs, nuclear propulsion plants, and undersea platform systems integration.

### Specifications

EB-1890H	This specification covers the markings of fasteners for material identification. It includes symbols to be used to indicate material, location of the symbols on the fastener, and the method of application of the symbol to the fastener.
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