SAE International™

SURFACE VEHICLE STANDARD

SAE J2656 JAN2010

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Superseding J2656 SEP2003

Fastener Part Standard—Hexagon Socket, Square Head, and Slotted Headless Set Screws—Inch Dimensioned

RATIONALE

Added Definition of terms used.
Added Ni-Cr-Mo-Cb Alloy 625 (Inconel) and Copper Alloy (Brass) 260 materials.
Added a caution note on black oxide coated brass.
Revised Zinc/Aluminum coating to designate either clear sealer or pigmented topcoat.
Corrected thread fit classes for set screws to ASME B18.6.2.
Redefined manufacturing and testing requirements for set screws in Section 3.
Added statement about potential hazardous materials.

1. SCOPE

This SAE Part Standard covers selected inch dimensioned set screws manufactured in accordance with American Society for Mechanical Engineers dimensional standards. This SAE standard covers material most often used in ship systems and equipment but its use may be applied wherever fasteners of the covered materials are used. This standard permits the fasteners to be identified and ordered by a part identification number (PIN) as defined in this document.

1.1 Purpose

The purpose of this document is to assist the designer and other personnel in providing requirements and PINs for the most commonly used set screws for ship systems and equipment. A PIN is normally required for all military applications and provides a useful means of communicating set screw requirements to suppliers and manufacturers in a very succinct manner.

1.2 Set Screw PINs

This document provides PINs that can be used to identify set screws covered by this standard. The fasteners covered by this standard are manufactured in general accordance with materials and processes identified in standards issued by ASTM. The PIN identifies the thread form, type of head, type of drive, nominal diameter, special features (plating, locking elements), nominal length and fastener material.

1.3 Procurement Specification Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards that may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

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Certain elements and their compounds are considered hazardous or toxic materials by the United States (US) Environmental Protection Agency (EPA) and Occupational Safety and Health Agency (OSHA.) Users of these materials should consider special disposal and human exposure requirements in Title 40. Protection of the Environment, from the Code of Federal Regulations, and the special handling requirements invoked in Title 29, Occupational, Safety and Health, from the Code of Federal Regulations, respectively, and others as applicable. State and Local regulations may also apply. Some of the examples of certain elements and compounds are the following: mercury, boron, chromium, lead, silver, barium, cadmium and selenium.

2. REFERENCES

2.1 Applicable Publications

The following documents form a part of this standard to the extent specified herein. The latest issue of the documents shall be used except in those cases where an invitation for bid or procurement contract specifically identifies the issues in effect on a particular date.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE AMS2485 Coating, Black Oxide

SAE AMS2487 Anodic Treatment of Titanium and Titanium Alloys—Solution pH 12.4 Maximum

SAE AMS2488 Anodic Treatment—Titanium and Titanium Alloys—Solution pH 13 or Higher

SAE AS1701 Lubricant, Solid Film

SAE J2270 Ship Systems and Equipment—Threaded Fasteners—Inspection, Test, and Installation Requirements

SAE J2280 Ship Systems and Equipment—Fasteners—Selection and Identification Requirements

2.1.2 National Aerospace Standards Publication

Available from the Aerospace Industries Association, 1000 Wilson Boulevard, Suite 1700, Arlington, VA 22209-3901; Tel: 703-358-1000, www.aia-aerospace.org.

NAS 1283 Fasteners, Male Threaded, Self-Locking

2.1.3 ASME Publications

Available from the American Society of Mechanical Engineers, 22 Law Drive, PO Box 2900, Fairfield, NJ 07007-2900, Tel: 973-882-1170, www.asme.org.

ASME B1.1 Unified Inch Screw Threads (UN and UNR Thread Form)

ASME B18.3 Socket Cap, Shoulder, and Set Screws, Hex and Spline Keys (Inch Series)

ASME B18.6.2 Slotted Head Cap Screws, Square Head Set Screws, and Slotted Headless Set Screws (Inch Series)

ASME B18.12 Glossary of Terms for Mechanical Fasteners

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

2.1.4 ASTM Publications

Available from American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM A 342/A 342M Standard Test Methods for Permeability of Feebly Magnetic Materials

ASTM A 380 Cleaning, Descaling and Passivation of Stainless Steel Parts, Equipment, and Systems

ASTM A 453/A 453M High-Temperature Bolting Materials, With Expansion Coefficients Comparable to Austenitic Steels

ASTM B 580 Anodic Oxide Coatings on Aluminum

ASTM F 468 Nonferrous Bolts, Hex Cap Screws, and Studs for General Use

ASTM F 880 Stainless Steel Socket Set Screws

ASTM F 912 Alloy Steel Socket Set Screws

ASTM F 1136 Zinc/Aluminum Corrosion Protective Coatings for Fasteners

ASTM F 1137 Phosphate/Oil and Phosphate/Organic Corrosion Protective Coatings for Fasteners

ASTM F 1470 Fastener Sampling for Specified Mechanical Properties and Performance Inspection

ASTM F 1789 Terminology for F16 Mechanical Fasteners

ASTM F 1941 Electrodeposited Coatings on Threaded Fasteners (Unified Inch Screw Threads (UN/UNR))

2.1.5 U. S. Government Publications

Available online at http://assist.daps.dla.mil/quicksearch/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

MIL-DTL-13924 Coating, Oxide, Black, For Ferrous Materials

MIL-DTL-16232 Phosphate Coating, Heavy, Manganese or Zinc Base

2.2 Definitions

2.2.1 For definition of terms used in this standard see ASME B18.12 and ASTM F 1789. In event of a conflict, the definitions in ASME B18.12 take precedence.

2.2.2 PIN

Represents part identification number. Part Identification Numbers (PINs) are identified in Figure 1.

3. SET SCREW REQUIREMENTS

3.1 SAE Set Screw Standards

This set screw part standard utilizes ASME dimensional standards for set screws and primarily ASTM standards for materials.

3.2 Part Identification Numbers (PINs) for Selected Set Screws

PINs are provided herein for selected set screws for the purpose of common logistics parts identification between designers, fastener manufacturers, construction and repair activities, and equipment operators. PINs are provided for only those set screw configurations and materials most likely to be needed for ship systems and equipment. Figure 1 provides PINs for selected set screws. The PIN consists of a number of fields in order as identified in Figure 1. (There are no blank spaces in the PIN.) The next to last field in the PIN, field 7, designates the set screw material. Table 1 lists the material designators for field 7 of the PIN along with the chemical and mechanical properties of the material.

3.3 Dimensional Requirements for Set Screws

The dimensional requirements for a particular set screw configuration are to be as shown in ASME B18.3 and ASME B18.6.2 for inch dimensioned set screws.

3.3.1 Lengths of Set Screws

Length tolerances for inch dimensioned set screws shall be in accordance with ASME B18.3 and ASME B18.6.2 as applicable.

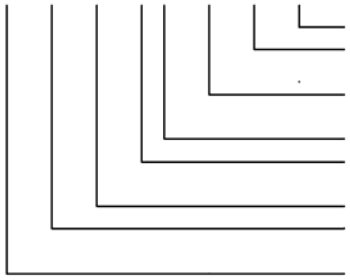
3.3.2 Diameters of Set Screws

Diameters shall be restricted to those identified in ASME B18.3 and ASME B18.6.2 as applicable.

3.3.3 Thread Types and Fits

Thread types and fits shall be restricted to those identified in Field 2 of Figure 1. For screws in accordance with ASME B18.3 the basic diameters per ASME B1.1 (Class 3A GO) shall apply to the finished fastener whether coated or not coated. Some screw diameters may require undersize threads prior to coating in order to meet 3A GO gage requirements. For screws in accordance with ASME B18.6.2 the threads shall be Class 2A in accordance with ASME B1.1. For screws with additive finish, the size limits of Class 2A apply before coating, and the thread after coating is subject to acceptance using a basic Class 3A size GO thread gage.

J2656 C XX H C YY S1 F



Field 8 Coatings and Special Features
Field 7 Material
Field 6 Nominal Length
Field 5 Type of Point
Field 4 Type of Head
Field 3 Nominal Diameter
Field 2 Thread Form
Field 1 SAE Standard

Field 1 - SAE **J2656** Set Screw Part Standard

Field 2 Thread Form (See 3.3.3 for thread class)
C = UNC/UNRC (ASME B1.1) **F** = UNF/UNRF (ASME B1.1)

Field 3 Nominal Diameter (See 3.3.2 for selection of diameters.)

Field 3	UNC	UNF	Diameter	Field 3	UNC	UNF	Diameter
N2	2-56	2-64	0.086	**09***	9/16-12	9/16-18	0.5625
N3 *	3-48	3-56	0.099	**10**	5/8 - 11	5/8 – 18	0.625
N4	4-40	4-48	0.112	**12**	3/4 - 10	3/4 – 16	0.750
N5*	5-40	5-44	0.125	**14**	7/8 - 9	7/8 – 14	0.875
N6	6-32	6-40	0.138	**16**	1 - 8	1 - 12	1.000
N8	8-32	8-36	0.164	**18**	1-1/8 - 7	1-1/8-12	1.125
03	10-24	10-32	0.190	**20**	1-1/4 – 7	1-1/4 –12	1.250
04	¼-20	¼-28	0.250	**22**	1-3/8 – 6	1-3/8 –12	1.375
05	5/16-18	5/16-24	0.3125	**24**	1-1/2 – 6	1-1/2 –12	1.500
06	3/8 - 16	3/8 - 24	0.375	**28**	1-3/4 – 5	--	1.750
07 *	7/16-14	7/16-20	0.4375	**32**	2 - 4-1/2	---	2.000
08	1/2 - 13	1/2 - 20	0.500				

* These diameters are often not available and should not be used for new design

Field 4 Type of Head

H – Hex Socket (See ASME B18.3) **L** – Slotted Headless (See ASME B18.6.2)
S – Square Head (See ASME B18.6.2)

Field 5 Type of Point (See Head Type Dimensional Standard and 4.4 for additional information.)

C - Cup Point **F** - Flat Point **N** – Cone Point
D – Dog Point **H** - Half Dog Point **V** - Oval Point

Note: Dog Point is not to be specified for Hex Socket configuration (See ASME B18.6.2 for minimum length limitations.)

FIGURE 1 - PINS FOR SET SCREWS (INCH DIMENSIONED)

Field 6 Nominal Screw Length - Nominal Screw lengths shall be as identified below:

Field 6	Nominal Length	Field 6	Nominal Length	Field 6	Nominal Length
01	0.06	**07**	0.44	**20**	1.25
02	0.13	**08**	0.50	**24**	1.50
03	0.19	**10**	0.63	**28**	1.75
04	0.25	**12**	0.75	**32**	2.00
05	0.31	**14**	0.88		
06	0.38	**16**	1.00		

For lengths over 2.00 inches, Field 6 shall be the length in 16ths of an inch. Length tolerances shall be in accordance with the applicable dimensional standard as identified in Field 4. The following length increments are recommended:

Length	Recommended increments
< 1 inch	1/16th inch
1 to 2 inches	1/8th inch
2 to 5 inches	1/4th inch
> 5 inches	1/2 inch

Field 7 Material (See Table 1 and 3.5 for designator and mechanical property requirements)

Field 8 Coatings and Special Features (See 3.4 and 3.6)
Note: If no coating or special feature leave blank

Coatings— If no coatings are applicable, do not use coating designation. Otherwise select from the coatings below:

A = Aluminum plate (Designator no longer used. See 3.4.7)
B = Black oxide with supplementary treatment for corrosion resistance (see 3.4.3)
C = Cadmium electroplate (see 3.4.5)
D = Dry Film Lubricant (see 3.4.4)
M4 = Manganese Phosphate Coating with chemically converted Class 4 supplementary treatment (See 3.4.6)
X3 = Zinc/Aluminum Inorganic Coating, No Chromium Permitted, Clear Sealer (See 3.4.7)
X6 = Zinc/Aluminum Inorganic Coating, No Chromium Permitted, Pigmented Topcoat (See 3.4.7)
Y3 = Zinc/Aluminum or Chromium/Zinc Inorganic Coating, Clear Sealer (See 3.4.7)
Y6 = Zinc/Aluminum or Chromium/Zinc Inorganic Coating, Pigmented Topcoat (See 3.4.7)
Z = Zinc Electro-deposited (see 3.4.5)
Z1 = Zinc Phosphate with supplementary protective oil type compound (See 3.4.6)
Z2 = Zinc Phosphate Coating with supplementary zinc rich epoxy resin coating (See 3.4.6)
Z3 = Zinc/Aluminum Inorganic Coating (Designator no longer used. See 3.4.7, 2nd Note)
Z4 = Zinc-Nickel Electro-deposited (see 3.4.5)

Special Features – The special features designations always follow the coating designator, if any.

L = Self-Locking (See 3.6)

FIGURE 1 - PINS FOR SET SCREWS (INCH DIMENSIONED) (CONTINUED)

TABLE 1 - MECHANICAL PROPERTY REQUIREMENTS FOR SET SCREW MATERIALS

Field 7 Designator	UNS Designation	Name/Material Specification[1]	Hardness	Additional Requirements
A1	UNS A96061	Aluminum 6061-T6	40 - 50 HRB	See 3.5.3
A2	UNS A97075	Aluminum 7075-T73	80 - 90 HRB	See 3.5.3
C2[2]	UNS C26000, UNS C27000 or UNS C27400	Brass - Cu 260, Brass - Cu 270 or Brass - Cu 274	55 - 80 HRF	See 3.5.3
G4	As applicable	Through Hardened Alloy Steel	45 - 53 HRC	For ASTM F 912 socket set screws See 3.5.1
G6	As applicable	Case Hardened Low Carbon Steel	83 HR15N min.	For ASME B18.6.2 Configurations (square head and slotted headless) See 3.5.1
N4[2][3] (See 4.3)	UNS N04400 or UNS N04405	NI-Cu Alloy 400 or Ni-Cu Alloy 405	≤ 0.750 Diam. 85 HRB - 25 HRC >0.750 Diam. 75 HRB - 25 HRC	See 3.5.3
N5	UNS N05500	Ni-Cu-Al	24 - 37 HRC	See 3.5.3
N6	UNS N06686	Ni-Cr-Mo-W Alloy 686	23 - 45 HRC	See 3.5.3
N7	UNS N06625	Ni-Cr-Mo-Cb Alloy 625	85 HRB - 35 HRC	See 3.5.3
S1[2] (See 4.3)	UNS S30400 UNS S30403 UNS S30500 UNS S38400 UNS S30430 UNS S30433 UNS S31600 UNS S31603	Austenitic Stainless Steel, Cold Worked Alloy 304 Alloy 304L Alloy 305 Alloy 384 Alloy 18-9LW Alloy 302 HQ Alloy 316 Alloy 316L	96 HRB - 33 HRC	Alloys 303, 303se and XM1 not permitted (See 3.5.2).
S2[2] (See 4.3)	UNS S31600 UNS S31603	Austenitic Stainless Steel, Cold Worked Alloy 316 Alloy 316L	96 HRB - 33 HRC	(See 3.5.2)
S6	UNS S66286	Alloy 660 (A 286) ASTM A 453/ A453M	99 HRB - 37 HRC	See 3.5.3
T1	UNS R55111	Titanium Alloy 5-1-1-1	24 - 38 HRC	See 3.5.3

1. Unless otherwise indicated the requirements of the following specifications apply: (austenitic steel) - ASTM F 880, (alloy steel) - ASTM F 912, (non-ferrous) - ASTM F 468.
2. For a specific designator, the supplier may furnish any of the alloys listed, unless otherwise specified by the purchaser.
3. The hardness requirements noted are more restrictive than ASTM F 468 requirements.

3.4 Coating Requirements

Coatings shall be limited to those identified herein. General industry practice is to provide set screws uncoated. Coatings may be applied to alloy steels for corrosion protection. The applicable coating shall be designated in the PIN as indicated in Figure 1. All titanium set screws shall be coated and the coating is not identified in the PIN. While not normally recommended, the black oxide coating can be specified for materials other than carbon steels where a shiny natural appearance must be avoided.

3.4.1 Required Treatments/Coatings for Aluminum, Stainless Steel and Titanium Set Screws

The following treatments are required for all set screws of the indicated material and is not identified in the PIN since the treatment is mandatory.

3.4.1.1 Aluminum

All aluminum set screws shall be anodized in accordance with ASTM B 580.

3.4.1.2 Stainless Steel

All corrosion-resistant steel set screws shall be passivated in accordance with ASTM A 380. Additional coatings are not necessary for protection of corrosion resistant steel set screws but solid dry film lubricants (see 3.4.3) may be added for lubricity.

3.4.1.3 Titanium

Set screws of titanium alloy shall be anodized in accordance with SAE AMS2487 or AMS2488 Type 2 (except testing requirements may be negotiated between manufacturer and coating supplier).

3.4.2 Aluminum Coatings

Aluminum coatings shall have a conversion or other top coat and shall meet the requirements of ASTM F 1137 for adhesion, coating flexibility, thread fit, dry to the touch and 400 hour corrosion resistance when tested per the procedures of ASTM F 1137. The number of coats of basecoat and topcoat and average thickness of coating as identified in ASTM F 1137 does not apply. Aluminum coatings have been replaced by Zinc/Aluminum coatings. See 3.4.7.

3.4.3 Black Oxide Coatings

Black oxide coatings shall be in accordance with SAE AMS2485 or MIL-DTL-13924 and have an oil or other supplementary preservative treatment.

3.4.4 Solid Dry Film Coatings

Dry or solid film lubricants can be used on set screws to prevent corrosion and to reduce installation friction. These coatings are suitable for use on titanium and corrosion resisting steel set screws to reduce friction and galling. Solid or dry film lubricants shall be in accordance with SAE AS1701 Class I except that heat and corrosion resistant screws shall be of a class rated for 399 °C (750 °F) or higher.

3.4.5 Electro-Deposited Coatings

Electro-deposited coatings (zinc, zinc-nickel, and cadmium) shall be in accordance with ASTM F 1941 as identified herein. Coating thickness is applicable to significant surfaces only. Significant surfaces are considered to be the head and ends and any unthreaded body. The following minimum plating thickness is required:

1-3/8 diameter or less – ASTM F 1941 Thickness Designation 5 (0.0002) or 1/6 the pitch diameter allowance as identified in ASME B1.1, whichever is less.
1-1/2 diameter and greater – ASTM F 1941 Thickness Designation 8 (0.0003).

The use of coated screws is not recommended when the coating thickness will be less than 0.00015 inches for inch screws when measured in accordance with ASTM F 1941. Neutral salt spray corrosion protection shall be in accordance with chromate finish Designation D for the minimum coating thickness as defined in ASTM F 1941 for the applicable coating material. A clear chromate finish, Designation A, shall be provided unless otherwise agreed between the purchaser and supplier.

Hydrogen embrittlement relief shall be provided in accordance with ASTM F 1941.

NOTE: Cadmium plating is not recommended for new design. Some activities may restrict the use of chromate finishes.

3.4.6 Phosphate Coatings

Manganese Phosphate coatings should not be exposed to temperature in excess of 121 °C (250 °F). Zinc Phosphate coatings should not be used if contact with alkaline materials or exposure to temperatures above 93 °C (200 °F) is expected. A supplementary coating shall be provided for improved corrosion resistance and shall be selected from one of the applicable coatings below:

M4 = Manganese Phosphate with chemically converted supplemental treatment in accordance with MIL-DTL-16232, Type M, Class 2.
Z1 = Zinc Phosphate with supplementary protective oil type compound. (Coating shall be in accordance with MIL-DTL-16232 or ASTM F 1137 and shall meet 72 hour salt spray test.)
Z2 = Zinc Phosphate Coating with supplementary zinc rich epoxy resin coating. (Coating shall be in accordance with ASTM F 1137 Grade II or Grade III and shall meet 240 hour salt spray test.)

3.4.7 Zinc/Aluminum Coatings

Zinc/Aluminum coatings shall meet the requirements of ASTM F 1136. The **X** designator indicates that no chromium is permitted while the **Y** designator permits the use of chromium. The second character of the coating designator indicates the Grade Number of the topcoat in accordance with ASTM F 1136. Salt spray requirements are per ASTM F 1136 for the specified coating and topcoat. For pigmented topcoats the color is at the manufacturer's option unless the purchaser specifies a particular color. Designators for Field 8, Coatings with topcoat and salt spray requirements are listed below:

X3 = Zinc/Aluminum Inorganic Base Coating - No Chromium Permitted - Must pass 500 hour salt spray test. Clear Sealer Topcoat.
X6 = Zinc/Aluminum Inorganic Base Coating - No Chromium Permitted - Must pass 500 hour salt spray test. Pigmented Topcoat.
Y3 = Zinc/Aluminum Inorganic Base Coating - Chromium Permitted - Must pass 1000 hour salt spray test. Clear Sealer Topcoat.
Y6 = Zinc/Aluminum Inorganic Base Coating - Chromium Permitted - Must pass 500 hour salt spray test. Pigmented Topcoat.

See 3.3.3 for gaging requirements.

NOTE: ASTM F 1136 covers additional topcoats. The topcoats identified above are recommended for standardization purposes. Use the ASTM F 1136 Grade Number as the second character of the designator if the selection of a different topcoat is required.

NOTE: The **Z3** designator previously used for this coating has been replaced by the X3 and Y3 designators in 3.4.7. These designators indicate whether or not chromium is permitted and the type of topcoat to be provided. Unless otherwise specified, either coating per X3 or Y3 may be supplied as a replacement for the Z3 coating.

3.5 Materials

Materials shall be limited to those listed in Table 1 and shall be designated in Field 7 of the PIN by the two character designation listed in Table 1.

3.5.1 Steel Set Screws

Socket, Square Head and Slotted Headless Set Screws of steel material shall either be case hardened steel or through hardened alloy steel as identified in Table 1. Alloy steel socket, square head and slotted headless set screws shall comply with ASTM F 912. See 3.7.1.1 and 3.7.1.2 for Quality Assurance requirements. Case hardened steel set screws shall comply with ASME B18.6.2. See 3.7.1.3 for Quality Assurance requirements.

3.5.2 Stainless Steel Set Screws

Material for stainless steel set screws shall be Condition CW (cold worked) per ASTM F 880. When alloy designation S2 (316 or 316L) is ordered the requirements of ASTM F 880 shall apply even though these materials are not specifically listed in ASTM F 880. See 3.7.2.1 and 3.7.2.2 for Quality Assurance requirements.

3.5.3 Non-Ferrous Set Screws

Material for non-ferrous set screws shall be in accordance with the hardness requirements of SAE J2656 Table 1 and ASTM F 468 requirements. See 3.7.3 for Quality Assurance requirements.

3.6 Special Features

3.6.1 Locking Elements

Locate locking element in accordance with NAS 1283. Performance and test for locking element performance shall be in accordance with SAE J2270. Self-Locking set screws shall be marked with six dots in a circle around the top of the head.

3.7 Quality Assurance Requirements

Unless otherwise specified in the ordering documentation, inspection and testing for mechanical properties, physical properties, and other quality requirements shall be as specified in the applicable material and product standards. When specified by the purchaser or required by the product standard, the supplier shall provide certification documenting the performance of all mandatory tests and inspections. Where the applicable material specification is silent regarding the number of samples to be tested, sampling shall be in accordance with ASTM F 1470. Unless otherwise specified by the purchaser, inspection and sampling for dimensions and thread fit shall be in accordance with ASME B18.18.2M.

3.7.1 Steel Set Screws

3.7.1.1 Alloy Steel Socket Set Screws

Alloy steel socket set screws shall be manufactured, tested and inspected in accordance with ASTM F 912 with hardness requirements in accordance with Table 1 and dimensions to ASME B18.3. For coated set screws, the coating thickness shall be verified by one of the methods identified in ASTM F 1941.

3.7.1.2 Alloy Steel Square Head and Slotted Headless Set Screws

Alloy steel square head and slotted headless set screws shall be manufactured, tested and inspected in accordance with ASTM F 912 except that the torque test is not required. Additionally hardness shall be in accordance with Table 1 and dimensions to ASME B18.6.2. For coated set screws, the coating thickness shall be verified by one of the methods identified in ASTM F 1941.

3.7.1.3 Case Hardened Steel Square Head and Slotted Headless Set Screws

Case hardened steel square head and slotted headless shall meet the hardness and dimensions of ASME B18.6.2. Quality requirements shall be as negotiated between the purchaser and supplier. For coated set screws, the coating thickness shall be verified by one of the methods identified in ASTM F 1941.