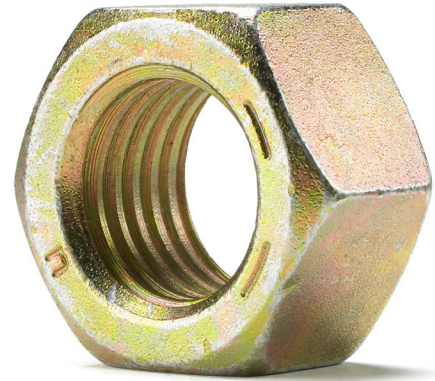


FINISHED HEX NUTS

NUCOR FASTENER

TECHNICAL DATA SHEET

Nucor Fastener Finished Hex Nuts are all formed on precision high speed nutformers, utilizing in-process quality systems and have full traceability from raw material to each container of nuts we ship. Grade 5 Nuts achieve their strength through cold forming, while Grade 8 Nuts are heat treated to provide a greater level of strength. Nucor Finished Hex Nuts are 100% Made in the U.S.A. from American Steel. Chemical and physical certifications are provided with every shipment. Nucor Fastener is TS16949 and ISO9001 Registered and our laboratory is A2LA Accredited.



Mechanical Properties

The mechanical properties of Finished Hex Nuts are covered in the Society of Automotive Engineers (SAE) SAE J995, "Mechanical and Material Requirements for Steel Nuts". This specification covers the materials, manufacturing methods, mechanical properties and testing requirements for these nuts. See Tables 2 & 3 for the mechanical properties.

Dimensions

The dimensions for Finished Hex Nuts are covered in the American National Standards Institute (ANSI) B18.2.2, "Square and Hex Nuts-Inch Series" (See Table 1). The size of the hex is the same as a cap screw head to permit using the same standard wrench size. Thread dimensions are per ANSI B1.1 and are manufactured to either a unified national coarse (UNC) or unified national fine (UNF) Class 2B thread tolerance.

Applications

In general, the proof load of the nut should be greater than the minimum tensile strength of the bolt to ensure that if overloaded, the bolt breaks rather than the nut threads shearing or stripping. Grade 5 Hex Nuts are designed to be used with Grade 5 Cap Screws and Grade 8 Nuts with Grade 8 Cap Screws. A stronger nut can nearly always be used with a weaker bolt (i.e., a Grade 8 Nut is acceptable for use on a Grade 5 Cap Screw).

Coatings

Finished Hex Nuts are typically purchased plain or zinc electroplated. Grade 5 Nuts typically have a clear trivalent chromate finish, while Grade 8 Nuts typically have a yellow chromate finish.

Markings

The marking requirements are covered in SAE J995 and were last modified in July 1999 to improve the marking requirements. The following table and figure show the marking requirements:

SAE GRADE	MARKINGS (JULY 99)
5	Two circumferential lines located 120° apart
8	Two circumferential lines located 60° apart

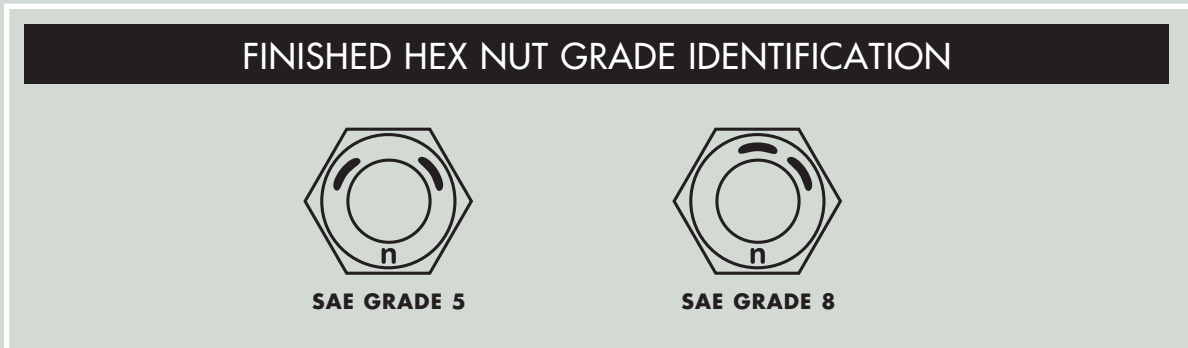


Table 1 – Dimensions of Finished Hex Nuts

NOMINAL SIZE OR BASIC MAJOR DIAM. OF THREAD		WIDTH ACROSS FLATS			WIDTH ACROSS CORNERS		THICKNESS HEX NUTS		
		BASIC	MAX.	MIN.	MAX.	MIN.	BASIC	MAX.	MIN.
5/8	0.6250	15/16	0.938	0.922	1.083	1.051	35/64	0.559	0.535
3/4	0.7500	1 1/8	1.125	1.088	1.299	1.240	41/64	0.665	0.617
7/8	0.8750	1 5/16	1.312	1.269	1.516	1.447	3/4	0.776	0.724
1	1.0000	1 1/2	1.500	1.450	1.732	1.653	55/64	0.887	0.831

(ANSI B18.2.2-1987)

Table 2 – Proof Load Stress and Hardness Requirements For Finished Hex Nuts

SAE GRADE	5		8	
	UNC	UNF	UNC	UNF
PROOF LOAD STRESS (psi)	120,000	109,000	150,000	150,000
HRC HARDNESS	32 MAX	32 MAX	26-34	26-34
NUT SIZE	5/8	27,100	27,900	33,900
	3/4	40,100	40,700	50,100
	7/8	55,400	55,500	69,300
	1	72,700	74,000	90,900

(SAE J995)

Nucor Fastener has the equipment, quality, systems, expertise, sources & people to meet your Finished Hex Nut needs.

TODAY, THAT LITTLE “n” MEANS BIG THINGS!

This Technical Data Sheet is subject to change without prior notification.

