Grades of Bolts and Nuts Table

The inspector is responsible for verifying that the grades of bolts and nuts are compatible. This chart indicates the compatibility of different bolt and nut grades. Take a few minutes to review the data in the table below.

Note that some specifications described in the following content may not be the same as the specifications followed by your agency. Always check with your State agency's standards and specifications when using these guidelines.

Specification	Material	Grade Identification Marking	Size Range (in.)	Min. Proof Strength (psi)	Min. Tensile Strength (psi)	Core Hardness Rockwell		ASTM A563 Compatible Heavy Hex Nut	
						Min.	Max.		
ASTM A325 Type 1	Medium carbon steel: quenched & tempered	A325	1/4 - 1 1 1/8 - 1 1/2	85,000 74,000	120,000 105,000	C25 C19	C34 C30	Grade C (plain)	Grade DH (plain or galvanized)
ASTM A325 Type 3	Weathering steel: quenched & tempered	A325	1/4 - 1 1 1/8 - 1 1/2	85,000 74,000	120,000 105,000	C25 C19	C34 C30	Grade C3	Grade DH3
ASTM A490 Type 1	Medium carbon alloy steel: quenched & tempered	A490	1/4 - 1 1/2	120,000	150,000 (min) 173,000 (max)	C33	C39	Grade DH (plain)	
ASTM A490 Type 3	Weathering steel: quenched & tempered	A490	1/4 - 1 1/2	120,000	150000 (min) 173,000 (max)	C33	C39	Grade DH3	

ASTM A563 considers the ASTM A194/A194M heavy hex nuts as acceptable equivalents for the DH heavy hex nut.