CONQUEST
CONQUER THE JOB

# THREADED ROD
## LOW CARBON, STAINLESS STEEL

## LOW CARBON THREADED ROD

| Size | UNC Pitch | Low Carbon UNC | | Low Carbon UNC | |
|---|---|---|---|---|---|
| | | Plain and Zinc | | HDG | |
| | | Stock | lb/ft | Stock | lb/ft |
| 1/4" | 20 | • | 0.121 | | |
| 3/8" | 16 | • | 0.291 | • | 0.291 |
| 1/2" | 13 | • | 0.522 | • | 0.522 |
| 5/8" | 11 | • | 0.837 | • | 0.837 |
| 3/4" | 10 | • | 1.224 | • | 1.224 |
| 7/8" | 9 | • | 1.692 | • | 1.692 |
| 1" | 8 | • | 2.201 | • | 2.201 |
| 1-1/4" | 7 | • | 3.5 | • | 3.5 |
| 1-1/2" | 6 | • | 5.05 | • | 5.05 |

## STAINLESS STEEL THREADED ROD

| Size | | | | UNC/Class 2 | |
|---|---|---|---|---|---|
| | UNC Pitch | 304SS/BB UNC-CL1 | | 316SS/BBM UNC-CL1 | |
| 3/8" | 16 | • | 0.296 | • | 0.296 |
| 1/2" | 13 | • | 0.539 | • | 0.539 |
| 5/8" | 11 | • | 0.852 | • | 0.852 |
| 3/4" | 10 | • | 1.249 | • | 1.249 |
| 7/8" | 9 | • | 1.724 | • | 1.724 |
| 1" | 8 | • | 2.256 | • | 2.256 |


PHONE: 844-567-2809 | WWW.CONQUESTFASTENER.COM

# ASTM – AMERICAN SOCIETY OF TESTING AND MATERIAL

## Steel Specifications:

**ASTM A36** - covers the chemical and mechanical requirements for carbon steel shapes, plates, and bars of structural quality for use in riveted, bolted, or welded construction of bridges, buildings and general structural purposes. Threaded rods and studs manufactured from A36 steel include ASTM specifications A307 and F1554 Grade 36 as well as SAE J429 Grade 2.

**A307** - covers carbon steel bolts and studs ranging from 1/4" through 4" diameter. This is a common bolt specification is often manufactured using A36 round bar. There are two grades; A and B which denote tensile strength, configuration, and application. Grade A has a minimum tensile strength of 60 ksi. Grade B has a minimum tensile strength of 60 ksi and a maximum of 100 ksi.

**A193-B7** - covers ate and tempered alloy steel and bolting materials for high temperature or high pressure service. This specification includes fasteners intended for use in pressure vessels, valves, flanges, and fittings and is commonly specified in the oil and gas industry. This material is often available in national coarse (UNC) thread pitches. Traditional applications, threads are specified with 8 threads per inch (tpi) for diameters above one inch.

**A193 B8** - Class 1 Stainless steel is commonly manufactured from AISI 304 material that has been carbide solution treated. B8 Class 2 Stainless steel has also been strain hardened. Minimum yield strength of 30 KSI and tensile strength of 75 KSI.

**A193 B8M** - Class 1 Stainless steel is commonly manufactured from AISI 316 material that has been carbide solution treated. B8M Class 2 Stainless steel has also been strain hardened. Yield strength of 30 KSI and tensile strength 75 KSI.

**A193 B16** - Mn-Cr-Mo-V grade for bolting applications requiring higher resistance than B7 to thermal softening at elevated temperatures.

**ASTM F1554** - covers anchor bolts and studs designed to anchor structural supports to concrete foundations. F1554 anchor bolts can take the form of either headed bolts, straight rods, or bent anchor bolts. The three grades 36, 55, and 105 designate the minimum yield strength (ksi) of the anchor bolt (ex: Grade 36 minimum yield strength is 36,000 PSI). The bolts can be either cut or roll threaded and a weldable grade 55 can be substituted for grade 36 at the supplier's option. Applications for F1554 anchor bolts include columns in structural steel framed buildings,traffic signal and street lighting poles, and overhead highway sign structures to name just a few.

**ASTM A242 and A588** - cover high strength, low-alloy structural steel shapes, plates, and bars with improved atmospheric corrosion resistance that is intended for riveted, bolted, or welded construction. When properly exposed to the atmosphere, this steel is suitable for many applications in the bare/unpainted condition. These grades can also be used in the quench and tempered condition in A449 Type 3.

**A449** - covers (medium carbon) quenched and tempered bolts and studs for general engineering use. A449 threaded rod is available in diameters /2" - 4" and is commonly used in the highway and commercial construction industries. A449 can be purchased in both plain oil and HDG finishes. Type 1 is furnished using a medium carbon or alloy steel. Type 3 requires a weathering steel such a A242/A588.

**A354** - specification covers the chemical and mechanical requirements of quenched and tempered alloy steel bolts, studs, and other externally threaded fasteners 4" and smaller in diameter. There are two levels of bolting strength covered, designated Grades BC and BD.

**A354 Gr BD** - bolts are higher in strength than A354 Gr BC and equal in strength to ASTM A490 bolts. Unlike ASTM A490 however, the A354 BD specification is unrestricted in its configuration. Since A490 bolts are heavy hex structural bolts and do not exceed 1-1/2" diameter, specification A354 BD should be considered for anchor bolts, threaded rods, other styles of headed bolts and bolts larger than 1-1/2" diameter where similar mechanical properties are desired. A354 Gr BD does not require a magnetic particle test as is required by the A490 specification. Research conducted on bolts of similar material and manufacture indicates that hydrogen-stress cracking or stress cracking corrosion may occur on hot-dip galvanized Grade BD bolts.

**A354 Gr BC** - Lower in strength than grade BD but higher ductility requirements.

## Coating Specifications:

**A153** - is the hot dip galvanizing spec for threaded parts. All of our HDG parts are coated to meet this specification. Conquest's hot dip galvanizing can be crossed certified to ASTM F2329 / A123A 123M-02.

**ASTM F2329** - covers the requirements for hot-dip zinc coating applied to carbon steel and alloy steel bolts, screws, washers, nuts, and special threaded fasteners applied by the hot-dip coating process. It is intended to be applicable to fasteners that are centrifuge or otherwise handled to remove excess zinc. This specification was developed as a fastener specific standard in 2005, and is slowly replacing ASTM A153 as each individual fastener standard is updated.

**ASTM A123** - is a related hot-dip galvanizing specification covering iron and steel products made from rolled pressed and forged shapes, castings, plates, bars and strips.

**ASTM F1941** - is the standard specification for electrodeposited coatings on threaded fasteners. Conquest supplies low carbon and other grades of rod to the following: Fe/Zn (designating Zinc as the coating), 3 (designating the Coating thickness) and AT (Trivalent Clear Chromate) and C for (Hexavalent Yellow Chromate). Note: It is common to hear the term "electro-galvanized zinc'. It is important to make the distinction between zinc plating (electrodeposited to the F1941 specification) and Hot-dip galvanized (to A153/F2329).