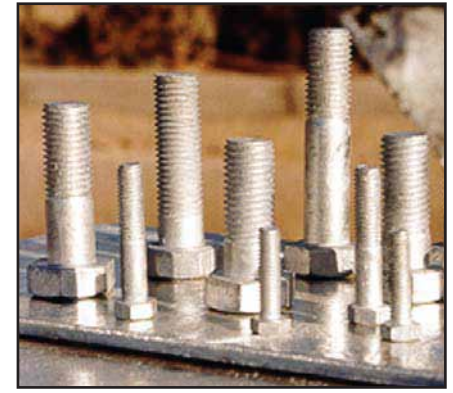


**Q:** Is there any specific information on the overtapping allowances necessary for hot-dip galvanized steel products?

**A:** Hot-dip galvanized (HDG) steel has a corrosion inhibiting, abrasion resistant zinc coating that increases the thickness of threaded products. To accommodate the increase in thickness of the stud or bolt, any female threads/nuts must be overtapped. In order to permit proper assembly, the recommended increase in the pitch diameter of female threads or nuts is documented in *Table 1*. The values listed in the table were determined by ASTM and are listed in Table 5 of the specification ASTM A 563 (*Standard Specification for Carbon and Alloy Steel Nuts*).

Most structural nuts are hot-dip galvanized as blanks, and the threads are tapped after galvanizing. Internal threads retapped after galvanizing will no longer have a zinc coating. However, the solid contact with the galvanized male threads provides sufficient cathodic protection and creates adequate durability in the threaded hole or the nut.

The galvanizer is responsible to ensure all threaded products are usable and meet the ASTM A 153 specification. All



threaded products must have clean threads that allow for proper assembly. The most common method for removal of excess zinc from fasteners is the centrifuging process. Large fasteners with male threads that cannot be centrifuged may have a thick zinc coating and may need to be manually cleaned. In addition, any studs welded to assemblies may need to be cleaned of any excess zinc. These products can be wire brushed while hot after galvanizing to reduce coating thickness in the threads.

**Table 1: Thread Dimensions and Overtapping Allowances for Nuts**

Nominal Female Thread or Nut Size (in.)	Diametral Allowance (in.)	Pitch Diameter: Minimum Increase (in.)	Pitch Diameter: Maximum Increase (in.)
0.250	0.016	0.2335	0.2384
0.500	0.018	0.4680	0.4745
0.750	0.020	0.7050	0.7127
1.000	0.024	0.9428	0.9516
1.250	0.024	1.1812	1.1908
1.500	0.027	1.4187	1.4292
1.750	0.050	1.6701	1.6817
2.000	0.050	1.9057	1.9181
2.500	0.050	2.3876	2.4011
2.750	0.050	2.6376	2.6513
3.000	0.050	2.8876	2.9015
3.250	0.050	3.1376	3.1517
3.500	0.050	3.3876	3.4019
3.750	0.050	3.6376	3.6521
4.000	0.050	3.8876	3.9023