



ASTM A354

Scope - This specification covers the chemical and mechanical requirements of quenched and tempered alloy steel bolts, studs, and other externally threaded fasteners covering two strength levels, 4" diameter and smaller.

| | | |
|---------------|---------|------------------------------------|
| Grades | A354 BC | Alloy Steel, quenched and tempered |
| | A354 BD | Alloy Steel, quenched and tempered |

| Mechanical Properties | Grade | Markings | Size | Tensile, ksi, min | Yield, ksi, min | Elong, %, min | RA, %, min | Hardness |
|------------------------------|-------|----------|----------|-------------------|-----------------|---------------|------------|----------|
| | BC | BC | ¼ to 2-½ | 125 | 109 | 16 | 50 | C26-C36 |
| | | | 2-⅝ to 4 | 115 | 99 | 16 | 45 | C22-C33 |
| | BD | BD | ¼ to 2-½ | 150 | 130 | 14 | 40 | C33-C39 |
| 2-⅝ to 4 | | | 140 | 115 | 14 | 40 | C33-C39 | |

| Recommended Mating Materials | Element | Sizes ¼ to 1-½ | Sizes above 1-½ |
|-------------------------------------|-----------------|----------------|-----------------|
| | Carbon | 0.30 – 0.53 | 0.35 – 0.53 |
| | Phosphorus, max | 0.035 | 0.035 |
| | Sulfur, max | 0.04 | 0.05 |

| Recommended Mating Materials | Nuts | | | Washers |
|-------------------------------------|-----------------|-------------------|------------------|----------------|
| | Grade BC | | Grade BD | |
| | Plain | Galvanized | Plain | |
| | A563C Heavy Hex | A563DH Heavy Hex | A563DH Heavy Hex | |