

STEEL GRADE COMPARISON & FACT SHEET

STEEL STANDARDS

ASTM A252

STEEL PIPE PILES 

ASTM A500

GRADES B&C 

CSA G40.21

METRIC 350W 

| DESCRIPTION | ASTM A252 | ASTM A500 | CSA G40.21 |
|--------------|---|--|---|
| DESCRIPTION | Standard specification for welded and seamless steel pipe piles | Standard specification for cold-formed welded and seamless carbon steel structural tubing in rounds and shapes | General requirements for rolled welded structural quality steel |
| INTENDED USE | Steel pipe piles of cylindrical shape, in which the steel cylinder acts as a permanent load-carrying member, or as a shell to form cast-in-place concrete piles | Welded, riveted or bolted construction of bridges and buildings, and for general structural purposes | General specification for plates, shapes, hollow sections, sheets, sheet piling, cold-formed channels and bars used in construction |

TECHNICAL INFORMATION

| SPECIFICATIONS | ASTM A252 | ASTM A500 | CSA G40.21 | | |
|--------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Strength Levels | Grade 2 | Grade 3 | Grade B | Grade C | 50W/350W |
| Yield Strength | 35,000 psi min. | 45,000 psi min. | 42,000 psi min. | 46,000 psi min. | 50,000 psi min. |
| Tensile Strength | 60,000 psi min. | 66,000 psi min. | 58,000 psi min. | 62,000 psi min. | 65-95,000 psi |
| Elongation % in 2" Min. | 25 | 20 | 23 | 21 | 22 |

| CHEMISTRY LEVELS | ASTM A252 | ASTM A500 | CSA G40.21 | |
|--------------------------------|-------------------|----------------|----------------|-----------------|
| | All Grades | Grade B | Grade C | 50W/350W |
| Carbon | N/A | .26 max. | .23 max. | .23 max. |
| Manganese | N/A | 1.35 max. | 1.35 max. | 0.50-1.50 |
| Phosphorus | .050 max. | .035 max. | .035 max. | .040 max. |
| Sulphur | N/A | .035 max. | .035 max. | .050 max. |
| Silicon | N/A | N/A | N/A | .40 max. |
| Grain Refining Elements | N/A | N/A | N/A | .10 max. |

| TOLERANCES | ASTM A252 | ASTM A500 | CSA G40.21 |
|------------------------------------|-------------------|-----------------------------|-----------------------------|
| | All Grades | All Grades | 50W/350W |
| OD Size | | | |
| > 1.9-2.5 incl. | +/- 1% | +/- 0.75% | +/- 0.20% |
| > 2.5-3.5 incl. | +/- 1% | +/- 0.75% | +/- 0.30% |
| > 3.5-5.5 incl. | +/- 1% | +/- 0.75% | +/- 0.40% |
| > 5.5 | +/- 1% | +/- 0.75% | +/- 1% |
| Wall Thickness | -12.5% | +/- 10% | +10%/-5% |
| Weight | +15%/-5% | Not specified | +10%/-3.5% |
| Straightness (max. allowed) | Not specified | 1/8" x length (in feet) ÷ 5 | 1/8" x length (in feet) ÷ 5 |