



Ancorsteel® 30 HP

Typical Analysis and Properties

Composition (weight %) (w/o)

C	Mo	Mn	O ₂
<0.01	0.35	0.15	0.13

Apparent Density

2.98 g/cm³

Flow Rate

27 s/50g

Micrometers	+250	-250 /+150	-150 /+45	-45
U.S. Standard Mesh	(+60)	(-60 /+100)	(-100 /+325)	(-325)
	Trace	10	65	25

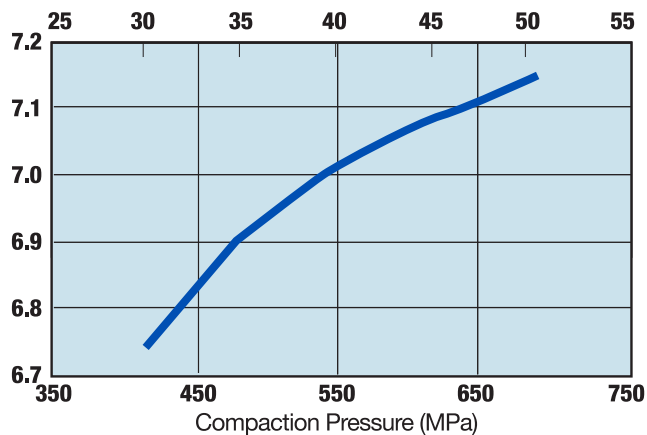
Ancorsteel® 30 HP is a water-atomized, prealloyed low-alloy steel powder for high performance applications. The prealloyed 0.35 weight % (w/o) molybdenum addition results in moderate hardenability, suitable for heat-treated applications.

Ancorsteel 30 HP provides a cost effective complement to other molybdenum prealloyed low-alloy steels.

The Effects of Compaction Pressure on Green Properties

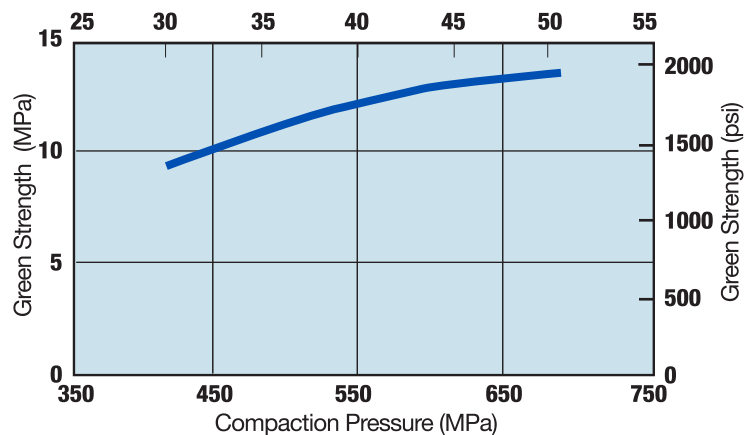
Green Density

0.6 w/o Graphite +0.75 w/o EBS
Compaction Pressure (tsi)



Green Strength

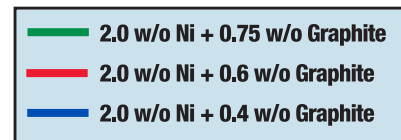
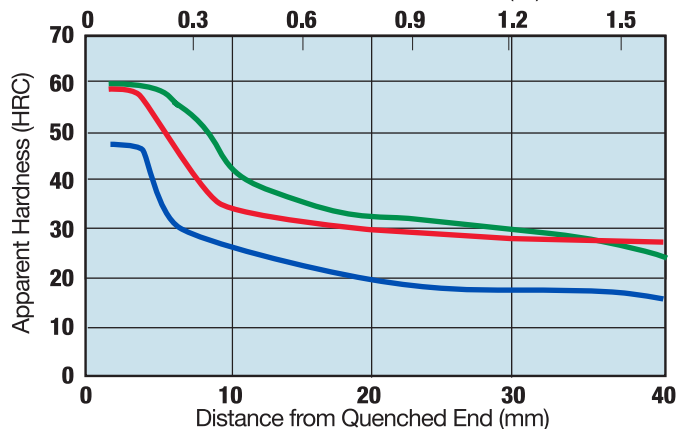
0.6 w/o Graphite +0.75 w/o EBS
Compaction Pressure (tsi)



Hardenability of Ancorsteel 30 HP

Jominy Hardenability

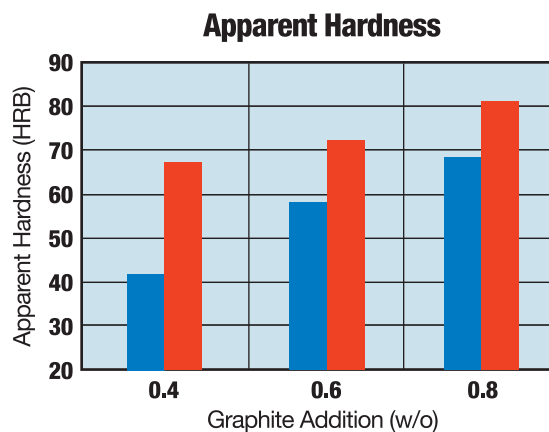
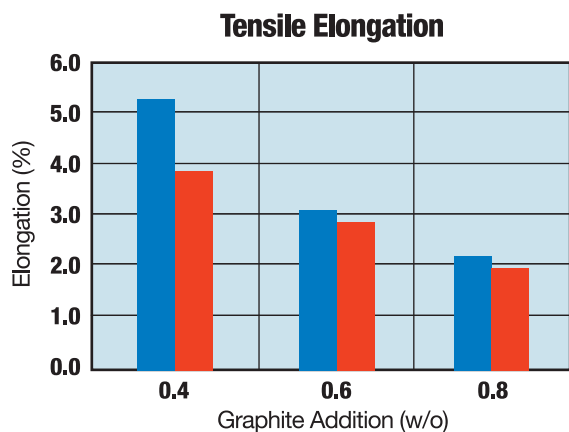
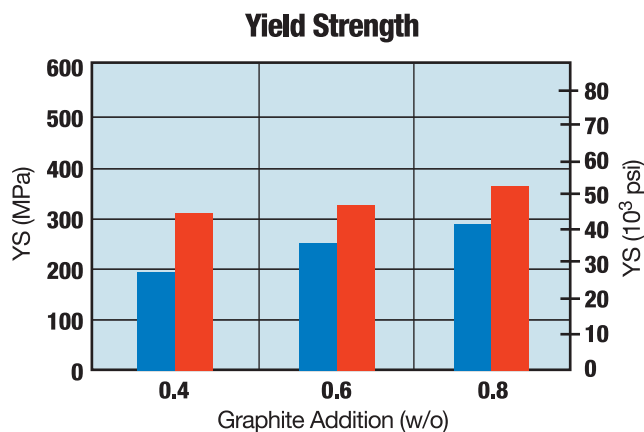
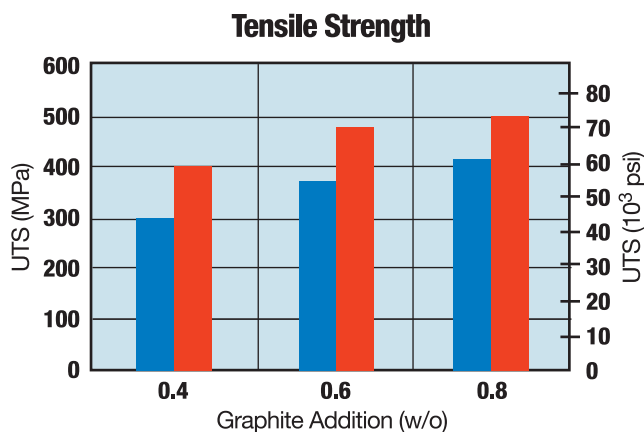
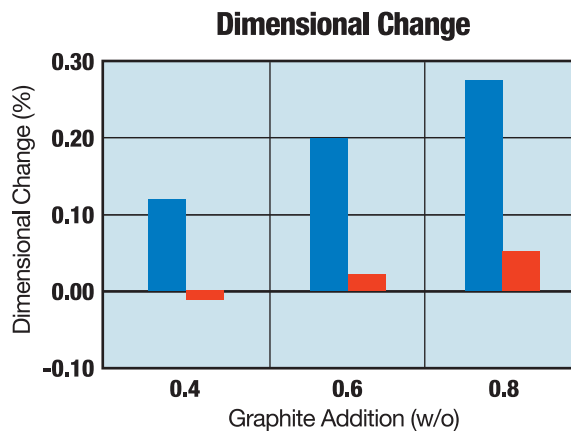
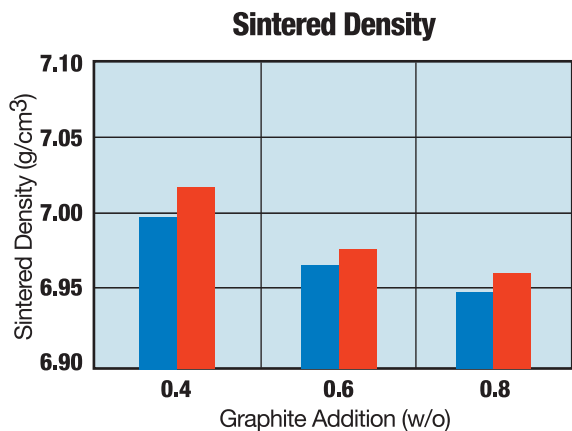
Distance from Quenched End (in.)



Ancorsteel® 30 HP

The Effects of Carbon Content on Sintered Properties

■ Ancorsteel 30 HP
 ■ Ancorsteel 30 HP + 2.0 w/o Ni

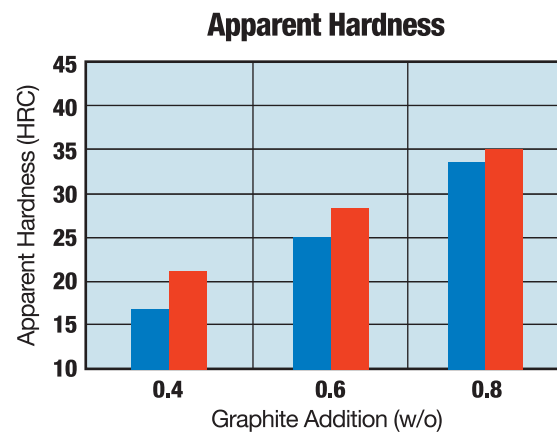
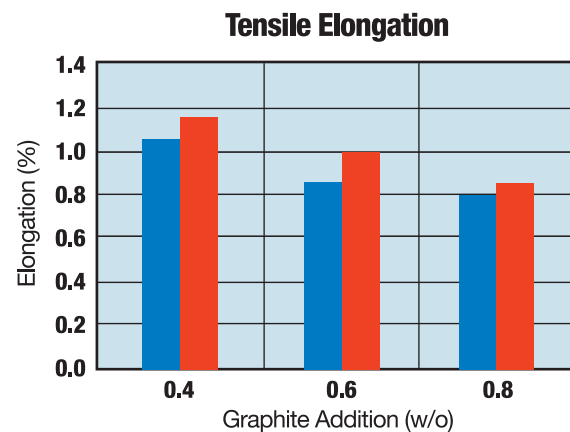
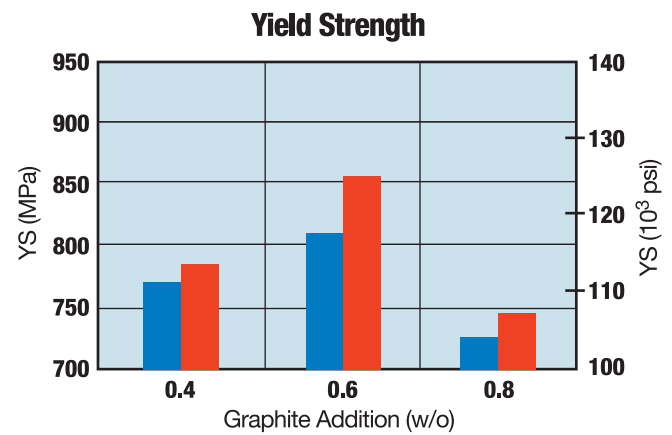
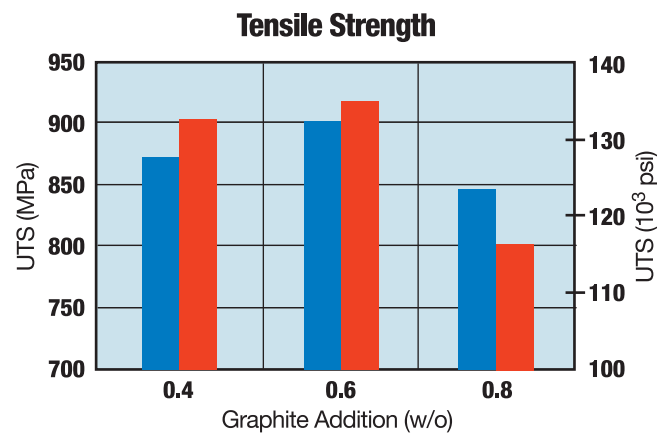
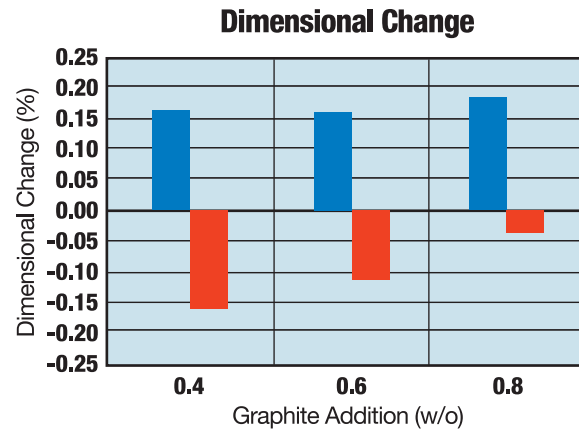
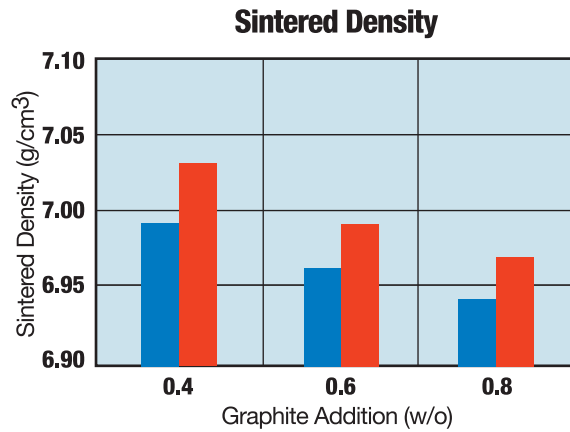


As-sintered test specimens were compacted to 7.0 g/cm³ and sintered at 1120 °C (2050 °F) in 90 v/o N₂ – 10 v/o H₂.

Ancorsteel® 30 HP

The Effects of Carbon Content on Heat-Treated Properties

■ Ancorsteel 30 HP
 ■ Ancorsteel 30 HP + 2.0 w/o Ni

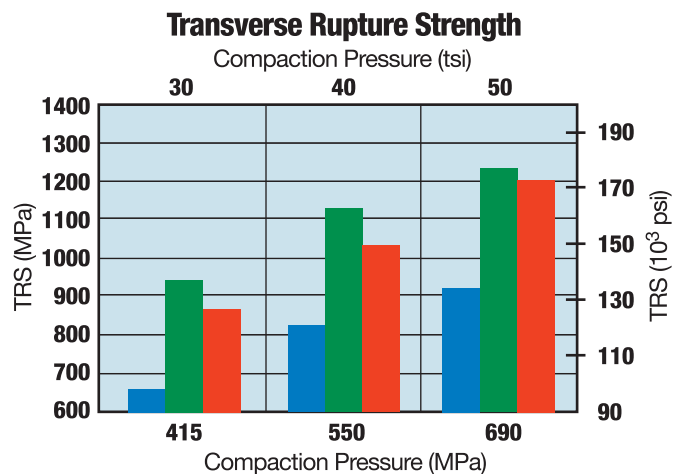
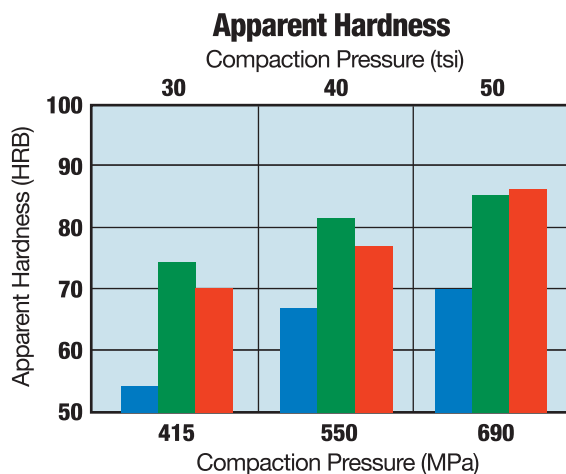
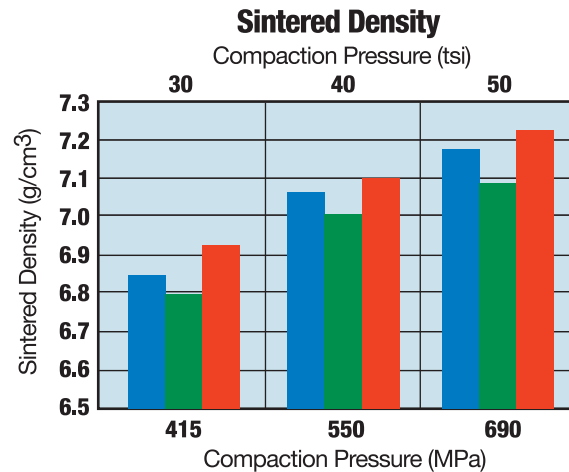
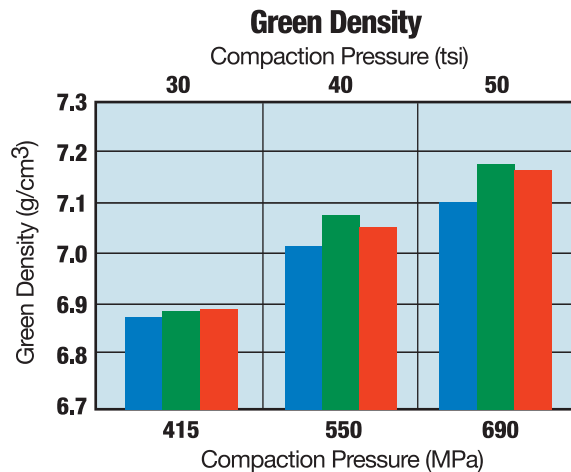


Heat-treated test specimens were compacted to 7.0 g/cm³ and sintered at 1120 °C (2050 °F) in 90 v/o N₂ – 10 v/o H₂, Austenitized at 900 °C (1650 °F) and oil quenched, tempered at 200 °C (400 °F).

Ancorsteel® 30 HP

The Effects of Compaction Pressure on Sintered Properties

- Ancorsteel 30 HP + 0.6 w/o Graphite
- Ancorsteel 30 HP + 0.6 w/o Graphite + 2.0 w/o Cu
- Ancorsteel 30 HP + 0.6 w/o Graphite + 2.0 w/o Ni

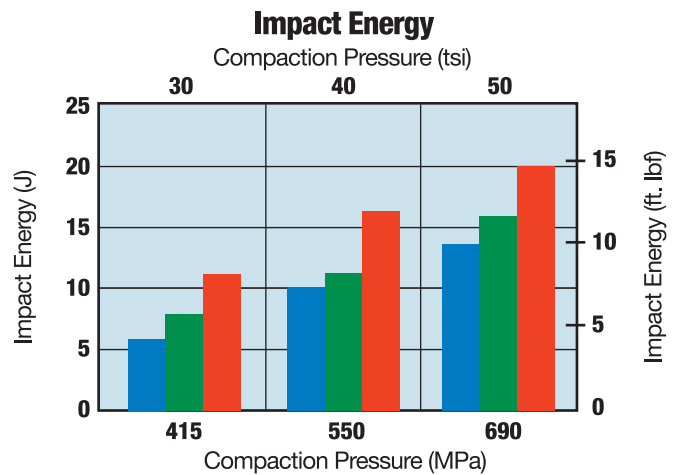
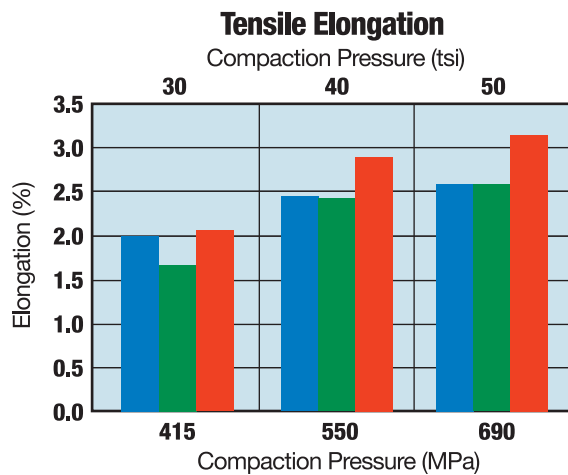
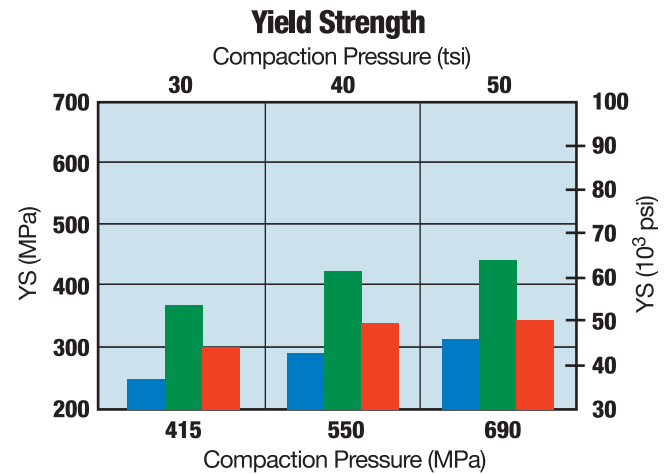
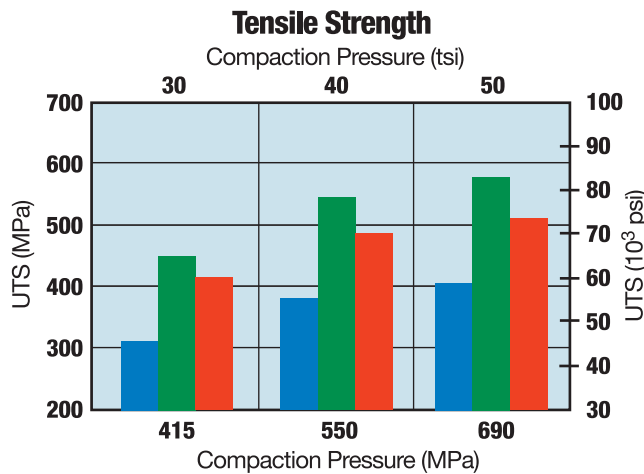


As-sintered test specimens were compacted to 7.0 g/cm³ and sintered at 1120 °C (2050 °F) in 90 v/o N₂ – 10 v/o H₂.

Ancorsteel® 30 HP

The Effects of Compaction Pressure on Sintered Properties (continued)

- Ancorsteel 30 HP + 0.6 w/o Graphite
- Ancorsteel 30 HP + 0.6 w/o Graphite + 2.0 w/o Cu
- Ancorsteel 30 HP + 0.6 w/o Graphite + 2.0 w/o Ni

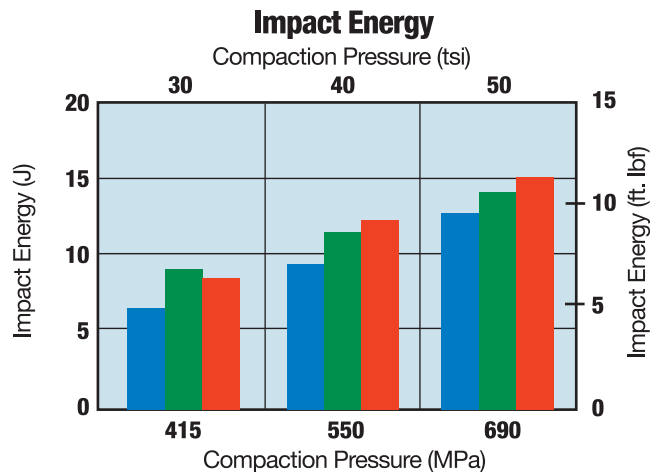
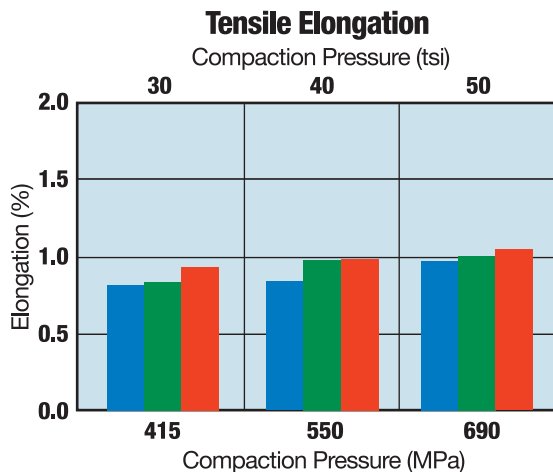
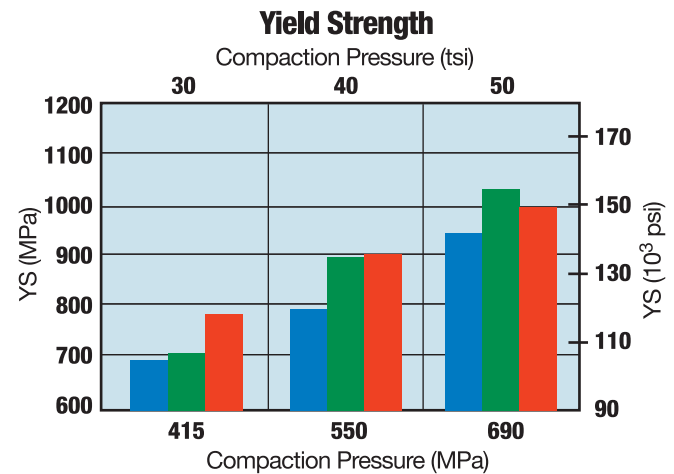
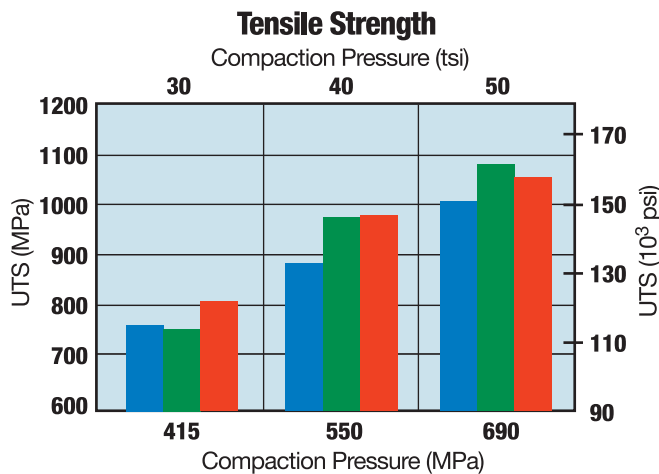
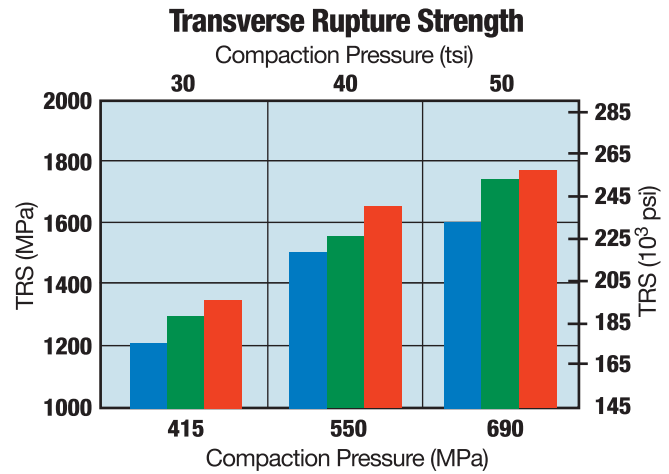
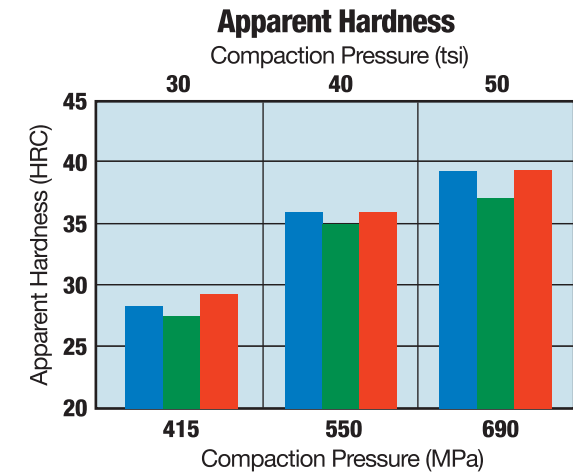


As-sintered test specimens were sintered at 1120 °C (2050 °F) in 90 v/o N₂ – 10 v/o H₂.

Ancorsteel® 30 HP

The Effects of Compaction Pressure on Heat-Treated Properties

- Ancorsteel 30 HP + 0.6 w/o Graphite
- Ancorsteel 30 HP + 0.6 w/o Graphite + 2.0 w/o Cu
- Ancorsteel 30 HP + 0.6 w/o Graphite + 2.0 w/o Ni

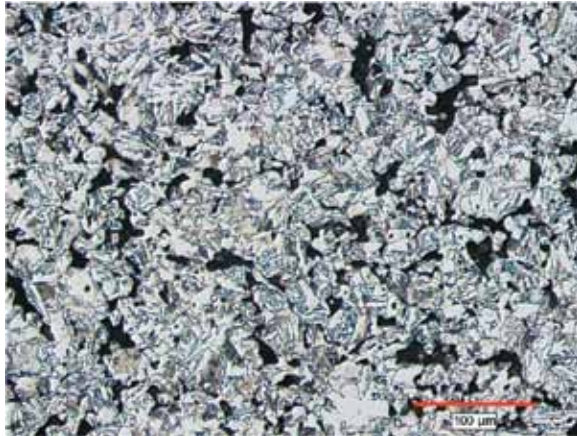


Heat-treated test specimens were sintered at 1120 °C (2050 °F) in 90 v/o N₂ -10 v/o H₂, Austenitized at 900 °C (1650 °F) and oil quenched, tempered at 200 °C (400 °F).

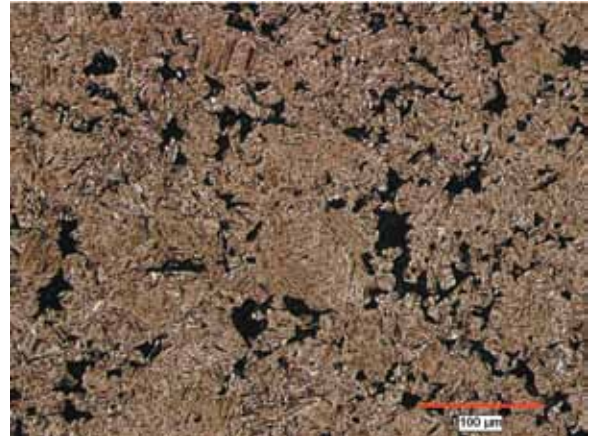
Ancorsteel® 30 HP

Typical Etched Microstructure

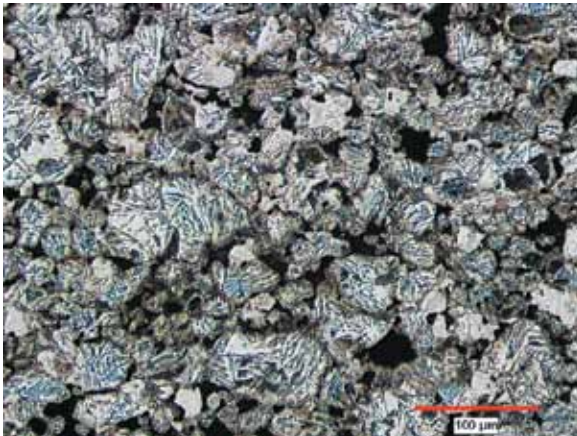
0.6 w/o Graphite — As-Sintered



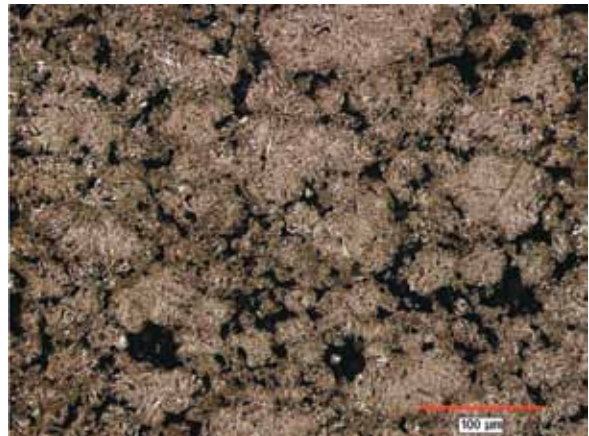
0.6 w/o Graphite — Heat-Treated



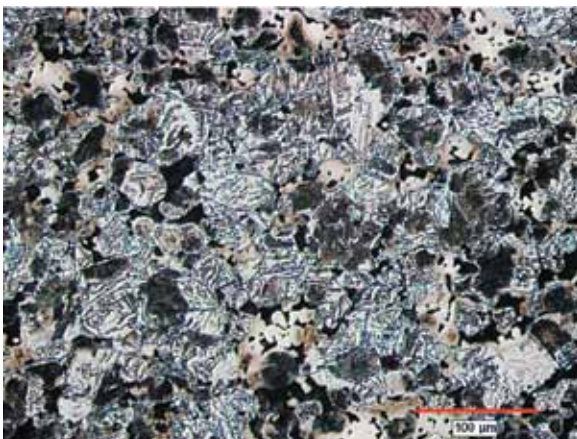
2.0 w/o Cu + 0.6 w/o Graphite — As-Sintered



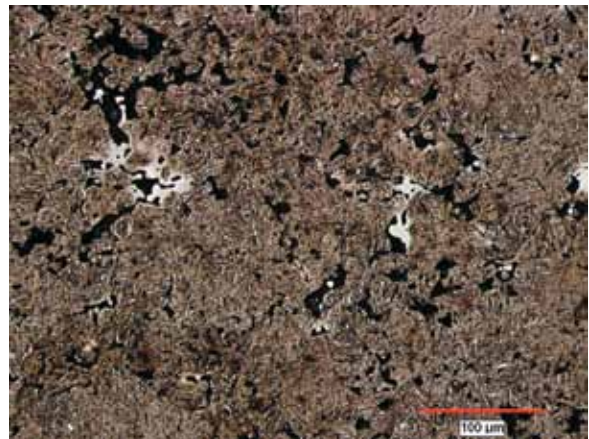
2.0 w/o Cu + 0.6 w/o Graphite — Heat-Treated



2.0 w/o Ni + 0.6 w/o Graphite — As-Sintered



2.0 w/o Ni + 0.6 w/o Graphite — Heat-Treated



Optical photomicrographs etched with 2% nital / 4% picral solution. 200 X original magnification.