HOEGANAES

Ancorsteel® DWP200

Ancorsteel® DWP200 *is a water atomized low apparent density powder for structural applications. The atomizing process imparts a more irregular spongy morphology to the powder particles giving DWP 200 a superior combination of green strength and compressibility to other atomized powders.*

Typical Analysis and Properties

Composition (weight %)(w/o)

Fe	Carbon	Si	Oxygen	S
Balance	0.01	0.02	0.15	0.015

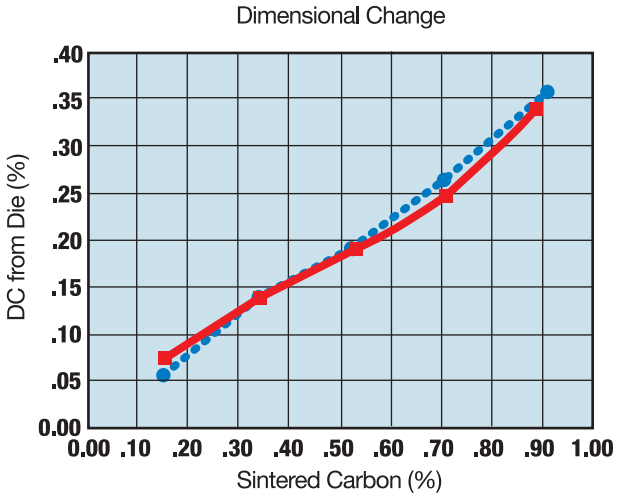
Apparent Density	Flow
2.55 g/cm^3	32 s/50 g

Sieve Distribution (weight %)

Micrometers	+250	-250/+150	-150/+45	-45
U.S. Standard Mesh	(+60)	-60/+100	(-100/+325)	(-325)
	Trace	16	73	11

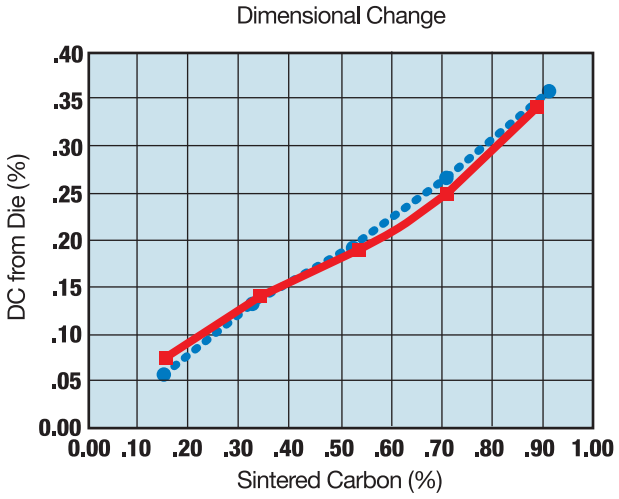
Effect of Carbon Content on Sintered Properties

0.5% EBS lubricant, compacted to 7.0 g/cm^3 green density



Effect of Graphite on Sintered Properties

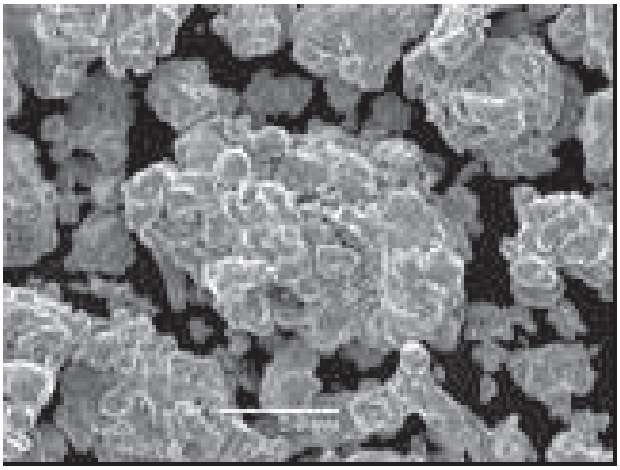
0.75% EBS, 7.0 g/cm^3, Sinter 1120 °C, 90% Hydrogen /10% Hydrogen



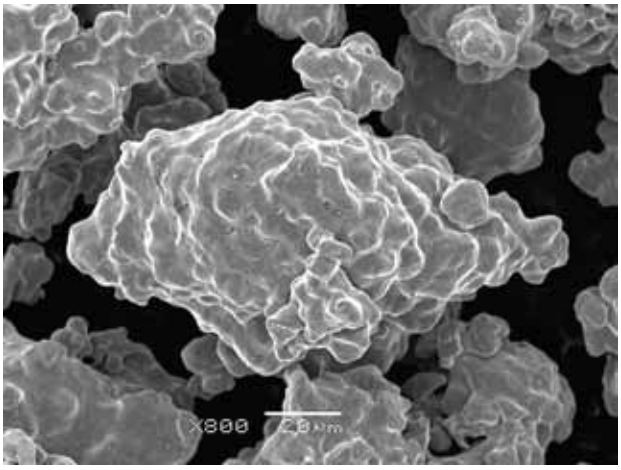
NORTH AMERICA Cinnaminson, NJ: +1-856-829-2220, **shelton.clisby@hoeganaes.com**
EUROPE Buzau, Romania: +40 238 403004, **Cristina.Diaconu@hoeganaes.com**
ASIA Jiangsu, China: +86 138 1842 8736, **Chao.Kuang@hoeganaes.com**

Ancorsteel® DWP200

SEM Photomicrographs of Iron Powders



Ancorsteel DWP200

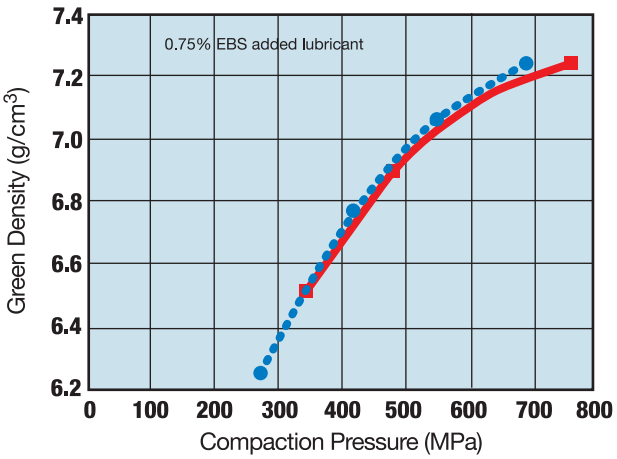


Ancorsteel 1000

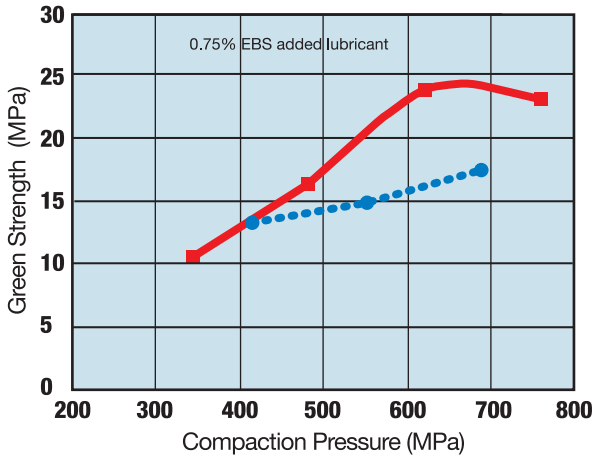
The Effects of Compaction Pressure on Green Properties

0.75% ethylene bis-stearamide (EBS)

Green Density



Green Strength



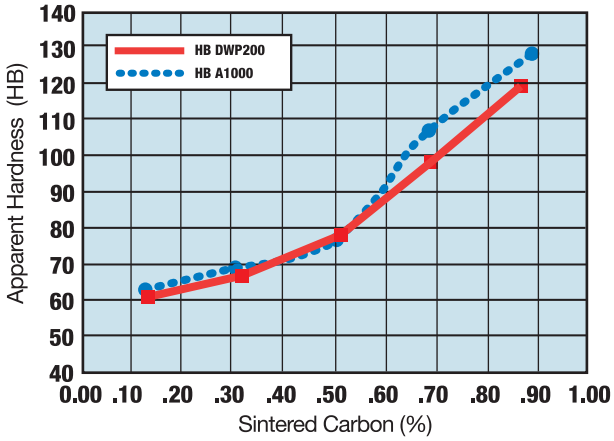
Ancorsteel 1000 graphite
Ancorsteel DWP200 graphite

IMPORTANT NOTICE: *The data shown are based on laboratory processing standard test specimens. Results may vary from that obtained in production processing.*

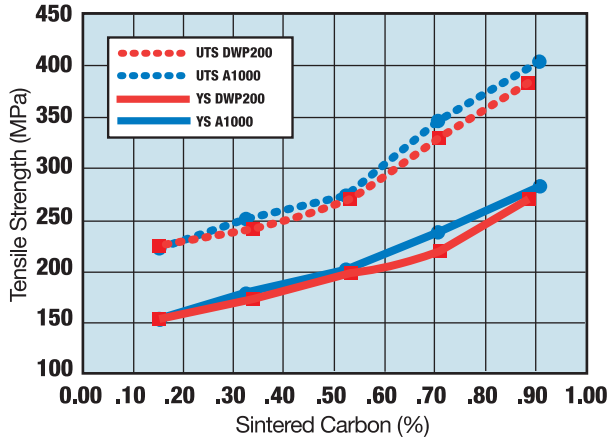
NORTH AMERICA Cinnaminson, NJ: +1-856-829-2220, **shelton.clisby@hoeganaes.com**
EUROPE Buzau, Romania: +40 238 403004, **Cristina.Diaconu@hoeganaes.com**
ASIA Jiangsu, China: +86 138 1842 8736, **Chao.Kuang@hoeganaes.com**

Ancorsteel® DWP200

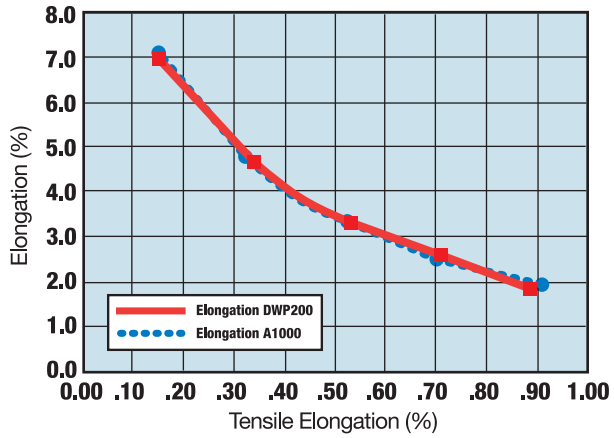
Apparent Hardness



Tensile Strength



Tensile Elongation



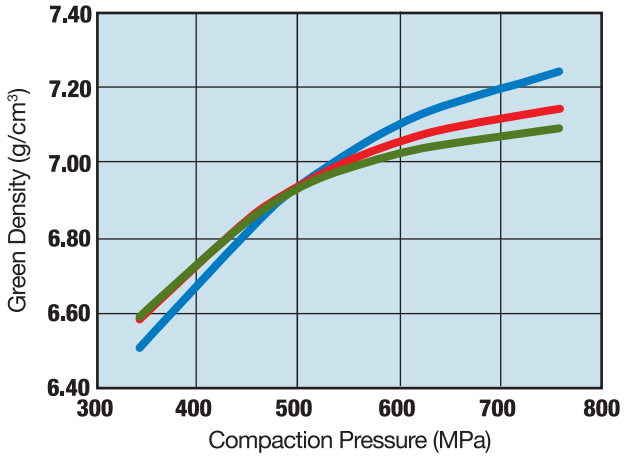
IMPORTANT NOTICE: *The data shown are based on laboratory processing standard test specimens. Results may vary from that obtained in production processing.*

NORTH AMERICA Cinnaminson, NJ: +1-856-829-2220, **shelton.clisby@hoeganaes.com**
EUROPE Buzau, Romania: +40 238 403004, **Cristina.Diaconu@hoeganaes.com**
ASIA Jiangsu, China: +86 138 1842 8736, **Chao.Kuang@hoeganaes.com**

Ancorsteel® DWP200

The Effects of Compaction Pressure on Green Properties

0.75% ethylene bis-stearamide (EBS)



- Ancorsteel DWP200 + 0.9% graphite
- Ancorsteel DWP200 + 1% Cu + 0.7% graphite
- Ancorsteel DWP200 + 2% Cu + 0.9% graphite

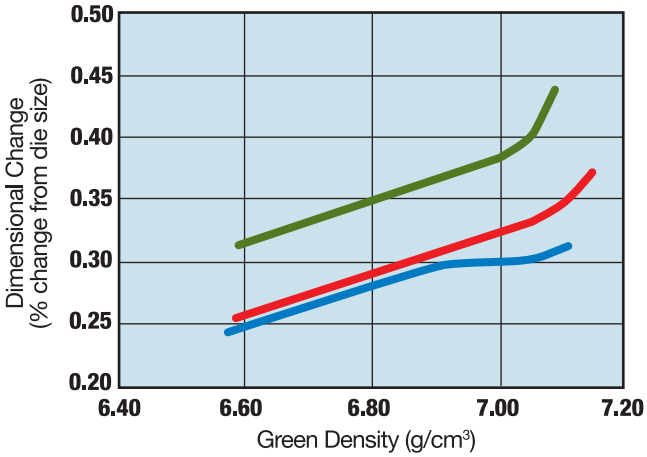
IMPORTANT NOTICE: *The data shown are based on laboratory processing standard test specimens. Results may vary from that obtained in production processing.*

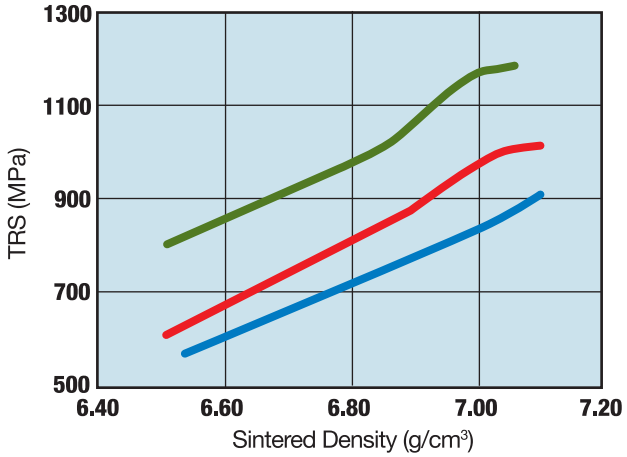
NORTH AMERICA Cinnaminson, NJ: +1-856-829-2220, **shelton.clisby@hoeganaes.com**
EUROPE Buzau, Romania: +40 238 403004, **Cristina.Diaconu@hoeganaes.com**
ASIA Jiangsu, China: +86 138 1842 8736, **Chao.Kuang@hoeganaes.com**

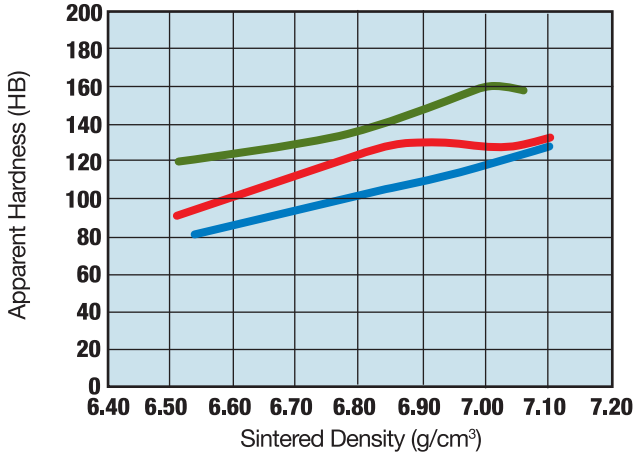
Ancorsteel® DWP200

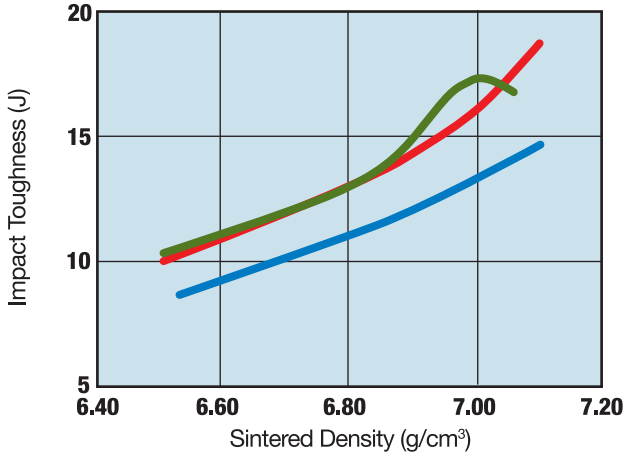
Sintered Properties

Composition: All mixes contain 0.75 w/o ethylene bis-stearamide (EBS)
Sintered in 90% Nitrogen - 10% Hydrogen atmosphere at 1120 ºC for 30 minutes









Ancorsteel DWP200 + 0.9% graphite
Ancorsteel DWP200 + 1% Cu + 0.7% graphite
Ancorsteel DWP200 + 2% Cu + 0.9% graphite

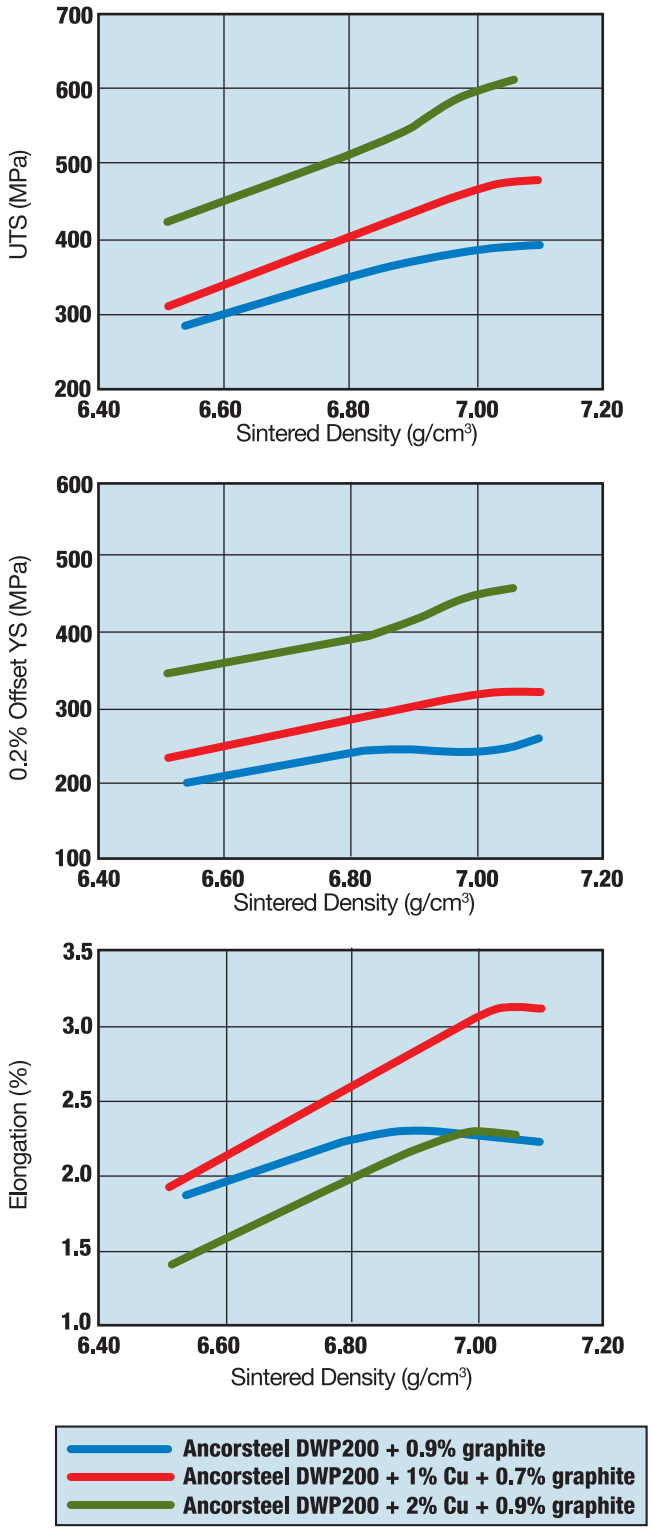
IMPORTANT NOTICE: *The data shown are based on laboratory processing standard test specimens. Results may vary from that obtained in production processing.*

NORTH AMERICA Cinnaminson, NJ: +1-856-829-2220, **shelton.clisby@hoeganaes.com**
EUROPE Buzau, Romania: +40 238 403004, **Cristina.Diaconu@hoeganaes.com**
ASIA Jiangsu, China: +86 138 1842 8736, **Chao.Kuang@hoeganaes.com**

Ancorsteel® DWP200

Sintered Tensile Properties

Composition: All mixes contain 0.75 w/o ethlene bis-stearamide (EBS)
Sintered in 90% Nitrogen - 10% Hydrogen atmosphere at 1120 ºC for 30 minutes



IMPORTANT NOTICE: *The data shown are based on laboratory processing standard test specimens. Results may vary from that obtained in production processing.*

NORTH AMERICA Cinnaminson, NJ: +1-856-829-2220, **shelton.clisby@hoeganaes.com**
EUROPE Buzau, Romania: +40 238 403004, **Cristina.Diaconu@hoeganaes.com**
ASIA Jiangsu, China: +86 138 1842 8736, **Chao.Kuang@hoeganaes.com**