

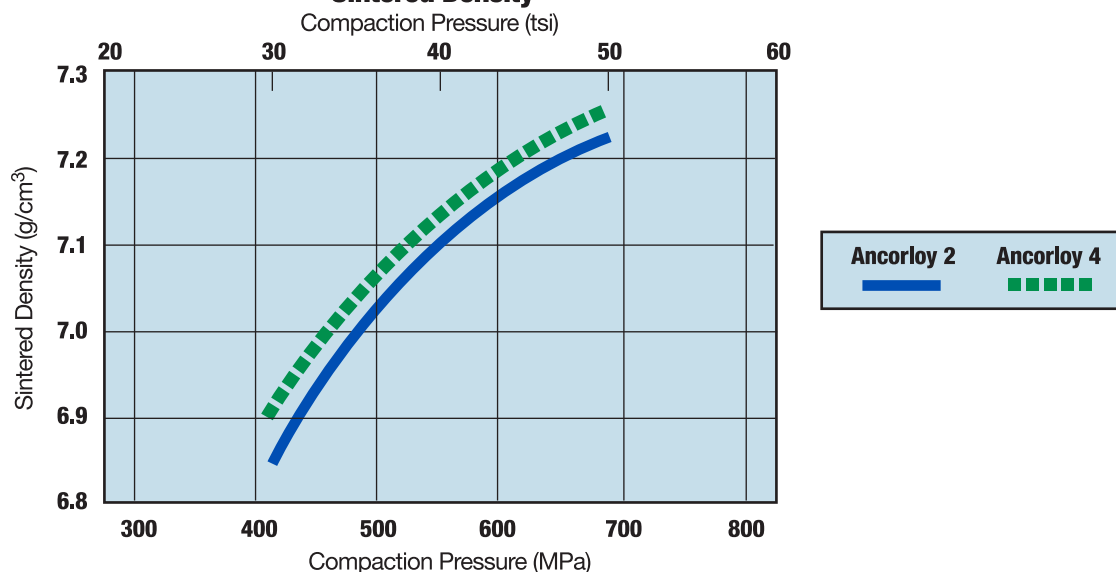
## Ancorloy® 2 Ancorloy® 4

**Ancorloy** is the material designation given to a new product line based on the use of a new Engineered Bonding Technology for high performance applications. Currently there are two products, Ancorloy 2 and Ancorloy 4 in this family. The composition of these binder-treated premixed materials meets the chemical composition limits for the MPIF Material Standard 35 for Material Designations FD-02XX and FD-04XX respectively. The combined carbon level of the finished sintered part can be adjusted through a graphite addition in the premix. Equivalent tensile properties can be achieved with lower graphite additions for the Ancorloy Grades in comparison with the Distaloy 4600A and Distaloy 4800A materials.

### Typical Analysis and Properties

Typical Analysis and Properties	Ancorloy 2	Ancorloy 4
<b>Composition (weight %) (w/o)</b>		
Nickel	1.75	4.0
Copper	1.5	1.5
Molybdenum	0.55	0.55
Apparent Density, g/cm <sup>3</sup>	3.24	3.30
Flow Rate, s/50g	28	27
Compressibility at 410 MPa (30 tsi) g/cm <sup>3</sup>	6.85	6.85
Green Strength, MPa (psi)	7.2 (1050)	7.2 (1050)

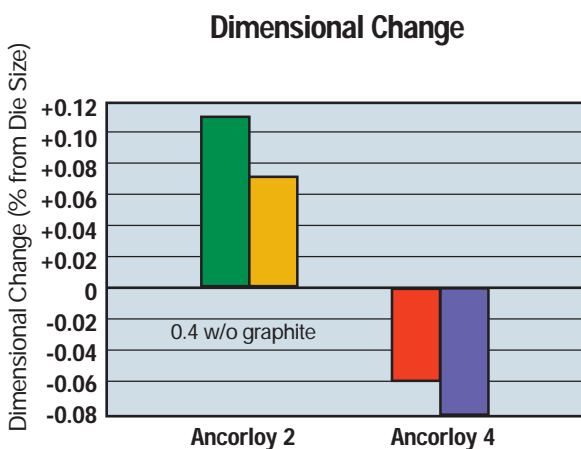
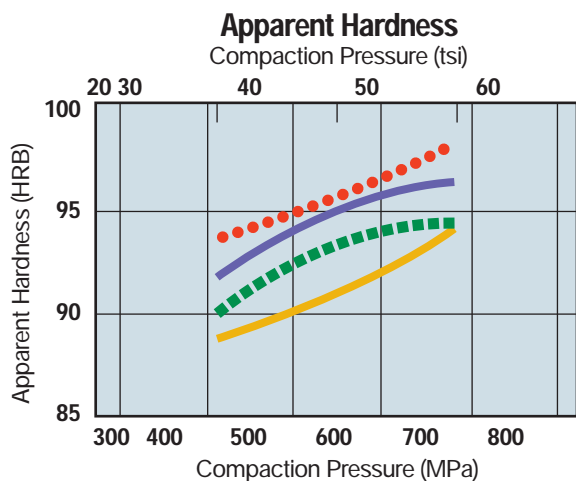
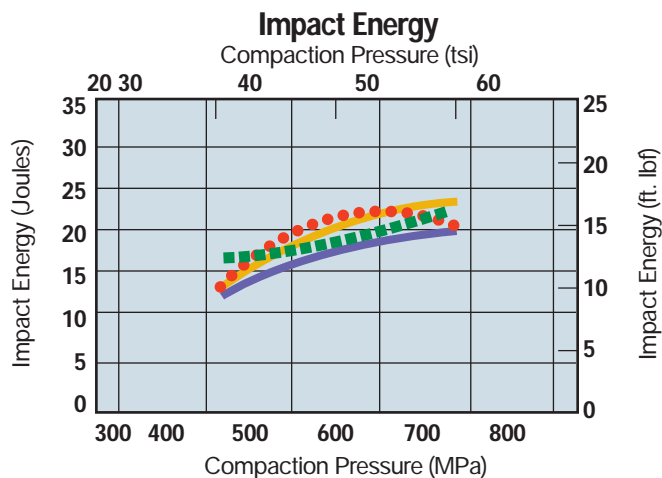
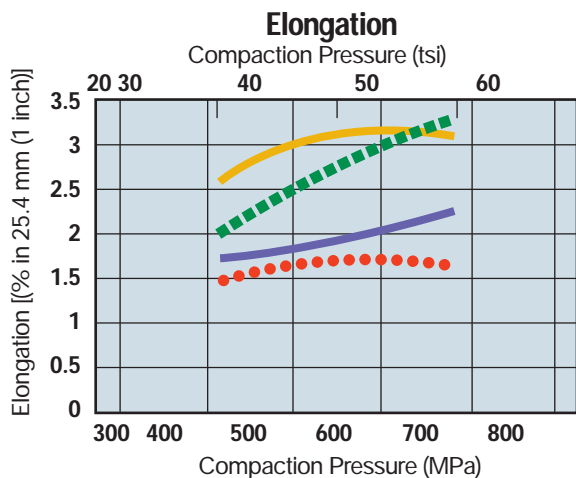
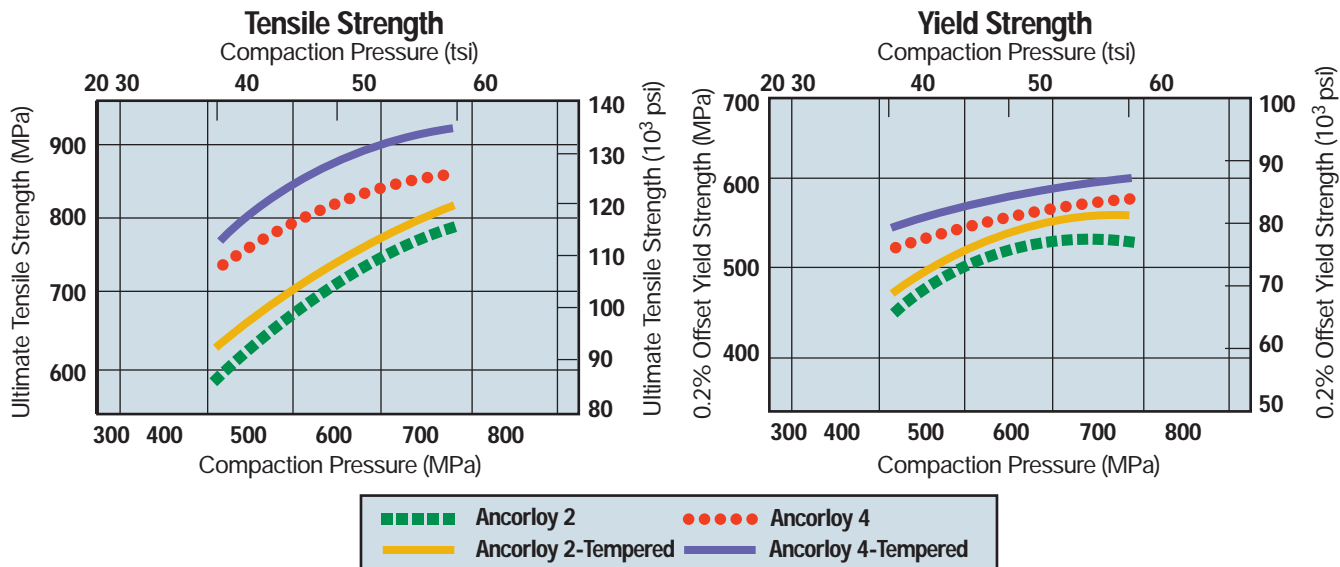
### The Effects of Compaction Pressure on the Density of Sintered Compacts



# Data Sheet

## Ancorloy 2/Ancorloy 4

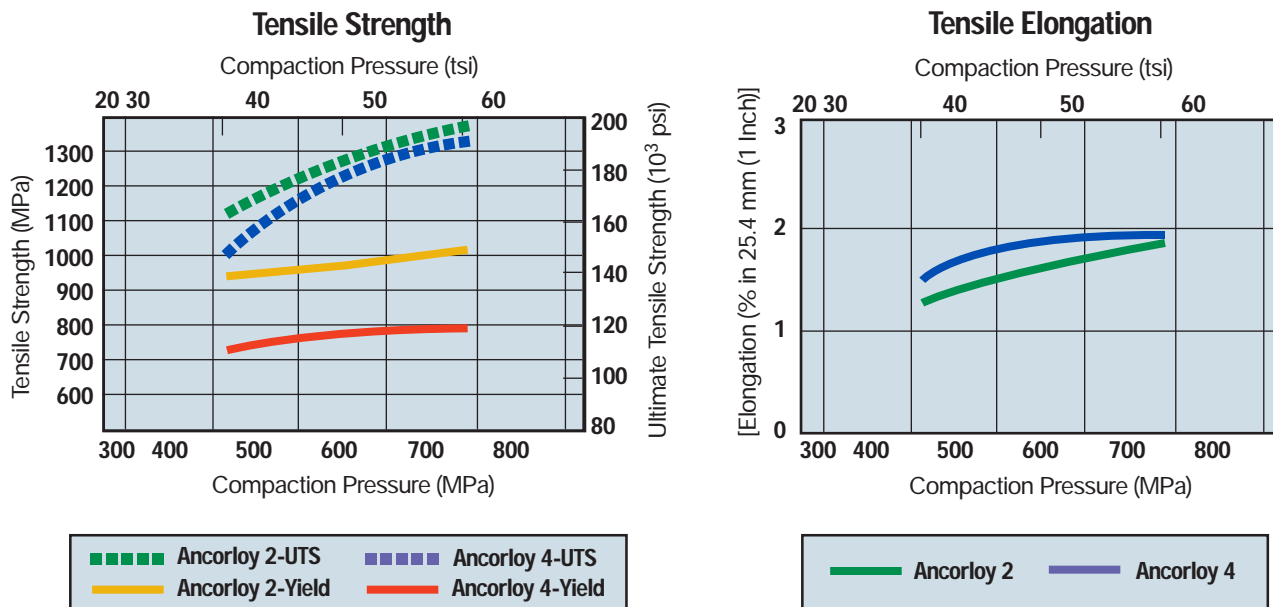
### The Effects of Compaction Pressure on the Mechanical Properties



All test specimens were prepared with 0.6 w/o graphite and were sintered in a 75 v/o Nitrogen-25 v/o Hydrogen gas furnace atmosphere for 30 minutes at a temperature of 1120°C (2050°F). Tempering was done in air at a temperature of 200°C (400°F) for one hour.

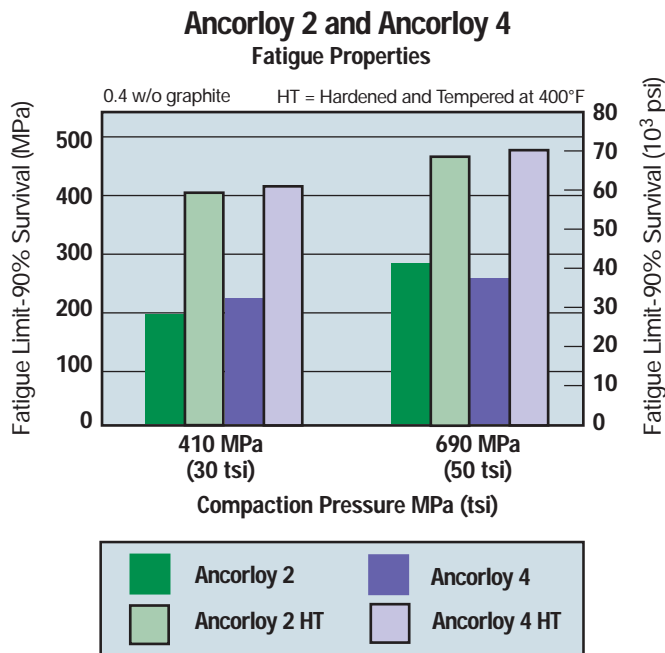
## Ancorloy 2/Ancorloy 4

### The Effects of Compaction Pressure on the Heat Treated Tensile Properties



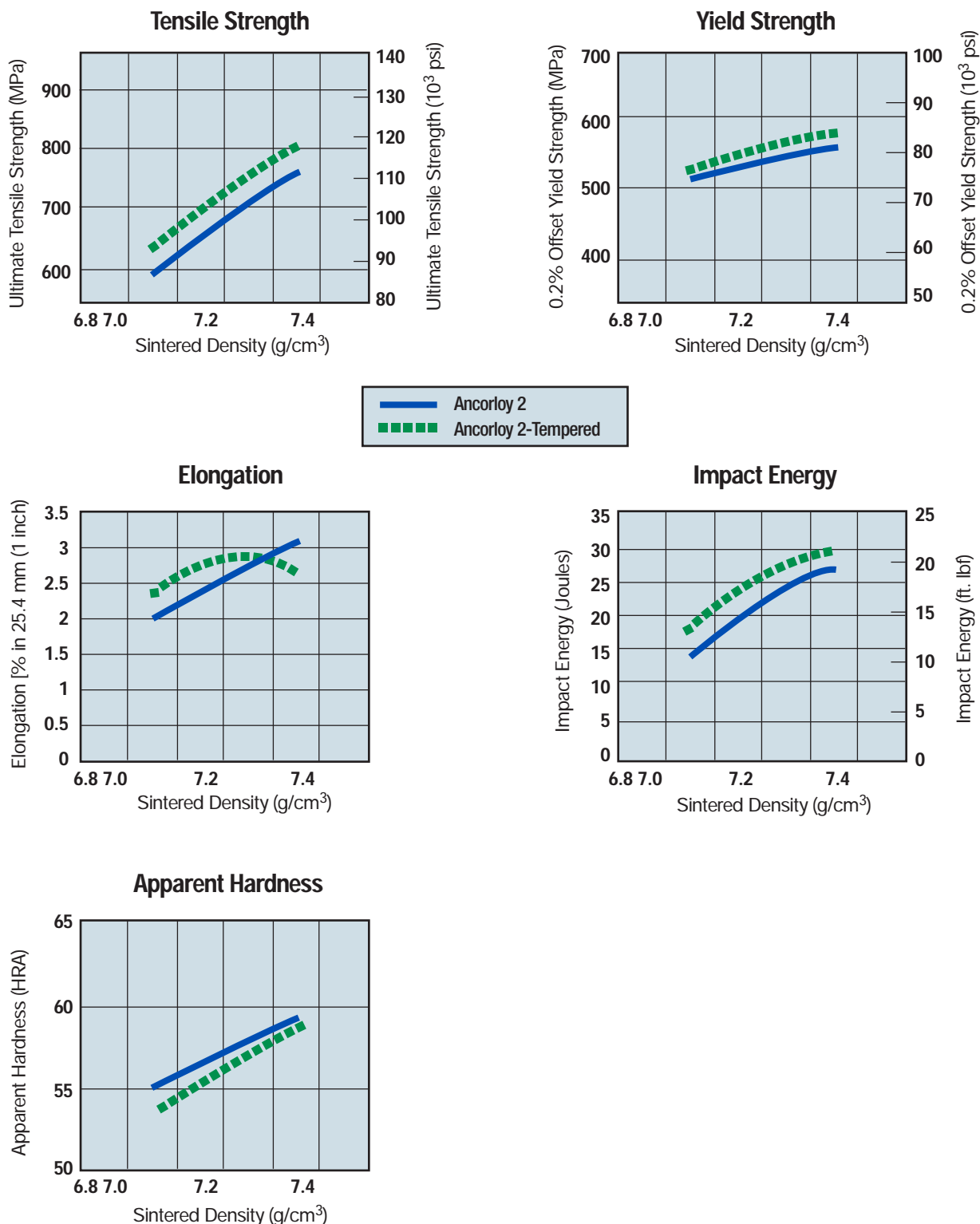
All test specimens were prepared with 0.6 w/o graphite and were sintered in a 75 v/o Nitrogen 25 v/o Hydrogen gas furnace atmosphere for 30 minutes at a temperature of 1120°C (2050°F). The specimens were austenitized at 870°C (1600°F) for 30 minutes in an endothermic gas atmosphere followed by quenching in oil preheated to 60°C (140°F). Tempering was done in air at a temperature of 200°C (400°F) for one hour.

### The Effects of Compaction Pressure on the Fatigue Properties



# Ancorloy 2/Ancorloy 4

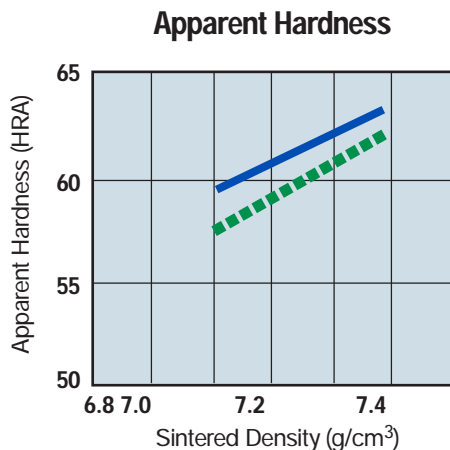
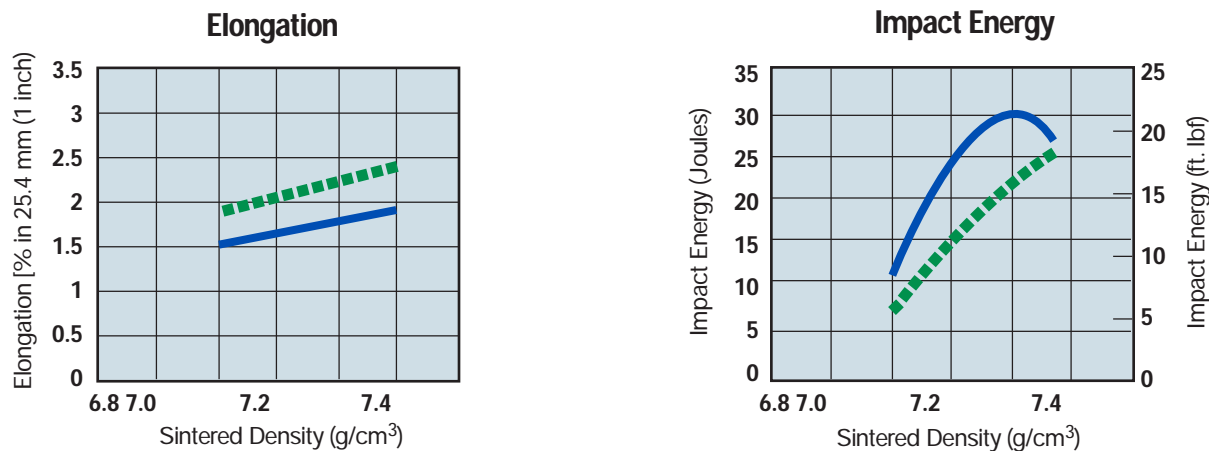
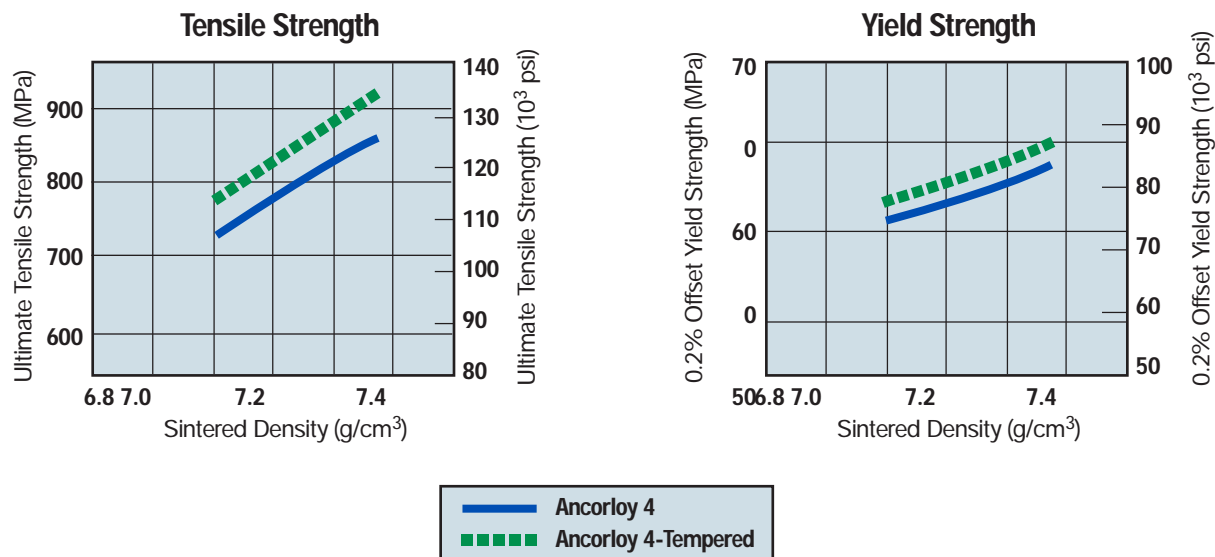
## The Effects of Sintered Density on the Mechanical Properties



All test specimens were prepared with 0.6 w/o graphite and were sintered in a 75 v/o Nitrogen-25 v/o Hydrogen gas furnace atmosphere for 30 minutes at a temperature of 1120°C (2050°F). Tempering was done in air at a temperature of 200°C (400°F) for one hour.

# Ancorloy 2/Ancorloy 4

## The Effects of Sintered Density on the Mechanical Properties



All test specimens were prepared with 0.6 w/o graphite and were sintered in a 75 v/o Nitrogen-25 v/o Hydrogen gas furnace atmosphere for 30 minutes at a temperature of 1120°C (2050°F). Tempering was done in air at a temperature of 200°C (400°F) for one hour.

