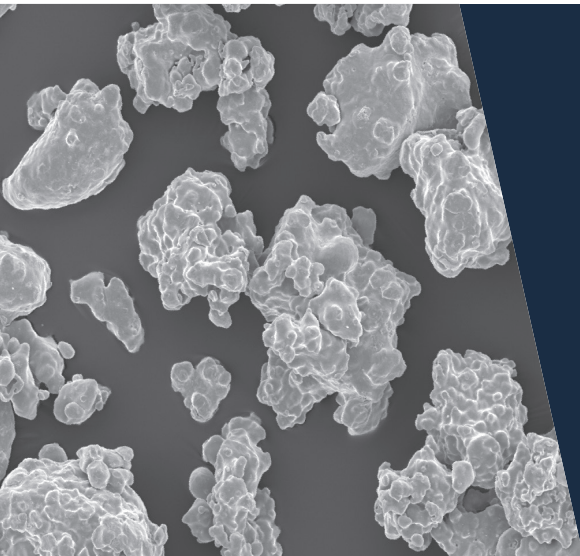


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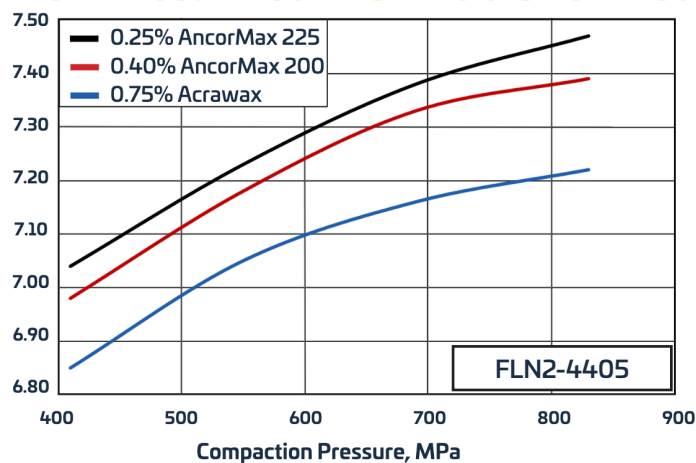
AncorMax®

AncorMax 200 and AncorMax 225 are engineered lubricant-binder systems for high density applications, utilizing low lubricant levels and warm die compaction to achieve high green and sintered density. Both materials offer high green strength and good part ejection characteristics. AncorMax 200 uses a nominal lubricant addition of 0.40% to achieve green densities of 7.25-7.35 g/cm³, while AncorMax 225 uses a nominal lubricant addition of 0.25% to achieve green densities >7.30 g/cm³. AncorMax 225 is the preferred option for heat treated copper steels and sinter-hardened materials. For more detailed discussion on the benefits of AncorMax, please consult with your Hoeganaes account manager.

Key Characteristics of AncorMax 200 and AncorMax 225

Characteristic	AncorMax 200	AncorMax 225
Powder Preheat	No	No
% Lubricant (typical)	0.40	0.25
Part Temperature °C (°F)	85 °C - 96 °C (185 °F - 205 °F)	98 °C - 110 °C (210 °F - 230 °F)
Part Density	7.25 - 7.35 g/cm ³	>7.35 g/cm ³
Green Strength	Greater than 20 MPa (3000 psi)	Greater than 27 MPa (4000 psi)
Materials	Not suitable for heat treated copper steels or sinter hardened applications.	All Materials
Ejection Characteristics	Good	Good
Bonded	Yes	Yes
Lube Burn Out	Good, Minimal Sooting	Good, Minimal Sooting

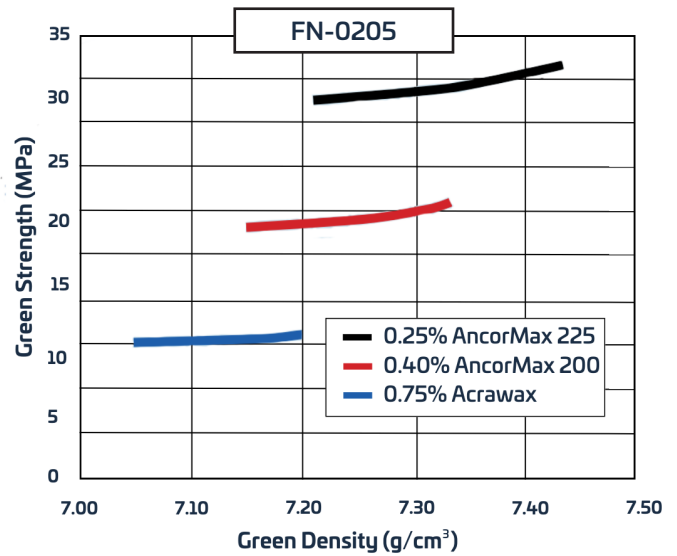
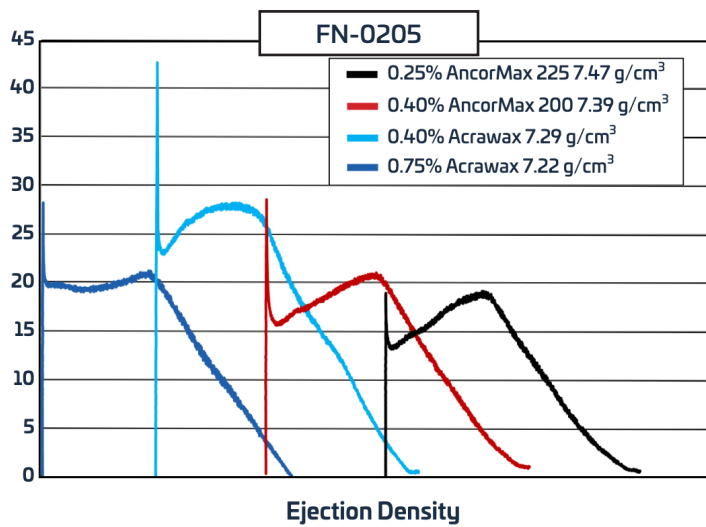
Compressibility Comparison of a Regular Premix Vs. AncorMax 200 and AncorMax 225



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The green strength was measured on 12.5 x 12.5 x 32 mm rectangular bars according to MPIF Standard Test Method #15. Samples were compacted at 550, 690, and 830 MPa (40, 50 or 60 tsi) per the conditions most suitable for each material. The ejection characteristics were determined via compaction of a round cylinder 25.4 mm in length by 14 mm in diameter (1 inch by 0.55 inch) at 830 MPa (60 tsi). Note the green strength of the AncorMax 225 is a significant improvement over a standard premix. Similarly the ejection characteristics of a AncorMax 200 and AncorMax 225 are superior to a standard premix.

PM Alloy: Ancorsteel® 85 HP + 2.0% Ni + 0.3% graphite
Compacted at 60 tsi (830 MPa)
Sintered at 2050 °F (1120 °C) in 90N₂-10H₂

Alloy	Density (g/cm ³)	Yield Strength MPa (10 ³ psi)	Ultimate Tensile Strength MPa (10 ³ psi)	Elongation (%)	Hardness (HRC)
PM FLN2-4405	7.46	1070 (155)	1275 (185)	1.5	40
AISI 8620 Steel	7.85	1105 (160)	1345 (195)	8.0	45

Q&T samples austenitized at 900 °C (1650 °F) and oil quenched
 Tempered at 205 °C (400 °F) for 1 hour