



P.O. Box 134, Ironton, Ohio 45638 Phone: 740-352-5970 Fax: 740-534-9772

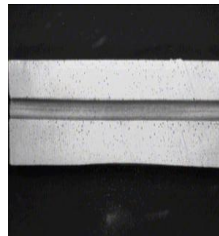
ALUMINASTIC MATERIAL SAND CASTING TESTING

	<u>1</u>	<u>2</u>
Sand:	1L-5W	1L-5W
Resin System:	X1000/X2000	X1000/X2000
Resin Percent,	1.0% 55/45	1.0% 55/45
Ratio:		
Catalyst:	X3501	X3501
Additive:	NONE	NONE
Coating:	NONE	NONE

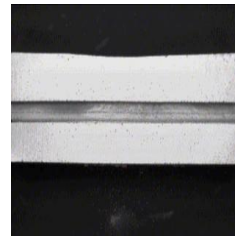
Metal Type:	356 Al	ALUMINASTIC
Pouring Temperature:	1350F	1350F

Warpage (inches):
Core Material
PEPSET X
1000/2000

0.030
inches



0.020
inches

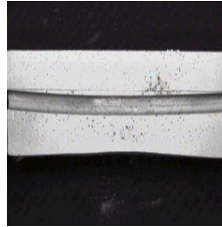


Comments:

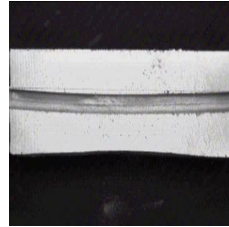
The Aluminastic material resulted in 0.010 less core warpage.

**Warpage (inches):
Core Material
CHEMREZ 234**

0.130
inches



0.130
inches



Comments:

The Aluminastic material showed no difference in core warpage.

**Fluidity Spiral:
100% Sand
Facing**



21



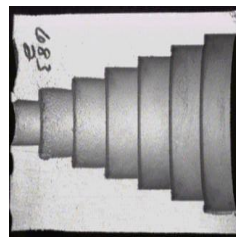
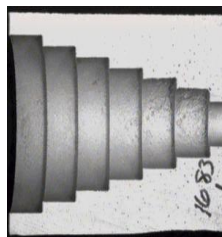
27

Comments:

The Aluminastic material showed approximately 29% improvement in fluidity.

Fluidity (inches):

Stepcone Casting:



Comments:

The Aluminastic material showed no difference in sand / metal ratio characteristics.

Impeller Casting:



Comments:

The Aluminastic material showed no difference in shrinkage and safety margins.

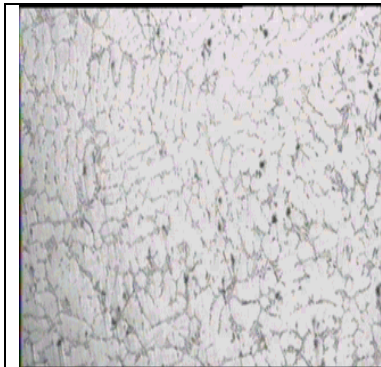
Rotor Casting:



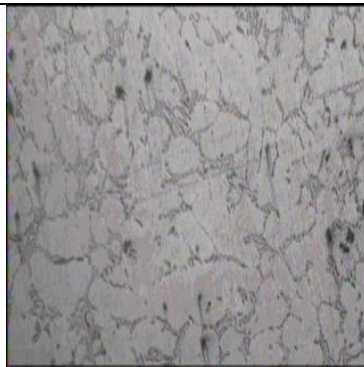
Comments:

The Aluminastic material showed no difference geometry based casting defect performance.

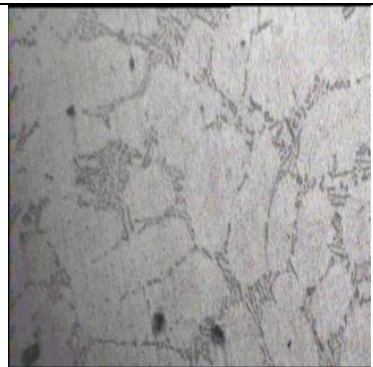
Microstructures



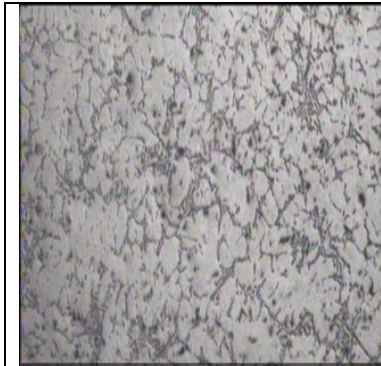
356, 100x



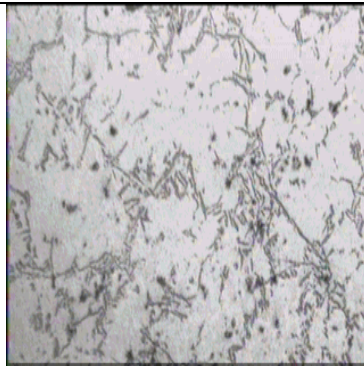
356, 200x



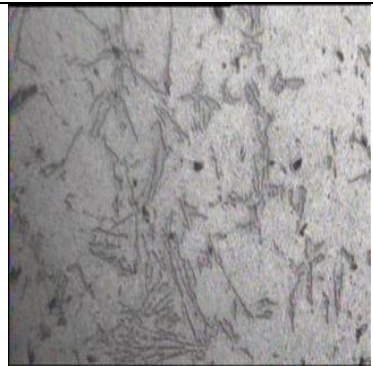
356, 400x



Aluminastic, 100x



Aluminastic, 200x

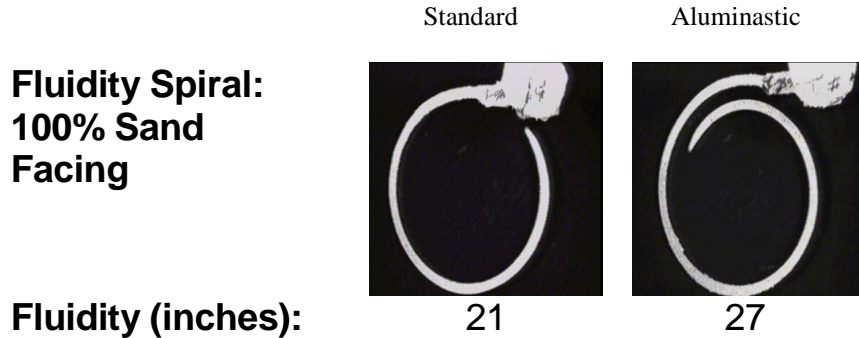


Aluminastic, 400x

Comments:

The photos indicate differences in the silicon second phase sizes.

SUMMARY OF FLUIDITY AND MECHANICALS



	Standard	Aluminastic
Ultimate Strength	17,000 psi	19,400 psi
Yield Strength @ 0.2 %	15,700 psi	12,300 psi
Elongation %	0.3 %	2.3 %

Aluminastic material has an increased flow rate of 29% and is approximately 14% stronger than the baseline with a much lower yield, equating into approximately 8 times greater elongation.

For more information:

E-mail: sales@aluminastic.com