



FILTRATION CASE STUDY NON FERROUS

Casting: Pressure Cooker KALFLO* filter

Foundry:
Wisconsin Aluminum, USA

Opportunities:
Increase quality level, improve surface finish, and reduce scrap.

Alloy:
Aluminium 356F

Casting weight:
10 kg (22 lbs.)

Pouring temperature:
750 - 770°C (1380 - 1420°F)

Poured weight:
17 kg (37 lbs.)

Cycle time:
5 minutes 30 seconds

Moulding process:
Gravity die.
Die temperature: 700°F (371°C)

FOSECO products used:

KALFLO Filter/Flow Control Units
DYCOTE* Coatings

Pouring/filtration practice:

Before – static pour 30° tilt double poured

After – KALFLO filters placed at bottom of downsprues. Die in static mode.

Requirements:

- Pressure tight to 15 - 20 psi
- Porosity free
- Avoidance of shrinkage
- No hydrogen gas porosity
- Excellent cosmetic appearance
- Flawless after machining
- Dimensional consistency

Problems:

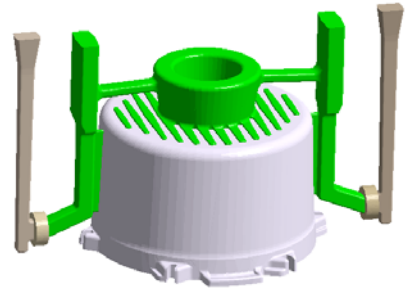
- Turbulent filling
- Leaks due to shrinkage
- Lack of directional solidification
- 15% scrap
- Cost of defective product \$ 200k

Improvements:

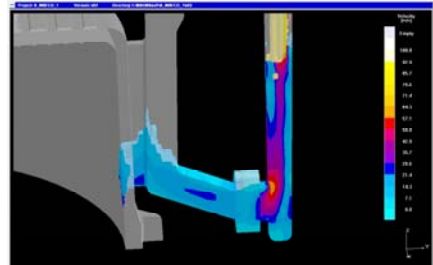
- Defect rate reduced by more than 50%
- 75% reduction in defects on largest casting sizes
- Metal velocity reduced
- Directional solidification encouraged
- Reduced shrinkage defects
- Improved cosmetics
- Saving of \$ 100k or \$ 4.16 per casting

Key Benefits

- Cleaner castings
- Reduced shrinkage
- Lower scrap
- Increased productivity



New gating system with KALFLO 200F set at the base of each downsprue



Smoother filling pattern with lower metal velocities created

