Case Study TopAl LTP

-high oxidation resistance & improved crucible lifetime

Info

Product name:	BNS 750 H750 TopAl LTP
Application:	Aluminum low pressure mold casting
Casting parts:	Aluminum wheels

Parameters

Furnace:	Electric resistance
Capacity:	Ca. 580 kg (1279 lbs.)
Casting temperature:	720 - 730°C (1328 - 1346°F)
Alloy:	AlSi7Mg – Aluminium alloy

Benefits - Comparison of TopAl LTP against existing crucible*

- higher oxidation resistance
- increased lifetime
- less crucible change overs
- lower labour charges for crucible handling

*For more details, please refer to page 2.

Existing Crucible

The customer was fairly satisfied with the existing crucible. It was changed after 7 months of usage due to expansion cracks caused by dross.

Picture 1 Existing Crucible after 7 months

TopAl LTP

TopAl LTP performed very well for 13 months before showing signs of oxidation cracks. Thus, crucible life almost doubled for the customer and obviously, the no. of crucibles required in a year reduced by 50%.

Investigating the structure of both versions below the melt level shows that the structure of the existing crucible is characterised by many oxidation nests. In comparison, the TopAl LTP crucible shows only very isolated initial stage oxidation.

Picture 2 TopAl LTP, no bottom oxidation after 13 months of use

Product name	Lifetime	Lifetime improvement	Crucibles per furnace / year
Existing Crucible	210 days	Lifetime almost doubled	2 pieces / year
TopAl LTP	390 days		1 pieces / year

Benefits

- Lower oxidation
- Less energy consumption due to lower dross adhesion
- Easier cleaing
- Less number of crucible change overs