

# Precision Controls for Precision Casting

The ceramic/metal interface



# New Premises, Equipment and Controls

2009 brings a fresh approach to Precision Controls at Cermatco Ltd

- New custom built premises for production, laboratories and offices - Granimar House
- Controls not just on particle size but phase, chemical and trace analysis for certification of raw materials and of product batches
- On-site Laser Particle Size controls – Malvern and Cilas
- On-site Inductively Coupled Plasma Optical Emission Spectrometer for chemistry and trace analysis



# Dedicated facilities for ceramic materials used in your processes

Completed in January 2009



## Granimar House

- 2,500 m<sup>2</sup> of production areas
- Each area segregated to ensure control of cross-contamination
- 400 m<sup>2</sup> of office and laboratory areas
- On site analysis of products
- Packaging and despatch of lots of up to 24 tonnes
- All situated near A2 motorway connections to the UK and mainland Europe

# Laboratory Controls

## Investment in controls for your business



- General view of main laboratory.



- Malvern Mastersizer shown here with the attachment for dry particle size analysis. Useful for moisture sensitive products and control of stucco dust



- ICP-OES from Perkin Elmer. Chemical analysis down to parts-per-million to avoid possible reaction between flour slurries and your binding system.

# Materials and their typical chemical analysis

Ceramic low dust stuccos and flours tailor made for precision casting

Element	FM-Fused Mullite	CerTab – Tabular Alumina	FSi – Fused Silica	CerSett Z
Alumina (Al <sub>2</sub> O <sub>3</sub> )	76%	99.6%	0.5 % max	50%
Silica (SiO <sub>2</sub> )	23.5%	0.05%	99.8%	17%
Total Alkalies (Na <sub>2</sub> O+K <sub>2</sub> O)	0.3%	0.3%	80 ppm	0.2%
Magnesia (MgO)	0.05% max	0.06%	10 ppm	7.6%
Combined iron (Fe <sub>2</sub> O <sub>3</sub> )	0.05% max	0.05% max	40 ppm	0.1%
Free iron (Fe) ppm	20 ppm	5 ppm	5 ppm	50 ppm
Acid Leachable Na (mg/l)		60		
pH	7.5	8.5	7.5	
Phase Analysis	Crystalline	α - Alumina	Amorphous	Mixed

**Many other grades are available on request - All products can be supplied to individual customers' specifications.**

# Trace metal analysis using in-house ICP-OES



Ag, Ba, Bi, Mg, Mn, P, Pb, Sn, Sr, Zn etc determined on each batch as you require and in-house