

# Advanced Metal Casting Centre (AMCC)



## AMCC - Advanced Metal Casting Centre (Completed April 2016)

Item	Detail
Building	1,500 m <sup>2</sup> (16,000 ft <sup>2</sup> )
High Pressure Die Casting Cell	1600 tonne press, vacuum assisted (Al & Mg)
High Pressure Die Casting Unit	450 tonne press, vacuum assisted (Al & Mg)*
Low Pressure Die Casting Cell	24 tonne LPDC unit with 600 kg Al furnace
Extrusion press	1600 tonne extrusion line
DC casting unit	Billet casting up to 205mm diameter, 200mm length
Aluminum dosing furnace	600 kg dosing furnace
Magnesium dosing furnace	500 kg dosing furnace
Twin Roll Caster	Thin strip casting facility capable 1.5 mm thin Mg strip



# Advanced Metal Processing Centre (AMPC)

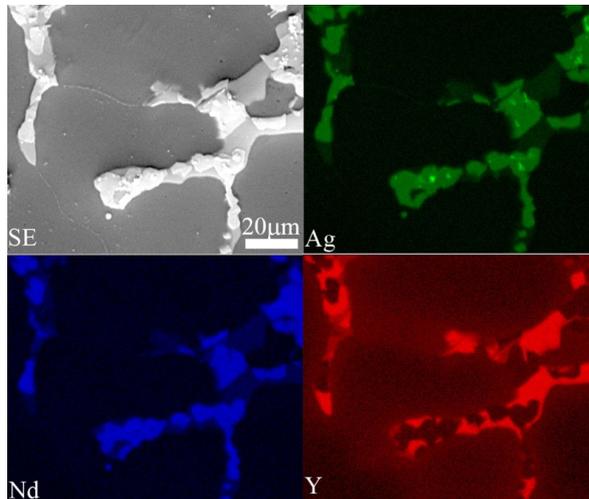
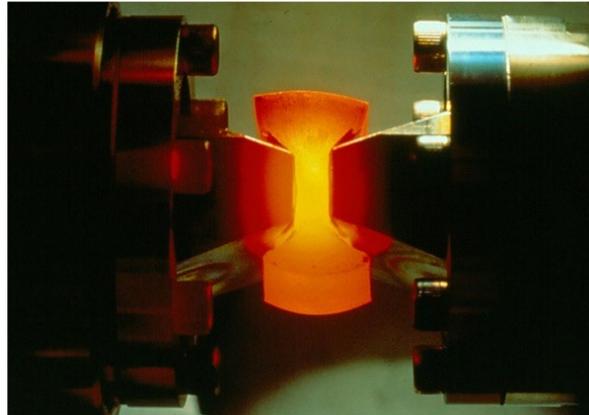


## AMPC - Advanced Metal Processing Centre (Completed June 2018)

Item	Detail
Building	1,500 m <sup>2</sup> (16,000 ft <sup>2</sup> )
Gravity die casting system <i>Technofond system</i>	Tilting through 90° 800 x 600 mm platens
Sand casting line	No bake system 1000 x 1000 mm bolsters
Melt Furnace Ladle	280kg 150kg heated ladle
Freeform Bending Cell	6-axis CNC control for extruded profiles up to 200 x 130 mm (Ø100 mm) x 4m in length
Electro-magnetic pulse forming-welding machine	PST EMPT - Processing of sections that fit within Ø100 mm circle, up to 1.5 m in length
Heat Treatment furnaces	Homogenising and ageing (Sections up to 1.5 x 1.5 x 1.5 m)
MIG & CMT Welding, SPR & FDS	Fronius automated MIG & CMT, Henrob SPR
Measurement & NDE Inspection	GOM ATOS 3D Scanning Optical Measurement System & CT Scanning facilities



# Future Metallurgy Centre (FMC)



- Atomic resolution Transmission Electron Microscopy (AR- TEM)
- Transmission Electron Microscopy (TEM)
- Scanning Electron Microscopy (HR-SEM)
- Scanning Electron microscopy with Focused Ion beam milling (SEM-FIB)
- 3D Atom Probe Tomography
- Nano indentation – MicroMaterials
- Flash Differential scanning calorimeter
- Thermomechanical Simulation - Gleeble 3800
- X-ray Computed Tomography - CT
- X-ray diffraction

# Training courses run by BCAST

**SOLIDIFICATION AND CASTING OF  
ALUMINIUM ALLOYS**

**MICROSTRUCTURE AND MECHANICAL  
CHARACTERISATION OF METALLIC  
INDUSTRIAL COMPONENTS**

**MATERIALS TESTING FOR INTEGRITY**

**ADVANCED MICROSTRUCTURAL EVOLUTION  
AND PHASE TRANSFORMATIONS  
IN SOLID-STATE THERMOMECHANICAL  
PROCESSING**