

ALUMINIUM CASTING METALLURGY

National Metalforming Centre, Birmingham Road, West Bromwich B70 6PY

TUESDAY 27 JUNE 2017

8.30 - 9.30am	Registration, Tea/Coffee.
9.30 – 9.40am	Welcome and Introduction.
9.40 – 9.50am	Round Table Introduction of Delegates.
9.50 – 10.20am	The Supply Chain for Aluminium Castings. From bauxite mining to foundry ingot and castings.
10.20 – 10.50am	Why and Where of Aluminium Castings? Why use an aluminium casting? Examples of typical end uses.
10.50 – 11.05am	COFFEE BREAK
11.05 – 12.00	The Aluminium Casting Alloys. An introduction to Compositions, Crystal Structures and Equilibrium Diagrams of the Al-Si, Al-Si-Mg, Al-Mg and Al-Cu alloys. Heat treatment for stress relief and to improve mechanical properties.
12.00 – 12.30pm	The Aluminium Casting Processes. High and Low Pressure Diecasting, Gravity and Sand Casting, Investment Casting, Squeeze Casting and Centrifugal Casting.
12.30 – 1.00pm	Foundry Practices to produce sound castings and control of melt temperature, metal cleanliness, gas content, grain refinement, chemical compositions, porosity and modification of silicon morphology.
1.00 – 1.45pm	LUNCH
1.45 – 2.15pm	Continued - Foundry Practices to produce sound castings.
2.15 – 2.30pm	Choice and Economics of Alloy Used and Casting Process.
2.30 – 3.00pm	“Hands on” session: - Delegates are asked to examine typical aluminium castings and comment on the process used, the possible alloy selected, any finishing applied and the possible end use.
3.00 – 3.15pm	COFFEE BREAK
3.15 – 3.45pm	National and International Standards to specify the Chemical Compositions and Mechanical Properties of Aluminium Ingots and Castings.
3.45 – 4.00pm	Sustainability Issues for Aluminium Castings and Foundry Companies.
4.00 – 4.15pm	Questions and Discussions.