



FOUNDRY INSIGHT

Improving Performance in Production

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CASTING RESPONDS TO GLOBAL CHALLENGE THROUGH INNOVATION



Pyrotek technologies, including the STAR degassing unit and Pyropore ceramic filters shown here, support the foundry industry's drive to boost process performance, product quality and productivity

As a very mature sector under considerable pressure from low-cost and in some cases subsidised producers, the UK's foundry industry shows a growing awareness of environmental issues, innovation, flexibility and product quality. These are all hallmarks of success for an industry working hard to stay competitive and profitable.

Recent winners of the Cast Metals Federation's Annual "Casting of the Year" Awards show just how versatile the UK cast metals sector can be. From Europe's largest-ever steel casting weighing well over 300 t to a lock component weighing just 0.2 gm; from an automotive structural magnesium part to a small disposable dental hand tool component, the UK continues to produce many of the world's most technically complex castings.

The magnesium automotive component for example replaced a number of steel fabrications and fixings, taking out considerable cost, weight and time for the customer. Equally, the tiny set of investment cast lock components required very high levels of precision to ensure that when assembled as cast, the stainless steel barrel, cover and clip worked perfectly without any additional machining.

PROCESS DEVELOPMENTS

UK foundries continue to respond to the many challenges faced by the sector and dispel the "black art" myth often associated with the manufacture of metal castings.

One of the key technologies now widely used across the industry is casting simulation, which maps mould filling and solidification patterns, allowing founders to predict casting integrity, which realises an associated improvement in yield wherever possible. Associated software can also be used to predict the thermally induced stresses arising during the casting process and where appropriate, during heat treatment.

The use of this technology is clearly beneficial to both founder and customer and can be further enhanced by use of the latest process equipment technologies including optimisation tools in the pursuit of quality and cost targets.

www.castmetalsfederation.com

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