Awards presented at EUROGUSS 2016

International Aluminium Die-casting Award 2016: winners announced

Düsseldorf, 12 January 2016 – GDA - Gesamtverband der Aluminiumindustrie e.V. (German aluminium associatin), Düsseldorf, has awarded the winners of the International Aluminium Die Casting Competition 2016 as part of the EUROGUSS 2016 in Nuremberg. Prizes were awarded by a jury of experts from research and practice to three castings from renowned manufacturers with a further three castings receiving special commendations. GDA has organised a competition for aluminium die-castings for the second time. It was partnered by the Association of the German Foundry Industry (Bundesverband der Deutschen Gießerei-Industrie e.V., BDG). The Austrian Economic Chambers (Wirtschaftskammer Österreich, WKO) and the Swiss Aluminium Association alu.ch also supported the competition.

For many years, the Aluminium Die-casting Award has proven to be a successful platform for demonstrating the high quality standards of aluminium die-castings. The aim of the competition is to boost interest in aluminium, a versatile material, still further and to demonstrate further fields of application. Criteria for evaluating the castings, submitted to the Aluminum Die Casting Competition 2016, were the die-cast conform and resource efficient construction.

The prize-winning castings will be on display in Hall 6 at the EUROGUSS fair (BDG stand 6-428) and one can also see them this year at the ALUMINIUM trade fair in Düsseldorf (29 November – 1 December).

The winners were:

1st Prize: Part of an oil-coolant assembly for medium-duty commercial-vehicle engines
Hengst SE & Co. KG, Nordwalde

Dimensions: L 254 mm, W 220 mm, H 303 mm
Weight: 3996 g
Alloy: EN AC-Al Si9Cu3(Fe)

The first prize was awarded to a part containing a large number of integrated functions, which was achieved by means of a highly complex die concept. It includes gating via a slide, slide-in-slide technique and an underfloor slide with locking. Other distinguishing features of the finished cast component are a sealing groove and a required flatness of 200 µm. In addition, the component has to meet very stringent

cleanliness requirements and exhibit tightness at oil pressures in excess of 50 bar. Here, die-casting contributes to increasing the payload of commercial vehicles by use of intelligent applications.

2nd Prize: Upper and lower XNF parts for a car battery case
Georg Fischer Druckguss GmbH, Herzogenburg

Dimensions: L 781 mm (upper part), 774 mm (lower part)
W 508 mm (upper part), 581 mm (lower part)
H 115 mm (upper part), 177 mm (lower part)
Weight: 6400 g (upper part), 9140 g (lower part)
Alloy: EN AC-Al Si10MnMg

The second prize was awarded to this large-surface, ready-to-install cast battery case. The jury rated the tight tolerances achieved and the fact that the mechanical properties needed to satisfy the crash requirements were achieved without heat treatment. Due to the long flow paths, the die temperature control is designed so that the gating area is cooled and the areas that are to be filled last are heated. This casting is a vivid example of the importance of die-casting technology in electromobility.

3rd Prize: Switch housing for a truck gearbox
DGS Druckguss Systeme s.r.o., Liberec

Dimensions: L 250 mm, W 170 mm, H 115 mm
Weight: 1785 g
Alloy: EN AC-Al Si10Mg(Fe)

The design requirements make this a complex component that can only be produced using a slide-in-slide die design. It was awarded the third prize because of the very high wall thicknesses, which are atypical for pressure die-casting and are achieved using two squeezers of different diameters. When in use, the component will be subjected to a pressure of 10 bar; it has a low pore density and is pressure-tight. The limits for utilising the die-casing process are thus utilised here to the full.

Special Commendation

Components of a water pump assembly for a petrol engine
Druckguss Westfalen GmbH & Co. KG, Geseke

Dimensions: L 110 mm, W 92 mm, H 73 mm
Weight: 260 g
Alloy: EN AC-Al Si9Cu3

This casting fulfils more stringent requirements with respect to porosity, which is kept to an absolute minimum throughout the whole component. The casting received a

special recommendation for the systematic, methodical approach to designing the die. The integration of various functions and the weight reduction due to the compact design mean the component contributes to the energy efficiency of vehicles.

Special Commendation

Photovoltaic blade
Austria Druckguss GmbH & Co. KG, Gleisdorf

Dimensions: L 564 mm, W 450 mm, H 52 mm
Weight: 3960 g
Alloy: EN AC-Al Si10MnMg

This casting is required for a free-standing, innovative photovoltaic unit that is subjected to very high wind forces. The application demonstrates the potential of die-casting for the structural components needed in the alternative generation of power. The judges recognised this and therefore awarded the casting a special commendation.

Special Commendation

Valve body for truck trailer
G.A. Röders GmbH & Co. KG, Soltau

Dimensions: L 170 mm, W 84 mm, H 112 mm
Weight: 1059 g
Alloy: EN AC-Al Si12Cu1(Fe)

The demands made on the casting were fulfilled here using innovative die concepts. A weight saving was achieved thanks to the co-operation between the foundry and the designer and a contribution was thus made to energy efficiency. It enabled the casting to assert itself against competition from an injection-moulded plastic part. The judges there gave it a special commendation.

The winning castings can be seen on the GDA website www.aluinfo.de.

Picture material can be downloaded here:
http://www.aluinfo.de/download_DGW_2016/Pictures_DGW_2016.zip

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