

R&D investment pays off with launch of new alloy

A UK manufacturer of round, flat and profile wire started the year by introducing a new alloy to its range.

Resulting from investment in its R&D programme, Alloy Wire International (AWI) launched Inconel 617, a chromium-cobalt-molybdenum alloy aluminium that offers a combination of increased strength and stability at elevated temperatures (up to 1,100°C, or 2,012°F), while retaining the high-temperature corrosion resistance of Inconel alloy 601.

The high nickel and chromium content makes the alloy resistant to a variety of both reducing and oxidising media, while achieving comparable corrosion resistance to Inconel 625.

The wire is expected to be used to produce components destined for the aerospace, medical, nuclear and petrochemi-

cal sectors – high-tech industries that require materials that perform under extreme engineering conditions.

"We're going to start by offering this grade initially in the size range of 0.025 to 5mm (0.001" to 0.197"), with each order made to customer specification within three weeks," said Andrew du Plessis, technical director at Alloy Wire International.

Areas of application can include springs and wire forms for aerospace components, land-based gas turbines, power generation, acid processing and petrochemical processing.

Mr du Plessis added, "With our ability to manufacture very small order quantities, engineers have the freedom to acquire just the amount of wire they need for their own R&D or product trials. Better still, wire in this alloy 617 is also manufactured



Lee Knight, technical executive at Alloy Wire International

under our AS 9100 (aerospace) and ISO 13485 (medical devices) approved quality systems."

AWI manufactures round, flat and profile wire in more than 60 exotic alloys, such as Inconel, Monel, Hastelloy, Nimonic and Rene 41.

Alloy Wire International
www.alloywire.com

Eco-designed lubricants for cold heading operations

Condat specialises in the field of industrial lubrication. Its lubricants are used in the metal working market, in particular for cold heading processes. Committed to a responsible approach, the company offers its customers technical solutions that allow them to reduce their impact on people and on the environment.

To supply the industry with greater readability of its eco-design lubricant offering, Condat's Lubriscore® self-scoring system allocates a number of stars to products showing a "virtuous profile" on life cycle criteria: raw materials

and design, production, transport, use and end of life. The Lubriscore rating is available for a wide range of Condat lubricants, including metalworking fluids and cold heading oils.

One example of a three-star Lubriscore product is Extrugliss sustainable cold heading oil. Extrugliss 268 WF was designed for warm forming applications to perform under high temperature (between 400 and 650°C). Showing high performance, Extrugliss 268 WF is also a dual-purpose oil, specially formulated to provide lubrication to ma-

chinery as well as for the warm forming process.

Used as a dual-purpose oil, it can prevent cross contamination to sustain lubricant performance for longer and extend sump life. Condat states that the vegetable-based Extrugliss 268 makes it possible to produce difficult parts while increasing machine efficiency and reducing tooling budget. The high flash point ensures lower smoke and reduces fire hazard.

Condat SA
www.condat.fr

Wire dies in PCD, TC and VNT nano

India's Ajex & Turner Wire Technologies designs TW dies in PCD, VNT nano and carbide to draw aluminium strands to produce ACSR, ACCC, ACSS and ACFR conductor (trapezoidal wire) to ASTM standards approved by most power grid corporations around the world.

The company says that its TW dies are designed to ensure accurate quality parameters, to obtain aluminium strands that are shaped to provide a smooth outer surface that can meet applicable ASTM standards. The dies are made from high-quality raw materials that enable them to be both efficient and long lasting.



TW shaped compacting NDCD dies

To resolve the issue of smaller diameter conductors, Ajex & Turner's trapezoidal-shape dies can be enlarged to provide a greater cross-sectional area of aluminium and match the diameter of the conventional round conductor.

Ajex & Turner also makes sector dies of any size and design.

It can produce TW, sector, Z, shape die sets and rollers according to conductor designs, using PCD, carbide, nano or hardened steel.

The company's shape dies for any type of metal are PCD, carbide or nano. The sector shape, TW and Z shape dies are used for compacting, bunching and stranding lines.

Ajex & Turner produces sector rollers and compacting rollers to various specifications.

Ajex & Turner Wire Technologies (P) Ltd
www.ajexturner.com

Demand for higher performance plastics and masterbatches in the automotive industry

Delta Tecnic specialises in colour concentrates for the automotive industry, designed with enhanced dispersion and dilution properties, and special attention paid to the reduction of sparks, colour regularity, pellet size and shape.

Meritxell Puigdemunt, area manager at Delta Tecnic, says that for the automotive industry to achieve its goal of zero pollution, the sector is accelerating a series of changes and transitions. One of these is the electric car, which is gaining market share as the necessary infrastructures grow, with the support of governments. Another is the self-driving car.

According to Bloomberg New Energy Finance (BNEF), by 2024 around 12 per cent of new cars sold worldwide will be fully electric; by 2040, that figure will be more than 50 per cent. The prediction is that the electric car will dominate sales by 2050. Production processes will need to keep pace, developing more advanced technologies and materials.

Car manufacturers will require new materials that increase the quality of their products and help optimise their operational processes. Obtaining a cable to match is essential to gain precision, reduce weight and improve thermal resistance.

Satisfying the technical colour needs of automotive cables requires improved colour masterbatches that have perfect dispersion and excellent dilution, with low dosage levels, high production speed and high processability. Since the colour must be identifiable for the lifetime of the vehicle, colour durability is critical.

A challenge for colour masterbatches is to dilute and fully incorporate the colour, unifying the polymer base with the individually separated pigment crystals at the right melting point. This is carried out under demanding production conditions, such as reduced extruder lengths or the increased speed required by the market. In addition, the colour concentrates must be compatible with the compounds used.

Colour intensity is also a key factor. Working with highly concentrated colour masterbatches with the appropriate pigments can achieve the right colour strength at the lowest possible dosage, aided by fast dilution.

Fluoropolymers, as thermoplastics and elastomers, are used widely in automotive applications due to their combination of high resistance to fuels and lubricants.

They can operate at ambient temperatures from -40°C to +200°C while providing high resistance to energy radiation. They are also lightweight – the second of two key factors for electric car requirements.

Silicones are growing in demand, as they are useful in various types of automotive cables, such as batteries or lighting, and

high-demand wiring. Silicones allow for working with constant dielectric and dielectric properties of dimensional stability from -80°C to +250°C. In addition, they resist vibration and fire, produce low smoke emissions and emit non-corrosive and non-toxic combustion gases.

Delta Tecnic
https://deltatecnic.com

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