

## Severstal invests in robotics to automate advanced composites manufacturing

PAO Severstal (MICEX-RTS: CHMF; LSE: SVST), one of the world's largest vertically integrated steel and mining companies, announces that it has invested in Dutch company Airborne, a global leader in developing digital automation platforms for the production of composite parts, and products with integrated composites. Severstal joins other investors in this investment round, including Pangaea Ventures, the leading advanced materials venture capital fund, and SABIC, the world's third largest diversified chemical company.

Airborne has developed and brought to market a unique set of digital technologies that increase the efficiency of carbon fiber composite production by automating the production process. The company is in the process of commercialising the automated production cells and software. At its facilities in the Netherlands and the UK, Airborne manufactures composite products for a broad range of sectors including the automotive, construction, shipbuilding, aerospace, electronics and wind power industries.

Using automation cell technology can help reduce the cost of producing composite products and their development cycle while ensuring consistent quality at a high production speed.

Working together with Severstal's technical development and quality department, Airborne will examine the potential of integrated solutions based on composites and steel, and Severstal will offer its clients the opportunity to test these integrated solutions.

George Gogolev, Head of Severstal Ventures, commented:

"With our investment in Airborne, we are continuing to move towards our goal of achieving integration between metals and composites in the innovative solutions we offer our clients. We believe this technology could transform the composites market in the next five to seven years by significantly reducing the price of end products. This will impact the metal market by enabling us to offer our customers new materials with unique properties that are not currently achievable in steelmaking. For comparison, composites can be up to five times as strong, up to twice as tough, and up to four times less prone to fatigue, and also up to 75% lighter than steel. However, this does not mean that steel as a material will be completely replaced by composite analogues. On the contrary, we are convinced that, going forward, the greatest demand from key industries will be for a "multi-material offer" of composites containing a combination of materials, including steel. It should also be noted that the Airborne deal was closed within two weeks, which is very fast by corporate venture fund standards."

Andrey Laptev, Director of Business Development and Corporate Venture Projects at Severstal, added:

"Our deal with Airborne resonates with one of the strategic priorities of our Company strategy – to pursue new opportunities. We are actively working with market niches within the sector that have potential for exponential growth. In particular, we are looking at advanced materials that could reach the steel market in the near future, as well as at technologies for their production. Together with Airborne, we plan to explore opportunities to move towards integrating metals and composites in our innovative customer solutions. With Airborne's unique automation platform, customers will be able to place their orders directly on the appropriate portal, and receive an affordable product that meets their needs. On a global scale, we see huge potential for composite materials, the market value of which is estimated at \$90 billion. Severstal is delighted to provide the team at Airborne with our support, and to be its first partner from the steel industry."

Arno van Mourik, CEO Airborne:

"We are very enthusiastic about this investment and collaboration with such a large and integrated steel company. It was a pleasure working with the Severstal Ventures team on this deal. We much appreciate the constructive approach, good discussions and speed of execution. We see that the global trend of lightweighting as a way to drive sustainability employs a great deal of multi-material solutions that combine the strength of metals and composites. While the steel industry is already very industrialised and efficient, the composite industry expresses a strong need to drastically reduce cost and improve efficiency, in order to accelerate the adoption of composites and enable its full potential. This can be done by automating the manufacturing process, as well as by digitalising the full value chain to make design and manufacturing highly efficient, easy and flexible. We very much look forward to the collaboration".

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