



Zeleros and ArcelorMittal

test the performance of steel for hyperloops

- **A new, unique ultra-high-speed testing facility has been designed to evaluate the performance of materials needed to build and operate ultra high-speed transport systems**
- **Zeleros' and ArcelorMittal's work allows both companies to optimise the design and selection of steels to use in hyperloop vehicles and infrastructure**
- **Zeleros releases a [short film](#) to mark latest phase of Hyperloop development**

Valencia and Luxembourg, September 28, 2022 Zeleros, the European company developing the scalable hyperloop, an ultra high-speed mobility solution for transport of passengers and goods, and ArcelorMittal, the world's leading steel and mining company, have carried out trials to analyse the behaviour of steel grades for optimal use in hyperloops.

A testing facility in the form of a spinning wheel that can reach linear speeds of up to 500km per hour has been designed and built at ArcelorMittal's Rail Excellence Centre in Spain, to test how certain steels perform in ultra-high-speed conditions, prior to testing on a scaled hyperloop track. The results provide data to further advance the selection of the best steels for hyperloop use, considering safety, energy efficiency, cost and scalability as the main decision criteria.

A relevant collaboration for Zeleros' scalable hyperloop

Zeleros and ArcelorMittal have been working together since 2017. Since then, experts from both companies – including all of ArcelorMittal's R&D centres - have jointly developed studies to analyse the way in which materials behave in high-speed conditions, measuring the effects of key characteristics for hyperloop technology, such as the electromagnetic properties of steels (hyperloop designs propose the use of magnetic levitation). As part of the collaborative work between the two companies, ArcelorMittal's rails business in Europe – ArcelorMittal Europe – Long Products, Rails and Special Sections - has developed new products with improved guiding and braking performance, as part of the wider co-engineering project between Zeleros and ArcelorMittal.

"To reach Zeleros' vision of building a scalable hyperloop, including the braking, guiding and levitation technology in the vehicle, this collaboration is key. Thanks to the continuous

improvement of steel, we can radically reduce infrastructure costs and assure energy efficiency and infrastructure viability”, stated Daniel Orient, Zeleros’ CTO.

“The work we have been doing with Zeleros reflects the importance we place on our involvement in innovative projects using steel in infrastructure and transportation, and that contribute to reducing CO2 emissions”, said Nicoleta Popa, Portfolio Leader of Construction Applications, Infrastructures and Long Products of ArcelorMittal Global R&D.

“The multidisciplinary ArcelorMittal team for the structural, mechanical and electromagnetic aspects, proves the strength of our approach for such complex innovative projects, both in defining new products and in developing new solutions” said Frederic Painchault, Head of marketing of Global automotive & Mobility solutions.

Besides hyperloop, ArcelorMittal has participated in studies of materials for other applications developed by Zeleros, such as the SELF (Sustainable Electric Freight-forwarder), conceived to move standard intermodal containers in a faster, automated and sustainable way within ports, for which the test track is currently under construction in the port of Sagunto in Spain.

Likewise, the objective of Zeleros is to advance in the construction of mobility solutions that are sustainable and efficient like hyperloop and SELF, accompanied by partners with extensive industrial knowledge, as confirmed by the material studies carried out with ArcelorMittal.

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About Zeleros:

Zeleros is the European company based in Spain leading the development of a scalable hyperloop system. Zeleros’ unique technologies integrated in the vehicle radically reduce hyperloop infrastructure costs per kilometer. The system also shortens path-to-market and offers a straight certification journey thanks to its operation at aviation pressure levels, using vastly proven safety systems for airplanes and railway. The company applies these pioneering technologies in the development of advanced mobility solutions for the automation of ports and airports such as SELF (Sustainable Electric Freight-forwarder).

Zeleros’ mission is to become the world's most scalable hyperloop system, and is validating the technologies with extensive testing, including the promotion of a European Hyperloop



Development Center in Spain, including a high-speed test-track and test-benches to demonstrate the efficiency of the system. The company mobilizes more than 180 people worldwide, working with world-renowned leaders in the railway, infrastructure, aviation and energy sectors such as Airbus, Acciona, ArcelorMittal, CAF Group, Capgemini Engineering, EIT Innoenergy, ITP Aero, Red Eléctrica de España and Renfe, as well as with research centers like CIEMAT and international investors such as Silicon Valley Plug and Play Tech Center.

More at: www.zeleros.com

About ArcelorMittal:

ArcelorMittal is the world's leading steel and mining company, with a presence in 60 countries and primary steel making facilities in 16 countries. In 2021, ArcelorMittal had revenues of \$76.6 billion and crude steel production of 69.1 million metric tonnes, while iron ore production reached 50.9 million metric tonnes. Our purpose is to produce ever smarter steels that have a positive benefit for people and the planet. Steels made using innovative processes which use less energy, emit significantly less carbon and reduce costs. Steels that are cleaner, stronger and reusable. Steels for electric vehicles and renewable energy infrastructure that will support societies as they transform through this century. With steel at our core, our inventive people and an entrepreneurial culture at heart, we will support the world in making that change. This is what we believe it takes to be the steel company of the future. ArcelorMittal is listed on the stock exchanges of New York (MT), Amsterdam (MT), Paris (MT), Luxembourg (MT) and on the Spanish stock exchanges of Barcelona, Bilbao, Madrid and Valencia (MTS). For more information about ArcelorMittal please visit: <http://corporate.arcelormittal.com>