

JOINT PRESS RELEASE

A4 TORINO-MILANO: FIRST GREEN & HI-TECH MOTORWAY IN EUROPE WITH GRAPHENE, RECOVERED HARD PLASTICS AND 70% RECYCLED ASPHALT

*Repaving of 250 km of slow lane begins
on the A4 Turin-Milan motorway operated by the ASTM Group*

Graphene, recycled hard plastics (such as toys, fruit crates and litter bins) and 70% recycled asphalt will make the new motorway more sustainable and safer, reducing CO₂eq emissions by 38.5% and use of new bitumen and aggregates by 40%

Turin – Milan, 20 October 2022. An innovative, sustainable, resilient and safe asphalt for the A4 Torino-Milano motorway section, managed by the **ASTM Group**: it will be made with **graphene and specially selected recycled hard plastics** (e.g., toys, fruit crates, litter bins) and with the re-use of **70% of milled material from existing pavement**, thus reducing the use of new natural aggregates to only 30%. The works will involve both directions for a total of 250 km.

The ASTM Group, the world's second largest operator of motorway networks under concession and a global player in the construction of major infrastructure works, will use **Gipave®**, an asphalt technology that uses a patented and innovative process completely made in Italy, the result of six years of research conducted by **Itechimica** - an Italian company operating in over 90 countries and a leader in the production and development of sustainable asphalt products and technologies - in collaboration with G.Eco (A2A Group), the University of Milan-Bicocca and Directa Plus.

The repaving activity will make the A4 motorway the first in Europe to use a green, hi-tech asphalt thanks to the use of graphene and 70% recycled asphalt. This activity is part of the ASTM Group's wider 'Smart Roads' project. The Turin-Milan section, in fact, which links the two main economic and industrial poles in the north-west of the country, was chosen by the Group to represent not only symbolically but also de facto the ASTM vision of the Motorway of the Future. Along the 125 km stretch, many innovative solutions will be implemented with the aim of increasing safety levels, improving the quality of travel for users and protecting the environment.

In particular, the use of Gipave's green and hi-tech technology and 70% recycled asphalt guarantees greater performance in terms of sustainability and resistance, up to a 75% increase in pavement durability compared to the best technologies currently used on the market. To achieve this ambitious goal, the ASTM Group will install a special production plant in a median position with respect to the A4 motorway section to better manage the entire process. Compared to standard maintenance, this solution will reduce energy consumption by about 90 million kWh (-30%), corresponding to the annual needs of about 30,000 households, and will allow the abatement of 18,350,000 kg of CO₂eq emissions (38.5% less) equal to the absorption of about 115,000 trees.

Moreover, compared to paving using traditional methods, about 1.5 million kg of hard plastics will be re-used for this activity (equal to the weight of more than 1,200 cars), saving almost 23 million kg of bitumen and about 480 million kg of raw materials extracted from quarries (-40% of non-renewable materials used compared to traditional technologies).

Umberto Tosoni, ASTM CEO, commented *“We will make the Turin-Milan motorway, the artery linking the two main economic and industrial centres in north-west Italy, the most modern, most technological and greenest motorway in Europe. ASTM's investment in advanced technologies and ongoing commitment to finding sustainable solutions are an integral part of our long-term strategy, which aims to improve the travel experience and quality of service for our customers. We are working on several fronts ranging from the adoption of infrastructure-vehicle communication systems to the introduction of intelligent 'free flow' tolling and anti-fog systems, from wrong-direction and dangerous goods detection systems to the introduction of hydrogen filling stations and an increased presence of electric charging stations. With the use of graphene asphalt, we are accelerating the process of ecological and environmental transition of our infrastructures: a project that will contribute, among other things, to the achievement of the Group's ambitious 2030 greenhouse gas emission reduction targets approved by the Science Based Targets Initiative.”*

Federica Giannattasio, CEO Iterchimica, declared *“After 6 years of research and development and numerous trial sections in Italy and abroad that have demonstrated both the technical and environmental performance of this technology, we are extremely proud to contribute together with the ASTM Group to the resurfacing of the A4 Torino-Milano motorway, which will thus become the first hi-tech, safe and sustainable motorway in Europe. The work is being carried out thanks to Gipave's patented technology and our know-how, which we have put at ASTM's disposal to enable the main road link in north-west Italy to achieve this prestigious result. This project, which represents a first step, makes us quite proud and places Italy at the forefront and in line with the ecological transition objectives set out in the UN's 2030 Agenda. The environmental savings are unprecedented, reaching emission reductions of up to 38.5% compared to traditional maintenance technologies.”*

In addition to ASTM and Iterchimica, which is supplying the products and its know-how, other companies in the ASTM Group have also actively collaborated in the realisation of this important infrastructure: **Itinera**, which operates in Italy and worldwide for the construction of large infrastructure projects, will carry out the resurfacing of the A4, and **SINA**, an engineering company in the highway infrastructure sector, which has designed the production recipe and carried out the asphalt tests. The asphalt producer **Bitux** will supply the eco-pavement mixes for the pilot project. The sustainability study was carried out by the **University of Bologna** (Department of Civil, Chemical, Environmental and Materials Engineering).

ASTM Group

ASTM Group is a world leader in the management of motorway networks and in the design and construction of large infrastructural works. Present in 15 countries and with approximately 17,000 employees and collaborators, the Group's activities are focused on three main areas: management of motorway infrastructures (concessions), design and construction of major works (EPC - Engineering, Procurement and Construction) and technology applied to transport mobility. In the area of concessions, the Group is the second largest operator in the world in the management of motorway infrastructures with a network of approximately 6,200 km of network, of which over 1,400 km in Italy, 4,700 km in Brazil through the listed company EcoRodovias and 84 km in the United Kingdom through a participation in Road Link

Iterchimica

Iterchimica S.p.A. is a Bergamo-based company founded in 1967 by Gabriele Giannattasio and owned 90% by the Giannattasio family (with Federica Giannattasio as Managing Director for industrial management) and 10% by Engineer Vito Gamberale, who has been its president for seven years. It operates in over 90 countries in the asphalt technology market. It manufactures and markets products for improving the characteristics of asphalt and road pavements, increasing their safety, sustainability, efficiency and performance. Thanks to the technologies it has developed, Iterchimica is able to create road pavements with very high percentages of recycled asphalt (up to 100%), thus reducing the extraction of new materials and the employment of first-use bitumen. In addition, the use of specific products allows asphalt pavements to be produced at reduced temperatures, thus saving energy and reducing CO₂eq emissions into the atmosphere.

The company collaborates with Contracting Authorities, construction companies, General Contractors and design studios, both in the design/construction phase and in the maintenance phase. Iterchimica's laboratories are accredited by the Ministry of Education, University and Research (M.I.U.R.). The company collaborates continuously with leading Italian and international universities specialising in road paving and chemical-technological research. Iterchimica is associated with Siteb (Strade Italiane E Bitumi), of which it is a founding member.

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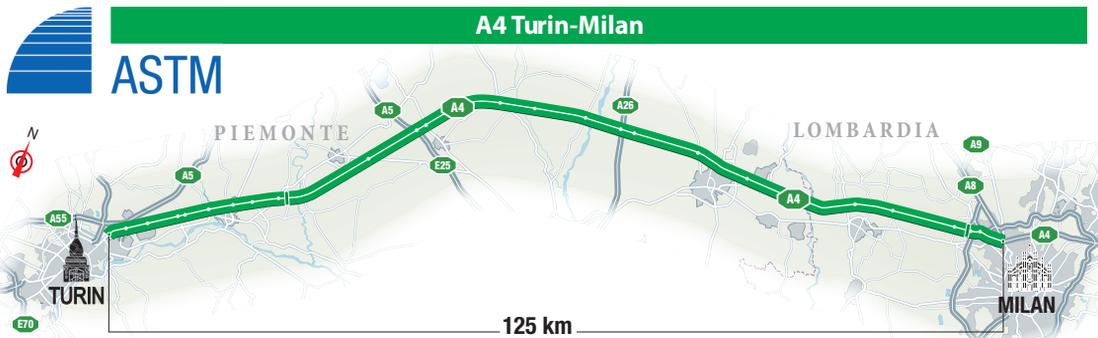
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A4 Turin-Milan: 1st Green & Hi-Tech Motorway in Europe w/graphene, recovered hard plastics and 70% recycled asphalt

The repaving of 250 km of slow lane (125 + 125) of the A4 To-Mi Motorway, managed by ASTM Group, is underway. GIPAVE® and 70% recycled asphalt will make the highway super-sustainable and safer.



The big advantages for the environment

*Source: Studio di Alma Mater Studiorum di Bologna

-30%



Energy Savings (estimated to be circa **90 million kWh**), equal to the annual energy needs of c. **30,000 families**.

-38,5%*



-18,350,000 kg of CO₂e_q emissions equal to the absorption action of about **115,000 trees**.

-40%



Savings of bitumen (equal to almost **23 million kg**) and of **aggregates** (circa **480 million kg of raw materials** extracted from quarries w/large **savings also of soil**).

1.500



Tonnes of reused hard plastics (almost equal to the **weight of over 1,200 cars**).

+75%



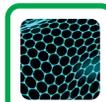
Increased pavement durability versus the best technologies currently used on the market.

Composition of GIPAVE®



GIPAVE® is the innovative, green technology for durable and sustainable asphalts.

Selected recovered hard plastics (such as toys, fruit crates and litter bins), otherwise not reusable and destined for less sustainable disposal methods (G.Eco - A2A Group)



Graphene*
(Directa Plus)



Functional Base



*Graphene is a new material that has the theoretical strength of diamonds and the flexibility of plastic. For their discoveries on graphene, two physicists, Andrej Gejm and Konstantin Novosëlov from the University of Manchester, won the 2010 Nobel Prize in Physics.



Gipave® is a completely Italian patent developed by **Itechimica** with the collaboration of G.Eco (A2A Group), the University of Milan Bicocca and Directa Plus.