Press release

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fischer fixing systems secure new métro lines 15 and 16 of the Grand Paris Express

A firm hold for Western Europe's largest infrastructure project

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The Le Grand Paris project aims to unite the French capital with multiple suburban communities. The expansion involves structural, spatial, social and functional aspects. Western Europe's largest infrastructure project, the Grand Paris Express, provides good connections and will double the length of the Parisian métro network by 2030. This includes the new construction of métro line 16, where the fischer FIS EM Plus injection mortar ensures a permanently secure connection of the floor slabs to the retaining walls. In the new line 15 the fischer Superbond system was used to anchor anchor cable runs and cable support systems reliably in concrete.

More than two million people live in an area of 105 km² in Paris, which corresponds to around 21,000 inhabitants per square kilometre, making Paris the most densely populated city in Europe. The metropolis is therefore set to merge into a new "Grand Paris" with numerous neighbouring communities of the Île de France. The Grand Paris Express métro network expansion is being carried out under the leadership of the Société du Grand Paris (SGP). With 220 km, the Parisian métro network is already Europe's fourth-largest network after London, Moscow and Madrid. The Grand Paris Express will add automatic lines over 200 km of new tracks as well as 68 new stations, which will exceed

what is currently the longest network in Europe, the London Underground (402 km). The Grand Paris Express has been under construction since 2015, with expected completion in 2030. In addition to the expansion of métro lines 11 and 14, four new lines (15, 16, 17 and 18) will be created with the main aim of efficiently connecting the metropolitan area and outer districts with one another.

Line 16, which will be completely underground, will cover about 27.5 km and connect the suburbs to the north and east of Paris. There will be 10 stations on the line. Three stations and a maintenance depot will be shared with Line 17. 8 stations will also have connections to other lines of the Paris transport network. The fischer FIS EM Plus injection mortar is used, among other things, to connect the floor slabs to the retaining walls. Here, the chemical fixing system ensures safe and fast progress on the construction sites. The mortar makes it possible to clean boreholes with water instead of blowing them out at great expense and causing dust and smoke. Another plus is that the FIS EM Plus can be stored very easily. An extra heated room or container is not necessary for this. The epoxy resin mortar must simply not freeze.

Other advantages include the permanent safety of the FIS EM Plus. In the construction industry, the Eurocode standards for standard structures assume an expected service life of 50 years. However, even higher requirements apply to the "Grand Paris Express" project. This is because a guaranteed service life of 100 years is stipulated for important and large infrastructure projects, such as subway tunnels, viaducts and nuclear power plants. The products used must also have this longevity. In the case of chemical fixing with the FIS EM Plus injection mortar, fischer applied for a European Technical Assessment (ETA) specifically for this purpose, in order to be able to provide

the proof of product performance required for Europe. "Our products meet the technical requirements of the applications in the construction of the 'Grande Paris Express' lines," says Jean-Marc Berg, Managing Director of the fischer subsidiary in France. "In addition to the quality of our fastening solutions, competitive prices and high product availability play a key role." However, the many services are also important, he adds. "We convinced our clients with our visits to construction sites for on-site support, the fast and precise responsiveness of our technical department to develop custom-fit, project-specific solutions, and our much more," Jean-Marc Berg emphasizes.

In addition to Line 16, the competence of the fixing expert fischer was also applied to the fully underground Ring Line 15, which will circle Paris beyond the city’s boundary. The line will contain 36 stations over 75 km, serving 19 communities. There are also plans to allow changes to other lines of the Paris traffic network. 77,000 fischer RSB resin capsules in the RSB 8 and RSB 12 mini variants are being used together with RG M anchor rods in the corresponding sizes to anchor cable runs to the wall and to fasten suspension brackets and steel panels for cable support systems to the roof using overhead installation. Here the RSB resin capsules can be used together with their system components for simple and quick overhead installation without having to wait thanks to their fast curing was another decisive factor. The European Technical Approval (ETA) Option 1 for cracked concrete including seismic stresses in performance categories C1 and the suitability for fire resistance class R 120 provide added security.

The drill holes for the chemical anchorages were created with little drill dust using the fischer FHD hollow drill attached to an SDS Plus drill hammer. With its two vacuum holes at the tip of the drill and its hollow cylindrical shaft, the FHD immediately

vacuums up dust, which made it ideal for the overhead applications during the tunnel constructions of the Grand Paris Express line 15. It protects users' lungs against hazardous dust that contains quartz which occurs during drilling, cleaning out and brushing drill holes. It also prevents errors when cleaning the drill hole, which can impair the fixing's performance.

fischer heavy-duty fixings were previously used during the expansion of the existing line 14 to securely fasten the console systems of the power lines. The company continuously demonstrates its fastening know-how in the construction of the "Grande Paris Express" lines.

Image captions:

Image 1
Six driverless metro lines will improve the connection of the Île de France communities through the Grand Paris Express network expansion. fischer heavy-duty fixings were used to secure media lines, connect the floor slabs to the retaining walls and much more.
Image: fischer

Image 2
Around 2 million passengers per day are expected to use the extended and new "Grand Paris Express" lines. Safety has top priority. It's a good thing that the fischer FIS EM Plus injection mortar used has an assessed (ETA) service life of 100 years.
Image: fischer

Image 3
In the "Grande Paris Express" project, the fischer FIS EM Plus injection mortar ensures rapid progress. The mortar eliminates the need for time-consuming blowing out of the boreholes and enables low-dust as well as safe working.
Image: fischer

Image 4
The fischer FIS EM Plus injection mortar is used in the construction of Line 16, among other things, for connecting the floor slabs to the retaining walls.
Image: fischer

Image 5
fischer RSB resin capsules are being used together with RG M anchor rods to securely anchor in the new Line 15 of the "Grande Paris

Express" cable runs and suspension brackets as well as steel panels for cable support systems in concrete.
Image: fischer

Image 6
In the construction of Line 15, fischer RSB resin capsules combine a high load-bearing capacity for a permanent and secure hold on the cable runs and cable support systems to meet the high health and safety requirements.
Image: fischer

The fischer Group of Companies

The fischer Group of Companies, headquartered in Waldachtal in Germany's northern Black Forest, generated sales of 988 million euro in 2021 with a worldwide staff of 5,400 employees. The family-owned company operates 50 subsidiaries in 38 countries and exports to more than 120 countries. It includes the five divisions: fischer fixing systems, fischer Automotive, fischertechnik, fischer Consulting and fischer Electronic Solutions.

fischer fixing systems is the technological market leader in key areas of fixing technology. fischer offers products that deliver technical perfection to a wide range of customers, from do-it-yourselfers to tradespeople to key account partners.

fischer Automotive manufactures high-quality parts for vehicle interiors. The company is highly competent in the plastics processing segment and is an important partner for the automotive industry. Its range of products includes air vents, cup holders, trays and multi-function components.

With its construction kits, fischertechnik is active in both the toymaking and the educational sector. fischertechnik is one of the last remaining toy makers to exclusively develop and produce in Germany.

fischer Consulting evolved from the competence developed in the company itself, which includes the fischer ProcessSystem with its central aim of permanent improvement for the ultimate benefit of the customer. fischer Consulting advises small and medium-sized businesses, government agencies and major companies on their path towards lean and efficient processes.

fischer Electronic Solutions develops and manufactures electronic solutions including product and system developments based on the latest technology as well as custom production orders processed in the company's own production facilities. As an experienced provider of development and production services for custom systems such as multi-touch solutions made of glass and the corresponding controller units, fischer Electronic Solutions forms the perfect link between the customer and the final product.

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