



FIP INDUSTRIALE

l e a d i n g t e c h n o l o g i e s



FIP INDUSTRIALE is a world leader company in products used in the structural engineering such as anti-seismic devices, bridge bearings, precast tunnel lining segments, expansion joints and noise barriers. *FIP INDUSTRIALE* also supplies a wide range of chemical products owning the company *FIP Chemicals*.



FIP INDUSTRIALE productive headquarters are in Padua, close to Venice in Italy. They are equipped with the most modern laboratory for static and dynamic testing of materials and devices, including one of the largest presses in the world, having 80000 kN of vertical load and 7500 kN of horizontal load. The equipment and competence of the laboratory permit the company to satisfy the most complex experimental and testing requirements, also for every kind of tunnel condition.



In more than thirty years tunnelling activity world-wide, *FIP INDUSTRIALE* has gained extensive experience in the design and manufacture of fittings for any kind of lining segments as well as a thorough knowledge of related site activities.

SEGMENTS CIRCUMFERENTIAL CONNECTORS BIBLOCK SYSTEMS



Biblock Systems are circumferential connectors, designed for any kind of tunnel dimension. The main advantages of this type of connection are: cost saving per mould/ring, quicker segment installation, safer site conditions, less personnel needed at the tunnel front, better segment alignment, smoother inner tunnel surface, lower water friction in hydraulic tunnels and dielectric isolation along the tunnel lining.

The shear capacity is guaranteed mainly by the centering ring, while the pull-out resistance depends on the pin/sockets interaction. Linking bolts and suitable sockets are also available.

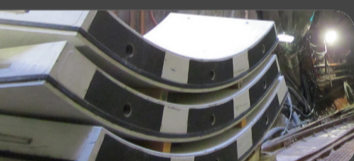


SEALING GASKETS



The **sealing gaskets** are made of all the most commonly used materials (especially EPDM) and can meet the most demanding requirements. Hydrophilic gaskets are also available. The gaskets can be supplied as continuously extruded profiles or in frames with 4 or 6 corners moulded to the profile in compliance with the project requirements.

OTHER PRODUCTS

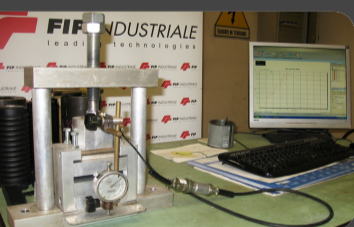


The tunnel construction process requires different products of various purposes.

Our **pads** are made either of elastomeric bitumen with the addition of SBS rubbers, or of glass fibre reinforced polyester.

Different sizes of **guiding rods** ensure an accurate alignment between the segments and increase the shear resistance during the assembling of each ring.

Moreover, *FIP INDUSTRIALE* offers adhesives, inserts for segment lifting, grout injection, grounding, rail fixing, anti-vibration pads.



Collecteur Intercommunal Algiers - Algeria • Takseb Tunnel - Algeria • Di Beni Haroun Hydraulic Tunnel - Algeria • Hydraulic tunnel Maldonado - Argentina • Brisbane Legacy Way - Australia • COPS 2 - Austria • Gastau Tunnel Project - Brazil • Sofia Metro - Bulgaria • Kunming Hydraulic Tunnel - China • Wanjiazhai Yellow River Div. Project lot 5 - China • Wanjiazhai Project Yellow River Div. Project lot 3 - China • Beles Tunnel - Ethiopia • Acheloos Diversion Tunnel - Greece • Karahnjukar Dam - Iceland • Bangalore Metro - India • New Delhi Metro - India • Isfahan Metro - Iran • Tabriz Metro - Iran • Shiraz Metro - Iran • Mashhad Metro - Iran • Tehran Metro Line 6 - Iran • Agri Tunnel - Sauro Trento - Italy • Andora Tunnel - Italy • Aurelia Tunnel - Italy • Brescia Metro - Italy • Castellaccio Hydraulic Tunnel - Italy • Castellanza Tunnel - Italy • Chiascio Hydraulic Tunnel - Italy • Chiascio Hydraulic Tunnel II - Italy • Chiascio Hydraulic Tunnel III - Italy • Chiavals Tunnel - Italy • Cimena Canal - Italy • Genoa Metro - Italy • Malborghetto Gas Pipeline Tunnel - Italy • Martignano Tunnel Trento - Italy • Milan Metro - Italy • Milan Railway Tunnel - Italy • Milan, Garibaldi Train station - Italy • Naples Light Train - Italy • Naples Metro Line 1 - Italy • Nazzano Highway Tunnel - Italy • Ortona Railway Tunnel - Italy • Hydraulic Plant Tunnel - Italy • P. Vergonte Hydroelectric Plant Tunnel - Italy • Premadio Hydroelectric Plant Tunnel - Italy • Railway underpasses - Italy • Rome Metro - Italy • Rome Metro II - Italy • Rome Quattro Venti Tunnel - Italy • Rome Sewerage System - Italy • Udine Hydraulic Tunnel - Italy • Vaglia High Speed Railway Tunnel - Italy • Sparvo Variante di Valico Tunnel - Italy • Vercellese Canal - Italy • Villabassa Tunnel - Bolzano - Italy • Zevio Canal - Verona - Italy • Rome Metro Line C - Italy • Rome Metro Line B - Italy • Turin Metro - Italy • Milan Metro - Italy • Milan metro Line 5 Extension - Italy • A1 Highway Sparvo Tunnel - Italy • Theun Hinboun Tunnel - Laos • Oporto Metro - Portugal • Krolsky Tunnel - Russia • Hydraulic Tunnel DF - Russia • Tunnel Ru - Russia • Sochi Tunnel - Russia • Krasnoyarsk Tunnel - Russia • H.S. Railway Tunnel Quejigares - Spain • Guadarrama Norte High Speed Railway Tunnel - Spain • Hydraulic Tunnel Madrid Ser. - Spain • Railway Tunnel UTE Camarillas - Spain • Railway Tunnel UTE Vigo - Spain • Jucar Vinalopo Hydraulic Tunnel - Spain • Pajares Tunnel I - Spain • Sörenberg Gas Pipeline Tunnel - Switzerland • Istanbul Metro Kadik-Kartal - Turkey • Istanbul Metro - Turkey • Kargi HEPP - Turkey • Kiev Metro - Ukraine • Abu Dhabi Tunnel STEP II - U.A.E. • Abu Dhabi Tunnel STEP III - U.A.E. • Caracas Metro Line 3 - Venezuela • Caracas Metro Line 3 extension - Venezuela.

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