



DURVINIL[®] SLEEVED GROUTING PIPES

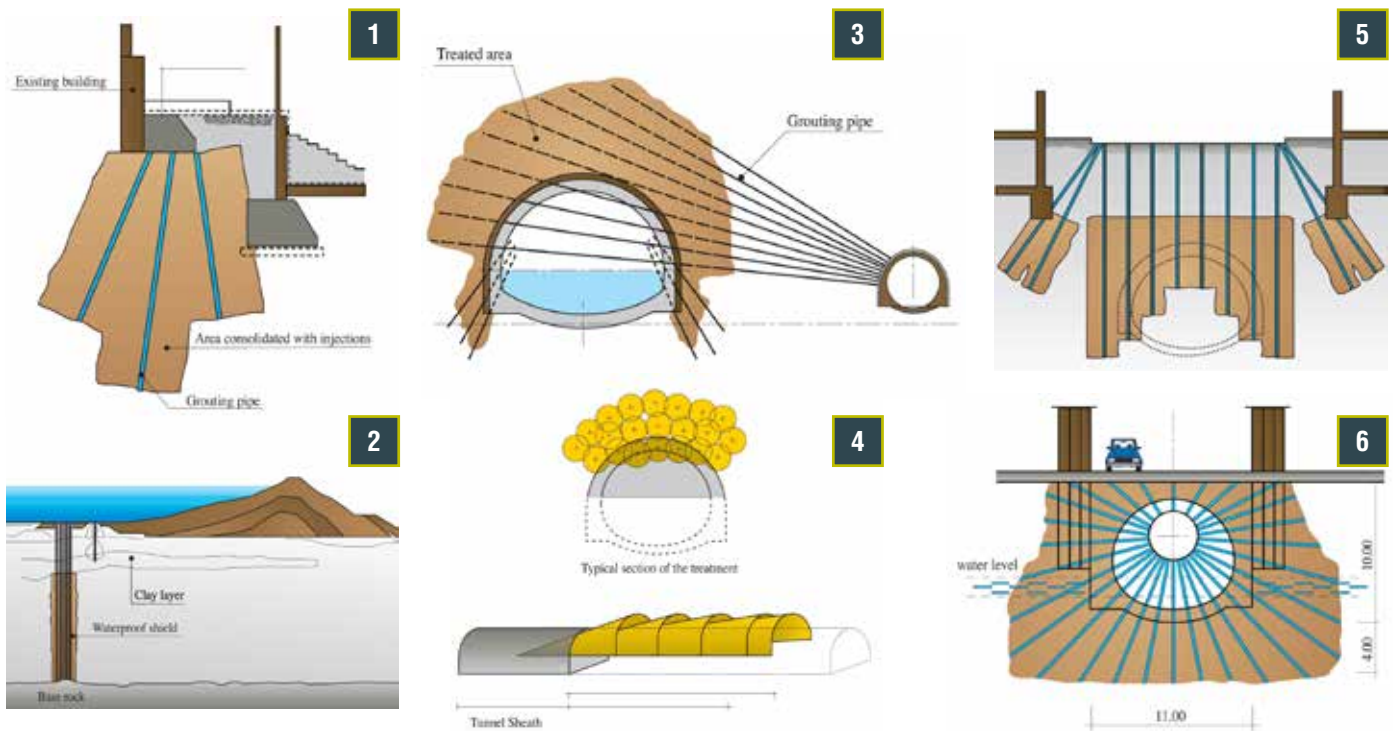
**SOIL CONSOLIDATION AND WATERPROOFING
THROUGH INJECTION OF CONCRETE
AND CHEMICAL GROUTING MIXTURES**

DURVINIL® SLEEVED GROUTING PIPES

DURVINIL® sleeved grouting pipes are used to perform compensation, consolidation and waterproofing injections in loose, rocky and fractured soils in order to improve their mechanical and permeability characteristics.

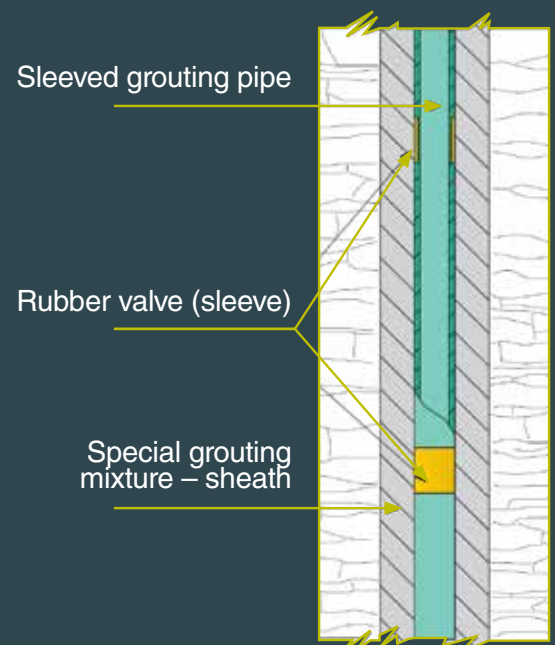
Typical applications of DURVINIL® sleeved grouting pipes:

- Consolidation treatment for excavation under existing foundations. ⁽¹⁾
- Waterproof shield for dams. ⁽²⁾
- Consolidation before the excavation of a tunnel or of an underground work:
 - from an adjacent or pilot tunnel (radial grouting method). ⁽³⁾
 - sub horizontal injections (umbrella method). ⁽⁴⁾
- Preventive treatment in case of increased structural load caused by renovation of old buildings or by creation of underground spaces below them. ⁽¹⁻⁵⁾
- Waterproofing or consolidation, near diaphragm walls and sheet piles. ⁽⁶⁾



CHARACTERISTICS OF DURVINIL® SLEEVED GROUTING PIPES

- Supplied in threaded bars up to 6 meters long
- Pipe diameter from 3/8" to 2 1/2"
- Sleeve pitch 25-33-50-100 cm
- External sleeves with protection rings or sleeves in the pipe thickness
- Connection by threaded couplings



ADVANTAGES OF THE GROUTING TECHNIQUE BY MEANS OF DURVINIL® SLEEVED PIPES

- Injections can be carried out in different stages (IRS Technique).
- Different mixtures can be injected at each grouting stage (concrete, resins and chemical mixtures).
- Accurate control of the injected volumes and of the grouting pressure.
- Sleeve pitch according to project indications.
- The pipes can be rolled to be joined to steel and strand anchors for the creation of a bulb effect in the bond length.
- Non metallic pipes easy to break during excavation.
- Accurate injections to reduce settlement problems.



Waterproofing injections



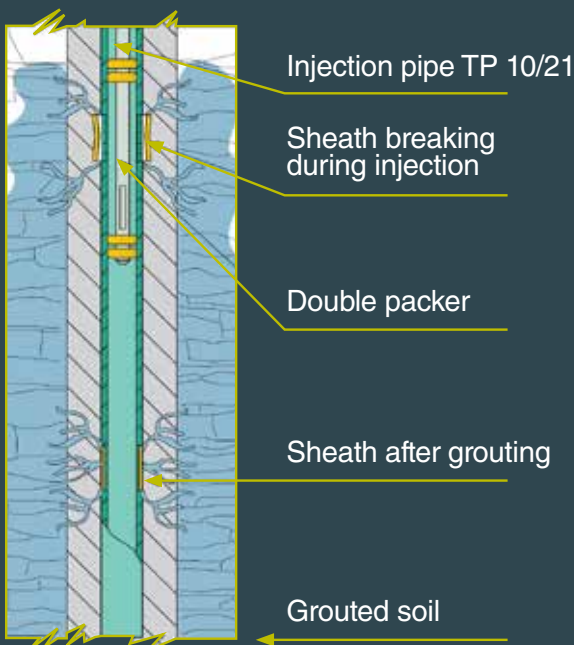
"No-Dig" horizontal injections



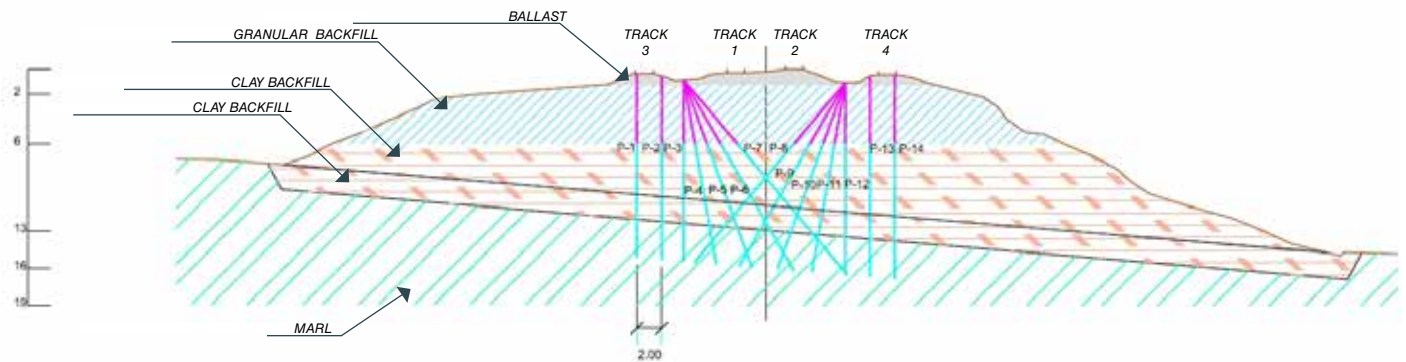
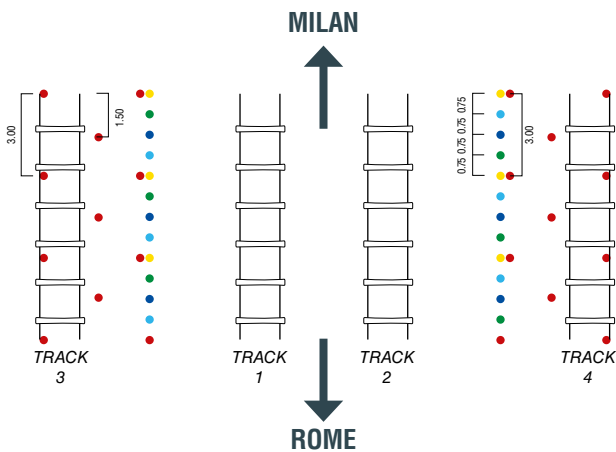
Rollable pipes for anchors



Consolidation grouting



1. Double mechanical packer for 1" and 1 1/4 pipes
2. Hydraulic packer for pipes from 1 1/2"
3. Obturator bag



Example of soil consolidation underneath a high-speed rail line.
Works carried out without interruption of traffic.

DURVINIL® PVC sleeved pipes are supplied in diameters and lengths with number, position and pitch of the sleeves according to the requests of both customers and designers. They can reach high injection pressures (up to 120 bar) and are also supplied with hydraulic or mechanical packers, necessary for the execution of injections.

Nominal Diameter	Internal Diameter [mm]	External Diameter [mm]	Burst pressure [bar]	Sleeves [I]internal/[E]xternal
3/8"	11	17	75 - 100	E
1/2"	15	21	50 - 90	E
1"	27	34	50 - 70	E
1 ¹ / ₈ "	28	38	50 - 70	E/I
1 ¹ / ₄ "	34	42	35 - 70	E
1 ¹ / ₂ "	40	48	35 - 50	E
1 ³ / ₄ "	40	50	35 - 50	I
2"	50	60	50 - 60	E/I
2 ¹ / ₂ "	64	75	40 - 50	I

Sireg is able to assist both customers and designers in all phases of planning and performing of the injections all over the world.

In partnership with other companies, Sireg also provides the necessary equipment to mix grouting concrete and can offer the assistance service on site, both during the pilot test and during installation.



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