- Rehabilitation of a motorway culvert in Belfort (Belfort Territory).
- Construction of a shotcrete shell for the Ave Maria tunnel at Boulogne-sur-Mer (Pas-de-Calais Department, France).
- Repair of the Saint-Hilaire-de-Riez corniche (Vendée Department, France).
- The shotcrete solution for Channel Tunnel work.
- External strengthening to the Bateau reservoir tank (Paris region).
- Dry process shotcrete placement for the Olbia cinema building in Hyères (Var Department, France).
- Reconstruction of concrete at Vincennes zoo (Paris region).

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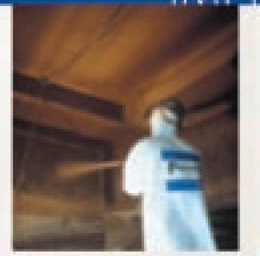
March 2004 - PAO - ID Compo 78310 Coignières - France - Names printed in italics in this brochure are registered trademarks of the Freyssinet Group

IMPROVEMENT/DURABILITY



SHOTCRETE

A PRINCIPLE...

The shotcrete technique consists of placing concrete by spraying wet-mix or dry-mix materials through a hose using compressed air.

This method has many advantages:

- Flexible and fast operation;
- Perfect bond on the prepared support;
- Optimum concrete compaction for better durability;
- Filling and shapes to be made controlled by adjustment of the application rate and by maintaining a continuous flow of the mix through the hose;
- Low shrinkage of placed concrete by correct adjustment and optimised hydration water content.

The Freyssinet technique combined with the dry shotcrete method (TORKRET process) can be used to produce concrete classes up to 60 MPa (compression strength at 28 days).

Restructuring work can be done using shotcrete combined with other techniques such as additional reinforcement, Carbon Fibre Fabrics (TFC®), fibres, additional prestressing, use of tie-rods.

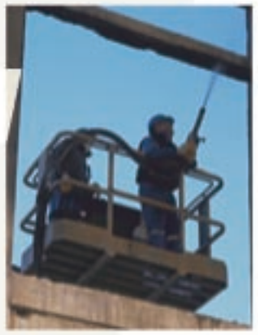
Freyssinet has more than fifty years experience and innovation in repair and strengthening techniques, and offers its skills and know how as a specialized main contractor to designers and customers.

Freyssinet's specialized personnel, trained and certified as nozzle-men, place shotcrete under the control of a shotcrete quality charter.







APPLICATIONS

Freyssinet is continuously searching for optimised solutions to be able to perform renovation works in accordance with standards and best practice, with minimum inconvenience for operations and the environment.

Shotcrete is used mainly for repairing and strengthening structures:

- buildings and car parks;
- bridges, viaducts, tunnels;
- dams, wharfs, quays;
- reservoirs, water towers, sewers, pipes;
- silos, tanks and pools.

that have suffered from:

- poor design, poor construction (cover defect, reinforcement defect, etc.);
- ageing of the structure (facing deterioration, masonry deterioration, etc.);
- accidents (fire, explosions, impacts);
- changes to structural function (changes to imposed loads, creation of openings, etc.).

All structural elements can be strengthened through a wide variety of shapes that can be reconstructed:

- beams, columns, floor slabs;
- arches;
- precast elements;
- circular structures.

Shotcrete can also be used for the construction of new structures, particularly for making arbitrary shapes:

- architectural facings;
- climbing walls, rocks;
- nailed walls, etc.

Our specialist teams can work with you and guide you in analysing your problems and modernization projects.