

Build on us

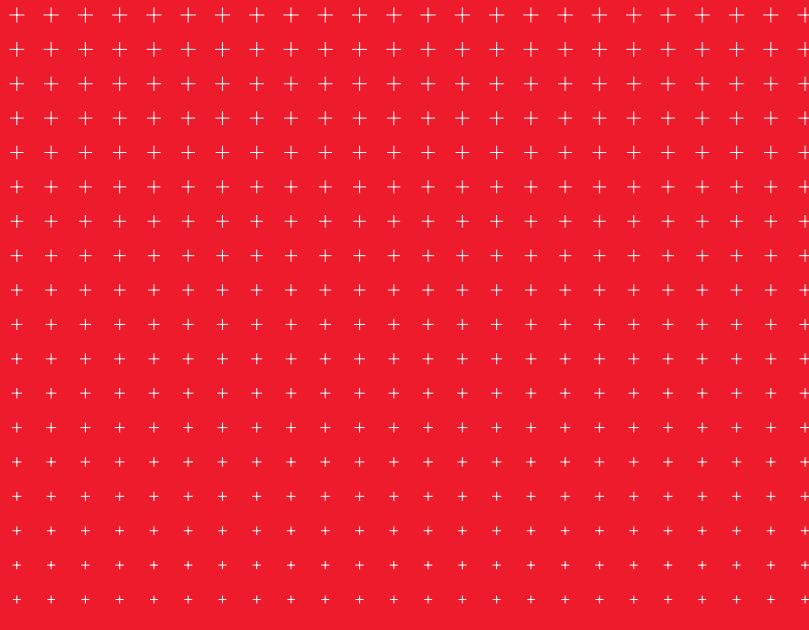


Soletanche Bachy is a world leader in foundations and soil technologies, operating in 60 countries via a network of 80 subsidiaries and branches.

The Group offers effective and innovative construction solutions to public and private clients, in order to complete deep foundations, retaining structures, cut-off walls, reinforcing and civil works for all types of projects, from the largest international structures to the most local sites.

Through its subsidiaries, Soletanche Bachy operates as a general contractor and a specialist subcontractor to design, build, rehabilitate and maintain ports, dams, car parks, metros, tunnels, energy facilities, buildings, etc.

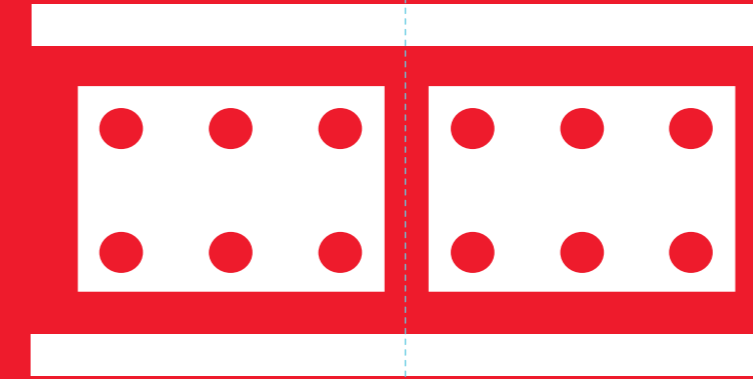
The Group provides environmental solutions by participating in the construction of structures with a positive impact, by implementing optimised technical solutions and by carrying out daily actions on our worksites.



**You have a project?
Contact us**

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Diaphragm Wall



Process

Techniques and applications



A subsidiary of  SOLETANCHE FREYSSINET

Build on us  SOLETANCHE BACHY

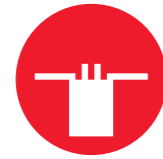
What is a diaphragm wall?

The diaphragm wall is a reinforced concrete screen cast into the ground, used for all types of structures (underground stations, buildings, parking lots, basins, dams) and in all types of soil. It is one of Soletanche Bachy's most frequently used techniques, for permanent retaining structures, deep foundations or the construction of deep cut-offs.

Applications



Retaining structures



Deep foundations



Cut-offs



Underpinning

The advantages of diaphragm walls

- ✓ Adapted to the presence of water in the ground,
- ✓ Preferred in urban environments, close to adjoining buildings, under limited height, or on a small footprint,
- ✓ Its high inertia makes the diaphragm wall much less deformable,
- ✓ Can be used as a temporary or permanent structure,
- ✓ Numerous environmental optimizations are possible.

Technical specifications

Thickness
From 0.8m to 1.8m

Depth
Over 125m

Water tightness
By using CWS metal formwork to incorporate a joint between two panels, or with interlocking joints in the concrete of the adjacent panel.



Environmental benefits

- + **Electrical machinery:** no local Co2 emission
- + **Innovation,** The HF8C Hydrofraise® with Grippers reduces noise and vibration.
- + **Low-carbon concrete,** thanks to the Exegy by Soletanche Bachy supply solution.

WHY WORK WITH BACHY SOLETANCHE SINGAPORE?

✓ A technique mastered for over 60 years.



Implementation

1

Construction of the guide wall, consisting of two temporary reinforced concrete walls defining the precise layout of the structure, to guide the drilling tool and support the future wall equipment.

2

Excavation of the panels using a bucket or an Hydrofraise®, in one or more passes, with the aid of a support fluid (or drilling mud), which contributes in particular to the stability of the trench.

3

Placement of the reinforcement cage, and installation of the concreting columns. The concrete encases the cages and gradually pushes the drilling mud back to the surface, where it is pumped to be recycled and reused.

4

Earthworks / Excavation carried out safely under the shelter of the diaphragm wall.

Execution controls and monitoring

- **Real-time measurement of drilling deviations,** thanks to a range of high-precision sensors embedded in the drilling tool body, developed and patented by Soletanche Bachy. The Z-Lyze® tool is used to process data from our tools.
- **Control of the physico-chemical properties of materials** by our in-house laboratory, through numerous tests and analyses on slurry and concrete to verify their quality.
- **Inclinometer checks** to monitor movements of the diaphragm wall during excavation and throughout the life of the structure.
- **Corrections of any potential deviations using our patented tools.**

✓ We design and build our equipment, such as grabs and Hydrofraises®, to suit project constraints.

✓ An in-house Materials department to formulate concretes and drilling fluids according to our customers' needs.

Equipment

Soletanche Bachy designs and manufactures its equipment to adapt to the constraints of each worksite:



Hydrofraise® HC05:
Compact, containerizable, the Hydrofraise® HC05 is ideal for highly constrained environments, under limited height. It can be fitted with an electric power pack to reduce its carbon footprint, and grippers for enhanced performance.



Hydrofraise® HF8C:
Capable of reaching depths of up to 90m while maintaining a reduced footprint, the Hydrofraise® HF8C meets the constraints of today's urban worksites. The HF8C is equipped with grippers and can operate electrically.



Hydrofraise® HF8:
A machine capable of drilling in the hardest terrain and at great depths. This machine can also be transported in a container and dismantled in 72 hours. The Hydrofraise® HF8 can also be fitted with an electric power pack and grippers.



KS / Baya grab:
Quiet and low-vibration, they are perfectly suited to urban worksites. The latest generations are equipped with hydraulic flaps and electronic sensors for greater drilling precision and verticality.

References



CR116 Ang Mo Kio Singapore HF8C Hydrofraise® with Gripper at CR116



National Gallery Singapore Construction of diaphragm wall in confined space



The Sail, Marina Bay Singapore Diaphragm Wall of 220m and thickness of 0.8m & 1.0m



Pasir Ris 8 Singapore Low headroom diaphragm wall with HC05



T228 Garden By the Bay Station Singapore Total of 900m diaphragm wall construction



N105 Novena Singapore First use of HF8 Hydrofraise® with grippers

✓ A digital platform (Zetta-Lyze®) to collect, analyze and track project data in real time.

✓ In-depth control of verticality and rigorous monitoring of implementation.