

# MENARD VACUUM



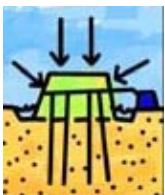
The Menard Vacuum consolidation method is a proprietary system used for preloading and consolidating soft and very soft saturated impervious soils.

The procedure consists of installing vertical and horizontal drains under an airtight impervious membrane, removing the air below the membrane, creating a vacuum condition and imposing an atmospheric pressure on the soil.

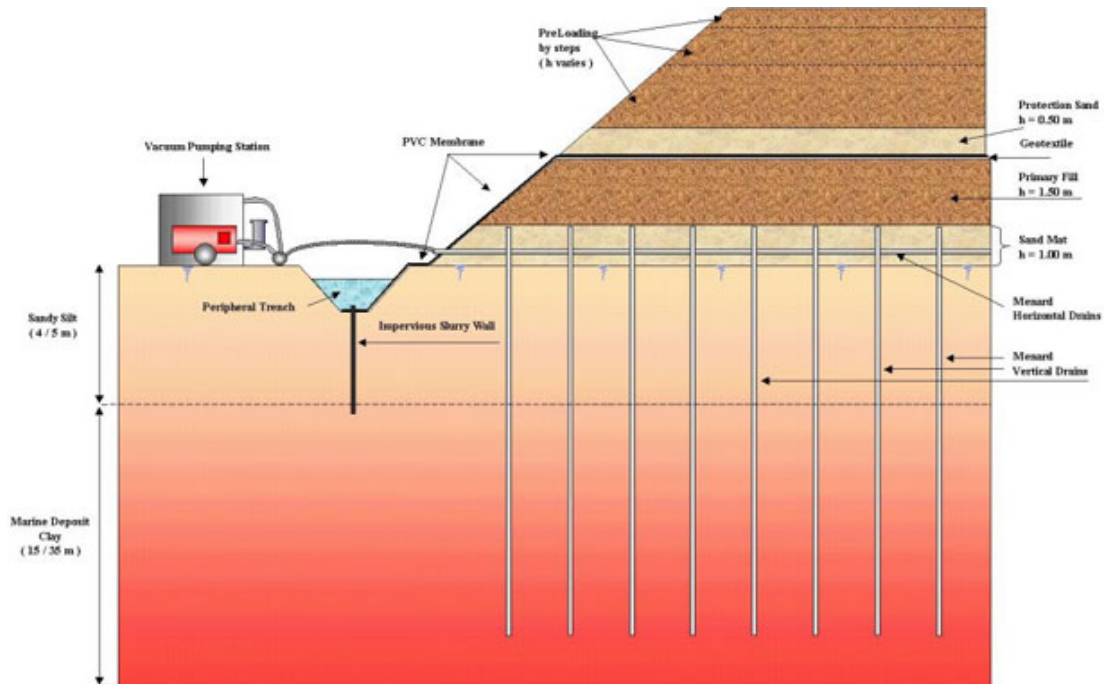
This process creates an accelerated isotropic consolidation state in the soil mass in a relatively short period; thus reducing the need for long-term and potentially unstable surcharge loads.

The main advantages of this technique are:

- Significant time savings compared to other consolidation methods
- Isotropic consolidation mitigates the risk of failure under additional loading of the permanent construction
- Reduced risk of slope instability beyond the boundaries
- Controlled rate and magnitude of loading and settlement



## Work procedure for Menard Vacuum



### Port of Brisbane, Fisherman Island Paddocks S3A & S3B

Application of Menard Vacuum technology was able to consolidate Paddocks S3A and S3B and save the project more than 2 years of construction time.

This technique was used to treat very soft marine mud with over 30 m of thickness. Thanks to this method, the project turned out to be an environmental success and stability bunds were not required to be reclaimed onto the sensitive marine habitat.



### Recent References

- Fisherman's Island S3A & S3B (QLD, Australia)** - Port of Brisbane Corporation
- Balina Bypass (NSW, Australia)** - NSW RTA - Road
- A380 Airbus Factory (Germany)** - EADS – Structures and platforms
- Kwang Yang Container Terminal (South Korea)** – Port Authority- Ports & storage – 300,000 m<sup>2</sup>
- Alexandria City Centre (Egypt)** - MAF Misr - Commercial buildings- 220,000 m<sup>2</sup>
- Calais Euro Tunnel (France)** - Euro Tunnel- Buildings- road networks- 57,000 m<sup>2</sup>

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