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NATIONWIDE

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ASP Piling is one of the most experienced and comprehensive providers of piling and anchoring solutions to the construction industry in Australia. Our sister company Australian Dewatering Systems is the leading dewatering service provider with Australia's largest fleet of water treatment settlement tanks.

Soil Mixing Wall System



Soil Mixing provides a quick and cost effective way of creating cut off and retaining walls requiring less equipment on site and, importantly, causing minimum disruption to neighbours.

The Soil Mixing Wall System blends self-hardening cement slurry with on-site soil to create strong reinforced walls that are quick to construct and are highly cost effective.

Also known as Mixed In Place Piles and used extensively in the United States and Europe, ASP is pioneering this method at suitable locations across Australia.

Methodology

A specialist drill rig using two independent rotary drives pushes a mixing tool into the ground. As the native soil is broken down, it is mixed with cement slurry that is continuously injected through the drill stem and a continuous wall is constructed by overlapping alternating primary and secondary wall elements. Depending on the type of soil and cement content, wall strengths range from 2MPa for cut off walls to 8-10 MPa for retaining walls.

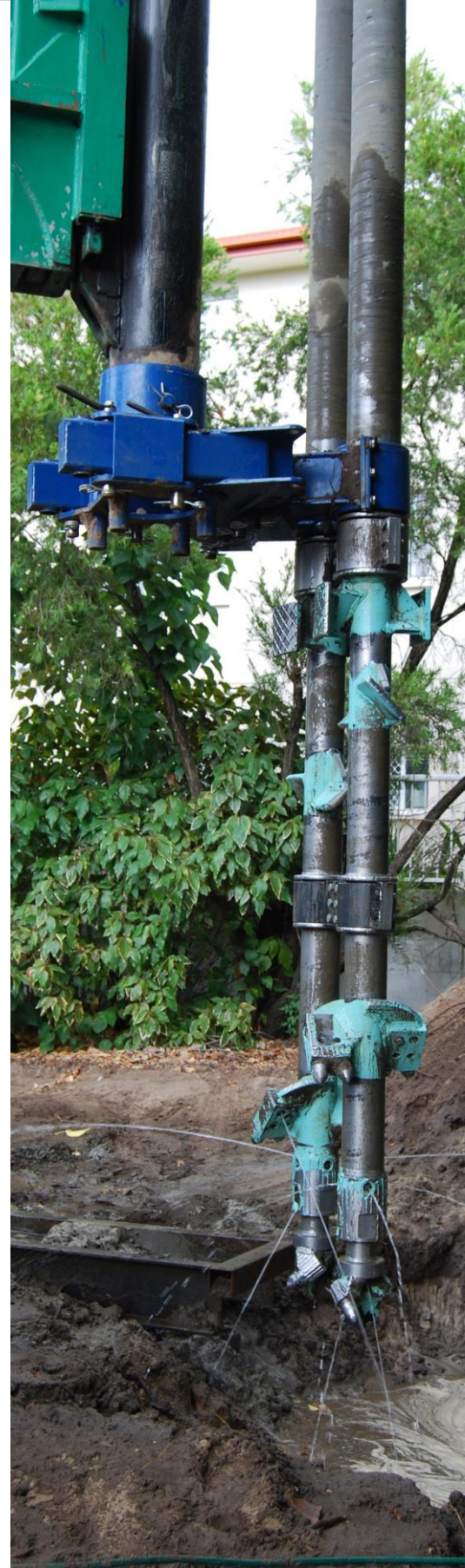
Wall thickness of 375mm and depths of up to 12 metres can be achieved.

Advantages

Significant Cost Savings: As minimal spoil is required to be excavated and is used as a fundamental part of the construction material, the cost savings in terms of equipment required on site and landfill haulage are quite significant.

Reduced Disturbance: The Soil Mixing Wall System uses a specialist drill rig to create the walls and does not require a pile driver or pounder, thereby reducing the disturbance to neighbours and reducing the probability of cracks caused by vibration of sheet pile installation and the possibility of any ground movement on neighbouring properties.

Flexibility: The Soil Mixed Wall System can be used as an alternative to block walls and sheet piled walls in certain locations. Soil mixed walls can also be shaved to meet specific architectural profile requirements.



ASP Soil Mixing Wall System



Technical Background

The twin mixing tools are mounted on a high revolution auger driver while the suspension (water/cement mixture) supply is attached.

As the mixing tools are lowered into the ground, soil is mixed with grout under pressure which is constantly pumped to the mixing tool as it descends to the required depth. The developed mixture from soil and suspension is further mixed during tool withdrawal and suspension continues to be pumped.

Once the augers are withdrawn, the completed wet mixed twin-pile is ready to cure.

Single piles, secant pile walls, block patterns or any other required patterns can be produced.

Left: ASP soil mixing rig.

Right: Head of the high revolution auger driver.



Below left: Soil mix control unit. **Below right:** A newly completed soil mix wall.

Bottom right: SMW used as a boundary retention system.



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