



tecniwell

tecniwell

DSM EQUIPMENT

Tecniwell's HISTORY

World Leader in Jet-Grouting Equipment

Established in 1987, Tecniwell specializes in designing and producing advanced equipment for soil consolidation and jet-grouting.

With over **35 years of experience**, Tecniwell is recognized globally for excellence in Jet-Grouting, Grouting, Mixing, and Pumping equipment, widely used in critical civil engineering projects.

About **5.500** units produced by **tecniwell** are used for the most challenging soil consolidation projects, all around the Continents, from Europe to Africa, from the Americas to Asia and Oceania.

tecniwell's commitment is the continuing innovation and improvement of its products and, through a close partnership with its clients, to supply equipment and accessories that perform at the best of Productivity and Reliability in full respect of the Safety.



THE
COMPANY

Deep Soil Mixing (DSM)

Technology

Deep Soil Mixing (DSM) is a ground improvement technique widely adopted in civil engineering to enhance the mechanical properties of weak soils, allowing them to safely support structures and earthworks. It works by disaggregating the ground and mixing it with a cement-based grout slurry.

- It works by mechanically blending the existing soil with cement-based or chemical binders using rotating mixing tools.
- This mixing process is carried out by inserting the mixing shafts into the ground and injecting grout while rotating the tools, ensuring a homogeneous mixture with the existing soil.
- DSM is particularly effective in soft clays, silts, and organic soils, increasing strength, reducing compressibility, and improving stability.



DSM

Execution & Methods

Deep Soil Mixing Execution :

Drilling, a rig equipped with mixing tools is used to drill into the ground to the required depth using conventional rotary methods.

Binder Injection, once at depth, a cement-based or chemical binder is injected through ports on the mixing tools.

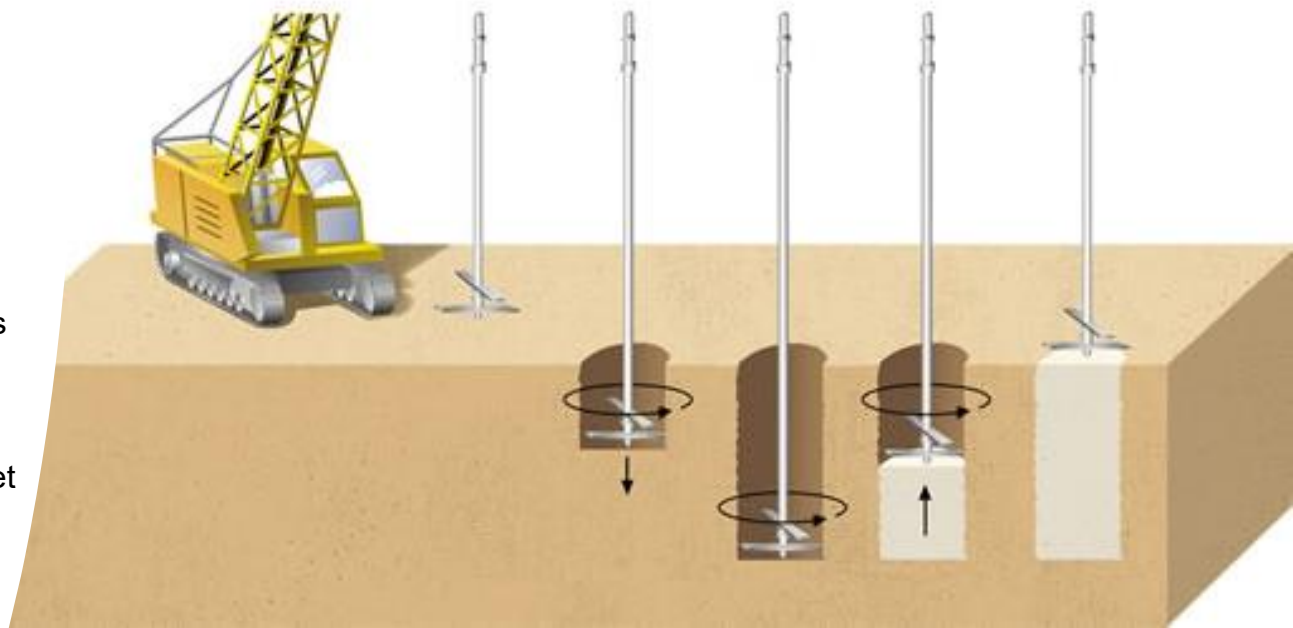
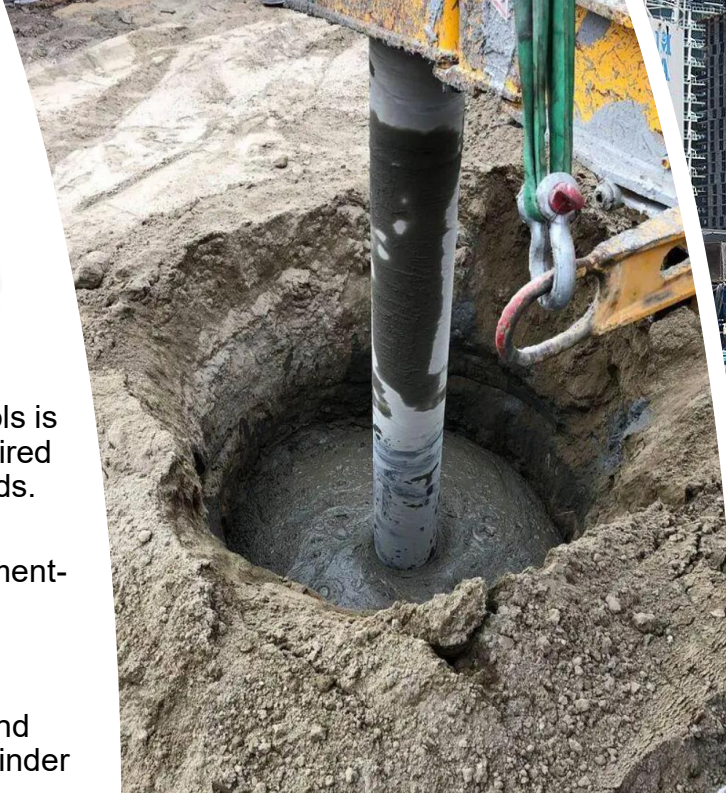
Soil Mixing, as the tools are rotated and withdrawn, they thoroughly blend the binder with the surrounding soil, forming a cylindrical column of improved ground.

DSM Methods

Dry Mixing: A dry binder (usually lime or cement) is introduced into the soil without water, ideal for moisture-rich soils.

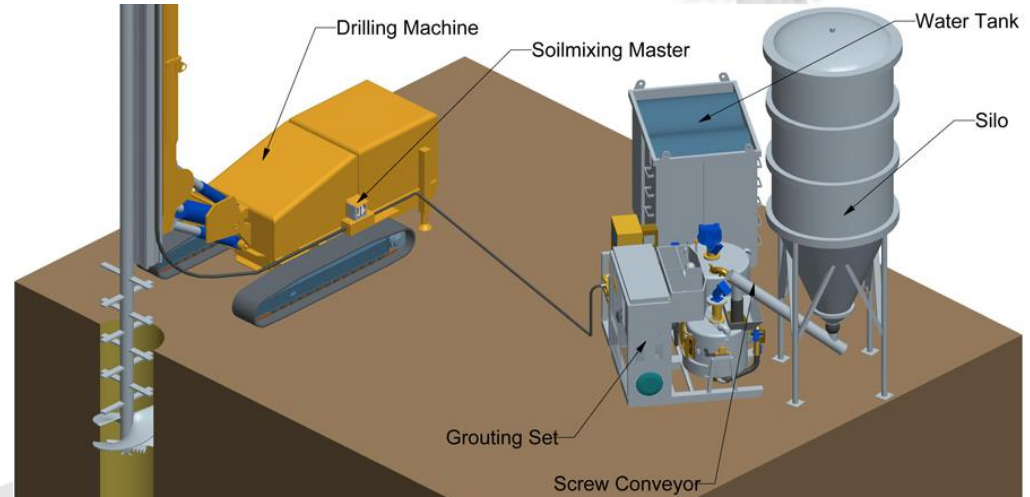
Wet Mixing: A slurry of binder and water is pumped into the ground, suited for drier soils or when higher uniformity is needed.

Combined Method: Uses both dry and wet binders to optimize mixing results depending on specific soil and project requirements.



Deep Soil Mixing

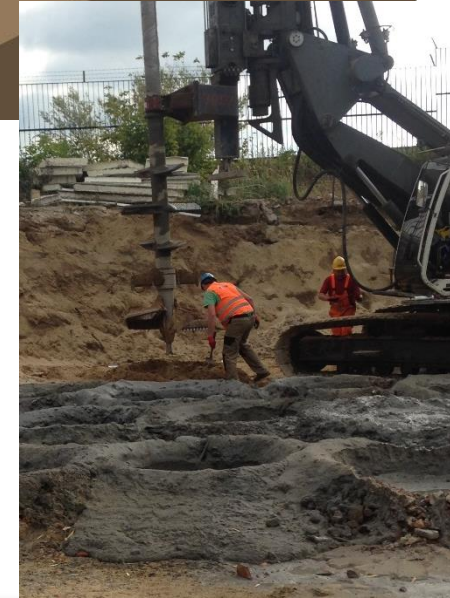
Job-site Set up



Standard set up Deep Soil Mixing

Drill rig, single or twin shaft, 10-30 mt depth.

- **High flow pump**, 300-500 lt/min @30-50 bar
- **Automatic mixing plant** 20-50 m³/h
- Vertical or Horizontal **cement silo**
- **DSM mixing tools**, twin or more paddle configuration.



Deep Soil Mixing

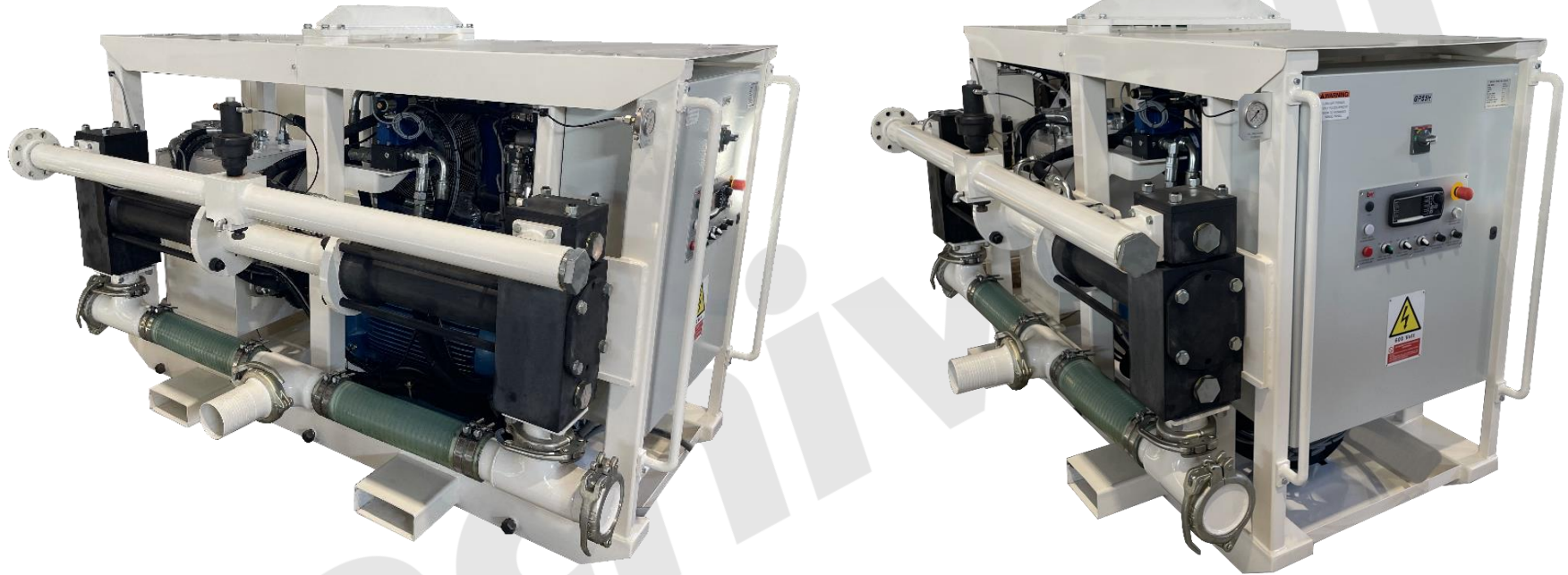
Tecniwell equipment

With over 35 years of expertise and a leading position on the field, Tecniwell supplies top-quality equipment and solutions for jet grouting technology, like:

- High flow pumps
- Mixing plants
- Horizontal silos



GP serie Grout Pump for High Flow DSM



37kW / 45kW / 50kW

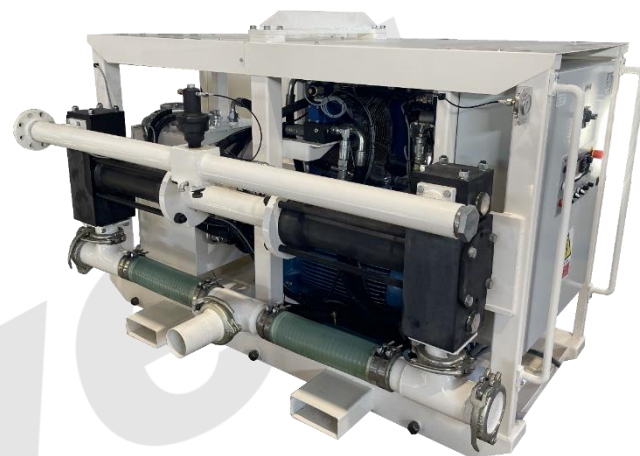
DSM EQUIPMENT – HIGH FLOW PUMPS



GP37H



GP45H



GP55H

GROUT PUMP MODEL	GP37H	GP45H	GP55H
Electric motor	37 kW	45 kW	55 kW
Piston / Plunger ø	6"-7"- 7" ¹ / ₂	6"-7"- 7" ¹ / ₂	6"-7"- 7" ¹ / ₂
Stroke	10"	10"	16"
Max. Pressure (BAR)	50	50	50
Max. Flow rate	575 lt/min	585 lt/min	800 lt/min

AUTOMATIC MIXER PLANTS

We offer a comprehensive range of automatic mixers — available in both containerized and non-containerized versions — with hourly production from 20 to 60 m³.

For maximum space efficiency, our containerized models can be stacked together with our horizontal silos.



MIXER PLANT



MODEL	TWM20	TWM30	TWM40	TWM50	TWM60	TWM60/S
Max hourly production	20 m3/h 88 gpm	30 m3/h 132 gpm	40 m3/h 173 gpm	50 m3/h 220 gpm	60 m3/h 264 gpm	60 m3/h 264 gpm
Mixer tank capacity	1.300 lt 340 gal	2.000 lt 528 gal	2.000 lt 528 gal	1.700 lt 450 gal	2.000 lt 528 gal	2.500 lt 660 gal
Pump capacity	1.500 lt/min 396 gpm	2.000 lt/min 528 gpm	3.300 lt/min 870 gpm	2 x 2.000 lt/min 2 x 528 gpm	2 x 3.300 lt/min 2 x 871 gpm	2 x 3.300 lt/min 2 x 871 gpm
Agitator tank capacity	2.600 lt 687 gal	4.000 lt 1.050 gal	4.000 lt 1.050 gal	4.000 lt 1.050 gal	4.000 lt 1.050 gal	8.000 lt 2.100 gal
Water tank capacity	1.600 lt 422 gal	2.000 lt 528 gal	2.000 lt 528 gal	1.650 lt 435 gal	1.650 lt 435 gal	1.650 lt 435 gal
Booster pump	700 lt/min 185 gpm	1.000 lt/min 264 gpm	1.000 lt/min 264 gpm	1.000 lt/min 264 gpm	1.000 lt/min 264 gpm	1.000 lt/min 264 gpm

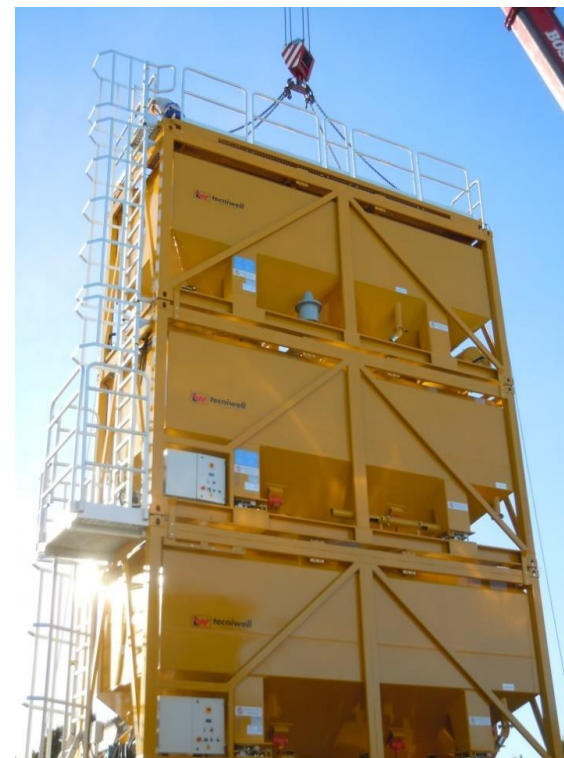


STACKABLE HORIZONTAL SILO

Our horizontal silos can be mounted directly on top of our containerized mixers, eliminating their footprint on site. With capacities ranging from 30 to 90 tons, they also allow for the simultaneous handling of different types of powders.



HORIZONTAL SILO



SILO MODEL	TWSILO 30T	TWSILO 33T	TWSILO 35T	TWSILO 50T	TWSILO30T+30T MODULAR	TWSILO 30T+30T+30T MODULAR
Max Storage Capacity	22 m ³	25 m ³	27 m ³	36 m ³	22 m ³ + 24 m ³	22 m ³ + 22 m ³ + 24 m ³
					DOUBLE POWDER STORAGE OPTION	DOUBLE POWDER STORAGE OPTION

CUSTOM MADE DSM EQUIPMENT



ELECTRONIC CONTROL SYSTEMS FOR TWM50 AND
WIRELESS REMOTE CONTROL FOR GP37H

TWM50 + GP37H

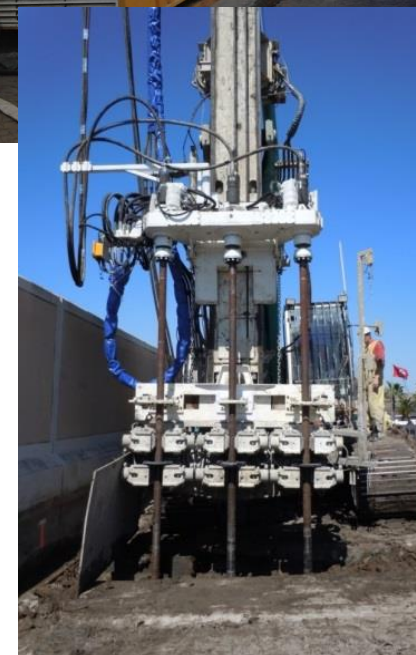
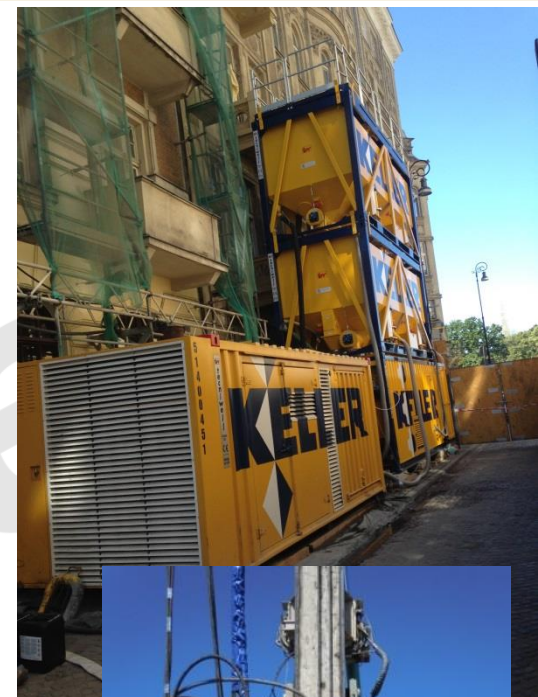


DSM MIXING / INJECTION HIGH CAPACITY COMPACT UNIT

GROUT PUMP MODEL	GP37H
Max Pressure	55 bar
Max Flow rate	600 lt/min

MIXING PLANT MODEL	TWM50
Max Hourly production	50 m ³
CEMENT SILO MODEL	TWSILO30T+30T
Max Capacity	60 ton

DSM Job Site in Poland
Max flow: 570 l/min at 30 bars



CASE HISTORY (example)



DSM Job Site in Turkey

Water / Cement = 0.8/1

Nozzles: 3.5

Max flow: 300 l/min at 70 + bars

Column: 80 cm diam. 19m depth

CASE HISTORY (example)



DSM Job Site in Holland
Water / Cement = 0.75/1
Max flow: 850 l/min at 35 + bars

CASE HISTORY (example)



DSM Job Site in Poland
Max flow: 380 l/min at 35 bars
GP37H pump + TWM20 Mixer



CASE HISTORY (example)



DSM Job Site in Poland
Max flow: 400 l/min at 35 bars
GP37H pump + TWM20 Mixer

CASE HISTORY (example)



DSM Job Site in Poland
Max flow: 300 l/min at 50 bars
GP37H pump + TWM12 Mixer



Innovation and Improvement for equipment at the best of
Productivity and Reliability in a full respect of the **Safety**.

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