

Grouting Equipment & Capabilities

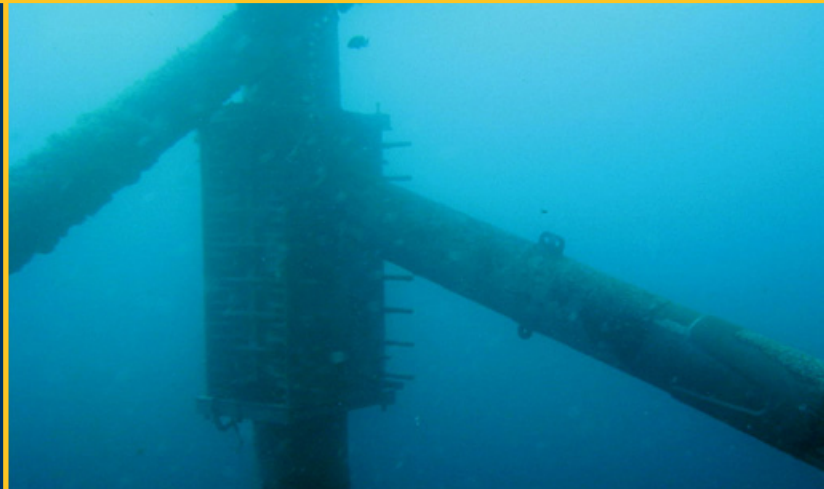
Oceanneering Grout Spread Mobilization on the DSV Ocean Project



Oceanneering Diving specializes in offshore structural repairs with owned and operated grouting equipment, proven methods and procedures that exceed industry standards to achieve 8,000 psi compressive strength after 28 days. We have well trained crews and over 40 years experience with offshore grouting operations.

Project Capabilities:

- Platform Structural Repairs
- Platform Leg / Pile Annulus Grouting
- Quality not Effected by Depth
- Stage Grouting for Deep Water
- Severed Jacket Leg Repairs
- Platform Member Grouting
- Full or Partial Grouting Methods
- Stress Grouted Clamp Repairs
- Legs, Members, X-Brace & Conductor Guide Frame Repairs



Stress Grouted Structural Repair Clamps



OCEANNEERING®

www.oceanneering.com

Grouting Equipment & Capabilities Specifications

Grouting Materials:

- Oceaneering uses Portland Cement "A" which is type I and type II rated in accordance with ASTM C 140.
- Admixtures / super plasticizer keeps the grout easy to pump while allowing a higher density and better crush strengths.

Grouting Equipment:

- 400 ft³ Bulk Cement P-Tanks, 11 ft Diameter 12,000 lb Empty (20 tons of Bulk Grout)
- Grout Mixer (50 BBL Capacity Mixer)
- Mixer Hydraulic Power Units
- Grout Pumps
- Grout Manifold System (Air / Water / Grout)
- Air Compressor 350 psi, 960 CFM
- Regulator / Dryer, Skid Mounted
- Pressure Washer
- 2-in Non-Collapsible Grout Hose
- Hydraulic Magnetic Drill Press
- 8 ft x 20 ft grout van, offshore unit with power and climate control, used to house testing equipment and spares. (Grout samples can be stored and tested onsite.)

Grout Testing:

- Unit Weight Test: Oceaneering will use a Halliburton TRU-WAT cup for fluid density measurements, this scale is accurate and capable of measuring between 7 to 22 lb/gal.
- Compressive Strength Testing in accordance with ASTM C109/C109M-98 Standard Test Method for compressive strength of hydraulic cement mortars using 2-in cube specimens.

Economics / Cost Savings:

- Oceaneering has the ability to transfer additional dry bulk grout to refill P-tanks on site, there-by saving time & money on large projects.
- Modular Equipment mobilized in less than 24 hours.

