

Thermotite ULTRA

Superior Subsea Insulation

Thermotite® ULTRA is a styrenic alloy-based subsea insulation system designed for flow assurance.

System Description:

- Layer 1,2,3: 3-layer anti-corrosion system - Fusion Bonded Epoxy, ULTRABond and ULTRA Solid
- Layer 4: Thermal insulation- ULTRA foam/solid
- Layer 5: Mechanical and UV protective layer- ULTRAShield

Superior Insulation Properties And Unmatched Mechanical Performance

- Lower thermal conductivity of both solid and foamed systems result in lower achievable U values
- Extended cool-down time
- No glass microspheres:
 - Zero risk of compromised thermal performance due to glass breakage or degradation during service
 - Superior insulation performance without glass enables unlimited depth installation
- Incompressibility of solid system allows unlimited water depth installation
- Higher insulation density coupled with reduced thickness improves seabed stability of flowlines and assists in optimizing hydrodynamic response of risers
- Thinner insulation and reduced pipe profile results in lower lay strains and improved hydrodynamic response

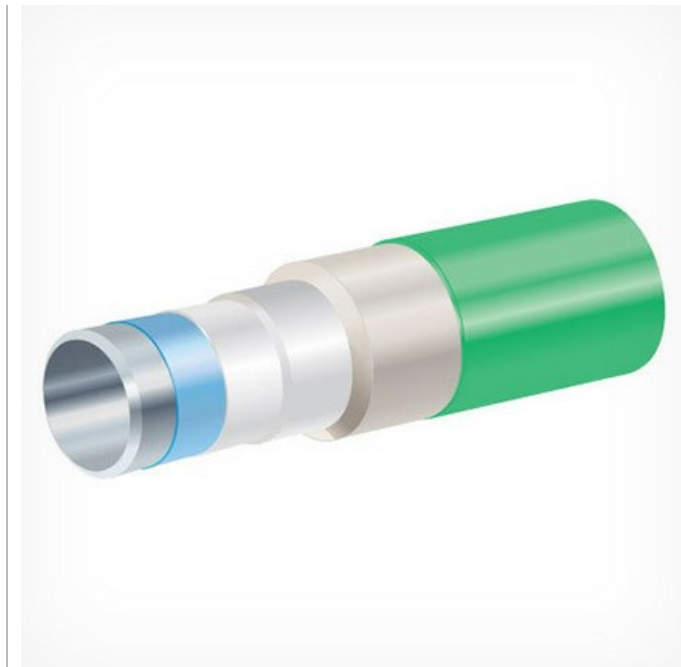
Installation

- Can be installed using all subsea laying methods including reeling, S-lay and J-lay
- Superior low temperature ductility enables lower temperature reeling and increased flexibility in installation schedule
- Lower thermal conductivity translates to reduced insulation
- Thickness and potential savings in transportation and installation costs

FJ Compatibility

- Thermotite® ULTRA
- Nemo 1.1
- Nemo 2.1

Value Added Services



- Compatibility with direct electrical heating systems (DEH)
- Streamlined delivery schedules, product standardization and quality assurance practices due to simplified processing operations
- Universally and readily available project management and logistics support from multiple existing plant locations

CAPABILITY/PROPERTY	SHALLOW WATER THERMOTITE®(S)
Minimum pipe diameter	100 mm (4")
Maximum pipe diameter	914 mm (36")
Maximum operating temperature	120°C (248°F)
Thermal conductivity (K value)	0.11-0.16 W/m·k
Overall heat transfer coeff. (U value)	> 2 W/m ² K (Specific to thermal design)
Water depth	Unlimited

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