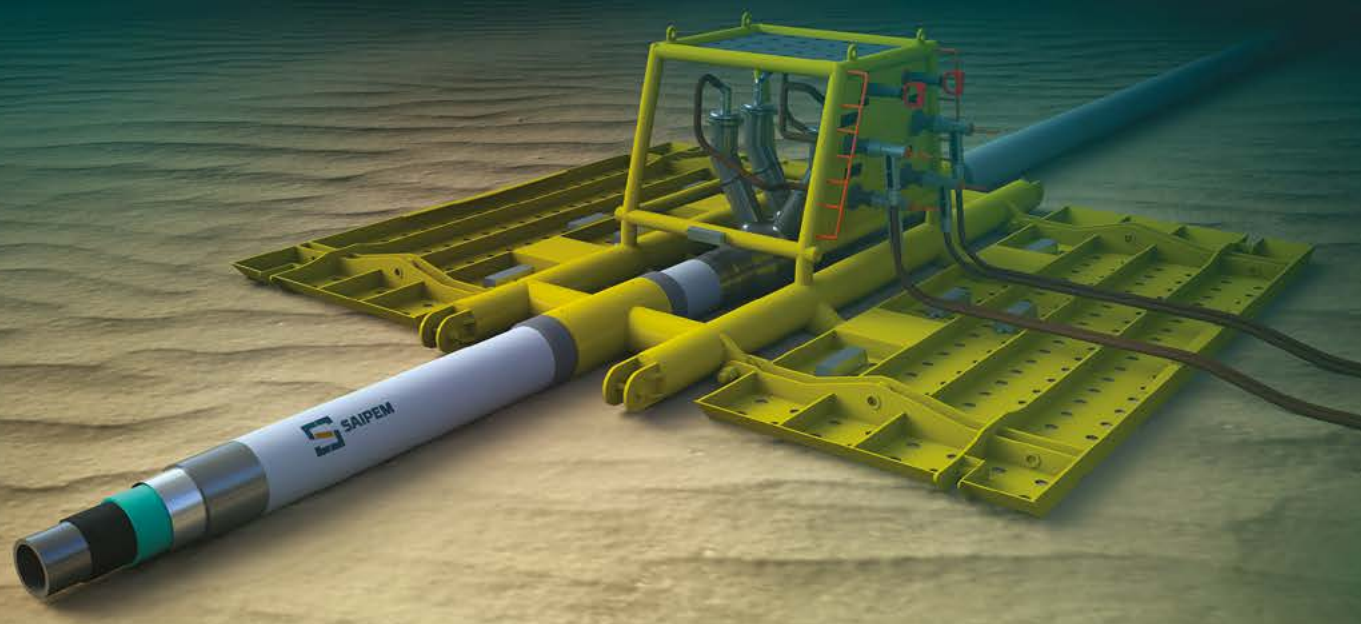
HIGH-PERFORMANCE DIRECT ELECTRICAL HEATING PIPE-IN-PIPE

THE NEXT GENERATION OF SUBSEA HEATED PIPELINES FOR RELIABLE AND COST-EFFECTIVE LONG SUBSEA TIEBACKS IN DEEP WATERS



SAIPEM

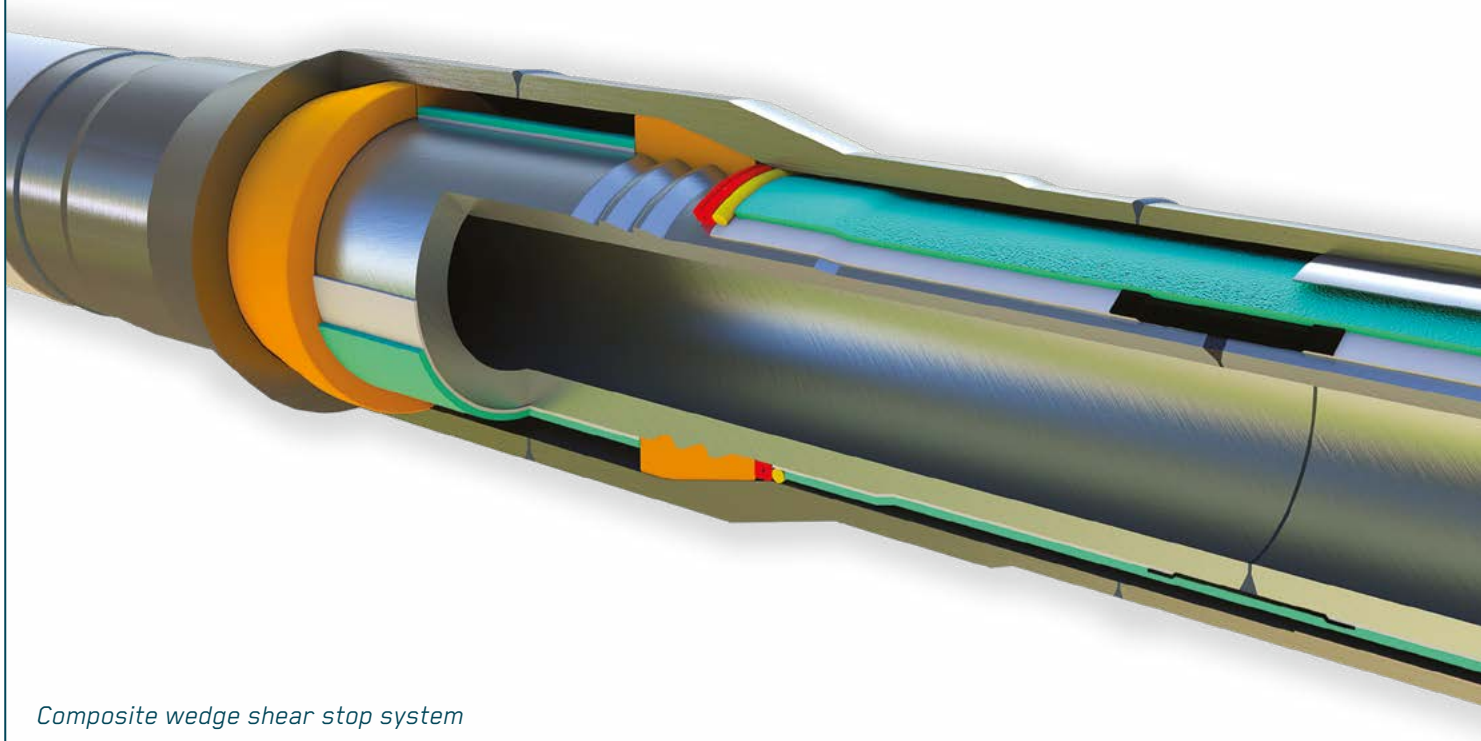
DIRECT ELECTRICAL HEATING PIPE-IN-PIPE

The Saipem High-Performance DEH Pipe-in-Pipe relies on a field-proven technology with enhanced performances through simple add-ons which offer superior electrical efficiency and system reliability.

The DEH PiP system allows improving flow assurance conditions by controlling the production fluid temperature for long and challenging tiebacks without major modifications to the pipeline design.

Direct Electrical Heating Pipe-in-Pipe enables overall field architecture and cost optimizations:

- OPERATIONAL FLEXIBILITY WITH SIMPLIFIED SHUTDOWNS AND FASTER RESTARTS TO MAXIMIZE FLUID PRODUCTION
- HIGH THERMAL PERFORMANCES UNDER NORMAL FLOW CONDITIONS
- SIMPLIFIED SUBSEA ARCHITECTURES, NO FLOW LOOPS
- MINIMUM IMPACT ON HOST STRUCTURE TOPSIDES
- LOWER CHEMICAL INJECTION

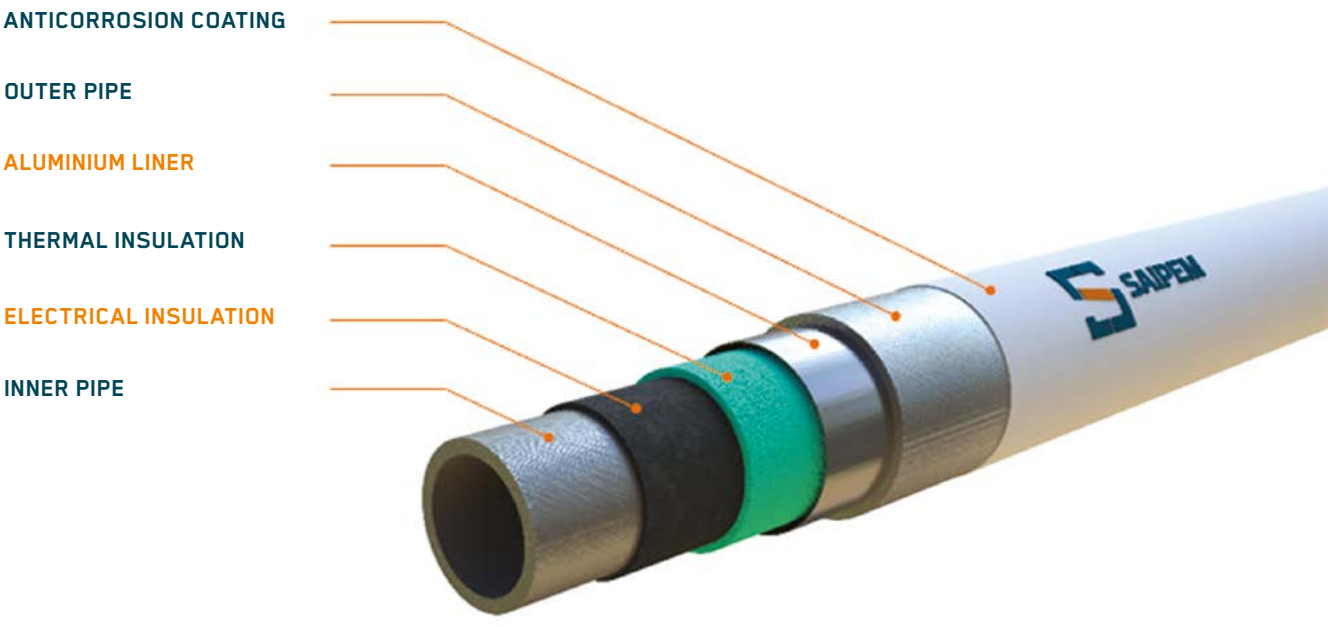


Composite wedge shear stop system

The Saipem High-Performance DEH PiP offers the following main differentiators:

- HIGHEST RELIABILITY THROUGH SIMPLIFIED PIPELINE DESIGN; NO HEATING CABLES OR INTERMEDIATE ELECTRICAL CONNECTIONS
- INCREASED ELECTRICAL EFFICIENCY, LOWER POWER CONSUMPTIONS AND SIMPLER POWER CHAIN
- HIGHER POWER OUTPUT OVER LONGER TIEBACKS
- LARGER PIPELINE DIAMETER AND DEEPER WATERS
- FASTER LAY RATE AND SAFER OFFSHORE OPERATIONS WITH USE OF COMPOSITE WEDGES
- UNIQUE ENGINEERED LINEAR POWER FOR COLD AREA MANAGEMENT

Subsea pipeline Direct Electrical Heating, benefits from an extensive track-record worldwide. The Saipem High-Performance DEH Pipe-in-Pipe has undergone a rigorous development and qualification programme including performance of small-scale and full-scale trials to enable extending the application range of subsea pipeline active heating technologies.
The intrinsically reliable arrangement of the High-Performance DEH PiP allows delivering distributed power outputs larger than 120 W/m and reaching tieback lengths in excess of 60 km with a single power supply location.
The use of innovative composite material solutions allows a 20% increase in the lay rate while enhancing the safety of offshore operations which is also applicable to conventional Pipe-in-Pipe technologies.



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LET'S KEEP IN TOUCH