



### Subsea Structure Insulation

Thermally insulating subsea equipment, especially in deep and ultra deepwater field developments, is paramount to overcome flow assurance issues.

**The thermal insulation of subsea architecture is an essential component in the combat of flow assurance issues in order to maintain flow rates, reduce production costs and provide defence against wax and hydrate formations.**

When reservoir fluids reach the structure, they are typically a high temperature mix of condensed hydrocarbon gases, liquid paraffinic materials, waxes and water. As the fluid progresses through the structure to the processing facility or during a system "cool-down" cycle, heat loss is apparent to the surrounding ocean. As the temperature decreases waxes and hydrate crystals may deposit, leading to potential flow loss and eventual system blockage.

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