



## Oil & Gas Case Study: Offshore pipeline insulation

High-temperature insulation is a critical aspect for many industries, especially the Oil & Gas industry. The drive for greater energy efficiency and the rapid industrialisation of emerging economies, further increase the need for insulation solutions.

Subsequently, there's a corresponding need for high-temperature insulation to help ensure safety, energy efficiency and controlled or reduced emissions.

### The Opportunity & Challenge

A company specialising in industrial insulation solutions, primarily for onshore and offshore Oil & Gas facilities, contacted Silicone Engineering for help with a new project.

The project was to create custom thermal insulation protection for pipelines in an offshore Oil & Gas facility. The client communicated the need for a material they could use to insulate various pipe systems, manifolds, exhaust and pump systems.

Due to the harsh environments where Oil & Gas processing is conducted, fire safety was a primary consideration. In addition to insulation and safety properties, the client was also interested in silicones' ability to withstand environmental stresses such as ozone, oxidation, ultraviolet light, cosmic radiation, and ionising radiation.



## The Solution: **expanSil™** & **kSil®** FR 250

After discussions with the customer, our material engineers suggested using a combination of expanSil™ silicone sponge tubes and kSil® sponge sheeting in a soft-medium flame retardant grade.

The silicone sponge extruded tubes would act as an insulation sleeve over the pipework. The silicone sponge sheets would be cut down and fabricated to different tailored shapes to fit manifolds, exhausts and pumps of varied sizes.

Silicone's low thermal conductivity properties would help ensure optimum heat retention, thus increasing the efficiency performance of the pipe system.

The proposed material would also provide a full range of elemental protection against condensation, water ingress, dust and UV light. The customer was happy with the flexibility gained from using a combination of both extrusions and sheeting to create a comprehensive insulation solution.

Silicone Engineering was able to manufacture and dispatch both flame retardant silicone sponge grades in cut tubes and sheeting together. Upon receipt of the material, the client added their expertise to create custom insulation systems integrated on various offshore oil refineries.

