AEROX™ - TECHNICAL DATA SHEET

AEROX™ * is a pipe support system that enables the use of aerogel insulation within a structural support assembly. The system integrates aerogel insulation and multiple vapour barrier membranes with a load-bearing cradle for cryogenic piping applications.
*Patent pending

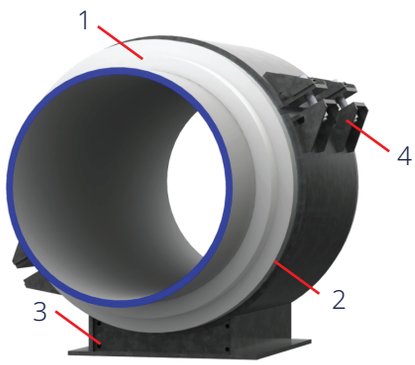

Fig 1: AEROX™ Cryogenic Pipe Support Assembly (Typical)

AEROX™ BG 700 System Overview

AEROX™ consists of a cryogenic support assembly including:
1. Multi-layer aerogel insulation (Oryza-Sil-650™)
2. Integrated vapour barrier system and metal protection shield
3. Structural steel cradle / base assembly
4. Clamping tabs with disc springs for consistent clamping pressure during thermal cycling

Typical Applications

LNG facilities and terminals, cryogenic process piping, industrial gas systems, low-temperature hydrocarbon service, modular pipe rack installations

AEROX™ Technical Parameters

Operating temperature	-196°C to +400°C (project specific)
Pipe size range	DN15 to DN1800
Load ratings	DN15 = 0.1kN, DN1800 = 400kN vertical loads (project specific)
Insulation thickness	60–80mm typical (project specific)
Support Configurations	Resting, guide, anchor, hanger
Materials / finishes	Galvanised carbon steel, stainless steel, or painted finishes (project specific)
CUI mitigation	An aerogel-infused coating system can be applied to assist in further reducing the risk of CUI

Performance Benefits

- Designed to enable the system-wide use of aerogel blanket insulation on piping
- 30–50% lower support profile, improving pipe-rack space efficiency and reducing wind loading.
- Flexible insulation format reduces pipe support installation time and handling complexity
- Hydrophobic aerogel structure with multiple integrated vapour barrier reduces moisture ingress, limiting ice formation and long-term maintenance risk
- Seamless tie-in integration

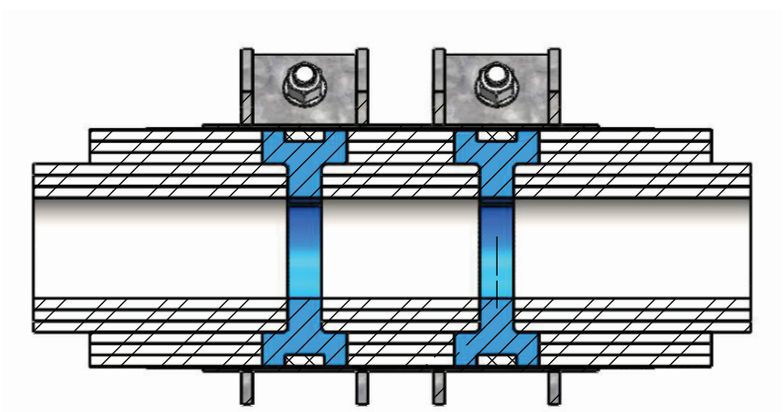
Fig 2: AEROX™ Cryogenic Pipe Support Assembly Cross Section

Design Inputs Required

Pipe size and insulation OD requirement
Design temperature (minimum and maximum operating temperature)
Support configuration (resting / guide / anchor / hanger)
Vertical and lateral loads
Coating / corrosion protection requirements
Tagging and documentation requirements
Support tag number / line number

Quality & Manufacturing Standards

CERTIFIED ISO 9001

AEROX™ supports are manufactured by Swift Metal Australia under ISO 9001 certified quality management systems. Fabrication and material supply are controlled in accordance with applicable Australian and international standards, including:

- AS 1554 – Structural steel welding
- AS/NZS 4673:2001 – Cold-formed stainless steel structures
- AS 4100 and AS/NZS 4600 – Structural steelwork (carbon steel)
- AS 1548-7-460R – Pressure vessel quality plate (where applicable)
- AS 3678 Grade 250 – Structural steel (carbon steel)
- ASTM A387 Grade 22 – Alloy steel plate (project specific)
- BS EN 10088 – Stainless steel grades (project specific)
- ASTM A29 (C1035) – Carbon steel bar/forgings (project specific)
- AS 4680 – Hot-dip galvanised coatings on fabricated ferrous articles

Additional material standards may be applied depending on project specification and site requirements.

Insulation Component – Oryza-Sil-650™

Oryza-Sil-650™ is a flexible aerogel-based thermal insulation material tested in accordance with ASTM C1728 (Standard Specification for Insulation) and associated test methods for thermal performance, compression and moisture resistance.

Typical insulation characteristics include:

- Operational temperature range suitable for cryogenic service
- Hydrophobic structure supporting moisture ingress control
- Reduced insulation thickness compared with conventional foam systems
- Compatible with all jacketing systems
- NORSOK M004 compliant

Nominal thickness: 3, 5, 10, 20 mm
Density: 165 kg/m^3
Operating temperature: -196°C to 650°C
Fire rating: A1
Thermal conductivity: 0.012–0.020 W/mK

Scan for more detail on Oryza-Sil-650