

DARQ

AEROGEL INSULATION BLANKET

ADVANCED THERMAL INSULATION SOLUTIONS

Complete Range | -200°C to 1600°C | Cryogenic to Ultra-High Temperature

D-CGI-200

Cryogenic Series

-200 to +125°C

GR-21 Series

Industrial Grade

-200 to +950°C

RZZ-1300H

Ultra-High Temp

+900 to +1600°C

World's Lowest Thermal Conductor | Grade A1 Fire Resistance | Hydrophobic & CUI-Proof

Certified per GB / ISO / DIN International Standards

WHY CHOOSE DARQ AEROGEL BLANKETS

World's Best Thermal Insulator

Silica aerogel is the lowest thermal conductor known — lambda as low as 0.016 W/(m·K), up to 5x better than mineral wool.

Full Spectrum: -200°C to 1600°C

One trusted brand covers the entire temperature range — from cryogenic cold to extreme furnace-level industrial heat.

Grade A1 Non-Combustible

Completely non-flammable, smoke-free. Certified Grade A1 across all product lines — the highest fire safety classification.

Up to 99% Hydrophobic

Repels liquid water completely and prevents Corrosion Under Insulation (CUI) — the most common cause of pipeline failures.

5x Thinner Than Alternatives

Only 1/5 to 1/3 the thickness of rock wool for the same performance. Frees critical space and cuts total installed cost.

Zero Powder Shedding

Pure inorganic silica aerogel — dust-free, eco-safe, asbestos-free (ISO 22262 certified), safe for all site personnel.

Easy On-Site Installation

Flexible roll form cuts with standard tools to any shape. Significantly reduces installation time and skilled labour cost.

Certified & Tested

All products tested to GB, ISO and DIN standards. Detailed test reports and classification society certification available.



D-CGI-200

Aerogel Blanket — Cryogenic Series

High Performance Cold Insulation for LN2, LNG & Cryogenic Equipment

OPERATING TEMPERATURE

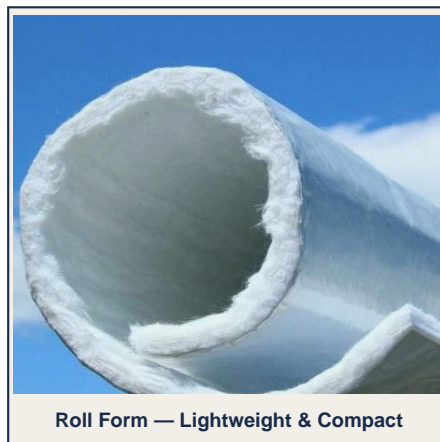
-200°C to +125°C



Aerogel Blanket — Flat Sheet



Superior Flexibility



Roll Form — Lightweight & Compact

Product Overview

The DARQ D-CGI-200 is a premium cold insulation blanket composed of special reinforcing fibre and silica aerogel — the world's lowest thermal conductor. Engineered for cryogenic pipelines, tanks and equipment handling liquified nitrogen, LNG and other cryogenic media, it delivers exceptional performance at temperatures as low as -200°C while remaining flexible and crack-free. Its hydrophobic yet vapour-permeable construction actively prevents Corrosion Under Insulation (CUI), extending asset life and reducing maintenance costs significantly.

Physical & Thermal Properties

Property	Value	Notes / Remarks
Product Form	Roll	Flexible, easy to handle & store
Standard Thickness	10 mm	Custom thickness on request
Standard Width	1,500 mm	—
Thermal Conductivity	0.017 W/(m·K)	At 25°C 5x better than mineral wool
Temperature Range	-200°C to +125°C	Full cryogenic service
Density	150 ± 30 kg/m ³	Lightweight construction
Hydrophobicity	Yes	Prevents CUI Vapour permeable
Combustion Grade	Non-Combustible	Inorganic silica aerogel base
Test Standards	GB/T10294 & GB/T10295-2008	Verified & certified results

Key Edge: 0.017 W/(m·K) at 25°C is up to 5x better than mineral wool.

Achieve the same insulation with 5x less thickness — freeing critical space and cutting total installed cost.

D-CGI-200 — KEY CHARACTERISTICS & BENEFITS

Superior Cold Insulation

Ultra-low thermal conductivity minimises thickness — ideal for space-critical cryogenic piping.

Cryogenic Stability

Maintains softness down to -200°C; NO cracking, absorbs internal pipeline stress reliably.

Hydrophobic & CUI-Proof

Repels liquid water while allowing vapour passage — prevents moisture-driven corrosion.

Easy On-Site Installation

Cuts with conventional tools to any shape — reduces installation time significantly.

Logistics Efficiency

Ultra-thin profile reduces storage and transport volume vs. conventional insulation.

Environmentally Safe

No hazardous fibres, no VOCs — fully inorganic, safe for all site personnel.

Compression Resistant

Maintains structural integrity under mechanical loads and thermal cycling.

Long Service Life

Durable aerogel matrix retains thermal performance across the full design service life.

Typical Applications

LN2 pipelines, tanks & equipment — storage & transport	LNG pipelines, storage facilities & transport systems
Cryogenic material handling equipment and vessels	Cold storage requiring thin, high-performance insulation
Industrial refrigeration & cold chain infrastructure	Space-constrained cryogenic process equipment

GR-21 Series

Aerogel Blankets — Industrial Grade

High-Temperature Insulation for Industrial, Petrochemical, Energy & Aerospace

OPERATING TEMPERATURE

-200°C to +950°C

Product Overview

DARQ GR Aerogel Blankets are manufactured from inorganic fibre combined with silica aerogel using proprietary high-tech processes. Available in three grades — GR-21A, GR-21B and GR-21C — covering the full industrial temperature spectrum from -200°C to +950°C. Grade A fire resistance, 98–99% hydrophobicity, 800 KPa tensile strength and industry-leading thermal conductivity make these blankets the preferred choice for petrochemical, new energy, aerospace, nuclear and marine applications.

Product Variants & Technical Specifications

Parameter	GR-21A	GR-21B	GR-21C
Thickness	3, 5, 6, 10 mm	3, 5, 10 mm	5–10 mm
Width	1,500 mm	1,500 mm	1,500 mm
Temp Range	-200°C to +650°C	0°C to +650°C	0°C to +950°C
Density	180 ± 20 kg/m ³	180 ± 20 kg/m ³	180 ± 20 kg/m ³
λ @ -20°C	0.016 W/(m·K)	—	—
λ @ 25°C	0.017 W/(m·K)	0.020 W/(m·K)	0.020 W/(m·K)
λ @ 300°C	0.036 W/(m·K)	0.042 W/(m·K)	0.042 W/(m·K)
λ @ 500°C	—	0.072 W/(m·K)	—
λ @ 600°C	—	—	0.055 W/(m·K)
λ @ 800°C	—	—	0.086 W/(m·K)
Linear Shrinkage	<2.5% @ 300°C×6h	<2.5% @ 500°C×6h	<2.5% @ 800°C×6h
Hydrophobicity	99%	98%	98%
Tensile Strength	800 KPa	800 KPa	800 KPa
Combustion Grade	Grade A	Grade A	Grade A

λ = Thermal Conductivity (W/m·K) · Test Standards: GB/T10294-2008 & GB/T10295-2008

Typical Applications

◆ Industrial equipment & furnaces	◆ New energy vehicles (NEV/EV batteries)	◆ High-temperature pipelines
◆ Ships & marine insulation	◆ Aerospace thermal protection	◆ Petrochemical & refinery plant
◆ Nuclear power plant insulation	◆ Photovoltaic & solar energy systems	◆ Environmental protection systems

RZZ-1300H

Aerogel Nano Fireproof Blanket — Ultra-High Temperature
Patented Nano-Porous Aerogel + High-Temperature Fire-Resistant Fibre

OPERATING TEMPERATURE

+900°C to +1600°C

Product Overview

The DARQ RZZ-1300H is a revolutionary nano fireproof insulation blanket developed through patented technology, combining nano-porous aerogel with high-temperature fire-resistant fibres. With a maximum operating temperature of 1600°C (2912°F), this product is in a class of its own. It delivers exceptional insulation and fire protection for the most demanding environments — nuclear, aerospace, steam turbines, industrial kilns and high-temperature reaction vessels. Completely non-combustible (A1), zero smoke, no asbestos or heavy metals.

Technical Specifications

Property	RZZ-1300H	Notes
Service Temp	900°C to 1600°C	Max 1600°C / 2912°F
Thickness	10 mm	Roll form
Roll Size	10mm x 1.22m x 15m	Custom on request
λ @ 25°C	≤ 0.021 W/(m·K)	Class-leading
λ @ 300°C	≤ 0.042 W/(m·K)	—
λ @ 500°C	≤ 0.07 W/(m·K)	—
λ @ 1000°C	≤ 0.10 W/(m·K)	Stable at extreme heat
Inflammability	A1 — Non-Inflammable	Zero smoke
Hydrophobicity	≥ 99%	Moisture-proof
Compressive Str.	≥ 37 KPa @ 25% deform.	Durable under load
Tensile Strength	≥ 67 KPa	—
Weight Loss Rate	≤ 0.4%	Zero shedding

RZZ-1300H — APPLICATION ADVANTAGES

Max 1600°C Operating Temp

Unmatched thermal resistance — handles the most extreme industrial heat, kilns and furnace environments.

Superior Mechanical Properties

Compression, tension and crack resistant; withstands rough construction and thermal cycling stress.

A1 Non-Combustible / Smoke-Free

Completely non-flammable with zero smoke — the highest fire safety classification achievable.

≥ 99% Hydrophobicity

Completely prevents liquid water penetration in outdoor or high-humidity industrial installations.

1/5 to 1/3 Traditional Thickness

Same performance with dramatically less material — reduces total construction cost significantly.

Zero Powder Shedding

No dust during transport, cutting or use — safe for all workers and sensitive equipment.

Low Density / Easy Logistics

Lightweight construction simplifies transport, storage and on-site handling operations.

Customisable Sizes

Cut to any project requirement — significantly reducing installation time on-site.

STANDARDS, TESTING & CERTIFICATIONS — RZZ-1300H

All RZZ-1300H specifications independently tested and certified per international standards. Classification society certified. Detailed lab test reports available on request.

Test Standard	Property Tested	Result
GB/T17911-2018	Linear Shrinkage Under Soaking Heat	2% @ 650°C
GB/T17911-2018	Surface Burning Characteristics	PASS
GB8624-2012	Classification of Burning Behaviour	PASS — Class A1
GB/T34336-2017	Mass Loss On Vibration	0.4%
GB/T34336-2017	Compression Resistance	96%
GB/T17393-2008	Austenitic SS Surface Corrosion	Pass — No Crack
GB/T30512-2014	Heavy Metal Presence	Non Detected
DIN75201-B-2011	Odor Test	Pass
ISO22262-1:2012	Asbestos Content	Non Detected

All tests conducted strictly per current standards. Genuine results — full reports on request.

INSTALLATION & HANDLING GUIDELINES

- 1 Designate Processing Area**
 Set up a dedicated flat cutting table with support structures for roll storage. Protect the area to prevent blanket damage during processing.
- 2 Secure Roll Before Cutting**
 Mount the roll on a supporting structure with roller inserted through the core. Pull blanket flat on the cutting table before any cutting.
- 3 Cut to Required Dimensions**
 Use conventional cutting tools to trim blanket to size. The flexible aerogel construction adapts easily to curved and complex surfaces.
- 4 Install & Fix in Place**
 Wrap or attach the cut blanket using appropriate fasteners, banding or adhesive as specified in the DARQ Installation Manual.
- 5 Protect Processed Materials**
 Wrap or cover cut pieces for storage and transport. Refer to the full DARQ Installation Manual for detailed guidance.

PERFORMANCE COMPARISON: DARQ AEROGEL VS. CONVENTIONAL INSULATION

Parameter	DARQ Aerogel	Mineral Wool	Calcium Silicate	PU Foam	Ceramic Fibre
λ @ 25°C (W/m·K)	0.016–0.021	0.033–0.045	0.050–0.060	0.022–0.028	0.030–0.040
Max Service Temp	1600°C	700°C	1000°C	150°C	1400°C
Min Service Temp	-200°C	-200°C	Ambient	-200°C	Ambient
Hydrophobicity	98–99%	Low	Very Low	Moderate	Low
Fire Rating	Grade A1	Non-comb.	Non-comb.	Combustible	Non-comb.
Relative Thickness	1x (Thinnest)	4–6x	5–8x	2–3x	3–5x
CUI Resistance	Excellent	Poor	Poor	Moderate	Poor
Powder / Dust Free	Yes	No	Yes	Yes	No

DARQ Aerogel column highlighted navy. λ = Thermal Conductivity. Values are indicative ranges from published literature.

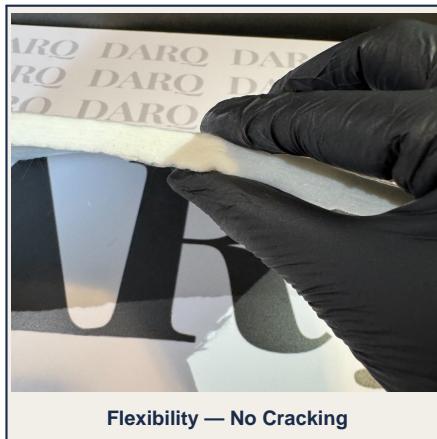
COMPLETE PRODUCT RANGE SUMMARY — -200°C TO 1600°C

Product	Series	Temp Range	Key Conductivity	Fire Grade	Best For
D-CGI-200	Cryogenic	-200°C to +125°C	0.017 W/(m·K) @ 25°C	Non-Combustible	LNG, LN2, Cryogenic
GR-21A	Industrial	-200°C to +650°C	0.016 W/(m·K) @ -20°C	Grade A	Pipelines, NEV, Marine
GR-21B	Industrial	0°C to +650°C	0.020 W/(m·K) @ 25°C	Grade A	Petrochemical, Refinery
GR-21C	Industrial HT	0°C to +950°C	0.020 W/(m·K) @ 25°C	Grade A	Furnaces, Nuclear, Power
RZZ-1300H	Ultra-High	+900°C to +1600°C	0.021 W/(m·K) @ 25°C	A1 Non-Inflammable	Aerospace, Kilns, Nuclear

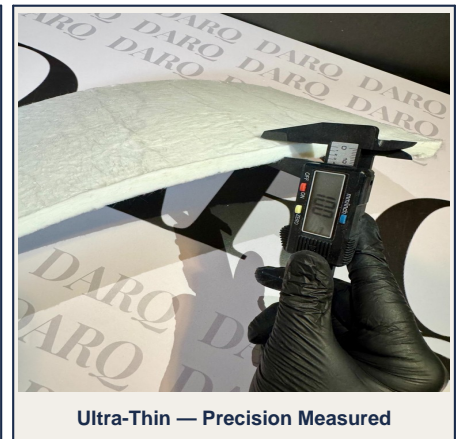
OUR PRODUCTS — REAL QUALITY, VERIFIED PERFORMANCE



Aerogel Blanket — Sheet Form

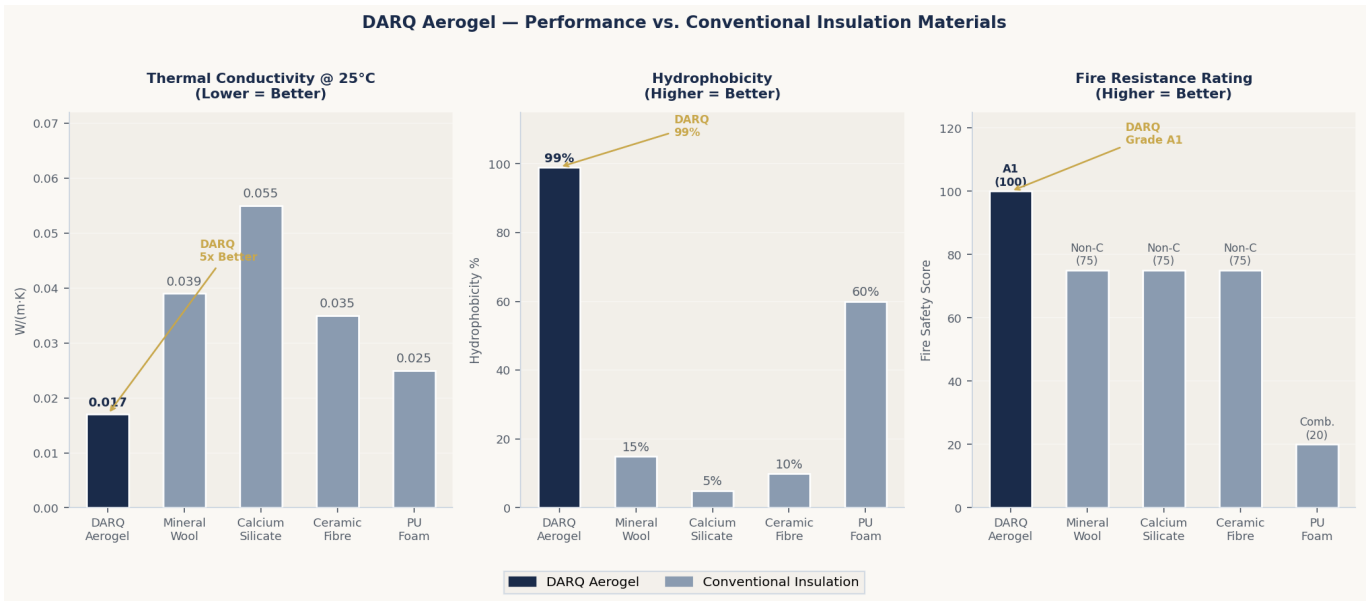


Flexibility — No Cracking



Ultra-Thin — Precision Measured

PERFORMANCE CHART — WHY DARQ AEROGEL OUTPERFORMS



All values based on published industry data. Thermal conductivity tested per GB/T10294-2008. Fire resistance per GB8624-2012. Hydrophobicity per GB/T34336-2017.

ABOUT DARQ INDUSTRIES PVT. LTD.

DARQ Industries Pvt. Ltd. stands at the leading edge of aerogel insulation technology, providing superior thermal insulation solutions across India and beyond. With a comprehensive product range covering the full temperature spectrum from cryogenic (-200°C) to ultra-high temperature (+1600°C), DARQ delivers measurable energy savings, extended asset life and enhanced safety for clients in oil & gas, petrochemical, power generation, aerospace, marine and new energy sectors. All products are manufactured and tested to international standards with detailed certification reports available on request.

DARQ

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Specifications subject to change without prior notice. All data based on standard test conditions. For project-specific technical support, custom dimensions or certification documentation, contact our technical team.