Silicone Hose & FKM Lined Composite Hose

Flexible connections for fuel-cell air, coolant and thermal circuits

Two flexible hose constructions for fuel-cell balance of plant. The silicone hose uses a platinum-cured silicone liner with polyester reinforcement for charge-air and general coolant runs; the FKM lined composite hose adds a fluorocarbon liner for media that the silicone grade cannot tolerate. Both are built from imported raw material, multi-layer reinforced, and supplied cut to length.



Hose construction



Typical in-vehicle routing

Key features

Imported raw material

High-grade silicone and FKM compounds from imported stock.

Size and length on request

Cut to the length the routing needs, no minimum tooling.

Wide temperature range

−40 °C up to +180 °C for the silicone grade.

Multi-layer reinforcement

At least two polyester layers; burst-proof construction.

Smooth, clean surface

Anti-fouling and fade-resistant, easy to clean.

Insulation and flame retardancy

Electrically insulating, flame-retardant compound.

Stable performance

Consistent bore and wall over a long service life.

Factory direct supply

Made and tested in house, supplied direct.

Construction

Inner layer

Platinum cured silicone for the standard hose; FKM of at least 0.3 mm for the composite hose (Viton GF-200S or DTR-70632GFS).

Reinforcement

Polyester fibre, mesh woven or fabric wound, at least two layers. Bond strength of the composite hose is at least 1.5 kN/m to GB/T 14905.

Outer layer

Silicone rubber, smooth and non-marking, resistant to ageing, ozone and engine-compartment contamination.

Where the hose is used

Charge-air lines

The air path from the compressor to the stack inlet. The hose takes up movement between the compressor, the intercooler and the stack.

Coolant lines

Connections to the radiator, the pump and the expansion tank, where the run has to flex with the chassis and the powertrain.

Assemblies on request

Cut to length and fitted with the end connections agreed at order, then marked with part and batch number and protected for shipment.

Technical data

Requirements below are the values verified on each production batch. Unnoted dimensions follow the tolerance standard given in the last row.

Item	Silicone hose	FKM lined composite hose
Inner layer	Platinum cured silicone	FKM, thickness ≥ 0.3 mm (Viton GF-200S / DTR-70632GFS)
Reinforcement	Polyester mesh fabric, ≥ 2 layers	Wound polyester fibre fabric, ≥ 2 layers
Outer layer	Silicone rubber	Silicone rubber
Working temperature	−40 °C to +180 °C	−40 °C to +150 °C
Burst pressure	≥ 8 barg	≥ 8 barg
Leak test	3 barg air, immersed in water, no bubble within 30 s	2 barg air, held 5 min, no leakage permitted
Layer bond strength	—	≥ 1.5 kN/m, tested to GB/T 14905
Dimensional tolerance	GB/T 9575-A	Q/WCG465.11
Cleanliness	Free of oil, dirt and dust; pipeline particle ≤ 400 μm	Clean and oil-free inside and out before shipment
Marking	Part number and batch number on the outer surface	Part number, supplier code and batch number at position A
Visual inspection	Smooth surface, no contamination	No cracks, scratches, burrs or flash, to Q/WCG187.1
Test fittings	DIN 3021-3	Per customer drawing

Where each construction fits

Silicone hose

Charge-air and coolant runs on the air and cooling circuits, where the medium is air, water-glycol or a mild coolant and the temperature stays inside the silicone range.

FKM lined composite hose

Lines carrying media that attack silicone, and any run where a fluorocarbon barrier is required. The FKM liner keeps the fluid away from the reinforcement.

Both types

Supplied cut to length with the fittings agreed at order, marked with part and batch number, and protected for shipment.

Ordering information

- State bore diameter, total length and the fittings at both ends; the hose is cut and assembled to that length.
- State the medium and the working temperature so the liner grade can be confirmed — silicone up to +180 °C, FKM up to +150 °C.
- Both constructions are rated ≥ 8 barg burst; confirm the working pressure and the applicable safety factor when ordering.

Standards referenced

GB/T 9575-A Dimensional tolerance	**GB/T 14905** Layer bond strength	**Q/WCG465.11** Dimensional standard	**Q/WCG187.1** Visual inspection	**DIN 3021-3** Test fittings

Note
Dimensions, liner grade and end fittings are confirmed against the drawing at order. Specifications are subject to change without notice.