

# Installation instructions

## chamber manifolds series FRANK 600

### General information

- FRANK chamber manifolds are factory assembled and are supplied with pressure-tested manifolds.
- The chamber manifolds are designed for connecting geothermal probes, geothermal collectors and energy cages.
- No liability shall be assumed in the case of incorrect use or modifications of the product.



**Do not use the pipe spigots as grips. Do not use pipes and valves as climbing aids.**

### To be agreed before installation:

- Clarify the traffic load prior to installation.
- The use of the chamber manifold in groundwater, stratum water or slack water is only permitted if this has been taken into account in its static design.
- For installation in groundwater/stratum water, buoyancy protection may need to be provided by the client.
- Agree on the installation depth on the later top ground surface. For chamber manifolds with a telescopic plate, the dimensions of the variable height adjustment must be taken into account.

### Bedding and installation

- The subsoil must have sufficient load capacity.
- The base of the trench and the soil surrounding the tank must be permeable.
- The contact surface of the chamber manifold (granular subbase) must be horizontal and level.
- The working area must be measured in such a way as to provide a stress-free alignment of the pipe connections. The minimum working area width is 500 mm.

### Pipe connection

- The pipe lines must be connected to provide a permanent, stress-free connection.
- The circuit and heat pump lines are connected using welded fittings.
- The DVS guideline 2207 must be observed for the welding work.
- When using electro fusion fittings, remove the oxide layer of the pipe spigots using a rotational scraper.

### Backfilling

- Use graded, non-cohesive material for backfilling. Requirements according to ATV 127: soil group G1 (SW, SI, SE, GW, GI and GE) or G2 (GU, GT, SU, ST).
- The material used for filling must be compressible, permeable, shearing resistant, frost-proof and free of sharp objects.
- The maximum particle size of rounded gravel material must be no larger than 22 mm and 11 mm if broken material is used (crushed sand/grit mixture).
- Cohesive soils are not suitable for backfilling.
- Place the backfill material carefully and evenly in several layers around the chamber manifold and compact with 1–2 steps per layer (see ATV A 139 / DIN EN 1610).
- During backfilling, make sure that the pipe connections are stress-free and permanently mounted.
- Use only hand tampers to compact the filling material near the pipe connections.
- Maintain a sufficient distance if using a heavy compactor (e.g. vibrating rollers).

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### Establishing the load capacity

- The load on the cover plate is diverted into the (road) substructure via the supporting rim.
- To ensure the smooth transfer of load, the bedding surface of the supporting rim must be supported and compacted to make it load bearing. (If necessary, using grit, sand or lean concrete).
- The cover plates are not suitable for flowing traffic.
- The chamber manifold cover must not be covered with soil.



No construction vehicles must run up to or over the chamber manifold.



Before closing the chamber manifold, clean the seals and contact surfaces of the cover.



### Technical data:

Max. working temperature	-10 °C to + 40 °C
Operating pressure	max. 3 bar
Test pressure	max. 6 bar

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### Applicable standards and regulations:

- Existing standards and regulations must be observed for the planning and installation of a chamber manifold.
- The accident prevention regulations must also be observed.

Standards and regulations	Contents
ATV A 127	Static Calculation for the Rehabilitation of Drains and Sewers
ATV A 139	Installation and Testing of Drains and Sewers
DIN EN 1610	Construction and Testing of Drains and Sewers
DIN 18196	Earthworks and Foundations - Soil Classification for Civil Engineering Purposes
DIN 1054	Subsoil - Verification of the Safety of Earthworks and Foundations
DIN 4123	Excavations, Foundations and Underpinnings in the Area of Existing Buildings
DIN 4124	Excavations and Trenches - Slopes, Planking and Strutting Breadths of Working Spaces
DIN 4084	Soil - Calculation of Embankment Failure and Overall Stability of Retaining Structures
DIN 18920	Vegetation Technology in Landscaping - Protection of Trees, Plantations and Vegetation Areas During Construction Work
DVGW W400-2	Engineering rules for water supply systems

Standards for road construction:	
ZTVE-StB 94	German Technical Terms and Conditions of Contract and Guidelines for Earthworks in Road Construction
RSto	German guidelines for the standardisation of pavement structures of traffic areas