

Installation instructions

FRANK spiral pipe manholes Type ... -WR (vertical version)

General information

- FRANK manholes are factory assembled and are supplied with pressure-tested manifolds.
- Existing standards and regulations must be observed for installing manholes, in particular DIN EN 1610 and ATV DVWK-A 127 and the UVV.
- No liability shall be assumed in the case of incorrect use or modifications of the product.

Safety information



Ventilate the manhole sufficiently before entry. Ensure an adequate supply of fresh air while inside the manhole.



At least one safety officer must remain outside the manhole.



Do not use the pipe spigots as grips. Use lifting eyes. 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 manhole 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 manholes 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.
- If a static analysis has been carried out, the conditions of installation stated therein must be strictly observed.
- The bedding should consist of class G1 soils with a minimum thickness of 150 mm and Proctor density of 97%.

- The bedding angle of the casing should be 120°.
- The contact surface of the manhole 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 recommended working area is 1 m.

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.

Concrete cover plate

- The concrete plate should be placed on the manhole prior to backfilling the trench to prevent deformation or displacement of the manhole.
- Before placing the concrete plate down, clean the sealing surface on the manhole and the contact surface of the concrete plate.

- The concrete plate must be laid on the manhole centrally to ensure an even load distribution.

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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 of max. 30 cm around the manhole and compact with 1–2 steps per layer (see ATV A 139 / DIN EN 1610).
- During backfilling, ensure that the pipe connections are supported, and 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).

Manhole cover



Each time you open the cover plate, clean the seals and contact surfaces before closing it again.

Technical data for manifold:

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

Applicable standards and regulations:

- Existing standards and regulations must be observed for the planning and installation of a manhole.
- 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