

# **Installation and maintenance instructions for RUGWT3000 Underground Tank**

## **Pedestrian Weight Resistant**

The RUGWT Underground Tank with the PE cover may only be installed in traffic free areas. The amount of short-term load of the PE cover is a maximum of 300kg.

## **Light traffic load resistant**

The RUGWT tank with the cast iron cover (Class B) and cement support ring are suitable for installation in light traffic areas (max. total load 3.5 ton). The tanks are not to be installed in areas where heavy goods vehicles are driven. • The areas driven by light traffic must have a compacted earth covering of not less than 700 mm and a maximum of 1000 mm. • Under no circumstances is the load caused by vehicles to be transferred to the tank.

The maximum allowed earth coverage above the tank shoulder must not be more than 1200 mm – in green areas only – not under areas used by passenger cars.

Construction site Under all circumstances, the following points must be clarified prior to installation: The structural suitability of the ground according to DIN 18196 • Maximum groundwater levels which occur and drainage capability of the subsoil • Types of loads which occur, e.g. traffic loads an expert ground report should be requested from the local planning authority to determine the physical characteristics of the subsoil. 5.2 Trench To ensure that sufficient space is available for working, the base area of the trench must exceed the dimensions of the tank by > 100 mm on each side; the distance from solid constructions must be at least 1000 mm. If the depth of the trench is > 1250 mm an embankment must be designed according to DIN 4124. The construction site must be horizontal and plane and must guarantee sufficient load-bearing capacity. The depth of the trench must be dimensioned so that the max. earth coverage (see point 2 – installation conditions) above the tank is not exceeded. To use the system throughout the entire year, it is necessary to install the tank and those parts of the system which conduct water in the frost-free area. The frost-free depth is usually approx. 600 mm – 800 mm; precise information in this regard can be obtained from the responsible authority. A layer of compacted, round-grain gravel (grain size 8/16, thickness approx. 100 - 150 mm) is applied as the foundation.

### **5.2.1 Slope, embankment**

On installation of the tank in the immediate vicinity (< 5 m) of a slope, earthen mound or slope, a statically calculated supporting wall must be erected to absorb the soil pressure. The wall must

exceed the dimensions of the tank by at least 500 mm in all directions, and must be located at least 1000 mm away from the tank.

### **Groundwater and cohesive (water impermeable) soils (e.g. clay soil)**

If it is anticipated that the tanks will be immersed deeper into the groundwater than is shown in the adjacent figure, sufficient dissipation must be ensured. (See table for max. immersion depth). Dissipation of the drainage water (e.g. via an annular drainage system) is recommended in the case of cohesive, water-impermeable soils.

### **Installation adjacent to surfaces used by vehicles**

If the underground tanks are installed adjacent to surfaces which are used by heavy vehicles weighing over 3.5 ton, the minimum distance away from these surfaces is at least the depth of the trench.

### **Insertion and filling**

The tanks must be inserted, impact-free, into the prepared trench using suitable equipment. To avoid deformities, the tank is filled 1/3 with water before filling in the tank surrounding. Afterwards the surrounding (round grain gravel, max. grain size 8/16) is then filled in layers of max. 30 cm steps and is compacted. The individual layers as well as the medial support column must be well compacted (manuel tamper). Damage to the tank must be avoided during compaction. Mechanical compaction machines must not be used under any circumstances. The surrounding towards the trench must be at least 100 mm wide.

### **Routing connections**

All feed and overflow pipes must be routed with a decline of at least 1% in the direction of flow (possible, subsequent settling must be taken into consideration in this case). If the tank overflow is connected to a public sewer, this must be protected against reflux by means of a lifting station (mixed sewer) or reflux seal (pure rainwater sewer) according to DIN 1986. All suction, pressure and control lines must be routed in an empty pipe, which must be routed as straight as possible, without bending, to the tank with a decline. Necessary bends must be formed using 30° moulded sections. Important: The empty pipe must be connected to an aperture above the max. water level.

### **Assembly of PE Cover**

The PE Cover must remain locked (child proof) in position except when working in the tank. The three sleeves are guided and hammered from below into the holes of the telescopic attachment and

screwed from above with 5 - 6 turns. Finally place the cover in position and screw into place so that it is child proof. The washers prevent the screws from cutting into plastic material of the cover.

**Under no circumstances are ensuing loads to be transferred directly to the tank.**

The RUGWT tank may under no circumstances be installed in areas traversed by heavy goods vehicles or heavy machinery.

### **Inspection and servicing**

The entire system must be checked for leaks, cleanliness and stability at least every three months.

The entire system should be serviced at intervals of approx. 5 years. In this case, all parts of the system must be cleaned and their function checked. Servicing should be carried out as follows: •

Drain the tank completely • Clean surfaces and internal parts with water • Remove all dirt from the tank • Check that all internal parts are firmly seated.