

RAINWATER ACCUMULATION TUNNEL SYSTEM AS-KRECHT OPTIMAL

Continuously expanding urban development increasingly runs into difficulties as regards handling of rainwater coming from hard surfaces and building roofs. Small capacities of the existing sewer systems, the necessity of retaining rainwater in the place of land of its incidence and, last but not least, the legal regulations connected with this, require adequate technical and economic suitable and advantageous solutions.

Such problems can be treated by constructing of soakaway/infiltration systems or slow-down retention spaces. In most cases, these problems limit further development of the relevant territory.

- **Conventional solution:** water accumulation in open polders, concrete tanks or cesspools, or underground gravel spaces.
- **New progressive systems:** plastic tunnels

For several years, plastic constructions of various designs (such as accumulation spaces for excessive rainwater retention) are used for handling of rainwater in the Czech Republic as well as abroad.

Advantages of the AS-KRECHT OPTIMAL system

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| ✓ Reliable and field-tested tunnel construction | ✓ Good strength and load bearing capacity for traffic |
| ✓ Excellent price-performance ratio – i.e. tunnel price as compared to soakaway area | ✓ 100% utilisation of accumulation space |
| ✓ Minimal installation costs | ✓ Easy and quick assembly by connecting the tunnel together |
| ✓ Minimal transport costs (compactness) | ✓ Long life by the use of recycled polyethylene (HDPE) |
| ✓ Assembly efficiency, excellent economic benefits | ✓ Exceptionally lightweight and portable |



AS-KRECHT OPTIMAL is an accumulation & draining tunnel-shaped system consisting of lightweight plastic and semi-circular compartment(s) closed with front covers at both ends. By this, an underground large-capacity space is created suitable for accumulation and gradual soakaway of rainwater from hard surfaces and other areas into the ground.

The tunnel-shaped semi-circular compartments of **AS-KRECHT OPTIMAL** dispose of 100% storage capacity and in a comparison with gravel this system represents savings of more than 2/3 of the excavation volume. Rainwater can thus freely infiltrate through the bottom into the ground..

Both front covers are fitted with offsets for cutting of openings for inlet or outlet; they are designed for connections of DN250 pipes. Merely with the three individual components (semi-circular tunnel parts, front and end covers of sections), it is possible to create a stable and spacious system with minimal construction costs. The system is very compact and lightweight, so the transport costs are minimal.

Specifications

Material: polyethylene (HDPE)

AS-KRECHT OPTIMAL – middle tunnel

Dimensions: 2.15 x 0.68 x 1.15 m (L x H x W)

Efficient length: 2.10 m

Weight: 27 kg

Volume (net): 1.15 m³

AS-KRECHT OPTIMAL – front (START) and end (END) covers

Dimensions: 0.37 x 0.68 x 1.15 m (L x H x W)

Efficient length: 0.32 m

Weight 4 kg

Mechanical properties

(load-bearing at min. overburden height)

✓ For passenger car = 5 kN/m² – min. overburden 0.5 m

✓ Lorry = 16.7 kN/m² – min. overburden 0.8 m

This load meets DIN1072 at various installation depths.



! For detailed data ask for design & installations supporting documents!

Installation options according to the load and surface types

Place of installation / traffic burden	Max. axle load	Min. total overburden (P)	Max. total overburden (P)
Man-bearing area Unpaved surface	-	0.5 ¹ m	3.0 m
LKW 12 t (substitute area load = 6.7 kN/m ²) Unpaved surface	8.0 t	0.5 ^{1,2} m	2.75 m
SLW 30 (substitute area load= 16.7 kN/m ²) Hard surface	13.0 t	1.0 m	2.0 m
SLW 60 (substitute area load = 33.4 kN/m ²) Hard surface	20.0 t	1.0	1.65

List of approved overburdens at various traffic loads (according to DIN 1072)

- 1) Applicable only if the installation areas are protected against freezing!
- 2) In unpaved surfaces it is necessary to beware of creation of irregularities in the finished surface due to erosion or settling processes. The minimum overburden layer must be maintained during the whole lifetime of the system.



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