

Drainage of polluted waste water

1.4 Dainage of polluted waste water

When draining highly polluted chemical waste water the choice of the right pipe material is a challenge. The suitability of the pipe system depends largely on the chemical resistance of the pipe material. The Akatherm HDPE with its excellent resistance against acids and bases is very suitable for most applications in industrial drainage systems. The Akatherm product range also includes special products for use in laboratories.

When using the Akapulus dual containment system one can play it safe in applications above and below ground level. The fully HDPE system offers extra security for possible leakage. The HDPE outer pipe contains the leaking medium and a leakage detection system can detect and locate the leakage point. A through plus in inaccessible locations, underground application or use in vulnerable rooms.

1.4.1 Akapulus dual containment system

The Akapulus dual containment system consists of an outer (protection) pipe and an inner (medium transporting) pipe. The inner pipe is centered in the outer pipe by spacers. In the fittings the inner and outer pipe are connected using butt-welding. This is done with an anchor point that can absorb the expansion force of the HDPE.

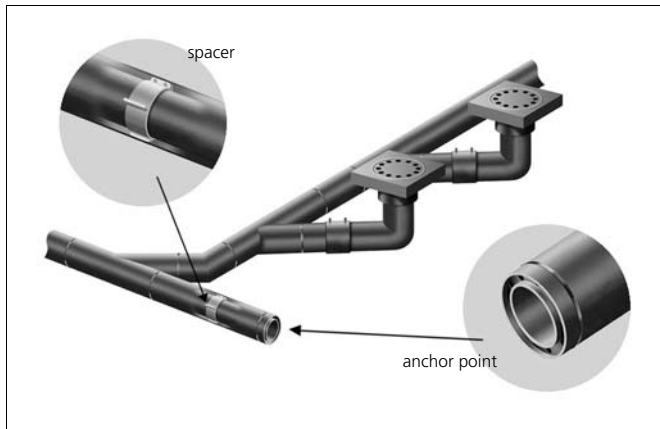


Illustration 1.28

1.4.2 Operating temperature

The Akapulus dual containment system with its built-in anchor points is designed for operating temperatures up to 60°C. For a short duration a temperature of 100°C is permitted.

1.4.3 Jointing method

For jointing of the Akapulus pipes and fittings we recommend the Akafusion technology. The fittings themselves are fabricated in our conditioned workshop using butt-welding. On site butt-welding is, with regard to the difficulty of simultaneously jointing the inner and outer pipe, not permitted. The spigot of the Akapulus fittings is suitable for electrofusion. The joint is made with the following method depending on the size combination:

- Diameter combination (outer pipe d_2 /inner pipe d_1)
160/110, 315/200
- Diameter combination (outer pipe d_2 /inner pipe d_1)
200/160, 250/125

Diameter combination (outer pipe d_2 /inner pipe d_1) 160/110, 315/200:

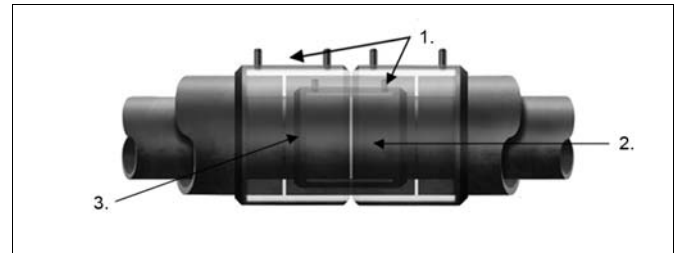


Illustration 1.29

- 1 Akafusion coupler d_2
- 2 Akafusion coupler d_1
- 3 Connecting piece outer pipe d_2

Diameter combination (outer pipe d_2 /inner pipe d_1) 200/160, 250/125:

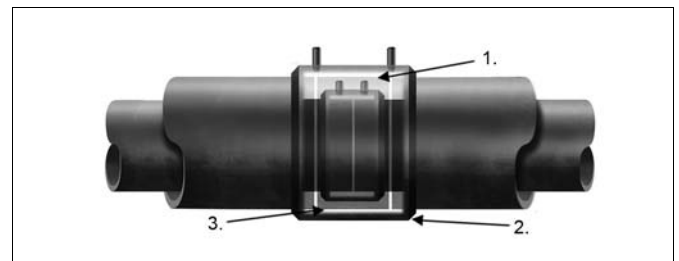


Illustration 1.30

- 1 Akafusion coupler d_2
- 2 Akafusion coupler d_1
- 3 Connecting piece outer pipe d_2

1.4.4 Leak detection

Possible leaks can be simply detected by using the space between the inner and outer pipe for a leak detection system. This can be done visually by using a sensor end-fitting with a sight-glass. At inspection a leak can be detected. When the Akapulus pipe system is equipped with sensor fittings (Art. Nr. 69xxxx) or sensor end-fittings (Art. Nr. 68xxxx) the pipe system can be guarded electronically. The fittings are equipped with contactless sensors that guard the space between inner and outer pipe. A leak not only can be detected by the system but with the right spacing of the sensors even be localized. The Akapulus product range can be found in a separate section of our catalogue. For detailed information please contact our Technical Support department.

1.4.5 Specialties

For the transport of waste water at extreme low ambient temperatures or low viscosity fluids with at normal ambient temperatures, the air insulation of the space between inner and outer pipe is not sufficient. The Akapulus product range includes special varieties for those specific applications:

With heating

Between the inner and outer pipe a heat tracing is applied.



Illustration 1.31

With insulation

The space between inner and outer pipe is insulated.



Illustration 1.32

With heating and insulation

After applying a heat tracing, the space between inner and outer pipe is insulated.



Illustration 1.33

These varieties are not included as separate fittings and pipe. Akaplus is offered on a project bases. For detailed technical advise please contact our Technical Support department.