# Texts for bids and tenders for waste-disposal technology
## PE 100 Pressure pipes for waste water

### Material and manufacture

Only pipes and fittings with a quality assurance certificate granted by TÜV Süddeutschland Bau und Betrieb GmbH.

The static verification of underground pressure pipes for wastewater is to be performed according to the rules and standards outlined in the Advisory Leaflet ATV-DVWK-A 127 "Static evaluation of wastewater channels and lines".

The dimensions and tolerances for the pipes must correspond to DIN 8074. The general quailty requirements and their testing are to be satisfied according to DIN 8075. For fittings, DIN 16963-5 is to be attached. Pipes and fittings must be coloured black throughout. The manufacture of pipes and fittings is to be verified with a quality management system according to DIN ISO 9001.

### Storage, Laying, and Pressure Testing

During storage of the pipes, it must be guaranteed that there is no permanent deformation or damage. Stacks of pipes should not be higher than 1.5 m. Sudden external forces are to be prevented. Pipes or fittings damaged by transport or storage are to be eliminated. This also applies to pipes that have marks with a depth of greater than 10% of the wall thickness due to transport.

For the laying and assembly work, only pipeline construction firms may be hired that use personnel with expert training according to WHG Section 19 l and that are certified by plastic welder testing according to DVS 2212 Part 1. The joining of the pipes and pipeline fittings by means of welding is to be performed by plastic welders that possess welder certification according to DVS 2212 Part 1.

Welding of the pipes and fittings is to be done by means of butt welding, electro fusion welding, or socket welding according to DVS 2207 Part 1 "Welding of thermoplastic materials; heated-tool welding of pipes, pipeline fittings, and sheets made of PE-HD." The processing data for the welding is to be recorded and delivered to the customer after completion of the welding work.

For underground pipelines, the laying is to be done according to DIN 1610. For above-ground laying of the piping systems, DVS 2210-1 also applies to the configuration.

The compression trial on the installed pipeline system is to be performed and documented according to DIN EN 1610.

# Texts for bids and tenders for waste-disposal technology

## PE 80 Pressure pipes for waste water

### Material and Manufacture

Only pipes and fittings with a quality assurance certificate granted by TÜV Süddeutschland Bau and Betrieb may be used.

Static verification of underground pressure pipes for wastewater is to be done according to the rules and standards outlined in the Advisory Leaflet ATV-DVWK-A 127 "Static evaluation of wastewater channels and lines".

The dimensions and tolerances for the pipes must correspond to DIN 8074. The general quality requirements and their testing is to be satisfied according to DIN 8075. For fittings, DIN 16963-5 is to be attached. Pipes and fittings must be coloured black throughout.

The manufacture of the pipes and fittings is to be verified with a quality management system according to DIN ISO 9001.

### Storage, Laying, and Pressure Testing

During storage, it must be guaranteed that there is no permanent deformation or damage. Stacks of pipes should not be higher than 1.5 m. Sudden external forces are to be prevented. Pipes or fittings damaged by transport or storage are to be eliminated. This also applies to pipes that have marks with a depth of greater than 10% of the wall thickness due to transport.

For the laying and assembly work, only pipeline construction firms may be hired that use personnel with expert training according to WHG Section 19 l. The joining of pipes and pipeline fittings is to be performed by plastic welders that have welder certification according to DVS 2212 Part 1.

The welding by means of heated-tool butt welding and electro fusion welding is to be performed according to DVS 2207 Part 1 "Welding of thermoplastic materials; heated-tool welding of pipes, pipeline fittings, and sheets made of HDPE." The processing data for the welding is to be recorded and delivered to the customer after completion of the welding work.

The laying is to be performed according to DIN EN 1610 "Laying and testing of wastewater lines and channels." In addition, the instructions of the Advisory Leaflets ATV-DVWK-A 127 "Static evaluation of wastewater channels and lines," ATV-A 139 "Laying and testing of wastewater channels and lines" and the laying instructions A 735 of the Kunststoffrohrverband (Association of plastic piping) are to be followed.

The compression trial on the piping system is to be performed according to DIN EN 1610.

# Texts for bids and tenders for waste-disposal technology
## PE 100 SPC-Waste water pressure pipes/PE 80 SPC-Waste water pipes

### Material and Manufacture

SIMONA SPC-Waste water pipes can be used as waste water pressure pipes and waste water channel pipes. The pipes correspond to the quality requirements of DIN 8074/75 and TÜV Süddeutschland. In addition, DIN 19537 and TÜV Süddeutschland applies to the field of wastewater channel pipes.

Manufacturing is performed in a continuous production process by means of a coextrusion procedure. The protective jacket that is mounted on the tool-side on the inner pipe and that is made of modified polypropylene is used as protection from external material damage of the inner pipe during laying and while the pipe is in service. The axial shear strength between inner pipe and protective jacket is $\geq$ 3.0 $N/mm^2$ (testing according to DIN 53769). The quality is guaranteed according to the rules of DIN EN ISO 9001. Quality verification according to DIN EN 10204, acceptance test certification 3.1.

### Storage, Processing and Laying

Laying is done according to the instructions of the corresponding KRV laying guidelines, as well as manufacturer instructions. Processing is to be performed according to currently valid technical regulations for pipeline construction, e.g., DVS guideline DVS-2207-1 (Welding of thermoplastic materials) or DVS-2208-1 (Machines), as well as appropriate standards. Laying is done according to DIN EN 1610, KRV laying instructions, as well as corresponding DVGW guidelines and corresponding manufacturer instructions.

# Texts for bids and tenders for waste-disposal technology

## PE 80 Sewer pipes

SIMONA® PE 80 pipes may be welded to SIMONA® PE 100 fittings. Within this context, the general welding guideline DVS 2207 must be observed. It is also possible to combine fittings made of PE 100 with pipes from the same SDR series made of PE 80, following the above mentioned guidelines. Consequently, for system planning purposes and the sizing of SIMONA® PE 80 sewer pipes it is possible to use the entire range of SIMONA® PE 80/100 fittings.

## Material and manufacture

Only pipes and fittings with a quality assurance certificate granted by TÜV Süddeutschland Bau and Betrieb GmbH may be used.

Manufacture with proof of quality assurance to DIN EN ISO 9001.

## Storage and laying

In storage care must be taken to ensure that no permanent deformities or damage occur. Stacks of pipes should not be higher than 1.5 m and must be secured at the sides. Sudden stress must be avoided. Pipes and fittings damaged in transit or storage must be segregated so that they can no longer be used. This also applies to pipes which have scores caused in transit with a depth of over 10% of wall thickness. Watertight and longitudinally positive pipe connection by heating element butt welding or electro fusion welding to DVS Guideline Information Sheet 2207.

When making connections to shafts and structures, the thermal expansion usually applicable to plastics must be taken into consideration. If necessary, the pipe ends to be connected should be temporarily immobilised with earth fills.

As is generally the case in sewer construction, supporting and embedding pipes and fittings is crucial to the stability of the pipeline. Special attention must therefore be paid to the embedding work in accordance with the structural analysis. Compacting must be performed in layers. Where the ground is rocky or stony, the bottom of the trench must be dug at least 0.15 m deeper. In accordance with the construction drawings, the sewer pipeline is to be laid and aligned on a continuously stone-free, compactable sand fill at final elevation (alternatively, twice crushed and screened chippings 2/5 mm to stabilise the pipe zone are allowed in the groundwater area). Material replacement for pipe support and pipe bed will be paid for separately. Pressure test in accordance with DIN EN 1610. Proof of load capability/sizing of pipe wall thickness depending on the placement conditions in accordance with Structural Analysis Guideline ATV-DVWK A-127:

# Texts for bids and tenders for waste-disposal technology

## PP-H 100 Sewer pipes

### Application note

SIMONA® PP-H 100 pipes may be welded to SIMONA® PP-R 80 fittings. Within this context, the general welding guideline DVS 2207 must be observed. It is also possible to combine fittings made of PP-R 80 with pipes from the same SDR series made of PP-H 100, following the above mentioned guidelines. Consequently, for system planning purposes and the sizing of SIMONA® PP-H 100 sewer pipes it is possible to use the entire range of SIMONA® PP fittings.

### Material and manufacture

Industrial sewer made of pipes of the service class PP-H 100 acc. to DIN 8077/78, including PP fittings to DIN 16962, as an open channel for non-pressurised operation. For maximum chemical resistance with low-stress pipe manufacture due to thermal after-treatment. Suitable for effluent temperatures up to 80°C with admission peaks above 100°C.

Manufacture with proof of quality assurance to DIN EN ISO 9001.

### Storage and laying

In storage care must be taken to ensure that no permanent deformities or damage occur. If the pipes and fittings are to be stored outdoors for a lengthy period they must be protected against solar radiation. Stacks of pipes should not be higher than 2 m and must be secured at the sides. Sudden stress must be avoided. This particularly applies at low temperatures. Pipes and fittings damaged in transit or storage must be segregated so that they can no longer be used. This also applies to pipes which have scores caused in transit with a depth of over 10% of wall thickness.

Watertight and longitudinally positive pipe connection by heating element butt welding or electro fusion welding to DVS Guideline Information Sheet 2207.

When making connections to shafts and structures the thermal expansion usually applicable to plastics must be taken into consideration. If necessary the pipe ends to be connected should be temporarily immobilised with earth fills.

As is generally the case in sewer construction, supporting and embedding the pipes and fittings is crucial to the stability of the pipeline. Special attention must therefore be paid to the embedding work in accordance with the structural analysis. Compacting must be performed in layers. Where the ground is rocky or stony, the bottom of the trench must be dug at least 0.15 m deeper.

In accordance with the construction drawings, the sewer pipeline is to be laid and aligned on a continuously stone-free, compactable sand fill at final elevation (alternatively, twice crushed and screened chippings 2/5 mm to stabilise the pipe zone are allowed in the groundwater area). Material replacement for pipe support and pipe bed will be paid for separately.

Pressure test in accordance with DIN EN 1610.

Proof of load capability/sizing of pipe wall thickness depending on the placement conditions in accordance with Structural Analysis Guideline ATV-DVWK A-127: