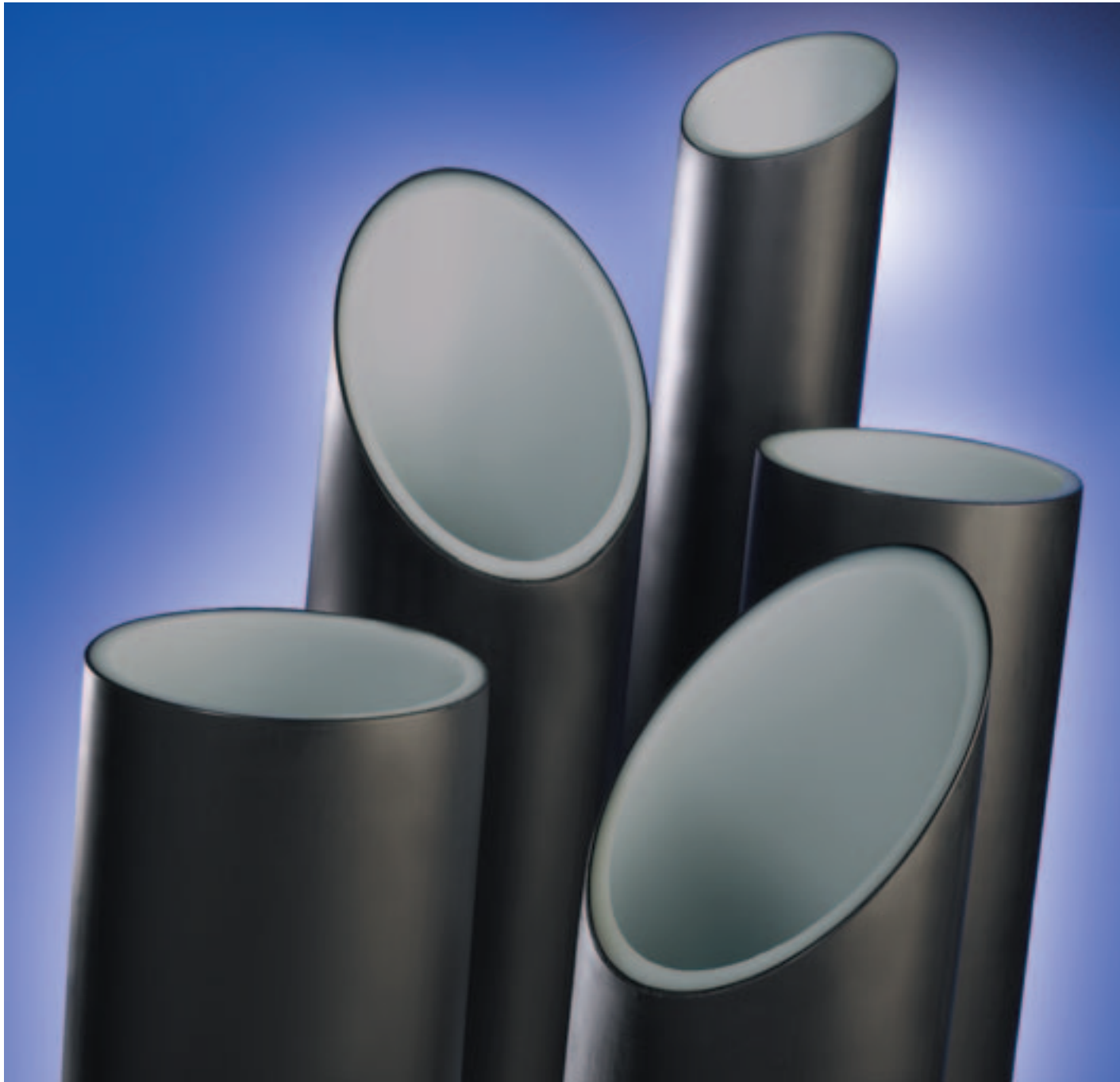


SIMONA



Plastics in environmental protection
SIMONA® PE CoEx Sewer Pipe Systems
for municipal waste water

Areas of use for SIMONA® PE CoEx Sewer Pipe Systems

SIMONA

Public sewerage systems are responsible for the collection and safe transportation and disposal of domestic waste water from developed areas. Safe transportation and disposal means that the sewage collected has to arrive at its destination, the sewage treatment plant. On its journey, leakage of any kind is to be avoided. Similarly, extraneous water must not be allowed to enter the sewer, i.e. the quantities of water to be treated in the sewage treatment plant have to be minimised.

Extraneous water penetrating sewers and the associated expenditure on treatment of the sewage pose considerable problems, often culminating in high-cost sewerage repairs after just a few years of operation. Compromises in terms of material selection or proper installation often result in unforeseen expenses at a later stage.

Given the fact that the financial resources of local authorities are dwindling rapidly and the additional costs of operation cannot always be passed on to end-users, shortcomings within this

area are unacceptable. Germany is a case in point: it has the highest sewage charges in Europe, but also the highest level of connection to biological sewage treatment plants.

PE-HD has a proven track record in sewage disposal

Sewer pipes, fittings and shafts made of PE-HD (high-density polyethylene) have a proven track record in sewage disposal spanning more than 30 years.



Test certificate confirming the high-pressure rinse resistance of SIMONA® PE CoEx pipes

The state-of-the-art SIMONA product range includes traditional black PE-HD pipes as well as a comprehensive waste-water pipe system made of co-extruded PE-HD solid-wall pipes, known as the SIMONA® PE CoEX sewer pipe system. The light grey interior layer of SIMONA® PE CoEX sewer pipes allows optimum illumination during camera inspection without any reflections.

This is where modern design and a high level of functionality offer tangible benefits in operation and maintenance.

The pipe range is complemented by shafts, branches, bends, eccentric producers, shaft connections and saddles. For specific applications, such as ATV A-142 Recommendation "Sewers in water catchment areas", the SIMONA® double-containment pipe system provides maximum reliability.

Combining economy with reliability

The first step towards cost-effective operation of sewage disposal pipes is actually taken very early on – at the planning and pre-engineering stages. By using thermoplastic SIMONA® PE 80 CoEX sewer pipes, it is possible to counteract the four main sources of damage associated with leaking sewers.

Flexibility of SIMONA® PE 80 CoEx Sewer pipes

Admissible bending angles dependant of SDR pipe classes

Dimension SDR ¹	Bending angle		
	~ 20 °C	~ 10 °C	~ 0 °C
26	30 x d	52.5 x d	75 x d
17.6	20 x d	35 x d	50 x d

¹⁾ SDR is equivalent to diameter/wall thickness ratio

- Corrosion
- Non-tight socket connections
- Material cracks
- Encrustations

These patterns of damage commonly occur with traditional materials; they are responsible for more than 80 per cent of existing sewer damage.

SIMONA® PE 80 CoEx sewer pipes – for a tight rein on expenses

The key advantages of SIMONA® PE CoEX sewer pipe systems over stoneware, concrete and cast-iron pipes used in the past are:

- Light weight
- Pipe flexibility
- Internal and external corrosion resistance
- Permanent watertight seal
- High abrasion resistance
- Excellent chemical resistance

SIMONA's state-of-the-art solutions ensure that the pipe system remains cost-effective – at all times – from initial installation

to ongoing operation. The main benefit for local authorities: peace of mind in terms of project and cost planning.

Flexibility – in every sense of the word – is another key benefit of SIMONA PE pipes. Owing to the favourable bending radii, a "change of direction" does not necessarily require cost-intensive installation of pipe fittings or shafts – in contrast to rigid pipe materials. The pipeline can thus follow the direction of the road even if there are sections with numerous bends. In addition, the number of access points can be reduced significantly.

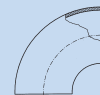
SIMONA® PE 80 CoEX sewer pipes – the key to reliable and cost-effective solutions in waste-water disposal.

Advantages of SIMONA® PE CoEx Pipes at a glance

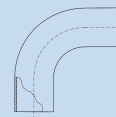
- Elimination of internal linings and protective coats due to excellent corrosion resistance
- High abrasion resistance to solids and liquids, thus eliminating the need for wall thickness allowances in cases of high solids content
- Low maintenance as a result of minimal tendency to encrustation
- Resistant to all substances contained in the ground such as humic acids, sulphates and chlorides as well as biogenic sulphuric acid
- Favourable hydraulic conditions thanks to extremely low wall roughness
- Cost-effective installation due to adapted pipe lengths, production of pipe sections in 6m and 12m; pipes up to 23m in overall length possible
- Inspection-friendly due to light-coloured pipe interior
- Compatible with high-pressure rinsing >100 bar without any risk of damaging inside wall of pipe
- Permanently watertight, strong connection by means of welding
- Elimination of fixing points and abutments
- Efficient handling, even with long pipe lengths, due to light weight and impact resistance
- No pipe break in the event of water hammer or soil settlement due to high elasticity
- Superior flexibility of material for more efficient installation
- UV and frost-resistant
- Approved basic raw materials as per Section 19 WHG
- Production ISO 9000 certified
- Recyclable without any additional material processing
- Maximum economy in transport, laying, operation and maintenance



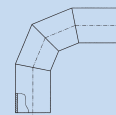
Fittings¹



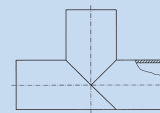
Bends 90°
Injected, $r = d$



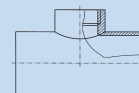
Bends 90°, 60°, 45°, 30°
Seamless, $r \sim 1.5 d$



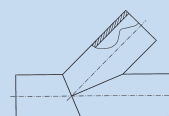
Bends 90°, 60°, 45°, 30°
Segment-welded,
 $r \sim 1.5 d$



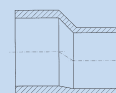
Tees
Segment-welded
(pressure reduction factor 0.65)



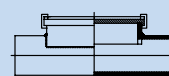
Tees reduced
Saddle-mounted, swept
(pressure reduction factor 0.75)



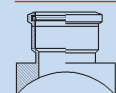
Branches 60°, 45°
Segment-welded
(pressure reduction factor 0.50)



Reducers, eccentric
Injected



Inspection box
Welded



External service pipe connection

¹ Injected fittings in black only

SIMONA® PE CoEx Sewer Pipes and Fittings for municipal waste water

SIMONA

Pipes

Material

PE 80
to DIN 8074/75

Type

homogeneous extrusion

Colour

light grey with black
UV protective layer

Dimensions

as per DIN 19537,
standard length: 6 m
sections

On request: 12 m
sections, overall lengths
up to 23 m

Remarks

Other dimensions,
colours and lengths
on request.

Subject to technical
changes, also with
regard to dimensions.

Pipe		SDR 26		SDR 17.6	
DN	d mm	e mm	kg/m	e mm	kg/m
150	160			9.1 ¹	4.35
150	180			10.2	5.48
200	225			12.8	8.55
250	280	10.7	9.1	15.9	13.2
300	315	12.1 ¹	11.6	17.9 ¹	16.7
300	355	13.6	14.6	20.1	21.2
350	400	15.3 ¹	18.6	22.7 ¹	26.9
400	450	17.2	23.5	25.5	34.0
500	560	21.4	36.2	31.7	52.5
600	630	24.1	45.9	35.7	66.5

¹ Based on DIN 19537



Double-containment pipes

Material

Internal pipe:
PE CoEx to
DIN 8074/75;
External pipe:
PE 80 to
DIN 8074/75;

Colour

PE CoEx: Light grey with
black UV protective layer
PE 80: black

Welding processes

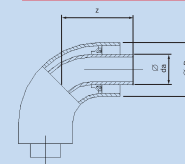
Internal pipe: SDR 17.6
External pipe: SDR 26
Simultaneous welding;
Internal pipe: SDR 17.6
External pipe: SDR 17.6
Cascade welding

Remarks

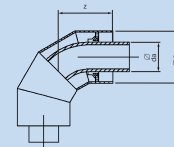
Other dimensions and
lengths on request.
Subject to technical
changes, also with
regard to dimensions.

Internal pipe			External pipe				
PE CoEx SDR 17.6			PE 80 SDR 26		SDR 17.6		
d mm	e mm	≈ kg/m	d mm	e mm	≈ kg/m	e mm	≈ kg/m
160	9.1	4.350	250	9.6	7.300	14.2	10.600
180	10.2	5.480	280	10.7	9.100	15.9	13.200
200	11.4	6.790	315	12.1	11.600	17.9	16.700
225	12.8	8.550	315	12.1	11.600	17.9	16.700
280	15.9	13.200	400	15.3	18.600	22.7	26.900
315	17.9	16.700	400	15.3	18.600		
315	17.9	16.700	450			25.5	34.000
355	20.1	21.200	450	17.2	23.500		
355	20.1	21.200	500			28.4	42.000
400	22.7	26.900	500	19.1	28.900		
400	22.7	26.900	560			31.7	52.500
450	25.5	34.000	560	21.4	36.200		
450	25.5	34.000	630			35.7	66.500
560	31.7	52.500	710			40.2	84.400
630	35.7	66.500	800			45.3	107.100

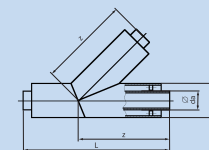
Double-containment pipe fittings¹



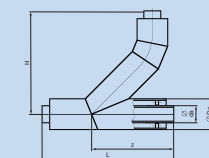
Bends 90°
Injected



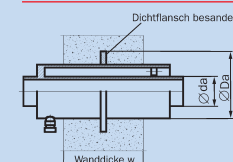
Bends 90°
Segment-welded



Branch 45°

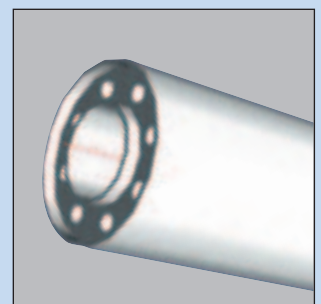


Branch with bend



**Shaft connection
Type 2**

¹ Injected double-containment pipe fittings
in black only



Our expertise – your gain

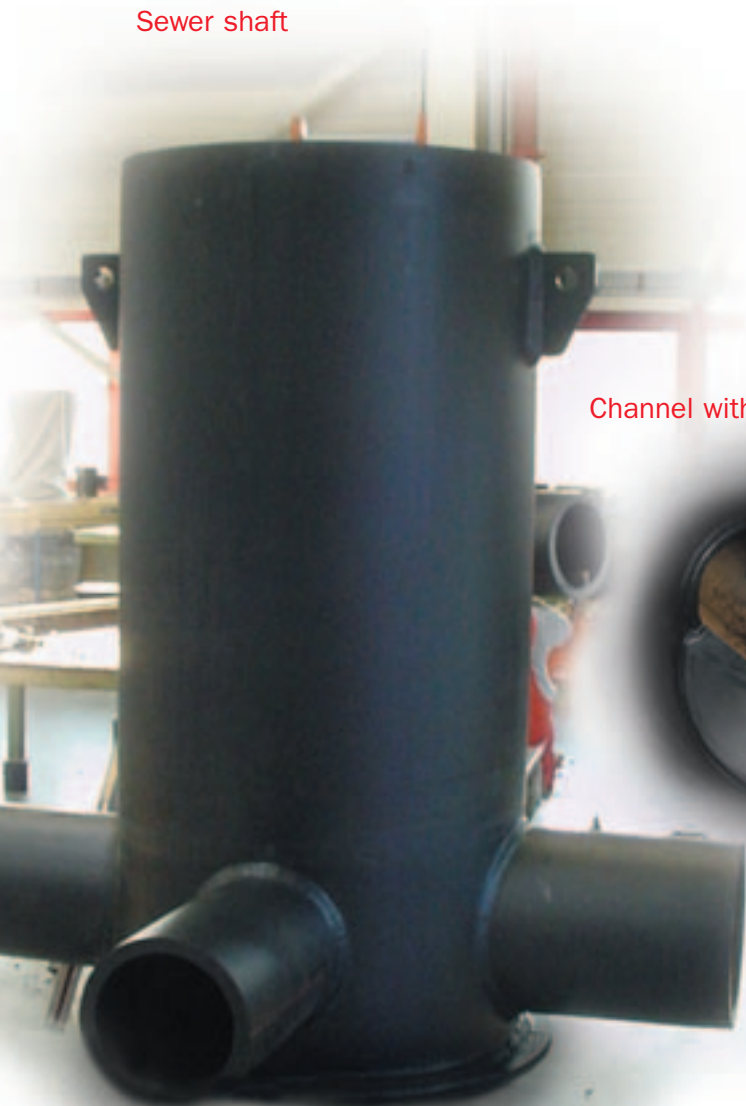
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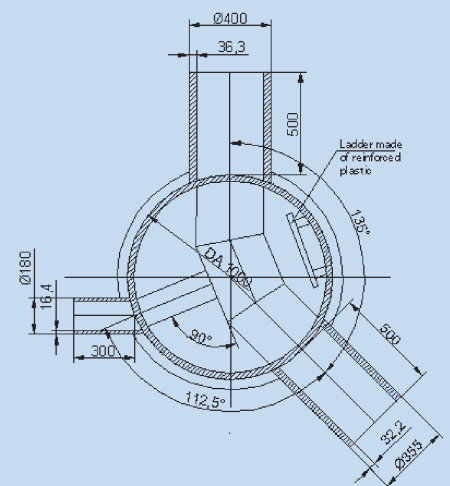
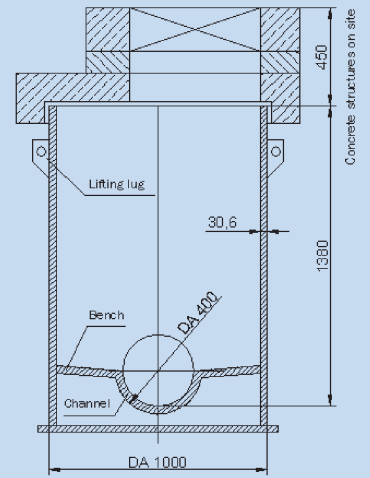
Saddle



Sewer shaft



Channel with bench



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