SIMONA

SIMONA® Piping Systems

Superior reliability for trenchless pipe installation

Put your trust in quality and expertise!

When it comes to pipeline construction, two factors are essential to success: premium-quality pipes and fittings that meet your application-specific requirements and a high-calibre partner who can assist you with everything from product selection to on-site project planning.

SIMONA offers you the best of both worlds – premium quality and unrivalled expertise.

Benefit from our passion and commitment – Welcome to SIMONA!

Behind each product associated with our company stands a dedicated team that has developed and manufactured it. SIMONA draws its inspiration from the unparalleled vision, dedication and passion of its employees – and a history spanning more than 150 years.

Today, we are recognised as one of the world's leading producers of semi-finished thermoplastics.

Products tailored to your needs

SIMONA is able to offer you the most extensive range of semi-finished thermoplastics worldwide. Our comprehensive portfolio of products encompasses pipes, fittings, valves, sheets, rods, profiles, welding rods and finished parts for a diverse range of applications. The materials offered within this area span everything from PE and PP to PVC, PVDF, E-CTFE and PETG. On request, we can even develop customised products tailored to your specific requirements.

Best-in-class quality

Our products and services are designed to deliver the very best quality imaginable. When implementing your projects, we always place the greatest possible emphasis on professionalism during every stage of the process. We are supported in our efforts by a first-class Quality Management system – for total peace of mind.

Global sales network

Boasting a global network of subsidiaries and distribution partners, SIMONA is renowned as a fast, flexible and reliable partner.

Exceptional service

As a customer, you always take centre stage: from project development to materials procurement and on-site planning, we are committed to delivering the very best consulting services. We will provide you with extensive technical product data as well as comprehensive information on how to process specific components. Our service portfolio also includes specialist training seminars and courses to hone your skills to perfection. Finally, we are able to offer expert advice on tendering procedures within the area of pipe installation and replacement.

SIMONA AG's Quality and Environmental Management system is certified in accordance with DIN EN ISO 9001 : 2000 and DIN EN ISO 14001 : 2005.

The Quality Management system of SIMONA AG in compliance with the Pressure Equipment Directive is certified to 97/23/EC Annex I, para. 4.3.

Efficient. Safe. Ecologically sound.
SIMONA® plastic pipes for trenchless pipe installation

Increasingly, operators of water and gas supply networks are having to address the issue of replacing and rehabilitating existing systems. The ongoing maintenance of wastewater systems also poses a tremendous challenge for the future.

Utility networks established in the 20th century are susceptible to the effects of damage and wear, leading to a reduction in service life and a tangible increase in operating costs. The key to safeguarding or enhancing operational reliability is to deploy state-of-the-art materials and joining methods that are capable of permanently withstanding the extreme conditions to which modern pipe networks are exposed.

The main causes of damage to existing systems are listed below:

External factors

- Soil and traffic loads
- Groundwater conditions
- Corrosive effects of soil surrounding the pipe

Internal factors

- Changing pressure loads and surge pressures
- Corrosive effects of media

Taking these factors into account, the most import criteria to be met by materials used within this field are as follows:

- Long service life of the piping system
- High corrosion resistance
- High resistance to fracture
- Availability of complete system solutions
- Leak-proof pipe joints

SIMONA® plastic pipes fulfil all of these requirements. Delivering superior durability and efficiency, they have become a benchmark for best-in-class quality within the area of supply and disposal systems.

Polyethylene (PE)

Polyethylene, as a material used within the field of pipe production, has a proven track record spanning more than fifty years. The main advantages of polyethylene (PE) over traditional materials are:

- Long service life (in excess of 100 years according to DIN 8074),
- Permanently watertight seal
- Corrosion resistance
- Chemical resistance
- High abrasion resistance
- Low weight
- Flexibility
- High physical stability

Superior operational reliability – low maintenance costs

Tests conducted on in-situ wastewater pipes made of PE 80 and PE 100 have shown that incrustation and material abrasion remain low even when the pipes are exposed to sewage containing a high level of solids. What is more, the time and effort required for maintenance and cleaning are minimal.

Advantages of polyethylene piping systems

- Permanently integral, watertight and strong connection by welding
- No need for internal linings and protective coatings due to excellent corrosion resistance
- Resistant to all substances contained in the ground
- Reduction of cleaning and flushing due to low level of incrustation
- Favourable hydraulic conditions due to minimal wall roughness
- High abrasion resistance – no wall thickness allowance required even in the case of high solids content
- Lightweight design for simple handling, even in the case of long pipe sections
- No pipe breakage in the event of pressure surges or soil settlement due to superior flexibility of the material
- Good storage properties
- Unsusceptible to weathering and UV rays

Conclusion

Polyethylene pipes for supply and disposal applications provide maximum cost-effectiveness in terms of transportation, laying, operation and servicing. They also deliver peace of mind when it comes to project planning and budgeting. With an impressive service life of 100 years and more, PE pipes can help to achieve a tangible reduction in the imputed cost of network operations. These savings can then be passed on to customers.

Material properties of polyethylene (PE)

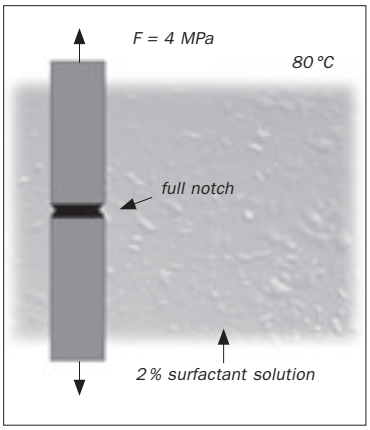
100 years and more

In contrast to many other materials, PE boasts exceptional levels of durability. Thus, the above-average performance of polyethylene pipes is maintained over the entire useful life of the piping system. Key advantages of PE:

- Notch and crack resistance
- Creep strength
- Stability and flexibility (creep modulus)
- Abrasion resistance
- Corrosion resistance

Full Notch Creep Test (FNCT)

The FNCT examines creep by systematically initiating stress cracks in the test specimen with the aid of a wetting agent solution (e.g. 2 % Arkopal N100), combined with mechanical loading and temperature elevation (80 °C). SIMONA pipes exhibit exceptionally high resistance to slow crack growth and concentrated loads.

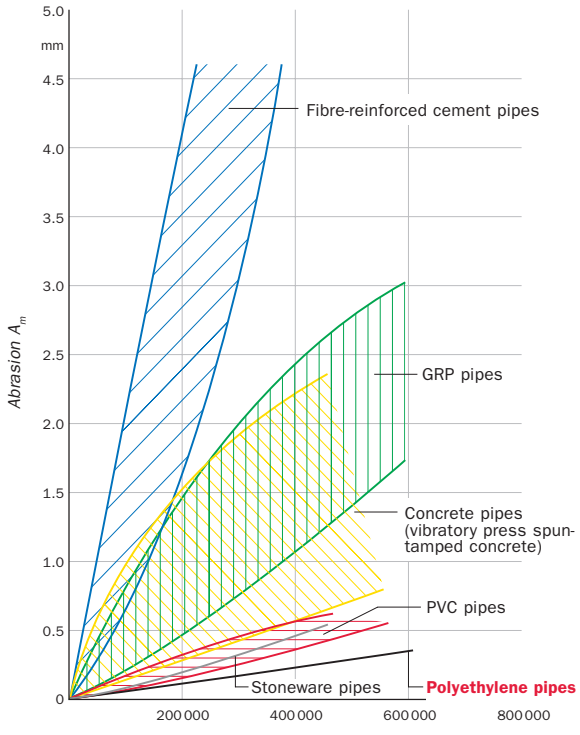


FNCT test specimen

Abrasion resistance (test based on the Darmstadt method)

Wastewater directed through sewage systems often flows at high velocity. What is more, it frequently contains an extremely high level of solids. This leads to a considerable abrasive load in systems made of conventional materials, particularly at the bottom of the sewers. The result: an increased risk of pipe wear. Owing to their high abrasion resistance, PE pipes are particularly well suited to applications within this area, as highlighted by comparative tests conducted on the basis of the Darmstadt method.

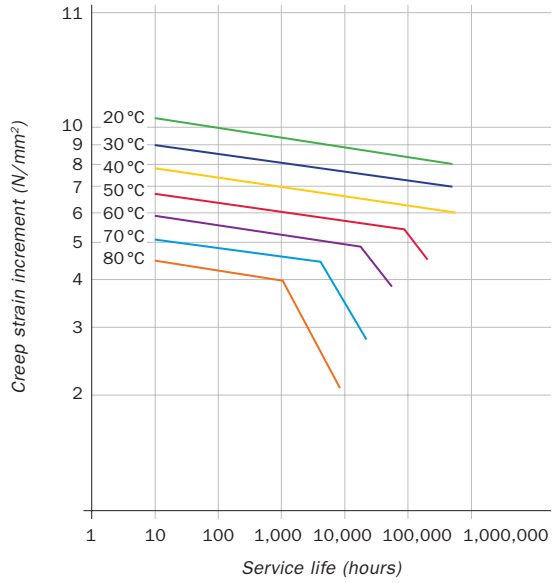
Abrasion figures, measured by Darmstadt method, for pipes made of various materials



Creep under internal pressure

One of the most important methods of verifying the service life of PE pipes is to determine creep under internal pressure, also referred to simply as “creep”. Even after 100 years of a continuous service temperature of 20 °C no thermooxidative processes will occur in PE 80 or PE 100 pipes (see chart). The tests conducted within this area provide comparative data used for the purpose of design/sizing pipes to be exposed to sustained loading (up to 100 years).

Internal pressure creep curves for PE 80 pipes

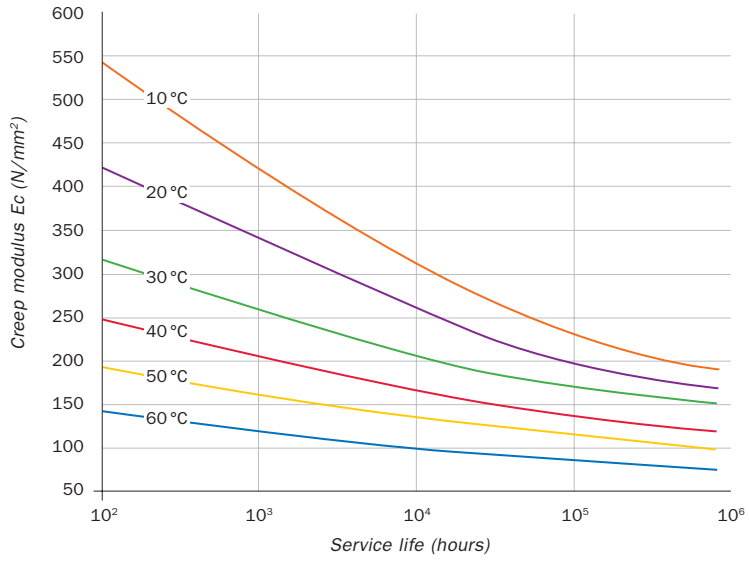


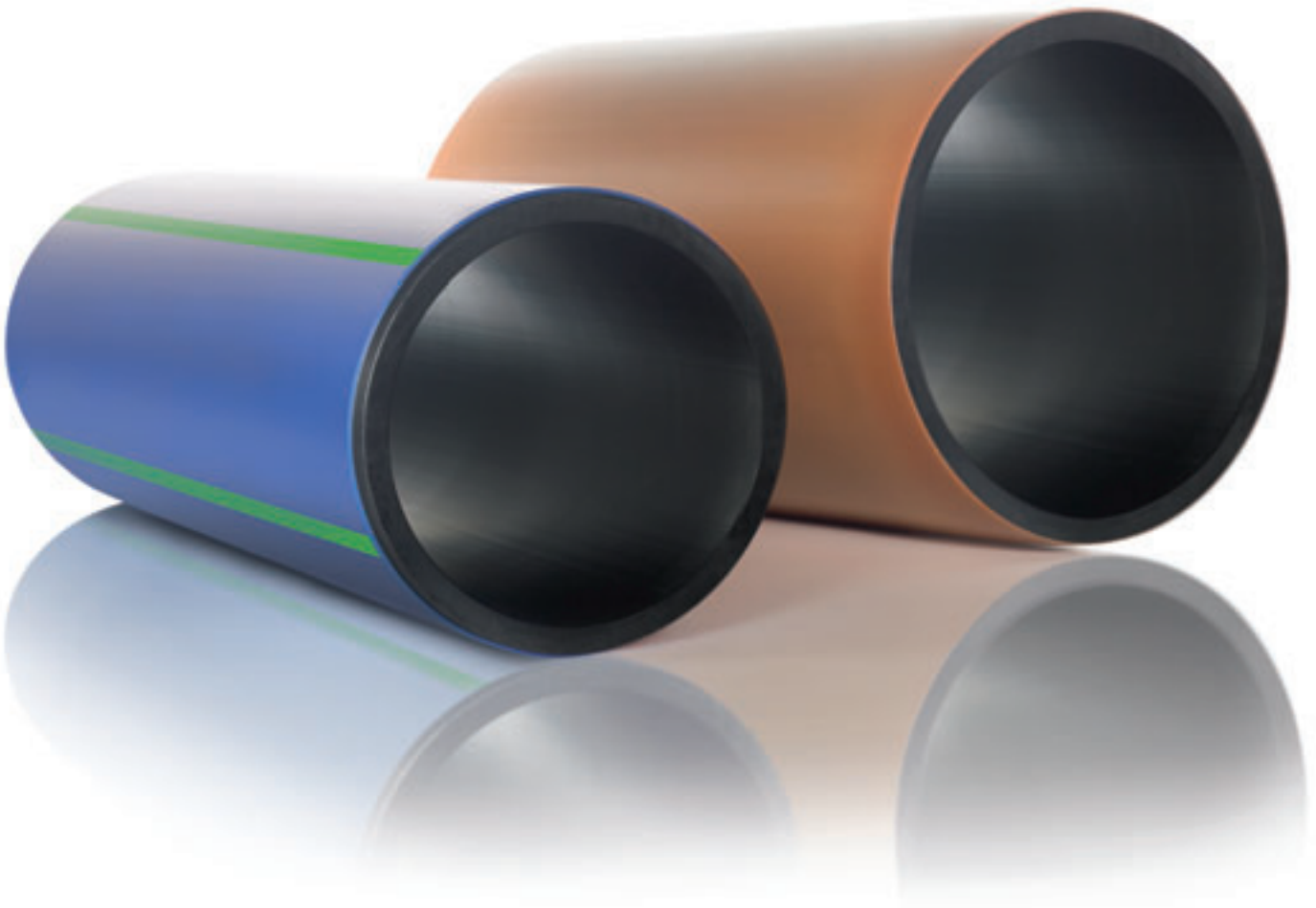
Time-dependent modulus of elasticity (creep modulus)

Data relating to the modulus of elasticity is essential when it comes to performing stability analyses, e.g. in the case of buried pipes exposed to soil loads, live loads or groundwater. In the case of pipes made of thermoplastic materials, the time-dependent modulus of elasticity is of particular importance. Scientific tests and practical experience have provided long-term dimensional parameters, ensuring that the design of the piping system is technically sound and suitable for sustained operation.

Strength figures for sizing thermoplastic pipes

Creep modulus for PE 80 and PE 100

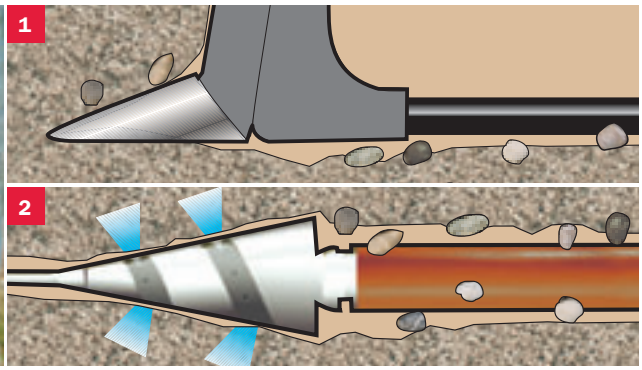




Solutions tailored to any application

The specific area of application and related technical factors play an important part when selecting a piping system that best suits your needs. SIMONA® piping systems are designed to meet every possible requirement within the field of pipe installation and rehabilitation, as well as offering superior operational reliability.

Efficient and ecologically sound – Trenchless pipe laying



Trenchless installation of plastic pipelines offers a number of financial and ecological advantages:

- Minimal adverse effect on developed and paved surfaces
- Use of existing pipeline routes
- Minor inconvenience for residents
- Shorter construction time
- Lower civil engineering and recultivation costs
- Installation possible under rivers, lakes or traffic routes
- Reduction in CO_2 emissions, as no vehicles are needed for transport of road surface materials, excavation work, etc.
- Avoidance of traffic re-routing and congestion

Ploughing (fig. 1)

Ploughing is the fast and possibly most cost-effective method of laying new plastic pipes. The technique used has a minimal impact on the subsoil and is therefore considered to be environmentally friendly. A winch is used to pull a plough blade and pipe-laying unit through the ground. Once the pipe has been installed, the furrow (trench) is automatically closed as the plough blade advances. This method is also suitable for the parallel installation of several pipelines. As the soil initially displaced by the plough is re-used without any further processing, the pipes deployed have to be highly resistant to point, i.e. concentrated, loads. Owing to their high stress crack resistance, SIMONA® PE 100 RC pipes are particularly durable.

Recommendation for pressure piping systems:

- *SIMONA® PE 100 RC-Line*

Horizontal drilling (fig. 2)

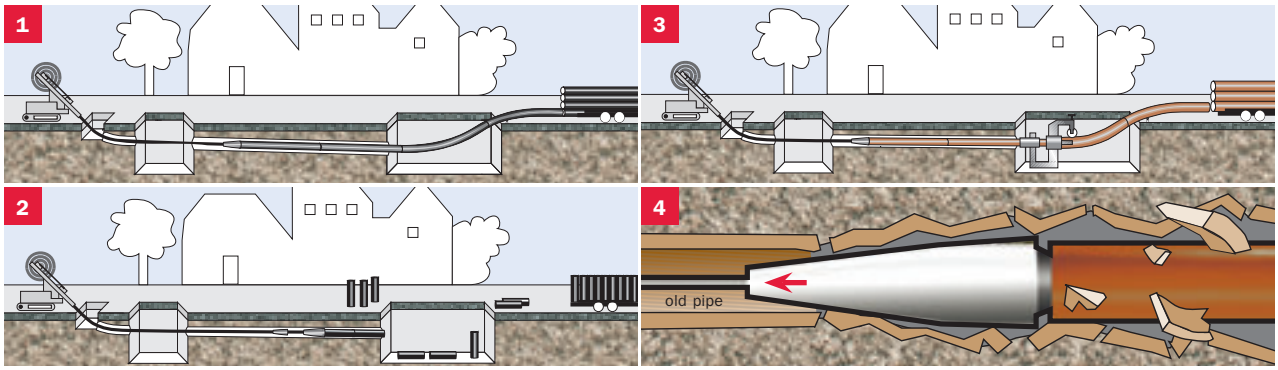
Soil is loosened and flushed out in various stages using a drilling fluid. The first step is to create a pipe duct by means of a pilot bore. Then, in further steps the final pipe duct is widened and the pipe is introduced with the help of an insertion device.

Recommendation for pressure piping systems:

- *SIMONA® PE 100 SPC RC-Line*
- *SIMONA® PE 100 RC-Line*

(depending on soil conditions)

Safe and effective – Trenchless pipe replacement



Relining (long pipe) (fig. 1)

In the case of relining, a new solid-wall pipe is inserted into the damaged existing pipe. The result is a fully operational piping system that is comparable to a newly installed pipe and is thus subject to the same accounting standards as a new system. It is essential that pipes installed by means of relining are assessed thoroughly in terms of their hydraulic properties because the circumference of the new pipe will be smaller than that of the old one. Additionally, high-strength pipe joints are considered a prerequisite for successful relining (e.g. SIMOFUSE® joining method).

Recommendation for non-pressure piping systems:

- *SIMONA® PE CoEx sewer pipes with SIMOFUSE® joining technology*

Recommendation for pressure piping systems:

- *SIMONA® PE 100 pressure pipes*

Relining (short pipe) (fig. 2)

In the case of limited space or access, relining with short pipe segments is the most effective method of pipeline rehabilitation. Short pipe modules with a length of 0.6 to 2.0 metres ensure simple handling, thus facilitating installation. The individual sections are welded together and inserted step-by-step into the damaged pipe. Using the SIMOFUSE® method, which relies on integral electrofusion spirals, pipe sections can be joined together quickly and with leak-proof tightness.

Recommendation for non-pressure piping systems:

- *SIMONA® PE CoEx short pipe modules with SIMOFUSE® joining technology*

Swagelining (fig. 3)

As in the case of relining, swagelining is a particular fast way of inserting a new pipe into an existing system. During insertion the pipe is pulled through a reduction device that temporarily reduces its diameter. This allows the pipe to be pulled through the existing pipeline. After the pipe has been pulled completely through the pipe, the pulling force is removed and the pipe returns toward its original diameter until it presses tightly against the inside wall of the host pipe. The tight-fitting liner results in a flow capacity close to the original pipeline design (close fit).

Recommendation for pressure piping systems:

- *SIMONA® PE 100 pressure pipes in special sizes Swagelining*

Burstlining (fig. 4)

Burstlining, a trenchless pipe-bursting method, is used for repairing damaged pipelines by retaining or enlarging the hydraulic cross-section. Together with the in-situ soil, the broken material compacted into the ground forms an annular space, into which the new pipeline attached to the bursting unit is introduced.

Recommendation for pressure piping systems:

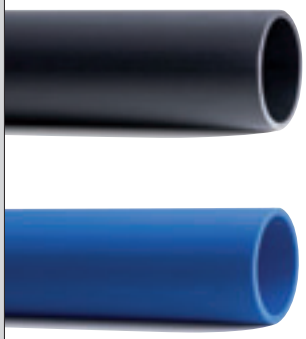
- *SIMONA® PE 100 SPC RC-Line*

SIMONA® pipes – Simple solutions for complex projects

PE 80/PE 100

Standard pressure pipes made of extruded polyethylene in PE 80 or PE 100

Protection level: + low



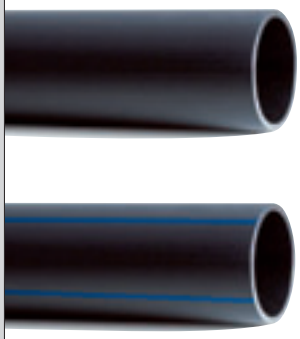
Advantages

- Low notch sensitivity
- Low weight
- Low incrustation
- High flexibility
- No corrosion

PE 100 RC-Line

Pressure pipes made of PE 100 RC with high resistance to slow crack growth and concentrated point loads

Protection level: ++ medium



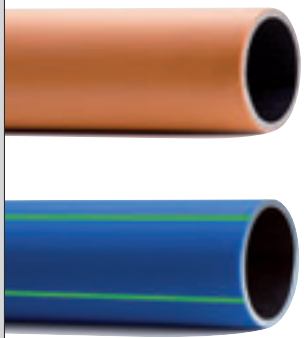
Additionally

- Superior stress crack resistance
- High resistance to point loads (e.g. stones, fragments)
- Excavated soil used as backfill in open-trench installation
- Increased resistance to slow crack growth

PE 100 SPC RC-Line

Coextruded multilayer pressure pipe with standardised inner pipe made of PE 100 RC and modified polypropylene (SIMONA PP Protect) protective jacket

Protection level: +++ high



Additionally

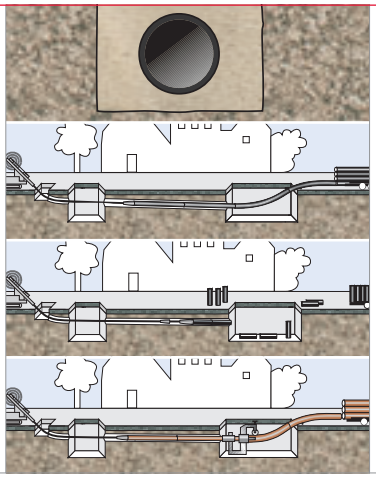
- Excellent bonding and shear strength between inner pipe and projective jacket
- High abrasion resistance
- No crack propagation from protective jacket into inner pipe
- High resistance of inner pipe (PE 100 RC) to slow crack growth
- Exceptional protection against external damage as notches, abrasion, wear (PE 100 SPC)

Pipe-laying methods

Open-trench method
- With sand bed
- With high-grade chippings

Trenchless method
- Relining (Sliplining)
- Swagelining

Installation with compactible, stone-free materials such as sand or twice-crushed and screened chippings, e.g. equivalent to 2/5 grade up to a maximum of 11 mm (bedding in accordance with DIN EN 1610)



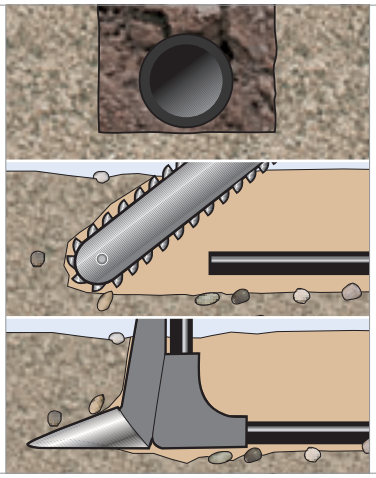
Standards and certifications

- DIN 8074/8075
- DIN EN 13244
- DIN EN 12201
- DIBt approval Z-40.23.311 for liquids hazardous to water
- Drinking-water: DVGW GW 335 A2
- TÜV Süddeutschland certified

Open-trench method
- Without sand bed
- Milling

Trenchless method
- Ploughing

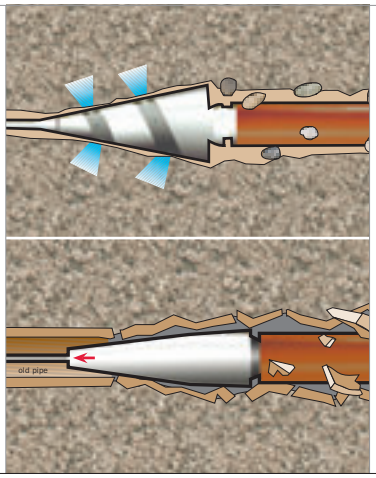
Installation with prepared, compactible excavated material with a grain size of up to 63 mm, e.g. equivalent to 32/63-grade crushed stone



- DIN 8074/8075
- DIN EN 13244
- DIN EN 12201
- Drinking-water: DVGW GW 335 A2
- TÜV Süddeutschland certified

Trenchless method
- Directional drilling
- Burstlining

Installation in all soil types and classes permitted for construction purposes



- DIN 8074/8075
- DIN EN 13244
- DIN EN 12201
- Drinking-water: DVGW GW 335 A2
- TÜV Süddeutschland certified

SIMONA® pipe fittings and system components

SIMONA offers an extensive range of specialist fittings and other components tailored to the requirements of pipeline engineering.

Fittings with short and elongated spigots (PE 80/PE 100)

- Elbows and bends
- Stub flanges
- Tees and branches
- Reducers and adaptors
- End caps

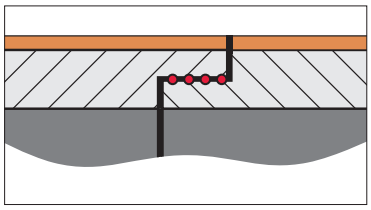
Fittings for flange assemblies (PE 80/PE 100)

- Loose and blind flanges
- Special flange connections
- Full face flanges

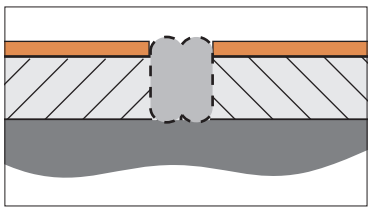
Special fittings

- Inspection tees
- Compensators

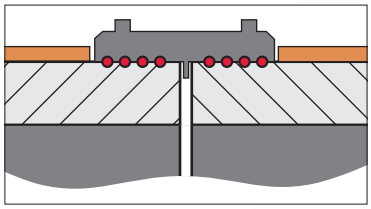
Joining methods



SIMOFUSE® technology (illustration)



Heated-tool butt welding (illustration)



Electrofusion socket welding (illustration)

Heated-tool butt welding

When applying the method of heated-tool butt welding in accordance with DVS Guideline 2207-1, the end of the pipes – following appropriate machining and plane-parallel alignment – are held against the heated tool at a predefined pressure and subsequently heated to the requisite welding temperature, having reduced the pressure. After removing the heated tool, the pipe ends are joined together at a predefined pressure.

Electrofusion welding

In the case of electrofusion welding performed in accordance with DVS Guideline 2207-1, the overlapping surfaces of the pipe are joined together. For this purpose, a heating spiral or filament integrated within one of the two surfaces to be joined is heated by means of electrical energy. The filament can be integrated into a fitting (**electrofusion socket**) or into the tip of the pipe itself (pipe modules with **SIMOFUSE®** technology).

Electrofusion socket welding

Heated-tool butt welding

SIMOFUSE®

Product range – SIMONA® piping systems

Whether you need special fittings or state-of-the-art pressure piping systems, SIMONA has the perfect solution to match your requirements.

PE 80/PE 100 Pressure pipes for wastewater

Material
PE 80/PE 100

Colour
Black

Dimensions
Standard lengths: 6 m, 12 m

Note
Other lengths on request

Application
Pressure piping systems under normal operating conditions
Industry
Disposal systems

Standards and guidelines
DIN 8074/8075
DIN EN 13244
DIBt approval Z-40.23.311
for liquids hazardous to water
TÜV Süddeutschland certified

Pressure pipe	SDR 17.6	SDR 17	SDR 11
d mm	e mm	e mm	e mm
90	5.1	5.4	8.2
110	6.3	6.6	10.0
125	7.1	7.4	11.4
140	8.0	8.3	12.7
160	9.1	9.5	14.6
180	10.2	10.7	16.4
200	11.4	11.9	18.2
225	12.8	13.4	20.5
250	14.2	14.8	22.7
280	15.9	16.6	25.4
315	17.9	18.7	28.6
355	20.1	21.1	32.2
400	22.7	23.7	36.3
450	25.5	26.7	40.9
500	28.4	29.7	45.4
560	31.7	33.2	50.8
630	35.7	37.4	57.2
710	40.2	42.1	64.5
800	45.3	47.4	
900	51.0	53.3	
1000	56.7	59.3	
1200	68.0	70.6	

Independent Testing
TÜV Süddeutschland

DIBt
approved

PE 100 Pressure pipes for drinking-water

Material
PE 100

Colour
Blue
Black with blue stripes

Dimensions
Standard lengths: 6 m, 12 m

Note
Other lengths on request

Application
Pressure piping systems under normal operating conditions
Supply systems

Standards and guidelines
DIN 8074/8075
DIN EN 12201
DVGW GW 335-A2

Pressure pipe	SDR 17	SDR 11
d mm	e mm	e mm
90	5.4	8.2
110	6.6	10.0
125	7.4	11.4
140	8.3	12.7
160	9.5	14.6
180	10.7	16.4
200	11.9	18.2
225	13.4	20.5
250	14.8	22.7
280	16.6	25.4
315	18.7	28.6
355	21.1	32.2
400	23.7	36.3
450	26.7	40.9
500	29.7	45.4
560	33.2	50.8
630	37.4	57.2
710	42.1	
800	47.4	
900	53.3	
1000	59.3	
1200	70.6	

Independent Testing
TÜV Süddeutschland

DIBt approved

DVGW Regelwerk

SVGW SSIGE

PE 100 RC-Line Pressure pipes for wastewater

Material
PE 100 RC

Colour
Black

Dimensions
Standard lengths: 6 m, 12 m

Note
Other lengths on request

Application
Pressure piping systems with demanding operational requirements
Industry
Disposal systems

Standards and guidelines
DIN 8074/8075
DIN EN 13244

Pressure pipe	SDR 17	SDR 11
d mm	e mm	e mm
90	5.4	8.2
110	6.6	10.0
125	7.4	11.4
140	8.3	12.7
160	9.5	14.6
180	10.7	16.4
200	11.9	18.2
225	13.4	20.5
250	14.8	22.7
280	16.6	25.4
315	18.7	28.6
355	21.1	32.2
400	23.7	36.3
450	26.7	40.9
500	29.7	45.4
560	33.2	50.8
630	37.4	57.2
710	42.1	
800	47.4	
900	53.3	
1000	59.3	
1200	70.6	

Independent Testing
TÜV Süddeutschland

PE 100 RC-Line Pressure pipes for drinking-water

Material
PE 100 RC

Colour
Black with blue stripes

Dimensions
Standard lengths: 6 m, 12 m

Note
Other lengths on request

Application
Pressure piping systems with demanding operational requirements
Supply systems

Standards and guidelines
DIN 8074/8075
DIN EN 12201
DVGW GW 335-A2

Pressure pipe	SDR 17	SDR 11
d mm	e mm	e mm
Product range equivalent to that of PE 100 RC-Line pressure pipes for wastewater		

Independent Testing
TÜV Süddeutschland

PE 100 SPC RC-Line Pressure pipes for wastewater

Material
PE 100 RC
Protective jacket made of PP Protect

Colour
Inner pipe: black
Protective jacket: brown

Dimensions
Standard lengths: 6 m, 12 m
Other lengths on request

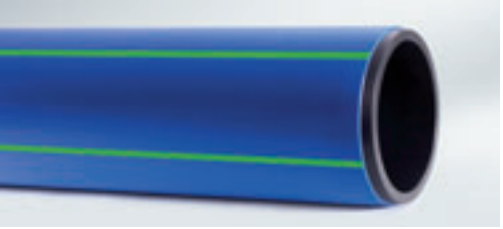
Application
Pressure piping systems
with highly demanding
operational requirements
Industry
Disposal systems

Note
On request: SPC pipes supplied with machined ends ready for heated-tool butt welding.

Standards and guidelines
Based on DIN 8074/8075
DIN EN 12666

Inner pipe	**SDR 17**	**SDR 11**
d mm	e mm	e mm
90	5.4	8.2
110	6.6	10.0
125	7.4	11.4
140	8.3	12.7
160	9.5	14.6
180	10.7	16.4
200	11.9	18.2
225	13.4	20.5
250	14.8	22.7
280	16.6	25.4
315	18.7	28.6
355	21.1	32.2
400	23.7	36.3
450	26.7	40.9
500	29.7	45.4
560	33.2	50.8
630	37.4	57.2

Independent Testing
TÜV Süddeutschland



PE 100 SPC RC-Line Pressure pipes for drinking-water

Material
PE 100 with drinking-water approval and protective jacket made of PP Protect

Colour
Inner pipe: black
Jacket pipe: blue with green strips

Dimensions
Standard lengths: 6 m, 12 m

Note
Other lengths on request

Application
Pressure piping systems with highly demanding operational requirements
Supply systems

Standards and guidelines
based on
DIN 8074/8075
DIN EN 12201
DVGW GW 335-A2

Pressure pipe	SDR 17	SDR 11
d mm	e mm	e mm
90	5.4	8.2
110	6.6	10.0
125	7.4	11.4
140	8.3	12.7
160	9.5	14.6
180	10.7	16.4
200	11.9	18.2
225	13.4	20.5
250	14.8	22.7
280	16.6	25.4
315	18.7	28.6
355	21.1	32.2
400	23.7	36.3
450	26.7	40.9
500	29.7	45.4
560	33.2	50.8
630	37.4	57.2

Independent Testing
TÜV Süddeutschland

Relining pipes (special sizes)

Material
PE 80/PE 100

Colour
Black
Blue

Dimensions
Standard lengths:
6 m, 12 m

Note
Dimensions adjusted to nominal diameters of sewer pipelines made of other materials. Other lengths and materials on request.

Application
Trenchless rehabilitation using relining method

Standards and guidelines
Based on
DIN 8074/8075
DIN EN 12201

		PE 80						PE 100					
Pipe		SDR 26		SDR 17.6		SDR 11		SDR 26		SDR 17		SDR 11	
DN mm	d mm	e mm	kg/m	e mm	kg/m	e mm	kg/m	e mm	kg/m	e mm	kg/m	e mm	kg/m
100	90	3.5	0.978	5.1	1.39	8.2	2.120	3.5	0.986	5.4	1.47	8.2	2.14
125	110	4.2	1.43	6.3	2.08	10.0	3.15	4.2	1.44	6.6	2.18	10.0	3.17
	119	–	–	–	–	10.9	3.704	–	–	–	–	10.9	3.74
	120	–	–	6.9	2.47	–	–	–	–	6.9	2.49	–	–
	121	4.7	1.75	–	–	–	–	4.7	1.76	–	–	–	–
150	125	4.8	1.84	7.1	2.66	11.4	4.08	4.8	1.86	7.4	2.78	11.4	4.11
	131	5.1	2.06	–	–	–	–	5.1	2.08	–	–	–	–
	134	–	–	–	–	12.2	4.68	–	–	–	–	12.2	4.72
	135	–	–	7.7	3.10	–	–	–	–	7.7	3.13	–	–
	140	5.4	2.32	8.0	3.34	12.7	5.08	5.4	2.34	8.3	3.49	12.7	5.12
200	160	6.2	3.04	9.1	4.35	14.6	6.67	6.2	3.07	9.5	4.56	14.6	6.72
	180	6.9	3.79	10.2	5.48	16.4	8.42	6.9	3.82	10.7	5.76	16.4	8.49
	190	–	–	–	–	17.3	9.38	–	–	–	–	17.3	9.46
	192	–	–	11.0	6.30	–	–	–	–	11.0	6.35	–	–
	194	7.5	4.44	–	–	–	–	7.5	4.48	–	–	–	–
250	200	7.7	4.69	11.4	6.79	18.2	10.40	7.7	4.73	11.9	7.11	18.2	10.5
	219	–	–	–	–	–	–	8.5	8.72	12.9	8.44	–	–
	225	8.6	5.89	12.8	8.55	20.5	13.10	8.6	5.94	13.4	9.01	20.5	13.3
	241	–	–	–	–	22.0	15.08	–	–	–	–	22.0	15.2
	242	9.4	6.92	–	–	–	–	9.4	6.98	–	–	–	–
	243	–	–	13.9	10.02	–	–	–	–	13.9	10.1	–	–
300	250	9.6	7.30	14.2	10.6	22.7	16.20	9.6	7.36	14.8	11.0	22.7	16.3
	280	10.7	9.10	15.9	13.2	25.4	20.30	10.7	9.18	16.6	13.9	25.4	20.4
	292	–	–	–	–	26.6	22.10	–	–	–	–	26.6	22.3
	295	–	–	16.8	14.7	–	–	–	–	16.8	14.8	–	–
	298	11.5	10.4	–	–	–	–	11.5	10.5	–	–	–	–
350	315	12.1	11.6	17.9	16.7	28.6	25.6	12.1	11.7	18.7	17.6	28.6	25.8
	332	–	–	18.9	18.6	–	–	–	–	18.9	18.7	–	–
	335	12.9	13.1	–	–	–	–	12.9	13.2	–	–	–	–
400	355	13.6	14.6	20.1	21.2	32.2	32.5	13.6	14.8	21.1	22.3	32.2	32.8
	375	14.5	16.5	–	–	–	–	14.5	16.6	–	–	–	–
	376	–	–	21.4	23.8	–	–	–	–	21.4	24.0	–	–
	380	14.7	16.9	–	–	–	14.7	17.1	–	–	–	–	
450	400	15.3	18.6	22.7	26.9	36.3	41.4	15.3	18.7	23.7	28.2	36.3	41.6
	418	–	–	–	–	38.0	45.1	–	–	–	–	38.0	45.5
	422	–	–	24.0	30.0	–	–	–	–	24.0	30.3	–	–
	425	16.4	21.2	–	–	–	–	16.4	21.3	–	–	–	–
500	450	17.2	23.5	25.5	34.0	40.9	52.3	17.2	23.7	26.7	34.7	40.9	52.7
	472	–	–	–	–	43.0	57.6	–	–	–	–	43.0	58.1
	475	–	–	27.1	38.3	–	–	–	–	27.1	38.6	–	–
	482	18.6	27.1	–	–	–	–	18.6	27.3	–	–	–	–
600	500	19.1	28.9	28.4	42.0	45.4	64.5	19.1	29.2	29.7	44.2	45.4	65.1
	560	21.4	36.3	31.7	52.5	50.8	80.8	21.4	36.6	33.2	55.3	50.8	81.5
700	630	24.1	45.9	35.7	66.5	57.3	102.0	24.1	46.3	37.4	70.0	57.2	103.2
800	710	27.2	58.4	40.2	84.4	–	–	27.2	58.8	42.1	88.9	–	–
900	800	30.6	73.9	45.3	107.0	–	–	30.6	74.5	47.4	112.7	–	–
1000	900	34.4	93.4	51.0	136.0	–	–	34.7	95.0	53.3	142.5	–	–
1000	950	36.5	104.6	54.0	151.4	–	–	36.5	105.5	55.9	157.7	–	–
1100	1000	38.2	115.0	56.7	167.0	–	–	38.5	117.1	59.3	176.1	–	–

PE 80/PE 100 Pipe modules SIMOFUSE®

Material
PE 80, PE 100

Joining
Integral electrofusion joints

Note
Available as
PE CoEx Sewer pipes,
PE RC-Line Wastewater pipes,
PE SPC Sewer pipes,
PE double-containment pipes

Application
Suitable for non-pressure pipelines (welded joint can be exposed to pressures of up to 0.5 bar)

	SDR 26	SDR 17.6	SDR 17	SDR 11
da mm	e mm	e mm	e mm	e mm
280		15.9	16.6	25.4
315		17.9	18.7	28.6
355		20.1	21.1	32.2
400		22.7	23.7	36.3
450		25.5	26.7	40.9
500	19.1	28.4	29.7	45.4
560	21.4	31.7	33.2	50.8
630	24.1	35.7	37.4	57.2
710	27.2	40.2	42.1	
800	30.6	45.3	47.7	

Module lengths L: L=700 mm to L=6000 mm. Other lengths on request

PE 80 Shaft connection SIMOFUSE®

Material
PE 80

Colour
Black

Joining
Integral electrofusion joints

Note
Suitable for joining PE sewer pipes in SDR classes 26 and 17.6 to ready-mixed concrete shafts

Pipe connection	Outside diameter	Overall length
d mm	D mm	l mm
110	180	135
160	210	135
180	235	135
200	260	135
225	285	135
250	320	135
280	360	135
315	407	135
355	457	135
400	492	135
450	562	135
500	602	135
560	682	135
630	737	135

Other overall lengths available on request

PE Electrofusion sockets

Material
PE 100

Colour
Black

Execution
Pressure: SDR 17/SDR 11
Sewer: SDR 26/SDR 17

Pressure	Sewer
d mm	d mm
90	
110	110
125	125
140	140
160	160
180	180
200	200
225	225
250	250
280	280
315	315
355	355
400	400
450	450
500	500
	560
	630

Services

As a customer, you always take centre stage: from project development to materials procurement and on-site planning, we are committed to providing the very best consulting services.

Our long-standing experience is your gain.

SIMONA services

Advisory service

We have channelled considerable resources into technical consulting and would be delighted to share our know-how with you. We offer global consulting services, headed by highly qualified staff at our Technical Sales Support unit and within our field sales organisation – from project planning and product selection to on-site assistance tailored to your applications.

Phone +49 (0) 67 52 14-268
+49 (0) 67 52 14-315
Fax +49 (0) 67 52 14-741
pipingsystems@simona.de

Our consulting service covers the following areas:

Project planning

We advise project planners and contractors on the selection of suitable materials and products as well as on the most efficient methods of installation. It would be a great pleasure for us to assist you in addressing all technical issues related to your specific project, e.g. pipe-laying methods, structural calculations or joining technology.

On-site consulting

We are happy to provide active support at all stages of your project. Our qualified engineers will assist you on site throughout your construction project and also advise you on technical matters subsequent to completion.

Training

We also offer a range of training courses and seminars for customer personnel – organised at your premises or at our Technology Centre in Kirn.

Structural analysis

We perform structural calculations in the following areas:

- Underground pipe installation
- Drainage pipes for landfill sites and traffic routes
- Shafts
- Rectangular and cylindrical tanks/vessels
- Ventilation piping systems

Customised pipes and fittings

Alongside our standard product range, we offer a premium-class package of specialist solutions:

- Pipes in various lengths for a range of joining methods.
- Special pipe sizes adapted to the standard nominal diameters of other materials.
- Pipes with non-standard properties such as electrical conductivity or low flammability.
- Customised fittings as system components for your application.

Standard tendering documents

To view standard tendering documents for our products, please refer to our SIMONA® SIMCAT CD-ROM or visit our website at www.simona.de.

Equipment and accessories

We are able to supply you with specialist equipment and accessories required for professional welding and processing, such as welding machines for electrofusion or heated-element butt welding as well as tensioning devices and other processing machinery. Specialist equipment can be either purchased or hired.

Information service

For further details about SIMONA piping systems, please refer to the following publications:

- Gross Price List
- SIMONA® Components for Piping Systems
- SIMONA® Piping Systems – Cost-effective solutions for wastewater disposal
- SIMONA® PE 80/PE 100 Pressure Pipe Systems for Municipal Sewage
- SIMONA® PE CoEx Sewer Pipe Systems for municipal waste water
- SIMONA® PP-H AlphaPlus – industrial piping systems
- SIMONA® PP-H Sewer Pipe Systems
- SIMONA® SIMODRAIN®
- Project Reports and Case Studies
- CD-ROM SIMCAT

Phone +49(0)6752 14-383
Fax +49(0)6752 14-738
marketing@simona.de
www.simona.de

Our full product range for pipes, fittings and valves is listed in our Gross Price List (print version) and on the Internet at www.simona.de

SIMONA accessories

SIMONA offers a comprehensive range of equipment and accessories for professional processing and welding of piping systems.

Drawing on many years of experience and first-class technical expertise, our highly qualified team looks forward to advising you. The joining technology on offer within this area is available for hire or sale.

Rental welding machines

- Workshop machines
- Socket welding machines
- Butt welding machines (depending on size also available with CNC technology)

Accessories (heated-tool butt welding)

- Logging unit to record welding data
- Internal pipe debeader 90–500 mm

Equipment for electrofusion welding

Various types of lightweight single-handed units:

- with logging and barcode input
- with additional manual input
- with barcode input, manual input and GEO data collection

Accessories (electrofusion welding)

- Rotary peeling devices (d 32–d 500 mm)
- Manual pipe scraper

Integral electrofusion joints (SIMOFUSE®)

- Clamping equipment
- Hydraulic devices

Stripping tools for SPC pipes

SIMONA stripping tools have been specially developed for use on construction sites. Using the stripping tools, the protective jacket is easily removed from the welding area ready for subsequent processing. Thus, the pipes can be welded in accordance with the relevant DVS welding guidelines.

Special service

As a matter of principle you receive SIMONA® SPC pipes with machined ends ready for heated-tool butt welding.

Silicone heating mats

To facilitate detachment of the protective jacket from the inner pipe, we recommend using silicone heating mats at low processing temperatures (< 15 °C).

SIMONA worldwide

SIMONA AG
Teichweg 16
D-55606 Kirn
Phone +49 (0) 67 52 14-0
Fax +49 (0) 67 52 14-211
mail@simona.de
www.simona.de

Plant I/II
Teichweg 16
D-55606 Kirn
Phone +49 (0) 67 52 14-0
Fax +49 (0) 67 52 14-211

Plant III
Gewerbestraße 1–2
D-77975 Ringsheim
Phone +49 (0) 78 22 436-0
Fax +49 (0) 78 22 436-124

Plant V
Würdinghauser Str. 53
D-57399 Kirchhundem
Phone +49 (0) 27 23 772-0
Fax +49 (0) 27 23 772-266

SIMONA S.A. Paris
Z.I. 1, rue du Plant Loger
F-95335 Domont Cedex
Phone +33 (0) 1 39 35 49 49
Fax +33 (0) 1 39 91 05 58
domont@simona-fr.com

SIMONA S.A. Lyon
Z.I. du Chanay
2, rue Marius Berliet
F-69720 Saint-Bonnet-de-Mure
Phone +33 (0) 4 78 40 70 71
Fax +33 (0) 4 78 40 83 21
lyon@simona-fr.com

SIMONA S.A. Angers
Z.I. 20, Bld. de l'Industrie
F-49000 Ecouflant
Phone +33 (0) 2 41 37 07 37
Fax +33 (0) 2 41 60 80 12
angers@simona-fr.com

SIMONA UK LIMITED
Telford Drive
Brookmead Industrial Park
GB-Stafford ST16 3ST
Phone +44 (0) 1785 22 24 44
Fax +44 (0) 1785 22 20 80
mail@simona-uk.com

SIMONA AG SCHWEIZ
Industriezone
Bäumlimattstrasse
CH-4313 Möhlin
Phone +41 (0) 61 8 55 90 70
Fax +41 (0) 61 8 55 90 75
mail@simona-ch.com

SIMONA S.r.l. ITALIA
Via Padana
Superiore 19/B
I-20090 Vimodrone (MI)
Phone +39 02 25 08 51
Fax +39 02 25 08 520
mail@simona-it.com

SIMONA IBERICA SEMIELABORADOS S.L.
Doctor Josep Castells, 26–30
Polígono Industrial Fonollar
E-08830 Sant Boi de Llobregat
Phone +34 93 635 41 03
Fax +34 93 630 88 90
mail@simona-es.com

SIMONA-PLASTICS CZ, s.r.o.
Zděbradská ul. 70
CZ-25101 Říčany-Jažlovice
Phone +420 323 63 78 3-7/-8/-9
Fax +420 323 63 78 48
mail@simona-plastics.cz
www.simona-plastics.cz

SIMONA POLSKA Sp. z o. o.
ul. H. Kamieńskiego 201–219
PL-51-126 Wrocław
Phone +48 (0) 71 3 52 80 20
Fax +48 (0) 71 3 52 81 40
mail@simona.pl
www.simona.pl

SIMONA FAR EAST LIMITED
Room 501, 5/F
CCT Telecom Building
11 Wo Shing Street
Fo Tan
Hongkong
Phone +852 29 47 01 93
Fax +852 29 47 01 98
sales@simona.com.hk

SIMONA AMERICA Inc.
64 N. Conahan Drive
Hazleton, PA 18201
USA
Phone +1 866 501 2992
Fax +1 800 522 4857
mail@simona-america.com
www.simona-america.com

Upon publication of this document all previous editions shall become void. For relevant changes within this edition, please refer to our company website at www.simona.de.

All information furnished herein reflects our scope of knowledge at the point of publication (errors and omissions excepted).

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SIMONA AG
Teichweg 16
D-55606 Kirn
Phone +49-(0)-67 52 14-0
Fax +49-(0)-67 52 14-211
mail@simona.de
www.simona.de

K+D 05/2008 - 3000 - KD - GB