

Technical insulation

Edition 1/2011

PIPELANE

Swiss pipe sections and
insulation material made
of fiber-glass wool



simply better insulation

 **PIPELANE**

Modern insulation has a name

The histories of the successful Swiss premium brand and that of Sager AG are closely connected up to the present. It all started in 1949 in Switzerland in the Aargau community of Dürrenäsch. The family-run company is still an independent and important employer in the region today and a decisive driving force in the field of insulation. Sager AG is a reliable contact person throughout Switzerland and a select partner in large parts of Europe.



- 1949** Takeover of the first cork fabric in Switzerland by Sager+Cie
- 1954** Start of production of SAGEX as first supplier of polystyrene insulation slabs in Switzerland
- 1978** Start of glass wool production by the name of SAGLAN
- 1999** New glass wool facility that allows an even more flexible production and thus customised cut to measure solutions
- 2001** Commissioning of the innovative 3D cutting facility for SAGEX
- 2008** The business sections SAGER insulation material and polymer profiles are converted to independent shareholder companies
- 2008** Start of production of the pipe section range PIPELANE for building technology and industrial facilities

SAGER has three independent product lines in the field of insulation

SAGLAN

Better insulation is more important than ever these days – and our SAGLAN glass wool made of natural quartz sand is the optimum insulation material for construction in Minergie. SAGLAN has outstanding sound and thermal insulation properties. The SAGLAN cutting service is very valuable and covers large insulation thicknesses up to 300 mm. All products can be lined with different coatings.



PIPELANE

After all, each system is only as good as the technical insulation of its pipelines. Whether for heating systems, warm water pipes, industrial facilities or air conditioning ducts – PIPELANE ensures thermal and sound insulation as well as fire protection. The outstanding material properties ensure reliable and permanent insulation and allow full utilisation of available energy savings potentials. PIPELANE is available with or without aluminium lining.



SAGEX

The brand SAGEX is the epitome for expanded polystyrene. The building construction and civil engineering industry cannot do without SAGEX. Its application fields are manifold and it helps to solve almost any thermal insulation problem. Besides the white SAGEX, we also produce dark grey SAGEX Nero, an advanced development with even better insulation properties.



The Swiss glass wool pipe sections by SAGER

After all, each system is only as good as the technical insulation of its pipelines. Whether for heating systems, warm water pipes, industrial facilities or air conditioning ducts – PIPELANE ensures thermal and sound insulation as well as fire protection.

The outstanding material properties ensure reliable and permanent insulation and allow full utilisation of available energy savings potentials.

You will profit from

- ▶ customised product properties
- ▶ defined system and cut to measure solutions
- ▶ optimum thermal insulation hot/cold
- ▶ outstanding acoustic insulation properties
- ▶ fast and easy to process products
- ▶ recyclable materials
- ▶ an unmatched customer service



Thermal insulation: Insulation of industrial facilities has economic and ecologic advantages. Reduce heat losses substantially with PIPELANE. Save energy and costs and protect the environment at the same time.

Sound insulation: Pipelines and ducts in building technology and industrial facilities are often bothersome noise sources. The causes may be transmitted operating noises caused by machines or noise resulting from high flow speeds of the transported medium, e.g. air or liquids. Regulations and standards define the admissible limit values. The most effective sound insulation is achieved with insulation measures on the pipelines themselves. Casings with PIPELANE substantially reduces noises.

PIPELANE for building technology and the industry



Sound insulation as well as fire protection and radiation losses in pipes can be effectively influenced with suitable coatings. PIPELANE pipe sections made of glass wool have outstanding sound insulation properties, are inflammable and insulate the dissipation losses highly effectively. They are indispensable in building technology and the industry.

The rational installation and easy handling of PIPELANE pipe sections has proven itself in practical application. PIPELANE pipe sections are available in different bulk densities. If the pipes require a specially blow-resistant surface, the PIPELANE pipe sections can be wrapped additionally, mainly with polymer or aluminium foils / sheets and galvanised steel sheets.

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PIPELANE Pipe sections

PIPELANE SGR without lining



Application field / properties:

PIPELANE glass wool shells are highly dimensionally stable and ensure easiest handling even at high application temperatures.

Technical parameters:

Thermal conductivity	0.034 W/mK
Reaction to fire	Not flammable
Application temperature	≤ 300 °C

Processing instructions:

- ▶ Application of the insulation on the pipe
- ▶ Fixation with attachment material
- ▶ If required, additional wrapping can be installed

Technical characteristics	Data	Unit	Standard	
Thermal conductivity λ_D at average temperature $\rho = 50 \text{ kg/m}^3$, other bulk densities on request	40 °C	0.034	W/mK	EN ISO 8497
	50 °C	0.036		
	100 °C	0.043		
	150 °C	0.052		
	200 °C	0.063		
	300 °C	0.093		
Heat conductivity at an average temperature of 40 °C	0.034	W/mK	EnEV	
Reaction to fire	Not flammable	A1		DIN 4102-1 BS 476 Part 4 NF VKF
	Not flammable	M0		
	Not flammable	6q.3		
	Not flammable			
Application temperature		≤ 300*	°C	
Top application temperature limit		500*	°C	EN 14707
Specific heat capacity	c	0.84	kJ/kgK	
Special properties	hydrophobic			EN 13472, AGI Q 132 AGI Q 132
Chloride ion content	produced in AS quality	≤ 10	mg/kg	EN 13468

Pipe sections without substances such as silicones, oils or waxes are available upon request.

VW test specification 3.10.7	-	-	-	Q.3-01/10
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* Organic binding agents may become partially volatile as of a temperature of ≥ 250 °C. However, this does not impair the thermal insulation properties. (EN 14707/2005)

Quality-controlled in acc. with VDI 2055

A melting point of > 1000 °C is not of relevance acc. to with EnEV 2009 (Germany) after determination of the thermal conductivity parameter (W/mK).

The insulation material is not damaging to health (certificate issued 04.02.2008)

Insulation code in acc. with AGI worksheet Q132: 10.04.02.50.99

PIPELANE Pipe sections

PIPELANE SGR 1 with aluminium lining



Application field / properties:

PIPELANE convinces with easy handling thanks to the gridded aluminium lining with overlap and self-adhesive strips.

Technical parameters:

Thermal conductivity	0.034 W/mK
Reaction to fire	Not flammable
Application temperature	≤ 300 °C

Processing instructions:

- ▶ Application of the insulation on the pipe, do not damage the aluminium lining
- ▶ Seal fully pounded longitudinal joints with self-adhesive overlapping tape
- ▶ Carefully mask all joints, seams, penetrations and pipe ends

Technical characteristics	Data		Unit	Standard
Thermal conductivity λ_p at average temperature $\rho = 50 \text{ kg/m}^3$, other bulk densities on request	40 °C	0.034	W/mK	EN ISO 8497
	50 °C	0.036		
	100 °C	0.043		
	150 °C	0.052		
	200 °C	0.063		
	300 °C	0.093		
Heat conductivity at an average temperature of 40 °C	0.034		W/mK	EnEV
Reaction to fire	Not flammable	A2		DIN 4102-1 BS 476 Part 4 (1997) BS 476 Part 6 (1989) NF VKF
	Not flammable	Class 0		
	Not flammable	M0		
	Not flammable	6q.3		
Application temperature		≤ 300*	°C	
Top application temperature limit		500*	°C	EN 14707
Temperature strain on the lining		≤ 100	°C	
Specific heat capacity	c	0.84	kJ/kgK	
Special properties	hydrophobic			EN 13472, AGI Q 132 AGI Q 132
Chloride ion content	produced in AS quality	≤ 10	mg/kg	EN 13468

Pipe sections without substances such as silicones, oils or waxes are available upon request.

VW test specification 3.10.7	-	-	-	Q.3-01/10
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* Organic binding agents may become partially volatile as of a temperature of $\geq 250 \text{ °C}$. However, this does not impair the thermal insulation properties. (EN 14707/2005)

Quality-controlled in acc. with VDI 2055

A melting point of $> 1000 \text{ °C}$ is not of relevance acc. to with EnEV 2009 (Germany) after determination of the thermal conductivity parameter (W/mK).

The insulation material is not damaging to health (certificate issued 04.02.2008)

Insulation code in acc. with AGI worksheet Q132: 10.04.02.50.99

Product overview / types of delivery

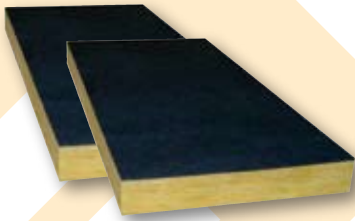
Pipe section length: 120 cm

Diameter Shell inside in mm	Insulation strength in mm		1. Number = unit 2. Number = running meter		Packaging in cartons (pallet at 18 cartons)		Packaging in PE bags (SGR 1 with alum. lining)		Packaging in PE bags (SGR and SGR 1)									
	20	25	30	40	50	60	70	80	100									
15	42	50,4	30	36	23	27,6	15	18										
18	42	50,4	30	36	23	27,6	15	18										
22	36	43,2	25	30	20	24	13	15,6										
28	30	36	23	27,6	18	21,6	12	14,4	9	10,8								
33	25	30	20	24	16	19,2	10	12	8	9,6								
35	25	30	20	24	16	19,2	10	12	8	9,6	5	6	4	4,8	4	4,8	2	2,4
38	23	27,6	18	21,6	15	18	9	10,8	7	8,4	5	6	4	4,8	4	4,8	2	2,4
42	20	24	16	19,2	13	15,6	9	10,8	6	7,2	5	6	4	4,8	4	4,8	2	2,4
45	20	24	16	19,2	12	14,4	9	10,8	6	7,2	5	6	4	4,8	4	4,8	2	2,4
48	18	21,6	15	18	12	14,4	9	10,8	6	7,2	4	4,8	4	4,8	4	4,8	2	2,4
54	16	19,2	12	14,4	10	12	8	9,6	5	6	4	4,8	4	4,8	4	4,8	2	2,4
57	16	19,2	12	14,4	9	10,8	7	8,4	5	6	4	4,8	4	4,8	4	4,8	2	2,4
60	14	16,8	12	14,4	9	10,8	7	8,4	5	6	4	4,8	4	4,8	4	4,8	2	2,4
64	12	14,4	9	10,8	9	10,8	6	7,2	5	6	4	4,8	4	4,8	2	2,4	2	2,4
67	12	14,4	9	10,8	9	10,8	6	7,2	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4
70	12	14,4	9	10,8	9	10,8	6	7,2	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4
76	9	10,8	9	10,8	8	9,6	5	6	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4
80	9	10,8	9	10,8	7	8,4	5	6	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4
83	9	10,8	8	9,6	6	7,2	5	6	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4
89	9	10,8	6	7,2	6	7,2	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4	2	2,4
102	6	7,2	5	6	5	6	4	4,8	4	4,8	2	2,4	2	2,4	2	2,4	2	2,4
108	6	7,2	5	6	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4	2	2,4	2	2,4
114	6	7,2	5	6	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4	2	2,4	2	2,4
121	4	4,8	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4
127	4	4,8	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4
133	4	4,8	4	4,8	4	4,8	4	4,8	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4
140			4	4,8	4	4,8	4	4,8	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4
159			4	4,8	4	4,8	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4
168			4	4,8	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4
177			2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4
194					2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	1	1,2
219					2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	1	1,2
245					2	2,4	2	2,4	2	2,4	2	2,4	2	2,4	1	1,2	1	1,2
273							2	2,4	2	2,4	1	1,2	1	1,2	1	1,2	1	1,2
305							2	2,4	1	1,2	1	1,2	1	1,2	1	1,2	1	1,2
324							1	1,2	1	1,2	1	1,2	1	1,2	1	1,2	1	1,2
356							1	1,2	1	1,2	1	1,2	1	1,2	1	1,2	1	1,2
406							1	1,2	1	1,2	1	1,2	1	1,2	1	1,2	1	1,2
419							1	1,2	1	1,2	1	1,2	1	1,2	1	1,2	1	1,2
457							1	1,2	1	1,2	1	1,2	1	1,2	1	1,2	1	1,2
508							1	1,2	1	1,2	1	1,2	1	1,2	1	1,2	1	1,2
559							1	1,2	1	1,2	1	1,2	1	1,2	1	1,2	1	1,2
612							1	1,2	1	1,2	1	1,2	1	1,2	1	1,2	1	1,2

Other diameters and insulation strengths on request

SAGLAN Supplementary products slabs

SAGLAN SAV 55 one-sided black glass fibre fleece



Application field / properties:
Stiff slabs made of glass wool for highly effective insulation and sound absorption. Coated on one side with black glass fibre fleece.

Technical parameters:

Bulk density	approx. 52 kg/m ³
Thermal conductivity λ_D	0.031 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
5001191	2400 x 1250	20
5001046	2400 x 1250	25
5001047	1500 x 600	30
5001048	2400 x 1250	30
5001049	2400 x 1250	50
5001050	1250 x 600	50
5001051	1250 x 600	60
5001052	1250 x 600	100

SAGLAN SAV 55 one-sided yellow glass fibre fleece with longitudinal reinforcement



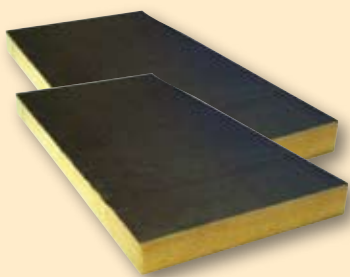
Application field / properties:
Stiff slabs made of glass wool for highly effective insulation and sound absorption. Coated on one side with yellow glass fibre fleece.

Technical parameters:

Bulk density	approx. 52 kg/m ³
Thermal conductivity λ_D	0.031 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
5001192	2400 x 1250	20
5001060	2400 x 1250	25
5001061	1500 x 600	25
5001062	2400 x 1250	30
5001063	2400 x 1250	50
5001064	1250 x 600	50
5001065	1250 x 600	60
5001066	1250 x 600	100

SAGLAN SAG 55 one-sided black glass fibre fabric



Application field / properties:
Stiff slabs made of glass wool for highly effective insulation and sound absorption. Coated on one side with black glass fibre fabric.

Technical parameters:

Bulk density	approx. 52 kg/m ³
Thermal conductivity λ_D	0.031 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
5001193	2400 x 1250	20
5001053	2400 x 1250	25
5001054	1500 x 600	30
5001055	2400 x 1250	30
5001056	2400 x 1250	50
5001057	1250 x 600	50
5001058	1250 x 600	60
5001059	1250 x 600	100

SAGLAN Supplementary products slabs

SAGLAN SAR 40 one-sided pure aluminium gridded



Application field / properties:
Stiff insulation plate made of glass wool with one-sided pure gridded aluminium coating for air ventilation ducts.

Technical parameters:

Bulk density	approx. 38 kg/m ³
Thermal conductivity λ_D	0.032 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
5001194	1250 x 600	20
5001195	1250 x 600	25
5001044	1250 x 600	30
5001075	1250 x 600	40
5001045	1250 x 600	50
5001078	1250 x 600	60
5001079	1250 x 600	80
5001080	1250 x 600	100

SAGLAN ST VV double-sided yellow glass fibre fleece



Application field / properties:
Stiff slabs for impact sound and thermal insulation with dual-sided yellow glass fibre fleece lining.

Technical parameters:

Bulk density	approx. 80 kg/m ³
Thermal conductivity λ_D	0.032 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
5001043	1500 x 600	15
5001127	2400 x 1200	25



Other dimensions and bulk densities, as well as other linings on request.

SAGLAN Supplementary products rolls

SAGLAN SIG 20 black one-sided black glass fibre fabric



Application field / properties:
Rolled glass wool felt lined on one side with yellow glass fibre fabric. Thermal insulation for ventilation ducts, pipes with large diameters or large, round containers.

Technical parameters:

Bulk density	approx. 20 kg/m ³
Thermal conductivity λ_D	0.035 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
500976	18000 x 1200	30
500977	18000 x 1200	40
500979	13000 x 1200	50
500980	10000 x 1200	60
500981	9000 x 1200	80

SAGLAN SIR 25 (Duct rolls) one-sided pure aluminium gridded



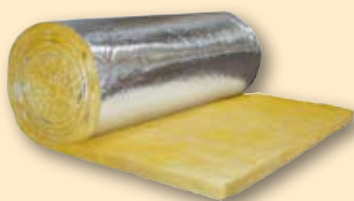
Application field / properties:
Felt in rolls, with gridded aluminium lining on one side. Thermal insulation for ventilation ducts, pipes with large diameters or large, round containers.

Technical parameters:

Bulk density	approx. 25 kg/m ³
Thermal conductivity λ_D	0.035 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
500994	18000 x 1200	25
500999	12000 x 1200	40
5001000	9000 x 1200	50

SAGLAN SIR 25 crêped one-sided pure aluminium gridded



Application field / properties:
Crêped felt in rolls, with gridded aluminium lining on one side. Thermal insulation for ventilation ducts, pipes with large diameters or large, round containers.

Technical parameters:

Bulk density	approx. 25 kg/m ³
Thermal conductivity λ_D	0.036 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
5001160	6000 x 1200	40
5001161	5000 x 1200	50
5001162	4000 x 1200	60
5001163	4000 x 1200	80
5001164	4000 x 1200	100
5001165	4000 x 1200	120

SAGLAN Supplementary products rolls

SAGLAN SI 25 without lining



Application field / properties:
Rolled glass wool felt without lining for ventilation ducts and acoustic ceilings.

Technical parameters:

Bulk density	approx. 25 kg/m ³
Thermal conductivity λ_D	0.035 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
500611	16000 x 1250	20
500612	16000 x 1250	25
500613	15000 x 1250	30
500614	10000 x 1250	40
500615	10000 x 1250	50
500616	8000 x 1250	60

SAGLAN SIV 25 black one-sided black glass fibre fleece with longitudinal reinforcement



Application field / properties:
Rolled glass wool felt lined on one side with black glass fibre fleece longitudinal reinforced for ventilation ducts and acoustic ceilings.

Also available without glass fibre fleece with longitudinal reinforcement on request.

Technical parameters:

Bulk density	approx. 25 kg/m ³
Thermal conductivity λ_D	0.035 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
500725	16000 x 1250	20
500726	16000 x 1250	25
5001196	15000 x 1250	30
5001197	10000 x 1250	40
5001198	10000 x 1250	50

SAGLAN SIV 25 yellow one-sided yellow glass fibre fleece with longitudinal reinforcement



Application field / properties:
Rolled glass wool felt lined on one side with yellow glass fibre fleece longitudinal reinforced for ventilation ducts and acoustic ceilings.

Technical parameters:

Bulk density	approx. 25 kg/m ³
Thermal conductivity λ_D	0.035 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
5001067	16000 x 1250	20
5001068	16000 x 1250	25
5001069	15000 x 1250	30
5001070	10000 x 1250	40
5001042	10000 x 1250	50

Other dimensions and bulk densities, as well as other linings on request.

SAGLAN Supplementary products rolls

SAGLAN SIV 30 one-sided black glass fibre fleece gridded



Application field / properties:
Felt in rolls, lined with gridded black fleece on one side. For thermal and sound insulation in air conditioning ducts and ventilation apparatuses.

Technical parameters:

Bulk density	approx. 30 kg/m ³
Thermal conductivity λ_D	0.034 W/mK
Reaction to fire (BKZ)	5.3 / A2

Item number	Format mm	Thickness mm
500618	16000 x 1200	15
500619	16000 x 1200	25

SAGLAN SIV 30 one-sided black glass fibre fleece with longitudinal reinforcement



Application field / properties:
Felt in rolls, lined with longitudinal reinforced black fleece on one side. For thermal and sound insulation in air conditioning ducts and ventilation apparatuses.

Technical parameters:

Bulk density	approx. 30 kg/m ³
Thermal conductivity λ_D	0.034 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Format mm	Thickness mm
5001071	16000 x 1250	20
5001072	15000 x 1250	30
5001073	10000 x 1250	40
5001074	10000 x 1250	50
5001148	8000 x 1250	60

SAGLAN Supplementary products wool/flakes

SAGLAN Wool TE



Application field / properties:
White glass fibre wool, loose. For stuffing cavities, e.g. boilers, pipes with large diameters, pipelines or thermal apparatuses of any kind.

Technical parameters:

Thermal conductivity λ_D	≤ 0.040 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Delivery unit
520683	1 bag 250 l at app. 10 kg, loose

SAGLAN Flakes, yellow



Application field / properties:
Yellow glass wool flakes made of recycled material for blowing into or stuffing cavities.

Technical parameters:

Thermal conductivity λ_D	≤ 0.040 W/mK
Reaction to fire (BKZ)	6q.3 / A1

Item number	Delivery unit (pallet at 18 bags)
500675	1 bag 800 x 400 x 250 mm = approx. 0,10 m ³ at app. 15 kg.

Simply a better insulation

Insulation products by SAGER are the perfect solution for your high demands. With our long-standing experience with glass wool as an insulation material, we are your competent partner to cover all your special needs.

- ▶ Our product quality gives builder-owners, planners and processors the necessary security for handling the technical insulation.
- ▶ Our unique service will convince you.

Our PIPELANE pipe sections are made of natural quartz sand and are therefore resistant to ageing and rotting. They have outstanding material properties, are water-repellent, moisture-resistant, dimensionally stable and highly secure in case of a fire. At the same time, glass wool is light and elastic.

They do not impair your health due to their high biosolubility, which is confirmed by the quality seals EUCEB and RAL.



DIN CERTCO

DIBt

CE

The notices, suggestions and examples contained in this publication are based on our present state of knowledge and refer to normal application cases often encountered in practice. It is the responsibility of the planners to take all influences into account and apply our specifications accordingly. We cannot assume any responsibility for individual cases with this publication.

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SAGER is the Swiss premium brand for innovative thermal and sound insulation. We offer custom-tailored solutions as well as a fast and reliable service. SAGER represents more living comfort and high energy efficiency, protects the environment and helps to save costs.

- ▶ Individually cut to specifications
- ▶ High quality
- ▶ Sustainable products
- ▶ Unbeatable service
- ▶ Reliable and customer-oriented
- ▶ International certifications
- ▶ Strategic partner and memberships

 SAGER

Your distribution partner:

Sager AG
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www.sager.ch

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Fax +41 62 767 87 80
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simply better insulation



PIPELANE