# **Product Range**

AF 14/09









Always the right decision

# **FRIAFIT®**Sewage System

The safe connection method for HD-PE pipes carrying sewage and foul water.

valid from 1st February 2009



# Things worth knowing about FRIAFIT®-Sewage System and this Product Range

#### **Contents**

To help you to find specific products easily we have included an alphabetical list arranged in product groups on page 3.

# **Stocking Status**

Please note the following:

- All articles with a stock Status of 1 are usually available ex-stock.
- All articles with a stock Status of 2 are manufactured to order and hence have a delivery time of 3 - 4 weeks.
- All articles with stock Status 3 are only manufactured for special customers and could not be returned to us and have a delivery time of 3 4 weeks.

### Packaging and pallet units

The product range shows packaging units (VE) and pallet units (PE). An order in complete VE/PE will simplify the procedure in your goods inwards department as well as your storage and ensures we can pick and deliver your order quickly. The product range will show that we have selected sensible and fair packaging units for you.

# Returns

Goods returned for credit must comply with certain criteria under our Quality Management System. We shall be glad to inform you about this separately on request. If the goods meet the criteria and their return is approved by us in advance they will be credited less 25% inspection costs.

# Inspection certificates

We Charge an administration fee of € 15,- per item for our inspection certificates according DIN EN 10204-3.1. The inspection certificate must be ordered at the same time as the order is placed; it is not possible to supply them retrospectively.

# **Quality Certification**

The FRIAFIT®-Sewage System is subject to constant Quality checks under stringent inspection regulations, which are part of our comprehensive Quality Management System which is certified to **DIN EN ISO 9001 : 2000.** 

The FRIAFIT®-Sewage System and the Operation of our Technical Equipment FRIATOOLS® are matched to each other. All modifications and additions occurring in the course of continuing technical development are taken into account. Our continuous monitoring of production as part of the Quality Assurance System includes the FRIAFIT®-Sewage System, the Technical Equipment FRIATOOLS® and the quality of the fused joint as a result of the combination of these two components. The Operation and functional safety of fusion units from other manufacturers are not subject to our specifications and checks. When installing fittings please proceed in accordance with our assembly instructions and the operating instructions for the equipment in question.

#### Norm Conformity/Fusion capability

The FRIAFIT®-Sewage System complies with EN 12 666 and thus counts as a regulated building product. As such it does not require a general building supervision approval. A certificate of conformity from DIBT Berlin is available.

The FRIAFIT®-Sewage System (without sewage sleeves AM) can be fused to pipes of SDR stages 33 to 11, FRIAFIT® Sewage Bends ABM/ABMS can be fused to pipes of SDR 33 to 17, in accordance with DIN 8074 and EN 12 666.

FRIAFIT®-Sewage sleeves AM SDR 17 are designed for use in drinking water systems PN10 and industrial water systems. They are registered according to DVGW - VP 607 certified by DV-8606BO6114 and DV-8611BO6115 and are subject to regular external checks.

FRIAFIT®-Sewage sleeves AM SDR 17 may be fused with pipes ranging in SDR from 33 to 17 according to DIN 8074, ISO 4437, EN 12 201 and EN 13 244.

Pipes made of raw material types PE 63, PE 80 and PE 100 with a melt flow rate MFR190/5 between 0.2 -1.7 g/10 min. can be fused.

The FRIAFIT®-Sewage System may be processed with ambient temperatures ranging from -10°C to +45°C.

# Things worth knowing about FRIAFIT®-Sewage System and this Product Range

# Pressure loading capacity

It is designed for unpressurised pipes (gravity pipes).

The test pressure for this type of System in accordance with DIN EN 1610 is a maximum of 0,5 bar.

#### **Pressure load limits**

FRIAFIT®-Sewage sleeves made from PE 100 SDR 17 are designed according to EN 12 201 and EN 13 244 for pressure load limits of 10 bar for water and sewage pipes with a design factor C = 1.25.

FRIAFIT®-Sewage bends ABM/ABMS made from PE 100 SDR 17 are designed for a pressure load capacity of 2,5 bar for sewage pipes.

#### **Static**

The static calculation for the PE sewer pipe must in each individual case be carried out by the relevant pipe manufacturer or engineering Office depending on the ambient conditions which prevail.

The annular rigidity of the pipe joint fused with FRIAFIT®-Sewage sleeves will in all cases be higher than the annular rigidity of the pipe used.

#### **Cooling times**

. .. .

# FRIAFIT®-Sewage sleeves AM and FRIAFIT®-Sewage insert sleeves AEM

The cooling times given in the bar codes and identified by additional letters (C.T.) are the times during which the fused joint should not be moved.

# FRIAFIT®-Sewage saddle Top-Loading ASA-TL and Transition saddle Top-Loading ASA-TL/KG

The cooling times given in the bar codes (C.T.) are the times before tapping takes place.

You can get further details from our assembly instruction.

# **Technical Information**

The technical Information in this product range are not comprehensive. Please refer to our data sheets for detailed Information. These may also be downloaded from the internet on <a href="https://www.friafit.com">www.friafit.com</a>.

Technical hints for processing or use could be attached to the products and must be strictly observed.

# **Update/Technical Progress**

All specifications are valid as at time of going to print. We reserve the right to implement changes which serve technical progress. We do not accept liability for printing mistakes.

#### **Brand Names**

For a better readability, no identification by ® was used in the continuous texts of this price list. The following brands are registered: FRIAFIT®, FRIALEN®, and FRIATOOLS®.

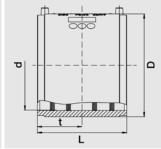
	Article	Brief Description	Page			
	FRIAFIT basic programme					
	Sewage sleeve SDR 17	AM	4			
	Sewage insert sleeve	AEM				
	Sewage inspection chamber adapter	ASF	5			
	Sewage inspection chamber adapter for masoned canals L = 250 mm	ASFL	5			
	Sewage saddle Top-Loading	ASA-TL	6			
NEW!	Transition saddle Top-Loading	ASA-TL/KG	6			
NEW!	Sewage bends	ABM	7			
NEW!	Sewage bends	ABMS	7			
,,,	Transition piece PE – PVC/PP	UKG	7			
	Transition piece PE – stoneware	USTZ	8			
	FRIAFIT additional fittings					
	Sewage elbows 30° (spigot fittings)	ABS 30°	8			
	Sewage elbows 45° (spigot fittings)	ABS 45°	8			
	Sewage elbows 60° (spigot fittings)	ABS 60°	9			
	Sewage elbows 90° (spigot fittings)	ABS 90°	9			
	Equal branch 45° (spigot fittings)	ATS 45°	9			
	Unequal branch 45° (spigot fittings)	ATSR 45°	10			
	Unequal branch 60° (spigot fittings)	ATSR 60°	10			

AF 14/09 3

#### ΔΜ

# **Sewage sleeve SDR 17**





With exposed heating coils for optimal heat transfer, large insertion depth, extra wide fusion zones plus cold zones at the end and in the middle to prevent the flow of molten material for use without holding devices.

From d 560 a larger annular gap can be compensated between the sewage sleeve and the pipe by using the pre-heating barcode.

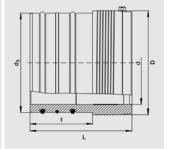
PE 100 SDR 17
Maximum working pressure 10 bar (water/sewage)

d	Order Ref.	Stock- status	VE	PE	D	L	t	Weight kg/each
110	680001	1	24	192	130	160	80	0,600
125	680013	1	22	176	146	160	80	0,620
160	680002	1	12	96	184	180	90	1,100
180	680003	1	8	64	207	180	90	1,700
200	680004	1	1	56	229	180	90	3,200
225	680005	1	4	32	254	200	100	2,000
250	680006	1	1	33	282	220	110	3,100
280	680007	1	1	32	316	220	110	3,700
315	680008	1	1	24	355	220	110	4,900
355	680009	1	1	20	400	220	110	6,100
400	680010	1	1	12	450	220	110	7,850
450	680011	1	1	6	506	270	135	8,400
500	<b>680012</b> ①	1	1	4	562	270	135	14,900
560	<b>680018</b> ①	1	1	2	630	380	190	24,800
630	<b>680019</b> ①	1	1	2	710	420	210	36,800

①separate fusion zones

**Sewage insert sleeve** 





For a flexible connection of HD-PE pipes into concrete inspection chambers according to DIN V 4034 resp. ATV-DVWK-A 157 with the FRIAFIT inspection chamber adapter. The FRIAFIT inspection chamber acts as a connecting element between the prefabricated inspection chamber and the FRIAFIT sewage insert sleeve with resilient sealing allows optimal anchoring to the FRIAFIT inspection chamber adapter. For extra safety, the Q seal ring capable of soaking up water is included. The connection side to the HD-PE pipe with exposed heating coils for optimal heat transfer, large insertion depth, extra wide fusion zones plus cold zones at the end to prevent the flow of molten material, for use without holding devices.

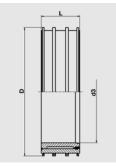
From d 560 a larger annular gap can be compensated between the sewage sleeve and the pipe by using the pre-heating barcode.

PE 100 Maximum test pressure in accordance with DIN EN 1610 0,5 bar

d	Order Ref.	Stock- status	VE	PE	D	d <sub>3</sub>	L	t	Weight kg/each
110	680201	1	8	144	133	131	165	135	0,690
160	680202	1	8	64	193	187	220	135	1,720
180	680203	1	1	54	225	215	220	135	2,640
200	680204	1	1	56	250	247	220	135	3,640
225	680205	1	1	32	280	277	220	135	4,600
250	680206	1	1	32	280	277	220	135	2,640
280	680207	1	1	24	315	313	220	135	3,500
315	680208	1	1	24	355	354	220	135	4,540
355	680209	1	1	20	400	399	220	135	5,800
400	680210	1	1	12	450	449	220	135	7,500
450	680211	1	1	8	500	499	220	135	8,100
560	680212	1	1	4	630	624	220	135	13,400

# Sewage inspection chamber adapter





Connection unit between the ready made concrete inspection chamber and the FRIAFIT sewage insert sleeve AEM. With anchoring ribs across the whole width of the diameter for a secure seat in the concrete. Resilient centre section serves to take up the stresses when the pipes are under load. Stable inside diameter due to high wall thickness giving a good connection to the sewage insert sleeve AEM in accordance with DIN V 4034.

**PE 100** Maximum test pressure in accordance with DIN EN 1610 0,5 bar

d	Order Ref.	Stock- status	VE	PE	D	d <sub>3</sub>	L	Weight kg/each
110	680401	1	12	96	200	134	135	1,450
160	680402	1	8	64	250	190	135	1,650
180	680403	1	6	48	280	218	135	1,950
200	680404	1	4	32	315	250	135	1,800
225	680405	1	4	32	355	280	135	3,150
250	680406	1	4	32	355	280	135	3,350
280	680407	1	4	32	400	316	135	4,200
315	680408	1	1	18	450	357	135	5,400
355	680409	1	1	18	500	402	135	6,400
400	680410	1	1	12	560	452	135	8,200
450	680411	1	2	8	630	502	135	11,450
560	680412	1	1	6	800	628	135	20,900

# Sewage inspection chamber adapter for masoned canals **ASFL** L = 250 mm

Connection unit between masoned canal and FRIAFIT AEM sewage insert sleeve. Fixing supports across the entire width for proper fit in canal with retrospective installation. Elastomere central piece to counterbalance stresses. Solid internal diameter due to large wall thickness.

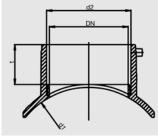
**PE 100** Maximum test pressure in accordance with DIN EN 1610 0,5 bar

d	Order Ref.	Stock- status	VE	PE	D	$d_3$	L	Weight kg/each
160	680502	1	2	36	250	190	250	2,910
225	680505	1	2	16	355	280	250	4,664
280	680507	1	2	16	400	316	250	6,648
315	680508	1	1	12	450	357	250	8,750
355	680509	1	1	6	500	402	250	11,050
450	680511	1	1	4	630	502	250	19,260

# ASA-TL

# **Sewage saddle Top-Loading**





The FRIAFIT sewage saddle ASA-TL is a compact component consisting of a fusion saddle with an integral fusion coupler at its outlet (d 160). The FRIAFIT sewage saddle can be used to connect sewer pipes to an existing main sewer system made of HD-PE. With exposed heating element for optimal heat transfer. Tapping area free of heating wires. The FRIAFIT sewage saddle will be fixed on the pipe by a clamping and drilling unit FWFIT (see product range FRIATOOLS) and tapping takes place after the cooling time.

By the application of pipes SDR 26-33 from d 200-315 mm please take care of special assembly instructions.

For the assembly on Close-Fit-Inliner please contact our hotline +49 621/486-1486.

PE 100
Maximum test pressure in accordance with DIN EN 1610 0,5 bar

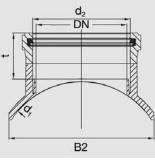
d <sub>1</sub>	$d_{\scriptscriptstyle 2}$	DN	Order Ref.	Stock- status	VE	PE	t	Weight kg/each
200	160	150	682618	1	8	64	76	1,000
225	160	150	682613	1	8	64	76	1,050
250	160	150	682619	1	10	80	76	0,990
280	160	150	682614	1	10	80	76	0,990
315	160	150	682615	1	10	80	76	0,990
355	160	150	682620	1	10	80	76	0,990
400	160	150	682621	1	10	80	76	0,890
450	160	150	682616	1	10	80	76	1,020
500/560	160	150	<b>682622</b> ①	1	10	80	76	1,020

①Installation d 560 using FRIALEN FRIATOP clamping device (see product range FRIATOOLS).



# ASA-TL/KG Transition saddle Top-Loading





The FRIAFIT transition saddle ASA-TL/KG is a compact component consisting of a fusion saddle with an integral fusion coupler at its outlet (d 160). The FRIAFIT transition saddle can be used to connect sewer pipes made from PVC/PP to an existing main HD-PE sewer system. With exposed heating element for optimal heat transfer. Tapping area free of heating wires. The FRIAFIT transition saddle will be fixed on the pipe by a clamping and drilling unit FWFIT (see product range FRIATOOLS) and tapping takes place after the cooling time.

By the application of pipes SDR 26 – 33 from d 200 – 315 mm please take care of special assembly instructions.

For the assembly on Close-Fit-Inliner please contact our hotline +49 621/486-1486.

PE 100
Maximum test pressure in accordance with DIN EN 1610 0,5 bar

d <sub>1</sub>	$d_2$	DN	Order Ref.	Stock- status	VE	PE	t	Weight kg/each
225	160	150	682624	1	8	64	76	1,192
280	160	150	682625	1	10	80	76	1,106
315	160	150	682626	1	10	80	76	1,106
355	160	150	682627	1	10	80	76	1,106
450	160	150	682628	1	10	80	76	1,136
500/560	160	150	<b>682629</b> ①	1	10	80	76	1,136

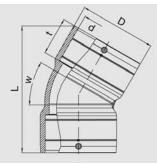
①Installation d 560 using FRIALEN FRIATOP clamping device (see product range FRIATOOLS).



#### $\Delta$ RM

# Sewage bends (coupler/coupler)





Little space required thanks to compact design as well as angle spacings of 15°, 30°, 45° facilitate a comfortable pipeline routing. Fusion couplers integrated on both ends to reduce the assembly time with exposed heating coils for an optimal heat transfer. The smooth, hydraulically optimised internal contour offers a level passage when **pipes SDR 17/17.6** are used. The bright surface facilitates an optimal view during camera inspection.

PE 100
Maximum working pressure 2,5 bar (sewage)

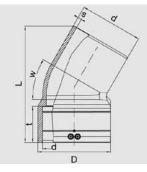
d	w	Order Ref.	Stock- status	VE	PE	D	L	t	Weight kg/each
160	15°	681100	1			185	279	92	1,668
160	30°	681101	1			185	306	92	1,768
160	45°	681102	1			185	320	92	1,859



# **ABMS**

# Sewage bends (coupler/pipe spigot)





Little space required thanks to compact design as well as angle spacings of 15°, 30°, 45° facilitate a comfortable pipeline routing. Coupler end with exposed heating coil for optimal heat transfer. Pipe spigots specifically suited for direct fusion into the FRIAFIT sewage saddle ASA-TL. Angles of 60°, 90° etc. can be produced by using ABM repeatedly. The smooth, hydraulically optimised internal contour offers a level passage when **pipes SDR 17/17.6** are used. The bright surface facilitates an optimal view during camera inspection.

PE 100 Maximum working pressure 2,5 bar (sewage)

d	W	Order Ref.	Stock- status	VE	PE	D	L	t	S	Weight kg/each
160	15°	681103	1			185	324	92	9,5	1,098
160	30°	681104	1	6	48	185	329	92	9,5	1,166
160	45°	681105	1			185	325	92	9,5	1,255

#### HKG

# Transition piece PE - PVC/PP





Flexible material transition in domestic range between HD-PE pipes (SDR 33 - SDR 17) and PVC/PP pipes. HD-PE side can be fused with FRIAFIT AM sewage coupler or with the outlet of the FRIAFIT ASA-TL sewage saddle. PVC/PP side acts as push-fit coupler with SBR lip seal gasket and large insertion depth.

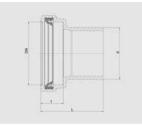
PE 100
Maximum test pressure in accordance with DIN EN 1610 0,5 bar

d/DN	Order Ref.	Stock- status	VE	PE	L	t	Weight kg/each
160/150	682617	1	12	96	194	70	1,070

AF 14/09 7

# Transition piece PE - stoneware





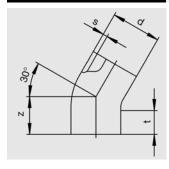
Flexible material transition in domestic range between HD-PE pipes (SDR 33- SDR 17) and stoneware pipes (spigot ends). HD-PE side can be fused with FRIAFIT AM sewage coupler or with the outlet of the FRIAFIT ASA-TL sewage saddle. Stoneware side acts as push-fit coupler with SBR lip seal gasket and large insertion depth.

PE 100 Maximum test pressure in accordance with DIN EN 1610 0,5 bar

d/DN	Order Ref.	Stock- status	VE	PE	L	t	Weight kg/each
160/150	682623	1	2	36	194	70	1,250

# ABS 30°

# Sewage elbows 30° (spigot fittings)



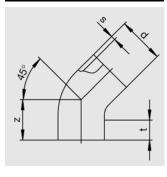
HD-PE fitting for use with FRIAFIT sewage sleeve AM without holding devices.

# **PE 100**

d	Order Ref.	Stock- status	VE	PE	Z	t	S	Weight kg/each
160	681001	3	1		280	170	9,5	2,780
180	681002	3	1		317	250	10,7	3,770
225	681003	3	1		371	250	13,4	6,870

# ABS 45°

# Sewage elbows 45° (spigot fittings)



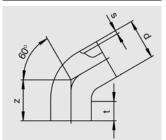
HD-PE fitting for use with FRIAFIT sewage sleeve AM without holding devices.

# PE 100

d	Order Ref.	Stock- status	VE	PE	Z	t	S	Weight kg/each
160	681201	3	1		280	170	9,5	2,780
180	681202	3	1		320	250	10,7	3,770
200	681203	3	1		349	250	11,9	5,000
225	681204	3	1		380	250	13,4	6,870
250	681205	3	1		411	250	14,8	9,210
280	681206	3	1		448	300	16,6	12,500
315	681207	3	1		491	300	18,7	17,400
355	681208	3	1		541	300	21,1	24,300

#### **ARS 60°**

# Sewage elbows 60° (spigot fittings)



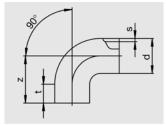
HD-PE fitting for use with FRIAFIT sewage sleeve AM without holding devices.

# **PE 100**

d	Order Ref.	Stock- status	VE	PE	Z	t	S	Weight kg/each
160	681401	3	1		308	170	9,5	2,780
180	681402	3	1		334	250	10,7	3,770
225	681403	3	1		392	250	13.4	6.870

#### ABS 90°

# Sewage elbows 90° (spigot fittings)



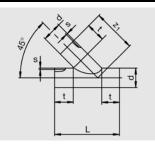
HD-PE fitting for use with FRIAFIT sewage sleeve AM without holding devices

# **PE 100**

d	Order Ref.	Stock- status	VE	PE	Z	t	S	Weight kg/each
160	681601	3	1		390	100	9,5	3,230
180	681602	3	1		420	150	10,7	4,370
225	681603	3	1		488	150	13.4	7.440

#### **ΔTS 45°**

# Equal branch 45° (spigot fittings)



HD-PE fitting for use with FRIAFIT sewage sleeve AM without holding devices.

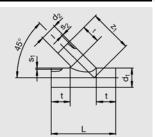
PE 100 Maximum test pressure in accordance with DIN EN 1610 0,5 bar

d	Order Ref.	Stock- status	VE	PE	L	t	S	Z <sub>1</sub>	Weight kg/each
110	682001	3	1		556	200	6,6	333	1,700
160	682002	3	1		626	200	9,5	393	4,100
180	682003	3	1		655	200	10,7	417	5,400
200	682004	3	1		783	250	11,9	491	8,000
225	682005	3	1		818	250	13,4	522	10,500
250	682006	3	1		954	300	14,8	602	15,100
280	682007	3	1		996	300	16,6	638	19,700
315	682008	3	1		1.145	350	18,7	730	28,800
355	682009	3	1		1.202	350	21.1	779	38.300

AF 14/09 9

# ATSR 45°

# Unequal branch 45° (spigot fittings)



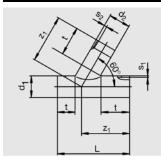
HD-PE fitting for use with FRIAFIT sewage sleeve AM without holding devices.

PE 100 Maximum test pressure in accordance with DIN EN 1610 0,5 bar

d <sub>1</sub>	$d_2$	Order Ref.	Stock- status	VE	L	t	Z <sub>1</sub>	S <sub>1</sub>	S <sub>2</sub>	Weight kg/each
160	110	682201	3	1	556	200	368	9,5	6,6	3,100
225	160	682203	3	1	726	250	489	13,4	9,5	8,000
280	160	682204	3	1	826	300	578	16,6	9,5	13,100
280	225	682205	3	1	918	300	610	16,6	13,4	16,300
315	160	682206	3	1	926	350	653	18,7	9,5	18,100
315	225	682207	3	1	1.018	350	685	18,7	13,4	22,900
355	160	682208	3	1	926	350	681	21,1	9,5	22,400
355	225	682209	3	1	1.018	350	714	21,1	13,4	26,700

# ATSR 60°

# **Unequal branch 60° (spigot fittings)**



HD-PE fitting for use with FRIAFIT sewage sleeve AM without holding devices.

PE 100 Maximum test pressure in accordance with DIN EN 1610 0,5 bar

d <sub>1</sub>	$d_2$	Order Ref.	Stock- status	VE	PE	L	t	t <sub>1</sub>	S <sub>1</sub>	$\mathbf{S}_{2}$	Weight kg/each
160	110	682601	3	1		527	200	324	9,5	6,6	2,900
225	160	682603	3	1		685	250	426	13,4	9,5	7,400
280	160	682604	3	1		785	300	508	16,6	9,5	12,300
280	225	682605	3	1		860	300	527	16,6	13,4	15,100
315	160	682606	3	1		885	350	578	18,7	9,5	17,200
315	225	682607	3	1		960	350	597	18,7	13,4	20,400
355	160	682608	3	1		885	350	601	21,1	9,5	21,400
355	225	682609	3	1		960	350	620	21,1	13,4	25,000

# **General conditions of supply and payment of FRIATEC Aktiengesellschaft Technical Plastics Division**

#### 1. Scope

Terms and conditions as listed below apply to all deliveries. Other conditions do not automatically become contractual, even if not expressly contradicted by us.

#### 2. Conclusion of a Contract

Our quotations are not binding. A contract is made only when we confirm an order in writing.

Our written order confirmation controls content and size of the order.

Alterations to the technical execution of ordered goods are acceptable unless they constitute essential functional changes or the customer proves that the alterations are unacceptable. We will accept liability for the quality of an item only if this has been expressly stated in our order confirmation or in our advertisements.

# 3. Delivery

Delivery dates and deadlines are subject to ourselves being supplied appropriately and in good time. Delivery deadlines are determined by the date of our order confirmation. They are regarded as utilifiled once the goods have left the factory or been released for shipment. The deadline is extended if the customer desires changes retrospectively or if events occur for which we are not responsible.

#### 4. Prices and Payment Conditions

Our prices are ex factory or ex warehouse, plus VAT. Insurance, packaging, shipment and customclearance charges are invoiced separately, unless expressly stated otherwise in our current pricelist

Our invoices are payable net within 30 days from the invoice date. We offer 2% discount for payments within 14 days, but only if all other outstanding invoices have been paid.

We reserve the right to accept bills of exchange and cheques in individual cases. No discount is offered when paying by bill of exchange. Bills of exchange and cheques are accepted only on account of performance. The claim is regarded as fulfilled only once payment has been cashed or credited. All expenses which may arise must be met by the customer.

We are authorised to demand immediate cash payment for all deliveries, if payment conditions are not adhered to, or in circumstances causing the credit worthiness of a customer to be questioned. A possible deferral caused by the acceptance of bills of exchange becomes null and void. The customer is obliged to pay cash immediately on returning the bill of exchange. In addition we are authorised to carry out any remaining deliveries against advance or warranty payment or to rescind the contract and demand compensation. We are furthermore authorised to stop the onward sale of goods to be delivered and to retrieve the goods at the customer's expense if we have rescinded the contract.

#### 5. Passage of Risk

The risk is transferred to the customer at the moment of the goods being ready for shipment and the notification thereof. This applies even if shipment is delayed due to circumstances not in our control. If there is no notification of readiness for shipment, the risk is passed to the transport company, and on to the customer no later than at the point of the goods leaving the factory or warehouse. This applies also if our own transport is used or carriage is paid.

#### 6. Formal Complaints, Claims, Limitation Period

The customer must immediately check goods received for any defects. Formal complaints must be lodged immediately on receipt of the goods, and no later than a fortnight after receipt, in writing. The same timeframe applies to hidden defects after discovery.

There can be no claims for defects which have not been notified within the appropriate period. When a claim is justified, we will choose either to repair or replace the goods. If we do not rectify the defect or provide a substitute within an appropriate period, or following no more than two attempts, the customer is authorised to rescind the contract or demand a reduction in the purchasing price. It is not possible to rescind if there is only an insignificant violation on our pari.

The limitation period for claims is

5 years for building materials which have been installed and have caused defects within a pipe system.

1 year for delivery of other new goods to contractor

2 years for all others

Limitation period starts on delivery of goods.

#### 7. Reservation of Ownership

Our deliveries are all subject to reservation of ownership. The goods remain in our ownership until payment of all claims arising from our business relationship with the customer is made. With an account current the reserved ownership constitutes the security for our balance claim. The customer is authorised to resell delivered goods within the framework of his or her ordinary business procedures. He or she may not however pledge or transfer the conditional commodity by way of security.

In the event of resale the customer assigns to us all claims including all subsidiary rights which arise from the resale. This applies without taking into consideration whether he or she resells the conditional commodity unaltered, unprocessed, or in conjunction with other items. If the resale takes place including goods not owned by us, the assigning applies only up to the value of the conditional commodity. The value is determined according to our sales prices.

Processing of the conditional commodity always occurs according to § 950 BGB for us as manufacturers, but without obligation. The processed goods constitute the conditional commodity as part of these conditions. If the conditional commodity is processed together or is irretrievably mixed up with other items not owned by us, we will gain co-ownership of the new item at a ratio of conditional commodity invoice value to the invoice value of other used goods at the time of processing and mixing. The co-ownership rights thus created apply as conditional commodity in the context of these conditions. The customer is obliged, if requested by us, to point out our ownership rights to the prospective buyer.

The customer is authorised to collect the claim from the resale notwithstanding our own collection authorisation. While the customer meets his payment obligations appropriately, we will not put the claim into force. The customer has to inform us of the debtors of the assigned claims and to notify the assignment to them. Our right of informing third-party debtors of the assignment will not be affected

by this.

The customer is not allowed to assign the claim against third-party debtors to third parties or to negotiate an assignment ban with the third-party debtor.

The customer is obliged to notify us immediately and in the quickest way possible about a pledge or any other infringement of our security rights by third parties. The customer is obliged to hand over to us all documents required to preserve our rights, and to compensate us for any costs arising from a possible intervention

We pledge to release existing securities of our choice up to the point where their value exceeds the claims to be ecured by more than 25%.

The customer is obliged to insure the goods for the duration of our reservation of ownership.

#### 8. Acts of God - Right to Rescind

If we are prevented from fulfilling our terms of delivery by acts of God or other circumstances not within our control, or if the fulfilment of our obligations becomes too great a bürden for these reasons, we are authorised to rescind the contract. Compensation claims by the customer in such circumstances are not permitted. The right to rescind is effective also if the delivery period was initially extended.

#### 9. Limitations of Liability

We are liable for any violations of life, body or health for which we are accountable in accordance with legal requirements.

For other damages the following applies:

We are liable for damages based on gross negligence by us or deliberate or gross negligence by our legal representatives or assistants in accordance with legal requirements.

For damages based on the violation of essential contractual obligations based on negligence by us, our legal representatives or assistants, our liability is limited to the predictable contractual damage up to a maximum of the value of the delivered item.

Claims for other damage on violating subsidiary obligations or inessential obligations based on negligence are excluded.

Claims for damages for delay caused by negligence are excluded. The customer's legal rights on completion of an appropriate period of time remain unaffected.

Liability exclusions or limitations do not apply if a defect has been deliberately concealed by us or if we have offered warranty on the quality of the item.

A customer's claim for compensation of time or costs invested in vain instead of compensation in place of time or costs, and the liability according to the product liability law remain unaffected.

#### 10. Non-assignment clause

Unless something different has been expressly agreed with the customer, the customer is not authorised to transfer rights from the contract to third parties without our agreement.

#### 11. Applicable rights, Place of Jurisdiction

Only German law applies under the exclusion of UN purchasing rights. Exclusive place of jurisdiction for disagreements between contract parties is Mannheim, if the customer is a merchant, a legal person of public law or a special asset, or if the customer does not have a place of jurisdiction in Germany. We do however reserve the right to proceed against a customer who does not have a general place of jurisdiction in Germany within other courts of our choice.

January 2006
FRIATEC Aktiengesellschaft
Technical Plastics Division
POB 71 02 61
D-68222 Mannheim
Telephone +49 (0) 621-4 86-0
Telefax +49 (0) 621-47 91 96



# Further Product Ranges:







