FLEXWELL SAFETY PIPE

Pipe system for installations

Project planning

BRUGG Pipes

Pioneers in Infrastructure

FLEXWELL® Safety Pipe

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Texts for invitations to tender

Wordings of invitations to tender for FLEXWELL® Safety Pipe are available on request.

Pipe systems for tank facilities and service stations

Processing enquiries

By E-Mail to: **info.brg@brugg.com**
By fax to: **+49 5031 170-189**

Customer/Contractual partner:

Company: _____
Country: _____
Contact person: _____
eMail address: _____
Desired
date of offer: _____

Project details:

Project designation: _____
Postcode / Town: _____
estimated project value (PW): _____ T€
Chance of getting order (AC): _____ %
Desired probable exec. date: _____
Competitors: _____

Product group: **Market segment:**

FLEXWELL® Safety Pipe ☐ _____
BRUGG-STAMANT® ☐ _____
SECON®-X ☐ _____
FLEXWELL®-LPG ☐ _____
NIROFLEX® ☐ _____
SPIRAFLEX® ☐ _____
Training seminars ☐ _____
Other ☐ _____

Length: _____ m
Dimensions: DN _____

Layout: ☐ for SECON®-X petrol station required
Routing: ☐ for BRUGG-STAMANT® absolutely necessary
Principle sketch: ☐ in other cases
Description of work to be done:
☐ German ☐ English

Information on medium for FLEXWELL-Sicherheitsrohr®, BRUGG-STAMANT®-Sicherheitsrohr, SECON®-X or FLEXWELL®-LPG:

Substance to be carried: _____ Fire prevention: ☐ Wall/ceiling thickness: ☐ _____

Data for supply: Supply rate _____ m^3/h Supply pressure _____ bar Temperature _____ °C

Data for laying: In the ground ☐ Empty pipe ☐ Canal ☐
Building ☐ Pipe bridge ☐ Other ☐

Description of project: _____

Date/Signature:

Customer BRUGG: _____
Project BRUGG: _____

Received by BRUGG:

_____ n
_____ n
_____ n
_____ n
_____ n
_____ n
_____ n
_____ n

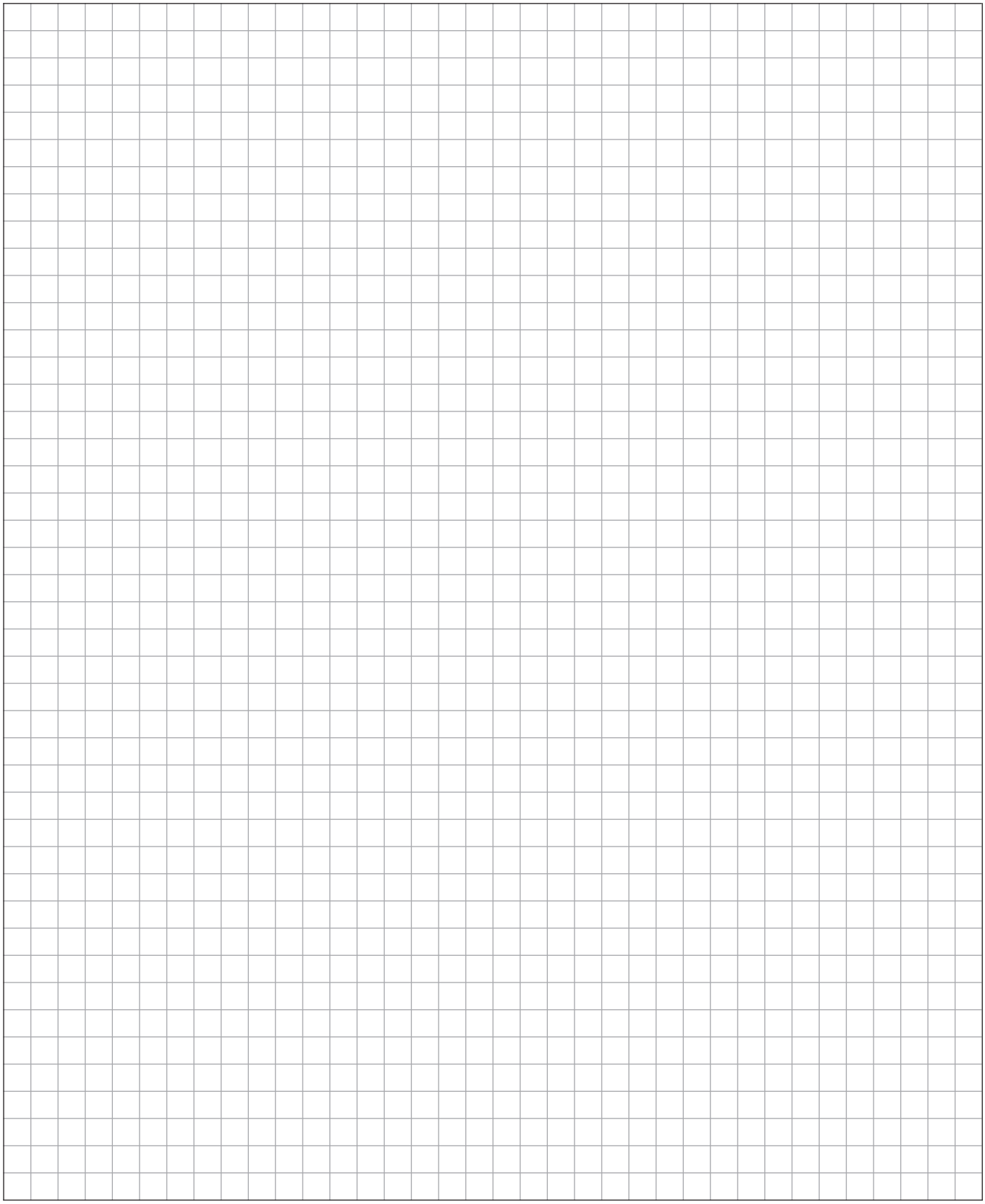
Date/Signature:

To be filled out by BRUGG Rohrsysteme

BRUGG Pipes

Pipe systems for tank facilities and service stations

Notes



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FLEXWELL® Safety Pipe

Minutes of the hearing to award the contract/order

Client (AG)		**Contractor (AN)**
Company:		BRUGG Rohrsysteme GmbH
Street/Postbox::		Adolf-Oesterheld-Straße 31
Postcode Town:		31515 Wunstorf
Telephone:		Person spoken to/Function:
E-Mail:		
Person spoken to/		
Function:		

Project _____

Address of construction site: _____

The following was agreed upon

1. The following documents/agreements shall apply _____
   and Conditions/Basis for discussions: _____
   Offer(s), No./Date _____
   Products _____
   Technical remarks in advance/approvals _____
   Existing “confirmed” drawings _____
   Supplementary agreements: _____
   _____
   _____

2. Scope of work: _____
   Offer No./Date _____
   Contract specifications pages, items _____
   Delivery, laying _____
   Insulation after installation _____

3. Additional work to be done: _____
   Addendum, if known _____
   Services to be performed _____
   (details of pricing/remuneration) _____

Client
Date/Initials _____

Contractor
Date/Initials _____

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FLEXWELL® Safety Pipe

Minutes of the hearing to award the contract/order

4. Drawings and other technical documents _____
   (e.g. offer, contract specifications, _____
   construction schedule, handover date): _____
   Routing to be fixed by (person): _____
   Routing plans to be provided by (person)/by (date): _____
   To be checked /confirmed by (person)/by (date): _____

5. Certificates and other documentation: _____
   _____
   _____

6. Dates: _____
   Drawings and other _____
   Technical documentation _____
   Deliveries _____
   Start of installation work _____
   Completion of installation work _____
   Interim deadlines _____

7. Time overruns: _____

8. Price(s): as per offer(s) No./Date _____
   Contract specifications pages, items _____
   Valid until _____
   _____

9. Payment terms: _____
   Net of deductions, trade discount _____
   Payment terms _____
   Payments on account for deliveries of material _____
   Payments on account for installation work _____

Client
Date/Initials _____

Contractor
Date/Initials _____

BRUGG Pipes

FLEXWELL® Safety Pipe

Minutes of the hearing to award the contract/order

10. Security for payment:
    advance payment, bond/guarantee etc.

11. Proof of performance/Basis for settlement:
    Bill of quantities, fixed price,
    delivery receipt, drawing

12. Warranties:
    as per offer, any agreements which
    deviate from that

13. Interruption, cancellation:

14. Other:

The order is hereby granted.*
The order is granted on the basis of the conditions agreed herein, and without delay after the client received an order in his turn.*

* Please delete whichever not applicable!

Place/Date

Client
Company stamp/Signature

BRUGG Rohrsysteme GmbH
Contractor
Signature

BRUGG Pipes

FLEXWELL® Safety Pipe

Pipe system for installations

Flexible, double-walled pipe system with stainless steel inner pipe and outer containment pipe and permanent leak detection with approval Z-38.4-253

SYSTEM DESCRIPTION

FLEXWELL® Safety Pipe was specially designed for the underground transport of flammable, water-hazardous fluids. It can be used as a suction or positive pressure supply pipe. The FLEXWELL® Safety Pipe can be permanently monitored by means of suitable leak detectors.

CONSTRUCTION

FLEXWELL® Safety Pipe is a flexible, permanently monitorable, double-walled pipe system. The FLEXWELL® Safety Pipe consists of a corrugated stainless steel inner medium pipe, a reinforcing band and a corrugated outer containment pipe made of stainless steel. The annular gap between the inner and outer pipes is a surveillance space for leak monitoring. External corrosion protection is provided by a PE casing covering the outer pipe.

RANGE OF APPLICATIONS

- suction pipe
- positive pressure supply pipe
- filling pipe

NOMINAL BORES / PRESSURE STAGES

FLEXWELL® Safety Pipe is available in nominal bores from DN 12 to DN 150. It can be operated with positive pressure up to max. 25 bar.

LAYING THE PIPES

FLEXWELL® Safety Pipe can be laid directly into the trench in one piece. It can be laid either overground in a trace or inside of bulidings. The unique corrugated pipe geometry of inner medium pipe and outer containment pipe ensures excellent flexibility. It can be cut to the required length at the construction site, laid "endlessly" and bent through tight radii thanks to its flexibility.

DOUBLE-WALLED FITTINGS

Monitorable through-connections and T-pieces as well as connectors with measuring branches are all part of the comprehensive range of products available in the FLEXWELL® Safety Pipe programme.

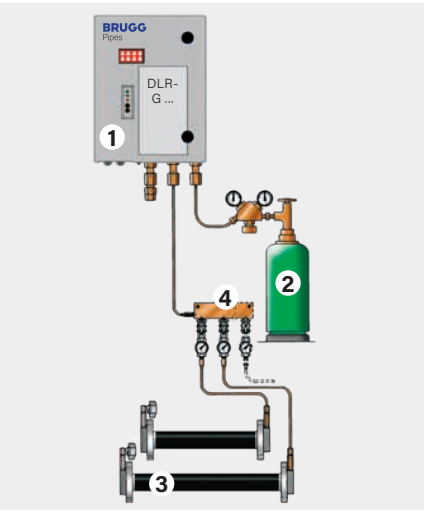
LEAK MONITORING

The surveillance space between the inner and outer pipes can be permanently monitored by means of suitable positive or negative pressure leak detectors. A wide range of leak detection systems for different areas of application and legal requirements is available.

BRUGG Pipes

1 corrugated inner medium pipe of stainless steel
2 corrugated outer containment pipe of stainless steel
3 polyethylene casing

FLEXWELL® Safety Pipe



1 leak detector
2 pressure reservoir
3 double-walled corrugated FLEXWELL® Safety Pipe with measuring branch and test valve
4 distributor

Positive pressure leak detector

Technical data FLEXWELL® Safety Pipe

Material:	inner pipe	1.4404/1.4571
	outer pipe	1.4301
	reinforcing band	steel
	corrosion proofing	PE-LD casing
Operating pressure inner pipe:	vacuum	suction pipe up to –0.8 bar
	positive pressure	up to 25 bar (depending on nominal bore)
Monitoring pressure outer pipe, permanent:	vacuum	–0.7 bar
	positive pressure	up to 25 bar (depending on operating pressure and nominal bore)

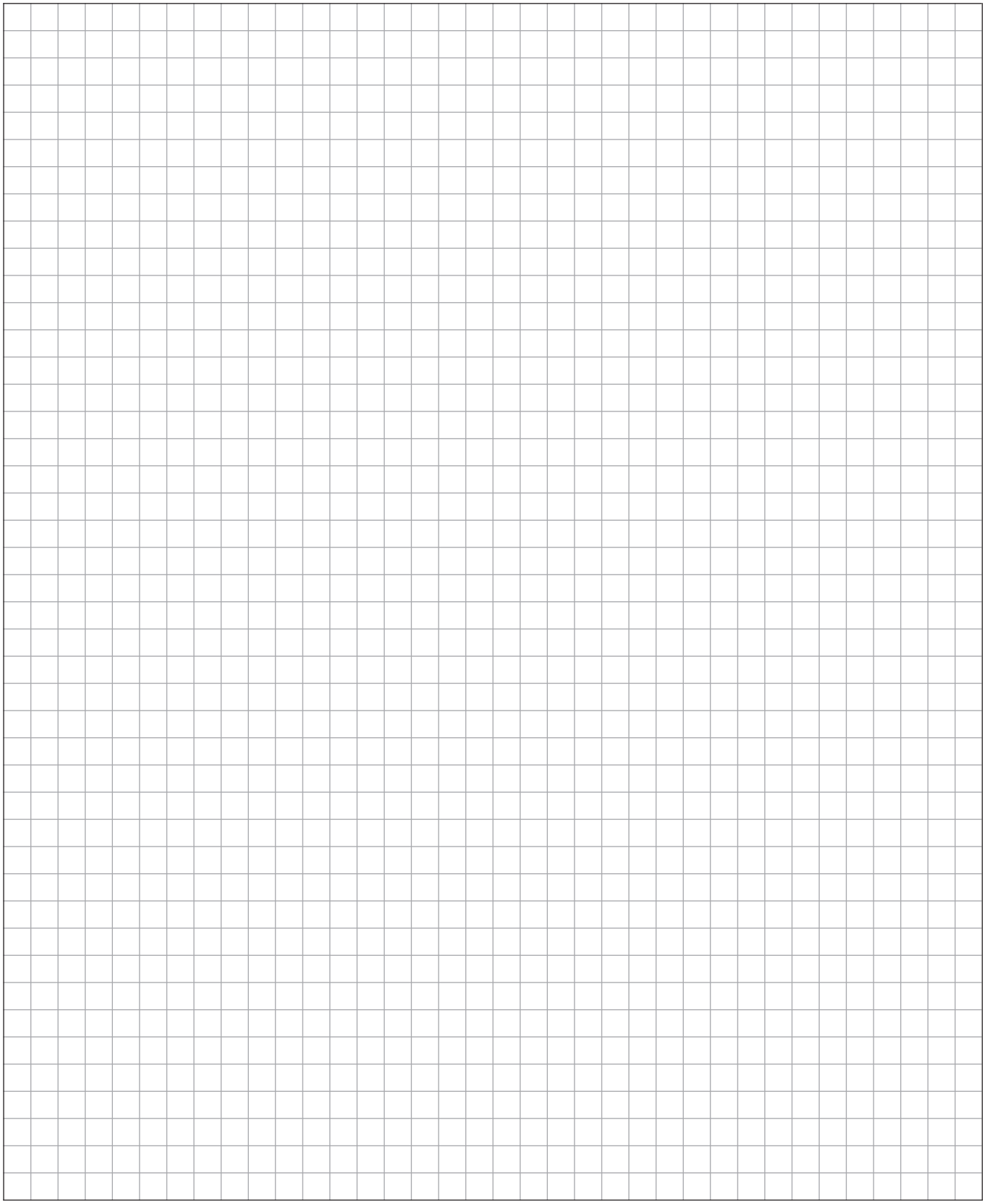
Dimensions

Type	**Nominal bore**	**Inner diameter**	**Outer diameter**	**Volume inner pipe**	**Weight**	**Bending radius**
	DN	mm	mm	l/m	kg/m	cm
FSR 13/ 25	12	13	25	0.13	0.52	30
FSR 30/ 48	25	30	48	0.80	1.40	50
FSR 39/ 60	32	39	60	1.30	2.00	60
FSR 48/ 71	40	48	71	2.00	2.90	60
FSR 60/ 83	50	60	83	3.00	3.80	70
FSR 75/107	65	75	107	5.10	6.20	90
FSR 98/134	80	98	134	8.40	9.00	120
FSR 127/175	100	127	175	14.00	18.10	150
FSR 200/262	150	200	262	23.20	29.00	400

BRUGG Pipes

FLEXWELL® Safety Pipe

Notizen



BRUGG Pipes

FLEXWELL® Safety Pipe

Resistance of material

The resistances for Materials No. 1.4404 for the inner pipe and 1.4301 for the outer pipe against various fluids acc. to DIN 6601 are confirmed as regards the following selection of transport media:

Petrol DIN EN 228

Petroleum spirit DIN 51632 – 1
Petroleum spirit DIN 51632 – 2
Petroleum spirit DIN 51632 – 3
Petroleum spirit DIN 51632 – 4:
auto ignition temperature > 55 °C,
auto ignition temperature > 61 °C

Diesel fuels DIN EN 590
Diesel fuels: 61 < auto ignition temperature ≤ 100 °C
Diesel fuels: auto ignition temperature ≤ 61 °C
Biodiesel

AdBlue – carbamide, diluted

Kerosine: 21 ≤ auto ignition temperature ≤ 55 °C

Heating oil, light: 61 < auto ignition temperature ≤ 100 °C
Heating oil, light: auto ignition temperature as per EN 590
Heating oil DIN 51603

Hydraulic fluid DIN 51502 – HFC
Hydraulic fluid DIN 51502 – HFD-R
Hydraulic fluid DIN 51502 – HFC-T
Hydraulic oil DIN 51524
Hydraulic oil DIN 51524

Refrigerating maschine oil DIN 51503

Motor oil SAE

Oils DIN 51502 – F
Oils DIN 51502 – J
Oils DIN 51502 – R

Lubricating oils DIN 51501
Lubricating oils DIN 51502
Lubricating oils DIN 51506
Lubricating oils DIN 51510
Lubricating oils DIN 51513
Lubricating oils DIN 51515
Lubricating oils DIN 51517

Methanol
Methanol, diluted
Ethanol
Ethanol in acqueous solution
Bioethanol
Isopropanol

Diethylene glycol/Glycol

Caustic soda solution up to max. 50 % NaOH

Ammoniac
Diluted ammoniac: 0,88 ≤ concentration ≤ 0,957
at 15 °C in water, 10 up to 35 %

Toluene

Certification of resistances for further fluids

The resistance of the pipe material for the medium-carrying pipes must be certified acc. to DIN 6601 (Positive Fluid list) or as a qualified individual test certificate.

Please note!

The properties of particular transport media must be considered for each project.

BRUGG Pipes

FLEXWELL® Safety Pipe

Basic planning parameters

General information

In contrast to conventional piping, FLEXWELL® Safety Pipe is a flexible pipe system. It is manufactured in our works in endless lengths and wound onto cable drums. Due to its flexibility FLEXWELL® Safety Pipe can be laid in one piece over long stretches of the routing without any need for moulded parts. Installation work to assemble and fit pipe connections and to insulate the piping on site is only necessary at the ends of the pipe sections.

Delivery lengths

Type	DN	Delivery lengths	
		on a drum	as a coil
		m	m
FSR 13/ 25	12	500	500
FSR 30/ 48	25	750	525
FSR 39/ 60	32	650	415
FSR 48/ 71	40	550	255
FSR 60/ 83	50	500	200
FSR 75/107	65	400	125
FSR 98/134	80	400	90
FSR 127/175	100	350	50
FSR 200/262	150	250	–

Longer pipe lengths are connected on site with monitorable through-connections.

Expansion takeup

Longitudinal expansion as a result of thermal influences is compensated in FLEXWELL® Safety Pipe rather like an expansion joint by the geometrical change in the corrugation of the pipes. That is why no action needs to be taken to compensate for expansion when using FLEXWELL® Safety Pipes. Expansion bends such as those needed on conventional piping can be dispensed with.

Anchor points

Anchor points are not necessary when the pipe is laid underground. In this case, the routing can be chosen completely freely and causes no extra work. Increase in the volume of fluids due to thermal influences and concomitant pressure increases can be compensated to a limited extent in surface laying.

Safety precautions

The following technical principles apply to FLEXWELL® Safety Pipe, and correspond to best engineering practice:
- Piping must be equipped with all devices needed for safe operations.
- Piping must be secured against exceeding the permissible pressures where it is cannot be excluded that such pressures may be exceeded.
- The safety equipment to prevent exceeding of permissible pressure must be installed in an appropriate position.
- For instance, spill valves are a suitable means of preventing pressure increases exceeding the permissible level as a result of temperature increases in flammable fluids e.g. due to exposure to sunshine.
- Unenclosed piping must be tightly sealed against fluid loss.
- Surface routed piping which is directly exposed to the sun must be shielded from sunshine using appropriate means.

Screws and seals

Screws and seals are not included in the scope of delivery.

IMPORTANT! Only use steel screws of strength class 4.6, 5.6 or 8.8. Screws of strength class ≥ 10.9 may not be used. When stainless steel screws are used, the area underneath the heads and on the thread must be lubricated with copper paste. This is absolutely necessary for the friction coefficient and maximum tightening torque. Only stainless steel screws with maximum strength class A 70 may be used.

Installation instruction for split loose flange

The splitting of the loose flange needs to be installed staggered 90° in reverse order.

FLEXWELL® Safety Pipe

Basic planning parameters

Routing

Routing with branching off pipes

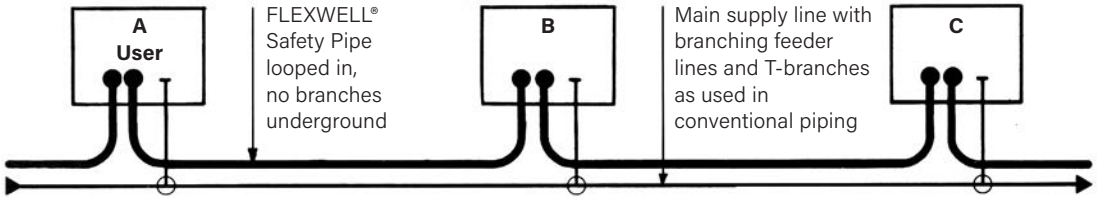
Where a number of differently located users need to be supplied by piping, this is normally done with conventional piping by laying feeder lines branching off from the main line. This makes it necessary to install T-branches, creating extra work on site. In the case of underground piping this also creates an extra risk, since the branches can neither be seen nor easily checked for leaks.

The flexibility of FLEXWELL® Safety Pipe allows it to be laid according to the "looping in" method familiar from high-voltage power cables (see the diagramme).

"Looping in" means:

1. The actual branching-off pipe, illustrated as a bridgeover, lies in an area where it is protected or easy to check (e.g. in a manhole pit or the boiler room.)
2. There is no connection to be installed by hand in the ground. This means that the corrosion-proofing fitted during manufacture in our factory is at no point interrupted in the underground routing.

Corrosion-proofed and completely monitorable T-branches can be delivered for special cases. We would like to point out however that "looping in" is normally much more economical than fitting monitorable T-branches.



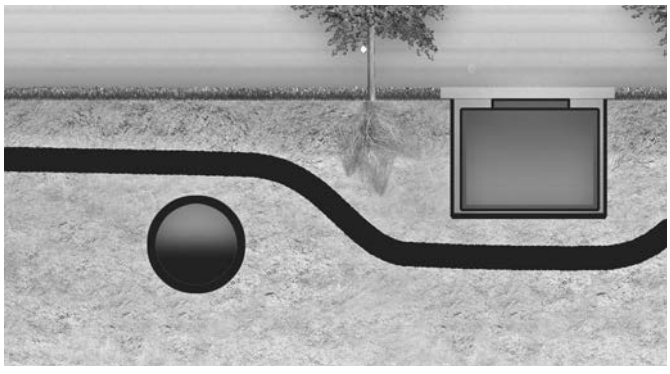
The looping in method

Pipe gradient, existing supply lines, stray currents

It makes a lot of sense to lay FLEXWELL® Safety Pipe with the gradients normally used in piping construction in order to be able to easily evacuate and vent the pipes or systems. In heavily built-up areas it is often the case, however, that already existing supply lines cross the planned routing. As long as no minimum distances between lines are stipulated by law or by the owners, FLEXWELL® Safety Pipe can simply be "threaded" through the crossing lines or led around other obstacles (see the diagramme). This only applies to positive pressure lines however. In the case of suction pipes, upward "jumps" greater than the internal diameter of the inner pipe are not permissible.

The rules of good engineering practice for pipelaying must be observed in all cases. In particular the properties of the transport media must be taken into consideration.

FLEXWELL® Safety Pipe is protected from stray currents due to its uninterrupted PE casing. This is proved by a 20 kV high voltage test in factory. In the vicinity of direct-current installations (tramlines, cathodically protected piping) it can be laid without there being any disadvantages to any part of the installation expected.



Routing around underground obstacles

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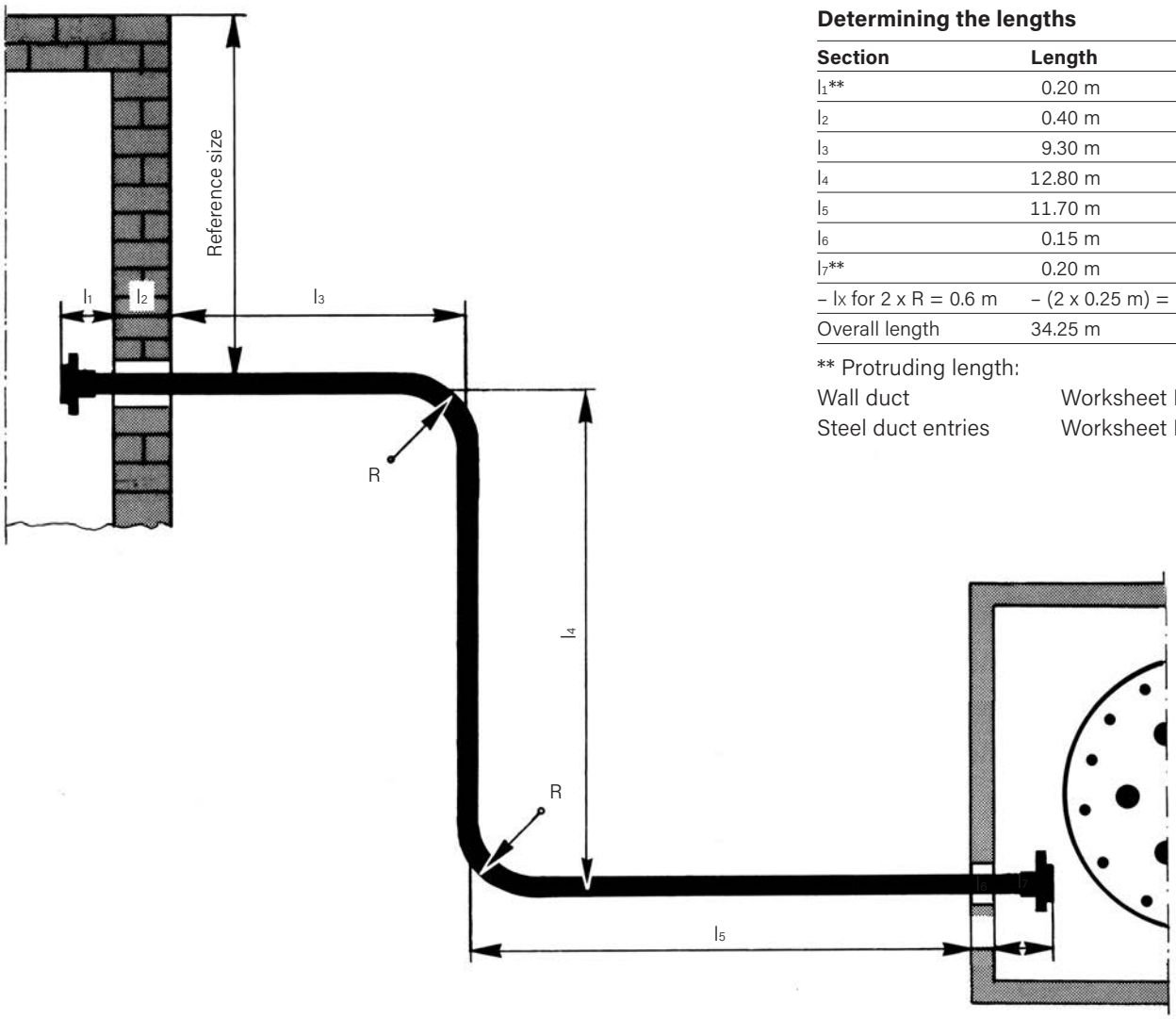
FLEXWELL® Safety Pipe

Basic planning parameters

Determining the lengths

Example of a routing sketch with determination of the lengths for FSR 39/60



Determining the lengths

Section	Length
l_1**	0.20 m
l_2	0.40 m
l_3	9.30 m
l_4	12.80 m
l_5	11.70 m
l_6	0.15 m
l_7**	0.20 m
– lx for 2 x R = 0.6 m	– (2 x 0.25 m) = – 0.50 m
Overall length	34.25 m

** Protruding length:

Wall duct Worksheet FSR 4.300

Steel duct entries Worksheet FSR 4.302

Type	for a bending radius R* from	for a 90° elbow deduct from value lx
FSR 13/ 25	0.3 m	lx = – 0.12 m
FSR 30/ 48	0.5 m	lx = – 0.21 m
FSR 39/ 60	0.6 m	lx = – 0.25 m
FSR 48/ 71	0.6 m	lx = – 0.25 m
FSR 60/ 83	0.7 m	lx = – 0.30 m
FSR 75/107	0.9 m	lx = – 0.39 m
FSR 98/134	1.2 m	lx = – 0.52 m
FSR 127/175	1.5 m	lx = – 0.64 m
FSR 200/262	4.0 m	lx = – 1.70 m

* Minimum bending radius R min. – generally done using a mechanical bending device.

BRUGG Pipes

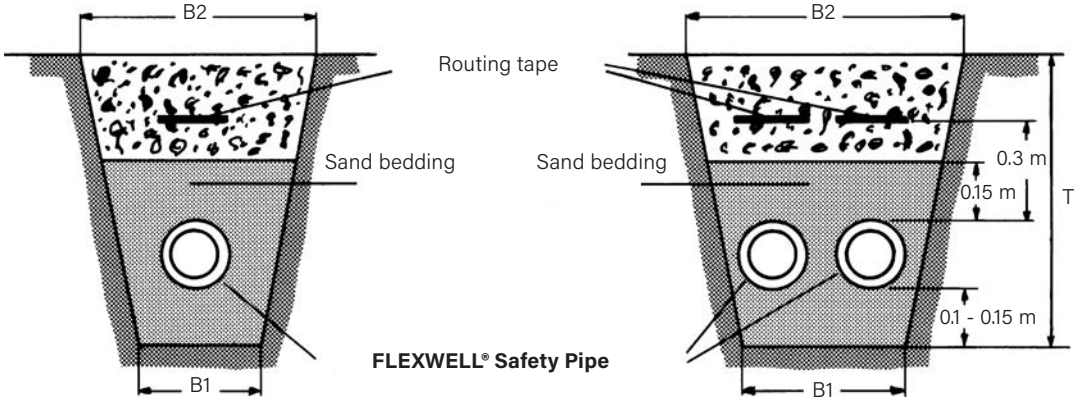
FLEXWELL® Safety Pipe

Basic planning parameters

Details for underground work

Pipe trench

FLEXWELL® Safety Pipe should be laid on top of a sand bedding at least 10 cm deep (grit size ≤ 2 mm) and covered over according to the rules of TrbF 50 Point 5.4.3 (2) with the same sand. The standards and regulation given below must be observed.



The routing tape is delivered by BRUGG and must be laid on site.

Type FSR	laying radii R*	trench depth T	trench width B1	trench width B2	spoil	Sand filling
	m	m	m	m	m³/lfd. m	m³/lfd. m
13/ 25	0.7	0.95	0.30 (0.40)	0.67 (0.73)	0.46 (0.54)	0.09 (0.11)
30/ 48	0.7	0.95	0.30 (0.40)	0.67 (0.73)	0.46 (0.54)	0.09 (0.11)
39/ 60	1.0	1.00	0.30 (0.40)	0.70 (0.75)	0.50 (0.58)	0.10 (0.14)
48/ 71	1.2	1.00	0.30 (0.40)	0.70 (0.75)	0.50 (0.58)	0.10 (0.14)
60/ 83	1.5	1.00	0.30 (0.40)	0.70 (0.75)	0.50 (0.58)	0.10 (0.14)
75/107	1.8	1.05	0.30 (0.40)	0.70 (0.75)	0.53 (0.60)	0.11 (0.15)
98/134	2.0	1.05	0.30 (0.40)	0.70 (0.75)	0.53 (0.60)	0.12 (0.16)
127/175	3.0	1.10	0.40 (0.50)	0.80 (0.90)	0.66 (0.77)	0.17 (0.22)
200/262	4.0	1.20	0.70 (1.10)	1.10 (1.50)	1.08 (1.56)	0.44 (0.67)

* When **pulling the pipe** into the trench, it is not permissible to go below these radii. **Minimum bending radius** see Worksheet FSR 4.322.

Technical regulations and DIN Standards

When carrying out underground work for FLEXWELL® Safety Pipe the following DIN standards, regulations, provisions and guidelines must be observed:

DIN 1072 Straßen- und Wegbrücken, Lastannahmen
DIN 4124 Baugruben und -gräben; Böschungen, Verbau, Arbeitsraumbreiten
DIN 18300 VOB, Teil C, Allgemeine technische Vorschriften; Erdarbeiten
DIN 18303 VOB, Teil C, Allgemeine technische Vorschriften; Verbauarbeiten
DIN 18307 VOB, Teil C, Allgemeine technische Vorschriften; Druckrohrleitungsarbeiten außerhalb von Gebäuden
DIN 18320 VOB, Teil C, Allgemeine technische Vorschriften; Landschaftsbauarbeiten
DIN 18330 VOB, Teil C, Allgemeine technische Vorschriften; Mauerarbeiten
DIN 18195 Bauwerksabdichtungen
DIN 18354 VOB, Teil C, Allgemeine technische Vorschriften; Asphaltbelagarbeiten
DIN EN 1610 Entwässerungskanäle und Leitungen, Richtlinie für die Ausführung

Merkheft „Sicherung von Leitungsgräben und Baugruben", Berufsgenossenschaft der Bauwirtschaft
Merkblatt über das Zufüllen von Leitungsgräben, Forschungsgesellschaft für das Straßenwesen e.V., Arbeitsgruppe Untergrund
Accident pevention regulations and general regulations of the Employers' Liability Insurance associations (Berufsgenossenschaften)

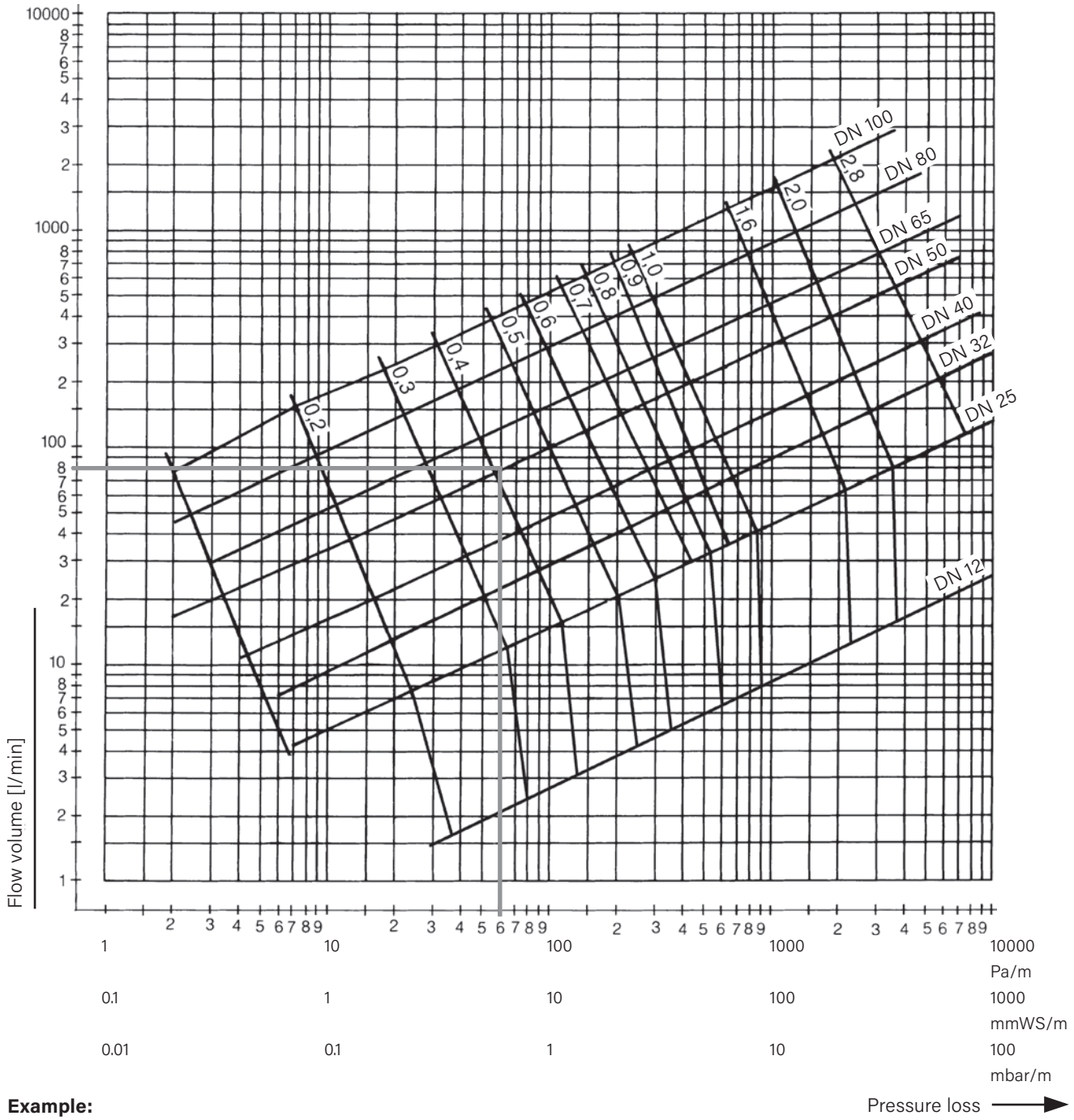
The gradients normally used in pipeline constructions must be observed when digging the pipe trench.

FLEXWELL® Safety Pipe

Fluid engineering

Pressure loss diagramme for petrol regular and super (4 star)

Temperature:	15 °C
Specific weight:	735 kg/m³
Kinematic viscosity:	5.5 · 10⁻⁷ m²/s



Example:

Pipe DN 50
With a flow volume of 80 l/min
at a speed of c. 0.4 m/s
the pressure loss is 0.6 mbar/m

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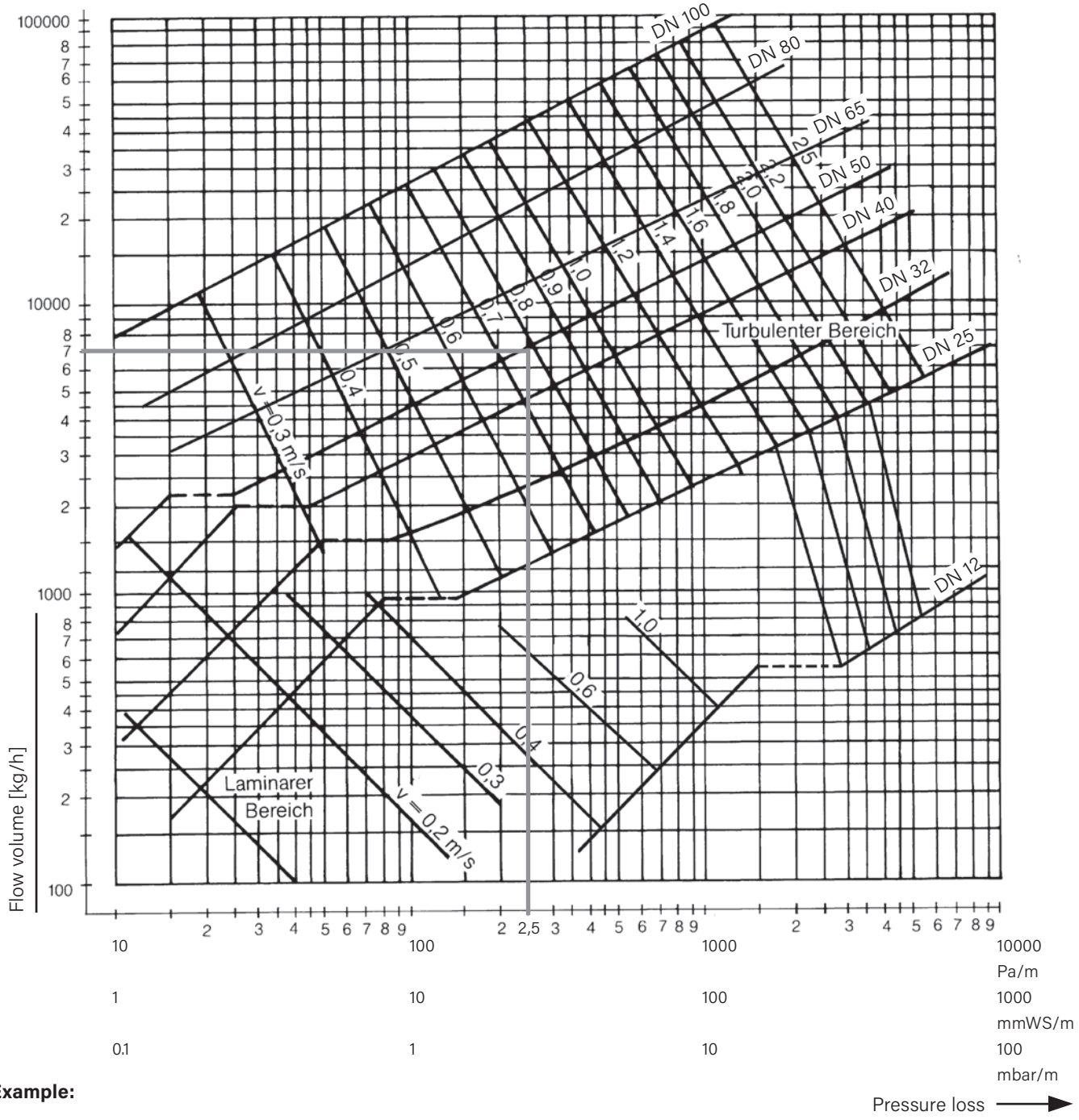
FLEXWELL® Safety Pipe

Fluid engineering

Pressure loss diagramme for heating oil (EL) and diesel fuel

Temperature:	15 °C
Specific weight:	860 kg/m³
Kinematic viscosity:	7 · 10⁻⁶ m²/s



Example:

Pipe DN 50
With a flow volume of 7000 kg/h
at a speed of c. 0.8 m/s
the pressure loss is 2.5 mbar/m

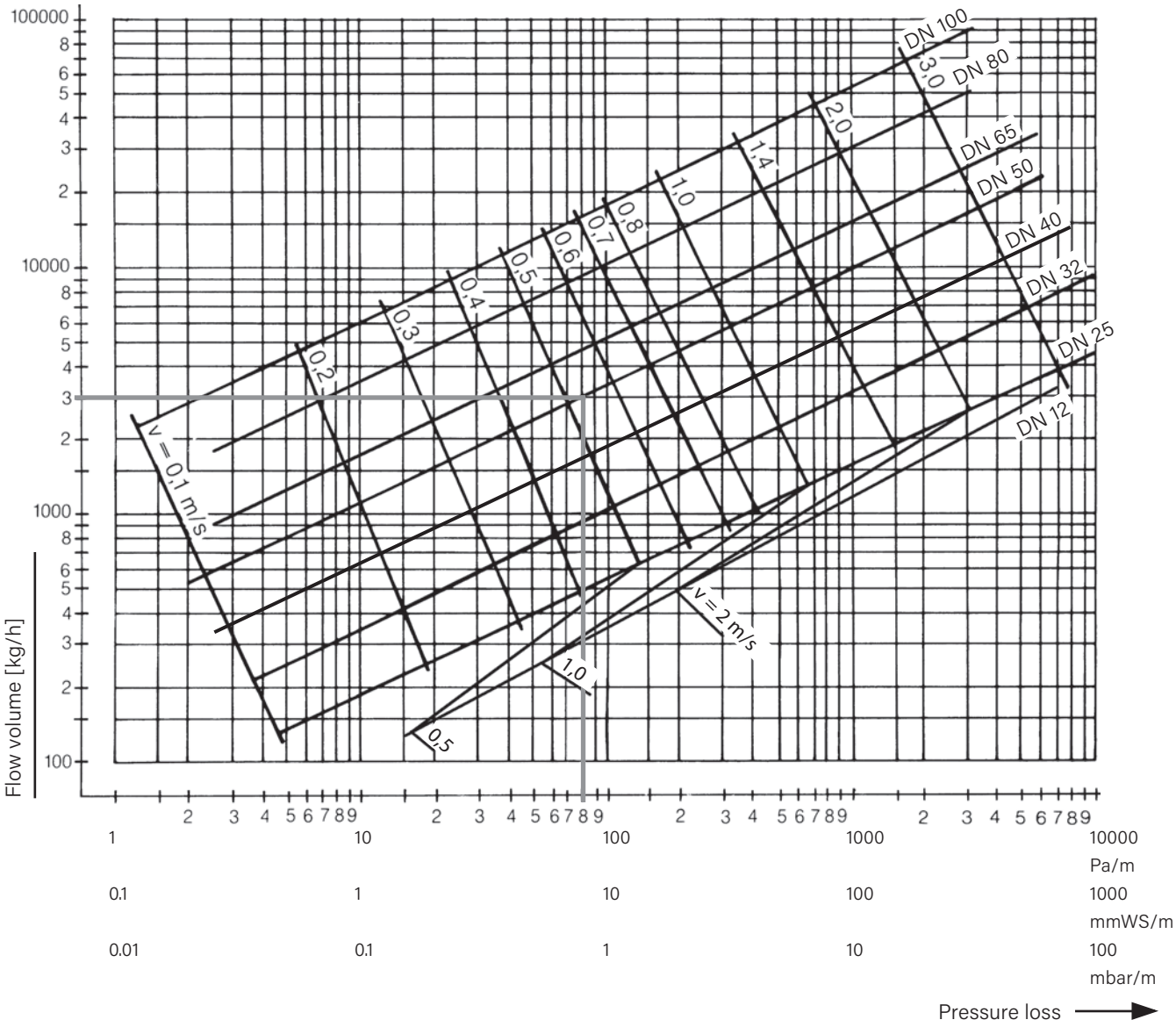
BRUGG Pipes

FLEXWELL® Safety Pipe

Fluid engineering

Pressure loss diagramme for liquid propane

Temperature:	15 °C
Specific weight:	508 kg/m³
Kinematic viscosity:	2.1 · 10⁻⁷ m²/s



Example:

Pipe DN 50
With a flow volume of 3000 kg/h
at a speed of c. 0.5 m/s
the pressure loss is 0.8 mbar/m

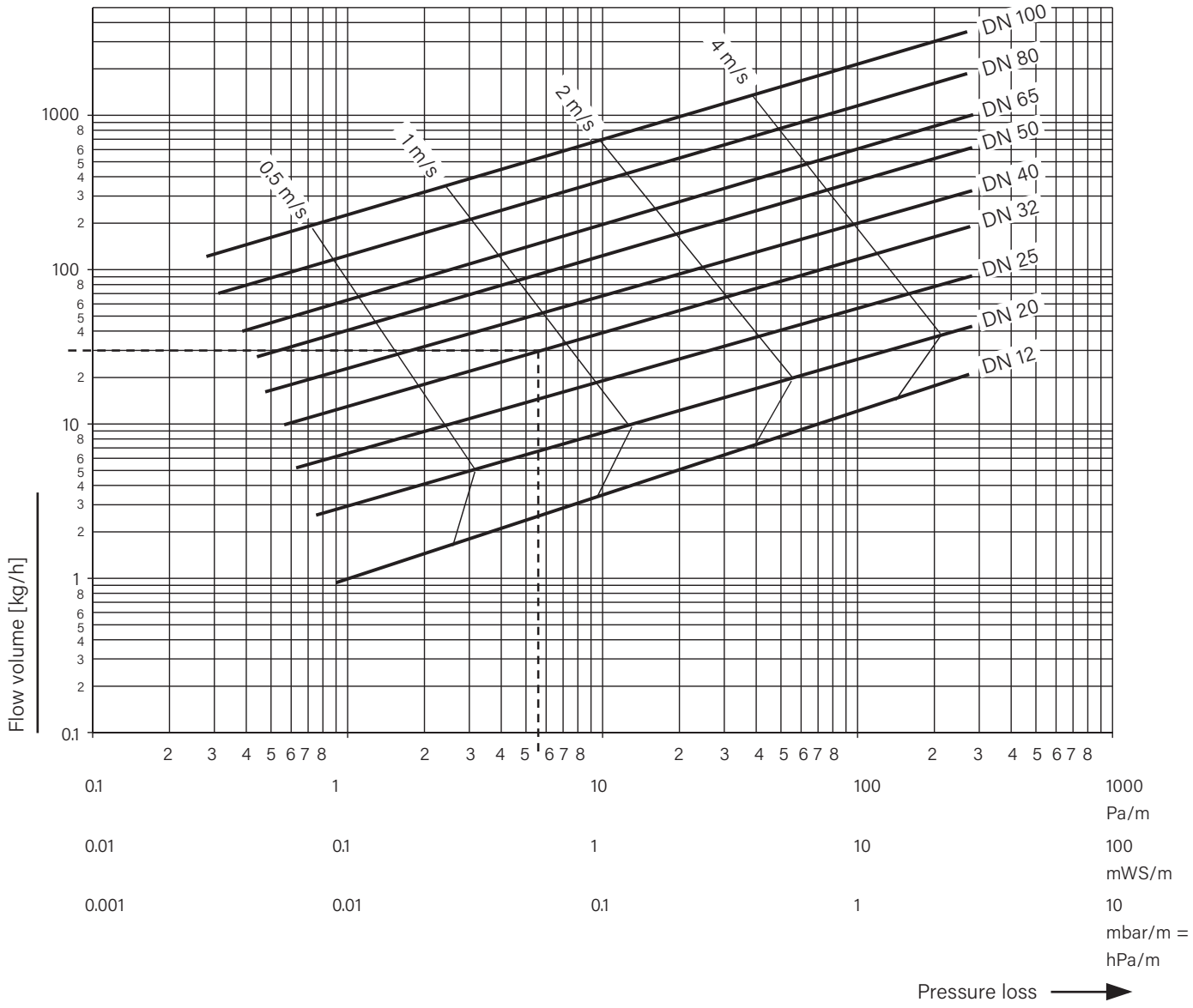
BRUGG Pipes

FLEXWELL® Safety Pipe

Fluid engineering

Pressure loss diagramme for gaseous propane

Temperature:	15 °C
Specific weight:	8 kg/m³ (3 bar)
Dynamic viscosity:	$7.9 \cdot 10^{-6}$ Ns/m² = kg/ms



Example:

Pipe DN 32
With a flow volume of 30 kg/h
at a speed of c. 0.9 m/s
the pressure loss is $5.6 \cdot 10^{-2}$ mbar/m = $5.6 \cdot 10^{-2}$ hPa/m

BRUGG Pipes

FLEXWELL® Safety Pipe

Wall duct Type MD

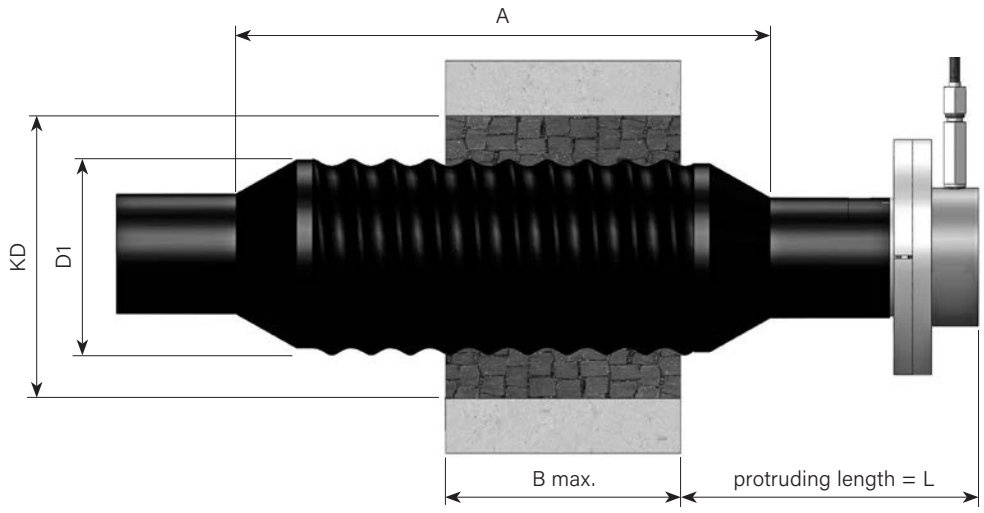
General information

FLEXWELL® Safety Pipe wall duct Type MD must be cemented in on site. If the intallation is correctly executed, the tightness between the concrete and the through-connection and between the through-connection and the FLEXWELL® Safety Pipe is 0.2 bar.

Wall duct Type MD for FSR 13/25 – FSR 60/83
The seal consists of a cross-linked polyolefin shrink sleeve, supported from within by a galvanized steel helix. When the two ends of this are heated using a gas flame they shrink, causing the sealing compound to melt and pressing it into any grooves or unevennesses of the surface.

Type MD	L	A	B max*	KD	D1	Article No.
	mm	mm	mm	mm	mm	
MD-FSR 13/25	200	800	450	100	21	1015749
MD-FSR 30/48	200	700	450	100	67	1015750
MD-FSR 39/60	200	750	450	150	116	1015751
MD-FSR 48/71	200	750	450	150	116	1015751
MD-FSR 60/83	200	750	450	150	116	1015751

* If walls are thicker, two wall ducts can be pushed inside one another.



Dimension KD:
Observe the steps for preparation of the installation!

Please note!
Push the wall duct over the pipe before installing the connection.

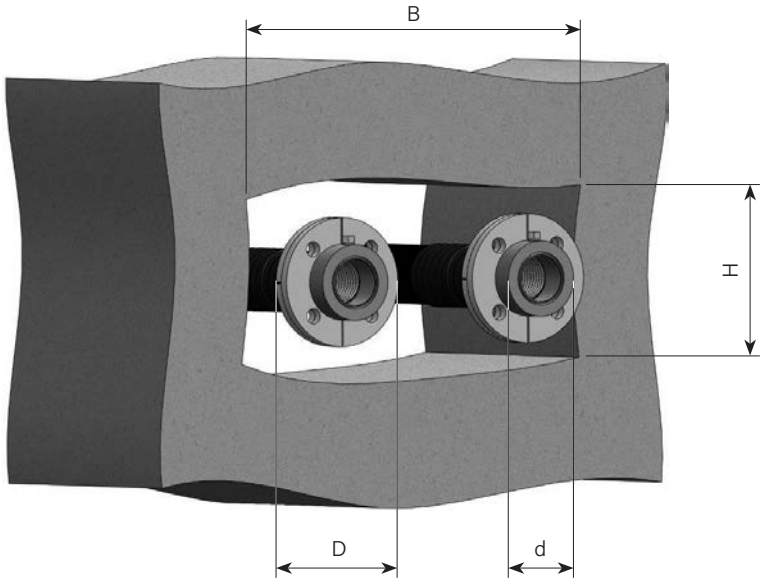
BRUGG Pipes

FLEXWELL® Safety Pipe

Wall breakthroughs, core holes

Wall breakthroughs for connections

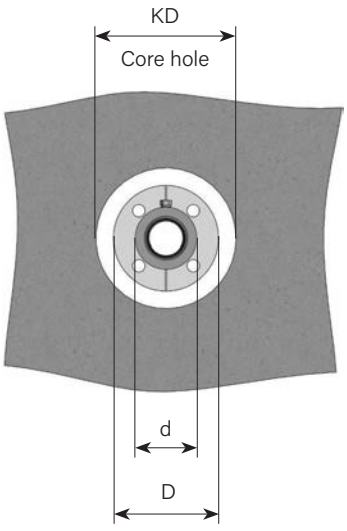
Type	D Threaded socket mm	D Flange mm	H mm	B 1 Pipe mm	B 2 Pipes mm
FSR 13/ 25	40	–	100	100	200
FSR 30/ 48	–	115	215	215	400
FSR 39/ 60	–	140	240	240	400
FSR 48/ 71	–	150	250	250	400
FSR 60/ 83	–	165	265	265	450
FSR 75/107	–	185	300	300	500
FSR 98/134	–	200	400	400	700
FSR 127/175	–	270	400	400	700
FSR 200/262	300	–	400	400	800



split loose flange
acc. to DIN 2656

Core holes for connections

Type	D mm	d mm	KD mm
FSR 13/ 25	–	40	80
FSR 30/ 48	115	68	100
FSR 39/ 60	140	78	125
FSR 48/ 71	150	88	125
FSR 60/ 83	165	102	150
FSR 75/107	185	122	200
FSR 98/134	200	138	200
FSR 127/175	270	190	250
FSR 200/262	–	300	400



split loose flange
acc. to DIN EN 1092-1

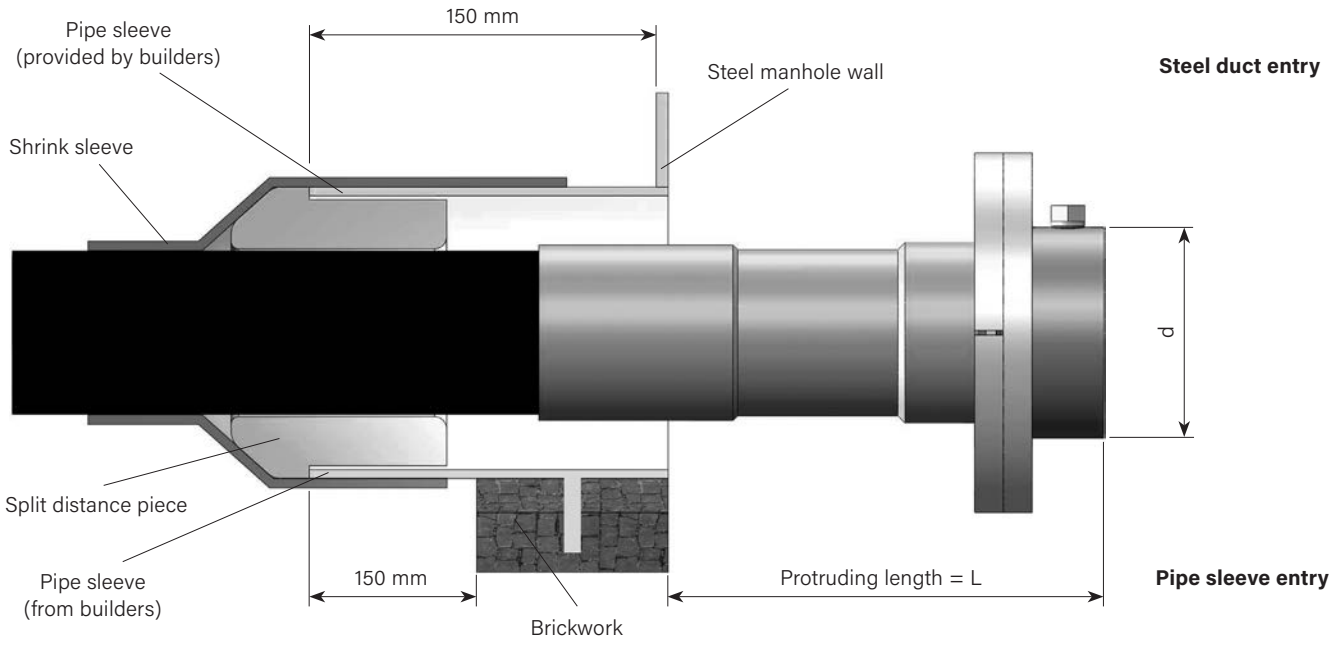
BRUGG Pipes

FLEXWELL® Safety Pipe

Steel duct and pipe sleeve entry

General information

FLEXWELL® Safety Pipe steel duct entries Type SSE are designed to be used with fixed-size pipe sleeves. The pipe sleeves must provided by the builders on site.



Type SSE	Pipe sleeve* (provided by builders) d1 x s1 mm	d mm	Protruding length L mm	Article No.
SSE-FSR 13/ 25	48.3 x 2.6	40	150	1015551
SSE-FSR 30/ 48	76.1 x 2.9	68	200	1015553
SSE-FSR 39/ 60	88.9 x 3.2	78	200	1015554
SSE-FSR 48/ 71	114.3 x 3.6	88	200	1015552
SSE-FSR 60/ 83	114.3 x 3.6	102	200	1015555
SSE-FSR 75/107	168.3 x 4.5	122	200	1015682
SSE-FSR 98/134	168.3 x 4.5	138	250	1016048
SSE-FSR 127/175	219.1 x 5.9	190	250	1015557
SSE-FSR 200/262	323.9 x 8.8	300	400	auf Anfrage

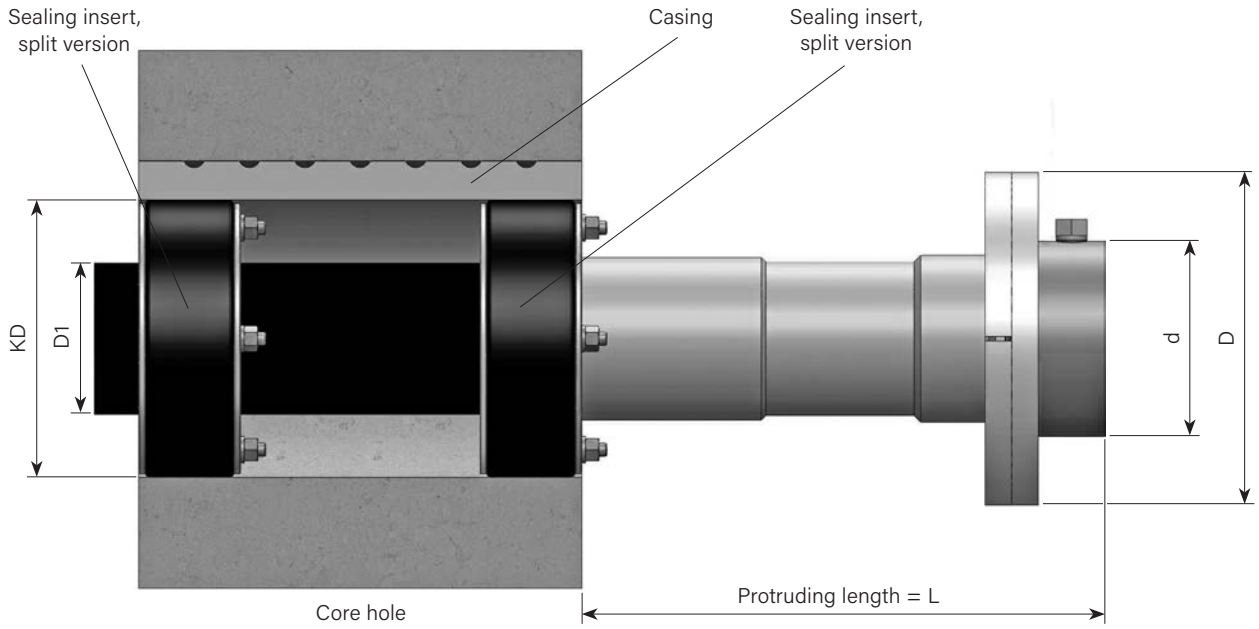
* For connecting fittings with monitorable sealing surface a separately request is needed.

BRUGG Pipes

FLEXWELL® Safety Pipe

Annular space seal

for core hole or fibre cement casing



Please note!
Two annular ring seals are used to seal the annular space between the casing or core bore and the pipeline and to ensure the axial guidance of the piping. As the ring seals are in a split version they can also be installed after the installation of the pipeline. After installation of the seal insert the pipe must not be axially displaced or misaligned.

Type	DN	d	D	L	D1	KD*	Article No.
		mm	mm	mm	mm	mm	
RRD-FSR 13/ 25	12	40	–	150	25	80	1091460
RRD-FSR 30/ 48	25	68	115	200	48	100	1091462
RRD-FSR 39/ 60	32	78	140	200	60	125	1091469
RRD-FSR 48/ 71	40	88	150	200	71	125	1091470
RRD-FSR 60/ 83	50	102	165	200	83	150	1091471
RRD-FSR 75/107	65	122	185	200	107	200	1091476
RRD-FSR 98/134	80	138	200	250	134	200	1091475
RRD-FSR 127/175	100	190	270	250	175	250	1091478
RRD-FSR 200/262	150	300	–	400	262	350	on request

* KD = Internal diameter of casing or diameter of core hole

Contents of the packaging unit = 2 pieces ring seal, split version

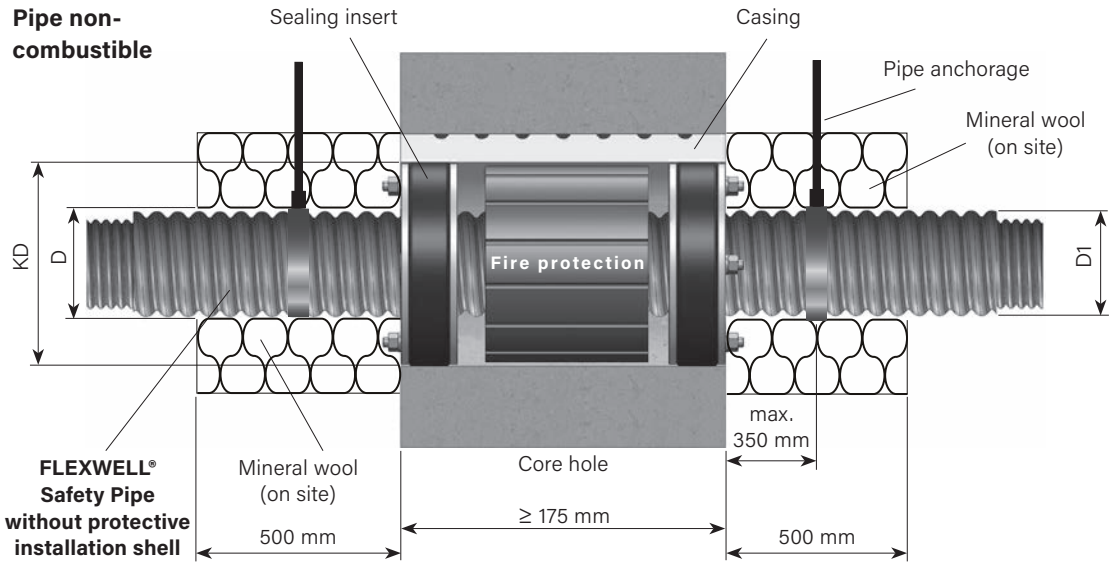
BRUGG Pipes

FLEXWELL® Safety Pipe

Fire protection wall duct

Bulkheading for core hole or fibre cement casing or with fire protection insulation sleeve

Pipe non-combustible



To be made available by the builders
Guidance values for both sides wrapped round with mineral wool:
Thickness: 80 mm
Density: 80 kg/m³
Length:
≥ 500 mm by R90

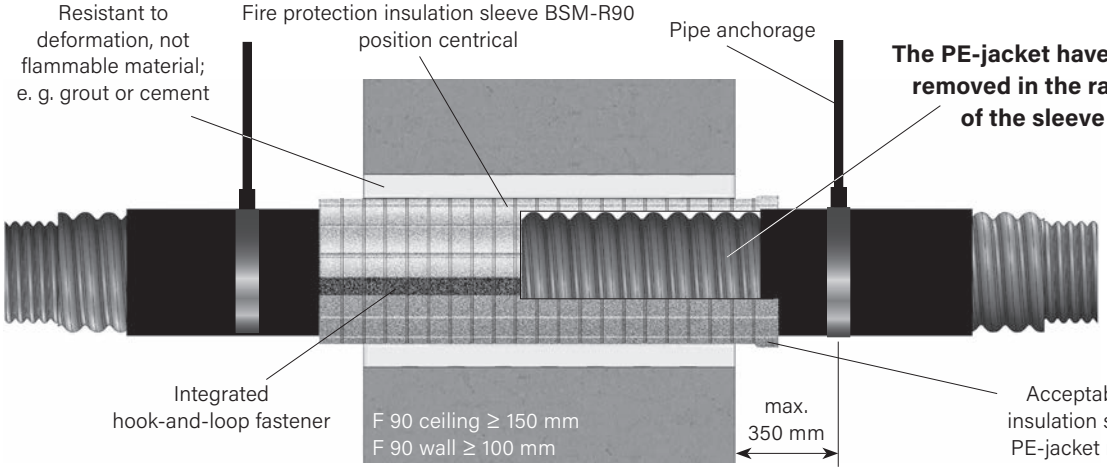
Pipe anchorage
The pipe have got to be insert horizontally into the wall.

Parts for mounting
Gas- and watertight pipe bulkheading with fire protection packing and sound-proofing according to DIN 4109
Metal parts: zinc-plated steel
Seal: EPDM
Casing: Special fibre cement optional

Type	DN	D mm	D1 mm	KD* mm	Article No.**
BSD-FSR 13/25	12	21.9	25.0	80	1016049
BSD-FSR 30/48	25	43.0	48.0	100	1016051
BSD-FSR 39/60	32	53.5	60.0	125	1016053
BSD-FSR 48/71	40	64.5	71.0	125	1016055
BSD-FSR 60/83	50	76.5	83.0	150	1016057

* KD = Internal diameter of the casing or diameter of the core hole
** not from stock/bigger dimensions on demand

Fire protection packing R90
Wall thickness > 400 mm = two fire protection packings are needed



Pipe anchorage
The pipe have got to be insert horizontally into the wall.

Type	Length in mm	Article No.
BSM-FSR 13/25	350	1060635
BSM-FSR 30/48	350	1060637
BSM-FSR 39/60	500	1060639
BSM-FSR 48/71	500	1060640
BSM-FSR 60/83	500	1060641
BSM-FSR 75/107, 98/134	700	on request

BRUGG Pipes

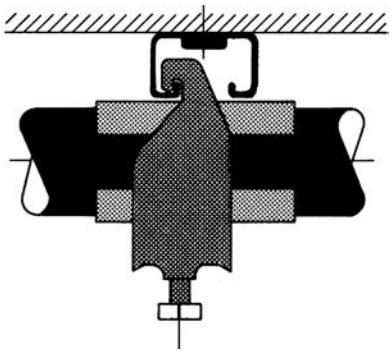
FLEXWELL® Safety Pipe

Anchor fittings to buildings, pipe bridges etc.

Anchor fitting in buildings or on supporting structures

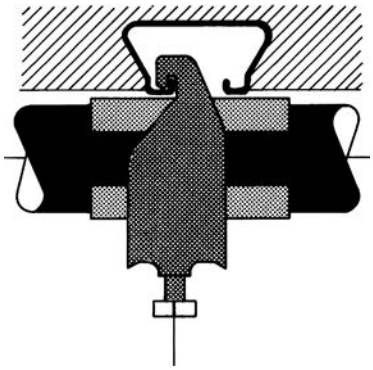
Installation example No. 1

BRUGG anchor fitting
Anchor fitting of the FLEXWELL® Safety Pipe on existing installation rails mounted on plaster by means of bracket clamps.



Installation example No. 2

Anchor fitting of the FLEXWELL® Safety Pipe on existing structural steel anchor rails embedded in the concrete (Jordahl or other anchor rails) by means of bracket clamps.



N.B.:

Apart from the components illustrated here, other bracket clamps normally in use in the trade with appropriate dimensions may be used with the anchor fitting.

Always take the local circumstances into consideration.

Fixing the anchor fitting to anchor rails or structural steel does however have the following advantages over fitting to an anchor point:

1. The FLEXWELL® Safety Pipe can be provisionally secured during laying.
2. To align the pipe correctly, the anchor fitting brackets only need to be loosened, pushed a little to one side and then tightened again afterwards.

Bending radii and bracket distances

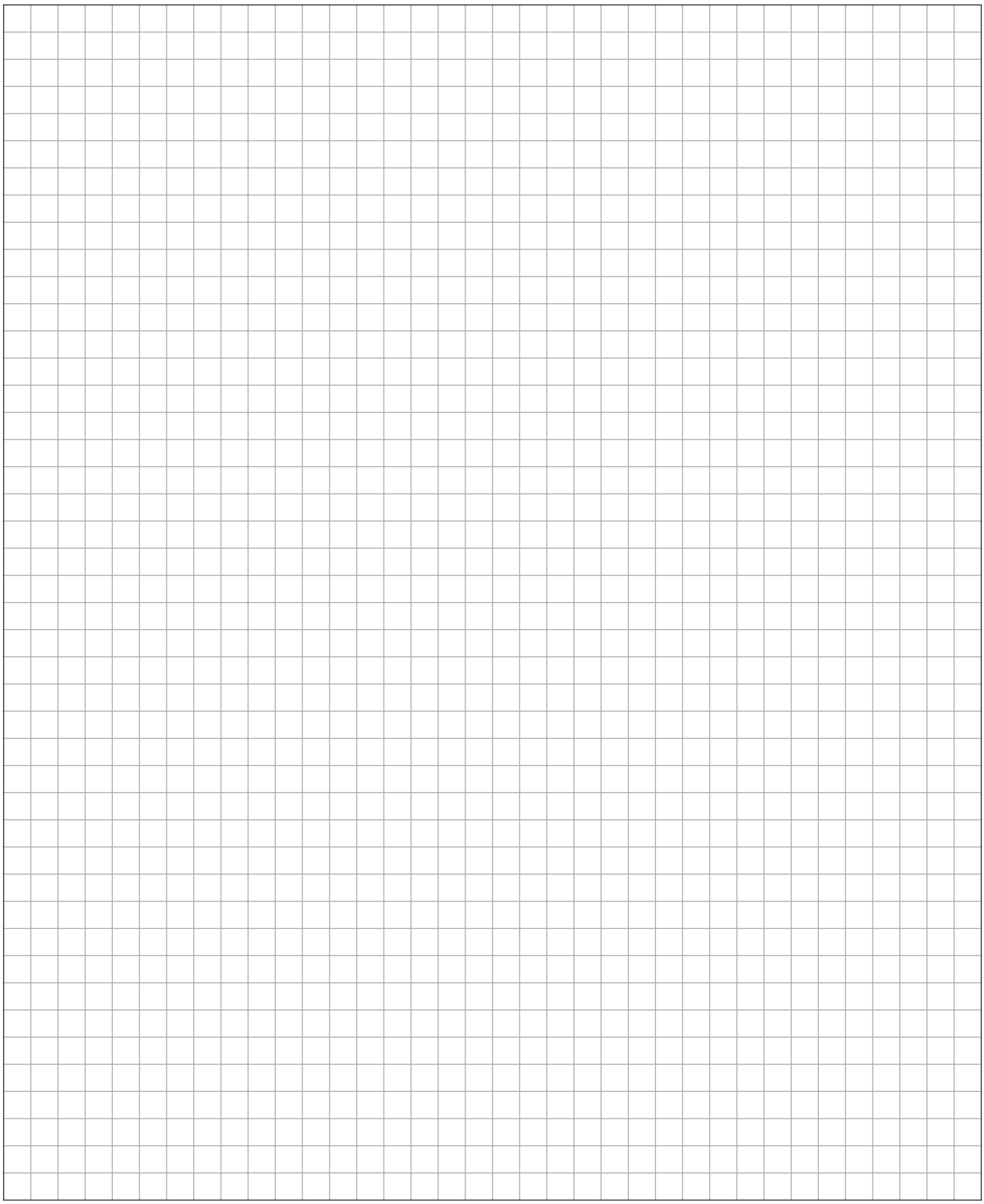
Type	Bending radius	Bracket distance max. horizontal	vertical	Article No. BRUGG cable saddles galvanized steel	Brackets provided by builders must be suitable for use with following pipe-Ø
	m	m	m		mm
KSS-FSR 13/ 25	0.30	1.00	1.20	1015541	25 – 30
KSS-FSR 30/ 48	0.50	1.20	1.40	1015544	48 – 52
KSS-FSR 39/ 60	0.60	1.40	1.60	1015545	60 – 65
KSS-FSR 48/ 71	0.60	1.50	1.70	1015543	70 – 75
KSS-FSR 60/ 83	0.70	1.60	1.80	1015546	83 – 90
KSS-FSR 75/107	0.90	1.60	1.90	1015547	107 – 112
KSS-FSR 98/134	1.20	1.60	2.00	1015549	134 – 140
KSS-FSR 127/175	1.50	1.60	2.00	1015550	170 – 180
KSS-FSR 200/262	4.0	1.80	2.00	on request	260 – 280

Anchor rail 250 mm	1015540
Anchor rail 500 mm	1015539

BRUGG Pipes

FLEXWELL® Safety Pipe

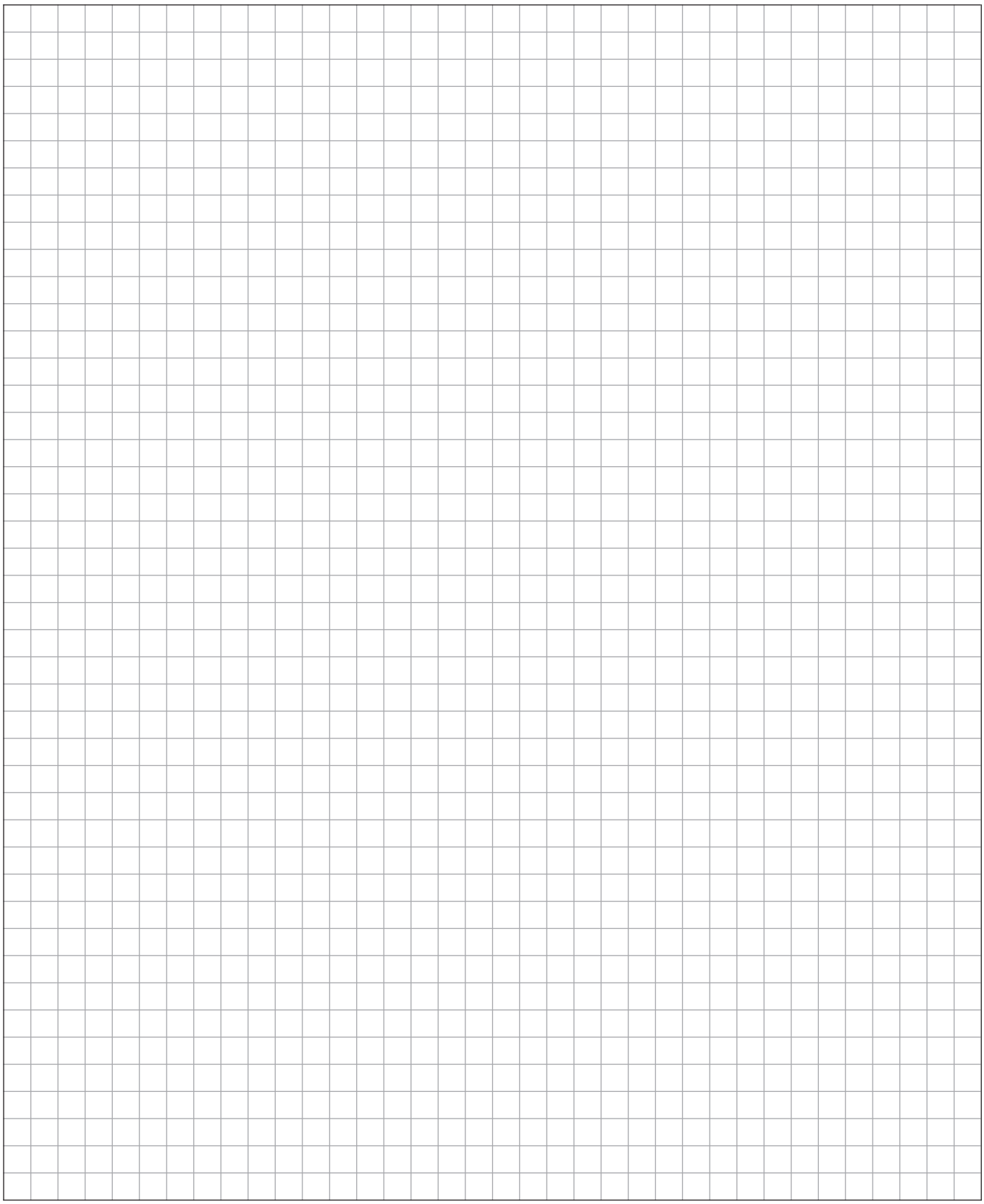
Notes



BRUGG Pipes

FLEXWELL® Safety Pipe

Notes



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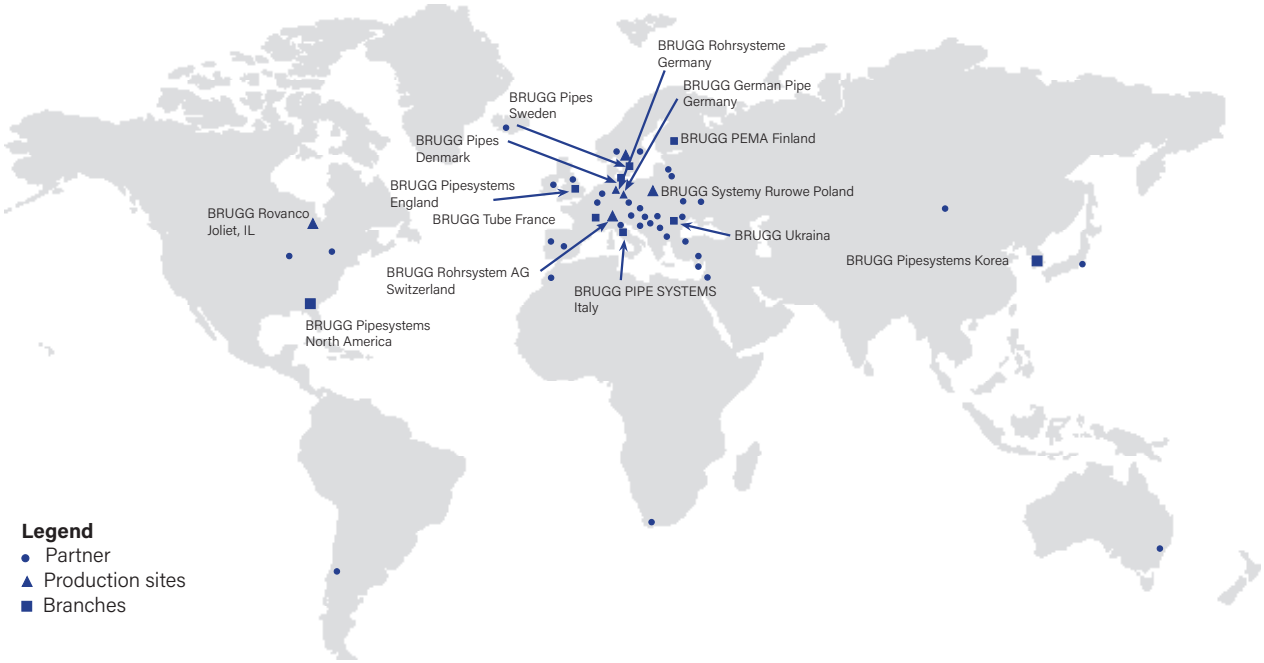
EN 07/26/ xxx ex. / 1016591



BRUGG
Pipes

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