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STAR PIPE

STAR PIPE is the designation for preinsulated pipes with a wide field of application.

STAR PIPE is manufactured to meet most requirements with regard to the transport of warm, cold and aggressive media.

The most frequent field of application is the application as district heating pipes, where laying is undertaken directly in excavated trenches.

The preinsulated STAR PIPE consists of an inner service pipe for the transport of a media insulated with polyurethane foam and protected by an outer impact resistant Polyethylene casing (PEH). The service pipe is centered in the PEH-casing by means of polypropylene distance holders. As standard the STAR PIPE is produced with a service pipe of plain steel, galvanised steel or copper, but other pipe materials such as stainless steel and PEH are also available.

STAR PIPE is available as a complete range of products – the bonded system. This range includes straight pipes and preinsulated fittings such as bends, T-pieces, anchors, compensators, valves etc. Furthermore split steel casing joints (joints and reduction joints, bends, T-pieces and hot tapping T-pieces) are available for the bonded system.

The range also includes a flexible dwelling connection pipe (STAR PIPE Flex) and a complete alarm system with central surveillance of the pipe network.

STAR PIPE SYSTEM

STAR PIPE is a bonded system. The polyurethane foam adheres with great strength to the service pipe as well as to the casing pipe. Relieved pipe systems are available, in which the expansion is absorbed either in preinsulated compensators, or in expansion loops (bends) that on the outside are covered with expansion cushions corresponding to the length of the deflection arm, or the system may be preheated. Reinforced systems (cold laying) are also available. Here the thermal expansion is absorbed as compression stresses in the material.

Maximum continued operating temperature: 130° C.

LAYING SYSTEMS

STRESS RELIEF		REINFORCEMENT
Expansion absorption	Prestressing	Cold laying
Operating compensators	Preheating with E-compensators	
Compensator pipes	Preheating in open trench	
Loop bends	Mechanical prestressing	

SERVICE PIPES (STEEL)

STRAIGHT PIPES	
Longitudinally or spirally welded steel pipes	
Material:	P235Gh
Production:	EN 10217-2 ; EN 10217-5
Certificate:	EN 10204 3.1
Welding edge:	Ø ³ 88,9 mm DIN 2559/2.2

STRAIGHT PIPES	
Seamless steel pipes (made to order)	
Material:	P235Gh
Production:	EN 10216-2
Certificate:	EN 10204 3.1
Welding edge:	Ø ³ 88,9 mm DIN 2559/2.2

BENDS

DN 20-25	
Cold bent seamless steel pipes	
Material:	P235Gh
Production:	EN 10216-2
Certificate:	EN 10204 3.1
Bending radius:	3 x D
Wall thickness:	As straight pipes

DN 32-80	
Cold bent longitudinally welded steel pipes	
Material:	P235Gh
Production:	EN 10217-2
Certificate:	EN 10204 3.1
Bending radius:	3 x D
Wall thickness:	As straight pipes

DN 100-125	
Cold bent seamless steel pipes.	
Material:	P235Gh
Production:	EN 10216-2
Certificate:	EN 10204 3.1
Bending radius:	3 x D
Wall thickness:	As straight pipes

DN 150	
Cold bent seamless steel pipes	
Material:	P235Gh
Production:	EN 10216-2 (welding bends) EN 10217-2 (straight pipes)
Certificate:	EN 10204 3.1
Bending radius:	1,5 x D
Wall thickness:	As straight pipes

DN 200-600	
Longitudinally welding bends with longitudinally or spirally welded straight pipes.	
Material:	P235Gh
Production:	EN 10217-2 ; EN 10217-5
Certificate:	EN 10204 3.1
Bending radius:	1,5 x D
Wall thickness:	As straight pipes

For bends of 90° DN 150-DN 300 cold bent steel pipes are normally used.

T-PIECES

MAIN PIPES	
Longitudinally or spirally welded steel pipes (DN 100-125: seamless steel pipes.	
Material:	P235Gh
Production:	EN 10217-2 ; EN 10217-5 EN 10216-2
Certificate:	EN 10204 3.1
Wall thickness:	As seamless steel pipes

BRANCH	
Production:	As bends
Wall thickness:	As straight steel pipes

ANCHORS

Longitudinally welded or spirally welded steel pipes	
Material:	P235Gh
Production:	EN 10217-2 ; EN 10217-5
Certificate:	EN 10204 3.1
Wall thickness:	As straight steel pipes

COMPENSATORS - SHUT OFF VALVES

Longitudinally or spirally welded steel pipes	
Material:	P235Gh
Production:	EN 10217-2 ; EN 10217-5
Certificate:	EN 10204 3.1
Wall thickness:	As straight pipes

CASING PIPES

STRAIGHT PIPES

Material:	Polyethylene High Density (PEH)
Production:	EN 253
Treatment:	CoronaTreatment

Fittings

Material:	Polyethylene High Density (PEH)
Production:	EN 448
Treatment:	CoronaTreatment

FLEX PIPES

Material:	Polyethylene High Density (PEH)
	Corrugated casing pipe

SPLIT STEEL FITTINGS

Coated steel plate fittings	
Material:	St. W22
Production:	DIN 1614
Wall thickness:	3 mm
Coating:	Polyethylene
Coating thickness:	~ 400 – 500 m



PREINSULATED SYSTEM STEEL PIPES

STAR PIPE's preinsulated system steel pipes are available in following dimensions and with a service pipe made of P235Gh steel, without alarm system or with the Nordic alarm system, PU-foam with cyclopentane as the blowing agent, standard insulation thickness and 15 cm pipe ends.

STANDARD INSULATION					
DN	Ø service pipe mm	Wall thickness mm	Ø casing pipe mm	Standard length m	Weight pipe kg/m
20	26,9	2,3	90	6	2,5
25	33,7	2,6	90	6	3,1
32	42,4	2,6	110	6/12	4,2
40	48,3	2,6	110	6/12	4,5
50	60,3	2,9	125	6/12	6,1
65	76,1	2,9	140	6/12	7,7
80	88,9	3,2	160	6/12	9,8
100	114,3	3,6	200	6/12	14,1
125	139,7	3,6	225	12/16	17,2
150	168,3	4,0	250	12/16	22,3
200	219,1	4,5	315	12/16	33,0
250	273,0	5,0	400	12/16	48,3
300	323,9	5,6	450	12/16	62,2
350	355,6	5,6	500	12/16	71,2
400	406,4	6,3	560	12/16	90,7
500	508,0	6,3	710	12/16	124
600	609,6	7,1	800	12/16	173

STAR PIPE's preinsulated steel pipes are also available in following variations:

Service pipe: Seamless P235Gh or galvanised

Alarm system: Resistive alarm system

Insulation thickness: Plus, Plus-Plus

Pipe ends: 25 cm

Other requests: Made to order

PRECURVED PIPES

STAR PIPE's preinsulated precurved pipes are available in following dimensions and with a service pipe made of P235Gh steel, without alarm system or with the Nordic alarm system, PU-foam with cyclopentane as the blowing agent, standard insulation thickness and 15 cm pipe ends

STANDARD INSULATION			
DN	Ø service pipe mm	Wall thickness mm	Ø casing mm
20	26.9	2.3	90
25	33.7	2.6	90
32	42.4	2.6	110
40	48.3	2.6	110
50	60.3	2.9	125
65	76.1	2.9	140
80	88.9	3.2	160
100	114.3	3.6	200
125	139.7	3.6	225
150	168.3	4.0	250
200	219.1	4.5	315
250	273.0	5.0	400
300	323.9	5.6	450
350	355.6	5.6	500
400	406.4	6.3	560
500	508.0	6.3	710
600	609.6	7.1	800

STAR PIPE's preinsulated precurved pipes are also available in following variations:

Service pipe: Seamless P235Gh or galvanised

Alarm system: Resistive alarm system

Insulation thickness: Plus, Plus-Plus

Pipe ends: 25 cm

Curve angle: Made to order

Other requests: Made to order



SYSTEM STEEL BENDS

STAR PIPE's preinsulated system steel bends are available in following dimensions and with a service pipe made of P235Gh steel, without alarm system or with the Nordic alarm system, PU-foam with cyclopentane as the blowing agent, standard insulation thickness and 15 cm pipe ends.

Standard angles: 45° and 90°

* Standard leg length: 0.6 x 0.6 m

STANDARD INSULATION					
DN	Ø service pipe mm	Wall thickness mm	Ø casing pipe mm	Standard leg length meter	
				1 x 1	1½ x 1½
20	26.9	2.3	90	x	
25	33.7	2.6	90	x	
32	42.4	2.6	110	x	
40	48.3	2.6	110	x	
50	60.3	2.9	125	x	
65	76.1	2.9	140	x	
80	88.9	3.2	160	x	
100	114.3	3.6	200	x	
125	139.7	4.0	225	x	
150	168.3	4.0	250	x	
200	219.1	4.5	315	x	
250	273.0	5.0	400	x	
300	323.9	5.6	450	x	
350	355.6	5.6	500	x	
400	406.4	6.3	560	x	
500	508.0	6.3	710		x
600	609.6	7.1	800		x

STAR PIPE's preinsulated steel bends are also available in following variations:

- Service pipe: Seamless P235Gh or galvanised
- Alarm system: Resistive alarm system
- Insulation thickness: Plus, Plus-Plus
- Pipe ends: 25 cm
- Angles: Made to order
- Leg lengths: Made to order
- Offset bends, Z-bends: Made to order
- Other requests: Made to order

Bends are also available as in-lead bends with a splash guard, potential alternative position of the alarm wires and increased leg length as requested by customer.



PREINSULATED SYSTEM T-PIECES WITH JUMP

STAR PIPE's preinsulated system T-pieces with jump are available in following dimensions and with a service pipe made of P235Gh steel, without alarm system or with the Nordic alarm system, PU-foam with cyclopentane as the blowing agent, standard insulation thickness and 15 cm pipe ends.

STANDARD INSULATION			Main pipe	Branch pipe	
DN	Ø service pipe mm	Wall thickness mm		From	To
20	26.9	2.3	27-90	27-90	27-90
25	33.7	2.6	34-90	27-90	34-90
32	42.4	2.6	42-110	27-90	42-110
40	48.3	2.6	48-110	27-90	48-110
50	60.3	2.9	60-125	27-90	60-125
65	76.1	2.9	76-140	27-90	76-140
80	88.9	3.2	89-160	27-90	89-160
100	114.3	3.6	114-200	27-90	114-200
125	139.7	4.0	139-225	27-90	139-225
150	168.3	4.5	168-250	27-90	168-250
200	219.1	6.3	219-315	27-90	219-315
250	273.0	6.3	273-400	27-90	273-400
300	323.9	7.1	323-450	27-90	323-450
350	355.6	8.0	355-500	27-90	355-500
400	406.4	8.8	406-560	27-90	406-560
500	508.0	11.0	508-710	27-90	508-710
600	609.6	12.5	609-900	27-90	609-800

STAR PIPE's preinsulated T-pieces with jump are also available in following variations:

Service pipe: Seamless P235Gh or galvanised

Alarm system: Resistive alarm system

Insulation thickness: Plus, Plus-Plus

Pipe ends: 25 cm

Other requests: Made to order

BRANCH PIPE (L2) mesure in mi m

D1	D2	90	110	125	140	160	180	200	225	250	280	315	355	400	450	500	560
90	L2 L1	1,0 1,0															
110	L2 L1	1,0 1,0	1,0 1,0														
125	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0													
140	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0												
160	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0											
180	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5										
200	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5									
225	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5								
250	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5							
280	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,0 1,5						
315	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,0					
355	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,5				
400	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,5	1,5 1,5			
450	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,5	1,5 1,5	1,5 1,5		
500	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 2,0	
560	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 2,0
630	L0 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,0 1,5	1,0 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5
710	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,0 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5
800	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5
900	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5
1000	L2 L1	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,0	1,0 1,5	1,0 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5	1,5 1,5

D1 = Main pipe casing dimension
 D2 = Branch pipe casing dimension
 L1 = Length of main pipe
 L2 = Length of branch pipe from centre line of main pipe

$$H = \frac{D1 + D2 + x}{2}$$

d2= Service pipe dimension on branch pipe



PREINSULATED PARALLELL SYSTEM T-PIECES

STAR PIPE's preinsulated parallel system T-pieces are available in following dimensions and with a service pipe made of P235Gh steel, without alarm system or with the Nordic alarm system, PU-foam with cyclopentane as the blowing agent, standard insulation thickness and 15 cm pipe ends.

STANDARD INSULATION			Main pipe	Branch pipe	
DN	Ø service pipe mm	Wall thickness mm		From	To
20	26,9	2,3	27-90	27-90	27-90
25	33,7	2,6	34-90	27-90	34-90
32	42,4	2,6	42-110	27-90	42-110
40	48,3	2,6	48-110	27-90	48-110
50	60,3	2,9	60-125	27-90	60-125
65	76,1	2,9	76-140	27-90	76-140
80	88,9	3,2	89-160	27-90	89-160
100	114,3	3,6	114-200	27-90	114-200
125	139,7	4,0	139-225	27-90	139-225
150	168,3	4,5	168-250	27-90	168-250
200	219,1	6,3	219-315	27-90	219-315
250	273,0	6,3	273-400	27-90	273-400
300	323,9	7,1	323-450	27-90	323-450
350	355,6	8,0	355-500	27-90	355-500
400	406,4	8,8	406-560	27-90	406-560
500	508,0	11,0	508-710	27-90	406-560
600	609,6	12,5	609-900	27-90	406-560

STAR PIPE's preinsulated parallel T-pieces are also available in following variations:

Service pipe: Seamless P235Gh or galvanised

Alarm system: Resistive alarm system

Insulation thickness: Plus, Plus-Plus

Pipe ends: 25 cm

Other requests: Made to order

BRANCH PIPE (L2) measure in m

D1	D2	90	110	125	140	160	180	200	225	250	280	315	355	400	450	500	560
90	L2 L1	0,5 1,0															
110	L2 L1	0,5 1,0	0,5 1,0														
125	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0													
140	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0												
160	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0											
180	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5										
200	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5									
225	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5								
250	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5							
280	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5						
315	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5					
355	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5				
400	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5			
450	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	1,0 2,0		
500	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	1,0 2,0	1,0 2,0	1,0 2,0
560	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	1,0 2,0	1,0 2,0	1,0 2,0
630	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	1,0 2,0	1,0 2,0	1,0 2,0
710	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	1,0 2,0	1,0 2,0	1,0 2,0
800	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	1,0 2,0	1,0 2,0	1,0 2,0
900	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	1,0 2,0	1,0 2,0	1,0 2,0
1000	L2 L1	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,5 1,0	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	0,75 1,5	1,0 2,0	1,0 2,0	1,0 2,0

d2 [mm]	X [mm]
< 139,7	150
168,3	200
193,7	250
219,1	250
273,0	300
323,9	350
355,6	400

D1 = Main pipe casing dimension
 D2 = Branch pipe casing dimension
 L1 = Length of main pipe
 L2 = Length of branch pipe from centre line of main pipe

$$H = \frac{D1 + D2 + x}{2}$$

d2= Service pipe dimension on branch pipe



PREINSULATED SYSTEM DRAINS/VENTS

STAR PIPE's preinsulated system drains and vents are available in following dimensions and with a service pipe made of P235Gh steel, without alarm system or with the Nordic alarm system, PU-foam with cyclopentane as the blowing agent, standard insulation thickness and 15 cm pipe ends.

STANDARD INSULATION				MEASURES			
DN	Ø casing pipe mm	Wall thickness mm	Ø casing mm	L mm	H (spindle) mm	Drain (ball valve) DN	OD
25	33.7	2.6	90	1000	384	25	110
32	42.4	2.6	110	1000	388	25	110
40	48.3	2.6	110	1000	403	40	125
50	60.3	2.9	125	1000	410	40	125
65	76.1	2.9	140	1000	414	40	125
80	88.9	3.2	160	1000	427	40	125
100	114.3	3.6	200	1000	450	40	125
125	139.7	3.6	225	1000	455	40	125
150	168.3	4.0	250	1000	475	40	125
200	219.1	4.5	315	1000	520	50	140
250	273.0	5.0	400	1000	557	50	140
300	323.9	5.6	450	1000	664	50	140
350	355.6	5.6	500	1000	Made to order	50	140
400	406.4	6.3	560	1000	Made to order	50	140
500	508.0	6.3	710	1000	Made to order	50	140
600	609.6	7.1	800	1000	Made to order	50	140

STAR PIPE's preinsulated drains are also available in following variations:

Service pipe: Seamless P235Gh or galvanised

Alarm system: Resistive alarmsystem

Insulation thickness: Plus, Plus-Plus

Pipe ends: 25 cm

Other requests: Made to order

L = Building length

H = Height of valve on valve

D = Drain casing dimension



PREINSULATED SYSTEM SHUT-OFF VALVE

STAR PIPE's preinsulated system shut-off valves are available in following dimensions and with a service pipe of P235Gh steel, without alarm system or with the Nordic alarm system, PU-foam with cyclopentane as the blowing agent, standard insulation thickness and 15 cm pipe ends.

Preinsulated shut-off valves are available with ball valves of an approved manufacture.

STANDARD INSULATION				MEASURES			
DN	Ø casing pipe mm	Wall thickness mm	Ø casing mm	L mm	H (spindle) mm	OD (spindle) mm	Hexagon mm
25	33.7	2.6	90	1500	384	90	19
32	42.4	2.6	110	1500	388	90	19
40	48.3	2.6	110	1500	403	90	19
50	60.3	2.9	125	1500	410	90	19
65	76.1	2.9	140	1500	414	110	19
80	88.9	3.2	160	1500	427	110	19
100	114.3	3.6	200	1500	450	110	27
125	139.7	3.6	225	1500	455	110	27
150	168.3	4.0	250	1500	475	110	27
200	219.1	4.5	315	1500	520	160	50
250	273.0	5.0	400	1500	557	160	50
300	323.9	5.6	450	1800	664	200	50

L = Building length

H = Spindle height from centre line of service pipe to the top

DS = Spindle casing dimension

STAR PIPE's preinsulated shut-off valves are also available in following variations:

Alarm system: Resistive alarm system

Insulation thickness: Plus, Plus-Plus

Pipe ends: 25 cm

Other requests: Made to order



PREINSULATED SYSTEM OPERATING COMPENSATORS

STAR PIPE's preinsulated system operating compensators are supplied with compensators of recognized manufactures*

STAR PIPE's preinsulated operating compensators are available in following dimensions and with a service pipe made of P235Gh steel, without alarm system or with the Nordic alarm system, PU-foam with cyclopentane as the blowing agent, standard insulation thickness and 15 cm pipe ends.

STANDARD INSULATION					TYPE			Length
DN	Ø service pipe	Wall thick-ness	Ø casing	Prot. PEH-casing Ø max. mm	Standard movement			
	mm	mm	mm		NP	DN	Exp. absorp.	
32	42.4	2.6	110	175	16	32	100	2000
40	48.3	2.6	110	175	16	40	100	2000
50	60.3	2.9	125	195	16	50	100	2000
65	76.1	2.9	140	215	16	65	100	2000
80	88.9	3.2	160	245	16	80	100	2000
100	114.3	3.6	200	300	16	100	125	2000
125	139.7	3.6	225	340	16	125	125	2000
150	168.3	4.0	250	400	16	150	125	2000
200	219.1	4.5	315	500	16	200	125	2000
250	273.0	5.0	400	560	16	250	125	2000
300	323.9	5.6	450	630	16	300	125	2500
350	355.6	5.6	500	630	16	350	125	2500
400	406.4	6.3	560	710	16	400	125	2500

*) Specified compensator manufacture: Made to order

STAR PIPE's preinsulated operating compensators are also available in following variations:

Alarm system: Resistive alarm system

Insulation thickness: Plus, Plus-Plus

Pipe ends: 25 cm

Other requests: Made to order



E-COMPENSATORS - UNINSULATED ONE-TIME COMPENSATOR

STAR PIPE's un-insulated one-time compensator, the E-compensator, is available in following dimensions:

DN	Ø service pipe mm	Wall thickness mm	Bellow measure max.	Max. expansion	Length mm
25	33.7	2.3	56	50	225
32	42.4	2.6	73	50	225
40	48.3	2.6	73	50	225
50	60.3	2.9	86	50	225
65	76.1	2.9	106	70	265
80	88.9	3.2	122	70	275
100	114.3	3.6	139.7	80	310
125	139.7	3.6	168.3	80	320
150	168.3	4.0	193.7	100	375
200	219.1	4.5	268.0	120	395
250	273.0	5.0	323.9	120	395
300	323.9	5.6	355.6	140	520
400	406.4	6.3	457.2	140	510
450	457.2	6.3	508.0	150	510
500	508.0	6.3	560	150	510
600	609.6	7.1	675	150	540

The E-compensator is also available with increased expansion.

Length applies to compressed condition. (The length stated is valid for fully compressed compensators).

The E-compensator is also available prestressed from STAR PIPE.

Material: P235Gh

Bellow: Acid proof steel AISI 31



PREINSULATED SYSTEM ANCHORS/ANCHOR BENDS

STAR PIPE's preinsulated system anchors/anchor bends are available in following dimensions and with a service pipe made of P235Gh steel, without alarm system or with the Nordic alarm system, PU-foam with cyclopentane as the blowing agent, standard insulation thickness and 15 cm pipe ends.

STANDARD INSULATION				
DN	Ø service pipe mm	Wall thickness mm	Ø casing mm	Flange dim. mm
20	26.9	2.3	90	200/12
25	33.7	2.6	90	200/14
32	42.4	2.6	110	220/14
40	48.3	2.6	110	220/14
50	60.3	2.9	125	230/16
65	76.1	2.9	140	250/18
80	88.9	3.2	160	270/20
100	114.3	3.6	200	310/20
125	139.7	4.0	225	335/25
150	168.3	4.5	250	365/25
200	219.1	6.3	315	450/25
250	273.0	6.3	400	560/30
300	323.9	7.1	450	630/35
350	355.6	8.0	500	680/35
400	406.4	8.8	560	765/40
500	508.0	11.0	710	920/45
600	609.6	12.5	800	1075/50

STAR PIPE's preinsulated anchors/anchor bends are also available in following variations:

- Service pipe: Seamless P235Gh or galvanised
- Alarm system: Resistive alarmsystem

- Insulation thickness: Plus, Plus-Plus
- Pipe ends: 25 cm
- Other requests: Made to order



SYSTEM PEH-SITE JOINTS WITH PE-SHRINK SLEEVES

For foaming

System PEH-site joints are as standard available with PE-shrink sleeves fitted and wrapped in plastic foil. 2 plugs and 2 fobs are also supplied.

For system PEH-site joints $\varnothing > 355$ the sleeves consist of a PE-shrink sleeve with a patch.

System PEH-site joints with PE-shrink sleeves may be tightness tested i.a.w. EN 448.

PEH casing pipe \varnothing mm	PEH-site joint with PE-shrink sleeves	
	Joint length mm	Sleeve width mm
90	500	150
90	500	150
110	500	150
110	500	150
125	500	150
140	500	150
160	500	150
180	500	150
200	500	150
225	500	225
250	500	225
280	500	225
315	500	225
355	500	225
400	600	300
450	600	300
500	600	300
560	600	300



SYSTEM PEH-SHRINK JOINTS WITH MASTIC WITH PE-SHRINK SLEEVES

For foaming

System PEH-shrink joints are as standard available with PE-shrink sleeves fitted and wrapped in plastic foil. 2 plugs and 2 fobs are also supplied. For PEH-shrink sleeves $\varnothing > 355$ the sleeves consist of PE-shrink sleeves with a patch.

The system PEH-shrink joint with PE-shrink sleeves may be tightness tested i.a.w. EN 448.

PEH casing pipe \varnothing mm	PEH-shrink joint with PE-shrink sleeves	
	Joint length mm	Sleeve width mm
90	500	150
90	500	150
110	500	150
110	500	150
125	500	150
140	500	150
160	500	150
180	500	150
200	500	150
225	500	225
250	500	225
280	500	225
315	500	225
355	500	225
400	600	300
450	600	300
500	600	300
560	600	300



PEH-SHRINK JOINTS

With PU-half shells

Double sealed

PEH-shrink joints with PU-half shells are as standard available with attached PE-shrink sleeves fitted and packed in plastic foil. PU-insulation half-shells are also supplied.

Service pipe Ø mm	Joint dimension			PU-half-shells		PE-sleeve
	Casing pipe Ø mm	PEH-shrink sleeve		Ø inner appr. mm	Length mm	Width mm
		Ø inner mm	Length mm			
26.9	90	105	500	27	380	150
33.7	90	105	500	34	380	150
42.4	110	125	500	42	380	150
48.3	110	125	500	48	380	150
60.3	125	141	500	60	380	150
76.1	140	156	500	76	380	150
88.9	160	176	500	89	380	150
114.3	200	215	500	114	380	150
139.7	225	241	500	140	380	225
168.3	250	270	500	168	380	225
219.1	315	338	500	219	380	225

PEH-END JOINTS WITH PE-SHRINK SLEEVES AND PU INSULATION SHELLS (PREINSULATED)

The PEH end joint is available with a shrink sleeve fitted over the joint and packed in plastic foil.

PEH-casing pipe outer mm	PE-sleeve Width mm	Steel pipe outer Ø Standard mm
90	150	26.9
90	150	33.7
110	150	42.4
110	150	48.3
125	150	60.3
140	150	76.1
160	150	88.9
180	150	108.0
200	150	114.3
225	225	139.7
250	225	168.3
280	225	193.7
315	225	219.1

PEH-END JOINTS WITH PE-SHRINK SLEEVE

For foaming

The PEH-end joints is available with shrink sleeve attached over the joint and wrapped in plastic foil. 1 plug and fop are also supplied.

The PE-joint for foaming may be tightness tested i.a.w. EN 448

PEH-casing pipe outer Ø mm	PE-sleeve Width mm
90	150
110	150
125	150
140	150
160	150
180	150
200	150
225	225
250	225
280	225
315	225
355	225
400	225
450	225
500	225
560	225
630	225
710	300
800	300
900	300
1000	300



SYSTEM PEH-SLIDING REDUCTION JOINT
WITH PE-SHRINK SLEEVES

For foaming

System PEH-sliding reduction joints are as standard available with PE-shrink sleeves fitted and wrapped in plastic foil. 2 plugs and 2 fobs are also supplied.

For PEH-sliding reduction joints with one/both ends $\varnothing > 225$ the sleeves consist of PE-shrink sleeves with patch.

PEH-sliding reduction joints with PE-shrink sleeves may be tightness tested i.a.w. EN 448.

Casing dimension	Reduction for casing dimension											
	\varnothing 90	\varnothing 110	\varnothing 125	\varnothing 140	\varnothing 160	\varnothing 180	\varnothing 200	\varnothing 225	\varnothing 250	\varnothing 280	\varnothing 315	\varnothing 355
\varnothing 110	X											
\varnothing 125	X	X										
\varnothing 140	X	X	X									
\varnothing 160	X	X	X	X								
\varnothing 180		X	X	X	X							
\varnothing 200			X	X	X	X						
\varnothing 225				X	X	X	X					
\varnothing 250					X	X	X	X				
\varnothing 280						X	X	X	X			
\varnothing 315							X	X	X	X		
\varnothing 355									X	X	X	
\varnothing 400										X	X	X

Other dimensions: Made to order.



SYSTEM PEH-SHRINK REDUCTION JOINTS WITH PE-SHRINK SLEEVES

For foaming

System PEH-shrink reduction joints are as standard available with PE-shrink sleeves fitted and wrapped in plastic foil. 2 plugs and 2 fobs are also supplied.

For PEH-shrink reduction joints with one/both ends $\varnothing > 225$ the sleeves consist of PE-shrink sleeves with patch.

PEH-shrink reduction joints with PE-shrink sleeves may be tightness tested i.a.w. EN 448.

Casing dimension	Reduction for casing dimension											
	\varnothing 90	\varnothing 110	\varnothing 125	\varnothing 140	\varnothing 160	\varnothing 180	\varnothing 200	\varnothing 225	\varnothing 250	\varnothing 280	\varnothing 315	\varnothing 355
\varnothing 110	X											
\varnothing 125	X	X										
\varnothing 140		X	X									
\varnothing 160			X	X								
\varnothing 180				X	X							
\varnothing 200					X	X						
\varnothing 225						X	X					
\varnothing 250							X	X				
\varnothing 280								X	X			
\varnothing 315									X	X		
\varnothing 355										X	X	
\varnothing 400											X	X

Other dimensions: Made to order.



EWELCON ELECTRO WELDING JOINT (WRAP AROUND)

The electro welding joints are developed to fulfil the requirements for a joint to resist even very severe physical loads.

The electro welding joints are built up from a PEH plate with a factory assembled electro welding element. The welding element consists of a copper wire element embedded in the inner surface of the PEH plate in a regular meander shaped pattern. The copper wire length as well as the spacing of the pattern are determined by the length of the closure and the casing dimension. The pattern of the welding element ensures that by changes in direction (transition between circumferential welding/longitudinal welding) a transition free welding bath appears. The closure is bevelled in such a way that the interface between the closure and casing is smoothed. These factors mean that the minimum stressing of the joint takes place only by axial movements in the ground. The risk that the joint during axial movements in the ground will leak/be torn off is completely eliminated using the electro welding joint.

After tightness testing of the electro welding joint (carried out i.a.w. EN 448) machine foaming is carried out and the closure is sealed with welding plugs. The installation of the electro welding joint must be carried out by trained staff.

PEH-casing pipe mm	Electro welding joint	
	Width mm	Wall thickness mm
250	700	4
280	700	4
315	700	4
355	700	4
400	700	4
450	700	4
500	700	6
560	700	6
630	700	6
710	700	8
800	700	8
900	700	8
1000	700	8

Other widths: Made to order.

SHRINK WELD JOINT (TUBULAR)

The shrink weld joint is a joint with a built in heating element and a heat sensor. The heating element consists of a meander shaped copper wire embedded in a polyethylene band.

The joint is shrunk over the jointing area, and the subsequent welding is performed by means of the computer controlled welding equipment CAW 04.

After the leak test which is performed i.a.w. EN 448 the joint is foamed by means of STAR PIPE's 2-component mixing gun with PUR-foam. After the foaming the foam holes are closed by means of PEH-welding plugs.

The weld joint takes advantage of the excellent properties of the PEH material to shrink and to adapt to the underlying casing and also to ensure a good and homogenous fusion weld. Time and temperature are controlled by the welding equipment. The pressure in the welding is ensured by the thermal extension of the PEH in the limited welding zone of the material.

The joint is for use above as well as under ground.

In tests the shrink weld joint has proved its mechanical strength which can be compared to that of the outer casing. The risk that the joint during axial movements in the ground will leak/be torn off are eliminated using the shrink welding joint.

The shrink weld joint has passed the dynamic box loader test at Dansk Teknologisk Institut.

The shrink weld joint is available as one total unit without loose mastic or welding bands. The packing material is watertight and protects the joints against sun, dirt and water.

The installation of the welding shrink joint must be carried out by trained staff.

PEH-casing pipe Ø mm	Shrink weld joint width mm
90	600
110	600
125	600
140	600
160	600
180	600
200	600
225	600
250	600

Other widths are made to order.



SYSTEM SPLIT STEEL JOINTS

For foaming

Surface coated with polyethylene.

System split steel joints are as standard available packed with the required number of number of hot galvanised steel bolts/disks, anode for additional corrosion protection and 2 plugs and fobs.

Split steel joints may be tightness tested i.a.w. EN 448.

Mastic strips PIB 500, Ø < 200: 3 x 10 mm, Ø > 225: Ø 10 mm are used as sealing material (to be ordered separately).

Supplied bolts: M 10 x 30 mm

Standard delivery length is 470 mm.

PEH casing pipe Ø mm	Width of split steel joint mm	Required mastic strips mm
90	155	1800
110	175	1900
125	190	2000
140	205	2100
160	225	2200
180	245	2300
200	265	2400
225	290	2600
250	315	2800
280	345	2900
315	380	3200



SPLIT STEEL REDUCTION JOINTS

For foaming

Surface coated with polyethylene

Ø < 160: L = 555 mm

Ø > 180: L = 615 mm

All data: as for split steel joints.

Casing dimension	Reduction for casing dimension									
	Ø 90	Ø 110	Ø 125	Ø 140	Ø 160	Ø 180	Ø 200	Ø 225	Ø 250	Ø 280
Ø 110	X									
Ø 125	X	X								
Ø 140		X	X							
Ø 160			X	X						
Ø 180				X	X					
Ø 200					X	X				
Ø 225						X	X			
Ø 250							X	X		
Ø 280								X	X	
Ø 315									X	X



SYSTEM SPLIT STEEL BENDS

For foaming

Surface coated with polyethylene

System split steel bends are as standard available packed with the required number of hot galvanised steel bolts/disks, anode for additional corrosion protection and 2 plugs and fobs.

System split steel bends may be tightness tested i.a.w. EN 448.

Mastic strips PIB 500, Ø < 200: 3 x 10 mm, Ø > 225: Ø 10 mm are used as sealing material (to be ordered separately).

Supplied bolts: M10 x 30 mm

Required accessories for system split steel bends (not sold by STAR PIPE):

Steel pipe: Welding bends

Galvanised service pipe: Galvanised bends/squares

Copper service pipe: Solder bends/solder joints

PEH-casing pipe Ø mm	Required mastic strip length mm	Standard angles			
		90° L mm	45° L mm	15° L mm	7 ½° L mm
90	2000	380	330	270	270
110	2100	400	340	270	270
125	2200	410	340	270	270
140	2400	440	340	275	275
160	2500	465	345	275	275
180	2600	510	350	295	295
200	3000	525	355	295	295
225	3300	570	370	300	300
250	3600	630	405	300	300
280	3900	680	415	305	305
315	4300	740	450	305	305



SYSTEM SPLIT STEEL-T-PIECES

MAIN PIPE PART

For assembly of 45° or 90° branch bend

For foaming

Surface coated with polyethylene

System split steel T-pieces are available packed in a plastic bag with the required number of hot galvanised bolts and disks, anode for additional corrosion protection and plugs and fobs.

Main part pipe is supplied with branch bend (45° or 90°). Branch bend is to be ordered separately (amount required appears in table below).

System split steel T-pieces may be tightness tested i.a.w. EN 448.

Mastic strips PIB 500, Ø < 200: 3 x 10 mm, Ø > 225: Ø 10 mm are used as sealing material (to be ordered separately).

Supplied bolts: M10 x 30 mm

Pipe sockets for welding on main pipe: See separate page.

SYSTEM BRANCH BENDS

Material/surface coating etc.: as for main pipe part.

	45°	90°
Ø 90	x	x
Ø 110	x	x
Ø 125	x	x
Ø 140	x	x
Ø 160	x	x
Ø 180	x	x
Ø 200	x	x

Application:

45°: Traditional 45° jump

90°: Hot tapping/parallel branch/90° jump

Consumption of mastic strip (main pipe + branch bend) in mm:

Ø casing mm		BRANCH PIPE						
		90	110	125	140	160	180	200
MAIN PIPE	90	3000						
	110	3100	3300					
	125	3200	3400	3500				
	140	3300	3500	3600	3700			
	160	3500	3600	3700	3800	3900		
	180	3600	3700	3800	3900	4000	4100	
	200	3800	3900	4000	4100	4200	4300	4400
	225	3900	4000	4100	4200	4300	4400	4500
	250	4100	4200	4300	4400	4500	4600	4700
	280	4300	4400	4500	4600	4700	4800	4900
	315	4500	4600	4700	4800	4900	5000	5100

SPLIT STEEL T-PIECES

With jump turned downwards: Made to order

For foaming

Surface coated with polyethylene.

SPLIT STEEL T-PIECES

Without jump: Made to order

For foaming

Surface coated with polyethylene.



PIPE SOCKET

For split steel T-pieces

Pipe sockets are welded on the service pipe of the main pipe before the assembly of split steel T-pieces.

The dimension of the service pipes (branch pipe and main pipe) and insulation thickness must be quoted when pipe sockets are ordered.

Pipe sockets for other combinations and insulation thicknesses: Made to order.

Pipe sockets for split steel T-pieces are available with 45° and 90° jumps.



HOT TAPPING SPIGOTS

To be welded on main pipe before drilling. Hot tapping spigots are available including plug in following measures:

Hot tapping		External thread	Plug
DN	Designation	Pipe thread	Pipe thread
20	27	1"	1/2"
25	34	1 1/4"	3/4"
32	42	1 1/2"	1"

Special drills in larger dimensions: Made to order.



HOT TAPPING TOOLS

For hot tapping through welded on hot tapping spigot.

Complete hot tapping tools are available packed with following parts:

- Gasket body
- Gasket
- Guide bush
- Valve
- Drill
- Plug rod



END-CAPS

Type DHEC (standard)

To be used wherever there is a risk of water penetration into the PU-installation, e.g.:

1. Transition to uninsulated valves in sump pits
2. Connection to pipes in concrete channels
3. Domestic inlead bends where the casing pipe becomes flush with the floor

Ser-vice pipe Ø mm	Casing pipe Ø mm																				
	63 64	75 93	90 93	110	125 128	140	160 183	180 186	200	225	250	266	280	297	315	326	334	355	400	450	500
27		2100	2100	2200	2200	2300															
34			2100	2200	2200	2300	2340														
42				2200	2200	2300	2340														
48				2300	2300	2300	2340														
60					2400	2400	2500	2500													
76						2400	2600	2500													
89							2600	2500	2600												
114								2600	2600	2630											
139									2630	2630	2700	2700	2700								
168											2700	2700	2700	2800	2800						
219															2800	2800	2800	2900	2900		
273																		2900	2900	3000	
324																			3000	3000	3000
355																				3000	3000

End caps for double pipes and repair made to order.



WALL ENTRY LABYRINTHS
(LABYRINTH SEALING GLANDS)

Where STAR PIPE are to be passed through masonry, walls, plinths, concrete units and the like a secure seal can be achieved against penetrating water by means of a wall entry labyrinth.

Wall entry labyrinths are made of a particularly durable styrene butadiene rubber which in addition to providing a fine seal also permits small expansive movements in the wall entry labyrinth. One or more wall entry labyrinths can be used per pipe as required.

PEH-casing pipe Ø mm	Wall entry			
	Ø inner mm	Ø outer mm	Wall thickness mm	Width mm
61	60	95	18	50
75	71	107	18	50
90	88	124	18	50
110	106	142	18	50
125	122	158	18	50
140	137	173	18	50
160	155	191	18	50
180	173	209	18	50
200	193	229	18	50
225	219	255	18	50
250	245	181	18	50
280	273	309	18	50
315	306	342	18	50
355	340	376	18	50
400	382	418	18	50
450	430	466	18	50
500	475	511	18	50
560	535	571	18	50
630	600	636	18	50
710	680	716	18	50
800	770	806	18	50
900	860	896	18	50
1000	960	996	18	50



EXPANSION CUSHIONS

Expansion cushions are made of polyether granulate, compressed to appr. 100 kg/m³.

Where the bends and branches are subject to the strain of the axial movements in the pipework these are covered with expansion cushions to absorb the expansion.

The size of the expansion cushions depends on the dimension of the casing and can be read from the following table.

Where dimensions are graded or where more than 30 mm expansion is required several expansion cushions are used either by way of extension or one on tope of the other, as appropriate.

Size	Length mm	Thickness mm	Width mm	For casing Ø mm
1	1000	40	400	90-140
2	1000	40	730	160-250
3	1000	40	915	280-450



MASTIC TAPE PIB 500

Seelastrip PIB 500: Strongly adhesive plastic tightening material for split steel fittings.

Consumption:

See under:

- Split steel joints
- Split steel reduction joints
- Split steel bends
- Split steel T-pieces
- Split steel hot tapping T-pieces



MARKING TAPE

(Warning tape)

It is recommended to place marking tape 100-200 mm above preinsulated STAR PIPE.

Marking tape should be place above both flow and return



TIGHTNESS TESTING EQUIPMENT

For tightness testing of joints

All STAR PIPE's joints with 2-3 plugs can be pressure tested for tightness acc. to EN 448.

Application:

1. Install the joint acc. to the assembly instruction
2. Fit the plug into one foam hole on the joint
3. Install pressure gauge in the other foaming hole on the joint
4. Actuate foot pump until pressure gauge displays 0.2 bars
5. Spray all edges with indicator fluid to detect leakage
6. If no seepage of air is detected the joint can be foamed

Complete set of pressure testing equipment:

1. Steel stopper
2. Gasket
3. Disk
4. Fly nut
5. Flush bushing 1/8"
6. T-piece, 1/4" PT
7. Collar nipple 1/4" PT
8. Valve
9. Snap-on coupling
10. Pressure gauge
11. Hose
12. Foot pump
13. Tightening plug

Supplied packed in fitter's box, incl. indicator fluid