CONTENTS

POLYFUSE® by Polyware™

02 **WHY POLYFUSE ?**

03 **PRODUCT SPECIFICATION & STANDARD REFERENCE**

04 **INDUSTRY WATER DISTRIBUTION SYSTEM CONNECTION**
Butt Fusion & Electro Fusion System

ELECTRO FUSION FITTINGS

05 . Electro Fusion Reducing Coupler . Electro Fusion Straight Coupler . Electro Fusion Elbow 90°

06 . Electro Fusion Equal Tee . Electro Fusion Reducing Tee . Electro Fusion End Cap

07 . Electro Fusion Transition PE/Brass Adaptor/ Female / Internal Thread
. Electro Fusion Transition PE/Brass Adaptor / Male / External Thread
. Electro Fusion Transition PE/Brass Female Elbow 90° / Internal Thread

08 . Electro Fusion Transition PE/Brass Male Elbow 90° / External Thread
. Electro Fusion Tapping Saddle

SPIGOT FITTINGS

09 . Spigot Tee . Spigot Reducing Tee

10 . Spigot Elbow 90° . Spigot Elbow 45°

PE FABRICATED FITTINGS

11 . 90° Bend . 60° & 45° Bend . 30° & 22.5° Bend . 90° Tee . 60° Branch Tee . Cross Tee

12 . Reducing Tee . All Flanged Reducing Tees. Flanged Branch Reducing Tee

13 . All Flanged Tees . Flanged Branch Tee
. Pupped Stub Flanged Assembly with Backing
. All Flanged Elbow 45° . All Flanged Elbow 90°
. Single Flanged Elbow 90°

14 **SEAMLESS LONG RADIUS HDPE SWEEP BEND**

SPIGOT FITTINGS

15 . PE/Steel Insert Stub End (Long) Flange Kit

16 . PE/Steel Insert Stub End (Short) Flange Kit

17 . Mild Steel Stub End (Long) Flange Kit

18 . Mild Steel Stub End (Short) Flange Kit

19 . PE Stub End (Long Collar) . PE SRW PE Stub End (Long Collar)

20 . PE Stub End (Short Collar) . PE SRW PE Stub End (Short Collar)

21 . PE End Cap . PE Flat Cap

22 . PE Reducer

23 . PE Puddle Flange (Pull-Resistant)

24 . PE Single Injection Moulded Flanges . Rubber Gasket

25 . Mild Steel Flange [Nominal PRESSURE PN10]

26 . Mild Steel Flange [Nominal PRESSURE PN16]

27 **HÜRNER EF CONTROL BOX & TOOLING**
. HÜRNER Electro Fusion Control Box (UNIVERSAL)
. HÜRNER Pipe Aligner
. HÜRNER Pipe Scraper
. HÜRNER Scraper Saddle

28 **HÜRNER BUTT FUSION MACHINE**
. HÜRNER CNC Butt Welding Machine
. HÜRNER Socket Welding

29 **INSTALLATION METHOD FOR ELECTRO FUSION FITTINGS**

30-32 **NOTE**

WHY CHOOSE PE PIPE LINE SYSTEM WITH POLYFUSE?

. Hygienic + improve quality of life
. Able to sustain high pressure (up to PN16)
. Low maintenance cost
. Reduce handling cost
. Convenience in installation preferences
. Easy mix & match with various preferences
. Complied to EN 12201 spec required / Tailor made facility is available



INDUSTRY

. Building
. Infrastructure
. Agriculture
. Mining
. Cable ducting
. Aquatic

APPLICATION

. Water distribution system
. Drainage System
. Sewerage pipeline system
. Gas distribution system

INSTALLATION METHOD

. Butt Fusion
. Electro Fusion
. Socket Fusion







PRODUCT SPECIFICATION & STANDARD REFERENCE

PRODUCT DESCRIPTION	SIZE (MM)	MAXIMUM OPERATING PRESSURE (PN) AT TEMPERATURE 20°C	REFERENCE STANDARD
PE Single Injection Moulded Spigot Fittings	20mm - 500mm	6 - 16	DIN16963 / EN12201
Electro Fusion Fittings	20mm - 355mm	16 (Water), 10 (Gas)	EN12201 / EN1555
PE Single Moulded Flange	63mm - 280mm	16	ISO 9624

[PIPE SUITABILITY] Polyethylene Pipe PE 80 & PE 100 , SDR 21,17,13.6 & 11 (ISO 4427 & MS 1058)

APPROVALS

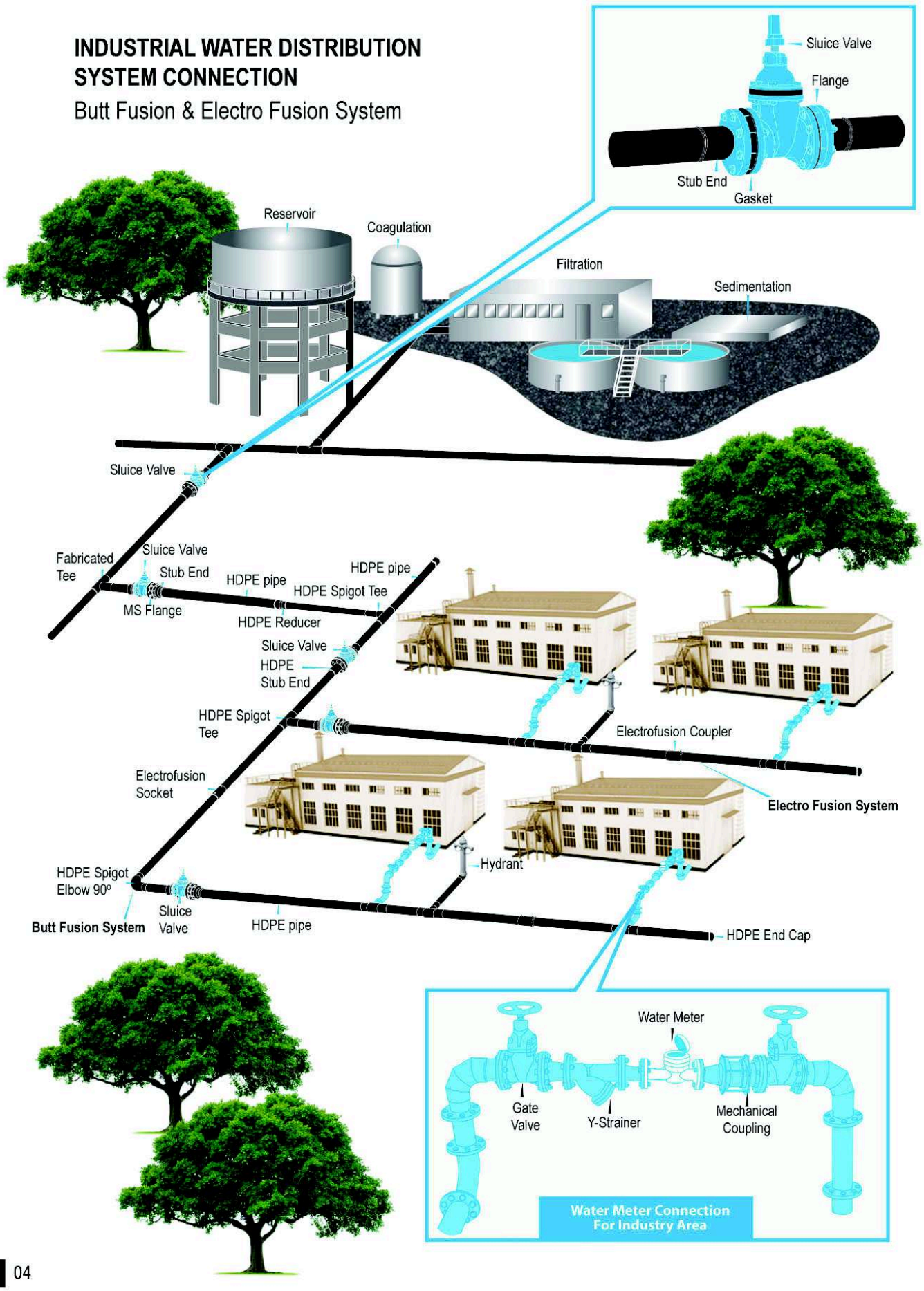
Polyfuse PE Single Injection Moulded Fittings in accordance to BS EN 12201 certification no. PP015508 since 1998 is approved and recognized by:

* SIRIM QAS International Sdn. Bhd. in Malaysia.
* Suruhanjaya Perkhidmatan Air Negara (SPAN) in Malaysia.



INDUSTRIAL WATER DISTRIBUTION SYSTEM CONNECTION

Butt Fusion & Electro Fusion System



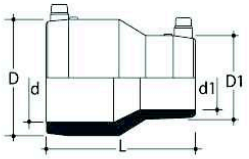


ELECTRO FUSION REDUCING COUPLER

Material
PE100

Colour
Black

Max. operating PN at temperature 20°C,16 (water), 10 (gas)



d x d1 (mm) (mm)	D (mm)	D1 (mm)	L (mm)
32 x 25	47	40	90
63 x 50	79	65	118
90 x 63	109	79	145
110 x 63	131	79	176
110 x 90	131	109	167
160 x 110	181	131	209

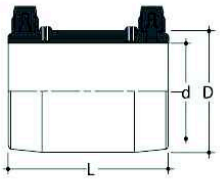


ELECTRO FUSION STRAIGHT COUPLER

Material
PE100

Colour
Black

Max. operating PN at temperature 20°C, 16 (water), 10 (gas)



d (mm)	D (mm)	L (mm)
20	70	32
25	70	40
32	77	47
50	94	68
63	113	81
90	160	116
110	155	141
125	160	159
160	203	170
180	230	180
200	254	195
225	279	210
250	312	220
280	348	260
315	392	285
355	423	283

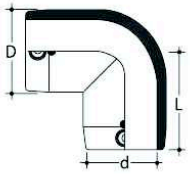


ELECTRO FUSION ELBOW 90°

Material
PE100

Colour
Black

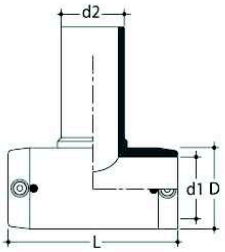
Max. operating PN at temperature 20°C, 16 (water), 10 (gas)



d (mm)	D (mm)	L (mm)
63	81	100
90	116	122
110	141	145
125	159	156
160	203	182
180	230	198
200	257	215
250	316	261

Note: Pin Adaptor : 4.0mm





ELECTRO FUSION EQUAL TEE

Material
PE100

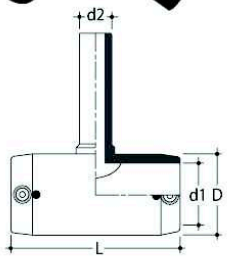
Colour
Black

Max. operating PN at temperature 20°C,16 (water), 10 (gas)

d1 x d2 (mm) (mm)	D (mm)	L (mm)
63 x 63	81	178
90 x 90	116	226
110 x 110	141	255
125 x 125	159	270
160 x 160	203	317
180 x 180	230	341

Note: Pin Adaptor : 4.0mm





ELECTRO FUSION REDUCING TEE

Material
PE100

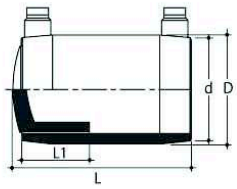
Colour
Black

Max. operating PN at temperature 20°C, 16 (water), 10 (gas)

d1 x d2 (mm) (mm)	D (mm)	L (mm)
63 x 32	81	156
90 x 63	116	200
110 x 63	141	220
110 x 90	141	220
125 x 90	159	245
160 x 110	203	277
180 x 125	230	310

Note: Pin Adaptor : 4.0mm





ELECTRO FUSION END CAP

Material
PE100

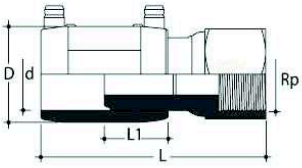
Colour
Black

Max. operating PN at temperature 20°C, 16 (water), 10 (gas)

d (mm)	D (mm)	L (mm)
32	42	80
50	68	105
63	81	128
90	111	151
110	133	165
160	186	193

Note: Pin Adaptor : 4.0mm





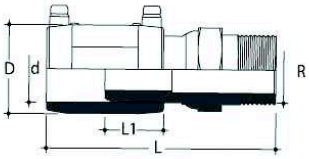
ELECTRO FUSION TRANSITION PE/BRASS ADAPTOR FEMALE / INTERNAL THREAD

Material
PE100

Note:
Pin Adaptor : 4.0mm

d x Rp (mm) (inch)	D (mm)	L (mm)
20 x 1/2	32	97
25 x 3/4	40	
32 x 1	44	117
50 x 1 1/2	68	
63 x 2	79	161





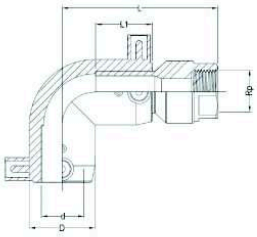
ELECTRO FUSION TRANSITION PE/BRASS ADAPTOR MALE / EXTERNAL THREAD

Material
PE100

Note:
Pin Adaptor : 4.0mm

d x Rp (mm) (inch)	D (mm)	L (mm)
20 x 1/2	32	103
25 x 3/4	40	
32 x 1	44	122
50 x 1 1/2	68	
63 x 2	79	171





ELECTRO FUSION TRANSITION PE/BRASS FEMALE ELBOW 90° / INTERNAL THREAD

Material
PE100

Note:
Pin Adaptor : 4.0mm

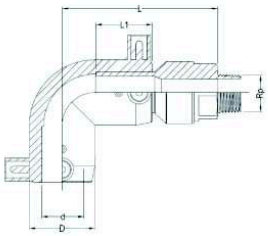
d x Rp (mm) (inch)	D (mm)	L (mm)
25 x 3/4	40	83
32 x 1	47	111
50 x 1 1/2	68	134
63 x 2	81	162



ELECTRO FUSION TRANSITION PE/BRASS MALE ELBOW 90° / EXTERNAL THREAD

Material
PE100

Note:
Pin Adaptor : 4.0mm



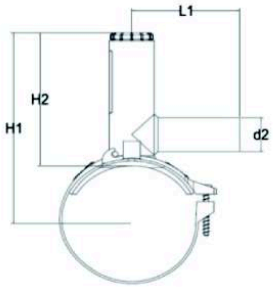
d x Rp (mm) (inch)	D (mm)	L (mm)
25 x 3/4	40	107
32 x 1	47	122
50 x 1 1/2	68	150
63 x 2	81	180

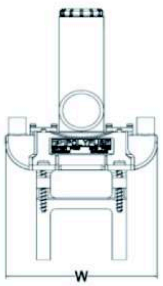


ELECTRO FUSION TAPPING SADDLE

Material
PE100

Note:
Pin Adaptor : 4.0mm





SIZE (mm)	W (mm)	d2 (mm)	L1 (mm)	H1 (mm)	H2 (mm)
63 x 20	130	20	93	157.5	126
63 x 25	130	25	93	157.5	126
63 x 32	130	32	93	157.5	126
75 x 20	130	20	93	163.5	126
75 x 25	130	25	93	163.5	126
75 x 32	130	32	93	163.5	126
90 x 20	130	20	93	171	126
90 x 25	130	25	93	171	126
90 x 32	130	32	93	171	126
110 x 20	130	20	93	181	126
110 x 25	130	25	93	181	126
110 x 32	130	32	93	181	126
125 x 20	130	20	93	188.5	126
125 x 25	130	25	93	188.5	126
125 x 32	130	32	93	188.5	126
160 x 20	130	20	93	206	126
160 x 25	130	25	93	206	126
160 x 32	130	32	93	206	126
180 x 20	130	20	93	216	126
180 x 25	130	25	93	216	126
180 x 32	130	32	93	216	126
200 x 20	130	20	93	226	126
200 x 25	130	25	93	226	126
200 x 32	130	32	93	226	126
225 x 20	130	20	93	238.5	126
225 x 25	130	25	93	238.5	126
225 x 32	130	32	93	238.5	126
250 x 20	130	20	93	251	126
250 x 25	130	25	93	251	126
250 x 32	130	32	93	251	126

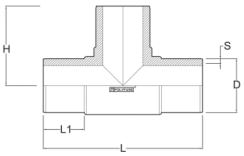


SPIGOT TEE

Material
PE 80 / 100
Colour
Black

Wall thickness
According to
EN 12201
ISO 4427
MS 1058

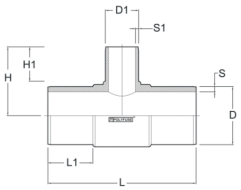
Remarks
Other SDR-PN on request



Size (DN)	D (mm)	L (mm)	H (mm)	L1 (mm)	S		
					SDR 17	SDR 13.6	SDR 11
50	50	183	90	56	3.0	3.7	4.6
63	63	250	125	71	3.8	4.7	5.8
75	75	253	125	71	4.5	5.5	6.8
90	90	296	143	85	5.4	6.6	8.2
110	110	344	153	94	6.6	7.1	10.0
125	125	388	151	105	7.4	9.2	11.4
160	160	444	222	107	9.5	11.8	14.6
180	180	456	228	103	10.7	13.3	16.4
200	200	460	230	112	11.9	14.7	18.2
225	225	500	250	120	13.4	16.6	20.5
250	250	550	275	130	14.8	18.4	22.7
280	280	594	297	137	16.6	20.6	25.4
315	315	670	335	158	18.7	23.2	28.6



SPIGOT REDUCING TEE



Material
PE 80 / 100
Colour
Black

Wall thickness
According to
EN 12201
ISO 4427
MS 1058

Remarks
Other SDR-PN on request

Size (DN)	D (mm)	L1 (mm)	L (mm)	D1 (mm)	H1 (mm)	H (mm)	S1			S2		
							SDR 17	SDR 13.6	SDR 11	SDR 17	SDR 13.6	SDR 11
110 x 63	110	85	280	63	65	130	6.6	7.1	10.0	3.8	4.7	5.8
110 x 75	110	85	280	75	82	152	6.6	7.1	10.0	4.5	5.5	6.8
110 x 90	110	85	280	90	82	152	6.6	7.1	10.0	5.4	6.6	8.2
160 x 63	160	107	330	63	82	178	9.5	11.8	14.6	3.8	4.7	5.8
160 x 90	160	107	330	90	82	178	9.5	11.8	14.6	5.4	6.6	8.2
160 x 110	160	107	330	110	88	178	9.5	11.8	14.6	6.6	7.1	10.0
180 x 63	180	103	300	63	65	168	10.7	13.3	16.4	5.4	6.6	8.2
180 x 90	180	103	330	90	82	184	10.7	13.3	16.4	5.4	6.6	8.2
180 x 110	180	103	370	110	88	213	10.7	13.3	16.4	6.6	7.1	10.0
180 x 125	180	103	365	125	105	192	10.7	13.3	16.4	7.4	9.2	11.4
180 x 160	180	103	402	160	107	217	10.7	13.3	16.4	9.5	11.8	14.6
200 x 50	200	112	314	50	56	180	11.9	14.7	18.2	3.0	3.7	4.6
220 x 63	200	112	323	63	65	179	11.9	14.7	18.2	3.8	4.7	5.8
200 x 75	200	112	357	75	71	190	11.9	14.7	18.2	4.5	5.5	6.8
200 x 90	200	112	350	90	85	195	11.9	14.7	18.2	5.4	6.6	8.2
200 x 110	200	112	370	110	94	199	11.9	14.7	18.2	6.6	7.1	10.0
200 x 125	200	112	370	125	105	215	11.9	14.7	18.2	7.4	9.2	11.4
200 x 160	200	112	420	160	107	215	11.9	14.7	18.2	9.5	11.8	14.6
200 x 180	200	112	442	180	103	223	11.9	14.7	18.2	10.7	13.3	16.4
225 x 90	225	120	413	90	85	248	13.4	16.6	20.5	5.4	6.6	8.2
225 x 110	225	120	373	110	94	223	13.4	16.6	20.5	6.6	7.1	10.0
225 x 160	225	120	423	160	107	240	13.4	16.6	20.5	9.5	11.8	14.6
225 x 200	225	120	465	200	112	252	13.4	16.6	20.5	11.9	14.7	18.2
250 x 63	250	130	365	63	65	208	14.8	18.4	22.7	3.8	4.7	5.8
250 x 90	250	130	393	90	85	224	14.8	18.4	22.7	5.4	6.6	8.2
250 x 110	250	130	405	110	94	223	14.8	18.4	22.7	6.6	7.1	10.0
250 x 125	250	130	425	125	105	230	14.8	18.4	22.7	7.4	9.2	11.4
250 x 160	250	130	460	160	107	241	14.8	18.4	22.7	9.5	11.8	14.6
250 x 180	250	130	480	180	103	250	14.8	18.4	22.7	10.7	13.3	16.4
250 x 200	250	130	500	200	112	255	14.8	18.4	22.7	13.4	16.6	20.5
250 x 225	250	130	505	225	120	276	14.8	18.4	22.7	13.4	16.6	20.5
280 x 90	280	137	568	90	85	255	16.6	20.6	25.4	5.4	6.6	8.2
280 x 110	280	137	423	110	94	236	16.6	20.6	25.4	6.6	7.1	10.0
280 x 160	280	137	474	160	107	254	16.6	20.6	25.4	9.5	11.8	14.6
280 x 225	280	137	539	225	120	276	16.6	20.6	25.4	16.6	20.6	25.4
315 x 90	315	158	445	90	85	262	18.7	23.2	28.6	5.4	6.6	8.2
315 x 110	315	158	435	110	94	266	18.7	23.2	28.6	6.6	7.1	10.0
315 x 125	315	158	470	125	105	265	18.7	23.2	28.6	7.4	9.2	11.4
315 x 160	315	158	484	160	107	283	18.7	23.2	28.6	9.5	11.8	14.6
315 x 180	315	158	530	180	109	285	18.7	23.2	28.6	10.7	13.3	16.4
315 x 200	315	158	560	200	112	300	18.7	23.2	28.6	11.9	14.7	18.2
315 x 225	315	158	555	225	120	305	18.7	23.2	28.6	16.6	20.6	25.4
315 x 250	315	158	605	250	130	313	18.7	23.2	28.6	14.8	18.4	22.7

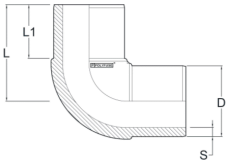


SPIGOT ELBOW 90°

Material
PE 80 / 100
Colour
Black

Wall thickness
According to
EN 12201
ISO 4427
MS 1058

Remarks
Other SDR-PN on request



Size (DN)	D (mm)	L (mm)	L1 (mm)	S		
				SDR 17	SDR 13.6	SDR 11
32	32	73	45	1.9	2.4	2.9
50	50	90	56	3.0	3.7	4.6
63	63	125	71	3.8	4.7	5.8
75	75	125	71	4.5	5.5	6.8
90	90	148	81	5.4	6.6	8.2
110	110	172	94	6.6	7.1	10.0
125	125	190	105	7.4	9.2	11.4
160	160	222	107	9.5	11.8	14.6
180	180	228	103	10.7	13.3	16.4
200	200	230	112	11.9	14.7	18.2
225	225	250	120	13.4	16.6	20.5
250	250	275	130	14.8	18.4	22.7
280	280	308	150	16.6	20.6	25.4
315	315	330	160	18.7	23.2	28.6

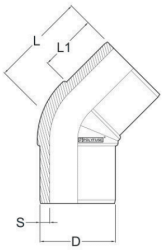


SPIGOT ELBOW 45°

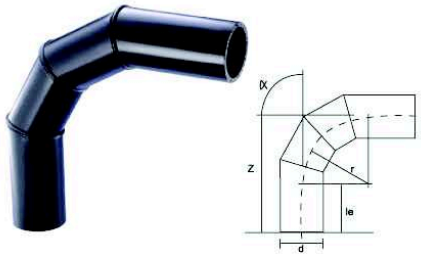
Material
PE 80 / 100
Colour
Black

Wall thickness
According to
EN 12201
ISO 4427
MS 1058

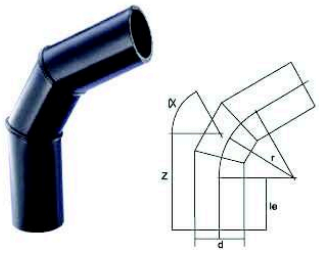
Remarks
Other SDR-PN on request



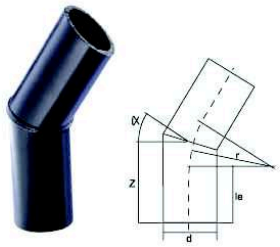
Size (DN)	D (mm)	L (mm)	L1 (mm)	S		
				SDR 17	SDR 13.6	SDR 11
40	40	70	40	2.4	3.0	3.7
50	50	80	45	3.0	3.7	4.6
63	63	125	71	3.8	4.7	5.8
75	75	125	71	4.5	5.5	6.8
90	90	148	81	5.4	6.6	8.2
110	110	172	94	6.6	7.1	10.0
125	125	190	105	7.4	9.2	11.4
160	160	222	107	9.5	11.8	14.6
180	180	228	103	10.7	13.3	16.4
200	200	230	112	11.9	14.7	18.2
225	225	250	120	13.4	16.6	20.5
250	250	275	130	14.8	18.4	22.7
280	280	308	150	16.6	20.6	25.4
315	315	330	160	18.7	23.2	28.6



90° BEND



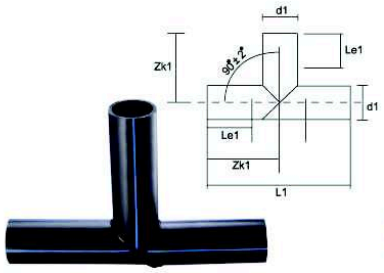
60° & 45° BEND



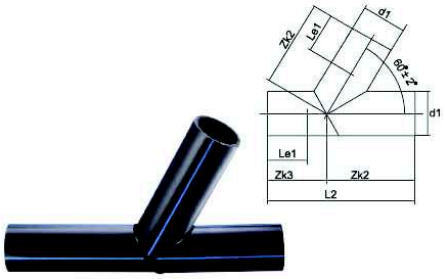
30° & 22.5° BEND

d (mm)	le1 min. (mm)	r (mm)	α ± 2° 90° Z min. (mm)	60° Z min. (mm)	45° Z min. (mm)	30° Z min. (mm)	22.5° Z min. (mm)
110	150	165	315	245	218	194	194
125		188	338	258	228	200	200
160		240	390	288	249	214	214
180		270	420	305	262	222	222
200		300	450	323	274	230	230
225		338	488	345	290	241	241
250	250	375	625	466	412	350	350
280		420	670	492	424	362	362
315	300	473	773	576	498	428	428
355		533	833	608	520	443	443
400		600	900	646	548	461	461
450		675	975	689	580	481	481
500	350	750	1100	783	665	551	551

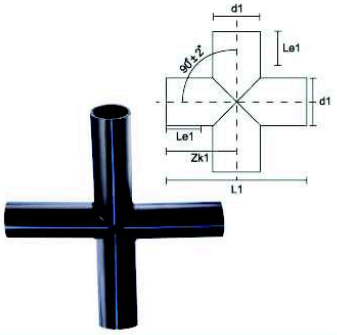
* 1.5d 1. Other dimension on request.



90° TEE



60° & BRANCH TEE

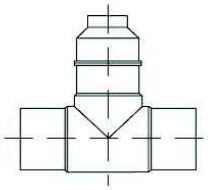


CROSS TEE

d (mm)	Le1 min. (mm)	90° TEE & CROSS TEE L1 min. (mm)	ZK1 min. (mm)	90° BRANCH TEE L2 min. (mm)	ZK2 min. (mm)	Zk3 min. (mm)
110	150	410	205	500	325	175
125		430	215	545	355	190
160		460	230	642	412	230
180		480	240	700	450	250
200		500	250	759	487	272
225		530	265	830	530	300
250	250	750	375	905	580	325
280		780	390	995	630	365
315	300	920	460	1090	690	400
355		960	480	1155	730	425
400		1000	500	1250	800	450
450		1050	525	1325	850	475
500	350	1200	600	1400	900	500

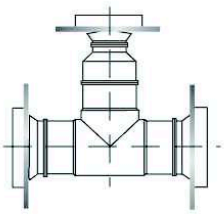
1. Other dimension on request.

PE FABRICATED FITTINGS Material PE 80 / 100



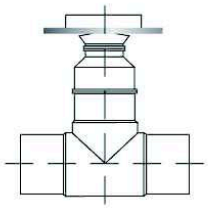
PERT
REDUCING TEE

size (mm)	size (mm)
63 x 50	160 x 50
90 x 50	160 x 63
90 x 63	160 x 75
90 x 75	160 x 90
110 x 50	160 x 110
110 x 63	160 x 125
110 x 75	180 x 50
110 x 90	180 x 63
125 x 50	180 x 75
125 x 63	180 x 90
125 x 75	180 x 110
125 x 90	180 x 125
125 x 110	180 x 160



AFRT ALL FLANGED
REDUCING TEES

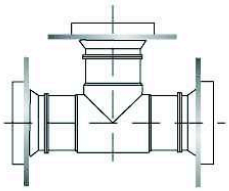
size (mm)	size (mm)
90 x 50	160 x 63
90 x 75	160 x 75
110 x 50	160 x 90
110 x 63	160 x 110
110 x 75	160 x 125
110 x 90	180 x 50
125 x 50	180 x 63
125 x 63	180 x 75
125 x 75	180 x 90
125 x 90	180 x 110
125 x 110	180 x 125
160 x 50	180 x 160



FBRT FLANGED BRANCH
REDUCING TEE

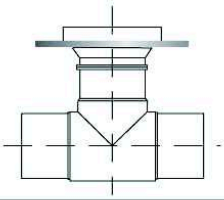
size (mm)	size (mm)
90 x 50	160 x 63
90 x 63	160 x 75
90 x 75	160 x 90
110 x 50	160 x 110
110 x 63	160 x 125
110 x 75	180 x 50
110 x 90	180 x 63
125 x 50	180 x 75
125 x 63	180 x 90
125 x 75	180 x 110
125 x 90	180 x 125
125 x 110	180 x 160
160 x 50	

PE FABRICATED FITTINGS Material PE 80 / 100



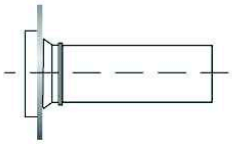
AFT
ALL FLANGED TEES

size (mm)	size (mm)
63	125
90	160
110	180



FBT
FLANGED BRANCH TEE

size (mm)	size (mm)
63	125
90	160
110	180



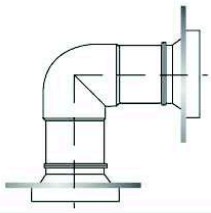
PSF PUPPED STUB FLANGED
ASSEMBLY WITH BACKING RING

size (mm)	size (mm)
90 x 90	250 x 250
110 x 110	280 x 280
125 x 125	315 x 315
160 x 160	345 x 345
180 x 180	355 x 355
200 x 200	400 x 400
225 x 225	450 x 450



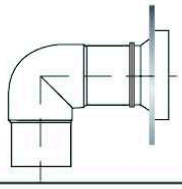
AFE 45°
ALL FLANGED ELBOW 45°

size (mm)	size (mm)
63	125
90	160
110	180



AFE 90°
ALL FLANGED ELBOW 90°

size (mm)	size (mm)
63	125
90	160
110	180

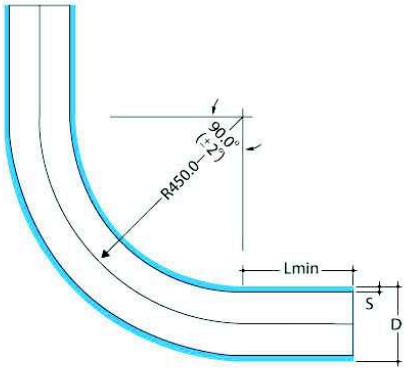


SFE 90°
SINGLE FLANGED ELBOW 90°

size (mm)	size (mm)
63	125
90	160
110	180

SEAMLESS LONG RADIUS HDPE SWEEP BEND





GENERAL SPECIFICATIONS

- Manufactured in one continuos piece from MS1058: Part 2 pressure pipe.
- Outside diameter of the spigot ends at least shall meet for a length of one diameter from the end (Lmin).
- Spigot lengths suitable for butt welding or electro fusion.

- No Mitred Fusion Joints
- Seamless Smooth Interior
- Virtually no flow restriction
- Fully pressure rated

- Wearability increased in slurry lines
- Can manufacture any angles up to 180. Other sizes upon request.
- Suitable for butt-welding, electro fusion or flanging

SWEEP BENDS MANUFACTURED TO:

- Center line radius of curvature generally is R450mm. Other radiusupon on request.
- Angular tolerance of ± 2% without revision.
- Linear tolerance of ± 20mm.

FREEDOM FROM DEFECTS

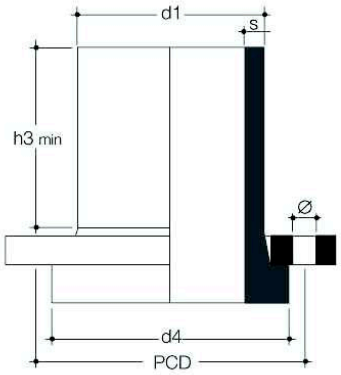
- The manufacturing process shall not create any grooves, blister, or other visual defects on the outside surface of the bend.
- There shall be no voids or inclusions in the fittings body and the inside surface shall be smooth, clean and free from grooves or blisters.

D (mm)	R (mm)	L min
110	450	150
125	450	150
160	450	180
180	450	180

- All fittings material conform to MS1058 : Part 2 and certified by **SIRIM**.
- Other sizes, nominal pressure and radius upon request.
- All dimensions in millimeter(mm), unless specifically stated.

PE STEEL INSERT STUB END (LONG) FLANGE KIT

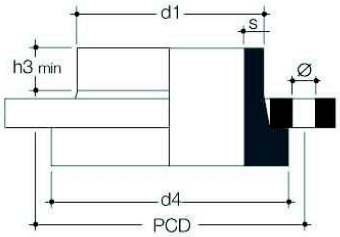




d1 (mm)	d4 min (mm)	PCD (mm)	h3 min (mm)	Bolt Hole Diameter Ø	Number of bolt hole (mm)	S			
						SDR 17	SDR 13.6	SDR 11	SDR 9
63	102	125	63	18	4	3.8	4.7	5.8	7.1
75	122	145	70	18	4	4.5	5.6	6.8	8.4
90	138	160	79	18	8	5.4	6.7	8.2	10.1
110	158	180	82	18	8	6.6	8.1	10.0	12.3
125	158	180	87	18	8	7.4	9.2	11.4	14.0
160	212	240	98	22	8	9.5	11.8	14.6	17.9
180	212	240	105	22	8	10.7	13.3	16.4	20.1
200	268	295	112	22	12	11.9	14.7	18.2	22.4
225	268	295	120	22	12	13.4	16.6	20.5	25.2
250	320	355	129	26	12	14.8	18.4	22.7	27.9
280	320	355	139	26	12	16.6	20.6	25.4	31.3

PE STEEL INSERT STUB END (SHORT) FLANGE KIT

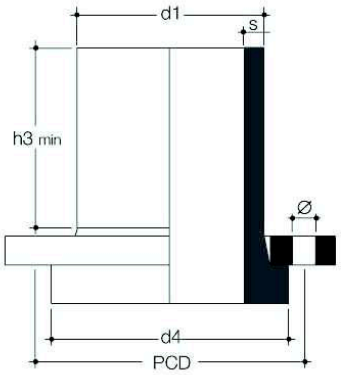




d1 (mm)	d4 min (mm)	PCD (mm)	h3 min (mm)	Bolt Hole Diameter Ø	Number of bolt hole	S			
						SDR 17	SDR 13.6	SDR 11	SDR 9
63	102	125	25	18	4	3.8	4.7	5.8	7.1
75	122	145	25	18	4	4.5	5.6	6.8	8.4
90	138	160	25	18	8	5.4	6.7	8.2	10.1
110	158	180	25	18	8	6.6	8.1	10.0	12.3
125	158	180	25	18	8	7.4	9.2	11.4	14.0
160	212	240	25	22	8	9.5	11.8	14.6	17.9
180	212	240	25	22	8	10.7	13.3	16.4	20.1
200	268	295	25	22	12	11.9	14.7	18.2	22.4
225	268	295	25	22	12	13.4	16.6	20.5	25.2
250	320	355	25	26	12	14.8	18.4	22.7	27.9
280	320	355	25	26	12	16.6	20.6	25.4	31.3

MILD STEEL STUB END (LONG) FLANGE KIT

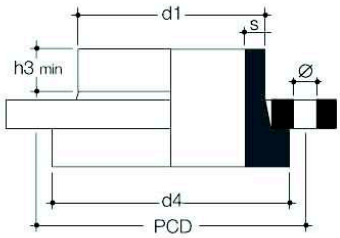




d1 (mm)	d4 min (mm)	PCD (mm)	h3 min (mm)	Bolt Hole Diameter Ø	Number of bolt hole	S			
						SDR 17	SDR 13.6	SDR 11	SDR 9
63	102	125	63	18	4	3.8	4.7	5.8	7.1
75	122	145	70	18	4	4.5	5.6	6.8	8.4
90	138	160	79	18	8	5.4	6.7	8.2	10.1
110	158	180	82	18	8	6.6	8.1	10.0	12.3
125	158	180	87	18	8	7.4	9.2	11.4	14.0
160	212	240	98	22	8	9.5	11.8	14.6	17.9
180	212	240	105	22	8	10.7	13.3	16.4	20.1
200	268	295	112	22	12	11.9	14.7	18.2	22.4
225	268	295	120	22	12	13.4	16.6	20.5	25.2
250	320	355	129	26	12	14.8	18.4	22.7	27.9
280	320	355	139	26	12	16.6	20.6	25.4	31.3

MILD STEEL STUB END (SHORT) FLANGE KIT

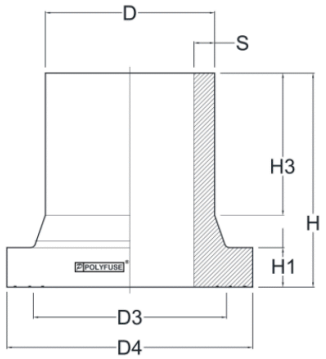




d1 (mm)	d4 min (mm)	PCD (mm)	h3 min (mm)	Bolt Hole Diameter Ø	Number of bolt hole	S			
						SDR 17	SDR 13.6	SDR 11	SDR 9
63	102	125	25	18	4	3.8	4.7	5.8	7.1
75	122	145	25	18	4	4.5	5.6	6.8	8.4
90	138	160	25	18	8	5.4	6.7	8.2	10.1
110	158	180	25	18	8	6.6	8.1	10.0	12.3
125	158	180	25	18	8	7.4	9.2	11.4	14.0
160	212	240	25	22	8	9.5	11.8	14.6	17.9
180	212	240	25	22	8	10.7	13.3	16.4	20.1
200	268	295	25	22	12	11.9	14.7	18.2	22.4
225	268	295	25	22	12	13.4	16.6	20.5	25.2
250	320	355	25	26	12	14.8	18.4	22.7	27.9
280	320	355	25	26	12	16.6	20.6	25.4	31.3

PE STUB END (LONG COLLAR)

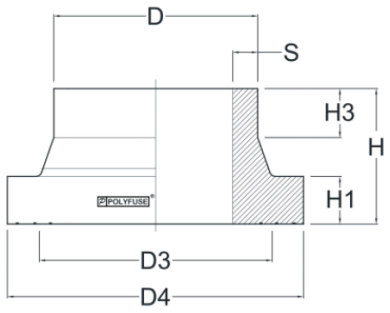




Size (DN)	D (mm)	D3 (mm)	D4 (mm)	H1 (mm)	H3 (mm)	H (mm)	S			
							SDR 17	SDR 13.6	SDR 11	SDR 9
20	20	27	45	7	65	85	-	-	2.0	2.3
25	25	33	58	9	63	85	-	-	2.3	2.8
32	32	40	68	10	62	85	1.9	2.4	2.9	3.6
40	40	50	78	11	60	85	2.4	3.0	3.7	4.5
50	50	61	88	12	93	120	3.0	3.7	4.6	5.6
63	63	75	102	16	90	120	3.8	4.7	5.8	7.1
75	75	89	122	16	90	125	4.5	5.5	6.8	8.4
90	90	105	138	17	103	140	5.4	6.6	8.2	10.1
110	110	125	158	18	102	145	6.6	7.1	10.0	12.3
125	125	132	158	25	87	139	7.4	9.2	11.4	14.0
160	160	175	212	25	110	165	9.5	11.8	14.6	17.9
180	180	-	212	30	130	162	10.7	13.3	16.4	20.1
200	200	232	268	32	127	195	11.9	14.7	18.2	22.4
225	225	235	268	32	135	200	13.4	16.6	20.5	25.1
250	250	285	320	35	147	220	14.8	18.4	22.7	27.9
280	280	291	320	35	147	220	16.6	20.6	25.4	31.3
315	315	335	370	35	197	270	18.7	23.2	28.6	35.2
355	355	373	430	40	197	270	21.1	26.1	32.2	-
400	400	427	482	46	179	270	23.7	29.4	36.3	-
450	450	514	585	60	195	280	26.7	33.1	40.9	-
500	500	530	585	60	215	310	29.7	36.8	45.6	-
560	560	615	685	60	235	300	33.2	41.2	50.8	-
630	630	642	685	60	255	300	37.4	46.3	57.2	-

PE STUB END (SHORT COLLAR)



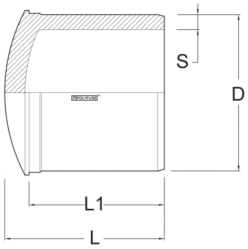


Size (DN)	D (mm)	D3 (mm)	D4 (mm)	H1 (mm)	H3 (mm)	H (mm)	S			
							SDR 17	SDR 13.6	SDR 11	SDR 9
50	50	61	88	12	24	55	3.0	3.7	4.6	5.6
63	63	75	102	16	24	60	3.8	4.7	5.8	7.1
75	75	89	122	16	23	60	4.5	5.5	6.8	8.4
90	90	105	138	17	32	70	5.4	6.6	8.2	10.1
110	110	125	158	18	43	80	6.6	7.1	10.0	12.3
125	125	132	158	25	30	80	7.4	9.2	11.4	14.0
160	160	175	212	25	32	80	9.5	11.8	14.6	17.9
180	180	180	212	30	50	80	10.7	13.3	16.4	20.1
200	200	232	268	32	35	100	11.9	14.7	18.2	22.4
225	225	235	268	32	35	100	13.4	16.6	20.5	25.1
250	250	285	320	35	30	100	14.8	18.4	22.7	27.9
280	280	291	320	35	30	100	16.6	20.6	25.4	31.3
315	315	335	370	35	49	105	18.7	23.2	28.6	35.2
355	355	373	430	40	49	125	21.1	26.1	32.2	-
400	400	427	482	46	42	120	23.7	29.4	36.3	-
450	450	514	585	60	42	120	26.7	33.1	40.9	-
500	500	530	585	60	30	125	29.7	36.8	45.6	-
560	560	615	685	60	30	125	33.2	41.2	50.8	-
630	630	642	685	60	30	140	37.4	46.3	57.2	-



PE END CAP

Material	Wall thickness	Remarks
PE 80 / 100	According to	Other SDR-PN on request
Colour	EN 12201	
Black	ISO 4427	
	MS 1058	

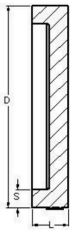


Size (DN)	D (mm)	L (mm)	L1 (mm)	S		
				SDR 17	SDR 13.6	SDR 11
32	32	48	44	-	-	3.0
63	63	70	66	3.8	4.7	5.8
90	90	82	79	5.4	6.6	8.2
110	110	90	82	6.6	7.1	10.0
*125	125	50	-	7.4	9.2	11.4
160	160	115	80	9.5	11.8	14.6
*180	180	63	-	10.7	13.3	16.4
200	200	124	112	11.9	14.7	18.2
225	225	132	120	13.4	16.6	20.5
*250	250	95	-	14.8	18.4	22.7
*280	280	95	-	16.6	20.6	25.4
*315	315	95	-	18.7	23.2	28.6
*355	355	95	-	21.1	26.1	32.3



PE FLAT CAP

Material	Wall thickness	Remarks
PE 80 / 100	According to	Other SDR-PN on request
Colour	EN 12201	
Black	ISO 4427	
	MS 1058	



Size (DN)	D (mm)	L (mm)	S		
			SDR 17	SDR 13.6	SDR 11
200	200	35	11.9	14.7	18.2
225	225	35	13.4	16.6	20.5
250	250	35	14.8	18.4	22.7
280	280	35	16.6	20.6	25.4
315	315	35	18.7	23.2	28.6
355	355	45	21.1	26.1	32.3
400	400	45	23.7	29.4	44.5
450	450	45	26.7	33.1	40.9

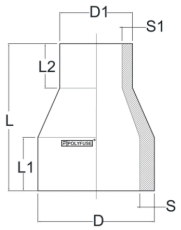
PE REDUCER (BUTT FUSION)

Material
PE 80 / 100
Colour
Black

Wall thickness
According to
EN 12201
ISO 4427
MS 1058

Remarks
Other SDR-PN
on request





Size (DN)	D (mm)	D1 (mm)	L1 (mm)	L2 (mm)	L (mm)	S			S1		
						SDR 17	SDR 13.6	SDR 11	SDR 17	SDR 13.6	SDR 11
50 x 25	50	25	60	46	138	3.0	3.7	4.6	-	-	2.3
50 x 32	50	32	60	49	138	3.0	3.7	4.6	-	2.4	3.0
50 x 40	50	40	60	54	138	3.0	3.7	4.6	2.4	3.0	3.7
63 x 25	63	25	68	46	160	3.8	4.7	5.8	-	-	2.3
63 x 32	63	32	68	49	160	3.8	4.7	5.8	-	2.4	3.0
63 x 40	63	40	68	54	160	3.8	4.7	5.8	2.4	3.0	3.7
63 x 50	63	50	68	60	160	3.8	4.7	5.8	3.0	3.7	4.6
75 x 50	75	50	35	35	170	4.5	5.5	6.8	3.0	3.7	4.6
90 x 50	90	50	35	35	180	6.6	8.2	3.0	3.0	3.7	4.6
90 x 63	90	63	35	35	180	6.6	8.2	3.0	3.8	5.6	5.8
90 x 75	90	75	35	35	180	6.6	8.2	3.0	4.5	3.7	6.8
110 x 63	110	63	82	63	205	6.6	7.1	10.0	3.7	4.6	5.8
110 x 75	110	75	82	70	205	6.6	7.1	10.0	3.8	4.7	6.8
110 x 90	110	90	82	79	215	6.6	7.1	10.0	5.4	6.7	6.8
125 x 90	125	90	92	85	215	7.4	9.2	11.4	5.4	6.7	6.8
125 x 110	125	110	92	86	215	7.4	9.2	11.4	6.6	8.1	8.2
160 x 90	160	90	43	30	124	9.5	11.8	14.6	5.4	6.7	8.2
160 x 110	160	110	43	30	124	9.5	11.8	14.6	6.6	8.1	10.0
160 x 125	160	125	46	33	124	9.5	11.8	14.6	7.4	9.2	11.4
180 x 90	180	90	46	33	135	10.7	13.3	16.4	5.4	6.7	8.2
180 x 110	180	110	46	33	135	10.7	13.3	16.4	6.6	8.1	10.0
180 x 125	180	125	46	33	135	10.7	13.3	16.4	7.4	9.2	11.4
180 x 160	180	160	46	33	135	10.7	13.3	16.4	7.4	9.2	14.6
200 x125	200	125	73	55	168	11.9	14.7	18.2	7.4	9.2	11.4
200 x 160	200	160	73	55	168	11.9	14.7	18.2	9.5	11.8	14.6
200 x 180	200	180	73	55	168	11.9	14.7	18.2	10.7	13.3	16.4
225 x 110	225	110	65	43	105	248	13.4	16.6	6.6	8.1	10.0
225 x 125	225	125	65	50	105	248	13.4	16.6	7.4	9.2	11.4
225 x 160	225	160	65	60	105	248	13.4	16.6	9.5	11.8	14.6
225 x 180	225	180	65	60	105	248	13.4	16.6	10.7	13.3	16.4
225 x 200	225	200	65	60	105	248	13.4	16.6	11.9	14.7	18.2
250 x 160	250	160	66	40	182	14.8	18.4	22.7	9.5	11.8	14.6
250 x 180	250	180	66	40	182	14.8	18.4	22.7	10.7	11.8	16.4
250 x 200	250	200	66	50	182	14.8	18.4	22.7	11.9	14.7	18.2
250 x 225	250	225	66	50	182	14.8	18.4	22.7	13.4	16.6	20.5
280 x 200	280	200	76	55	210	16.6	20.6	25.4	11.9	16.6	18.2
280 x 225	280	225	76	55	210	16.6	20.6	25.4	13.4	14.7	20.5
280 x 250	280	250	76	55	210	16.6	20.6	25.4	14.8	18.4	22.7
315 x 225	315	225	78	52	215	18.7	23.2	28.6	13.4	16.6	20.5
315 x 250	315	250	78	52	215	18.7	23.2	28.6	14.8	18.4	22.7
315 x 280	315	280	78	52	215	18.7	23.2	28.6	16.6	20.6	25.4

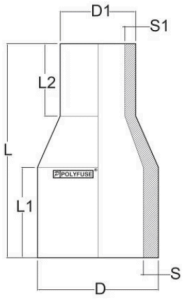
PE REDUCER (ELECTRO FUSION USE)

Material
PE 80 / 100
Colour
Black

Wall thickness
According to
EN 12201
ISO 4427
MS 1058

Remarks
Other SDR-PN
on request





Size (DN)	D (mm)	D1 (mm)	L1 (mm)	L2 (mm)	L (mm)	S1			S2		
						SDR 17	SDR 13.6	SDR 11	SDR 17	SDR 13.6	SDR 11
50 x 25	50	25	60	46	138	3.0	3.7	4.6	-	-	2.3
50 x 32	50	32	60	49	138	3.0	3.7	4.6	-	2.4	3.0
50 x 40	50	40	60	54	138	3.0	3.7	4.6	2.4	3.0	3.7
63 x 25	63	25	68	46	160	3.8	4.7	5.8	-	-	2.3
63 x 32	63	32	68	49	160	3.8	4.7	5.8	-	2.4	3.0
63 x 40	63	40	68	54	160	3.8	4.7	5.8	2.4	3.0	3.7
63 x 50	63	50	68	60	160	3.8	4.7	5.8	3.0	3.7	4.6
75 x 50	75	50	35	35	170	4.5	5.5	6.8	3.0	3.7	4.6
90 x 50	90	50	35	35	180	5.4	6.6	8.2	3.0	3.7	4.6
90 x 63	90	63	35	35	180	5.4	6.6	8.2	3.8	5.6	5.8
90 x 75	90	75	35	35	180	5.4	6.6	8.2	4.5	3.7	6.8
110 x 63	110	63	82	63	205	6.6	7.1	10.0	3.7	4.6	5.8
110 x 75	110	75	82	70	205	6.6	7.1	10.0	3.8	4.7	6.8
110 x 90	110	90	82	79	215	6.6	7.1	10.0	5.4	6.7	6.8
125 x 110	125	110	92	86	215	7.4	9.2	11.4	6.6	8.1	8.2

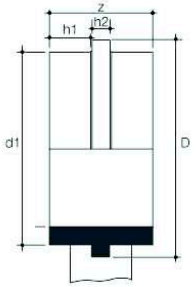
PE PUDDLE FLANGE (PULL-RESISTANT)

Material
PE 80 / 100
Colour
Black

Wall thickness
According to
EN 12201
ISO 4427
MS 1058

Remarks
Other SDR-PN
on request



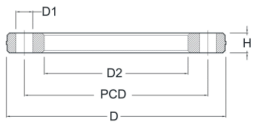


d1 (mm)	D (mm)	h1 (mm)	h2 (mm)	Z (mm)	S			
					SDR 17	SDR 13.6	SDR 11	SDR 9
90	130	70	15	155	5.4	6.6	8.2	10.1
110	130	70	20	160	6.6	7.1	10.0	12.3
125	150	70	20	160	7.4	9.2	11.4	14.0
160	210	70	20	160	9.5	11.8	14.6	17.9
180	210	70	20	160	10.7	13.3	16.4	20.1
200	260	70	25	165	11.9	14.7	18.2	22.4
225	260	70	25	165	13.4	16.6	20.5	25.1
250	320	70	25	165	14.8	18.4	22.7	27.9
280	320	70	25	165	16.6	20.6	25.4	31.3
315	370	70	25	165	18.7	23.2	28.6	35.2
355	430	80	25	185	21.1	26.1	32.2	39.7
400	480	80	30	190	23.7	29.4	36.3	44.5

PE SINGLE INJECTION MOULDED FLANGES

Colour	Standard	Remarks
Black	ISO 9624 / PN16 Except DN 200mm is based on BS 4504.	with steel insert moulded



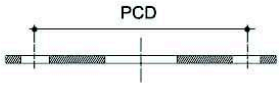


Size (DN)	D (mm)	D2 (mm)	PCD (mm)	D1 (mm)	H (mm)	N (Number Hole)	Screw Thread
63	165	78	125	18	20	4	M16
75	185	92	145	18	20	4	M16
90	200	108	160	18	20	8	M16
110	220	128	180	18	20	8	M16
125	220	135	180	18	20	8	M16
160	285	178	240	22	24	8	M20
180	285	188	240	22	24	8	M20
200	340	235	295	22	24	12	M20
225	340	238	295	22	24	12	M20
250	395	288	350	26	26	12	M24
280	395	294	350	26	26	12	M24

RUBBER GASKET

Colour	Material
Black	Normal Rubber / Natural Rubber / GSG / EPDM (upon request)





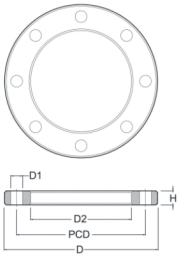
DN (inch)	BS4504	PCD (mm)	NO. OF HOLES	PCS / Bundle
2	PN16	125	4	20
3	PN16	160	8	20
4	PN16	110	8	20
6	PN16	238	8	20
8	PN16	295	12	20
10	PN16	355	12	20
12	PN16	315	12	20

MILD STEEL FLANGE [NOMINAL PRESSURE PN10]

Wall thickness
Wall thickness on request.

Standard
ISO 9624





Size (DN)	D (mm)	D2 (mm)	D1 (mm)	H (mm)	N (Number Hole)	Screw Thread
20	95	28	14	-	4	M12
25	105	34	14	-	4	M12
32	115	42	14	-	4	M12
40	140	51	18	-	4	M16
50	150	62	18	-	4	M16
63	165	78	18	-	4	M16
75	185	92	18	-	4	M16
90	200	108	18	-	8	M16
110	220	128	18	-	8	M16
125	220	135	18	-	8	M16
160	285	178	22	-	8	M20
180	285	188	22	-	8	M20
200	340	235	22	-	12	M20
225	340	238	22	-	12	M20
250	395	288	22	-	12	M20
280	395	294	22	-	12	M20
315	445	338	22	-	12	M20
350	505	376	22	-	16	M20
400	565	430	26	-	16	M24
450	615	490	26	-	20	M24
450	670	517	26	-	20	M24
500	670	533	26	-	20	M24
560	780	618	30	-	20	M27
630	780	645	30	-	24	M27
710	895	740	30	-	24	M27
800	1015	843	33	-	24	M30
900	1115	947	33	-	28	M30
1000	1230	1050	36	-	28	M33
1200	1455	1260	39	-	32	M36

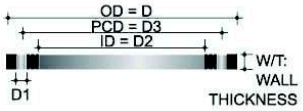
MILD STEEL FLANGE [NOMINAL PRESSURE PN16]

Wall thickness
Wall thickness on request.

Standard
ISO 9624

Remarks
1. DN 15mm to 200mm PN16 specification share the same dimension table with PN10. (Refer page 25)





DN (mm)	Nominal outside diameter of pipe dn (mm)	Loose Backing Flanges					
		OD outside diameter D (mm)	ID inside diameter D2 (mm)	PCD pitch circle diameter D3 (mm)	Bolts		
					Bolt hole diameter D1 (mm)	Number N	Bolt Size
250	250	405	288	355	26	12	M 24
250	280	405	294	355	26	12	M 24
300	315	460	338	410	26	12	M 24
350	355	520	376	470	26	16	M 24
400	400	580	430	525	30	16	M 27
450	450	640	490	585	30	20	M 27
500	500	715	533	650	33	20	M 30
600	560	840	618	770	36	20	M 33
600	630	840	645	770	36	20	M 33
700	710	910	740	840	36	24	M 33
800	800	1025	843	950	39	24	M 36
900	900	1125	947	1050	39	28	M 36
1000	1000	1230	1050	1170	42	28	M 39
1200	1200	1455	1260	1390	48	32	M 45

HÜRNER EF CONTROL BOX & TOOLING



HÜRNER ELECTRO FUSION CONTROL BOX (UNIVERSAL)

EF Control Box HST 300 Print 450 + 2.0
(Size: up to OD 450mm)
EF Control Box HST 300 Print 450 + 2.0
(Size: up to OD 1,200mm)



HÜRNER PIPE ALIGNER

Model:
Pipe Aligner (Size: 20mm - 75mm)
Pipe Aligner (Size: 75mm - 180mm)



HÜRNER PIPE SCRAPER

Model:
Pipe Scraper (Size: 32mm to 160mm)
Pipe Scraper (Size: 63mm to 250mm)

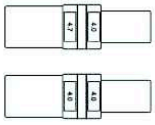


HÜRNER SCRAPER SADDLE

Model:
Scraper Saddle (Size: 63mm - 180 mm)

ELECTROFUSION PIN ADAPTOR [STRAIGHT TYPE]

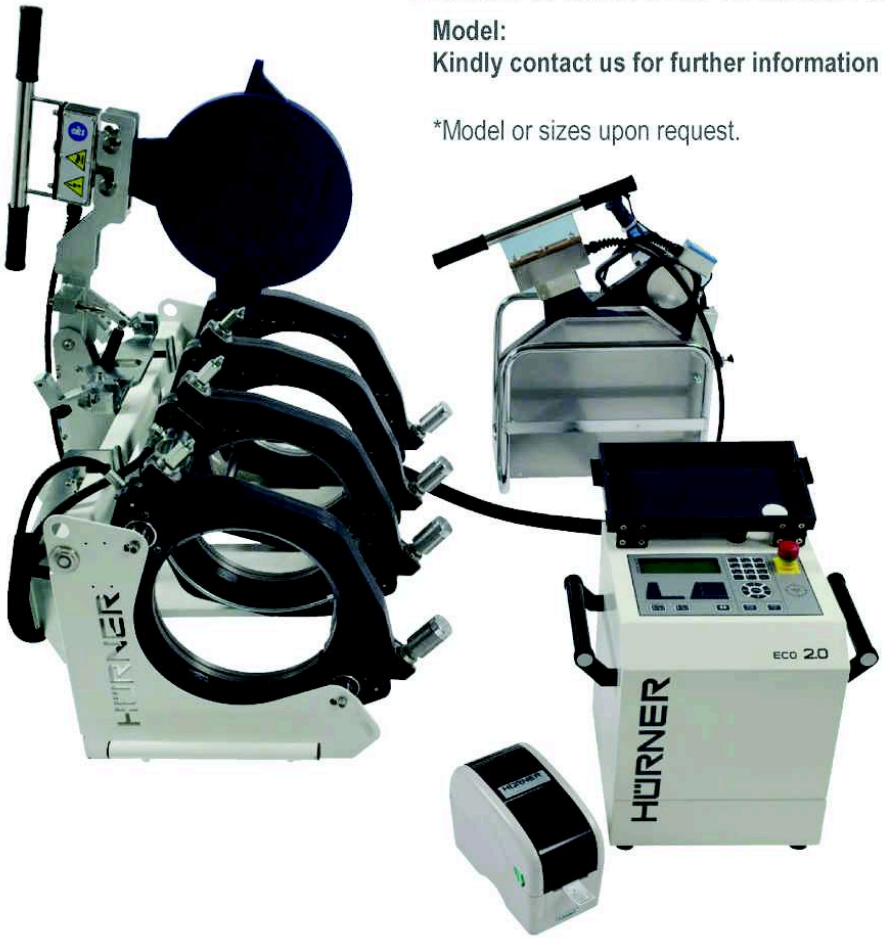




SIZE (mm)	COLOUR	PACKING
4.7 mm to 4.0 mm	grey	1 pair
4.0 mm to 4.0 mm	black	1 pair

MADE IN GERMANY

HÜRNER BUTT FUSION MACHINE



HÜRNER CNC BUTT WELDING MACHINE

Model:
Kindly contact us for further information

*Model or sizes upon request.

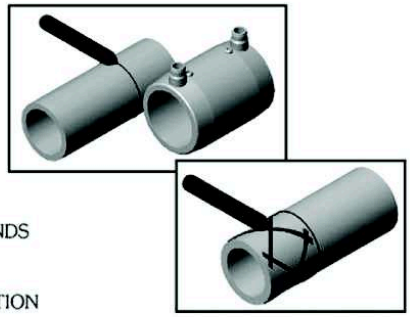


HÜRNER SOCKET WELDING

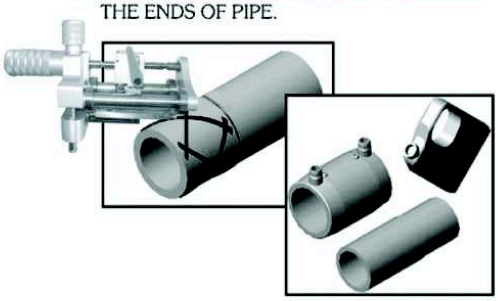
Model:
Socket Welding HMS 50T
(20mm to 32mm / 230V with temperature control / 5.5 kgs)
Socket Welding HMS 63T
(20mm to 63mm / 6.5 kgs)

MADE IN GERMANY

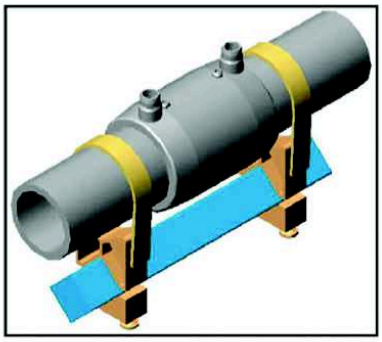
INSTALLATION METHOD FOR ELECTRO FUSION FITTINGS



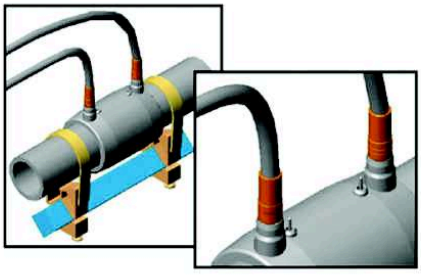
1. CUT THE PE PIPE AND ENSURES THE PIPE END MUST HAVE A SQUARE, EVEN CUT.
2. MEASURE THE TOTAL LENGTH OF FITTING
3. USING MARKER PEN TO MARK BOTH PIPE ENDS FROM HALF OF THE FITTING LENGTH.
4. SCRAPE PIPE ENDS TO REMOVE ALL OXIDATION & CONTAMINANTS.
5. REMOVE ANY BURRS OR SHAVINGS FROM THE ENDS OF PIPE.



6. USE ACETONE TO CLEAN PILED AREA AT THE END OF PIPE & INNER SURFACE OF THE FITTING.
7. WIPE WITH CLEAN CLOTH AND ALLOW TO FULLY DRY BEFORE PROCEEDING.
8. DON'T TOUCH CLEANED SURFACE WITH YOUR FINGER.
9. INSERT THE PE PIPE INTO THE FITTING UNTIL THE MARKED AREA.
10. FIT PIPES & COUPLER USING CLAMPING TOOL.



11. CLAMPING TOOL IS TO ALIGN THE PIPE WITH THE FITTING AND HOLD THE FITTING POSITION DURING FUSION PROCESS.
12. PLUG IN THE FUSION PLUG FROM THE WELDING MACHINE.
13. CHECK CONTACT BETWEEN WELDING MACHINE AND FITTING BY READING THE DISPLAYED VALUE.
14. WHEN CONTACT IS OK, SCAN BAR CODE FOR INPUT FUSION PARAMETER.
15. VERIFY FUSION PARAMETER, E.G: PRODUCT TYPE / VOLTAGE / HEATING TIME / COOLING TIME.



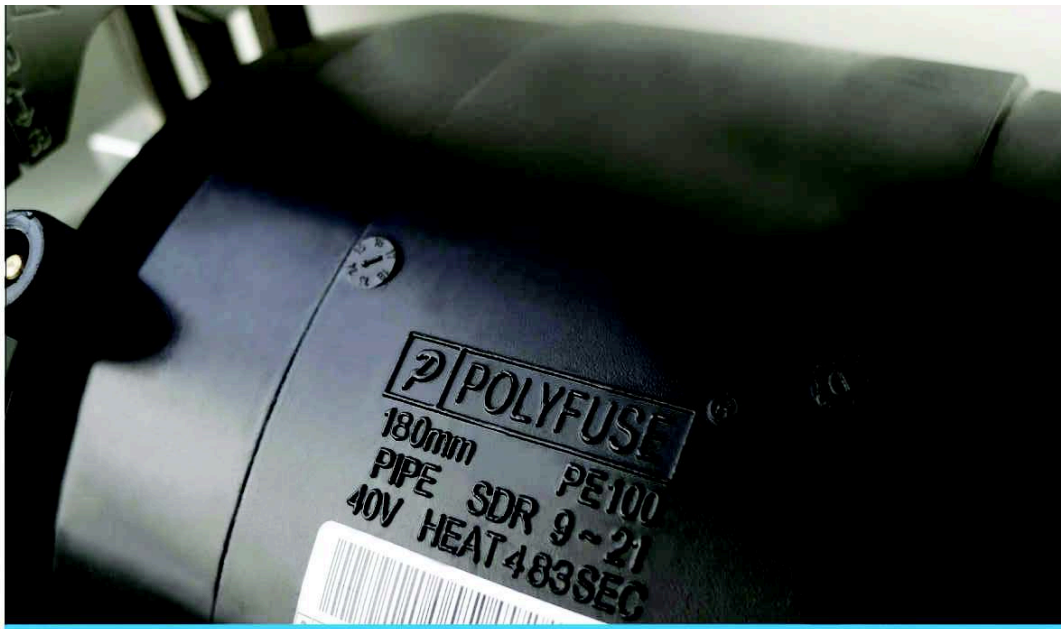
16. PUSH START BUTTON TO START THE FUSION PROCESS.
17. MAKE SURE FUSION NOT SHORT CIRCUIT. IF SHORT CIRCUIT, PROCESS WILL AUTOMATICALLY FAIL.
18. THE FUSION INDICATOR WILL RISE DURING THE FUSION PROCESS.
19. AFTER HEATING TIME OVER, IT WILL ENTER COOLING PROCESS.
20. THE OVERALL FUSION PROCESS WILL FINISH AFTER THE COOLING PROCESS.
21. AFTER FINISHED TAKE OUT FITTING FROM CLAMP & CHECK THE APPEARANCE.
22. FUSION PROCESS IS DONE, IF WITHOUT ANY VISIBLE DEFECT.

NOTE

Polyware™

Polyware Sdn. Bhd. (408370-M)
PT285794, Persiaran Perindustrian Pengkalan 16,
Kawasan Perindustrian Pengkalan, 31500 Ipoh, Perak, Malaysia.
Tel : (605) 323 2788 Website: www.polyware.com.my

0725



POLYFUSE®
by Polyware™






Green Water . Green Edu . Green Life