

AGRU – Frank has become the first European manufacturer to achieve Factory Mutual (FM) Approval for High Density Polyethylene (PE100) pipes and fittings for underground fire protection service. The FM approval means that the pipes and fittings correspond to the highest requirements - ensuring consistent quality of the product range - achieved by means of a third party audit undertaken by FM.

PE100 piping is ideal for buried applications. It has exceptional ductility and will withstand very unfavourable ground conditions. It is also very easy to install using a simple butt fusion or electro-fusion welding technique.

Many industrial and automotive groups require FM approval for infrastructure piping systems within their factories. This need can now be satisfied with a comprehensive range of approved pipes and fittings. The FM approval has been issued for the dimension range 63mm to 400mm, and it includes a wide and diverse range of fittings. The system is approved for use at a service pressure of up to 12 bar.

IPS can supply the complete range of FM approved AGRU piping systems together with documentation, as well as welding equipment for butt or electro fusion jointing. Comprehensive welder training is readily available on request.

PE100

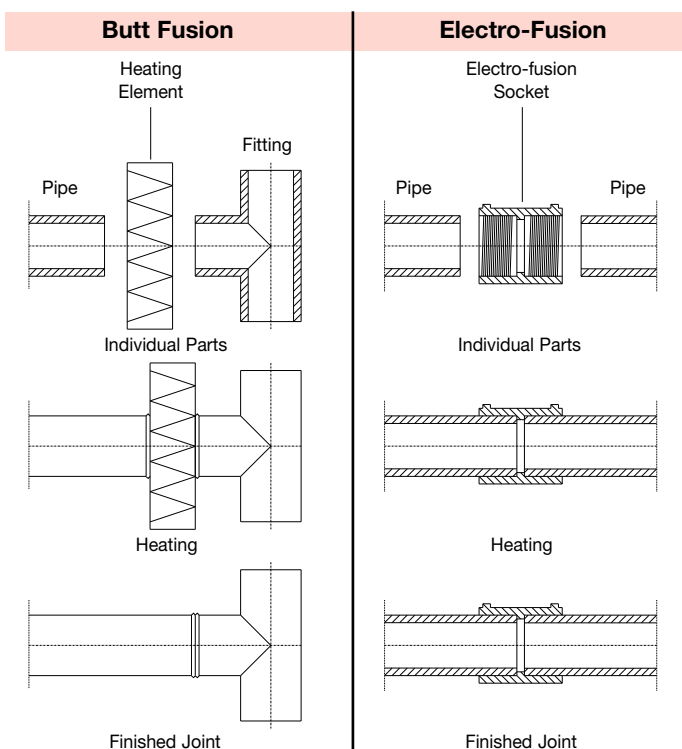
PN12

Size	Code	Price/m
63	25 705 0063 11FM	7.56
75	25 705 0075 11FM	10.54
90	25 705 0090 11FM	15.12
110	25 705 0110 11FM	22.56
125	25 705 0125 11FM	29.04
140	25 705 0140 11FM	36.34
160	25 705 0160 11FM	47.82
180	25 705 0180 11FM	60.12
200	25 705 0200 11FM	88.45
225	25 705 0225 11FM	93.74
250	25 705 0250 11FM	115.90
280	25 705 0280 11FM	144.67
315	25 705 0315 11FM	183.71
355	25 705 0355 11FM	233.00
400	25 705 0400 11FM	295.15

Please note that a transportation surcharge may be applied on pipe diameters 250mm or larger - please enquire for details.

Jointing FM Approved Polyethylene Systems

PE pipe to pipe and pipe to fitting joints are easy to make, using butt fusion or electrofusion welds.



Welding equipment is available for sale or hire - see Tools and Installation Equipment. Detailed installation instructions, as well as free training, is available on request.



FM approved electrofusion fittings

Electrofusion Coupling



63	25 173 0063 11FM	10.83
75	25 173 0075 11FM	15.45
90	25 173 0090 11FM	20.59
110	25 173 0110 11FM	24.76
125	25 173 0125 11FM	34.80
140	25 173 0140 11FM	39.20
160	25 173 0160 11FM	47.99
180	25 173 0180 11FM	68.85
200	25 173 0200 11FM	81.32
225	25 173 0225 11FM	104.75
250	25 173 0250 11FM	154.37
280	25 173 0280 11FM	208.58
315	25 173 0315 11FM	251.62
355	25 173 0355 11FM	459.99
400	25 173 0400 11FM	576.78

Electrofusion Elbow 45°



63	25 170 0063 11FM	25.73
75	25 170 0075 11FM	36.84
90	25 170 0090 11FM	45.88
110	25 170 0110 11FM	73.57
125	25 170 0125 11FM	92.57
160	25 170 0160 11FM	171.47
180	25 170 0180 11FM	on application
225	25 170 0225 11FM	467.61

Electrofusion Tee 90°

Fusion Spigot Branch



63	25 176 0063 11FM	25.73
75	25 176 0075 11FM	36.22
90	25 176 0090 11FM	45.88
110	25 176 0110 11FM	73.51
125	25 176 0125 11FM	92.57
160	25 176 0160 11FM	171.47
180	25 176 0180 11FM	on application
225	25 176 0225 11FM	467.61



Electrofusion Reducer

90x63	25 177 9063 11FM	34.57
110x63	25 177 1163 11FM	56.36
110x90	25 177 1190 11FM	56.36
125x90	25 177 1290 11FM	on application
160x90	25 177 1690 11FM	98.29
160x110	25 177 1611 11FM	100.79
180x125	25 177 1812 11FM	on application
225x160	25 177 2216 11FM	228.77

Electrofusion Elbow 90°



63	25 171 0063 11FM	25.73
75	25 171 0075 11FM	36.84
90	25 171 0090 11FM	45.88
110	25 171 0110 11FM	73.51
125	25 171 0125 11FM	92.57
160	25 171 0160 11FM	171.47
180	25 171 0180 11FM	on application
225	25 171 0225 11FM	467.61



Electrofusion Cap

63	25 174 0063 11FM	22.33
75	25 174 0075 11FM	35.31
90	25 174 0090 11FM	49.89
110	25 174 0110 11FM	64.02
125	25 174 0125 11FM	78.67
140	25 174 0140 11FM	103.26
160	25 174 0160 11FM	110.51
180	25 174 0180 11FM	145.10
200	25 174 0200 11FM	171.56
225	25 174 0225 11FM	202.24
250	25 174 0250 11FM	325.30
280	25 174 0280 11FM	446.95
315	25 174 0315 11FM	555.93

Automatic Electrofusion Welding Machine

- Barcode or manual entry
- Welding is fully monitored throughout
- Illuminated display
- Fault messages displayed plus warning signal
- Memory records weld information
- Data output to PC or printer
- 110v or 230v supply
- Available for sale or hire



FM approved fusion spigot fittings

Tee 90°



PN12

Size	Code	Price
63	25 006 0063 11FM	10.46
75	25 006 0075 11FM	21.05
90	25 006 0090 11FM	31.44
110	25 006 0110 11FM	46.18
125	25 006 0125 11FM	63.57
140	25 006 0140 11FM	80.56
160	25 006 0160 11FM	135.52
180	25 006 0180 11FM	173.67
200	25 006 0200 11FM	248.97
225	25 006 0225 11FM	296.02
250	25 006 0250 11FM	376.61
280	25 006 0280 11FM	507.30
315	25 006 0315 11FM	723.32
355	25 006 0355 11FM	845.34
400	25 006 0400 11FM	1262.21

Reducing Tee 90°



PN12

Size	Code	Price
125x63	25 016 1263 11FM	61.42
125x90	25 016 1290 11FM	61.42
140x63	25 016 1463 11FM	77.05
140x90	25 016 1490 11FM	78.31
140x110	25 016 1411 11FM	78.31
160x125	25 016 1612 11FM	129.94
180x63	25 016 1863 11FM	161.33
180x110	25 016 1811 11FM	161.33
180x125	25 016 1812 11FM	166.51
225x125	25 016 2212 11FM	280.91
250x110	25 016 2511 11FM	370.76
250x160	25 016 2516 11FM	378.42

Tee 90°

Elongated



63	25 066 0063 11FM	14.08
75	25 066 0075 11FM	23.39
90	25 066 0090 11FM	33.26
110	25 066 0110 11FM	48.67
125	25 066 0125 11FM	66.81
140	25 066 0140 11FM	107.36
160	25 066 0160 11FM	139.32
180	25 066 0180 11FM	182.82
200	25 066 0200 11FM	262.03
225	25 066 0225 11FM	311.25
250	25 066 0250 11FM	401.89
280	25 066 0280 11FM	600.97
315	25 066 0315 11FM	771.77

Reducing Tee 90°

Elongated



63x50	25 065 6350 11FM	14.70
90x63	25 065 9063 11FM	32.80
110x63	25 065 1163 11FM	48.65
110x90	25 065 1190 11FM	49.34
125x90	25 065 1290 11FM	67.67
125x110	25 065 1211 11FM	67.67
160x63	25 065 1663 11FM	133.02
160x90	25 065 1690 11FM	134.15
160x110	25 065 1611 11FM	137.53
180x90	25 065 1890 11FM	184.40
180x110	25 065 1811 11FM	184.40
180x160	25 065 1816 11FM	184.40
225x90	25 065 2290 11FM	311.74
225x110	25 065 2211 11FM	313.00
225x160	25 065 2216 11FM	314.11
225x180	25 065 2218 11FM	315.19
315x110	25 065 3111 11FM	848.94
315x160	25 065 3116 11FM	848.94
315x225	25 065 3122 11FM	887.51
315x250	25 065 3125 11FM	887.51



Pressure Ratings

FM approved polyethylene fittings are suitable for use handling fluids at pressures up to 12 bar at 20°C.

FM approved fusion spigot fittings

Reducer

Concentric



PN12

Size	Code	Price
90x63	25 009 9063 11FM	17.11
110x63	25 009 1163 11FM	21.74
110x90	25 009 1190 11FM	21.74
125x63	25 009 1263 11FM	27.94
125x90	25 009 1290 11FM	27.94
125x110	25 009 1211 11FM	27.94
140x90	25 009 1490 11FM	33.82
140x110	25 009 1411 11FM	33.82
140x125	25 009 1412 11FM	39.53
160x90	25 009 1690 11FM	39.53
160x110	25 009 1611 11FM	39.53
160x125	25 009 1612 11FM	39.53
160x140	25 009 1614 11FM	39.53
180x90	25 009 1890 11FM	62.09
180x110	25 009 1811 11FM	58.46
180x125	25 009 1812 11FM	53.90
180x140	25 009 1814 11FM	51.18
180x160	25 009 1816 11FM	48.83
225x140	25 009 2214 11FM	167.08
225x160	25 009 2216 11FM	143.41
225x180	25 009 2218 11FM	136.55
250x160	25 009 2516 11FM	191.47
250x180	25 009 2518 11FM	177.16
250x225	25 009 2522 11FM	154.57
280x200	25 009 2820 11FM	223.06
280x225	25 009 2822 11FM	207.97
280x250	25 009 2825 11FM	200.25
315x225	25 009 3122 11FM	240.74
315x250	25 009 3125 11FM	220.06

Cap

Elongated



PN12

Size	Code	Price
63	25 064 0063 11FM	10.43
75	25 064 0075 11FM	16.08
90	25 064 0090 11FM	24.52
110	25 064 0110 11FM	33.26
125	25 064 0125 11FM	35.93
140	25 064 0140 11FM	44.94
160	25 064 0160 11FM	50.36
180	25 064 0180 11FM	65.46
200	25 064 0200 11FM	81.94
225	25 064 0225 11FM	97.38
250	25 064 0250 11FM	145.89
280	25 064 0280 11FM	206.67
315	25 064 0315 11FM	278.64

Cap

Short Spigot

355	25 004 0355 11FM	207.24
400	25 004 0400 11FM	278.64

Reducer

Concentric - Elongated



Size	Code	Price
90x63	25 067 9063 11FM	17.47
110x63	25 067 1163 11FM	23.50
110x90	25 067 1190 11FM	23.50
125x63	25 067 1263 11FM	28.22
125x90	25 067 1290 11FM	28.22
125x110	25 067 1211 11FM	28.27
140x125	25 067 1412 11FM	40.62
160x90	25 067 1690 11FM	54.22
160x110	25 067 1611 11FM	54.38
160x125	25 067 1612 11FM	54.38
160x140	25 067 1614 11FM	52.59
180x125	25 067 1812 11FM	70.48
180x160	25 067 1816 11FM	70.48
225x160	25 067 2216 11FM	124.25
250x160	25 067 2516 11FM	168.01
250x225	25 067 2522 11FM	175.73
280x250	25 067 2825 11FM	234.19
315x225	25 067 3122 11FM	301.32
315x250	25 067 3125 11FM	301.32

Machine Hire

Don't have the tools?
We have a dedicated fleet of
welding equipment available to
hire on a weekly basis.



FM approved fusion spigot fittings

Bend 90°



PN12

Size	Code	Price
250	25 001 0250 11FM	278.16
280	25 001 0280 11FM	360.33
315	25 001 0315 11FM	499.27
355	25 001 0355 11FM	730.31
400	25 001 0400 11FM	1002.93

Bend 60°

Elongated



PN12

Size	Code	Price
90	25 398 0090 11FM	
110	25 398 0110 11FM	
125	25 398 0125 11FM	
140	25 398 0140 11FM	
160	25 398 0160 11FM	
180	25 398 0180 11FM	on application
200	25 398 0200 11FM	on application
225	25 398 0225 11FM	
250	25 398 0250 11FM	
280	25 398 0280 11FM	
315	25 398 0315 11FM	

Multi-Bend 90°

Elongated



63	25 068 0063 11FM	9.24
75	25 068 0075 11FM	12.72
90	25 068 0090 11FM	18.48
110	25 068 0110 11FM	35.15
125	25 068 0125 11FM	49.53
140	25 068 0140 11FM	66.25
160	25 068 0160 11FM	80.70
180	25 068 0180 11FM	95.57
200	25 068 0200 11FM	142.40
225	25 068 0225 11FM	169.84

Bend 45°

Elongated



Size	Code	Price
90	25 397 0090 11FM	66.47
110	25 397 0110 11FM	126.50
125	25 397 0125 11FM	on application
140	25 397 0140 11FM	on application
160	25 397 0160 11FM	187.62
180	25 397 0180 11FM	226.78
200	25 397 0200 11FM	on application
225	25 397 0225 11FM	290.54
250	25 397 0250 11FM	454.44
280	25 397 0280 11FM	on application
315	25 397 0315 11FM	on application

Elbow 90°

Elongated



250	25 061 0250 11FM	294.54
280	25 061 0280 11FM	443.50
315	25 061 0315 11FM	556.49

Bend 30°

Elongated



Size	Code	Price
90	25 396 0090 11FM	66.47
110	25 396 0110 11FM	126.50
125	25 396 0125 11FM	on application
140	25 396 0140 11FM	on application
160	25 396 0160 11FM	200.68
180	25 396 0180 11FM	226.78
200	25 396 0200 11FM	on application
225	25 396 0225 11FM	290.54
250	25 396 0250 11FM	441.69
280	25 396 0280 11FM	on application
315	25 396 0315 11FM	on application

Elbow 45°

Elongated



Size	Code	Price
63	25 060 0063 11FM	15.30
75	25 060 0075 11FM	19.73
90	25 060 0090 11FM	23.82
110	25 060 0110 11FM	45.66
125	25 060 0125 11FM	56.40
140	25 060 0140 11FM	73.79
160	25 060 0160 11FM	85.30
180	25 060 0180 11FM	93.37
200	25 060 0200 11FM	127.62
225	25 060 0225 11FM	152.09
250	25 060 0250 11FM	294.54
280	25 060 0280 11FM	443.49
315	25 060 0315 11FM	556.49

Bend 22°

Elongated



Size	Code	Price
90	25 395 0090 11FM	66.47
110	25 395 0110 11FM	126.50
125	25 395 0125 11FM	on application
140	25 395 0140 11FM	on application
160	25 395 0160 11FM	187.62
180	25 395 0180 11FM	226.78
200	25 395 0200 11FM	on application
225	25 395 0225 11FM	290.54
250	25 395 0250 11FM	454.44
280	25 395 0280 11FM	on application
315	25 395 0315 11FM	on application

Bend 11°

Elongated



Size	Code	Price
90	25 394 0090 11FM	66.47
110	25 394 0110 11FM	126.50
125	25 394 0125 11FM	on application
140	25 394 0140 11FM	on application
160	25 394 0160 11FM	187.62
180	25 394 0180 11FM	226.78
200	25 394 0200 11FM	on application
225	25 394 0225 11FM	290.54
250	25 394 0250 11FM	454.44
280	25 394 0280 11FM	on application
315	25 394 0315 11FM	on application

Stub Flange



PN12

Size	Code	Price
63	25 012 0063 11FM	6.12
75	25 012 0075 11FM	7.22
90	25 012 0090 11FM	10.36
110	25 012 0110 11FM	13.32
125	25 012 0125 11FM	16.08
140	25 012 0140 11FM	18.78
160	25 012 0160 11FM	23.68
180	25 012 0180 11FM	36.79
200	25 012 0200 11FM	40.49
225	25 012 0225 11FM	45.10
250	25 012 0250 11FM	68.47
280	25 012 0280 11FM	74.61
315	25 012 0315 11FM	88.13
355	25 012 0355 11FM	156.46
400	25 012 0400 11FM	308.21

Backing Ring

Polypropylene with Steel Core



NP10

63	14 014 0063 11*	16.40
75	14 014 0075 11*	18.20
90	14 014 0090 11*	21.50
110	14 014 0110 11*	25.57
125	14 014 0125 11*	25.57
140	14 014 0140 11*	39.38
160	14 014 0160 11*	45.09
180	14 014 0180 11*	45.09
200	14 014 0200 11*	64.20
225	14 014 0225 11*	64.20
250	14 014 0250 11*	102.52
280	14 014 0280 11*	102.52
315	14 014 0315 11*	128.83
355	14 014 0355 11*	271.34
400	14 014 0400 11*	307.41

*Black

Stub Flange

Elongated



63	25 062 0063 11FM	8.26
75	25 062 0075 11FM	10.72
90	25 062 0090 11FM	13.93
110	25 062 0110 11FM	17.79
125	25 062 0125 11FM	21.65
140	25 062 0140 11FM	27.92
160	25 062 0160 11FM	31.91
180	25 062 0180 11FM	49.18
200	25 062 0200 11FM	56.10
225	25 062 0225 11FM	60.42
250	25 062 0250 11FM	92.90
280	25 062 0280 11FM	140.27
315	25 062 0315 11FM	178.57

Blind Flange

Polypropylene with steel insert



NP10

63	14 045 0063 11	65.53
75	14 045 0075 11	76.69
90	14 045 0090 11	84.44
110	14 045 0110 11	115.26
125	14 045 0125 11	115.26
140	14 045 0140 11	141.63
160	14 045 0160 11	178.69
180	14 045 0180 11	178.69
200	14 045 0200 11	198.82
225	14 045 0225 11	198.82
250	14 045 0250 11	259.87
280	14 045 0280 11	259.87
315	14 045 0315 11	378.99
355	14 045 0355 11	740.13
400	14 045 0400 11	845.86

Stub Flange

To adapt to cast iron flanges



63	25 912 0063 11FM	
90	25 912 0090 11FM	
110	25 912 0110 11FM	
125	25 912 0125 11FM	
140	25 912 0140 11FM	
160	25 912 0160 11FM	on application
180	25 912 0180 11FM	
225	25 912 0225 11FM	
250	25 912 0250 11FM	
280	25 912 0280 11FM	
315	25 912 0315 11FM	
355	25 912 0355 11FM	
400	25 912 0400 11FM	



Connection to other materials

Connecting to metal pipe systems, particularly cast or ductile iron, requires care as the pipe diameters differ widely. We can advise on the selection of the correct flange components.