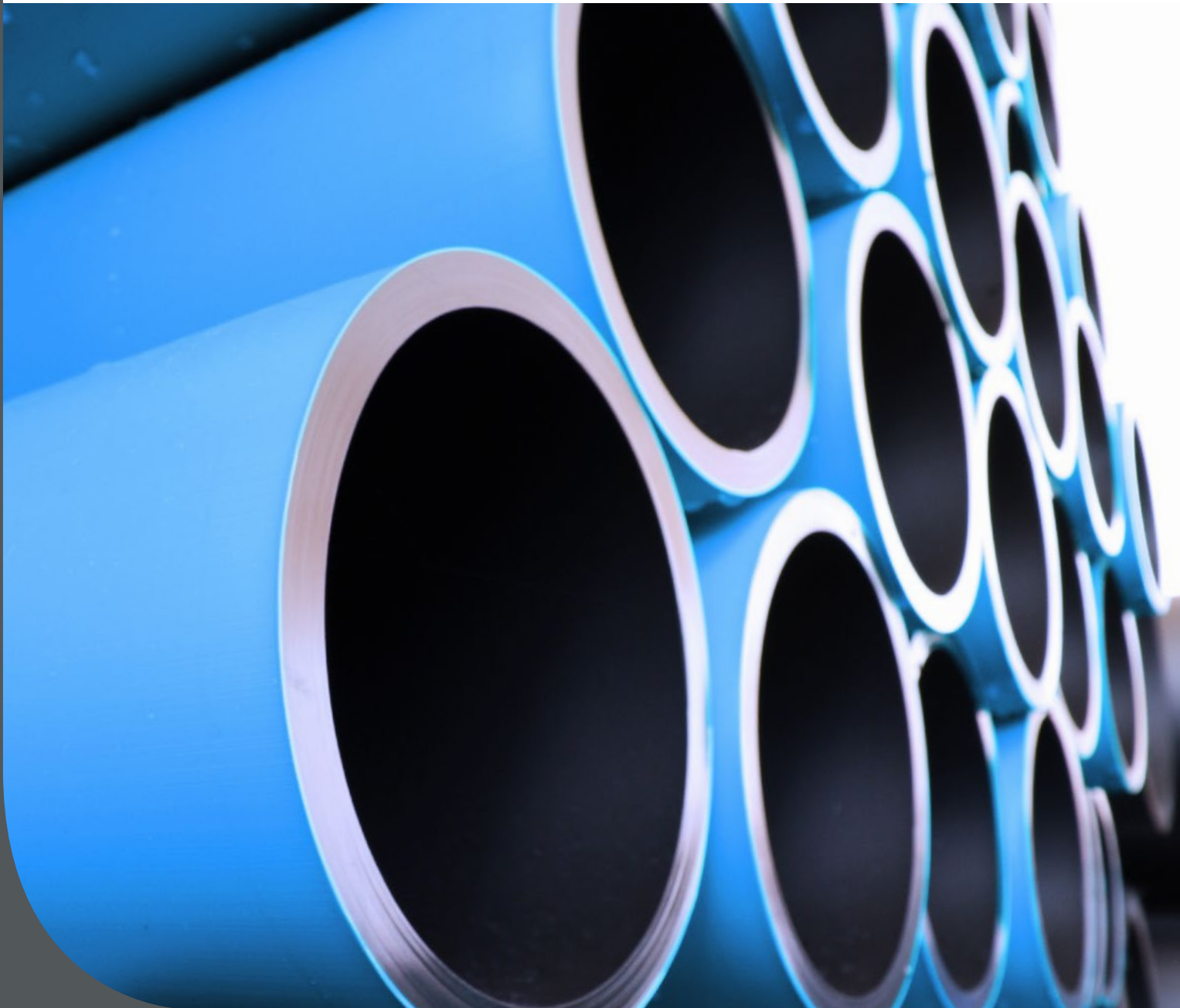


CIVIL, WATER & INFRASTRUCTURE

PRODUCT CATALOGUE

Version 1.03





PE808
2.5

312052
30700725
2.5000
PE808
2.5
LIFE
WATERS &
DIAMETER

PE808 2.5

ABOUT WATERS & FARR

Established in 1954, Waters & Farr is a leading New Zealand manufacturer of high performance polyethylene and polypropylene pipe for civil, utilities and rural applications.

Overview

Manufacturing and distribution sites in Whanganui and Rangiora, supported by an additional distribution centre in Auckland, ensures timely product supply to customers throughout New Zealand. Waters & Farr products are distributed to installers and asset owners through a nationwide network of merchant stockists servicing the civil, utilities and rural sectors.

Waters & Farr is committed to continuous improvement. Ongoing investment in plant and equipment is focussed on meeting customer needs and delivering innovative solutions. Our comprehensive range of polyethylene and polypropylene pipe extends from 13mm to 1200mm in diameter.

Commitment to quality

- Waters & Farr maintains a quality management system certification to ISO 9001
- 'S' mark certification to AS/NZS 4130 and AS/NZS 5065 is maintained via independent third party verification.
- PipeTest NZ, a division of Waters & Farr, was established as an independent IANZ accredited testing laboratory. PipeTest NZ conducts a comprehensive range of pipe and fusion joint testing on pipeline products for Waters & Farr and external parties.
- Waters & Farr operates under founding values that underpin our business practices in order to deliver positive outcomes for our people and our customers.

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Waters & Farr Terms and Conditions

Information or advice contained in this catalogue or obtained from Waters & Farr otherwise is given in good faith. Waters & Farr make no warranty or representation regarding the information, opinions and recommendations contained in this catalogue. Users of this catalogue are advised to seek and rely upon their own professional advice and assessment of the matters contained in this catalogue. Waters & Farr excludes all liability to any user of this catalogue for consequential or indirect damages, or any other form of compensation or relief whatsoever for any acts or omissions of Waters & Farr, arising out of or in connection with the use of this catalogue irrespective of whether the same arises at law, inequity or otherwise.

PLAIN WALL POLYETHYLENE PRESSURE PIPE

CLASSIFICATION

SERIES 1 TO AS/NZS 4130









PN	Nominal Working Pressure at 20°C				SDR	
	MPa	kPa	bar	p.s.i.	PE 80B	PE 100
3.2	0.32	320	3.2	46	SDR 41	-
4	0.40	400	4.0	58	SDR 33	SDR 41
6.3	0.63	630	6.3	91	SDR 21	SDR 26
8	0.80	800	8.0	116	SDR 17	SDR 21
10	1.00	1000	10.0	145	SDR 13.6	SDR 17
12.5	1.25	1250	12.5	181	SDR 11	SDR 13.6
16	1.60	1600	16.0	232	SDR 9	SDR 11
20	2.00	2000	20.0	290	SDR 7.4	SDR 9
25	2.50	2500	25.0	362	-	SDR 7.4

PRODUCT ATTRIBUTES

CORRECTLY DESIGNED AND INSTALLED POLYETHYLENE PIPE SYSTEMS USING WATERS & FARR PRODUCTS INCLUDE:

- Inert, corrosion free pipe material
- Low specific weight
- Low installation and maintenance costs
- Leak free welded construction
- Good resistance to impacts, ground movement
- High strength, durability and abrasion resistance
- Flexibility
- Long service life
- Polyethylene pipe is widely recognized as having good seismically resilient properties, which is supported by its performance in the 2010/2011 Canterbury earthquakes.

Source: SEISMIC PERFORMANCE OF PLASTIC PIPE SYSTEMS IN 2010/11 CANTERBURY EARTHQUAKES by Bill Noell, Water Services Infrastructure Lead, Pattle Delamore Partners.

Colour	Common Use
	Potable (Drinking) Water PE100
	Potable (Drinking) Water PE80
	Gas PE 80 and Gas PE100
	Reclaimed Water
	Pressure Sewer
	Electrical Conduit
	Communication / Rural
	Fibre optic / Rural

Refer to AS/NZS 4130 for specification information on pipe jacket and stripe colour options.

PRESSURE PIPE DIMENSIONS TO AS/NZS 4130

Pressure/Water PE Pipe -Series 1 to AS/NZS 4130

Nominal outside diameter (DN)	Mean outside diameter		Maximum out-of-roundness	SDR 13.6				SDR 11				SDR 9			
				Wall thickness		Mean inside diameter		Wall thickness		Mean inside diameter		Wall thickness		Mean inside diameter	
	Min	Max		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
20	20.0	20.3	1.2	1.6	1.9	16.2	17.1	1.9	2.2	15.6	16.5	2.3	2.7	14.6	15.7
25	25.0	25.3	1.2	1.9	2.2	20.6	21.5	2.3	2.7	19.6	20.7	2.8	3.2	18.6	19.7
32	32.0	32.3	1.3	2.4	2.8	26.4	27.5	2.9	3.3	25.4	26.5	3.6	4.1	23.8	25.1
40	40.0	40.4	1.4	3.0	3.4	33.2	34.4	3.7	4.2	31.6	33.0	4.5	5.1	29.8	31.4
50	50.0	50.5	1.4	3.7	4.2	41.6	43.1	4.6	5.2	39.6	41.2	5.6	6.3	37.4	39.3
63	63.0	63.6	1.5	4.7	5.3	52.4	54.2	5.8	6.5	50.0	52.0	7.1	8.0	47.0	49.4
75	75.0	75.7	1.6	5.5	6.2	62.6	64.7	6.8	7.6	59.8	62.1	8.4	9.4	56.2	58.9
90	90.0	90.9	1.8	6.6	7.4	75.2	77.7	8.2	9.2	71.6	74.5	10.1	11.3	67.4	70.7
110	110.0	111.0	2.2	8.1	9.1	91.8	94.8	10.0	11.1	87.8	91.0	12.3	13.7	82.6	86.4
125	125.0	126.2	2.5	9.2	10.3	104.4	107.8	11.4	12.7	99.6	103.4	14.0	15.5	94.0	98.2
140	140.0	141.3	2.8	10.3	11.5	117.0	120.7	12.7	14.1	111.8	115.9	15.7	17.4	105.2	109.9
160	160.0	161.5	3.2	11.8	13.1	133.8	137.9	14.6	16.2	127.6	132.3	17.9	19.8	120.4	125.7
180	180.0	181.7	3.6	13.3	14.8	150.4	155.1	16.4	18.2	143.6	148.9	20.1	22.3	135.4	141.5
200	200.0	201.8	4.0	14.7	16.3	167.4	172.7	18.2	20.2	159.6	165.4	22.4	24.8	150.4	157.0
225	225.0	227.1	4.5	16.6	18.4	188.2	193.9	20.5	22.7	179.6	186.1	25.1	27.8	169.4	176.9
250	250.0	252.3	5.0	18.4	20.4	209.2	215.5	22.7	25.1	199.8	206.9	27.9	30.8	188.4	196.5
280	280.0	282.6	9.8	20.6	22.8	234.4	241.4	25.4	28.1	223.8	231.8	31.3	34.6	210.8	220.0
315	315.0	317.9	11.1	23.2	25.7	263.6	271.5	28.6	31.6	251.8	260.7	35.2	38.9	237.2	247.5
355	355.0	358.2	12.5	26.1	28.9	297.2	306.0	32.2	35.6	283.8	293.8	39.6	43.7	267.6	279.0
400	400.0	403.6	14.0	29.4	32.5	335.0	344.8	36.3	40.1	319.8	331.0	44.7	49.3	301.4	314.2
450	450.0	454.1	15.6	33.1	36.6	376.8	387.9	40.9	45.1	359.8	372.3	50.2	55.4	339.2	353.7
500	500.0	504.5	17.5	36.8	40.6	418.8	430.9	45.4	50.1	399.8	413.7	55.8	61.5	377.0	392.9
560	560.0	565.0	19.6	41.2	45.5	469.0	482.7	50.8	56.0	448.0	463.5	62.5	68.9	422.2	438.4
630	630.0	635.7	22.1	46.3	51.1	527.8	543.1	57.2	63.1	503.8	521.3	70.3	77.5	475.0	493.2
710	710.0	716.4	24.9	52.2	57.6	594.8	612.0	64.5	71.1	567.8	587.4	79.3	87.4	535.2	557.8
800	800.0	807.2	28.0	58.8	64.8	670.4	689.6	72.5	80.0	640.0	662.0	89.3	98.4	603.2	628.6
900	900.0	908.1	31.5	66.2	73.0	754.0	775.7	81.7	90.0	720.0	744.7	-	-	-	-
1000	1000.0	1009.0	35.0	72.5	79.9	840.2	864.0	90.8	100.0	800.0	827.4	-	-	-	-
1200	1200.0	1210.0	42.0	88.2	97.2	1005.6	1034.4	-	-	-	-	-	-	-	-

Notes:

- Dimensions in mm.
- As per AS/NZS4130, Clause 9.4, out of roundness requirements shall apply at the time of manufacture and before coiling. These requirements are applicable to pipe of SDR17 and less.



POTABLE (DRINKING) WATER

- MTO = Made to Order. Capability exists to produce a wide range of DN/SDR variations up to DN1200.
- Pipes are available in coils, straight lengths and on returnable drums, subject to DN/SDR/Length.
- Pressure pipes conformance to AS/NZS 4130 is independently certified by Bureau Veritas
- For pipeline design and installation refer to AS/NZS 2566 and AS/NZS 2033.
- Technical guides are available on <http://watersandfarr.co.nz/technical-information/>

BLACK-BLUE JACKET PIPE COILS / LENGTHS

PN12.5 SDR11 PE80B

Item Code	DN	Stocked Lengths (m)					Av. Wall (mm)	Av. ID (mm)
		5	25	50	100	200		
WJ20.11	20	✓	✓	✓	✓	MTO	2.1	16
WJ25.11	25	✓	✓	✓	✓	✓	2.5	20.1
WJ32.11	32	✓	✓	✓	✓	✓	3.1	25.9
WJ40.11	40	✓	✓	✓	✓	✓	4.0	32.3
WJ50.11	50	✓	✓	✓	✓	MTO	4.9	40.4
WJ63.11	63	✓	✓	✓	✓	MTO	6.2	51.0
WJ90.11	90	MTO					8.7	73.0
WJ125.11	125	MTO					12.1	101.5



Note: Full product code includes pipe length. Example: WJ20.11 pipe in 100m length – code: WJ20.11.100

PN12.5 SDR13.6 PE100

Item Code	DN	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		6	12	100		
WJH125.13	125	✓	✓	✓	9.8	106.1
WJH140.13	140	MTO			10.9	118.8
WJH160.13	160	MTO			12.5	135.8
WJH180.13	180	✓	✓		14.1	152.7
WJH200.13	200	MTO			15.5	169.9
WJH225.13	225	MTO			17.5	191.0
WJH250.13	250	✓	✓		19.4	212.3
WJH280.13	280	MTO			21.7	237.9
WJH315.13	315	✓	✓		24.5	267.5
WJH355.13	355	✓	✓		27.5	301.6



Note: Full product code includes pipe length. Example: WJH125.13 pipe in 100m length – code: WJH125.13.100

PN16 SDR11 PE100

Item Code	DN	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		6	12	100		
WJH125.11	125	✓	✓	✓	12.1	101.5
WJH180.11	180	✓	✓		17.3	146.2
WJH225.11	225	MTO			21.6	182.8
WJH250.11	250	✓	✓		23.9	203.3
WJH280.11	280	MTO			26.7	227.8
WJH315.11	315	MTO			30.1	256.2
WJH355.11	355	MTO			33.9	288.8
WJH400.11	400	MTO			38.2	325.4
WJH450.11	450	MTO			43.0	366.0

Note: Full product code includes pipe length. Example WJH180.11 pipe in 12m length - code WJH180.11.12

BLACK-BLUE STRIPED PIPE COILS / LENGTHS

PN12.5 SDR13.6 PE100

Item Code	DN	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		6	12	100		
WHS125.13	125	MTO			9.8	106.1
WHS180.13	180	MTO			14.1	152.7
WHS225.13	225	MTO			17.5	191.0
WHS250.13	250	MTO			19.4	212.3
WHS280.13	280	MTO			21.7	237.9
WHS300.13	315	MTO			24.5	267.5
WHS350.13	355	MTO			27.5	301.6
WHS400.13	400	MTO			31.0	339.9
WHS450.13	450	MTO			34.9	382.3



Note: Full product code includes pipe length. Example: WHS125.13 pipe in 100m length - Code: WHS125.13.100

PN16 SDR11 PE100

Item Code	DN	Stocked Lengths (m)					Av. Wall (mm)	Av. ID (mm)
		6	12	25	50	100		
WHS20.11	20	MTO					2.1	16
WHS25.11	25	✓		✓	✓	✓	2.5	20.1
WHS32.11	32	✓		✓	✓	✓	3.1	25.9
WHS40.11	40	✓		✓	✓	✓	4.0	32.3
WHS50.11	50	✓		✓	✓	✓	4.9	40.4
WHS63.11	63	✓		✓	✓	✓	6.2	51.0
WHS125.11	125	✓	✓				12.1	101.5
WHS180.11	180	✓	✓				17.3	146.2
WHS250.11	250	MTO					23.9	203.3
WHS315.11	315	MTO					30.1	256.2
WHS355.11	355	MTO					33.9	288.8



Note: Full product code includes pipe length. Example: WHS20.11 pipe in 100m length - code: WHS20.11.100

PRESSURE / VACUUM SEWER

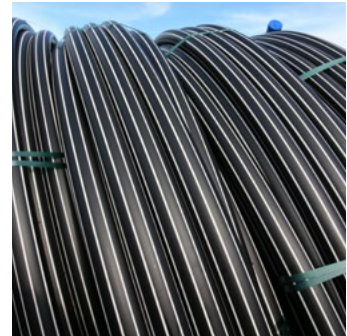
- MTO = Made to Order. Capability exists to produce a wide range of DN/SDR variations up to DN1200.
- Pipes are available in coils, straight lengths and on returnable drums, subject to DN/SDR/Length.
- Pressure pipes conformance to AS/NZS 4130 is independently certified by Bureau Veritas.
- For pipeline design and installation refer to AS/NZS 2566 and AS/NZS 2033.
- Technical guides are available on <http://watersandfarr.co.nz/technical-information/>

BLACK-CREAM STRIPED PIPE COILS / LENGTHS

PN16 SDR11 PE100

Item Code	DN	Stocked Lengths (m)				Av. Wall (mm)	Av. ID (mm)
		6	25	50	100		
WHS40.11...CRM	40		✓	✓	✓	4.0	32.3
WHS50.11...CRM	50	✓	✓	✓	✓	4.9	40.4
WHS63.11...CRM	63	✓	✓	✓	✓	6.2	51.0
WHS75.11...CRM	75		MTO		✓	7.3	60.8
WHS90.11...CRM	90		MTO		✓	8.7	73.0

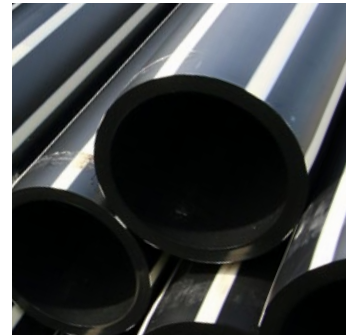
Note: Full product code includes pipe length. Example: WHS40.11. ... CRM pipe in 100m length – code: WHS40.11.100CRM



PN12.5 SDR13.6 PE100

Item Code	DN	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		6	12	100		
WHS90.13...CRM	90		MTO		7.0	76.4
WHS110.13...CRM	110		MTO		8.6	93.3
WHS125.13...CRM	125		MTO		9.8	106.1
WHS140.13...CRM	140		MTO		10.9	118.8
WHS160.13...CRM	160		MTO		12.5	135.8
WHS180.13...CRM	180		MTO		14.1	152.7
WHS200.13...CRM	200		MTO		15.5	169.9
WHS225.13...CRM	225		MTO		17.5	191.0
WHS250.13...CRM	250		MTO		19.4	212.3
WHS280.13...CRM	280		MTO		21.7	237.9
WHS315.13...CRM	315		MTO		24.5	267.5
WHS355.13...CRM	355		MTO		27.5	301.6
WHS400.13...CRM	400		MTO		31.0	339.9
WHS450.13...CRM	450		MTO		34.9	382.3

Note: Full product code includes pipe length. Example: WHS90.13. ... CRM pipe in 100m length – code: WHS90.13.100CRM



GENERAL PRESSURE

- MTO = Made to Order. Capability exists to produce a wide range of DN/SDR variations up to DN1200.
- Pipes are available in coils, straight lengths and on returnable drums, subject to DN/SDR/Length.
- Pressure pipes conformance to AS/NZS 4130 is independently certified by Bureau Veritas.
- For pipeline design and installation refer to AS/NZS 2566 and AS/NZS 2033.
- Technical guides are available on <http://watersandfarr.co.nz/technical-information/>

BLACK PIPE COILS / LENGTHS

PN12.5 SDR13.6 PE100

Item Code	DN	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		6	12	100		
WHB90.13	90		MTO		7.0	76.4
WHB110.13	110	✓	✓		8.6	93.3
WHB125.13	125	✓	✓	MTO	9.8	106.1
WHB140.13	140		MTO		10.9	118.8
WHB160.13	160		MTO		12.5	135.8
WHB180.13	180	✓	✓		14.1	152.7
WHB200.13	200		MTO		15.5	169.9
WHB225.13	225		MTO		17.5	191.0
WHB250.13	250	✓	✓		19.4	212.3
WHB280.13	280		MTO		21.7	237.9
WHB315.13	315		MTO		24.5	267.5
WHB355.13	355		MTO		27.5	301.6
WHB400.13	400		MTO		31.0	339.9
WHB450.13	450		MTO		34.9	382.3



Note: Full product code includes pipe length. Example: WHB90.13 pipe in 100m length – code: WHB90.13.100

PN16 SDR11 PE100

Item Code	DN	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		6	12	100		
WHB90.11	90	✓	✓	MTO	8.7	73.0
WHB110.11	110	✓	✓	MTO	10.6	89.4
WHB125.11	125	✓	✓	MTO	12.1	101.5
WHB140.11	140		MTO		13.4	113.8
WHB160.11	160	✓	✓		15.4	129.9
WHB180.11	180	✓	✓		17.3	146.2
WHB200.11	200		MTO		19.2	162.5
WHB225.11	225		MTO		21.6	182.8
WHB250.11	250		MTO		23.9	203.3
WHB280.11	280		MTO		26.8	227.8
WHB315.11	315		MTO		30.1	256.2
WHB355.11	355		MTO		33.9	288.8
WHB400.11	400		MTO		38.2	325.4
WHB450.11	450		MTO		43.0	366.0

Note: Full product code includes pipe length. Example: WHB90.11 pipe in 100m length – code: WHB90.11.100

GENERAL DRAINAGE

POLYETHYLENE PLAIN WALL PIPES TO AS/NZS 4130 SERIES 1 & AS/NZS 5065

Nominal outside diameter (DN)	Mean outside diameter		Maximum out of roundness	SDR 26		SDR 21		SDR 17	
	Min.	Max.		Wall thickness		Wall thickness		Wall thickness	
				Min.	Max.	Min.	Max.	Min.	Max.
110	110.0	111.0	2.2	4.3	4.9	5.3	6.0	6.6	7.4
125	125.0	126.2	2.5	4.8	5.4	6.0	6.7	7.4	8.3
140	140.0	141.3	2.8	5.4	6.1	6.7	7.5	8.3	9.3
160	160.0	161.5	3.2	6.2	7.0	7.7	8.6	9.5	10.6
180	180.0	181.7	3.6	6.9	7.7	8.6	9.6	10.7	11.9
200	200.0	201.8	4.0	7.7	8.6	9.6	10.7	11.9	13.2
225	225.0	227.1	4.5	8.6	9.6	10.8	12.0	13.4	14.9
250	250.0	252.3	5.0	9.6	10.7	11.9	13.2	14.8	16.4
280	280.0	282.6	9.8	10.7	11.9	13.4	14.9	16.6	18.4
315	315.0	317.9	11.1	12.1	13.5	15.0	16.6	18.7	20.7
355	355.0	358.2	12.5	13.6	15.1	16.9	18.7	21.1	23.4
400	400.0	403.6	14.0	15.3	17.0	19.1	21.2	23.7	26.2
450	450.0	454.1	15.6	17.2	19.1	21.5	23.8	26.7	29.5
500	500.0	504.5	17.5	19.1	21.2	23.9	26.4	29.6	32.7
560	560.0	565.0	19.6	21.4	23.7	26.7	29.5	33.2	36.7
630	630.0	635.7	22.1	24.1	26.7	30.0	33.1	37.3	41.2
710	710.0	716.4	24.9	27.2	30.1	33.9	37.4	42.1	46.5
800	800.0	807.2	28.0	30.6	33.8	38.1	42.1	47.4	52.3
900	900.0	908.1	31.5	34.4	38.0	42.9	47.3	53.5	59.0
1000	1000.0	1009.0	35.0	38.2	42.2	47.7	52.6	59.3	65.4
1200	1200.0	1210.0	42.0	45.9	50.6	57.2	63.1	70.6	77.8

Notes:

1. Dimensions in mm.
2. As per AS/NZS4130, Clause 9.4, out of roundness requirements shall apply at the time of manufacture and before coiling. These requirements are applicable to pipe of SDR17 and less.

PIPES – DRAINAGE

- MTO = Made to Order. Capability exists to produce a wide range of DN/SDR variations up to DN1200.
- Pipes are available in coils, straight lengths and on returnable drums, subject to DN/SDR/Length.
- Pressure pipes conformance to AS/NZS 4130 is independently certified by Bureau Veritas.
- For pipeline design and installation refer to AS/NZS 2566 and AS/NZS 2033.
- Technical guides are available on <http://watersandfarr.co.nz/technical-information/>

BLACK PIPE COILS / LENGTHS

PN10 SDR17 PE100 (SN16)

Item Code	DN	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		6	12	100		
SH90.17	90	✓	✓	✓	5.8	78.9
SH110.17	110	✓	✓	✓	7.0	96.5
SH125.17	125	✓	✓	✓	7.9	109.9
SH140.17	140		MTO		8.8	123.0
SH160.17	160	✓	✓		10.1	140.6
SH180.17	180	✓	✓		11.3	158.2
SH200.17	200	✓	✓		12.6	175.8
SH225.17	225	✓	✓		14.2	197.7
SH250.17	250	✓	✓		15.6	219.9
SH280.17	280	✓	✓		17.5	246.3
SH315.17	315	✓	✓		19.7	277.0
SH355.17	355	✓	✓		22.3	312.1
SH400.17	400	✓	✓		25.0	351.9
SH450.17	450	✓	✓		28.1	395.8
SH500.17	500	MTO	✓		31.2	439.9
SH560.17	560	MTO	✓		35.0	492.6
SH630.17	630	MTO	✓		39.3	554.3
SH710.17	710		MTO		44.3	624.6
SH800.17	800		MTO		49.9	703.9
SH900.17	900		MTO		56.3	791.5
SH1000.17	1000		MTO		62.4	879.8
SH1200.17	1200		MTO		74.2	1062.3



Note: Full product code includes pipe length. Example: SH90.17 pipe in 100m length – code: SH90.17.100

PN8 SDR21 PE100 (SN8)

Item Code	DN	Stocked Lengths (m)			Av. Wall (mm)	Av. ID (mm)
		6	12	100		
SH90.21	90		MTO		4.6	81.2
SH110.21	110		MTO		5.7	99.2
SH125.21	125		MTO		6.4	112.9
SH140.21	140		MTO		7.1	126.4
SH160.21	160		MTO		8.2	144.4
SH180.21	180		MTO		9.1	162.6
SH200.21	200		MTO		10.2	180.6
SH225.21	225		MTO		11.4	203.2
SH250.21	250		MTO		12.6	226.0
SH280.21	280		MTO		14.2	253.0
SH315.21	315		MTO		15.8	284.8
SH355.21	355		MTO		17.8	321.0
SH400.21	400		MTO		20.2	361.5
SH450.21	450		MTO		22.7	406.7
SH500.21	500		MTO		25.2	451.9
SH560.21	560		MTO		28.1	506.3
SH630.21	630		MTO		31.6	569.7
SH710.21	710		MTO		35.7	641.9
SH800.21	800		MTO		40.1	723.4
SH900.21	900		MTO		45.1	813.8
SH1000.21	1000		MTO		50.2	904.2
SH1200.21	1200		MTO		60.2	1084.7



Note: Full product code includes pipe length. Example: SH90.21 pipe in 100m length – code: SH90.21.100

TERRACOTTA – BLACK JACKET PIPE LENGTHS

“VISION” SN16 SDR17 TO AS/NZS 5065

- MTO = Made to Order. Capability exists to produce a wide range of DN/SDR variations up to DN450.
- Pipes are available in coils, straight lengths and on returnable drums, subject to DN/SDR/Length.
- Drainage pipes conformance to AS/NZS 5065 is independently certified by Bureau Veritas.
- For pipeline design and installation refer to AS/NZS 2566.
- Technical guides are available on <http://watersandfarr.co.nz/technical-information/>

Item Code	DN	Stocked Length (m)		Av. Wall (mm)	Av. ID (mm)
		6	12		
VP110.17	110		MTO	7.0	96.5
VP125.17	125		MTO	7.9	109.9
VP140.17	140		MTO	8.8	123.0
VP160.17	160		MTO	10.1	140.6
VP180.17	180		MTO	11.3	158.2
VP200.17	200		MTO	12.6	175.8
VP250.17	250		MTO	15.6	219.9

Note: Full product code includes pipe length. Example VP110.17 - pipe in 12 m length - Code: VP110.17.12



CIVILBOSS TWIN WALL POLYPROPYLENE PIPE

CIVILBOSS SN16 TO AS/NZS 5065

- CIVILBOSS pipes conformance to AS/NZS 5065 is independently certified by Bureau Veritas
- For pipeline design and installation refer to AS/NZS 2566.
- Technical guides are available on <http://watersandfarr.co.nz/technical-information/>



CivilBoss Pipe (Nominal Inside Diameter Series)

Product Code	Description	Weight (kg)	Crate Size
CIV225.16	DN225 x 6m CIVILBOSS SN16 PP RED/GREY	21	8
CIV300.16	DN300 x 6m CIVILBOSS SN16 PP RED/GREY	39	6
CIV375.16	DN375 x 6m CIVILBOSS SN16 PP RED/GREY	60	2
CIV450.16	DN450 x 6m CIVILBOSS SN16 PP RED/GREY	82	2

*A rubber ring is included with each pipe. Additional rings available on request

CivilBoss Rubber rings

Product Code	Description
BRR225.SN16	Rubber Ring DN225 for Bosspipe SN16
BRR300.SN16	Rubber Ring DN300 for Bosspipe SN16
BRR375.SN16	Rubber Ring DN375 for Bosspipe SN16
BRR450.SN16	Rubber Ring DN450 for Bosspipe SN16

CivilBoss Couplers

Product Code	Description
BC225	Coupler for DN225 Bosspipe
BC300	Coupler for DN300 Bosspipe
BC375	Coupler for DN375 Bosspipe
BC450	Coupler for DN450 Bosspipe

CivilBoss Manhole Connectors

Product Code	Description
BMHC222	MH Connector w/Hydroseal ring for DN225 Bosspipe
BMHRG225	Hydroseal ring only for DN225 Bosspipe
BMHC300	MH Connector w/Hydroseal ring for DN300 Bosspipe
BMHRG300	Hydroseal ring only for DN300 Bosspipe
BMHC375	MH Connector w/Hydroseal ring for DN375 Bosspipe
BMHRG375	Hydroseal ring only for DN375 Bosspipe
BMHC450	MH Connector w/Hydroseal ring for DN450 Bosspipe
BMHRG450	Hydroseal ring only for DN450 Bosspipe

CivilBoss Lubricant

Product Code	Description
BL475ML	Lube for Bosspipe 475ml - (1 Pint)
BLIQ	Lube for Bosspipe 1kg - (1 Quart)
BLIG	Lube for Bosspipe 5kg - (1 US Gallon)

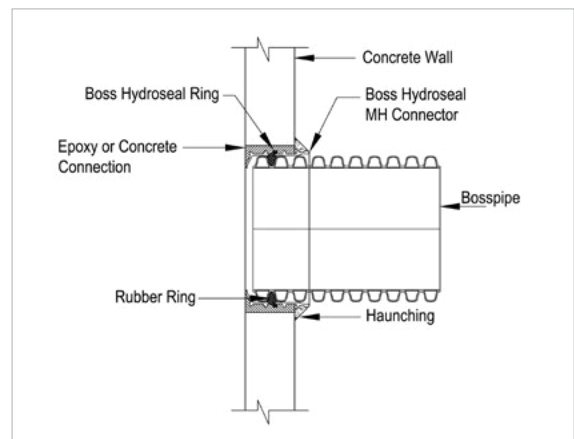


FIG. 1 Manhole Connection with a manhole connector
Where a flexible joint is required to provide for movement. Suitable for manholes, concrete walls, etc.

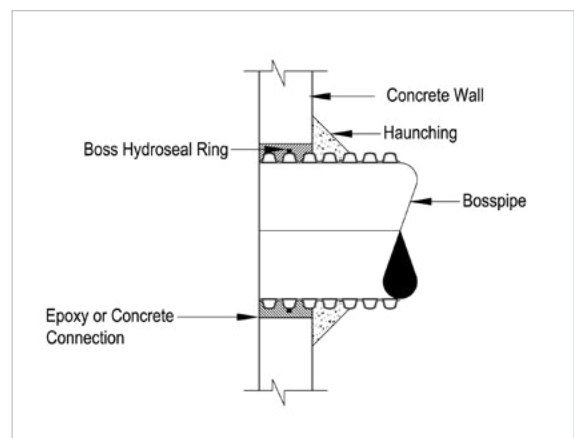


FIG. 2 Manhole Connection with a Boss Hydroseal ring
Where physical anchoring of the pipe is required (ie. like a puddle flange) – suitable for cesspits, stormwater manholes, concrete walls, etc.

CIVILBOSS IS A TWIN WALL EXTRUDED POLYPROPYLENE DRAINAGE PIPE WITH A SMOOTH INTERNAL BORE AND UV RESISTANT, CORRUGATED OUTER LAYER. IT HAS EXCELLENT RESISTANCE TO IMPACT, ABRASION AND CHEMICAL ATTACK.

TRANSPORTATION & HANDLING

- Civilboss is very light weight due to its twin wall construction so can be handled without heavy lifting equipment and transported on utility vehicles if required.
- A length of Civilboss pipe can easily be handled by two people, meaning significant savings in time, labour and machinery can be achieved.

JOINTING

- CivilBoss is quick and easy to cut on-site to any required length – no fuss, no hold-ups, no hassles.
- The integral socket and corrugated outer profile of CivilBoss allows for simple rubber jointing of full or partial lengths.
- A rubber ring is included with each 6m pipe length.

INSTALLATION & STRUCTURAL DESIGN

- The structural design procedure for buried flexible pipelines including CIVILBOSS is given in AS/NZS 2566.1 and its supplement.
- You'll find all installation and testing requirements and practices for CIVILBOSS pipelines in AS/NZS 2566.2 (subject for review, interpretation, application and approval by a qualified engineer who must assume full responsibility for verifying that information is appropriate and correct):
- The embedment of CivilBoss in normal soil should be of granular material, free from rocks and other hard or sharp objects. Gap 20, 14, 10 or 7 materials are recommended with a maximum particle size of 20mm and less than 5% of fines (<0.075 mm). These materials will require less compactive effort to achieve desired densities. Materials with 5–12% of fines may be used but will require considerably more compactive effort.
- The recommended minimum thickness of compacted bedding (lb) is 100 mm for sizes up to DN375 and 150 mm for DN450
- To ensure good side support for the pipe by bedding material, the recommended minimum width (lc) is:
 - 150 mm for DN225
 - 200 mm for DN300 and DN375
 - 300 mm for DN450
- The recommended minimum overlay thickness of bedding material (lo) is 150 mm.

Civilboss SN16 - Typical Dimensions*

Nominal Inside Diameter (DN)	Type	SN	Mean inside diameter (barrel) (mm)	Mean outside diameter (mm)		Pipe length (m)
				Barrel	Socket	
225	CivilBoss	16	220	259	272	6
300	CivilBoss	16	296	353	369	6
375	CivilBoss	16	370	442	463	6
450	CivilBoss	16	444	531	555	6

Note: *Not to be construed as specification.

EMBEDMENT GEOMETRY

TYPICAL PE AND CIVILBOSS PIPE TRENCH

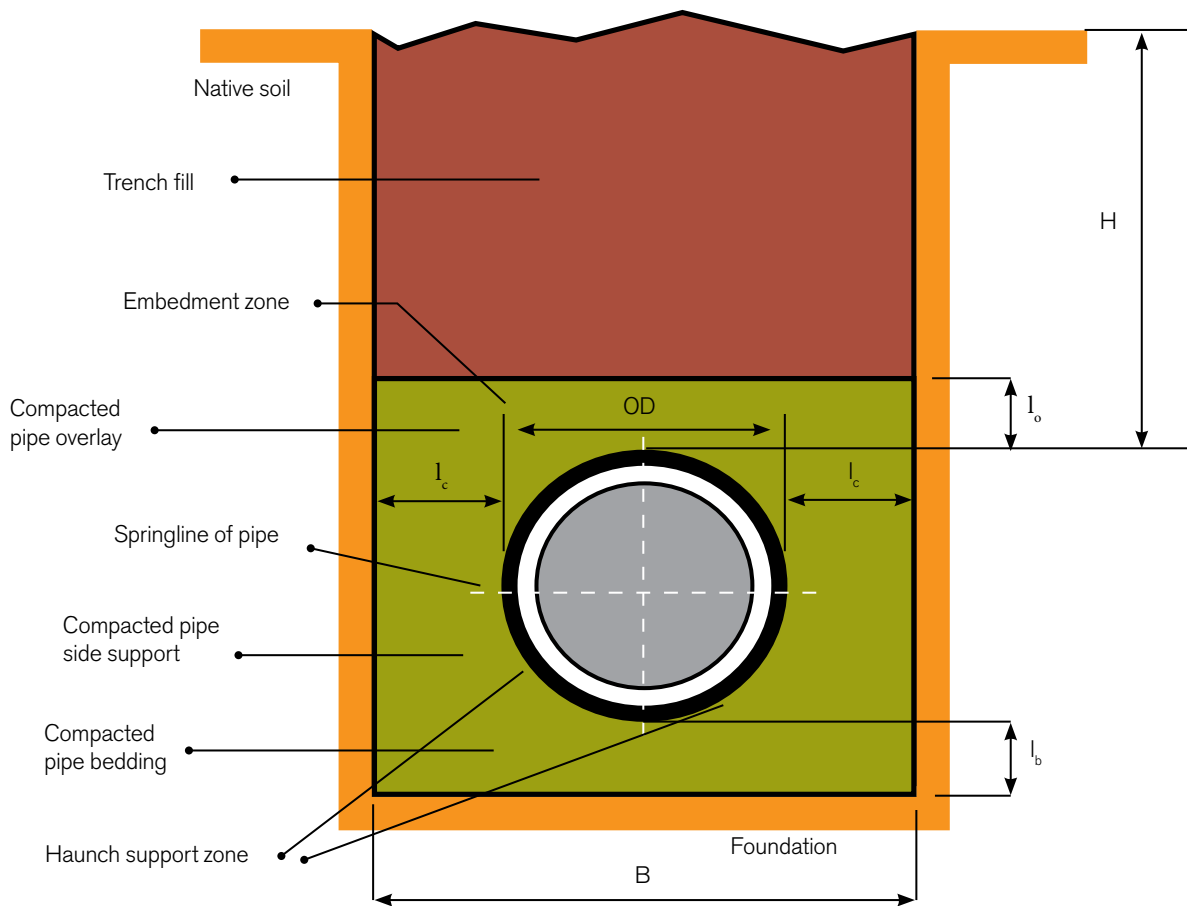


FIG. 3 Typical PE and CivilBoss Pipe Installation

OD (mm)		Minimum Values to AS/NZS 2566.2 (mm)		
		l_b	l_c	l_o
≥ 75	≤ 150	75	100	100
> 150	≤ 300	100	150	150
> 300	≤ 450	100	200	150
> 450	≤ 900	150	300	150
> 900	≤ 1500	150	350	200

Note: Dimensions in mm.

Minimum Cover (H) to AS/NZS 2566.2	
Loading condition	Minimum cover H (m) *
Not subject to vehicle loading	0.3
Land zoned for agricultural use	0.6
Subject to vehicular loading –	
▪ no carriageway;	0.45
▪ sealed carriageways; and	0.6
▪ unsealed carriageways	0.75
Pipelines in embankments or subject to construction equipment loads	0.75

Note: *Subject to design to AS/NZS 2566.1 and to variation by the relevant asset owner. Railway crossing shall comply with AS 4799 and relevant NZ Railroads' regulations

Civil, Water and Infrastructure Product Catalogue

Version 1.03

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