



PEX Water Systems
Technical and Installation Guide

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Overview

The Reflex PEX Water Systems are representative of all the attributes demanded by the Australian Plumbing and Gas Sectors; quality, value for money and expertise with PEX systems. The Reflex product offer combines all three of these desirables with a service level second-to-none.

The Reflex PEX Water Systems offer a choice of fitting styles; crimp fittings with pre-fitted stainless steel rings or slide-ring compression fittings. Both of these fitting options are used with Reflex PEX pipe. Using one of the tool options available, a leak-free joint can be fabricated with a minimum of fuss.

There are a number of trade outlets that stock these systems, so please call us for the details of your local stockist.

One of the many design features of Reflex crimp fittings is that a controlled, positive seal is produced without O-rings. This feature helps avoid any potential issues should the fitting not be crimped at installation because a problem will be immediately evident during the pressure test.

Most importantly, Reflex PEX Water Systems' components, fittings and/or pipe, are not interchangeable with any other manufacturers' system.

Reflex Water Systems are also designed as a system for water services installations in accordance with Australian Standard AS/NZS 3500. All requirements and limiting conditions of AS/NZS 3500 must be strictly adhered to.

Only licensed plumbers should install the Reflex PEX Systems. This document is intended to provide the plumber with the technical attributes of the Reflex PEX Water Systems; it is not a training guide for laypersons.

The various tips and suggestions found in this document are a means of reiterating some of the requirements of AS/NZS 3500; it is not to be interpreted as a document that allows the installer to disregard any other obligations or requirements of these Standards.

Inherent dangers when working with water is well known to plumbers and, with this in mind, DO NOT classify this manual as the definitive document with regards to the safety risks associated with water systems. We urge all tradespeople to complete any refresher courses from time to time and keep abreast of best-practice and trends within the sector.

AS/NZS 3500 must be read in its entirety to ensure compliance is met by the installer.

Reflex PEX Water Systems

Crimp Fittings

Reflex Crimp Fittings are manufactured to meet the strict requirements of AS/NZS 2537.2:2011 and AS/NZS 2537.5:2011, resulting in the product being suitable for both water and gas delivery.

The body of the fitting is made from dezincification resistant (DR) brass, threads formed to AS/NZS 1722.1 and the fitting complemented with stainless steel crimp-rings. The crimp-rings are positioned and fixed to the body of the fitting via a collet and come fitted with protection plugs to ensure the crimp-ring holds shape during transportation. Most importantly, the collet provides the user with inspection ports that allow installers to determine if the pipe is inserted to the correct depth.

It is critical to the integrity of the joint that the collet and crimp-ring are correctly positioned on the body of the fitting and have not been dislodged in transit prior to any attempt to make a joint. Further, a crimp-ring must not be “double-crimped” or reused in any way after it has been crimped; if this is the case, immediate replacement of the crimp-ring is required.

In order to complete a sound joint, the barb of the fitting is inserted into the bore of the pipe and pushed all of the way in until the end of the pipe meets the collet of the fitting. When in the correct position, the pipe will be clearly visible via the inspection ports in the collet. If the pipe is at the correct depth and the fitting is aligned as required the joint is ready for “crimping”. Upon crimping the joint the pipe is compressed between the wall of the crimp-ring and the barb of the fitting. The use of a specialised tool is required to complete this task.

One of the many design features of Reflex crimp fittings is that a controlled, positive seal is produced without O-rings, thereby totally eliminating the potential for all O-ring problems during installation. Most importantly, this feature helps avoid any potential issues should the fitting be missed and not crimped at installation because a problem will be immediately evident during the pressure test.

Upon creating a crimped joint for any Reflex fitting a Reflex Crimp Gauge must be used to ensure the pressing tongs have sufficiently crimped the crimp-ring to provide a leak-free outcome (see page 7 for assembly details) .

The range is available for sizes from DN16 to DN32.

Crimp Fitting Technical Data

Dia Nom	Description	Nom OD (mm)	Nom ID (mm)	Body	Crimp Ring	Tool Profile
DN16	DN16 Crimp	16	8.50	DR Brass	304 SS	TH or U
DN20	DN20 Crimp	20	11.20	DR Brass	304 SS	TH or U
DN25	DN25 Crimp	25	14.20	DR Brass	304 SS	TH or U
DN32	DN32 Crimp	32	19.00	DR Brass	304 SS	TH or U

Slide-ring Compression Fittings

Reflex PEX Slide-ring Compression Fittings are manufactured to meet the strict requirements of AS/NZS 2537.2:2011 and AS/NZS 2537.5:2011, resulting in the product being suitable for both water and gas delivery.

The body of the fitting and the slide-ring are both made from dezincification resistant (DR) brass and the threads formed to AS/NZS 1722.1. Purchased separately, the slide-rings are positioned on the pipe prior to pipe expansion.

In order to complete a sound joint, the PEX pipe is fed through the slide-ring and then expanded using the correct pipe expander. After expansion of the pipe, the barb of the fitting is inserted into the bore of the previously expanded PEX pipe. With the use of a specialised tool, the slide-ring is then pulled along the pipe and over the barb, thereby compressing the PEX pipe between the slide-ring and the barb of the fitting (see page 7 for assembly details).

It should be noted that either Reflex PE-Xa or Reflex PE-Xb can be used with Reflex slide-ring fittings.

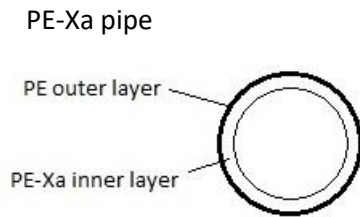
The range is available for sizes DN16 to DN50.

Slide-ring Compression Fitting Technical Data

Dia Nom	Description	Nom OD (mm)	Nom ID (mm)	Body
DN16	DN16 SR Compression	16	10.00	DR Brass
DN20	DN20 SR Compression	20	12.50	DR Brass
DN25	DN25 SR Compression	25	15.30	DR Brass
DN32	DN32 SR Compression	32	20.00	DR Brass
DN40	DN40 SR Compression	40	23.70	DR Brass
DN50	DN50 SR Compression	50	30.60	DR Brass

PEX Pipe

Reflex PE-Xa Pipe is a bonded, double-layered pipe manufactured to the exacting requirements of AS/NZS 2492:2007. The outer layer is a suitably coloured PE and the core is PE-Xa which is opaque.



The bore of Reflex PEX pipe is very smooth which results in very little friction loss and is resistant to internal scaling.

Like all reputable PEX pipe, Reflex PEX pipe has low thermal conductivity properties, increased flexibility and is lighter than its metal competitors. These features, when coupled with a flame-free solution, ensure Reflex PEX Water Systems offer many benefits to the installer and consumer.

Reflex PE-Xa pipe is rated at 2000kPa @ 20°C but the installer must consider a number of limitations placed upon its use as set-out in AS/NZS 3500¹.

Technical Data – PE-Xa

Nominal Diameter	DN16	DN20	DN25	DN32
Nominal OD (mm)	16	20	25	32
Nominal Bore (mm)	11.60	14.40	18.00	23.20
Thermal Conductivity (W/mk)	0.35	0.35	0.35	0.35
Thermal Expansion Rate (mm/mtr every 10° C change)	1.50	1.50	1.50	1.50
Thermal R- Value (K / W)	0.006	0.008	0.010	0.013
Pipe Roughness (W mm)	0.007	0.007	0.007	0.007
Maximum Continuous Operating Temperature (°C)	70	70	70	70
Maximum Operating Pressure* (kPa)	1000	1000	1000	1000
Bend Radius (without tools)	8 x OD	8 x OD	8 x OD	8 x OD
Weight (g) / metre	98	153	235	377
Volume (l) / metre	0.105	0.160	0.251	0.419
Coil Length (mtr)	50/100	50/100	50/100	20
Straight Length (mtr)	5	5	5	5
Colours (Black, Red, Green, Lilac)	B,R,G,L	B,R,G,L	B,R,G,L	B,R

Wall Penetrations

Only PROMASEAL CFC32 Conduit Collars are certified for use with Reflex PE-Xa pipe.

These collars have been tested in walls and floors and achieved up to 240 minutes fire resistance in accordance with the criteria BS 476: Part 20: 1987 and AS 1530 Part4:2005 depending upon size of pipe, installation practice and the material of the penetrated medium.

Pressure Loss Tables

Cold Water at 25°C

Peak Flow Rate Qs (l/s) (0.01 to 0.50)	PN20 16 x 2.2 OD (mm) = 16.00		PN20 20 x 2.8 OD (mm) = 20.00		PN20 25 x 3.5 OD (mm) = 25.00		PN20 32 x 4.4 OD (mm) = 32.00	
	ID (mm) = 11.60		ID (mm) = 14.40		ID (mm) = 18.00		ID (mm) = 23.20	
	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)
0.01		0.094		0.060		0.039		0.024
0.02		0.187		0.122		0.078		0.047
0.03		0.083		0.182		0.117		0.070
0.04	0.2331	0.374		0.244		0.155		0.094
0.05	0.3429	0.468	0.1229	0.304		0.194		0.117
0.06	0.4707	0.562	0.1684	0.364	0.0585	0.234		0.141
0.07	0.6178	0.655	0.2200	0.426	0.0763	0.272	0.0230	0.164
0.08	0.7785	0.749	0.2774	0.486	0.0960	0.311	0.2891	0.187
0.09	0.9577	0.843	0.3408	0.547	0.1178	0.350	0.0353	0.211
0.10	1.1532	0.937	0.4098	0.608	0.1415	0.389	0.0425	0.235
0.11	1.3648	1.031	0.4843	0.371	0.1670	0.428	0.0500	0.257
0.12	1.5924	1.124	0.5643	0.730	0.1944	0.467	0.0582	0.281
0.13	1.8357	1.218	0.6497	0.790	0.2236	0.506	0.0668	0.305
0.14	2.0944	1.312	0.7405	0.851	0.2546	0.545	0.0760	0.328
0.15	2.3687	1.405	0.8366	0.912	0.2874	0.583	0.0857	0.351
0.16	2.6582	1.499	0.9379	0.972	0.3219	0.623	0.0959	0.374
0.17	2.9628	1.593	1.0444	1.034	0.3582	0.661	0.1066	0.398
0.18	3.2824	1.686	1.1560	1.094	0.3962	0.700	0.1179	0.422
0.19	3.6171	1.780	1.2727	1.155	0.4358	0.740	0.1296	0.445
0.20	3.9665	1.873	1.3945	1.216	0.4772	0.778	0.1418	0.468
0.21	4.3308	1.967	1.5213	1.276	0.5201	0.817	0.1544	0.492
0.22	4.7096	2.061	1.6531	1.337	0.5648	0.856	0.1676	0.515
0.23	5.1033	2.154	1.7898	1.398	0.6111	0.895	0.1813	0.539
0.24	5.5113	2.248	1.9315	1.459	0.6591	0.934	0.1953	0.562
0.25	5.9340	2.342	2.0781	1.520	0.7086	0.972	0.2099	0.585
0.26	6.3710	2.436	2.2296	1.580	0.7598	1.012	0.2249	0.609
0.27	6.8226	2.529	2.3860	1.641	0.8127	1.050	0.2405	0.633
0.28	7.2884	2.623	2.5472	1.702	0.8670	1.089	0.2564	0.655
0.29	7.7685	2.717	2.7132	1.763	0.9231	1.129	0.2727	0.679
0.30	8.2629	2.811	2.8840	1.824	0.9806	1.167	0.2897	0.703
0.31	8.7716	2.904	3.0596	1.884	1.0398	1.206	0.3070	0.726
0.32	9.2944	2.998	3.2400	1.945	1.1005	1.245	0.3247	0.749
0.33	9.8314	3.092	3.4251	2.006	1.1628	1.284	0.3429	0.773
0.34	10.3824	3.185	3.6150	2.067	1.2266	1.323	0.3615	0.796
0.35	10.9476	3.279	3.8096	2.128	1.2920	1.361	0.3807	0.820
0.36	11.5269	3.372	4.0089	2.188	1.3589	1.401	0.4003	0.843
0.37	12.1202	3.466	4.2129	2.249	1.4274	1.439	0.4202	0.866

0.38	12.7274	3.560	4.4216	2.310	1.4974	1.478	0.4406	0.890
0.39	12.3588	3.653	4.6351	2.371	1.5690	1.518	0.4614	0.914
0.40	13.9839	3.747	4.8531	2.431	1.6420	1.556	0.4827	0.937
0.41			5.0758	2.492	1.7166	1.595	0.5045	0.960
0.42			5.3031	2.553	1.7927	1.634	0.5266	0.984
0.43			5.5352	2.614	1.8703	1.673	0.5492	1.007
0.44			5.7718	2.675	1.9494	1.712	0.5722	1.031
0.45			6.0130	2.735	2.0300	1.750	0.5956	0.105
0.46			6.2589	2.797	2.1122	1.790	0.6194	1.077
0.47			6.5093	2.857	2.1958	1.829	0.6437	1.101
0.48			6.7643	2.918	2.2809	1.867	0.6684	1.124
0.49			7.0240	2.979	2.3675	1.907	0.6936	1.147
0.50			7.2881	3.039	2.4556	1.945	0.7191	1.171
0.51	7.5569	3.279	2.5452	1.984	0.7451	1.194	0.2546	0.764
0.52	7.8302	3.161	2.6362	2.023	0.7714	1.218	0.2635	0.779
0.53	8.1081	3.221	2.7287	2.062	0.7982	1.241	0.2726	0.794
0.54	8.3904	3.283	2.8228	2.101	0.8255	1.264	0.2819	0.810
0.55	8.6774	3.343	2.9182	2.139	0.8531	1.288	0.2913	0.825
0.56	8.9690	3.405	3.0152	2.179	0.8811	1.312	0.3007	0.840
0.57	9.2650	3.465	3.1136	2.218	0.9096	1.335	0.3104	0.854
0.58	9.5656	3.531	3.2135	2.256	0.9384	1.358	0.3202	0.869
0.59	9.8707	3.587	3.3149	2.296	0.9677	1.382	0.3301	0.884
0.60	10.1803	3.647	3.4177	2.334	0.9974	1.405	0.3401	0.899
0.61	10.4980	3.709	3.5219	2.373	1.0275	1.429	0.3503	0.915
0.62	10.8131	3.769	3.6277	2.412	1.0580	1.452	0.3606	0.930
0.63	11.1362	3.829	3.7349	2.451	1.0890	1.475	0.3711	0.944
0.64	11.4638	3.891	3.8435	2.490	1.1203	1.499	0.3816	0.959
0.65	11.7959	3.951	3.9536	2.528	1.1521	1.523	0.3923	0.974
0.66			4.0651	2.568	1.1841	1.545	0.4032	0.989
0.67			4.1781	2.607	1.2167	1.569	0.4142	1.004
0.68			4.2924	2.645	1.2497	1.593	0.4253	1.019
0.69			4.3847	2.685	1.2830	1.616	0.4366	1.035
0.70			4.5257	2.723	1.3168	1.639	0.4480	1.049
0.71			4.6444	2.762	1.3329	1.663	0.4595	1.064
0.72			4.7646	2.207	1.3855	1.686	0.4711	1.079
0.73			4.8861	2.840	1.4205	1.710	0.4829	1.094
0.74			5.0092	2.879	1.4558	1.733	0.4949	1.109
0.75			5.1337	2.918	1.4916	1.756	0.5069	1.124
0.76			5.2596	2.957	1.5278	1.780	0.5191	1.139
0.77			5.3870	2.996	1.5643	1.803	0.5314	1.154
0.78			5.5157	3.034	1.6012	1.827	0.5439	1.169
0.79			5.6459	3.074	1.6386	1.850	0.5565	1.184
0.80			5.7775	3.113	1.6764	1.873	0.5692	1.199
0.81			5.9106	3.151	1.7146	1.897	0.5820	1.214
0.82			6.0450	3.190	1.7531	1.921	0.5950	1.229
0.83			6.1810	3.229	1.7920	1.943	0.6081	1.244
0.84			6.3183	3.268	1.8314	1.967	0.6213	1.259
0.85			6.4570	3.307	1.8711	1.991	0.6347	1.274

0.86			6.5971	3.346	1.9112	2.014	0.6482	1.289
0.87			6.7386	3.385	1.9518	2.037	0.6618	1.304
0.88			6.6281	3.015	1.9927	2.061	0.6756	1.319
0.89			7.0260	3.462	2.0340	2.084	0.6894	1.334
0.90			0.2419	3.320	2.0756	2.102	0.7034	1.349
0.91			7.3191	3.540	2.1178	2.131	0.7176	1.364
0.92			7.4677	3.579	2.1603	2.154	0.7318	1.379
0.93			7.6177	3.618	2.2031	2.178	0.7463	1.394
0.94			7.7691	3.657	2.2464	2.218	0.7607	1.409
0.95			7.9220	3.696	2.2901	2.225	0.7754	1.424
0.96			8.0762	3.735	2.3341	2.248	0.7902	1.438
0.97			8.2319	3.774	2.3786	2.272	0.8051	1.454
0.98			8.3890	3.812	2.4234	2.295	0.8201	1.469
0.99			8.5475	3.851	2.4686	2.319	0.8353	1.484
1.00			8.7073	3.891	2.5142	2.342	0.8506	1.499

Cold Water at 25°C

Peak Flow Rate Qs (l/s) (0.05 to 2.5)	PN20 32 x 4.4 OD (mm) = 32.00		PN20 40 x 5.5 OD (mm) = 40.00		PN20 50x 6.9 OD (mm) = 50.00	
	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)
0.05		0.117		0.075		0.049
0.10	0.0425	0.235	0.0148	0.149		0.096
0.15	0.0857	3.515	0.0297	0.225	0.0104	0.145
0.20	0.1418	0.468	0.0490	0.300	0.0171	0.192
0.25	0.2099	0.585	0.0724	0.374	0.0251	0.241
0.30	0.2897	0.703	0.0996	0.449	0.0347	0.288
0.35	0.3807	0.820	0.1307	0.525	0.0453	0.337
0.40	0.4827	0.937	0.1654	0.600	0.0573	0.385
0.45	0.5956	1.054	0.2038	0.674	0.0706	0.433
0.50	0.7191	1.171	0.2458	0.749	0.0849	0.481
0.55	0.8531	1.288	0.2913	0.825	0.1006	0.529
0.60	0.9974	1.405	0.3401	0.899	0.1173	0.577
0.65	1.1521	1.523	0.3923	0.974	0.1352	0.626
0.70	1.3168	1.634	0.4480	1.049	0.1542	0.673
0.75	1.4916	1.756	0.5069	1.124	0.1743	0.722
0.80	1.6764	1.873	0.5692	1.199	0.1956	0.769
0.85	1.8711	1.991	0.6347	1.274	0.2180	0.818
0.90	2.0756	2.108	0.7034	1.349	0.2414	0.865
0.95	2.2901	2.225	0.7754	1.424	0.2659	0.914
1.00	2.5142	2.342	0.8506	1.499	0.2915	0.962
1.05	2.7480	2.459	0.9289	1.574	0.3182	1.010
1.10	2.9916	2.576	1.0105	1.648	0.3458	1.058
1.15	3.2447	2.693	1.0951	1.724	0.3746	1.106
1.20	3.5075	2.811	1.1830	1.799	0.4043	1.154

1.25	3.7797	2.927	1.2738	1.873	0.4352	1.203
1.30	4.0615	3.044	1.3679	1.948	0.4670	1.250
1.35	4.3528	3.162	1.4650	2.024	0.4999	1.299
1.40	4.6536	3.279	1.5652	2.099	0.5338	1.346
1.45	4.9639	3.396	1.6684	2.173	0.5687	1.395
1.50	5.2835	3.513	1.7748	2.248	0.6046	1.442
1.55	5.6125	3.630	1.8841	2.324	0.6415	1.491
1.60	5.9510	3.747	1.9965	2.398	0.6794	1.539
1.65			2.1120	2.473	0.7184	1.587
1.70			2.2304	2.548	0.7583	1.635
1.75			2.3518	2.623	0.7992	1.683
1.80			2.4764	2.698	0.8412	1.732
1.85			2.6038	2.773	0.8841	1.779
1.90			2.7343	2.848	0.9279	1.828
1.95			2.8677	2.922	0.9728	1.876
2.00			3.0042	2.998	1.0186	1.924
2.05			3.1436	3.073	1.0654	1.972
2.10			3.2860	3.147	1.1133	2.020
2.15			3.4313	3.222	1.1621	2.068
2.20			3.5796	3.298	1.2118	2.117
2.25			3.7309	3.372	1.2624	2.164
2.30			3.8852	3.447	1.3141	2.213
2.35			4.0423	3.522	1.3668	2.260
2.40			4.2024	3.598	1.4204	2.309
2.45			4.3654	3.672	1.4749	2.356
2.50			4.5313	3.747	1.5303	2.405

Hot Water at 60°C

Peak Flow Rate Qs (l/s) (0.01 to 0.50)	PN20 16 x 2.2 OD (mm) = 16.00		PN20 20 x 2.8 OD (mm) = 20.00		PN20 25 x 3.5 OD (mm) = 25.00		PN20 32 x 4.4 OD (mm) = 32.00	
	ID (mm) = 11.60		ID (mm) = 14.40		ID (mm) = 18.00		ID (mm) = 23.20	
	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)
0.01		0.094		0.060		0.039		0.024
0.02	0.0584	0.187		0.122		0.078		0.047
0.03	0.1179	0.281	0.0422	0.182	0.0147	0.117		0.070
0.04	0.1948	0.374	0.0695	0.244	0.0241	0.155	0.0072	0.094
0.05	0.2884	0.468	0.1026	0.304	0.0354	0.194	0.0106	0.117
0.06	0.3980	0.562	0.1412	0.364	0.0487	0.234	0.0146	0.141
0.07	0.5233	0.655	0.1852	0.426	0.0594	0.272	0.0190	0.164
0.08	0.6638	0.749	0.2344	0.486	0.0806	0.311	0.0241	0.187
0.09	0.8194	0.843	0.2889	0.547	0.0991	0.350	0.0295	0.211
0.10	0.9899	0.937	0.3484	0.608	0.1193	0.389	0.0354	0.235
0.11	1.1750	1.031	0.4128	0.668	0.1412	0.428	0.0420	0.257
0.12	1.3746	1.124	0.4822	0.730	0.1647	0.467	0.0489	0.281
0.13	1.5887	1.218	0.5566	0.790	0.1899	0.506	0.0562	0.305
0.14	1.8169	1.312	0.6357	0.851	0.2166	0.545	0.0642	0.328
0.15	2.0594	1.405	0.7196	0.912	0.2449	0.583	0.0724	0.351
0.16	2.3160	1.499	0.8083	0.972	0.2748	0.623	0.0812	0.374
0.17	2.5866	1.593	0.9017	1.034	0.3063	0.661	0.0904	0.398
0.18	2.8711	1.686	0.9998	1.094	0.3393	0.700	0.1000	0.422
0.19	3.1696	1.780	1.1025	1.155	0.3737	0.740	0.1101	0.445
0.20	3.4819	1.873	1.2099	1.216	0.4098	0.778	0.1206	0.468
0.21	3.8079	1.967	1.3218	1.276	0.4474	0.817	0.1316	0.492
0.22	4.1478	2.061	1.4385	1.337	0.4864	0.856	0.1430	0.515
0.23	4.5013	2.154	1.5596	1.398	0.5270	0.895	0.1547	0.539
0.24	4.8686	2.248	1.6854	1.459	0.5690	0.934	0.1669	0.562
0.25	5.2495	2.342	1.8157	1.520	0.6106	0.972	0.1796	0.585
0.26	5.6439	2.436	1.9504	1.580	0.6575	1.012	0.1927	0.609
0.27	6.0520	2.529	2.0898	1.641	0.7039	1.050	0.2061	0.633
0.28	6.4736	2.623	2.2335	1.702	0.7518	1.089	0.2200	0.655
0.29	6.9087	2.717	2.3818	1.763	0.8011	1.129	0.2342	0.679
0.30	7.3574	2.811	2.5346	1.824	0.8520	1.167	0.2489	0.703
0.31	7.8195	2.904	2.6919	1.884	0.9043	1.206	0.2640	0.726
0.32	8.2951	2.998	2.8536	1.945	0.9579	1.245	0.2796	0.749
0.33	8.7842	3.092	3.0197	2.006	1.0131	1.284	0.2954	0.773
0.34	9.2867	3.185	3.1903	2.067	1.0696	1.323	0.3118	0.796
0.35	9.8026	3.279	3.3653	2.128	1.1276	1.361	0.3285	0.820
0.36	10.3318	3.372	3.5448	2.188	1.1870	1.401	0.3456	0.843
0.37	10.8746	3.466	3.7286	2.249	1.2479	1.439	0.3631	0.866
0.38	11.4306	3.560	3.9168	2.310	1.3102	1.478	0.3808	0.890

0.39	12.0001	3.653	4.1095	2.371	1.3738	1.518	0.3994	0.914
0.40	12.5829	3.747	4.3066	2.431	1.4390	1.556	0.4181	0.937
0.41			4.5081	2.492	1.5055	1.595	0.4372	0.960
0.42			4.7139	2.553	1.5734	1.634	0.4567	0.984
0.43			4.9241	2.614	1.6427	1.673	0.4765	1.007
0.44			5.1387	2.675	1.7134	1.712	0.4968	1.031
0.45			5.3576	2.735	1.7856	1.750	0.5175	1.054
0.46			5.5809	2.797	1.8590	1.790	0.5386	1.077
0.47			5.5809	2.857	1.9340	1.829	0.5599	1.101
0.48			6.0407	2.918	2.0103	1.867	0.5818	1.124
0.49			6.2770	2.979	2.0880	1.907	0.6040	1.147
0.50			6.5178	3.039	2.1671	1.945	0.6266	1.171
0.51	6.7629	3.101	2.2476	1.984	0.6495	1.194	0.2199	0.764
0.52	7.0123	3.161	2.3295	2.023	0.6729	1.218	0.2277	0.779
0.53	7.2660	3.221	2.4127	2.062	0.6967	1.241	0.2357	0.794
0.54	7.5241	3.283	2.4973	2.101	0.7208	1.264	0.2438	0.810
0.55	7.7865	3.343	2.5833	2.139	0.7454	1.288	0.2521	0.825
0.56	8.0533	3.405	2.6707	2.179	0.7702	1.312	0.2604	0.840
0.57	8.3243	3.465	2.7595	2.218	0.7956	1.335	0.2688	0.854
0.58	8.5997	3.531	2.8496	2.256	0.8212	1.358	0.2774	0.869
0.59	8.8794	3.587	2.9412	2.296	0.8472	1.382	0.2861	0.884
0.60	9.1634	3.647	3.0341	2.334	0.8737	1.405	0.2949	0.899
0.61	9.4518	3.709	3.1284	2.373	0.9004	1.429	0.3039	0.915
0.62	9.7445	3.769	3.2240	2.412	0.9276	1.452	0.3130	0.930
0.63	10.0415	3.829	3.3211	2.451	0.9552	1.475	0.3222	0.944
0.64	10.3427	3.891	3.4194	2.490	0.9831	1.499	0.3316	0.959
0.65	10.6483	3.951	3.5192	2.528	1.0114	1.523	0.3410	0.974
0.66			3.6202	2.568	1.0401	1.545	0.3506	0.989
0.67			3.7228	2.607	1.0692	1.569	0.3603	1.004
0.68			3.8266	2.645	1.0986	1.593	0.3701	1.019
0.69			3.9319	2.685	1.1284	1.616	0.3801	1.035
0.70			4.0384	2.723	1.1586	1.639	0.3902	1.049
0.71			4.1463	2.762	1.1892	1.663	0.4003	1.064
0.72			4.2557	2.801	1.2201	1.686	0.4107	1.079
0.73			4.3663	2.840	1.2515	1.710	0.4210	1.094
0.74			4.4784	2.879	1.2831	1.733	0.4316	1.109
0.75			4.5917	2.918	1.3141	1.756	0.4422	1.124
0.76			4.7065	2.957	1.3476	1.780	0.4530	1.139
0.77			4.8226	2.996	1.3804	1.803	0.4640	1.154
0.78			4.9400	3.034	1.4135	1.827	0.4750	1.169
0.79			5.0588	3.074	1.4471	1.850	0.4862	1.184
0.80			5.1790	3.113	1.4810	1.873	0.4975	1.199
0.81			5.3006	3.151	1.5153	1.897	0.5089	1.214
0.82			5.4234	3.190	1.5499	1.921	0.5203	1.229
0.83			5.5477	3.229	1.5850	1.943	0.5320	1.244
0.84			5.6732	3.268	1.6203	1.967	0.5437	1.259
0.85			5.8001	3.307	1.6561	1.991	0.5556	1.274
0.86			5.9284	3.346	1.6922	2.014	0.5676	1.289

¹ AS/NZS 3500 must be read in its entirety to ensure compliance is met by the installer.

0.87			6.0580	3.385	1.7287	2.037	0.5797	1.304
0.88			6.1890	3.423	1.7656	2.061	0.5919	1.319
0.89			6.3213	3.462	1.8029	2.084	0.6043	1.334
0.90			6.4550	3.502	1.8404	2.102	0.6168	1.349
0.91			6.5900	3.540	1.8784	2.131	0.6293	1.364
0.92			6.7265	3.579	1.9167	2.154	0.6421	1.379
0.93			6.8642	3.618	1.9554	2.178	0.6549	1.394
0.94			7.0033	3.657	1.9946	2.202	0.6679	1.409
0.95			7.1436	3.696	2.0340	2.225	0.6809	1.424
0.96			7.2854	3.735	2.0738	2.248	0.6941	1.438
0.97			7.4285	3.774	2.1139	2.272	0.7075	1.454
0.98			7.5729	3.812	2.1545	2.295	0.7208	1.469
0.99			7.7187	3.851	2.1954	2.319	0.7344	1.484
1.00			7.8658	3.891	2.2367	2.342	0.7480	1.499

Hot Water at 60°C

Peak Flow Rate Qs (l/s) (0.05 to 2.5)	PN20 32 x 4.4 OD (mm) = 32.00		PN20 40 x 5.5 OD (mm) = 40.00		PN20 50x 6.9 OD (mm) = 50.00	
	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)	Head Loss (kPa/m)	Velocity (m/s)
0.05	0.0106	0.117	0.0037	0.075	0.0013	0.049
0.10	0.0354	0.235	0.0123	0.149	0.0043	0.096
0.15	0.0724	0.351	0.0249	0.225	0.0087	0.145
0.20	0.1206	0.468	0.0414	0.300	0.0144	0.192
0.25	0.1796	0.585	0.0614	0.374	0.0213	0.241
0.30	0.2489	0.703	0.0849	0.449	0.0293	0.288
0.35	0.3285	0.820	0.1119	0.525	0.0385	0.337
0.40	0.4181	0.937	0.1421	0.600	0.0489	0.385
0.45	0.5175	1.054	0.1755	0.674	0.0603	0.433
0.50	0.6266	1.171	0.2122	0.749	0.0728	0.481
0.55	0.7454	1.288	0.2521	0.825	0.0863	0.529
0.60	0.8737	1.405	0.2949	0.899	1.0088	0.577
0.65	1.0114	1.523	0.3410	0.974	0.1165	0.626
0.70	1.1586	1.669	0.3902	1.05	0.1332	0.673
0.75	1.3151	1.756	0.4422	1.337	0.1508	0.722
0.80	1.4810	1.873	0.4975	1.199	0.1695	0.769
0.85	1.6561	1.991	0.5556	1.274	0.1891	0.818
0.90	1.8404	2.108	0.6168	1.349	0.2158	0.865
0.95	2.0340	2.225	0.6809	1.424	0.2314	0.914
1.00	2.2367	2.342	0.7480	1.499	0.2539	0.962
1.05	2.4486	2.459	0.8180	1.574	0.2775	1.010
1.10	2.6695	2.576	0.8911	1.648	0.3020	1.058
1.15	2.8996	2.693	0.9669	1.741	0.3274	1.106

1.20	3.1387	2.811	1.0458	1.799	0.3538	1.154
1.25	3.3869	2.927	1.1275	1.873	0.3812	1.203
1.30	3.6442	3.044	1.2122	1.948	0.4096	1.250
1.35	3.9104	3.162	1.2997	2.024	0.4389	1.299
1.40	4.1857	3.279	1.3901	2.099	0.4691	1.346
1.45	4.4699	3.396	1.4834	2.173	0.5001	1.395
1.50	4.7632	3.513	1.5795	2.248	0.5322	1.442
1.55	5.0654	3.630	1.6785	2.324	0.5653	1.491
1.60	5.3767	3.747	1.7804	2.398	0.5992	1.539
1.65	0.0000	0.000	1.8852	2.473	0.6341	1.587
1.70	0.0000	0.000	1.9928	2.548	0.6699	1.635
1.75	0.0000	0.000	2.1033	2.623	0.7066	1.683
1.80	0.0000	0.000	2.2165	2.698	0.7443	1.732
1.85	0.0000	0.000	2.3326	2.773	0.7828	1.779
1.90	0.0000	0.000	2.4516	2.848	0.7233	1.828
1.95	0.0000	0.000	2.5734	2.922	0.8627	1.876
2.00	0.0000	0.000	2.6980	2.998	0.9040	1.924
2.05	0.0000	0.000	2.8255	3.073	0.8472	1.972
2.10	0.0000	0.000	2.9557	3.147	0.9831	2.020
2.15	0.0000	0.000	3.0888	3.222	0.1033	2.068
2.20	0.0000	0.000	3.2247	3.298	1.0783	2.117
2.25	0.0000	0.000	3.3634	3.372	1.1242	2.164
2.30	0.0000	0.000	3.5050	3.447	1.1710	2.213
2.35	0.0000	0.000	3.6492	3.522	1.2187	2.260
2.40	0.0000	0.000	3.7965	3.598	1.2672	2.309
2.45	0.0000	0.000	3.9463	3.672	1.3167	2.356

Installation Instructions

AS/NZS 3500¹ outlines a number of installation practices and considerations the installer must follow in order to complete works in a safe, compliant manner.

Summarised, the list of some of the considerations that must form part of the installation include¹;

- Pipe protection
- Pipe limitations
- Pipe sizing
- Thermal expansion
- Exposure to heat
- Exposure to UV rays
- Clipping & supporting
- Installation underground, in-slab & underfloor
- Connection to other material
- Future extension
- Fire Protection
- Testing

UV Protection and Mechanical Protection

AS/NZS 3500¹ outlines a number of installation practices and considerations the installer must follow, including UV protection and mechanical protection of PEX pipe.

The most effective way to satisfy this requirement is to install the PEX pipe within Reflex UV resistant, corrugated tube.

Heat Trace

The maximum temperature of the heating source in contact with Reflex PEX pipe must not exceed 65°C; confirm specifications with the Heat Trace manufacturer.

¹ AS/NZS 3500 must be read in its entirety to ensure compliance is met by the installer.

Assembly

Crimp Fittings

Cut Pipe

Cut pipe using Hippo PEX Cutter. The pipe should be cut square and any debris removed prior to installation. **NEVER USE A HACKSAW TO CUT PEX PIPE.**



Check Fitting Assembly

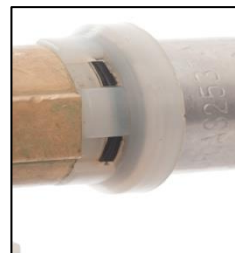
Remove the crimp-ring protection plugs from the fitting assembly.

Confirm the crimp-ring and collet are fitted tight against its seat on the body of the fitting by attempting to wiggle the components.



Insert Fitting

Insert the barb of the fitting into the bore of the pipe. When the pipe is inserted to the correct depth and resting against the pipe stop, the pipe will be fully visible via the inspection ports in the base-plate.



Position, Crimp & Gauge the Joint

Position the Fitting

Position the tongs such that the base plate is seated in its location slot. Ensure the pipe is visible via inspection ports and align the fitting as required.



Crimp the Fitting

Fully close the tongs of the tool and then release.



Gauge the Joint

Double-check the integrity of the joint by ensuring the crimp gauge can pass over the diameter of the newly formed indentations in the crimp-ring.



CAUTION: Gauging of the fitting after crimping is critical to completing a leak-free joint. Re-calibrating of tools maybe required to ensure the correct force/impression depth of the crimping process is achieved.

Pressure Test

The testing protocol outlined in AS/NZS 3500¹ MUST BE ADHERED TO in addition to any/all local regulations or requirements.

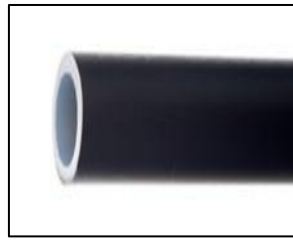
CAUTION: Failure to test the circuit in strict accordance with the relevant Australian Standard may result in product failure and unsafe, dangerous, installations. Do not test the circuit at an arbitrary pressure, test the circuit at the pressure outlined in the Australian Standard.

¹ AS/NZS 3500 must be read in its entirety to ensure compliance is met by the installer.

Slide-ring Compression Fittings

Cut Pipe

Cut pipe using Hippo PEX Cutter. The pipe should be cut square and any debris removed prior to installation. **NEVER USE A HACKSAW TO CUT PEX PIPE.**



Fit Compression Sleeve

PE-Xa pipe is fed through the slide-ring ensuring the sleeve is fitted with the chamfered end facing towards the body of a fitting.



Expand Pipe

Insert the expander head into the bore of the pipe and expand the pipe by completing a single stroke of the tool. Then rotate the tool 90 degrees in readiness for another expansion stroke. The process is complete upon the completion of 4 strokes, i.e. 4 single strokes evenly spread around the bore of the pipe. **DO NOT OVER-EXPAND THE PIPE.**



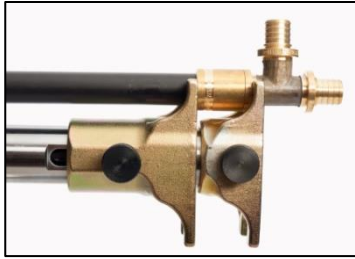
Insert Fitting

With the sleeve in place and the pipe expanded, insert the barb of the fitting into bore of the pipe ensuring the pipe rests against the stop found after the last barb. **THE PIPE MUST NOT BE OVER-EXPANDED SUCH THAT IT PASSES OVER THE PIPE STOP.**



Complete the Joint

Position the compression jaws over the sleeve and shoulder of the fitting simultaneously and allow the tool to complete the joint.



Pressure Test

The testing protocol outlined in AS/NZS 3500¹ MUST BE ADHERED TO in addition to any/all local regulations or requirements.

CAUTION: Failure to test the circuit in strict accordance with the relevant Australian Standard may result in product failure and unsafe, dangerous, installations. Do not test the circuit at an arbitrary pressure, test the circuit at the pressure outlined in the Australian Standard.

¹ AS/NZS 3500 must be read in its entirety to ensure compliance is met by the installer.

System Tools

Power Tools

Battery-operated tools are available for both crimp and compression fittings. The kits come complete in a steel carry case with tongs suitable for 16mm to 25mm crimp fittings and heads for 16mm to 25mm compression fittings. Both kits also come with batteries and a battery charger.



Hand Tools, Cutters, Expanders and Guages

Hippo Multicrimp hand tools are available for the Reflex crimp fittings. Options for the hand tool include the Multicrimp tool with interchangeable tongs for 16mm to 25mm fittings or the Megacrimp tool which can handle crimp fitting sizes from 16mm to 32mm. Both options come with a carry case and adjustment spanner.

Hydraulic and mechanical hand tool options are also available for use with Reflex compression fittings.



CAUTION: Re-calibrating of tools, particularly hand tools, maybe required to ensure the correct force/impression-depth of the crimping process is achieved. If unsure talk with your local Reflex representative for detailed advice.

Warranty Statement and Conditions

This warranty is provided by Saveur Pacific Pty Ltd, 27B Prosperity Place, Geebung Queensland 4034. We may be contacted by phone at +61 7 3266 4794 or at www.savpac.com.au

All products sold by Saveur Pacific come with a warranty that cannot be excluded under Australian Consumer Law (ACL).

You are entitled to a replacement or refund for a major failure and, if reasonably foreseeable, compensation for other loss or damage. If the goods fail to be of acceptable quality and failure does not amount to a major failure, Saveur Pacific has the right to provide you with a repair or replacement product.

In addition to all rights you are entitled to under any Australian law(s), Reflex Water and Gas Systems are guaranteed free from manufacturing defects and/or faulty workmanship for a period of 25 years, subject to the conditions outlined below.

If any other party within the supply chain wishes to provide additional warranty or change any warranty conditions, it does so without any authority from Saveur Pacific.

Warranty Conditions

1. Reflex Water and Gas systems must have been installed by a licensed Plumber or Gas Fitter in accordance with the information supplied in this document, AS/NZS 3500, AS/NZS 5601:2013, and all relevant statutory and local requirements of the State or Territory in which the system is installed.
2. All pipe sizing values listed in this document are specific to the Reflex PEX Water Systems and must not be substituted with the values produced by any other manufacturers.
3. Only Reflex Water Fittings and Reflex PEX Pipe can be intermixed as these products are not interchangeable with other manufacturers' products.
4. All requests for warranty must be made directly with the entity from which the product(s) was purchased.
5. If on-site investigation of any issue is agreed to by Saveur Pacific, Saveur Pacific reserves the right to appoint a third party of its choosing to act as its representative.

Warranty is offered in good faith in accordance with all Australian consumer law(s).

However, our liability under this manufacturer's warranty is subject to us being satisfied that a defect was caused by defective workmanship during manufacture and/or failed materials and was not caused by, or substantially contributed to, factors or circumstances beyond our control including (but not limited to) the following;

1. Where damage is caused by accident, acts of God, misuse or incorrect installation.
2. Where failure is found to be caused by poor, malformed joints.
3. The failure is due, in part or in whole, to faulty manufacture or incorrect installation of any appliance of which the Reflex Water and Gas Systems form part.
4. Where the failure, directly or indirectly, is as a result of excessive pressure or temperature, thermal input, corrosive environments, non-compliance with the REFLEX Installation Guide or failure to adhere to all relevant statutory and local requirements of the State or Territory in which these systems are installed.
5. Failure of the system was due to foreign matter or debris, either from installation or poor conditions, resulting in blocked components or appliances.

SAVEUR PACIFIC PTY LTD

ABN: 63 135 169 603

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