LIANG CHEW HARDWARE
联 洲 五 金

NORIKA PEX F6 MULTILAYER PIPES AND FITTINGS

Scan for installation video:

EQAIMS European Quality Assurance ISO 9001:2015

SINGAPORE GREEN BUILDING PRODUCT CERTIFICATE

AWARDED TO

Liang Chew Hardware Pte Ltd

133 Kitchener Road
Singapore 208517

FOR THE PRODUCT

Pipe & Fittings - Potable Water

PRODUCT BRAND

Norika

PRODUCT MODEL

Refer to Appendix

THE PRODUCT HAS BEEN ASSESSED ACCORDING TO THE ASSESSMENT CRITERIA OF SINGAPORE GREEN BUILDING PRODUCT CERTIFICATION SCHEME. IT HAS BEEN AWARDED THE RATING:

SINGAPORE GREEN BUILDING PRODUCT SGBC GOOD

Director
SGBC Pte Ltd

Certificate Number	Original Issue Date	Revised Date	Valid Till
SGBP 4219	07 December 2023	-	06 December 2025

✓Good ✓✓Very Good ✓✓✓Excellent ✓✓✓✓Leader

The use and reliance on this certificate is subject to the terms and conditions of the Singapore Green Building Product Certification Scheme. Revised certificates may also be issued at the discretion of the Council. The certification status may be verified at the Singapore Green Building Council website (www.sgbc.sg).

SINGAPORE GREEN BUILDING PRODUCT CERTIFICATE

Appendix

Certificate Number: SGBP 4219

Models

[PIPES] - PIPPEX: [16mm, 20mm, 25mm, 32mm, 40mm, 50mm, 63mm and 75mm],[Fittings, Push-Fit] - (16mm, 20mm, 25mm and 32mm)(PEXF6EC || PEXF6E90 || PEXF6ET || PEXF6ES || PEXF6MIA || PEXF6FIA || PEXF6MIE || PEXF6FIE || PEXF6FE || PEXF6MIT || PEXF6FIT || PEXF6RT) // (20mm, 25mm and 32mm) (PEXF6RS || PEXF6RE90) // (16mm, 20mm, and 25mm) (PEXF6BV) // (16mm and 20mm) (PEXF6FE) ,[Fittings] - (16mm, 20mm, 25mm, 32mm, 40mm, 50mm, 63mm and 75mm) (PEXF5ES || PEXF5RS || PEXF5E90 || PEXF5RE90 || PEXF5EC16 || PEXF5ET16 || PEXF5RT || PEXF5MIT || PEXF5FIT || PEXF5MIA || PEXF5FIA) // (16mm, 20mm, 25mm, 32mm, 40mm, 50mm & 63mm) (PEXF5MIE || PEXF5FIE) // (16mm, 20mm, 25mm, 32mm, 40mm and 50mm) (PEXF5FJC) // (16mm, 20mm and 25mm) (PEXF5FE || PEXF5BV) // (16mm and 20mm) (PEXF5FES)

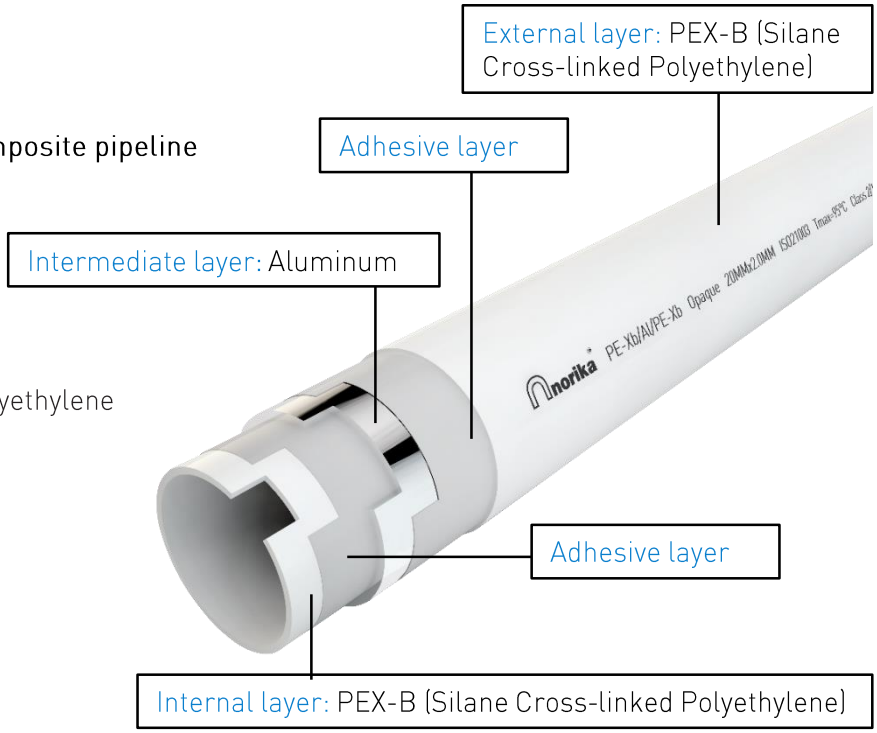
The **Norika® Multilayer PEX pipes**, is a three layer pipe in which it consist of materials PEX-B for its outside and inside layer while the middle layer is made of aluminum. The **Norika® Multilayer PEX pipes** have an operating pressure of 10bar and working temperature of 0℃ to 70℃. External and internal layer is made of silane cross-linked polyethylene that is extensively used in distribution of potable water. The silane cross-linking provides superior chemical and mechanical properties. While the intermediate layer is an aluminum alloy with overlapped welding that guarantees a total barrier to the passage of oxygen and light and provides excellent mechanical and chemical properties. It is applicable for hot and cold potable water applications also used for under floor heating system. Main advantages of multilayer pipes:

- Increase in internal pressure resistance.
- Ductility. Thanks to its aluminum layer, once pipes have been curved it will keep that form.
- Tightness to oxygen diffusion.
- Dimensional stability.
- Long service life.
- Higher flow.

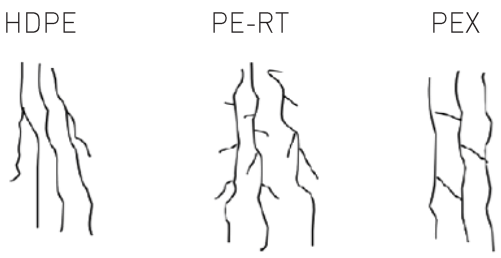
PAP——Polyethylene-Aluminum composite pipeline

Raw Material

- HDPE-AL-HDPE
  HDPE: High density polyethylene
- PERT-AL-PERT
  PERT: Heat resistant reinforced polyethylene
- PEX-AL-PEX
  PEX: Cross-linked polyethylene



Why Crosslinking?



Changing the structure to increase heat resistance and strength of the pipe.

- Insoluble & infusible – solvent resistance, high-temperature resistance
- Crosslinked construction – Impact / tensile strength, creep resistance, scratch resistance

Comparison Of The Three Cross-Linking Methods

	PEX-A		PEX-B		PEX-C		
Production Process	Engel (Peroxide plunger method)	Daoplas (Infrared cross-linking method)	Monsil (One-step method)	Sioplas (Two-step method)	γ-co	β-accelerator	UV
Basic formulation of Materials	HDPE + Peroxide + Antioxidants		HDPE + Peroxide + Antioxidants + Silane + Catalyst		HDPE + Antioxidants + Photosensitizer		
Agglomerate Structure	Planar Crosslinking		Volume Crosslinking		Volume Crosslinking		
Reaction by-Products	Initiator by-products (can be removed by post-treatment)		Initiator by-products + silane oligomers + silane hydrolysis by-products (Silane is difficult to remove)		Photosensitizer byproduct (Generally does not require post-processing)		
Rigidity	Poor		Good		Average		
Flexibility	Good		Poor		Average		
Hygiene Performance	Average		Poor		Good		
Aging Resistance	Poor		Average		Poor		
Memorability	Excellent memory effect, especially for use with cold expansion connections		Minimal shape memory, not suitable for cold expansion fittings		Minimal shape memory, not suitable for cold expansion fittings		
Cracking & Repair	Heat the kinked area with a heat gun until the material becomes translucent, then allow to cool.		The pipe is bent into a kink will produce white cracks, for the dead bend of the pipe, can not be repaired		PEX-C can use a heat gun to heat to transparent for small kink recovery, the effect is not as perfect as PEX-A		
Cross-linking Degree	≥70%		≥65%		≥60%		

Comparison Of Hydrostatic Stress

Test Conditions	Hydrostatic stress (MPa)	
	PE-RT	PE-X
20℃, 1h	9.9	12
95℃, 22h	3.8	4.7
95℃, 165h	3.6	4.6
95℃, 1000h	3.4	4.4

PEX-A, PEX-B, PERT+EVOH & Multilayer Technical Parameter Comparison Table

	PEX-A (Other Brand)	PEX (PEX-B)	EVOH+PERT pure plastic pipe (Other Brand)	NORIKA Multilayer (PEX multilayer pipe)	Note
Production Process	Engel (Peroxide plunger method)	Monsil (One-step method)	multilayer co-extrusion	Multilayer co-extrusion + metal welding + tube boiling crosslink	
Basic formulation of materials	HDPE + Peroxide + Antioxidants	HDPE + Peroxide + Antloxdants + Silane + Catalyst	PERT+EVOH	PEX-B Raw Material+Aluminium	
Agglomerate structure	Planar Crosslinking	volume Crosslinking	PERT+EVOH	PEXB-AL-PEXB	NORIKA multilayer pipe, based on the bulk crosslinking of PEXb, has a metal layer for reinforcement, achieving the most stable state.
Rigidity	LOW	AVERAGE	LOW	HIGH	
Flexibility	HIGH	HIGH	HIGH	AVERAGE Can be bent by hand	
Hygiene perfomance	AVERAGE	AVERAGE	GOOD	EXCELLENT	Due to the metal layer, NORIKA multilayer pipe can 100% barriers off light and oxygen
Aging resistance	LOW	AVERAGE	AVERAGE	HIGH	
Memorability	HIGH	LOW	LOW	LOW	
Cracking & Repair	AVERAGE Dead bend can be repaired	AVERAGE Slight bend can be repaired	LOW Crack cannot be repaired	EXCELLENT Crack cannot be repaired	The structure with multi-layer distribution of metal and non-metal significantly enhances crack resistance.
Cross-linking degree	≥70%	≥65%	No Crosslink	Same With NORIKA PEX-b	
Average coefficient of expansion(mm/mK)	HIGH (0.15)	HIGH (0.2)	NA	LOW (0.025) Hard to be deformed	The lower the value, the smaller the deformation impact caused by hot-cold alternation, and the less damage to the building.
roughness (mm)	AVERAGE (0.007)	LOW (0.0001)	NA	LOW (0.0007)	A low roughness can reduce water flow resistance and prevent sediment accumulation, further improving hygiene.
Max working temperature (Tmax,℃)	90	90	NA	95	The maximum temperature at which the pipe can work normally for a long term.
Short time extream high temperature (Tmal,℃)	100	100	NA	110	Extremely high temperature. Under this temperature, the pipe usually works for no more than 100 hours.
Working pressure (70℃, MPa)	1	1	NA	1	
Density (g/cm^3)	NA	0.946	0.941	0.946 (Plastic Layer)	
Vicat Softening temperature (℃)	NA	133	125	133 (Plastic Layer)	It is generally understood as the critical temperature at which the pipe softens and deforms due to heat.
Yeild Streee (kg/cm^2)	NA	210	210	210 (Plastic Layer)	
Elongation at Break (%)	NA	468	750	468 (Plastic Layer)	

Norika® PEX Multilayer Extrapolated Strength Values

Prediction 20°C				Prediction 70°C			
Time [h]	Time [y]	σLPL [MPa]	σLTHS [MPa]	Time [h]	Time [y]	σLPL [MPa]	σLTHS [MPa]
1	0.00	22.99	23.15	1	0.00	15.61	15.78
10	0.00	21.44	21.59	10	0.00	14.03	14.18
22	0.00	20.94	21.08	22	0.00	13.53	13.67
100	0.01	20.00	20.14	100	0.01	12.61	12.74
165	0.02	19.70	19.83	165	0.02	12.32	12.44
1000	0.11	18.65	18.78	1000	0.11	11.32	11.44
4000	0.46	17.89	18.01	4000	0.46	10.62	10.80
8760	1.00	17.47	17.59	8760	1.00	10.24	10.34
438000	50.00	15.51	15.62	438000	50.00	8.53	8.62

Prediction 95°C				Prediction 110°C			
Time [h]	Time [y]	σLPL [MPa]	σLTHS [MPa]	Time [h]	Time [y]	σLPL [MPa]	σLTHS [MPa]
1	0.00	11.56	11.71	1	0.00	9.08	9.23
10	0.00	10.09	10.22	10	0.00	7.74	7.87
22	0.00	9.63	9.76	22	0.00	7.33	7.45
100	0.01	8.80	8.92	100	0.01	6.60	6.71
165	0.02	8.55	8.66	165	0.02	6.38	6.48
1000	0.11	7.68	7.78	1000	0.11	5.63	5.72
4000	0.46	7.08	7.17	4000	0.46	5.11	5.19
8760	1.00	6.75	6.84	8760	1.00	4.84	4.92

Temperature	Extrapolation time [h]	Extrapolation time [y]	Test temperature used	Extrapolation time factor, ke
20°C	876000	100.00	95°C	100.00
70°C	490707	56.02	110°C	50.00
95°C	39257	4.48	110°C	4.00
110°C	9814	1.12	110°C	1.00

Pressure loss

Calculation formula: Colebrook - White Equation

$$r = f \times \frac{L}{D} \times P \times \frac{V^2}{2}$$

$$\frac{1}{\sqrt{f}} = -2\log\left(\frac{e}{3.7D} + \frac{2.51}{Re\sqrt{f}}\right)$$

$$Re = \frac{\rho \times V \times D}{\mu}$$

Description:

- r = heath loss (Pa)
- f = friction factor
- ρ = density of the fluid (kg/m^3)
- V = the velocity of the fluid (m/s)
- D = the pipe inner diameter (m)
- L = pipe length (m)
- e = relative roughness
- Re = reynolds number
- μ = dynamic viscosity (Pa·s)

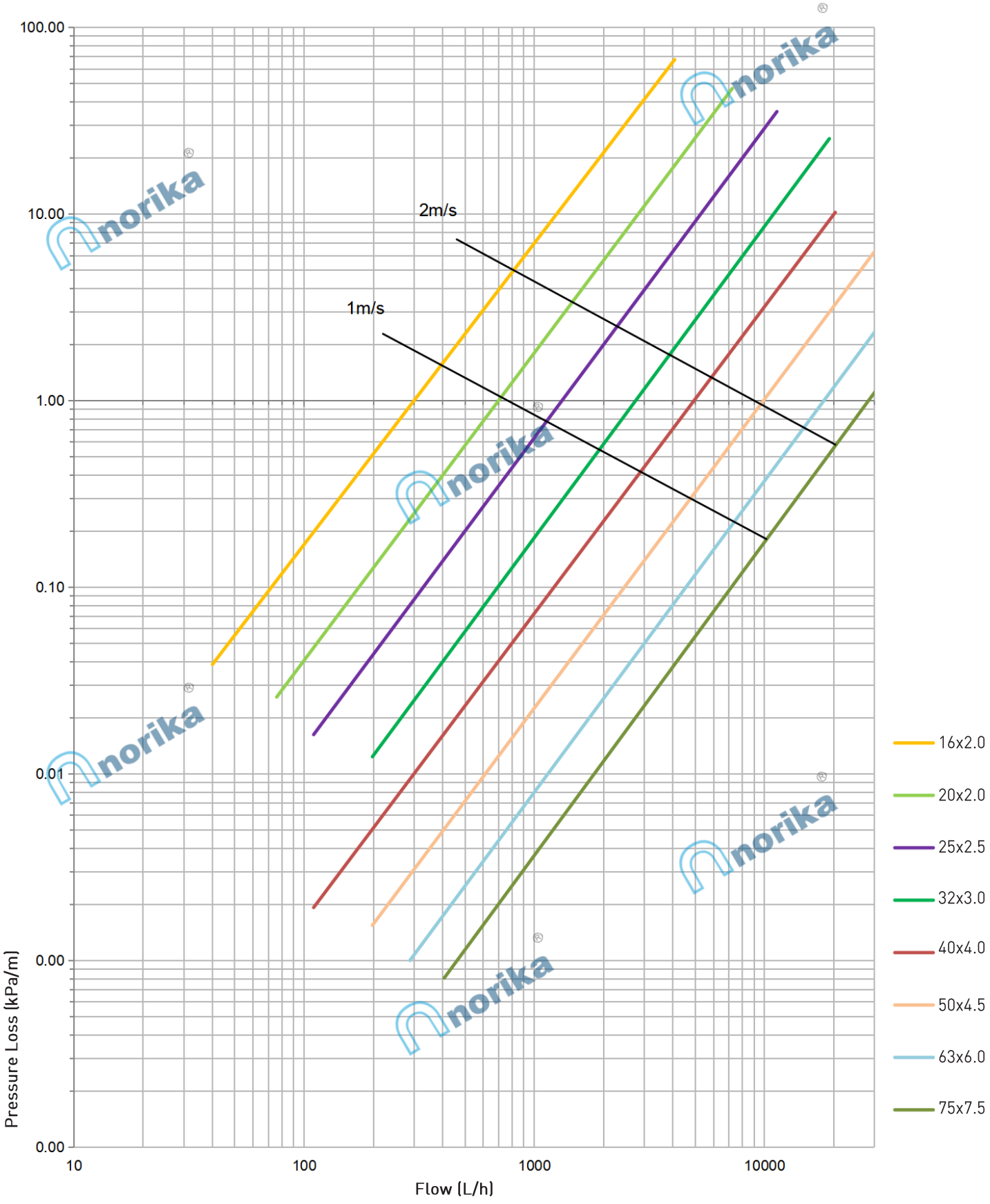
Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 10°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
23	0.01																
29	0.01																
40	0.01	0.098	0.053														
54	0.02	0.133	0.076														
76	0.02	0.187	0.117	0.105	0.034												
110	0.03	0.270	0.188	0.152	0.054	0.097	0.021			0.038	0.003						
198	0.06	0.486	0.436	0.274	0.120	0.175	0.045	0.104	0.014	0.068	0.006	0.042	0.002				
230	0.06	0.565	0.559	0.318	0.149	0.203	0.055	0.120	0.018	0.079	0.007	0.048	0.002				
288	0.08	0.707	0.825	0.398	0.212	0.255	0.076	0.151	0.024	0.099	0.010	0.061	0.003	0.039	0.001		
350	0.10	0.860	1.147	0.484	0.297	0.309	0.104	0.183	0.031	0.121	0.013	0.074	0.004	0.048	0.002		
406	0.11	0.997	1.478	0.561	0.382	0.359	0.133	0.212	0.039	0.140	0.015	0.085	0.005	0.055	0.002	0.040	0.001
460	0.13	1.130	1.837	0.636	0.472	0.407	0.166	0.241	0.048	0.159	0.019	0.097	0.006	0.063	0.002	0.045	0.001
573	0.16	1.407	2.668	0.792	0.688	0.507	0.240	0.300	0.070	0.198	0.026	0.121	0.008	0.078	0.003	0.056	0.002
688	0.19	1.690	3.563	0.951	0.944	0.608	0.329	0.360	0.096	0.238	0.036	0.145	0.011	0.094	0.004	0.068	0.002
720	0.20	1.768	3.832	0.995	1.019	0.637	0.356	0.377	0.103	0.249	0.039	0.151	0.012	0.098	0.004	0.071	0.002
850	0.24	2.088	5.335	1.174	1.334	0.752	0.474	0.445	0.137	0.294	0.052	0.179	0.016	0.116	0.006	0.084	0.003
916	0.25	2.250	6.005	1.266	1.499	0.810	0.538	0.479	0.156	0.316	0.059	0.193	0.018	0.125	0.007	0.090	0.003
1000	0.28	2.456	6.902	1.382	1.750	0.884	0.621	0.523	0.182	0.345	0.068	0.210	0.021	0.136	0.008	0.098	0.004
1146	0.32	2.815	8.580	1.583	2.288	1.013	0.769	0.600	0.229	0.396	0.086	0.241	0.027	0.156	0.010	0.113	0.004
1220	0.34	2.996	9.489	1.685	2.527	1.079	0.852	0.638	0.255	0.421	0.096	0.257	0.030	0.166	0.011	0.120	0.005
1373	0.38	3.372	11.488	1.897	3.048	1.214	1.096	0.718	0.308	0.474	0.118	0.289	0.036	0.187	0.013	0.135	0.006
1413	0.39	3.470	12.034	1.952	3.191	1.249	1.148	0.739	0.322	0.488	0.124	0.297	0.038	0.192	0.014	0.139	0.006
1450	0.40	3.561	12.553	2.003	3.326	1.282	1.196	0.759	0.336	0.501	0.129	0.305	0.040	0.197	0.014	0.142	0.007
1603	0.45	3.937	14.805	2.215	3.905	1.417	1.402	0.839	0.396	0.554	0.152	0.337	0.048	0.218	0.017	0.157	0.008
1690	0.47	4.151	16.153	2.335	4.252	1.494	1.524	0.884	0.455	0.584	0.165	0.356	0.052	0.230	0.019	0.166	0.009
1833	0.51	4.502	18.479	2.532	4.852	1.621	1.735	0.959	0.520	0.633	0.188	0.386	0.060	0.249	0.021	0.180	0.010
1900	0.53	4.667	19.622	2.625	5.143	1.680	1.838	0.994	0.551	0.656	0.199	0.400	0.064	0.258	0.023	0.187	0.011
1980	0.55	4.863	21.017	2.735	5.501	1.751	1.963	1.036	0.588	0.684	0.214	0.417	0.068	0.269	0.024	0.195	0.011
2062	0.57	5.064	22.491	2.849	5.879	1.823	2.096	1.079	0.627	0.712	0.239	0.434	0.073	0.280	0.026	0.203	0.012
2200	0.61	5.403	25.107	3.039	6.544	1.945	2.327	1.151	0.695	0.760	0.268	0.463	0.080	0.299	0.029	0.216	0.014
2262	0.63	5.556	26.306	3.125	6.850	2.000	2.434	1.183	0.727	0.781	0.281	0.476	0.084	0.308	0.031	0.222	0.014
2290	0.64	5.624	26.853	3.164	6.991	2.025	2.484	1.198	0.741	0.791	0.286	0.482	0.086	0.311	0.031	0.225	0.015
2400	0.67	5.895	29.074	3.316	7.557	2.122	2.681	1.256	0.799	0.829	0.308	0.505	0.092	0.326	0.034	0.236	0.016
2442	0.68	5.998	29.951	3.374	7.780	2.159	2.758	1.278	0.821	0.843	0.317	0.514	0.095	0.332	0.035	0.240	0.016
2545	0.71	6.251	32.129	3.516	8.334	2.250	2.952	1.332	0.877	0.879	0.338	0.535	0.102	0.346	0.037	0.250	0.017
2700	0.75	6.631	35.533	3.730	9.199	2.387	3.253	1.413	0.965	0.933	0.338	0.568	0.119	0.367	0.041	0.265	0.019
2770	0.77	6.803	37.121	3.827	9.605	2.449	3.394	1.449	1.006	0.957	0.387	0.583	0.124	0.377	0.043	0.272	0.020
2828	0.79	6.946	38.501	3.907	9.948	2.501	3.511	1.480	1.040	0.977	0.400	0.595	0.128	0.385	0.044	0.278	0.021
2895	0.80	7.110	40.043	4.000	10.347	2.560	3.650	1.515	1.080	1.000	0.415	0.609	0.133	0.394	0.046	0.284	0.022
3100	0.86	7.614	45.056	4.283	11.617	2.741	4.090	1.622	1.207	1.071	0.463	0.652	0.148	0.422	0.051	0.305	0.024
3258	0.91	8.002	49.098	4.501	12.636	2.881	4.445	1.705	1.310	1.125	0.502	0.685	0.160	0.443	0.057	0.320	0.026
3325	0.92	8.167	50.855	4.594	13.082	2.940	4.599	1.740	1.354	1.148	0.519	0.700	0.165	0.452	0.060	0.327	0.027
3450	0.96	8.474	54.216	4.766	13.931	3.050	4.893	1.805	1.439	1.192	0.550	0.726	0.175	0.469	0.064	0.339	0.029
3665	1.02	9.002	60.243	5.063	15.447	3.241	5.416	1.917	1.589	1.266	0.607	0.771	0.193	0.498	0.071	0.360	0.032
3880	1.08	9.530	66.448	5.360	17.027	3.431	5.964	2.030	1.748	1.340	0.666	0.816	0.212	0.528	0.078	0.381	0.036
4070	1.13	9.996	72.223	5.623	18.494	3.599	6.468	2.129	1.893	1.406	0.721	0.856	0.229	0.553	0.084	0.400	0.040

Medium: Water; 1 mbar/m = 100 Pa/m

Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 10°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
4250	1.18			5.872	19.932	3.758	6.962	2.224	2.034	1.468	0.774	0.894	0.245	0.578	0.090	0.418	0.043
4340	1.21			5.996	20.661	3.837	7.215	2.271	2.107	1.499	0.801	0.913	0.253	0.590	0.093	0.426	0.044
4432	1.23			6.123	21.429	3.919	7.480	2.319	2.182	1.531	0.829	0.932	0.262	0.603	0.096	0.435	0.045
4720	1.31			6.521	23.902	4.173	8.332	2.469	2.426	1.630	0.920	0.993	0.290	0.642	0.106	0.464	0.050
4990	1.39			6.894	26.327	4.412	9.166	2.611	2.666	1.723	1.010	1.050	0.318	0.679	0.116	0.490	0.055
5065	1.41			6.998	27.019	4.478	9.405	2.650	2.733	1.749	1.035	1.066	0.326	0.689	0.119	0.498	0.056
5300	1.47			7.322	29.228	4.686	10.172	2.773	2.953	1.831	1.117	1.115	0.351	0.721	0.128	0.521	0.060
5540	1.54			7.654	31.552	4.898	10.981	2.898	3.184	1.913	1.202	1.166	0.378	0.753	0.137	0.544	0.065
5790	1.61			7.999	34.018	5.119	11.850	3.029	3.433	2.000	1.296	1.218	0.406	0.787	0.147	0.569	0.070
6150	1.71			8.497	37.467	5.438	13.158	3.218	3.806	2.124	1.434	1.294	0.449	0.836	0.163	0.604	0.077
6515	1.81			9.001	40.569	5.761	14.546	3.409	4.203	2.250	1.582	1.371	0.494	0.886	0.179	0.640	0.084
6900	1.92			9.533	44.114	6.101	16.070	3.610	4.639	2.383	1.744	1.452	0.544	0.938	0.197	0.678	0.092
7235	2.01			9.996	47.510	6.397	17.431	3.785	5.036	2.499	1.892	1.522	0.589	0.984	0.213	0.711	0.100
7650	2.13					6.764	19.052	4.002	5.548	2.642	2.081	1.610	0.647	1.040	0.233	0.752	0.109
7920	2.20					7.003	20.076	4.144	5.890	2.735	2.209	1.666	0.687	1.077	0.247	0.778	0.116
8680	2.41					7.675	22.836	4.541	6.908	2.998	2.587	1.826	0.802	1.180	0.288	0.853	0.135
9050	2.51					8.002	24.408	4.735	7.427	3.126	2.780	1.904	0.861	1.231	0.309	0.889	0.144
9560	2.66					8.453	26.873	5.002	8.142	3.302	3.057	2.011	0.946	1.300	0.339	0.939	0.158
10180	2.83					9.001	30.069	5.326	8.981	3.516	3.411	2.142	1.054	1.384	0.377	1.000	0.176
10700	2.97					9.461	32.884	5.598	9.629	3.696	3.720	2.251	1.149	1.455	0.410	1.051	0.191
11310	3.14					10.000	36.301	5.917	10.460	3.906	4.093	2.380	1.264	1.538	0.451	1.111	0.210
12500	3.47							6.540	12.320	4.317	4.805	2.630	1.503	1.700	0.535	1.228	0.249
13380	3.72							7.000	13.906	4.621	5.283	2.815	1.692	1.819	0.602	1.315	0.279
14500	4.03							7.586	16.091	5.008	5.986	3.051	1.945	1.972	0.692	1.425	0.321
15300	4.25							8.005	17.747	5.284	6.566	3.219	2.128	2.080	0.759	1.503	0.352
16300	4.53							8.528	19.910	5.630	7.350	3.429	2.339	2.216	0.848	1.601	0.392
17200	4.78							8.999	21.939	5.941	8.081	3.619	2.521	2.339	0.931	1.690	0.430
18300	5.08							9.574	24.600	6.321	9.039	3.850	2.768	2.488	1.036	1.798	0.479
19110	5.31							9.998	26.603	6.600	9.786	4.021	2.978	2.599	1.112	1.877	0.517
20280	5.63									7.004	10.905	4.267	3.309	2.758	1.217	1.992	0.573
22080	6.13											4.646	3.857	3.002	1.373	2.169	0.662
23750	6.60											4.997	4.397	3.229	1.546	2.333	0.740
26000	7.22											5.470	5.177	3.535	1.812	2.554	0.841
28500	7.92											5.996	6.129	3.875	2.142	2.800	0.980
29500	8.19											6.207	6.517	4.011	2.277	2.898	1.042
31000	8.61											6.522	7.137	4.215	2.491	3.046	1.138
33250	9.24											6.996	8.120	4.521	2.833	3.267	1.291
36800	10.22													5.004	3.410	3.615	1.552
40700	11.31													5.534	4.103	3.999	1.866
44100	12.25													5.997	4.752	4.333	2.160
48000	13.33													6.527	5.552	4.716	2.522
51500	14.31													7.003	6.333	5.060	2.874
56500	15.69															5.551	3.409
61100	16.97															6.003	3.939
68000	18.89															6.681	4.798
72000	20.00															7.074	5.339

Medium: Water; 1 mbar/m = 100 Pa/m

Pipes Pressure Loss at 10°C (kPa/m)



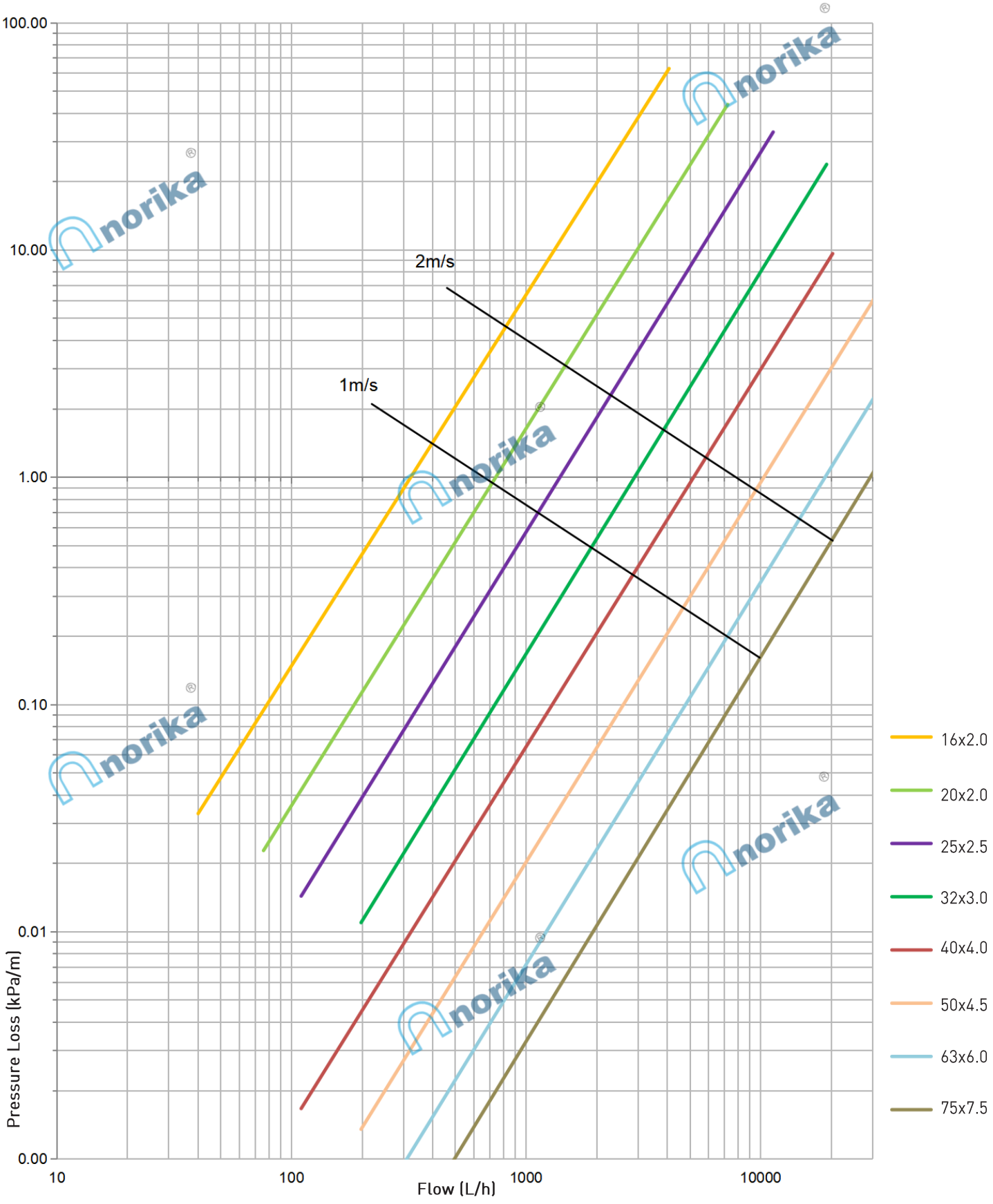
Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 20°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
23	0.01																
29	0.01																
40	0.01	0.098	0.043														
54	0.02	0.133	0.062														
76	0.02	0.187	0.097	0.105	0.028												
110	0.03	0.270	0.159	0.152	0.045	0.097	0.017			0.038	0.002						
198	0.06	0.486	0.402	0.274	0.104	0.175	0.038	0.104	0.012	0.068	0.005	0.042	0.002				
230	0.06	0.565	0.520	0.318	0.133	0.203	0.048	0.120	0.015	0.079	0.006	0.048	0.002				
288	0.08	0.707	0.760	0.398	0.197	0.255	0.069	0.151	0.021	0.099	0.008	0.061	0.003	0.039	0.001		
350	0.10	0.860	1.065	0.484	0.274	0.309	0.096	0.183	0.028	0.121	0.011	0.074	0.004	0.048	0.001		
406	0.11	0.997	1.374	0.561	0.353	0.359	0.124	0.212	0.036	0.140	0.014	0.085	0.004	0.055	0.002	0.040	0.001
460	0.13	1.130	1.690	0.636	0.438	0.407	0.153	0.241	0.045	0.159	0.017	0.097	0.005	0.063	0.002	0.045	0.001
573	0.16	1.407	2.412	0.792	0.637	0.507	0.223	0.300	0.065	0.198	0.024	0.121	0.008	0.078	0.003	0.056	0.001
688	0.19	1.690	3.419	0.951	0.854	0.608	0.305	0.360	0.088	0.238	0.033	0.145	0.010	0.094	0.004	0.068	0.002
720	0.20	1.768	3.673	0.995	0.916	0.637	0.330	0.377	0.096	0.249	0.036	0.151	0.011	0.098	0.004	0.071	0.002
850	0.24	2.088	4.783	1.174	1.276	0.752	0.430	0.445	0.128	0.294	0.048	0.179	0.015	0.116	0.005	0.084	0.002
916	0.25	2.250	5.392	1.266	1.438	0.810	0.480	0.479	0.145	0.316	0.054	0.193	0.017	0.125	0.006	0.090	0.003
1000	0.28	2.456	6.213	1.382	1.651	0.884	0.591	0.523	0.167	0.345	0.063	0.210	0.020	0.136	0.007	0.098	0.003
1146	0.32	2.815	7.755	1.583	2.052	1.013	0.738	0.600	0.207	0.396	0.080	0.241	0.025	0.156	0.009	0.113	0.004
1220	0.34	2.996	8.594	1.685	2.269	1.079	0.814	0.638	0.229	0.421	0.088	0.257	0.028	0.166	0.010	0.120	0.005
1373	0.38	3.372	10.447	1.897	2.746	1.214	0.983	0.718	0.295	0.474	0.107	0.289	0.034	0.187	0.012	0.135	0.006
1413	0.39	3.470	10.961	1.952	2.877	1.249	1.029	0.739	0.309	0.488	0.111	0.297	0.036	0.192	0.013	0.139	0.006
1450	0.40	3.561	11.447	2.003	3.000	1.282	1.072	0.759	0.322	0.501	0.116	0.305	0.037	0.197	0.013	0.142	0.006
1603	0.45	3.937	13.539	2.215	3.536	1.417	1.260	0.839	0.377	0.554	0.145	0.337	0.044	0.218	0.016	0.157	0.007
1690	0.47	4.151	14.795	2.335	3.858	1.494	1.372	0.884	0.410	0.584	0.158	0.356	0.047	0.230	0.017	0.166	0.008
1833	0.51	4.502	16.985	2.532	4.413	1.621	1.566	0.959	0.467	0.633	0.180	0.386	0.054	0.249	0.020	0.180	0.009
1900	0.53	4.667	18.056	2.625	4.686	1.680	1.661	0.994	0.494	0.656	0.191	0.400	0.057	0.258	0.021	0.187	0.010
1980	0.55	4.863	19.357	2.735	5.019	1.751	1.777	1.036	0.528	0.684	0.204	0.417	0.062	0.269	0.022	0.195	0.011
2062	0.57	5.064	20.753	2.849	5.373	1.823	1.900	1.079	0.564	0.712	0.217	0.434	0.069	0.280	0.024	0.203	0.011
2200	0.61	5.403	23.171	3.039	5.989	1.945	2.114	1.151	0.626	0.760	0.241	0.463	0.077	0.299	0.026	0.216	0.013
2262	0.63	5.556	24.313	3.125	6.278	2.000	2.214	1.183	0.655	0.781	0.252	0.476	0.081	0.308	0.028	0.222	0.013
2290	0.64	5.624	24.849	3.164	6.41	2.025	2.260	1.198	0.668	0.791	0.257	0.482	0.082	0.311	0.028	0.225	0.013
2400	0.67	5.895	26.939	3.316	6.942	2.122	2.444	1.256	0.721	0.829	0.277	0.505	0.088	0.326	0.030	0.236	0.014
2442	0.68	5.998	27.744	3.374	7.148	2.159	2.516	1.278	0.742	0.843	0.284	0.514	0.091	0.332	0.032	0.240	0.015
2545	0.71	6.251	29.791	3.516	7.667	2.250	2.695	1.332	0.794	0.879	0.304	0.535	0.097	0.346	0.035	0.250	0.016
2700	0.75	6.631	33.001	3.730	8.477	2.387	2.977	1.413	0.875	0.933	0.335	0.568	0.107	0.367	0.039	0.265	0.017
2770	0.77	6.803	34.512	3.827	8.858	2.449	3.107	1.449	0.912	0.957	0.349	0.583	0.111	0.377	0.041	0.272	0.018
2828	0.79	6.946	35.773	3.907	9.180	2.501	3.218	1.480	0.944	0.977	0.361	0.595	0.115	0.385	0.042	0.278	0.019
2895	0.80	7.110	37.262	4.000	9.555	2.560	3.348	1.515	0.982	1.000	0.375	0.609	0.119	0.394	0.044	0.284	0.020
3100	0.86	7.614	41.948	4.283	10.748	2.741	3.760	1.622	1.100	1.071	0.419	0.652	0.133	0.422	0.049	0.305	0.023
3258	0.91	8.002	45.73	4.501	11.705	2.881	4.091	1.705	1.195	1.125	0.455	0.685	0.144	0.443	0.053	0.320	0.025
3325	0.92	8.167	47.342	4.594	12.124	2.940	4.234	1.740	1.237	1.148	0.470	0.700	0.149	0.452	0.054	0.327	0.026
3450	0.96	8.474	50.284	4.766	12.923	3.050	4.512	1.805	1.316	1.192	0.500	0.726	0.158	0.469	0.058	0.339	0.027
3665	1.02	9.002	54.992	5.063	14.350	3.241	5.004	1.917	1.457	1.266	0.552	0.771	0.174	0.498	0.064	0.360	0.030
3880	1.08	9.530	59.620	5.360	15.844	3.431	5.517	2.030	1.604	1.340	0.607	0.816	0.191	0.528	0.070	0.381	0.033
4070	1.13	9.996	63.967	5.623	17.217	3.599	5.993	2.129	1.740	1.406	0.658	0.856	0.207	0.553	0.075	0.400	0.036

Medium: Water; 1 mbar/m = 100 Pa/m

Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 20°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
4250	1.18			5.872	18.570	3.758	6.458	2.224	1.873	1.468	0.707	0.894	0.222	0.578	0.081	0.418	0.038
4340	1.21			5.996	19.250	3.837	6.697	2.271	1.940	1.499	0.733	0.913	0.230	0.590	0.084	0.426	0.039
4432	1.23			6.123	19.954	3.919	6.941	2.319	2.012	1.531	0.759	0.932	0.24	0.603	0.086	0.435	0.041
4720	1.31			6.521	21.999	4.173	7.747	2.469	2.240	1.630	0.844	0.993	0.264	0.642	0.096	0.464	0.045
4990	1.39			6.894	23.864	4.412	8.532	2.611	2.465	1.723	0.928	1.050	0.290	0.679	0.105	0.490	0.049
5065	1.41			6.998	24.427	4.478	8.757	2.650	2.528	1.749	0.952	1.066	0.297	0.689	0.108	0.498	0.049
5300	1.47			7.322	26.024	4.686	9.476	2.773	2.736	1.831	1.028	1.115	0.321	0.721	0.116	0.521	0.054
5540	1.54			7.654	28.075	4.898	10.222	2.898	2.952	1.913	1.109	1.166	0.346	0.753	0.125	0.544	0.059
5790	1.61			7.999	30.194	5.119	10.984	3.029	3.187	2.000	1.196	1.218	0.372	0.787	0.134	0.569	0.063
6150	1.71			8.497	33.419	5.438	12.000	3.218	3.539	2.124	1.326	1.294	0.412	0.836	0.148	0.604	0.070
6515	1.81			9.001	37.140	5.761	13.038	3.409	3.914	2.250	1.466	1.371	0.455	0.886	0.163	0.640	0.076
6900	1.92			9.533	41.299	6.101	14.227	3.610	4.323	2.383	1.618	1.452	0.501	0.938	0.180	0.678	0.084
7235	2.01			9.996	44.983	6.397	15.391	3.785	4.686	2.499	1.756	1.522	0.544	0.984	0.195	0.711	0.091
7650	2.13					6.764	17.037	4.002	5.121	2.642	1.935	1.610	0.598	1.040	0.214	0.752	0.100
7920	2.20					7.003	18.120	4.144	5.385	2.735	2.056	1.666	0.635	1.077	0.227	0.778	0.106
8680	2.41					7.675	21.342	4.541	6.139	2.998	2.409	1.826	0.744	1.180	0.266	0.853	0.124
9050	2.51					8.002	23.086	4.735	6.565	3.126	2.584	1.904	0.800	1.231	0.285	0.889	0.133
9560	2.66					8.453	25.469	5.002	7.209	3.302	2.816	2.011	0.879	1.300	0.313	0.939	0.146
10180	2.83					9.001	28.548	5.326	8.059	3.516	3.073	2.142	0.981	1.384	0.349	1.000	0.162
10700	2.97					9.461	31.232	5.598	8.857	3.696	3.310	2.251	1.070	1.455	0.380	1.051	0.176
11310	3.14					10.000	34.576	5.917	9.761	3.906	3.621	2.380	1.177	1.538	0.419	1.111	0.194
12500	3.47							6.540	11.694	4.317	4.319	2.630	1.377	1.700	0.498	1.228	0.231
13380	3.72							7.000	13.238	4.621	4.877	2.815	1.513	1.819	0.561	1.315	0.259
14500	4.03							7.586	15.327	5.008	5.638	3.051	1.721	1.972	0.643	1.425	0.298
15300	4.25							8.005	16.872	5.284	6.215	3.219	1.888	2.080	0.699	1.503	0.327
16300	4.53							8.528	18.992	5.630	6.975	3.429	2.112	2.216	0.764	1.601	0.365
17200	4.78							8.999	21.035	5.941	7.696	3.619	2.327	2.339	0.827	1.690	0.400
18300	5.08							9.574	23.532	6.321	8.620	3.850	2.604	2.488	0.915	1.798	0.438
19110	5.31							9.998	25.523	6.600	9.330	4.021	2.819	2.599	0.988	1.877	0.466
20280	5.63									7.004	10.419	4.267	3.140	2.758	1.100	1.992	0.508
22080	6.13											4.646	3.663	3.002	1.281	2.169	0.587
23750	6.60											4.997	4.187	3.229	1.461	2.333	0.668
26000	7.22											5.470	4.945	3.535	1.724	2.554	0.787
28500	7.92											5.996	5.857	3.875	2.039	2.800	0.929
29500	8.19											6.207	6.243	4.011	2.173	2.898	0.989
31000	8.61											6.522	6.839	4.215	2.381	3.046	1.083
33250	9.24											6.996	7.793	4.521	2.708	3.267	1.230
36800	10.22													5.004	3.264	3.615	1.481
40700	11.31													5.534	3.934	3.999	1.783
44100	12.25													5.997	4.564	4.333	2.069
48000	13.33													6.527	5.340	4.716	2.421
51500	14.31													7.003	6.079	5.060	2.757
56500	15.69															5.551	3.273
61100	16.97															6.003	3.785
68000	18.89															6.681	4.615
72000	20.00															7.074	5.128

Medium: Water; 1 mbar/m = 100 Pa/m

Pipes Pressure Loss at 20°C (kPa/m)



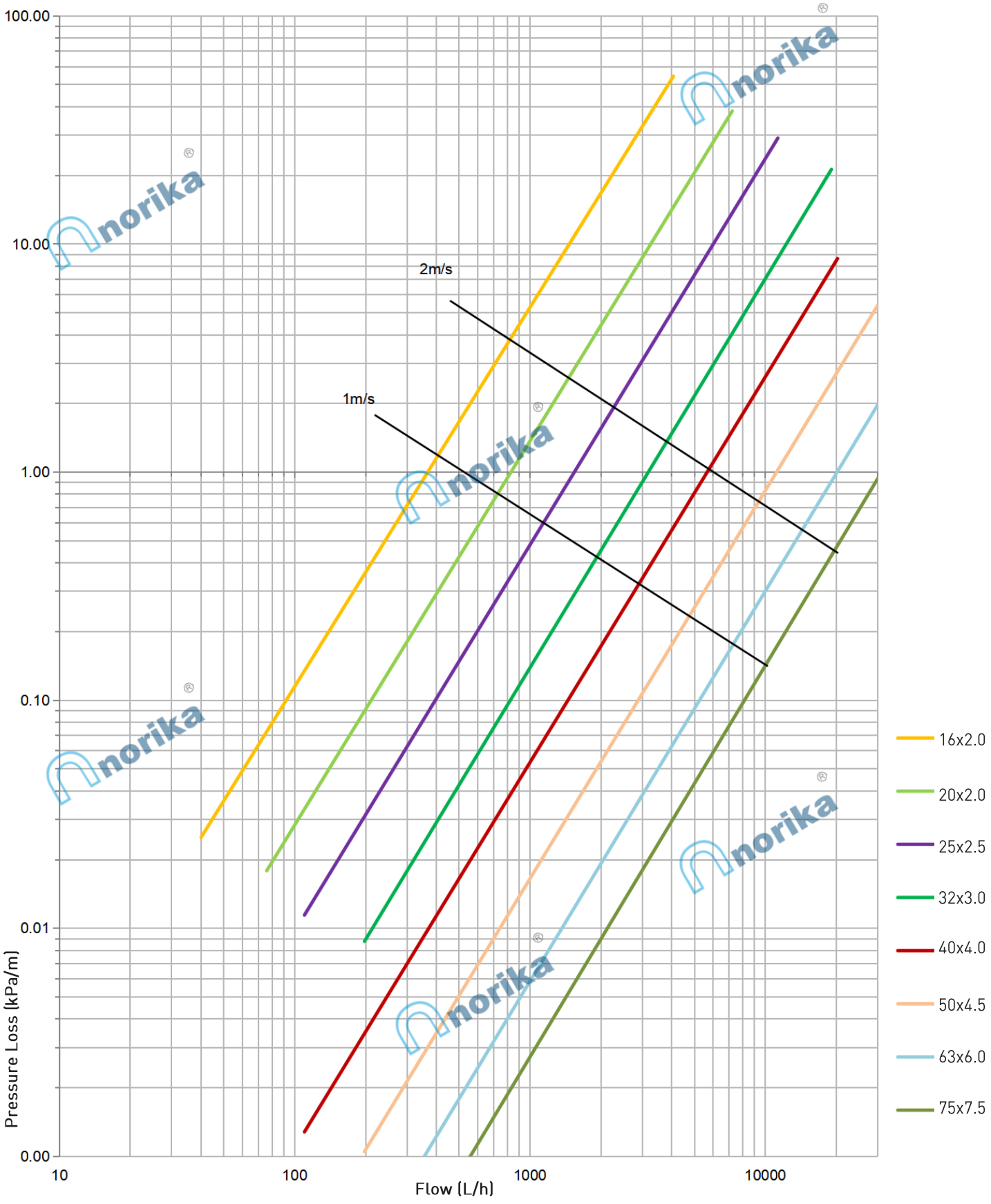
Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 45°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
23	0.01																
29	0.01																
40	0.01	0.10	0.029														
54	0.02	0.13	0.043														
76	0.02	0.19	0.070	0.10	0.020												
110	0.03	0.27	0.126	0.15	0.033	0.10	0.012			0.04	0.002						
198	0.06	0.49	0.344	0.27	0.089	0.18	0.031	0.10	0.009	0.07	0.004	0.04	0.001				
230	0.06	0.56	0.446	0.32	0.114	0.20	0.040	0.12	0.012	0.08	0.004	0.05	0.001				
288	0.08	0.71	0.648	0.40	0.169	0.25	0.059	0.15	0.017	0.10	0.006	0.06	0.002	0.04	0.001		
350	0.10	0.86	0.898	0.48	0.235	0.31	0.082	0.18	0.024	0.12	0.009	0.07	0.003	0.05	0.001		
406	0.11	1.00	1.192	0.56	0.298	0.36	0.106	0.21	0.031	0.14	0.012	0.09	0.004	0.06	0.001	0.04	0.001
460	0.13	1.13	1.453	0.64	0.366	0.41	0.131	0.24	0.038	0.16	0.014	0.10	0.004	0.06	0.002	0.05	0.001
573	0.16	1.41	2.065	0.79	0.550	0.51	0.186	0.30	0.055	0.20	0.021	0.12	0.006	0.08	0.002	0.06	0.001
688	0.19	1.69	2.779	0.95	0.735	0.61	0.264	0.36	0.074	0.24	0.029	0.14	0.009	0.09	0.003	0.07	0.001
720	0.20	1.77	2.994	0.99	0.791	0.64	0.284	0.38	0.080	0.25	0.031	0.15	0.010	0.10	0.003	0.07	0.002
850	0.24	2.09	3.940	1.17	1.034	0.75	0.370	0.44	0.111	0.29	0.040	0.18	0.013	0.12	0.005	0.08	0.002
916	0.25	2.25	4.464	1.27	1.168	0.81	0.417	0.48	0.125	0.32	0.045	0.19	0.014	0.12	0.005	0.09	0.002
1000	0.28	2.46	5.173	1.38	1.350	0.88	0.480	0.52	0.144	0.35	0.055	0.21	0.017	0.14	0.006	0.10	0.003
1146	0.32	2.81	6.518	1.58	1.692	1.01	0.600	0.60	0.178	0.40	0.069	0.24	0.021	0.16	0.008	0.11	0.004
1220	0.34	3.00	7.248	1.69	1.878	1.08	0.664	0.64	0.197	0.42	0.076	0.26	0.024	0.17	0.008	0.12	0.004
1373	0.38	3.37	8.876	1.90	2.290	1.21	0.808	0.72	0.239	0.47	0.092	0.29	0.029	0.19	0.010	0.13	0.005
1413	0.39	3.47	9.319	1.95	2.405	1.25	0.847	0.74	0.250	0.49	0.096	0.30	0.031	0.19	0.011	0.14	0.005
1450	0.40	3.56	9.751	2.00	2.512	1.28	0.884	0.76	0.261	0.50	0.100	0.31	0.032	0.20	0.011	0.14	0.005
1603	0.45	3.94	11.600	2.21	2.980	1.42	1.047	0.84	0.308	0.55	0.118	0.34	0.038	0.22	0.014	0.16	0.006
1690	0.47	4.15	12.712	2.33	3.261	1.49	1.144	0.88	0.336	0.58	0.128	0.36	0.041	0.23	0.015	0.17	0.007
1833	0.51	4.50	14.639	2.53	3.748	1.62	1.313	0.96	0.384	0.63	0.146	0.39	0.046	0.25	0.017	0.18	0.008
1900	0.53	4.67	15.574	2.62	3.987	1.68	1.395	0.99	0.408	0.66	0.155	0.40	0.049	0.26	0.018	0.19	0.009
1980	0.55	4.86	16.719	2.74	4.281	1.75	1.496	1.04	0.437	0.68	0.166	0.42	0.053	0.27	0.019	0.19	0.009
2062	0.57	5.06	17.923	2.85	4.593	1.82	1.604	1.08	0.468	0.71	0.178	0.43	0.056	0.28	0.021	0.20	0.010
2200	0.61	5.40	19.736	3.04	5.139	1.95	1.792	1.15	0.522	0.76	0.198	0.46	0.062	0.30	0.023	0.22	0.011
2262	0.63	5.56	20.484	3.13	5.394	2.00	1.879	1.18	0.547	0.78	0.207	0.48	0.065	0.31	0.024	0.22	0.011
2290	0.64	5.62	20.865	3.16	5.510	2.02	1.919	1.20	0.558	0.79	0.211	0.48	0.067	0.31	0.024	0.22	0.012
2400	0.67	5.89	22.259	3.32	5.980	2.12	2.081	1.26	0.605	0.83	0.229	0.50	0.072	0.33	0.026	0.24	0.012
2442	0.68	6.00	22.894	3.37	6.162	2.16	2.143	1.28	0.623	0.84	0.235	0.51	0.074	0.33	0.027	0.24	0.013
2545	0.71	6.25	24.507	3.52	6.616	2.25	2.302	1.33	0.668	0.88	0.252	0.54	0.079	0.35	0.029	0.25	0.014
2700	0.75	6.63	27.259	3.73	7.318	2.39	2.551	1.41	0.739	0.93	0.279	0.57	0.087	0.37	0.032	0.27	0.015
2770	0.77	6.80	28.464	3.83	7.637	2.45	2.666	1.45	0.772	0.96	0.291	0.58	0.091	0.38	0.033	0.27	0.016
2828	0.79	6.95	29.556	3.91	7.889	2.50	2.764	1.48	0.800	0.98	0.301	0.60	0.094	0.38	0.034	0.28	0.016
2895	0.80	7.11	30.876	4.00	8.193	2.56	2.879	1.51	0.832	1.00	0.314	0.61	0.098	0.39	0.036	0.28	0.017
3100	0.86	7.61	34.677	4.28	9.009	2.74	3.244	1.62	0.937	1.07	0.352	0.65	0.110	0.42	0.040	0.30	0.019
3258	0.91	8.00	38.004	4.50	9.686	2.88	3.535	1.70	1.020	1.13	0.383	0.69	0.120	0.44	0.043	0.32	0.020
3325	0.92	8.17	39.480	4.59	9.991	2.94	3.660	1.74	1.057	1.15	0.397	0.70	0.124	0.45	0.045	0.33	0.021
3450	0.96	8.47	42.299	4.77	10.677	3.05	3.893	1.81	1.126	1.19	0.423	0.73	0.132	0.47	0.047	0.34	0.022
3665	1.02	9.00	47.228	5.06	11.802	3.24	4.265	1.92	1.251	1.27	0.469	0.77	0.146	0.50	0.053	0.36	0.025
3880	1.08	9.53	52.49	5.36	13.060	3.43	4.624	2.03	1.381	1.34	0.517	0.82	0.161	0.53	0.058	0.38	0.027
4070	1.13	10.00	57.006	5.62	14.276	3.60	4.953	2.13	1.502	1.41	0.562	0.86	0.174	0.55	0.063	0.40	0.029

Medium: Water; 1 mbar/m = 100 Pa/m

Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 45°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed (m/s)	ΔP (kPa/m)	Speed (m/s)	ΔP (kPa/m)	Speed (m/s)	ΔP (kPa/m)	Speed (m/s)	ΔP (kPa/m)	Speed (m/s)	ΔP (kPa/m)	Speed (m/s)	ΔP (kPa/m)	Speed (m/s)	ΔP (kPa/m)	Speed (m/s)	ΔP (kPa/m)
(L/h)	(L/s)																
4250	1.18			5.87	15.424	3.76	5.324	2.22	1.617	1.47	0.606	0.89	0.188	0.58	0.067	0.42	0.032
4340	1.21			6.00	16.052	3.84	5.509	2.27	1.677	1.50	0.628	0.91	0.195	0.59	0.070	0.43	0.033
4432	1.23			6.12	16.611	3.92	5.713	2.32	1.736	1.53	0.651	0.93	0.202	0.60	0.072	0.44	0.034
4720	1.31			6.52	18.712	4.17	6.396	2.47	1.913	1.63	0.727	0.99	0.225	0.64	0.080	0.46	0.038
4990	1.39			6.89	20.639	4.41	7.077	2.61	2.070	1.72	0.801	1.05	0.247	0.68	0.088	0.49	0.041
5065	1.41			7.00	21.256	4.48	7.268	2.65	2.111	1.75	0.822	1.07	0.253	0.69	0.091	0.50	0.042
5300	1.47			7.32	23.036	4.69	7.891	2.77	2.262	1.83	0.888	1.12	0.274	0.72	0.098	0.52	0.046
5540	1.54			7.65	24.925	4.90	8.533	2.90	2.436	1.91	0.956	1.17	0.297	0.75	0.106	0.54	0.049
5790	1.61			8.00	27.175	5.12	9.230	3.03	2.628	2.00	1.022	1.22	0.320	0.79	0.114	0.57	0.053
6150	1.71			8.50	30.300	5.44	10.331	3.22	2.918	2.12	1.113	1.29	0.355	0.84	0.126	0.60	0.059
6515	1.81			9.00	33.835	5.76	11.457	3.41	3.241	2.25	1.212	1.37	0.392	0.89	0.140	0.64	0.065
6900	1.92			9.53	37.423	6.10	12.766	3.61	3.591	2.38	1.333	1.45	0.434	0.94	0.155	0.68	0.072
7235	2.01			10.00	40.955	6.40	13.902	3.79	3.925	2.50	1.447	1.52	0.467	0.98	0.167	0.71	0.079
7650	2.13					6.76	15.420	4.00	4.327	2.64	1.600	1.61	0.505	1.04	0.185	0.75	0.086
7920	2.20					7.00	16.412	4.14	4.619	2.74	1.701	1.67	0.531	1.08	0.196	0.78	0.090
8680	2.41					7.67	19.447	4.54	5.455	3.00	2.009	1.83	0.612	1.18	0.229	0.85	0.107
9050	2.51					8.00	21.011	4.73	5.901	3.13	2.166	1.90	0.660	1.23	0.244	0.89	0.115
9560	2.66					8.45	23.264	5.00	6.509	3.30	2.394	2.01	0.723	1.30	0.264	0.94	0.126
10180	2.83					9.00	26.115	5.33	7.308	3.52	2.684	2.14	0.811	1.38	0.288	1.00	0.142
10700	2.97					9.46	28.677	5.60	8.014	3.70	2.939	2.25	0.884	1.45	0.312	1.05	0.152
11310	3.14					10.00	31.715	5.92	8.880	3.91	3.257	2.38	0.981	1.54	0.346	1.11	0.163
12500	3.47							6.54	10.675	4.32	3.909	2.63	1.185	1.70	0.415	1.23	0.195
13380	3.72							7.00	12.119	4.62	4.436	2.82	1.337	1.82	0.468	1.31	0.214
14500	4.03							7.59	14.045	5.01	5.143	3.05	1.544	1.97	0.542	1.42	0.247
15300	4.25							8.00	15.513	5.28	5.680	3.22	1.704	2.08	0.599	1.50	0.269
16300	4.53							8.53	17.467	5.63	6.386	3.43	1.926	2.22	0.661	1.60	0.315
17200	4.78							9.00	19.314	5.94	7.063	3.62	2.113	2.34	0.742	1.69	0.335
18300	5.08							9.57	21.667	6.32	7.908	3.85	2.372	2.49	0.822	1.80	0.384
19110	5.31							10.00	23.494	6.60	8.570	4.02	2.580	2.60	0.897	1.88	0.410
20280	5.63									7.00	9.567	4.27	2.872	2.76	1.004	1.99	0.455
22080	6.13											4.65	3.361	3.00	1.164	2.17	0.529
23750	6.60											5.00	3.853	3.23	1.338	2.33	0.606
26000	7.22											5.47	4.547	3.54	1.574	2.55	0.730
28500	7.92											6.00	5.423	3.88	1.874	2.80	0.861
29500	8.19											6.21	5.747	4.01	2.005	2.90	0.920
31000	8.61											6.52	6.299	4.22	2.213	3.05	0.989
33250	9.24											7.00	7.173	4.52	2.532	3.27	1.212
36800	10.22													5.00	3.000	3.62	1.395
40700	11.31													5.53	3.671	4.00	1.659
44100	12.25													6.00	4.235	4.33	1.976
48000	13.33													6.53	4.925	4.72	2.117
51500	14.31													7.00	5.674	5.06	2.620
56500	15.69															5.55	3.203
61100	16.97															6.00	3.617
68000	18.89															6.68	4.375
72000	20.00															7.07	4.729

Medium: Water; 1 mbar/m = 100 Pa/m

Pipes Pressure Loss at 45°C (kPa/m)



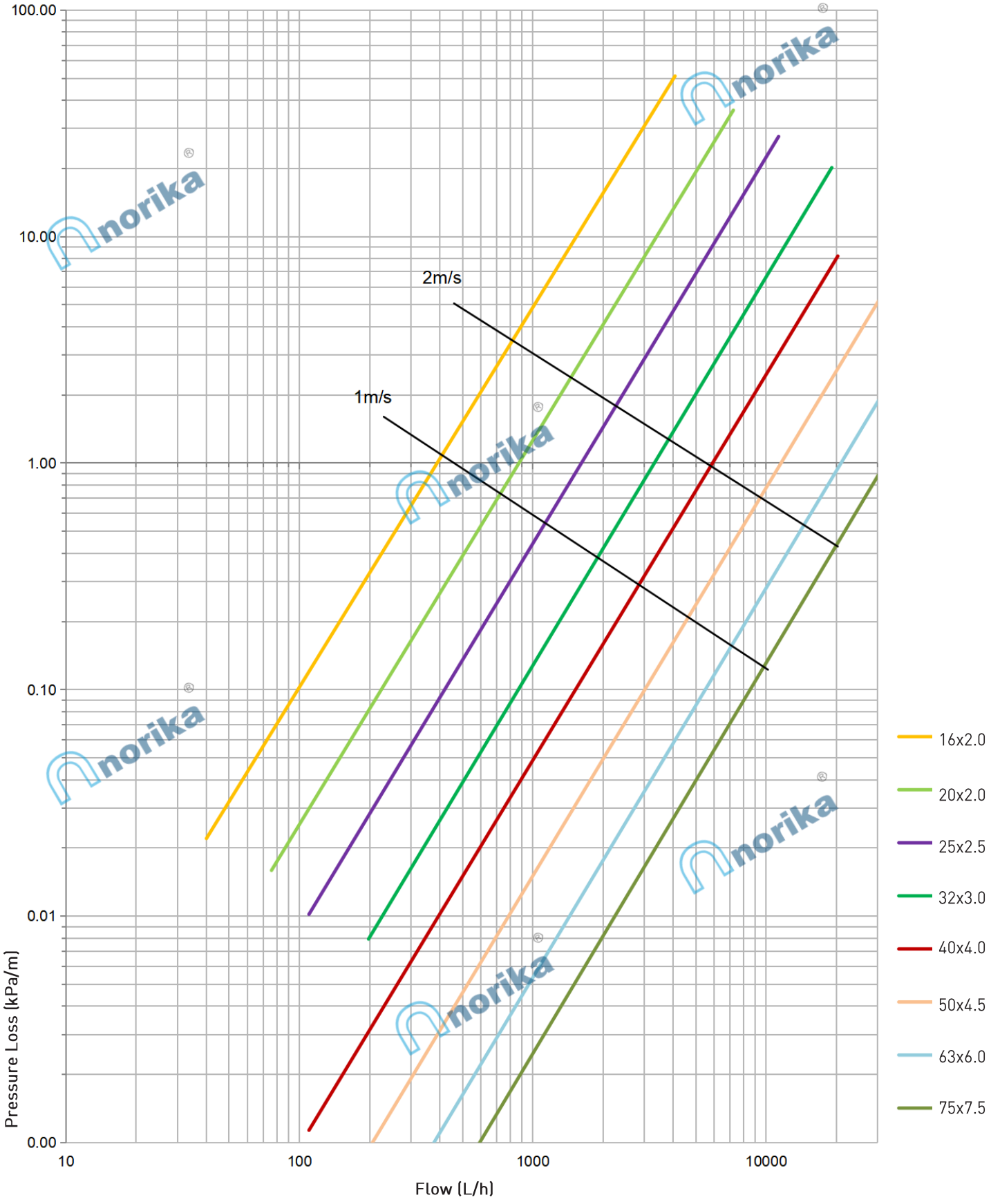
Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 60°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
23	0.01																
29	0.01																
40	0.01	0.098	0.025														
54	0.02	0.133	0.037														
76	0.02	0.187	0.062	0.152	0.017												
110	0.03	0.270	0.117	0.274	0.030	0.097	0.011			0.038	0.001						
198	0.06	0.486	0.319	0.318	0.082	0.175	0.029	0.104	0.008	0.068	0.003	0.042	0.001				
230	0.06	0.565	0.408	0.398	0.106	0.203	0.037	0.120	0.011	0.079	0.004	0.048	0.001				
288	0.08	0.707	0.620	0.484	0.155	0.255	0.055	0.151	0.016	0.099	0.006	0.061	0.002	0.039	0.001		
350	0.10	0.860	0.847	0.561	0.211	0.309	0.076	0.183	0.022	0.121	0.008	0.074	0.003	0.048	0.001		
406	0.11	0.997	1.073	0.636	0.286	0.359	0.096	0.212	0.029	0.140	0.011	0.085	0.003	0.055	0.001	0.040	0.001
460	0.13	1.130	1.311	0.792	0.349	0.407	0.120	0.241	0.035	0.159	0.013	0.097	0.004	0.063	0.001	0.045	0.001
573	0.16	1.407	1.875	0.951	0.495	0.507	0.178	0.300	0.050	0.198	0.019	0.121	0.006	0.078	0.002	0.056	0.001
688	0.19	1.690	2.539	0.995	0.666	0.608	0.238	0.360	0.071	0.238	0.026	0.145	0.008	0.094	0.003	0.068	0.001
720	0.20	1.768	2.739	1.174	0.717	0.637	0.256	0.377	0.077	0.249	0.028	0.151	0.009	0.098	0.003	0.071	0.001
850	0.24	2.088	3.623	1.266	0.943	0.752	0.335	0.445	0.100	0.294	0.039	0.179	0.012	0.116	0.004	0.084	0.002
916	0.25	2.250	4.112	1.382	1.067	0.810	0.378	0.479	0.112	0.316	0.043	0.193	0.013	0.125	0.005	0.090	0.002
1000	0.28	2.456	4.777	1.583	1.236	0.884	0.437	0.523	0.130	0.345	0.050	0.210	0.016	0.136	0.005	0.098	0.003
1146	0.32	2.815	6.038	1.685	1.556	1.013	0.548	0.600	0.162	0.396	0.062	0.241	0.020	0.156	0.007	0.113	0.003
1220	0.34	2.996	6.727	1.897	1.730	1.079	0.608	0.638	0.179	0.421	0.069	0.257	0.022	0.166	0.008	0.120	0.004
1373	0.38	3.372	8.256	1.952	2.118	1.214	0.742	0.718	0.218	0.474	0.083	0.289	0.026	0.187	0.010	0.135	0.004
1413	0.39	3.470	8.682	2.003	2.225	1.249	0.779	0.739	0.228	0.488	0.087	0.297	0.028	0.192	0.010	0.139	0.005
1450	0.40	3.561	9.078	2.215	2.326	1.282	0.814	0.759	0.238	0.501	0.091	0.305	0.029	0.197	0.011	0.142	0.005
1603	0.45	3.937	10.774	2.335	2.765	1.417	0.965	0.839	0.282	0.554	0.107	0.337	0.034	0.218	0.012	0.157	0.006
1690	0.47	4.151	11.727	2.532	3.029	1.494	1.057	0.884	0.308	0.584	0.117	0.356	0.037	0.230	0.013	0.166	0.006
1833	0.51	4.502	13.071	2.625	3.489	1.621	1.215	0.959	0.353	0.633	0.134	0.386	0.042	0.249	0.015	0.180	0.007
1900	0.53	4.667	13.836	2.735	3.714	1.680	1.292	0.994	0.375	0.656	0.142	0.400	0.045	0.258	0.016	0.187	0.008
1980	0.55	4.863	14.792	2.849	3.990	1.751	1.388	1.036	0.403	0.684	0.152	0.417	0.048	0.269	0.017	0.195	0.008
2062	0.57	5.064	15.888	3.039	4.280	1.823	1.489	1.079	0.432	0.712	0.163	0.434	0.051	0.280	0.019	0.203	0.009
2200	0.61	5.403	17.787	3.125	4.764	1.945	1.666	1.151	0.482	0.760	0.182	0.463	0.057	0.299	0.021	0.216	0.010
2262	0.63	5.556	18.699	3.164	4.966	2.000	1.748	1.183	0.506	0.781	0.191	0.476	0.060	0.308	0.022	0.222	0.010
2290	0.64	5.624	19.100	3.316	5.06	2.025	1.786	1.198	0.516	0.791	0.195	0.482	0.061	0.311	0.022	0.225	0.010
2400	0.67	5.895	20.770	3.374	5.397	2.122	1.938	1.256	0.560	0.829	0.211	0.505	0.066	0.326	0.024	0.236	0.011
2442	0.68	5.998	21.344	3.516	5.561	2.159	1.997	1.278	0.577	0.843	0.217	0.514	0.068	0.332	0.024	0.240	0.012
2545	0.71	6.251	23.190	3.730	5.877	2.250	2.146	1.332	0.619	0.879	0.233	0.535	0.073	0.346	0.026	0.250	0.012
2700	0.75	6.631	25.600	3.827	6.494	2.387	2.369	1.413	0.686	0.933	0.258	0.568	0.080	0.367	0.029	0.265	0.014
2770	0.77	6.803	26.910	3.907	6.782	2.449	2.470	1.449	0.717	0.957	0.269	0.583	0.084	0.377	0.030	0.272	0.014
2828	0.79	6.946	27.937	4.000	7.052	2.501	2.548	1.480	0.744	0.977	0.279	0.595	0.087	0.385	0.031	0.278	0.015
2895	0.80	7.110	29.223	4.283	7.311	2.560	2.637	1.515	0.774	1.000	0.290	0.609	0.090	0.394	0.032	0.284	0.015
3100	0.86	7.614	33.019	4.501	8.273	2.741	2.899	1.622	0.872	1.071	0.327	0.652	0.101	0.422	0.036	0.305	0.017
3258	0.91	8.002	36.24	4.594	9.064	2.881	3.132	1.705	0.951	1.125	0.356	0.685	0.110	0.443	0.040	0.320	0.019
3325	0.92	8.167	37.656	4.766	9.398	2.940	3.243	1.740	0.985	1.148	0.369	0.700	0.114	0.452	0.041	0.327	0.019
3450	0.96	8.474	40.312	5.063	10.031	3.050	3.550	1.805	1.049	1.192	0.393	0.726	0.122	0.469	0.044	0.339	0.020
3665	1.02	9.002	44.908	5.360	11.195	3.241	3.845	1.917	1.154	1.266	0.437	0.771	0.135	0.498	0.048	0.360	0.023
3880	1.08	9.530	50.026	5.623	12.446	3.431	4.253	2.030	1.253	1.340	0.482	0.816	0.149	0.528	0.053	0.381	0.025
4070	1.13	9.996	54.503	5.872	13.592	3.599	4.640	2.129	1.339	1.406	0.524	0.856	0.162	0.553	0.058	0.400	0.027

Medium: Water; 1 mbar/m = 100 Pa/m

Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 60°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
4250	1.18			5.996	14.652	3.758	5.021	2.224	1.435	1.468	0.564	0.894	0.174	0.578	0.062	0.418	0.029
4340	1.21			6.123	15.249	3.837	5.211	2.271	1.483	1.499	0.583	0.913	0.181	0.590	0.064	0.426	0.030
4432	1.23			6.521	15.916	3.919	5.411	2.319	1.538	1.531	0.604	0.932	0.19	0.603	0.067	0.435	0.031
4720	1.31			6.894	17.847	4.173	6.067	2.469	1.715	1.630	0.661	0.993	0.209	0.642	0.074	0.464	0.035
4990	1.39			6.998	19.753	4.412	6.714	2.611	1.899	1.723	0.715	1.050	0.230	0.679	0.082	0.490	0.038
5065	1.41			7.322	20.246	4.478	6.891	2.650	1.950	1.749	0.732	1.066	0.236	0.689	0.084	0.498	0.039
5300	1.47			7.654	22.001	4.686	7.492	2.773	2.113	1.831	0.786	1.115	0.256	0.721	0.091	0.521	0.042
5540	1.54			7.999	23.915	4.898	8.120	2.898	2.292	1.913	0.848	1.166	0.275	0.753	0.098	0.544	0.045
5790	1.61			8.497	25.939	5.119	8.810	3.029	2.481	2.000	0.928	1.218	0.295	0.787	0.106	0.569	0.049
6150	1.71			9.001	28.959	5.438	9.847	3.218	2.776	2.124	1.022	1.294	0.321	0.836	0.118	0.604	0.054
6515	1.81			9.533	32.105	5.761	10.950	3.409	3.078	2.250	1.133	1.371	0.349	0.886	0.130	0.640	0.060
6900	1.92			9.996	35.913	6.101	12.174	3.610	3.423	2.383	1.258	1.452	0.383	0.938	0.143	0.678	0.066
7235	2.01			10.569	39.050	6.397	13.307	3.785	3.729	2.499	1.371	1.522	0.416	0.984	0.154	0.711	0.072
7650	2.13					6.764	14.742	4.002	4.133	2.642	1.517	1.610	0.460	1.040	0.167	0.752	0.080
7920	2.20					7.003	15.704	4.144	4.407	2.735	1.615	1.666	0.489	1.077	0.175	0.778	0.084
8680	2.41					7.675	18.629	4.541	5.216	2.998	1.908	1.826	0.577	1.180	0.203	0.853	0.097
9050	2.51					8.002	20.092	4.735	5.634	3.126	2.061	1.904	0.622	1.231	0.219	0.889	0.103
9560	2.66					8.453	22.276	5.002	6.241	3.302	2.282	2.011	0.687	1.300	0.241	0.939	0.112
10180	2.83					9.001	25.001	5.326	7.004	3.516	2.561	2.142	0.772	1.384	0.270	1.000	0.124
10700	2.97					9.461	27.453	5.598	7.669	3.696	2.810	2.251	0.845	1.455	0.295	1.051	0.135
11310	3.14					10.000	30.393	5.917	8.517	3.906	3.113	2.380	0.935	1.538	0.326	1.111	0.149
12500	3.47							6.540	10.244	4.317	3.745	2.630	1.124	1.700	0.392	1.228	0.179
13380	3.72							7.000	11.605	4.621	4.246	2.815	1.275	1.819	0.443	1.315	0.202
14500	4.03							7.586	13.482	5.008	4.927	3.051	1.478	1.972	0.514	1.425	0.234
15300	4.25							8.005	14.880	5.284	5.452	3.219	1.634	2.080	0.547	1.503	0.258
16300	4.53							8.528	16.737	5.630	6.124	3.429	1.837	2.216	0.638	1.601	0.290
17200	4.78							8.999	18.496	5.941	6.772	3.619	2.027	2.339	0.704	1.690	0.320
18300	5.08							9.574	20.751	6.321	7.578	3.850	2.250	2.488	0.790	1.798	0.358
19110	5.31							9.998	22.496	6.600	8.220	4.021	2.463	2.599	0.856	1.877	0.388
20280	5.63									7.004	9.170	4.267	2.748	2.758	0.955	1.992	0.433
22080	6.13											4.646	3.219	3.002	1.118	2.169	0.506
23750	6.60											4.997	3.688	3.229	1.279	2.333	0.579
26000	7.22											5.470	4.358	3.535	1.511	2.554	0.686
28500	7.92											5.996	5.165	3.875	1.793	2.800	0.813
29500	8.19											6.207	5.514	4.011	1.911	2.898	0.866
31000	8.61											6.522	6.038	4.215	2.097	3.046	0.950
33250	9.24											6.996	6.882	4.521	2.388	3.267	1.081
36800	10.22													5.004	2.883	3.615	1.306
40700	11.31													5.534	3.472	3.999	1.575
44100	12.25													5.997	4.033	4.333	1.827
48000	13.33													6.527	4.719	4.716	2.137
51500	14.31													7.003	5.377	5.060	2.435
56500	15.69															5.551	2.892
61100	16.97															6.003	3.346
68000	18.89															6.681	4.081
72000	20.00															7.074	4.538

Medium: Water; 1 mbar/m = 100 Pa/m

Pipes Pressure Loss at 60°C (kPa/m)



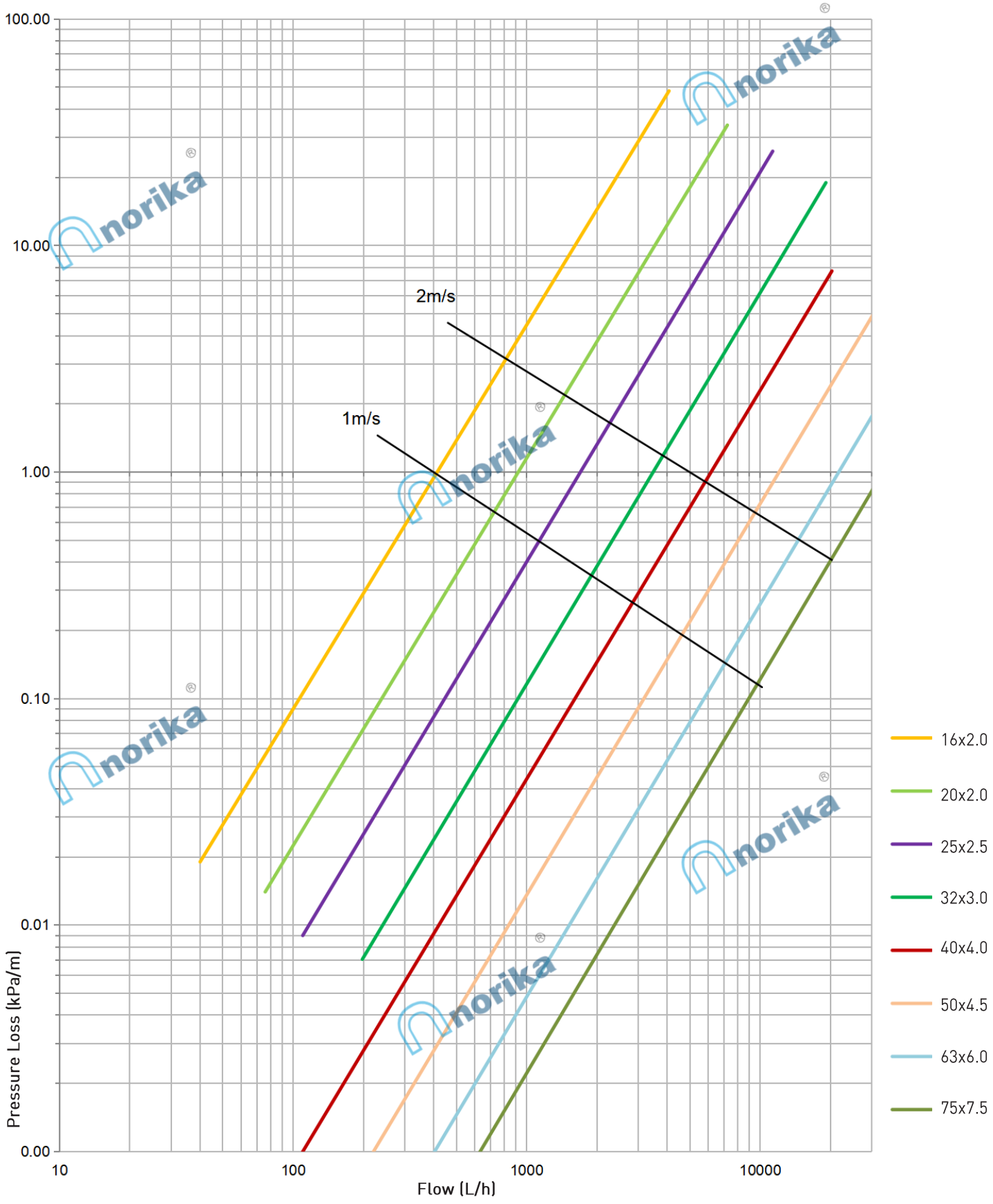
Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 80°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
23	0.01																
29	0.01																
40	0.01	0.098	0.021														
54	0.02	0.133	0.032														
76	0.02	0.187	0.057	0.105	0.015												
110	0.03	0.270	0.106	0.152	0.028	0.097	0.010			0.038	0.001						
198	0.06	0.486	0.283	0.274	0.075	0.175	0.026	0.104	0.008	0.068	0.003	0.042	0.001				
230	0.06	0.565	0.385	0.318	0.096	0.203	0.034	0.120	0.010	0.079	0.004	0.048	0.001				
288	0.08	0.707	0.550	0.398	0.145	0.255	0.049	0.151	0.015	0.099	0.005	0.061	0.002	0.039	0.001		
350	0.10	0.860	0.752	0.484	0.200	0.309	0.068	0.183	0.020	0.121	0.008	0.074	0.002	0.048	0.001		
406	0.11	0.997	0.956	0.561	0.253	0.359	0.091	0.212	0.026	0.140	0.010	0.085	0.003	0.055	0.001	0.040	0.001
460	0.13	1.130	1.174	0.636	0.310	0.407	0.111	0.241	0.032	0.159	0.012	0.097	0.004	0.063	0.001	0.045	0.001
573	0.16	1.407	1.692	0.792	0.442	0.507	0.158	0.300	0.047	0.198	0.018	0.121	0.005	0.078	0.002	0.056	0.001
688	0.19	1.690	2.307	0.951	0.599	0.608	0.212	0.360	0.063	0.238	0.024	0.145	0.007	0.094	0.003	0.068	0.001
720	0.20	1.768	2.492	0.995	0.646	0.637	0.229	0.377	0.068	0.249	0.026	0.151	0.008	0.098	0.003	0.071	0.001
850	0.24	2.088	3.310	1.174	0.854	0.752	0.301	0.445	0.089	0.294	0.034	0.179	0.011	0.116	0.004	0.084	0.002
916	0.25	2.250	3.767	1.266	0.970	0.810	0.341	0.479	0.100	0.316	0.038	0.193	0.012	0.125	0.004	0.090	0.002
1000	0.28	2.456	4.385	1.382	1.126	0.884	0.395	0.523	0.116	0.345	0.044	0.210	0.014	0.136	0.005	0.098	0.002
1146	0.32	2.815	5.559	1.583	1.423	1.013	0.498	0.600	0.145	0.396	0.055	0.241	0.018	0.156	0.006	0.113	0.003
1220	0.34	2.996	6.181	1.685	1.585	1.079	0.553	0.638	0.162	0.421	0.061	0.257	0.019	0.166	0.007	0.120	0.003
1373	0.38	3.372	7.361	1.897	1.945	1.214	0.678	0.718	0.197	0.474	0.075	0.289	0.024	0.187	0.009	0.135	0.004
1413	0.39	3.470	7.688	1.952	2.045	1.249	0.712	0.739	0.207	0.488	0.078	0.297	0.025	0.192	0.009	0.139	0.004
1450	0.40	3.561	8.008	2.003	2.139	1.282	0.744	0.759	0.216	0.501	0.082	0.305	0.026	0.197	0.009	0.142	0.004
1603	0.45	3.937	9.430	2.215	2.543	1.417	0.885	0.839	0.257	0.554	0.097	0.337	0.030	0.218	0.011	0.157	0.005
1690	0.47	4.151	10.359	2.335	2.774	1.494	0.970	0.884	0.281	0.584	0.106	0.356	0.033	0.230	0.012	0.166	0.006
1833	0.51	4.502	11.947	2.532	3.112	1.621	1.118	0.959	0.323	0.633	0.122	0.386	0.038	0.249	0.014	0.180	0.006
1900	0.53	4.667	12.778	2.625	3.287	1.680	1.190	0.994	0.343	0.656	0.129	0.400	0.040	0.258	0.015	0.187	0.007
1980	0.55	4.863	13.796	2.735	3.482	1.751	1.278	1.036	0.369	0.684	0.139	0.417	0.043	0.269	0.016	0.195	0.007
2062	0.57	5.064	14.819	2.849	3.733	1.823	1.368	1.079	0.396	0.712	0.149	0.434	0.046	0.280	0.017	0.203	0.008
2200	0.61	5.403	16.712	3.039	4.189	1.945	1.512	1.151	0.443	0.760	0.166	0.463	0.052	0.299	0.019	0.216	0.009
2262	0.63	5.556	17.587	3.125	4.401	2.000	1.573	1.183	0.465	0.781	0.174	0.476	0.054	0.308	0.019	0.222	0.009
2290	0.64	5.624	17.967	3.164	4.499	2.025	1.595	1.198	0.475	0.791	0.178	0.482	0.055	0.311	0.020	0.225	0.009
2400	0.67	5.895	19.583	3.316	4.910	2.122	1.707	1.256	0.515	0.829	0.193	0.505	0.060	0.326	0.021	0.236	0.010
2442	0.68	5.998	20.269	3.374	5.039	2.159	1.752	1.278	0.531	0.843	0.199	0.514	0.062	0.332	0.022	0.240	0.010
2545	0.71	6.251	21.746	3.516	5.427	2.250	1.877	1.332	0.570	0.879	0.213	0.535	0.066	0.346	0.024	0.250	0.011
2700	0.75	6.631	24.161	3.730	6.046	2.387	2.076	1.413	0.630	0.933	0.237	0.568	0.073	0.367	0.026	0.265	0.012
2770	0.77	6.803	25.494	3.827	6.336	2.449	2.174	1.449	0.655	0.957	0.247	0.583	0.076	0.377	0.027	0.272	0.013
2828	0.79	6.946	26.473	3.907	6.569	2.501	2.257	1.480	0.676	0.977	0.256	0.595	0.079	0.385	0.028	0.278	0.013
2895	0.80	7.110	27.613	4.000	6.862	2.560	2.348	1.515	0.699	1.000	0.267	0.609	0.082	0.394	0.029	0.284	0.014
3100	0.86	7.614	31.266	4.283	7.779	2.741	2.667	1.622	0.769	1.071	0.301	0.652	0.093	0.422	0.033	0.305	0.015
3258	0.91	8.002	34.436	4.501	8.529	2.881	2.914	1.705	0.832	1.125	0.327	0.685	0.101	0.443	0.036	0.320	0.017
3325	0.92	8.167	35.668	4.594	8.847	2.940	3.019	1.740	0.859	1.148	0.338	0.700	0.105	0.452	0.037	0.327	0.017
3450	0.96	8.474	38.132	4.766	9.515	3.050	3.230	1.805	0.919	1.192	0.358	0.726	0.112	0.469	0.040	0.339	0.018
3665	1.02	9.002	42.613	5.063	10.597	3.241	3.608	1.917	1.021	1.266	0.390	0.771	0.124	0.498	0.044	0.360	0.021
3880	1.08	9.530	47.362	5.360	11.795	3.431	4.002	2.030	1.130	1.340	0.424	0.816	0.137	0.528	0.049	0.381	0.023
4070	1.13	9.996	51.916	5.623	12.849	3.599	4.365	2.129	1.234	1.406	0.457	0.856	0.149	0.553	0.053	0.400	0.025

Medium: Water; 1 mbar/m = 100 Pa/m

Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 80°C																	
		16×2.0		20×2.0		25×2.5		32x3.0		40x4.0		50x4.5		63x6.0		75x7.5	
Flow		Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
4250	1.18			5.872	13.915	3.758	4.723	2.224	1.336	1.468	0.493	0.894	0.160	0.578	0.057	0.418	0.026
4340	1.21			5.996	14.472	3.837	4.910	2.271	1.385	1.499	0.512	0.913	0.165	0.590	0.059	0.426	0.027
4432	1.23			6.123	14.992	3.919	5.100	2.319	1.436	1.531	0.531	0.932	0.171	0.603	0.061	0.435	0.028
4720	1.31			6.521	16.913	4.173	5.736	2.469	1.611	1.630	0.594	0.993	0.187	0.642	0.068	0.464	0.032
4990	1.39			6.894	18.737	4.412	6.349	2.611	1.783	1.723	0.657	1.050	0.202	0.679	0.075	0.490	0.035
5065	1.41			6.998	19.314	4.478	6.531	2.650	1.831	1.749	0.675	1.066	0.207	0.689	0.077	0.498	0.036
5300	1.47			7.322	20.928	4.686	7.094	2.773	1.991	1.831	0.733	1.115	0.223	0.721	0.083	0.521	0.039
5540	1.54			7.654	22.673	4.898	7.705	2.898	2.162	1.913	0.795	1.166	0.241	0.753	0.089	0.544	0.042
5790	1.61			7.999	24.697	5.119	8.361	3.029	2.344	2.000	0.860	1.218	0.261	0.787	0.095	0.569	0.045
6150	1.71			8.497	27.567	5.438	9.340	3.218	2.618	2.124	0.961	1.294	0.291	0.836	0.104	0.604	0.050
6515	1.81			9.001	30.600	5.761	10.386	3.409	2.910	2.250	0.961	1.371	0.323	0.886	0.114	0.640	0.055
6900	1.92			9.533	34.055	6.101	11.540	3.610	3.233	2.383	1.187	1.452	0.358	0.938	0.126	0.678	0.059
7235	2.01			9.996	37.186	6.397	12.595	3.785	3.534	2.499	1.294	1.522	0.390	0.984	0.137	0.711	0.063
7650	2.13					6.764	13.986	4.002	3.534	2.642	1.434	1.610	0.432	1.040	0.151	0.752	0.069
7920	2.20					7.003	14.939	4.144	4.175	2.735	1.526	1.666	0.460	1.077	0.161	0.778	0.074
8680	2.41					7.675	17.678	4.541	4.951	2.998	1.811	1.826	0.544	1.180	0.190	0.853	0.087
9050	2.51					8.002	19.113	4.735	5.358	3.126	1.956	1.904	0.588	1.231	0.205	0.889	0.093
9560	2.66					8.453	21.147	5.002	5.917	3.302	2.165	2.011	0.650	1.300	0.227	0.939	0.103
10180	2.83					9.001	23.786	5.326	6.650	3.516	2.432	2.142	0.730	1.384	0.254	1.000	0.116
10700	2.97					9.461	26.068	5.598	7.287	3.696	2.671	2.251	0.800	1.455	0.279	1.051	0.127
11310	3.14					10.000	28.865	5.917	8.079	3.906	2.955	2.380	0.887	1.538	0.308	1.111	0.140
12500	3.47							6.540	9.721	4.317	3.557	2.630	1.066	1.700	0.370	1.228	0.168
13380	3.72							7.000	11.028	4.621	4.033	2.815	1.209	1.819	0.420	1.315	0.191
14500	4.03							7.586	12.812	5.008	4.691	3.051	1.403	1.972	0.487	1.425	0.221
15300	4.25							8.005	14.138	5.284	5.164	3.219	1.551	2.080	0.538	1.503	0.244
16300	4.53							8.528	15.927	5.630	5.817	3.429	1.744	2.216	0.605	1.601	0.274
17200	4.78							8.999	15.927	5.941	6.419	3.619	1.924	2.339	0.669	1.690	0.303
18300	5.08							9.574	19.708	6.321	7.207	3.850	2.163	2.488	0.750	1.798	0.340
19110	5.31							9.998	21.374	6.600	7.823	4.021	2.343	2.599	0.813	1.877	0.368
20280	5.63									7.004	8.734	4.267	2.614	2.758	0.908	1.992	0.411
22080	6.13											4.646	3.062	3.002	1.063	2.169	0.481
23750	6.60											4.997	3.503	3.229	1.216	2.333	0.551
26000	7.22											5.470	4.143	3.535	1.439	2.554	0.652
28500	7.92											5.996	4.916	3.875	1.706	2.800	0.772
29500	8.19											6.207	5.240	4.011	1.817	2.898	0.824
31000	8.61											6.522	5.736	4.215	1.994	3.046	0.903
33250	9.24											6.996	6.534	4.521	2.270	3.267	1.028
36800	10.22													5.004	2.741	3.615	1.242
40700	11.31													5.534	3.304	3.999	1.496
44100	12.25													5.997	3.835	4.333	1.736
48000	13.33													6.527	4.489	4.716	2.032
51500	14.31													7.003	5.115	5.060	2.317
56500	15.69															5.551	2.751
61100	16.97															6.003	3.181
68000	18.89															6.681	3.883
72000	20.00															7.074	4.318

Medium: Water; 1 mbar/m = 100 Pa/m

Pipes Pressure Loss at 80°C (kPa/m)



PRODUCT CERTIFICATION

TEST CERTIFICATE
POTABLE WATER FITTINGS SCHEME

Certificate Number : TC-J0244
Issue No: 04

This Certificate is awarded to the following product(s) which has / have complied with the requirements of the listed standard(s) in accordance with Stipulation of Standards and Requirements for Water Fittings for Use in Potable Water Service Installations.

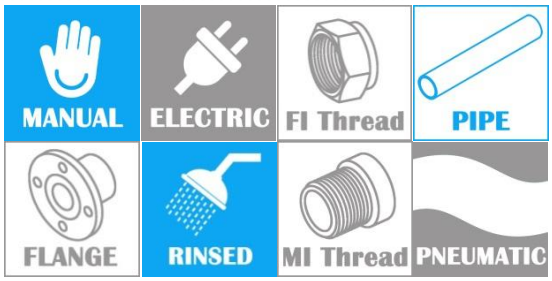
Client	:	**Liang Chew Hardware Pte Ltd** 133 Kitchener Road Singapore 208517
Product	:	Multilayer Pipes & Fittings (Push-fit)
Brand / Model	:	Norika / PIPPEX & PEXF6
Detail	:	Sizes (mm): 16, 20, 25 & 32
Test Standard(s)	:	BS EN ISO 21003-1: 2008, BS EN ISO 21003-2: 2008 + A1: 2011, BS EN ISO 21003-3: 2008, BS EN ISO 21003-5: 2008, AS/NZS 4020: 2005, AS/NZS 4020: 2018, SS 375: 2015, BS EN 12165: 2016
Test Report(s)	:	2524187-OYC, 2120978/01-OYC, 2120978/02-OYC, 1820215/01-OYC, 2020852-CPC, 1820215/04-CPC, 2020843/01-CPC, 2020889-CPC, 21802731-CLC

A sample of the product submitted was tested and found to comply with the test requirements of the above standard(s).

Date of Original Issue	:	10 March 2021
Date of Last Revision	:	04 March 2025
Date of Expiry	:	09 March 2027

Head, Certification
Singapore Test Lab Pte Ltd

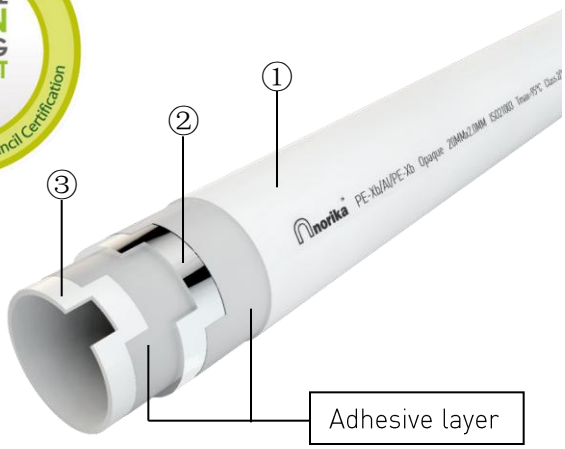
PEX-B/AL/PEX-B THREE LAYER PIPE



COMPLY WITH BS EN ISO 21003-1:2008
BSEN ISO 21003-2:2008+A1:2011
AS/NZS 4020:2005
SS 375:2015

STRAIGHT TUBE
SKU: PIPPEXL016~075

COILING TUBE
SKU: PIPPEX016~032



**Exclusively indoor installation only.

STANDARD SPECIFICATION	
Working Pressure	10 Bar
Working Temperature	0 ~ 70℃
Applications	Hot and cold potable water system.

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Outside layer	PEX-B (Silane Cross-linked Polyethylene)
2	Middle layer	Aluminum
3	Inside layer	PEX-B (Silane Cross-linked Polyethylene)

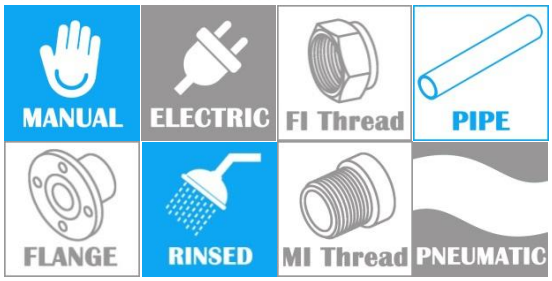
DIMENSIONS

SKU	Outside Diameter (mm)	Inside Diameter (mm)	Thickness (mm)	Tolerance Of Pipe Thickness (mm)	Length (mm)	WEIGHT (kg/m)
PIPPEXL016	16	12	2.0	2.00~2.25	5800	0.121
PIPPEXL020	20	16	2.0	2.00~2.30	5800	0.166
PIPPEXL025	25	20	2.5	2.40~2.70	5800	0.235
PIPPEXL032	32	26	3.0	2.90~3.25	5800	1.040
PIPPEXL040	40	32	4.0	4.00~4.60	5800	0.567
PIPPEXL050	50	41	4.5	4.50~5.20	5800	0.820
PIPPEXL063	63	51	6.0	6.00~6.80	5800	1.334
PIPPEXL075	75	60	7.5	7.50~8.50	5800	1.893

DIMENSIONS

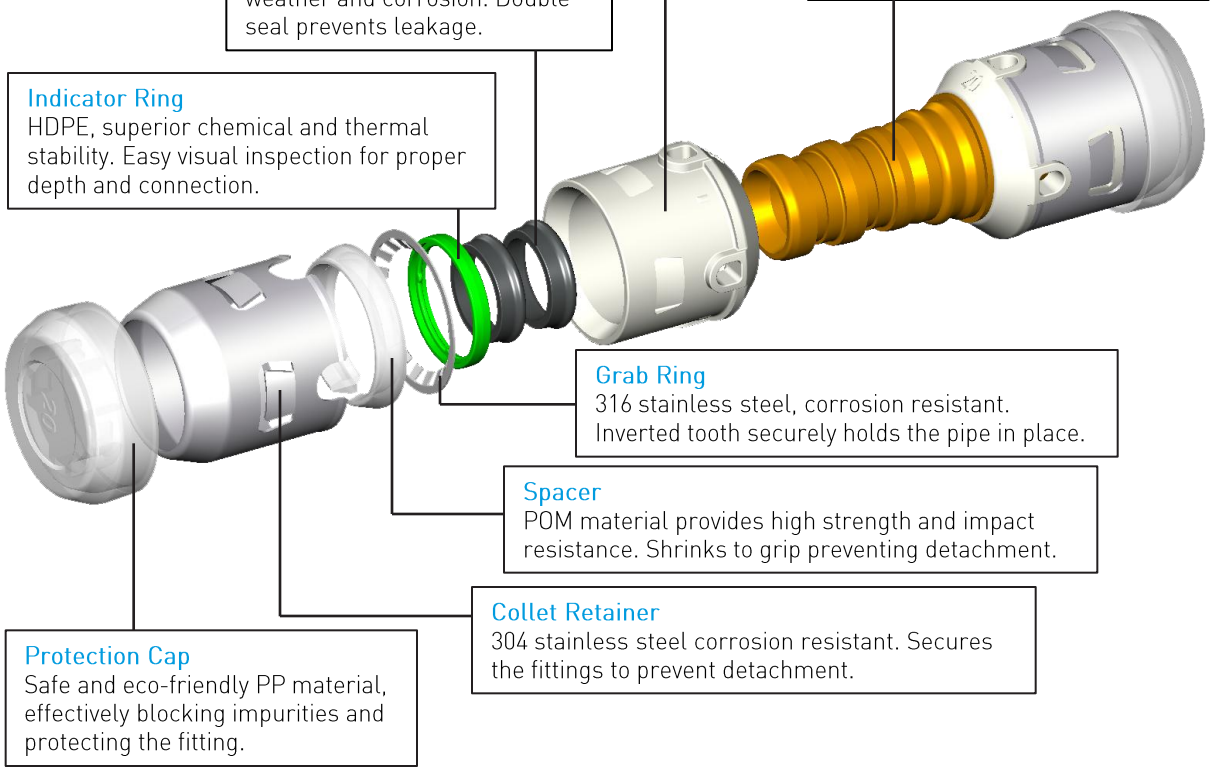
SKU	Outside Diameter (mm)	Inside Diameter (mm)	Thickness (mm)	Tolerance Of Pipe Thickness (mm)	WEIGHT (kg/m)	M/CTN
PIPPEX016	16	12	2.0	2.00~2.25	0.121	200M
PIPPEX020	20	16	2.0	2.00~2.30	0.166	200M
PIPPEX025	25	20	2.5	2.40~2.70	0.235	100M
PIPPEX032	32	26	3.0	2.90~3.25	1.040	50M

PEX MULTI LAYER PIPES AND FITTINGS



COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT COMPONENTS:



Collet
PPSU, is stable, heat-resistant, and environment friendly. Inspection holes verify full tube insertion.

Body
Made of Brass CW602N boosts corrosion resistance, eliminates processing stress, and stable.

Seal Ring
High-quality EPDM resists weather and corrosion. Double seal prevents leakage.

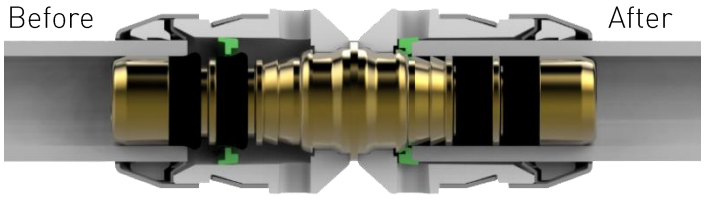
Indicator Ring
HDPE, superior chemical and thermal stability. Easy visual inspection for proper depth and connection.

Grab Ring
316 stainless steel, corrosion resistant. Inverted tooth securely holds the pipe in place.

Spacer
POM material provides high strength and impact resistance. Shrinks to grip preventing detachment.

Collet Retainer
304 stainless steel corrosion resistant. Secures the fittings to prevent detachment.

Protection Cap
Safe and eco-friendly PP material, effectively blocking impurities and protecting the fitting.

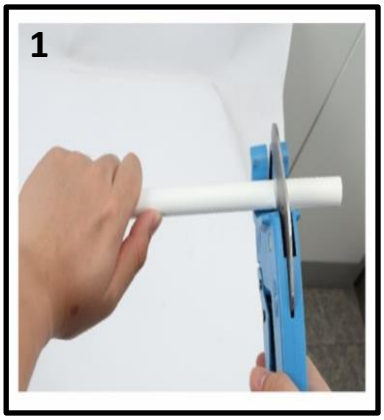


STANDARD SPECIFICATION	
Working Pressure	10 Bar
Working Temperature	0 ~ 70℃
Applications	Hot and cold potable water system, Underfloor heating system

INSTALLATION GUIDE:

1. Pipe cutting

Cut the pipe vertically and precisely with a sharp pipe cutter.



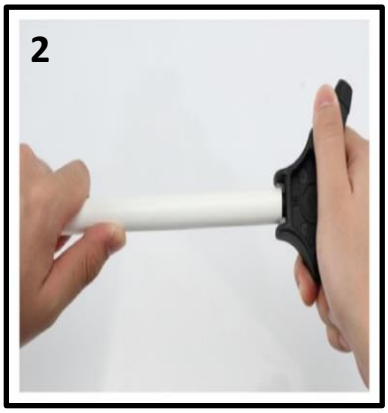
2. Rounding and beveling

- **Multilayer pipe:**

Round and bevel the end holes with reamer.

- **Pex pipe:**

Round the end holes with reamer, no need to bevel.
If you want to insert quickly and easily, you can bevel the pipe.



3. Removing

Removing the protective cap from the fitting. Make sure that both the fitting and pipe are clean and free of dirt and debris before making a connection.

INSTALLATION GUIDE:

4. Inserting

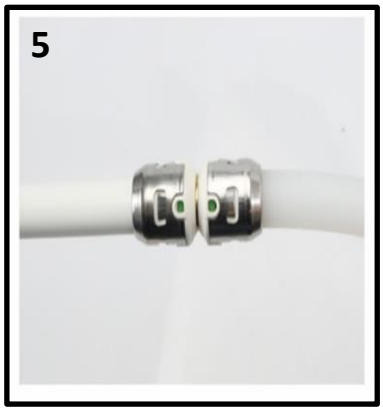
Choose the right size push-fitting for the pipe, push the pipe into the fitting firmly. Note that the pipe should be inserted in parallel until the green indicator ring is seen.

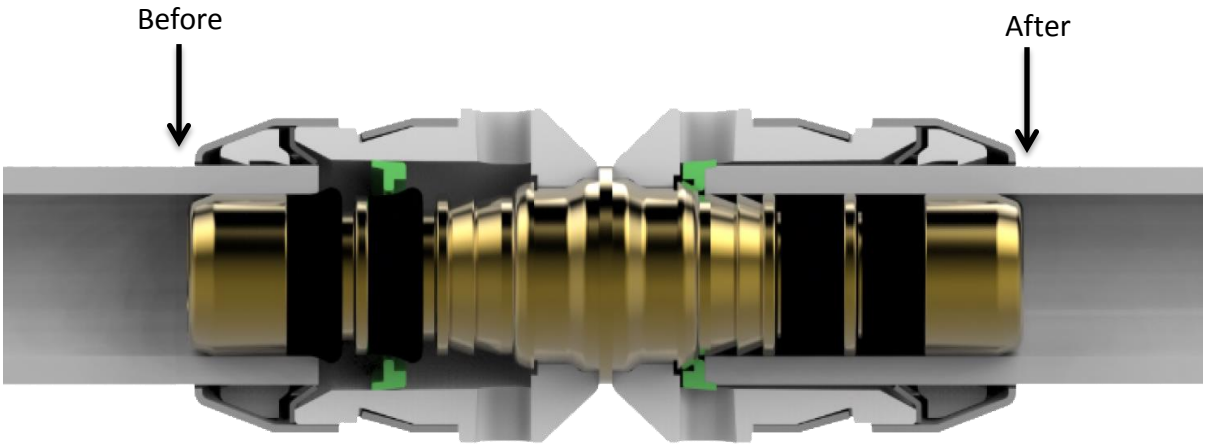
Doesn't require any tools for inserting.

5. Checking

Checking the installed fitting, it is indicating that the fitting is properly installed if the green indicator ring can be seen through the inspection holes.

The pipeline can only be installed after hydrostatic test.





PEX MULTI LAYER PIPES AND FITTINGS

MANUAL RINSED PIPE

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

SINGAPORE GREEN BUILDING PRODUCT GOOD
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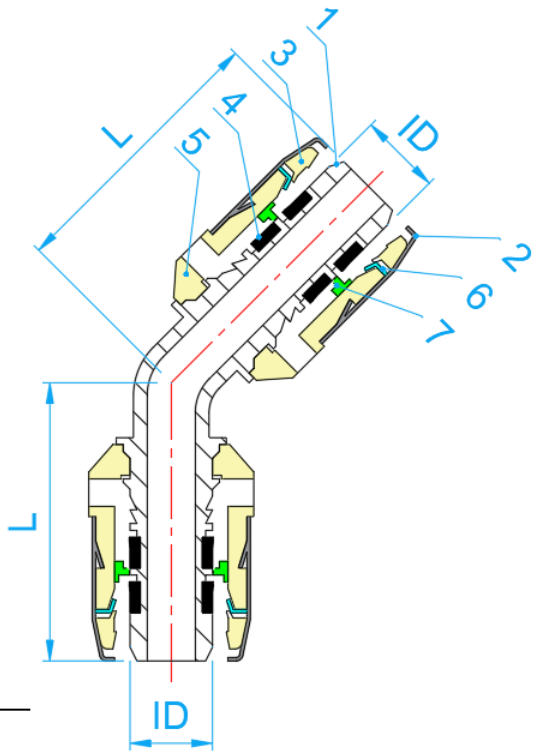
F6 PUSH-FIT PEX 45° ELBOW



SECTION VIEW

COMPONENT PARTS		
ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

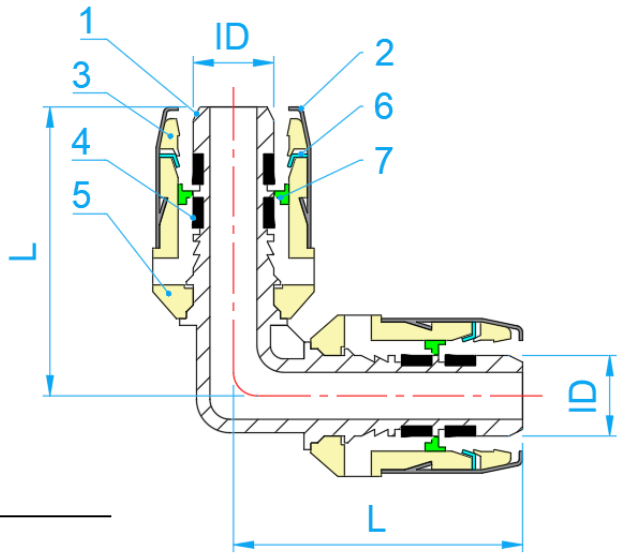
DIMENSIONS

SKU	SIZE (mm)	ID (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF6E45016	16	11.80	40.5	0.078	96

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX EQUAL ELBOW



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS

SKU	SIZE (mm)	ID (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF6E90016	16	11.80	43	0.079	96
PEXF6E90020	20	15.80	47	0.120	112
PEXF6E90025	25	19.75	53	0.150	80
PEXF6E90032	32	25.75	63	0.312	42

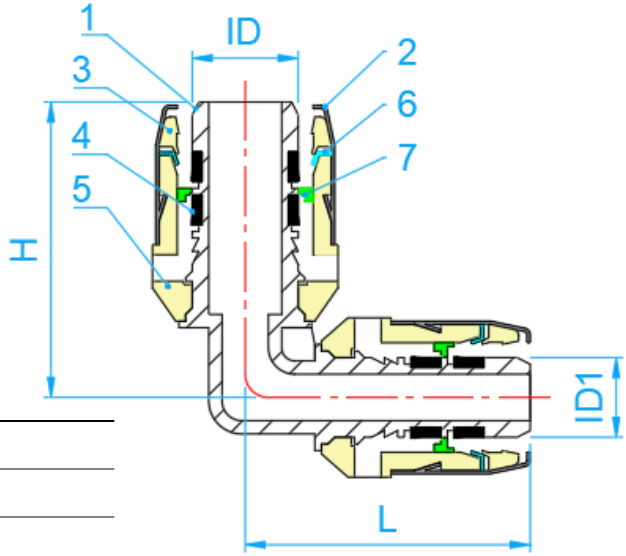
PEX MULTI LAYER PIPES AND FITTINGS

MANUAL RINSED PIPE

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

SINGAPORE GREEN BUILDING PRODUCT GOOD
Singapore Green Building Council Certification

F6 PUSH-FIT PEX REDUCING ELBOW



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS

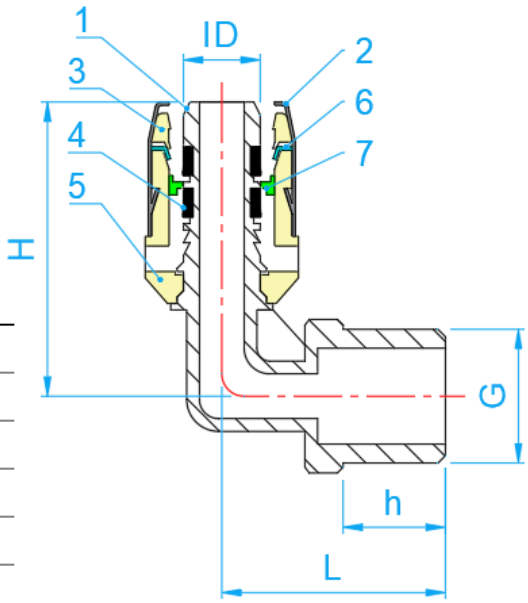
SKU	SIZE (mm)	ID (mm)	ID1 (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6RE9002016	20X16	15.80	11.80	45	47	0.126	128
PEXF6RE9002516	25X16	19.75	11.80	47	53	0.111	100
PEXF6RE9002520	25X20	19.75	15.80	49	53	0.155	84
PEXF6RE9003216	32X16	25.75	11.80	50	60	0.199	72
PEXF6RE9003220 *	32X20	25.75	15.80	53	60	-	-
PEXF6RE9003225 *	32X25	25.75	19.75	59	60	-	-

*This item requires special ordering. Please consult with a salesperson for the estimated lead time.

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX MI ELBOW



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS

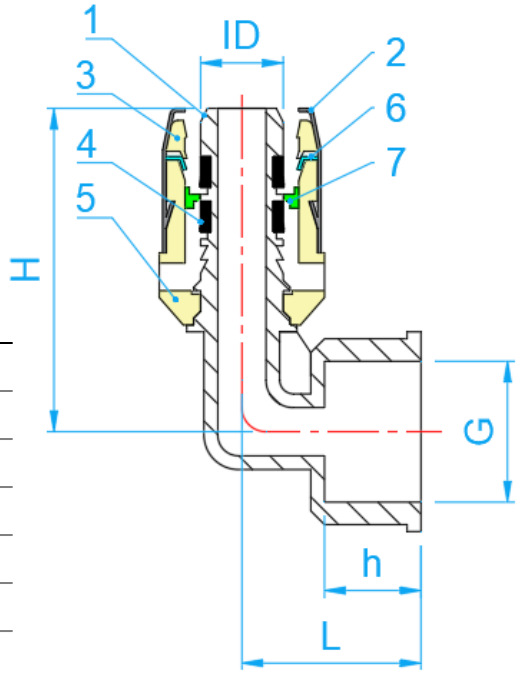
SKU	SIZE (mmxinch)	ID (mm)	R BSPT (inch)	h (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6MIE01616	16X1/2"	11.80	½"	14.0	35	46.0	0.074	144
PEXF6MIE01620	16X3/4"	11.80	¾"	15.0	36	48.5	0.093	96
PEXF6MIE02016	20X1/2"	15.80	½"	14.0	37	47.0	0.093	80
PEXF6MIE02020	20X3/4"	15.80	¾"	15.0	38	50.0	0.112	80
PEXF6MIE02520	25X3/4"	19.75	¾"	15.0	42	56.0	0.153	96
PEXF6MIE02525	25X1"	19.75	1"	16.0	43	60.0	0.196	80
PEXF6MIE03220 *	32X3/4"	25.75	¾"	15.0	45	62.0	-	-
PEXF6MIE03225	32X1"	25.75	1"	16.0	46	65.0	0.252	48
PEXF6MIE03232	32X11/4"	25.75	11/4"	19.5	45	68.5	0.290	40

*This item requires special ordering. Please consult with a salesperson for the estimated lead time.

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX FI ELBOW



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS

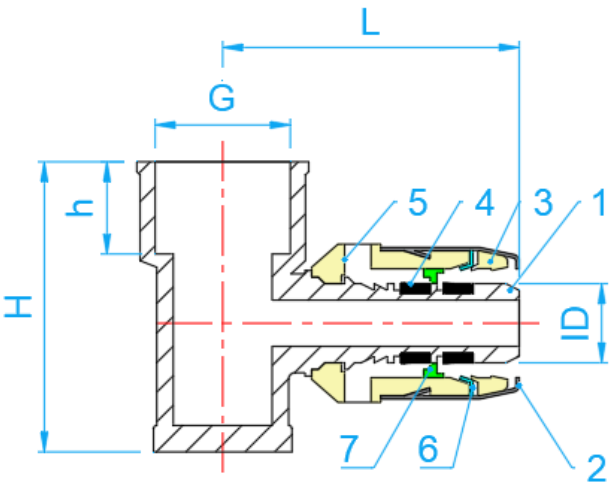
SKU	SIZE (mmxinch)	ID (mm)	G BSP (inch)	h (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6FIE01616	16X1/2"	11.80	½"	15	26	47	0.082	96
PEXF6FIE01620	16X3/4"	11.80	¾"	16	27	50	0.099	112
PEXF6FIE02016	20X1/2"	15.80	½"	15	27	49	0.102	80
PEXF6FIE02020	20X3/4"	15.80	¾"	16	28	51	0.112	80
PEXF6FIE02520	25X3/4"	19.75	¾"	16	30	56	0.160	72
PEXF6FIE02525	25X1"	19.75	1"	18	32	60	0.195	72
PEXF6FIE03220 *	32X3/4"	25.75	¾"	16	33	62	-	-
PEXF6FIE03225	32X1"	25.75	1"	18	34	66	0.251	48
PEXF6FIE03232	32X11/4"	25.75	11/4"	19	34	71	0.279	40

*This item requires special ordering. Please consult with a salesperson for the estimated lead time.

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX FI WALLPLATE ELBOW



SECTION VIEW

COMPONENT PARTS		
ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS

SKU	SIZE (mmxinch)	ID (mm)	h (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6FE016	16X1/2"	11.80	15	47	43	0.082	144
PEXF6FE02016	20X1/2"	15.80	15	48	43	0.127	120

PEX MULTI LAYER PIPES AND FITTINGS

MANUAL RINSED PIPE

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

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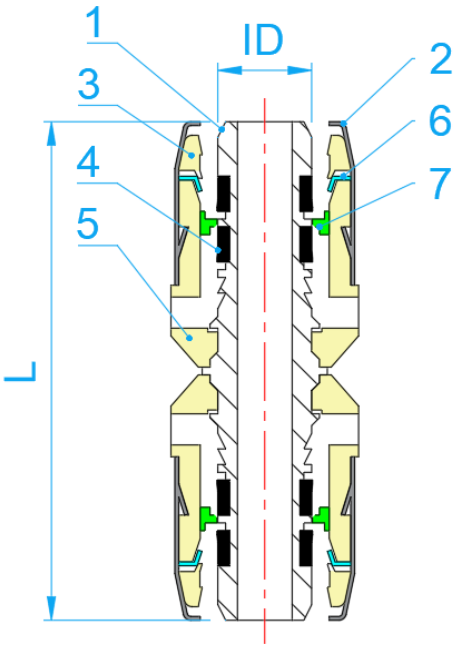
F6 PUSH-FIT PEX EQUAL SOCKET



SECTION VIEW

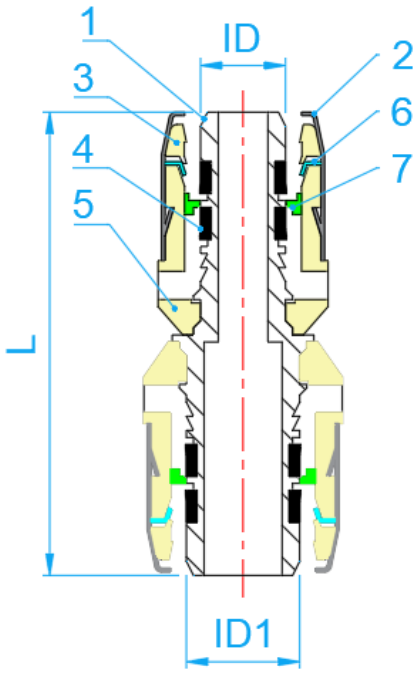
COMPONENT PARTS		
ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS					
SKU	SIZE (mm)	ID (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF6ES016	16	11.80	64.0	0.066	144
PEXF6ES020	20	15.80	67.0	0.096	120
PEXF6ES025	25	19.75	77.5	0.150	96
PEXF6ES032	32	25.75	88.5	0.249	48

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX REDUCING SOCKET



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

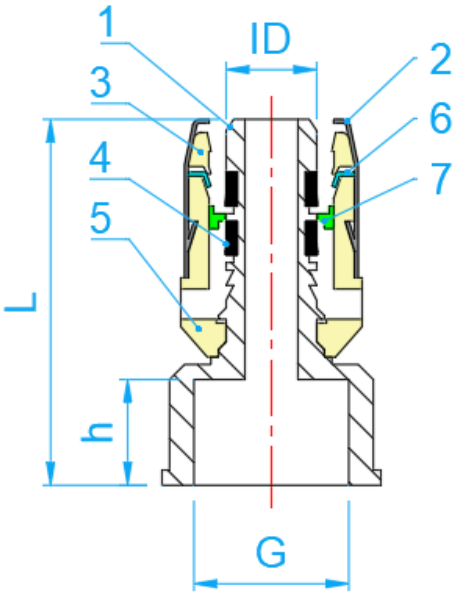
DIMENSIONS

SKU	SIZE (mm)	ID (mm)	ID1 (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF6RS02016	20X16	11.80	15.80	65.5	0.082	160
PEXF6RS02516	25X16	11.80	19.75	71.0	0.111	120
PEXF6RS02520	25X20	15.80	19.75	72.5	0.124	120
PEXF6RS03216	32X16	11.80	25.75	76.5	0.168	72
PEXF6RS03220	32X20	15.80	25.75	78.0	0.182	80
PEXF6RS03225	32X25	19.75	25.75	83.0	0.204	60

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX FEMALE ADAPTOR



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

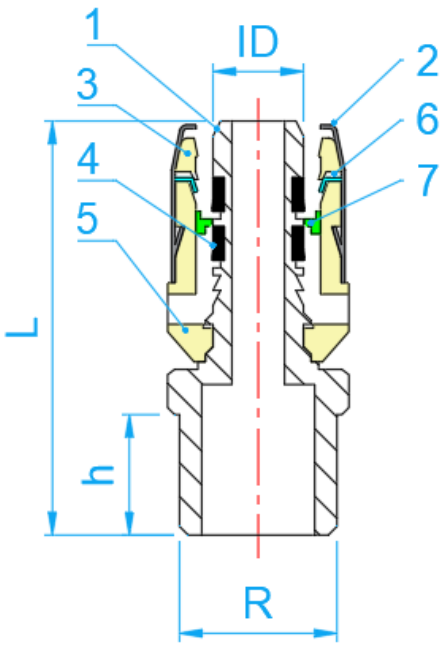
DIMENSIONS

SKU	SIZE (mmxinch)	ID (mm)	G BSP (inch)	h (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF6FIA01616	16×1/2"	11.80	½"	15	48.5	0.068	144
PEXF6FIA01620	16×3/4"	11.80	¾"	16	49.5	0.085	96
PEXF6FIA02016	20×1/2"	15.80	½"	15	50.0	0.081	96
PEXF6FIA02020	20×3/4"	15.80	¾"	16	51.0	0.097	96
PEXF6FIA02516	25×1/2"	19.75	½"	15	55.0	0.103	80
PEXF6FIA02520	25×3/4"	19.75	¾"	16	56.0	0.119	80
PEXF6FIA02525	25×1"	19.75	1"	18	57.5	0.156	64
PEXF6FIA03220	32×3/4"	25.75	¾"	16	66.0	0.174	80
PEXF6FIA03225	32×1"	25.75	1"	18	63.0	0.199	80
PEXF6FIA03232	32×11/4"	25.75	11/4"	19	65.5	0.234	64

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX MALE ADAPTOR



SECTION VIEW

COMPONENT PARTS+

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

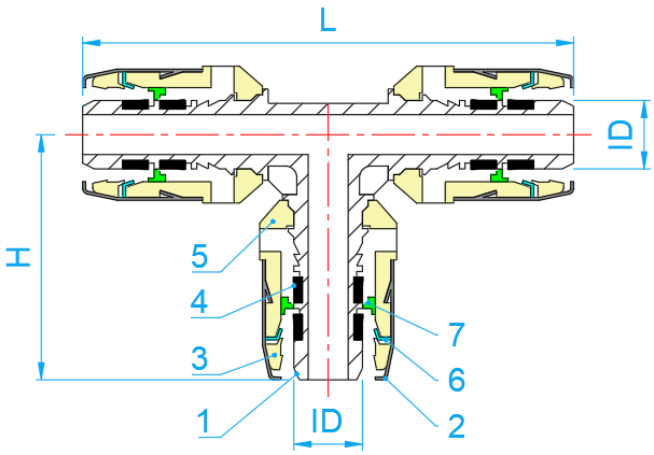
DIMENSIONS

SKU	SIZE (mmxinch)	ID (mm)	R BSPT (inch)	h (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF6MIA01616	16X1/2"	11.80	½"	14	55.0	0.069	144
PEXF6MIA01620	16X3/4"	11.80	¾"	15	52.0	0.077	144
PEXF6MIA02016	20X1/2"	15.80	½"	14	57.0	0.086	144
PEXF6MIA02020	20X3/4"	15.80	¾"	15	58.0	0.095	120
PEXF6MIA02516	25X1/2"	19.75	½"	14	66.0	0.130	80
PEXF6MIA02520	25X3/4"	19.75	¾"	15	67.0	0.140	64
PEXF6MIA02525	25X1"	19.75	1"	16	60.0	0.141	64
PEXF6MIA03216	32X1/2"	25.75	½"	14	71.5	0.173	80
PEXF6MIA03220	32X3/4"	25.75	¾"	15	72.5	0.180	80
PEXF6MIA03225	32X1"	25.75	1"	16	73.5	0.204	80
PEXF6MIA03232	32X11/4"	25.75	1¼"	19	70.0	0.240	72

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX EQUAL TEE



SECTION VIEW

COMPONENT PARTS		
ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

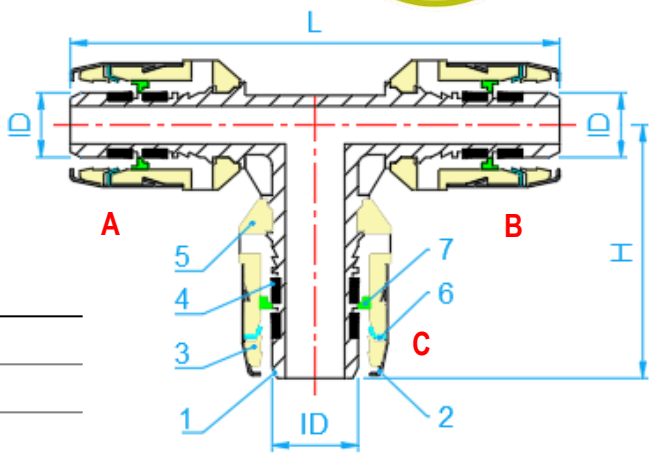
DIMENSIONS

SKU	SIZE (mm)	ID (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6ET016	16	11.80	86	43	0.117	96
PEXF6ET020	20	15.80	93	47	0.174	72
PEXF6ET025	25	19.75	106	53	0.270	48
PEXF6ET032	32	25.75	125	63	0.451	24

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX REDUCING TEE



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS

SKU (A*B*C)	SIZE (A*C*B)	ID (mm)	ID1 (mm)	ID2 (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6RT0161620	16X20X16	11.80	11.80	15.80	91	47.0	0.146	72
PEXF6RT0161625	16X25X16	11.80	11.80	19.75	96	53.0	0.173	60
PEXF6RT0201616	20X16X16	15.80	11.80	11.80	88	45.0	0.138	72
PEXF6RT0201620	20X20X16	15.80	11.80	15.80	92	47.0	0.157	72
PEXF6RT0202016	20X16X20	15.80	15.80	11.80	93	47.0	0.156	72
PEXF6RT0201625 *	20X25X16	15.80	11.80	19.75	98	53.0	-	-
PEXF6RT0202025 *	20X25X20	15.80	15.80	19.75	99	53.0	-	-
PEXF6RT0202032 *	20X32X20	15.80	15.80	25.75	106	60.0	-	-
PEXF6RT0251616 *	25X16X16	19.75	11.80	11.80	93	47.0	-	-
PEXF6RT0252016 *	25X16X20	19.75	15.80	11.80	95	47.0	-	-
PEXF6RT0252516	25X16X25	19.75	19.75	11.80	100	47.0	0.215	60
PEXF6RT0251620 *	25X20X16	19.75	11.80	15.80	97	49.0	-	-
PEXF6RT0252020	25X20X20	19.75	15.80	15.80	98	49.0	0.208	60

*This item requires special ordering. Please consult with a salesperson for the estimated lead time.

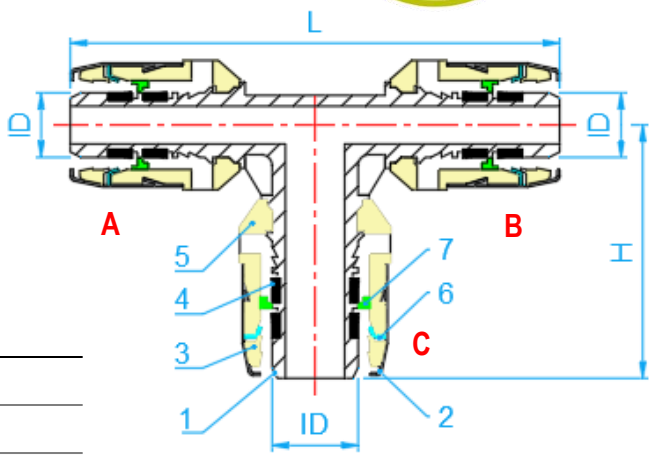
PEX MULTI LAYER PIPES AND FITTINGS

MANUAL | RINSED | PIPE

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

SINGAPORE GREEN BUILDING PRODUCT – GOOD – Singapore Green Building Council Certification

F6 PUSH-FIT PEX REDUCING TEE



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS

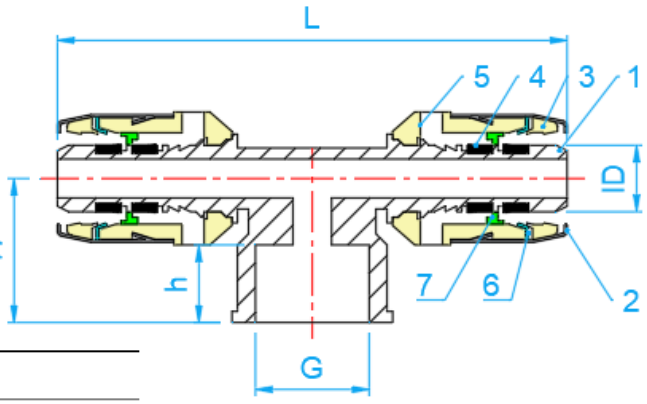
SKU (A*B*C)	SIZE (A*C*B)	ID (mm)	ID1 (mm)	ID2 (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6RT0252520	25X20X25	19.75	19.75	15.80	103	49.0	0.236	56
PEXF6RT0251625 *	25X25X16	19.75	11.80	19.75	102	53.0	-	-
PEXF6RT0252025 *	25X25X20	19.75	15.80	19.75	104	53.0	-	-
PEXF6RT0252532 *	25X32X25	19.75	19.75	25.75	106	60.0	-	-
PEXF6RT0322516 *	32X16X25	25.75	19.75	11.80	105	50.0	-	-
PEXF6RT0323216	32X16X32	25.75	25.75	11.80	110	50.0	0.330	48
PEXF6RT0322020 *	32X20X20	25.75	15.80	15.80	104	53.0	-	-
PEXF6RT0322520	32X20X25	25.75	19.75	15.80	109	53.0	0.298	48
PEXF6RT0323216	32X16X32	25.75	25.75	11.80	112	51.5	0.310	48
PEXF6RT0323220	32X20X32	25.75	25.75	15.80	114	53.0	0.350	48
PEXF6RT0322525	32X25X25	25.75	19.75	19.75	114	59.0	0.333	32
PEXF6RT0323225	32X25X32	25.75	25.75	19.75	120	59.0	0.390	24

*This item requires special ordering. Please consult with a salesperson for the estimated lead time.

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX FI TEE



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS

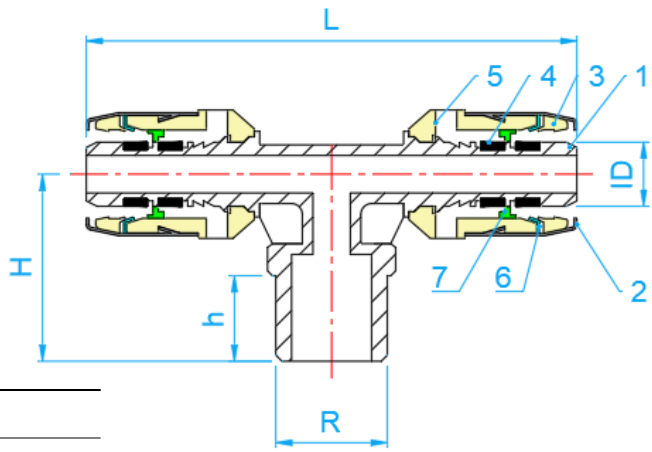
SKU	SIZE (mmxinch)	ID (mm)	G BSPT (inch)	h (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6FIT01616	16X1/2"	11.80	½"	14	94	26	0.118	110
PEXF6FIT01620 *	16X3/4"	11.80	¾"	15	99	27	-	-
PEXF6FIT02016	20X1/2"	15.80	½"	14	97	27	0.122	90
PEXF6FIT02020 *	20X3/4"	15.80	¾"	15	102	28	-	-
PEXF6FIT02516	25X1/2"	19.75	½"	14	107	29	0.220	60
PEXF6FIT02520 *	25X3/4"	19.75	¾"	15	112	30	-	-
PEXF6FIT03216 *	32X1/2"	25.75	½"	14	118	32	-	-
PEXF6FIT03220 *	32X3/4"	25.75	¾"	15	123	33	-	-
PEXF6FIT03225 *	32X1"	25.75	1"	16	131	34	-	-

*This item requires special ordering. Please consult with a salesperson for the estimated lead time.

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX MI TEE



SECTION VIEW

COMPONENT PARTS

ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

DIMENSIONS

SKU	SIZE (mmxinch)	ID (mm)	R BSPT (inch)	h (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6MIT01616	16X1/2"	11.80	½"	14	92	35	0.115	100
PEXF6MIT01620	16X3/4"	11.80	¾"	15	97	36	0.140	100
PEXF6MIT02016 *	20X1/2"	15.80	½"	14	94	37	-	-
PEXF6MIT02020 *	20X3/4"	15.80	¾"	15	100	38	-	-
PEXF6MIT02516 *	25X1/2"	19.75	½"	14	107	41	-	-
PEXF6MIT02520	25X3/4"	19.75	¾"	15	112	42	0.231	48
PEXF6MIT03220 *	32X3/4"	25.75	¾"	15	123	45	-	-
PEXF6MIT03225 *	32X1"	25.75	1"	16	130	46	-	-

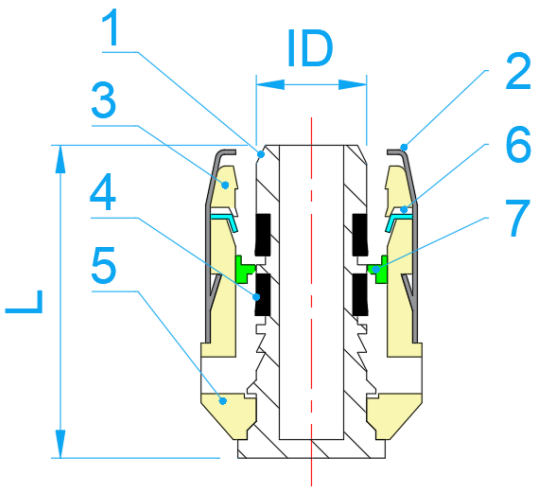
*This item requires special ordering. Please consult with a salesperson for the estimated lead time.

PEX MULTI LAYER PIPES AND FITTINGS

MANUAL RINSED PIPE

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F6 PUSH-FIT PEX END CAP



SECTION VIEW

COMPONENT PARTS		
ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

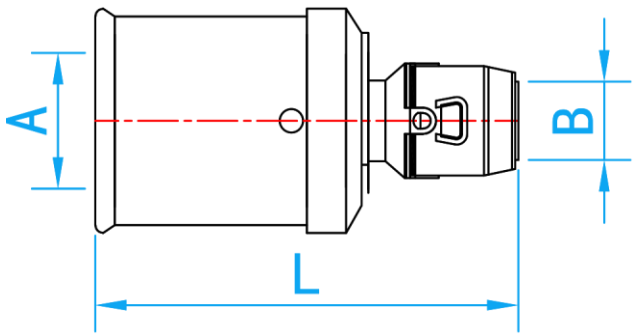
DIMENSIONS

SKU	SIZE (mm)	ID (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF6EC016	16	11.80	34.0	0.037	288
PEXF6EC020	20	15.80	35.5	0.054	192
PEXF6EC025	25	19.75	40.5	0.086	128
PEXF6EC032	32	25.75	46.0	0.142	108

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F5 PRESSFIT X F6 PUSH-FIT PEX REDUCER



SIDE VIEW

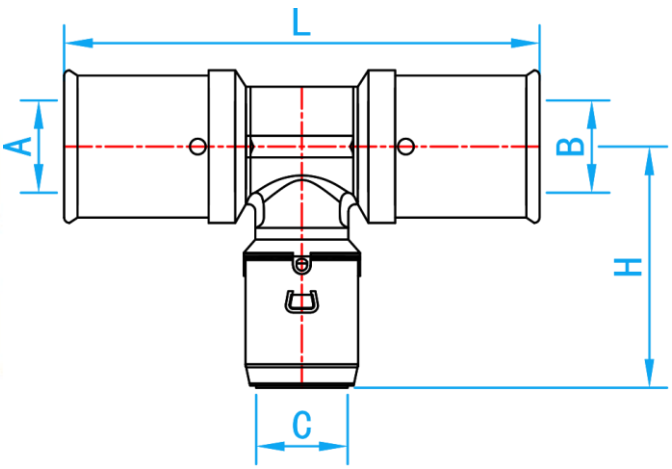
DIMENSIONS

SKU	SIZE A×B (mm)	A (mm)	B (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF6RS04032	40×32	31.75	25.75	85.0	0.284	42
PEXF6RS05020	50×20	40.75	15.80	93.5	0.290	38

PEX MULTI LAYER PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
BS EN ISO 21003-5:2008
BS EN 12165:2016
AS/NZS 4020:2005
SS 375:2015

F5 PRESSFIT X F6 PUSH-FIT PEX REDUCING TEE



SIDE VIEW

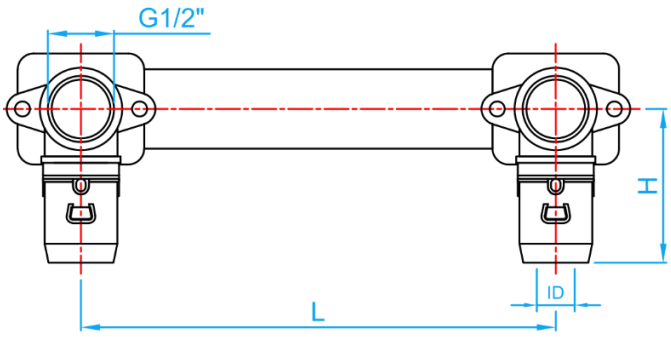
DIMENSIONS

SKU	SIZE A×B×C (mm)	A (mm)	B (mm)	C (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6RT0404025	40×40×25	31.75	31.75	19.75	128	63	0.485	24
PEXF6RT0404032	40×40×32	31.75	31.75	25.75	136	68	0.556	20

PEX PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
SS 375:2015

F6 PUSH-FIT PEX ASSEMBLY
DOUBLE FLANGE ELBOW



SIDE VIEW

DIMENSIONS

SKU	SIZE (mmxinch)	ID (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6FE016S	16X1/2"	11.8	150	49.5	0.223	16
PEXF6FE02016S *	20X1/2"	15.8	150	51.0	-	-

*This item requires special ordering. Please consult with a salesperson for the estimated lead time.

PRODUCT CERTIFICATION

TEST CERTIFICATE
POTABLE WATER FITTINGS SCHEME

Certificate Number : TC-J0259
Issue No: 03

This Certificate is awarded to the following product(s) which has / have complied with the requirements of the listed standard(s) in accordance with Stipulation of Standards and Requirements for Water Fittings for Use in Potable Water Service Installations.

Client	:	**Liang Chew Hardware Pte Ltd** 133 Kitchener Road Singapore 208517
Product	:	DZR Brass Ball Valves (Type 6)
Brand / Model	:	Norika / PEXF6BV16, PEXF6BV20, PEXF6BV25
Detail	:	Sizes (mm): 16, 20 & 25 F6 PEX Push-Fit
Test Standard(s)	:	BS EN 13828: 2003, BS EN 12165: 2016, AS/NZS 4020: 2018, SS 375: 2015
Test Report(s)	:	2524279-OYC, 2120979/02-OYC, 2020843/01-CPC, 2020889-CPC, FB8500265106/2

A sample of the product submitted was tested and found to comply with the test requirements of the above standard(s).

Date of Original Issue	:	21 April 2021
Date of Last Revision	:	04 April 2025
Date of Expiry	:	20 April 2027

Head, Certification
Singapore Test Lab Pte Ltd

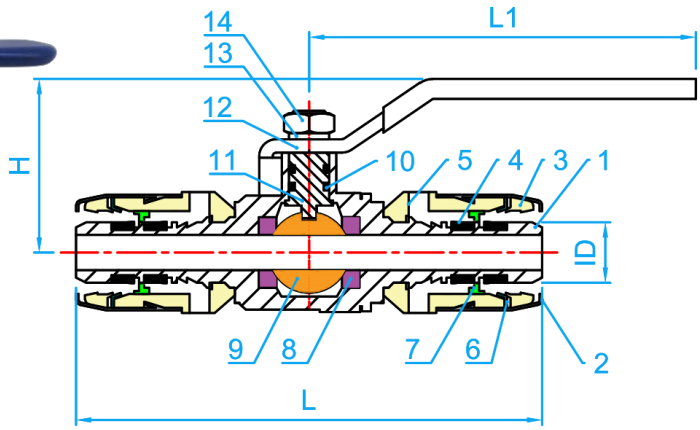
PEX PIPES AND FITTINGS

COMPLY WITH BS EN ISO 21003-1:2008
BS EN ISO 21003-3:2008
SS 375:2015

MANUAL | RINSED | PIPE

SINGAPORE GREEN BUILDING PRODUCT – GOOD – Singapore Green Building Council Certification

F6 PUSH-FIT PEX BALL VALVE



SECTION VIEW

COMPONENT PARTS		
ITEM	PARTS	MATERIAL
1	Body	DZR Brass
2	Collet Retainer	AISI304
3	Spacer	POM
4	Seal Ring	EPDM
5	Collet	PPSU (Polyphenylene Sulfone Resin)
6	Grab Ring	AISI316
7	Indicator Ring	HDPE (High Density Polyethylene)

COMPONENT PARTS		
ITEM	PARTS	MATERIAL
8	Seat	PTFE
9	Ball	DZR Brass
10	O-ring	EPDM
11	Stem	DZR Brass
12	Handle	Q235
13	Spring Washer	65Mn Spring Steel
14	Nut	AISI304

DIMENSIONS

SKU	SIZE (mm)	ID (mm)	L (mm)	L1 (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF6BV016	16	11.80	92.3	73.5	38	0.156	120
PEXF6BV020	20	15.80	100.0	84.0	43	0.236	96
PEXF6BV025	25	19.75	114.5	84.0	46	0.324	72

NOTES

NOTES

LIANG CHEW HARDWARE
联 洲 五 金

Built For Water

Main Office

133 Kitchener Road
Singapore 208517

Mon-Fri: 8:00am - 5:30pm
Sat: 8:00am - 1:00pm
Sun & PH: Closed

North Office

10 Admiralty Street, North
Link Building #02-45
Singapore 757695

Mon-Fri: 8:00am - 5:00pm
Sat: 8:00am - 1:00pm
Sun & PH: Closed