

### **NORIKA PEX F5 MULTILAYER PIPES AND FITTINGS**



Scan for installation video:











# 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:

ms.

Director SGBC Pte Ltd

**SGBP 4219** 

Certificate Number

Original Issue Date 07 December 2023

Revised Date

Valid Till

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

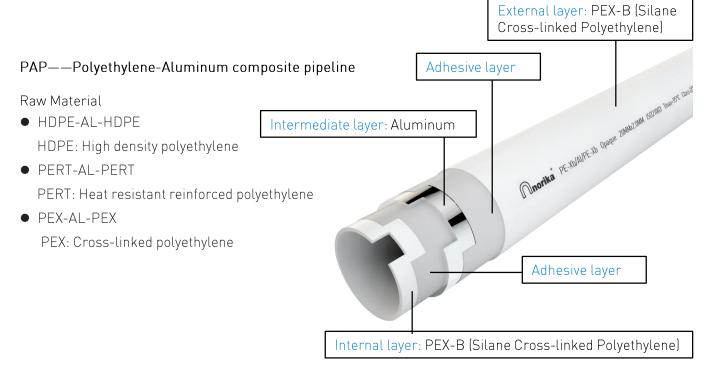
Certificate Number: SGBP 4219

# 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 || PEXF6FIT || PEXF6FIT || PEXF6FIT || PEXF6FE) // (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) (PEXF5FIE) // (16mm, 20mm, 25mm, 32mm, 40mm and 50mm) (PEXF5FJC) // (16mm, 20mm and 25mm) (PEXF5FE || PEXF5BV) // (16mm and 20mm) (PEXF5FJS)

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°C to 70°C. External and internal layer is made of silane cross-linked polyethylene that is extensively used in distribution of potable water. The silane crosslinking 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.



#### Why Crosslinking?



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

- Insoluble & infusible solvent resistance, hightemperature resistance
- Crosslinked construction Impact / tensile strength, creep resistance, scratch resistance

	PE	X-A	PE	К-В		PEX-C
Production Process	Engel (Peroxide plunger method)	Daoplas (Infrared cross- linking method)	Monsil (One-step method)	Sioplas (Two-step method)	<b>γ</b> -co	<sup>®</sup> β-accelerator UV
Basic formulation of Materials	HDPE + F Antiox		Antioxidant	Peroxide + s + Silane + alyst		PE + Antioxidants + Photosensitizer
Agglomerate Structure	Planar Cr	osslinking	Volume Cr	osslinking	Vo	lume Crosslinking
Reaction by- Products	Initiator by-pro removed by po			ane hydrolysis lane is difficult	(Gene	osensitizer byproduct rally does not require oost-processing)
Rigidity	Pc	or	norika	od		Average
Flexibility	Go	od	Pc	or		Average
Hygiene Performance	Aver	age	Pc	or		Good
Aging Resistance	Pc	or	Aver	age		Poor
Memorability	Excellent me especially for expansion o	use with cold		e memory, not old expansion ngs		al shape memory, not ole for cold expansion fittings
Cracking & Repair	Heat the kinke heat gun unti becomes tran allow t	l the material slucent, then	dead bend of th	t into a kink will cracks, for the ne pipe, can not paired	to he sma	C can use a heat gun at to transparent for Il kink recovery, the t is not as perfect as PEX-A
Cross-linking Degree	≥7(	)%	≥65	5%		≥60%

#### Comparison Of The Three Cross-Linking Methods

#### Comparison Of Hydrostatic Stress

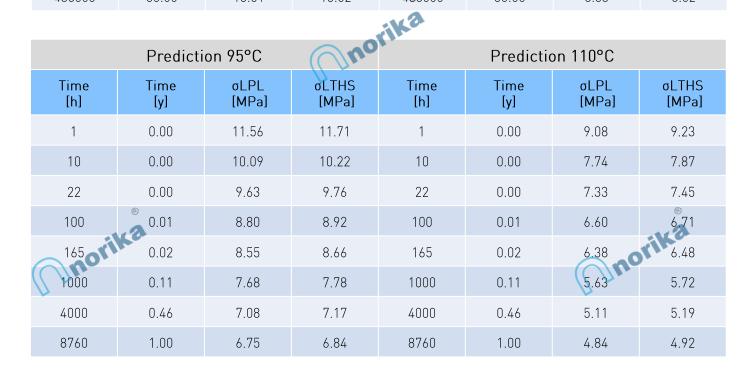
Hydrostatic	stress (MPa)
PE-RT	PE-X
9.9	12
3.8	4.7
3.6	4.6
3.4	4.4
	PE-RT 9.9 3.8 3.6

#### 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	norika
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	e 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, <b>°C</b> )	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/cm³)	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/cm²)	NA	210	210	210 (₱lastic Layer)	
Elongation at Break (%)	NA	468	750	468 (Plastic Layer)	
		(	nor		

	Predicti	on 20°C			Predicti	on 70°C	
Time [h]	Time [y]	σLPL [MPa]	σLTHS [MPa]	Time [h]	Time [y]	σLPL [MPa]	σLTHS [MPa]
1	<sup>®</sup> 0.00	22.99	23.15	1	0.00	15.61	15.78
10 22 <b>nori</b>	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

#### Norika® PEX Multilayer Extrapolated Strength Values



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

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

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

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

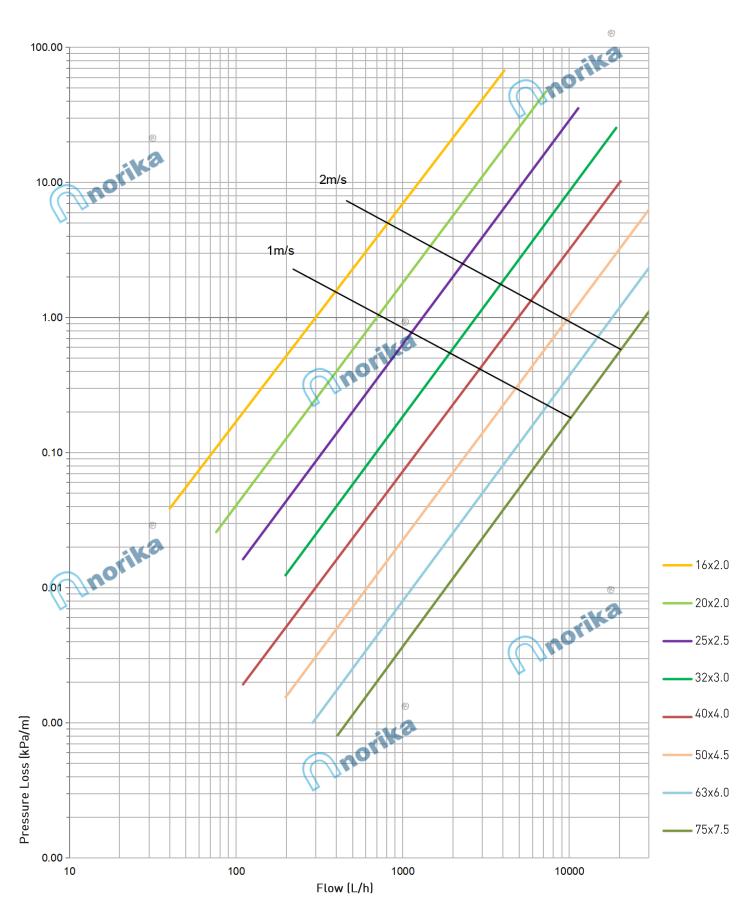
#### Description:

- r = heath loss (Pa)
- f = friction factor
- $\rho = \text{density of the fluid } (\text{kg/m}^3)$
- V = the velocity of the fluid (m/s)
- D = the pipe inner diameter (m)
- L = pipe length (m)
- e = relative roughness
- Re = reynolds number
- $\mu = dynamic viscosity (Pa \cdot s)$

				Press	sure Los	s Table	e of Mul	tilayer	PEX Pip	e, Wat	er Temp	eratur	e = 10°0	C			
		16	×2.0	20	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75:	x7.5
Flo	W	Speed	ΔΡ	Speed	ΔΡ	Speed	ΔΡ	Speed	ΔΡ	Speed	ΔΡ	Speed	ΔΡ	Speed	ΔΡ	Speed	ΔΡ
(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		อ														Ø
40	0.01	0.098	A														
54	0.02		0.076												Ju		<b>No</b>
76	0.02		0.117	0.105	0.034									6		01	
(110)	0.03	0.270	0.188	0.152	0.054	0.097	0.021			0.038	0.003				D.		
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	0.000	0.004		
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	0.040	0.001
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 0.329	0.300	0.070	0.198	0.026	0.121	0.008	0.078	0.003	0.056	0.002
688 720	0.19 0.20	1.690 1.768	3.563 3.832	0.951 0.995	0.944 1.019	0.608	0.329	0.360	0.096 0.103	0.238 0.249	0.036 0.039	0.145	0.011 0.012	0.094	0.004 0.004	0.068 0.071	0.002
850	0.20	2.088	5.335	1.174	1.334	0.752	0.338	0.445		0.247	0.052	0.179	0.012	0.078	0.004	0.071	0.002
916	0.24	2.250	6.005	1.266	1.499	0.810	0.538	0.479	0.157		0.052	0.193	0.018	0.1125	0.007	0.090	0.003
1000	0.23	2.456	6.902	1.382	1.750	0.884	0.621	0.523	0.180	0.345	0.068	0.210	0.021	0.120	0.007	0.098	0.000
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	0.000	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	0.010	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	<b>1</b> .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		ସ.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		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		1.148	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		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
Mediu	um: Wa	ter; 1	mbar/m	= 100 P	'a/m												

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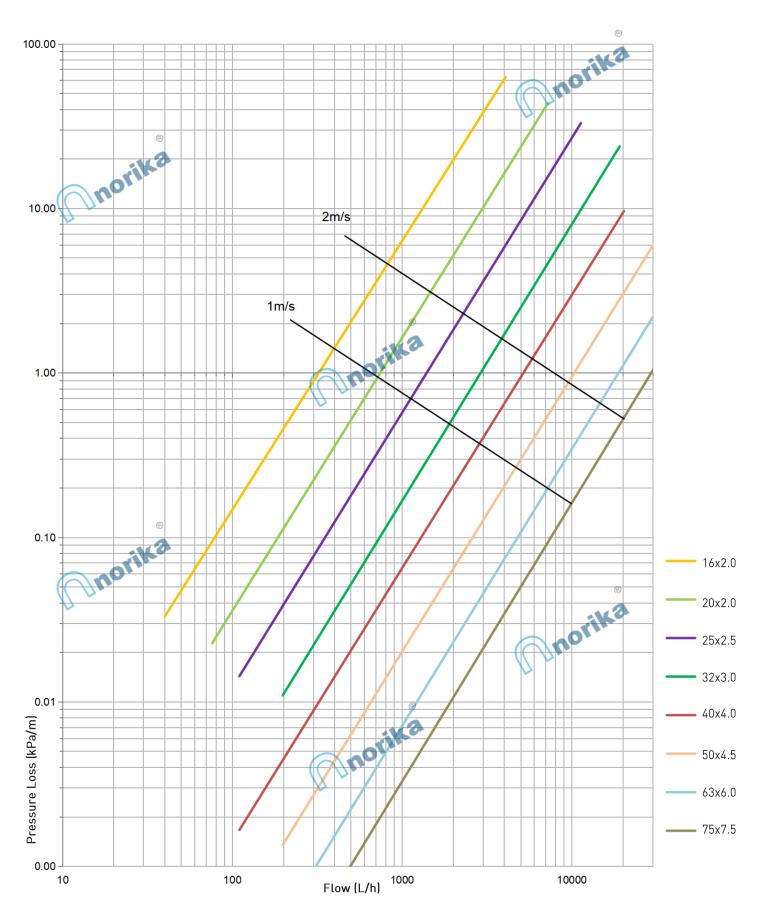
I         I					Press	sure Los	s Table	e of Mul	tilayer	PEX Pip	e, Wat	er Temp	eratur	re = 10°C	)			
Line         Yarda         Horon         Yarda         Horon         Yarda         Horon         Yarda         Horon         Yarda         Horon         Horon <thh< td=""><td></td><td></td><td>16</td><td>×2.0</td><td>203</td><td>×2.0</td><td>25</td><td>×2.5</td><td>32</td><td>x3.0</td><td>40</td><td>x4.0</td><td>50</td><td>x4.5</td><td>63</td><td>x6.0</td><td>75</td><td>x7.5</td></thh<>			16	×2.0	203	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75	x7.5
Loo         Mod         Diracit         Diracit <thdiracit< th=""> <thdiracit< th=""> <thdiracit< <="" td=""><td>Flo</td><td>w</td><td>Speed</td><td>ΔP</td><td>Speed</td><td>ΔP</td><td>Speed</td><td>ΔP</td><td>Speed</td><td>ΔP</td><td>Speed</td><td>ΔP</td><td>Speed</td><td>ΔP</td><td>Speed</td><td>ΔP</td><td>Speed</td><td>ΔP</td></thdiracit<></thdiracit<></thdiracit<>	Flo	w	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
4440       1.21       5.96       0.8.41       3.837       7.215       2.271       2.107       1.49       0.801       0.913       0.230       0.046       0.045         4442       1.30       6.152       2.492       2.117       7.400       2.102       2.102       0.202       0.202       0.202       0.200       0.424       0.801       0.445       0.445       0.145         4420       1.41       6.864       2.8.27       4.412       9.164       2.441       2.666       1.72       1.101       1.155       0.316       0.292       0.202       0.308       0.202       0.302       0.302       0.302       0.302       0.302       0.302       0.302       0.301       0.72       0.724       0.141       0.701       0.202       0.302	(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)
4422         1.23         1.24         6.123         21.429         21.429         2.149         2.140         2.191         1.301         0.429	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
char         char <td>4340</td> <td>1.21</td> <td></td> <td></td> <td>5.996</td> <td>20.661</td> <td>3.837</td> <td>7.215</td> <td>2.271</td> <td>2.107</td> <td>1.499</td> <td>0.801</td> <td>0.913</td> <td>0.253</td> <td>0.590</td> <td>0.093</td> <td>0.426</td> <td>0.044</td>	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
4400       120	4432	1.23		8	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
166       1.1       6.998       27.01       4.478       9.405       2.650       2.730       1.749       1.055       1.064       0.224       0.456       0.110       0.126       0.127       0.732       0.728 <th0.728< th=""> <th0.728< th=""> <th0.728< td=""><td>4720</td><td>1.31</td><td>:14</td><td>3</td><td>6.521</td><td>23.902</td><td>4.173</td><td>8.332</td><td>2.469</td><td>2.426</td><td>1.630</td><td>0.920</td><td>0.993</td><td>0.290</td><td>0.642</td><td>0.106</td><td>0.464</td><td>0.050</td></th0.728<></th0.728<></th0.728<>	4720	1.31	:14	3	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
Baca         1.47         1.47         7.322         2.922         4.686         11.172         2.773         2.933         1.191         1.115         0.331         0.733         0.128         0.544         0.054           5500         1.64         7.964         31.552         4.878         11.915         3.02         3.03         2.000         1.294         1.246         0.436         0.736         0.137         0.544         0.054           5750         1.41         7.999         3.408         1.185         3.020         3.040         1.292         1.241         0.440         0.885         0.781         0.741         0.540         0.788         0.771         0.440         0.884         0.778         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.783         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.781         0.771         0.710         0.772         0.716         0.775         0.775         0.755         0.775	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
5540       1.54       1.54       2.452       2.498       1.918       1.913       1.920       1.144       0.378       0.733       0.137       0.544       0.845         5770       1.41       1.71       8.479       77.467       5.388       1.191       1.820       3.223       3.233       2.000       1.294       1.216       0.464       0.836       0.137       0.540       0.071         6151       1.31       1.71       8.479       77.467       1.356       0.418       0.797       0.440       0.886       0.137       0.440       0.886       0.137       0.440       0.886       0.137       0.440       0.886       0.137       0.440       0.886       0.137       0.440       0.886       0.137       0.446       0.886       0.197       0.447       0.408       0.137       0.447       0.408       0.137       0.447       0.438       0.137       0.447       0.108       0.109       0.109       0.247       0.147       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101       0.101	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
1979       1.4.1       1.4.1       7.979       34.318       5.119       1.158       3.229       3.432       2.001       1.274       1.428       0.466       0.777       0.147       0.549       0.771         4515       1.71       8.4477       37.447       5.438       1.158       3.218       3.800       2.124       1.244       1.244       1.244       0.840       0.870       0.147       0.840       0.970         4515       1.81       9.011       0.654       5.741       1.554       3.403       4.301       4.303       1.424       1.242       1.242       0.440       0.880       0.179       0.440       0.980         7202       2.01       9.996       47.510       6.397       17.41       3.785       5.136       2.499       1.822       1.520       0.364       0.417       0.400       0.333       0.732       0.101         7800       2.11       6.767       2.283       4.541       6.998       2.998       2.567       1.826       0.801       1.100       0.339       0.739       0.758         1970       2.41       3.232       5.978       8.298       2.697       1.624       1.944       1.841       1.331	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
1.71       8.477       37.467       5.438       13.158       3.218       3.806       2.124       1.434       1.247       0.449       0.836       0.163       0.640       0.007         4515       1.81       9.001       40.569       57.61       14.544       3.407       4.202       2.205       1.362       1.371       0.449       0.886       0.179       0.441       0.846         4900       1.92       9.733       4.114       6.101       0.407       3.410       4.437       2.388       1.441       1.452       0.584       0.934       0.933       0.733       0.171       0.110         7255       2.13       6.73       4.747       3.237       2.324       2.491       1.822       0.584       0.447       1.040       0.233       0.725       0.116         7650       7.1       6.747       7.075       2.238       4.541       5.787       7.475       2.267       1.646       0.647       1.040       0.339       0.939       0.158         9500       2.44       6.47       6.473       7.475       2.433       5.787       7.475       2.426       1.641       1.441       1.441       1.441       1.441       1.441 <t< td=""><td>5540</td><td>1.54</td><td></td><td></td><td>7.654</td><td>31.552</td><td>4.898</td><td>10.981</td><td>2.898</td><td>3.184</td><td>1.913</td><td>1.202</td><td>1.166</td><td>0.378</td><td>0.753</td><td>0.137</td><td>0.544</td><td>0.065</td></t<>	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
5515       1.81       9.001       40.569       5.761       14.546       3.409       4.203       2.280       1.572       1.582       1.444       0.846       0.179       0.640       0.084         4700       1.92       9.333       64.114       61.071       3.470       4.439       2.383       1.474       1.652       0.644       0.934       0.179       0.478       0.092         7235       2.01       9.994       47.510       6.397       17.431       3.785       5.038       2.499       1.892       1.620       0.644       0.934       0.213       0.717       0.747       0.748       0.116         7560       2.16       7       7.475       22836       4.144       5.990       2.783       2.187       1.424       0.646       1.031       0.339       0.939       0.138         9560       2.64       6.64       6.1       8.403       2.493       8.593       3.216       3.211       1.414       1.645       0.410       1.110       0.100       1.339       0.339       0.339       0.339       0.339       0.339       0.339       0.339       0.339       0.339       0.339       0.339       0.339       0.339       0.339       <	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
9700       1.92       9.533       44.114       6.101       16.107       2.463       2.483       1.744       1.452       0.548       0.928       0.117       0.079         7253       2.13       6.764       1.925       4.002       2.483       1.492       1.522       0.589       0.984       0.213       0.711       0.100         7650       2.13       6.764       1.905       4.002       5.548       2.482       1.680       0.464       0.461       0.201       0.228       0.721       0.114         8680       2.41       6.764       1.905       4.002       5.784       2.498       1.564       0.801       1.131       0.208       0.787       0.114         8680       2.41       6.76       1.905       2.408       4.734       0.792       2.281       1.464       0.801       1.331       0.309       0.191         11180       2.46       6.843       5.978       9.629       3.676       3.702       2.211       1.441       1.451       0.401       1.651       0.114         11310       3.14       6.111       0.100       3.602       5.979       3.623       3.654       3.123       1.421       1.431       0	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
Y235       2.01       X       Y </td <td>6515</td> <td>1.81</td> <td></td> <td></td> <td>9.001</td> <td>40.569</td> <td>5.761</td> <td>14.546</td> <td>3.409</td> <td>4.203</td> <td>2.250</td> <td>1.582</td> <td>1.371</td> <td>0.494</td> <td>0.886</td> <td>0.179</td> <td>0.640</td> <td>0.084</td>	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
750       2.13       2       2       3       7.03       2.072       2.003       2.076       4.144       5.890       2.735       2.209       1.666       0.667       1.077       0.247       0.738       0.116         8600       2.41       7.073       2.235       4.541       6.908       2.998       2.587       1.806       0.802       1.80       0.288       0.833       0.135         9500       2.51       1       1       8.002       2.408       4.735       7.427       6.26       2.780       1.806       0.801       1.31       0.303       0.899       0.144         9500       2.66       8.845       2.637       5.502       5.102       3.02       3.027       1.001       0.461       1.314       0.303       0.399       0.158         10100       2.97       2.97       2.91       1.414       1.020       3.037       1.000       3.047       1.001       1.011       1.	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
7200       2.200       1       1       7.003       20.076       4.14       5.890       2.209       1.646       0.6467       1.077       0.247       0.778       0.118         86400       2.41       7.475       2.233       4.541       6.908       2.980       1.824       0.802       1.180       0.288       0.839       0.142         9560       2.66       8.405       2.630       4.542       4.703       7.277       2126       2.780       1.944       1.020       0.339       0.889       0.144         9560       2.66       8.453       2.630       5.594       9.629       3.696       3.702       2.51       1.140       1.946       1.000       0.303       0.307       0.017       1.000       1.711         10700       2.97       9.461       3.284       5.549       9.629       3.696       3.720       2.51       1.149       1.455       0.410       1.011       1.011       1.011       1.011       0.211       1.111       0.211       1.111       0.211       1.111       0.211       1.111       0.211       1.313       0.231       1.251       0.211       1.313       0.211       1.313       0.211       1.314       0.2	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
8680       2.41       1       1       7.475       22.836       4.541       6.908       2.987       1.826       0.802       1.180       0.288       0.835       0.135         9050       2.51       1       1       0.800       24.408       4.735       7.477       6.16       2.780       1.004       0.301       0.337       0.937       0.188         9050       2.64       2.836       2.837       5.002       3.027       2.011       0.944       1.300       0.337       0.937       0.188         10100       2.97       9.441       32.88       5.97       1.640       3.964       3.720       2.511       1.149       1.656       0.411       1.010       0.176       0.171         11310       3.14       1       1       0.000       3.68       5.401       1.280       3.170       0.531       1.700       0.531       1.28       0.411       1.111       0.211       1.316       0.421       1.315       0.427         13380       3.72       2.40       4.63       2.440       3.64       1.480       3.640       0.551       1.28       0.351       1.28       0.315       0.322         14500       4.03	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
9050       2.51       2.64       8.002       24.408       4.735       7.427       3.126       2.780       1.940       0.864       1.231       0.309       0.889       0.144         9560       2.66       8.453       26.873       5.002       4142       3.302       3.057       2.011       0.964       1.304       0.339       0.939       0.158         10180       2.83       9.001       30.647       5.268       8.981       3.516       3.411       2.142       1.984       1.324       0.307       1.000       0.176         10700       2.97       9.461       32.83       5.98       9.629       3.696       3.202       2.511       1.491       1.455       0.410       1.010       0.101         1310       3.14       10       0.00       3.601       1.230       4.317       4.005       1.503       1.503       1.501       1.501       0.511       1.111       0.210         13300       3.72       1.00       1.30       1.700       13.90       4.621       5.203       2.815       1.692       1.819       0.602       1.315       0.279         14400       4.30       4.30       1.929       5.341       5.038 </td <td>7920</td> <td>2.20</td> <td></td> <td></td> <td></td> <td></td> <td>7.003</td> <td>20.076</td> <td>4.144</td> <td>5.890</td> <td>2.735</td> <td>2.209</td> <td>1.666</td> <td>0.687</td> <td>1.077</td> <td>0.247</td> <td>0.778</td> <td>0.116</td>	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
9500       2.66        8.453       26.873       5.02       5.14       3.302       3.057       2.01       0.940       0.339       0.939       0.158         10180       2.83       1       9.001       30.65       5.24       8.981       3.54       3.541       2.142       1.054       1.384       0.377       1.000       0.176         10700       2.77       1       9.461       3.284       5.58       9.627       3.696       3.720       2.251       1.147       1.455       0.410       1.010       0.101         13130       3.14       1       1       10.000       3.6.01       5.917       10.461       3.906       4.93       2.380       1.624       1.580       0.421       1.11       0.210         13303       3.72       1       1       0.100       3.6.01       5.174       1.680       5.88       2.815       1.892       1.891       1.421       1.892       1.891       1.425       0.301       1.425       0.301       1.425       0.301       1.491       0.425       0.321       1.433       0.421       1.425       0.421       1.425       0.421       1.425       0.421       0.339       0.421       0.32	8680	2.41					7.675	22.836	4.541	6.908	<sup>©</sup> 2.998	2.587	1.826	0.802	1.180	0.288	0.853	0.135
10180       2.83       2.83       9.001       30.07       5.32       8.981       3.516       3.41       2.142       1.054       1.34       0.377       1.000       0.176         10700       2.97       9.461       32.83       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       3.6301       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       12.30       4.317       4.805       2.630       1.503       1.000       0.692       1.45       0.279         13800       3.72       6.640       7.000       13.06       4.28       2.815       1.492       1.819       0.602       1.315       0.279         14500       4.03       6.33       6.051       17.477       528       6.307       3.218       1.804       1.819       0.602       1.35       0.321       1.330       0.321       1.300       0.571       1.344       0.801       1.610       0.322         17200       4.78       9.938       1.6	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
10700       2.97       2.97       2.97       2.94       3.94       5.98       9.429       3.69       3.70       2.251       1.149       1.455       0.410       1.051       0.171         11310       3.14       2       10.000       36.301       5.917       10.460       3.906       4.093       2.380       1.503       1.000       0.535       1.228       0.249         13280       3.72       2       2       2       7.586       16.01       5.986       3.051       1.945       1.972       0.692       1.450       0.373       0.373       0.373       0.373       0.373       0.373       0.373       0.373       0.471       0.403       0.759       1.503       0.759       3.501       1.974       0.984       1.984       0.401       0.372       0.479       0.474       0.433       0.479       0.474       5.984       6.401       0.479       0.479       0.474       0.484       1.401       0.475       0.479       0.474       0.484       1.401       0.479         14300       4.53       4.59       2.419       5.541       8.803       7.503       7.505       1.974       8.804       3.627       2.339       0.931       1.690 <td>9560</td> <td>2.66</td> <td></td> <td></td> <td></td> <td></td> <td>8.453</td> <td>26.873</td> <td>5.002</td> <td>8.142</td> <td>3.302</td> <td>3.057</td> <td>2.011</td> <td>0.946</td> <td>1.300</td> <td>0.339</td> <td>0.939</td> <td>0.158</td>	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
11310       3.14       3.4       3.4       3.4       3.4       1.000       3.6301       5.917       10.460       3.908       4.093       2.380       1.244       1.538       0.451       1.111       0.210         12500       3.47       3.72	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
12500       3.47       1<	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
13380       3.72       1<	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
14500       4.03       1<	12500	3.47							6.540	12.320	4.317	4.805	2.630	1.503	1.700	0.535	1.228	0.249
15300       4.25       A       A       A       B<	13380	3.72							7.000	13.906	4.621	5.283	2.815	1.692	1.819	0.602	1.315	0.279
1330       4.53	14500	4.03							7.586	16.091	5.008	5.986	3.051	1.945	1.972	0.692	1.425	0.321
17200       4.78       •<	15300	4.25							8.005	17.747	5.284	6.566	3.219	2.128	2.080	0.759	1.503	0.352
13300       5.08	16300	4.53							8.528	19.910	5.630	7.350	3.429	2.339	2.216	0.848	1.601	0.392
19110       5.31       1.112       1.87       0.517         20280       5.63       6.60       9.786       4.021       2.978       2.599       1.112       1.972       0.573         20280       6.13       1.0       1.0       1.0.90       4.267       3.09       2.758       1.972       0.573         2080       6.13       1.0       1.0       1.0.90       4.267       3.09       2.759       1.640       2.333       0.740         2000       7.22       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       1.0       0.662         2000       7.22       1.0	17200	4.78	®	)					8.999	21.939	5.941	8.081	3.619	2.521	2.339	0.931	1.690	<b>@</b> .430
202806.331.9751.2771.9920.57320806.131.911.911.911.910.662237506.601.911.911.910.662237506.601.921.911.910.62250007.221.911.911.910.5125007.921.911.911.910.5125007.921.911.911.911.9125007.921.911.911.911.9125008.191.911.911.911.9131008.611.911.911.911.9132509.241.911.911.911.91368001.021.911.911.911.91368001.221.911.911.911.91368001.221.911.911.911.91368001.221.911.911.911.91368001.221.911.911.911.91368001.221.911.911.911.91368001.251.911.911.911.91368001.331.911.911.911.91368001.331.911.911.911.91368001.331.911.911.911.91368001.331.911.911.911.91368001.331.911.911.9136800 </td <td>18300</td> <td>5.08</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>9.574</td> <td>24.600</td> <td>6.321</td> <td>9.039</td> <td>3.850</td> <td>2.768</td> <td>2.488</td> <td>1.036</td> <td>1.798</td> <td>0.479</td>	18300	5.08							9.574	24.600	6.321	9.039	3.850	2.768	2.488	1.036	1.798	0.479
22080       6.13       Image: Solution of the state of the s	19110	5.31	11-						9.998	26.603	6.600	9.786	4.021	2.978	2.599	1.112	1.877	0.517
23750       6.60       6.60       6.60       6.60       6.60       6.72       6.60       7.22       6       6       6       6       6.77       3.535       1.812       2.554       0.841         2800       7.92       7.92       6       6       6       7.92       5.976       6.129       3.875       2.142       2.800       0.980         29500       8.19       6       6       6.207       6.517       4.011       2.277       2.898       1.042         3100       8.61       6       6       6.207       6.517       4.011       2.277       2.898       1.042         33250       9.24       6       6       6.207       6.517       4.011       2.277       2.898       1.291         34800       10.22       7.33       4.215       2.491       3.046       1.138         34000       11.31       6       6       6       6.996       8.120       4.103       3.999       1.866         44000       12.35       6       6       6       6       6       6       5.997       4.752       4.333       2.160         48000       13.33       6       6       6 </td <td>20280</td> <td>5.63</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>7.004</td> <td>10.905</td> <td>4.267</td> <td>3.309</td> <td>2.758</td> <td>1,217</td> <td>1.992</td> <td>0.573</td>	20280	5.63									7.004	10.905	4.267	3.309	2.758	1,217	1.992	0.573
26000       7.22       Image: Constraint of the const	22080	6.13											4.646	3.857	3.002	1.373	2.169	0.662
28500       7.92       Image: state	23750	6.60											4.997	4.397	3.229	1.546	2.333	0.740
295008.19aaa </td <td>26000</td> <td>7.22</td> <td></td> <td>5.470</td> <td>5.177</td> <td>3.535</td> <td>1.812</td> <td>2.554</td> <td>0.841</td>	26000	7.22											5.470	5.177	3.535	1.812	2.554	0.841
31000       8.61       Image: state	28500	7.92											5.996	6.129	3.875	2.142	2.800	0.980
33250       9.24       Image: Single	29500	8.19											6.207	6.517	4.011	2.277	2.898	1.042
36800       10.22       10.22       10.11 <td< td=""><td>31000</td><td>8.61</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>6.522</td><td>7.137</td><td>4.215</td><td>2.491</td><td>3.046</td><td>1.138</td></td<>	31000	8.61											6.522	7.137	4.215	2.491	3.046	1.138
40700       11.31       Image: Constraint of the cons	33250	9.24											6.996	8.120	4.521	2.833	3.267	1.291
44100       12.25	36800	10.22													5.004	3.410	3.615	1.552
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       6.97       5.551       3.409         61100       16.97       6.97       6.003       3.939	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									2				6.527	5.552	4.716	2.522
	51500	14.31								TIN					7.003	6.333	5.060	2.874
								6									5.551	3.409
	61100	16.97						$\langle \rangle$	0-								6.003	3.939
								Y										
72000 20.00 7.074 5.339	72000	20.00															7.074	5.339
Medium: Water; 1 mbar/m = 100 Pa/m			iter; 1	mbar/m	= 100 P	a/m												



### Pipes Pressure Loss at 10°C (kPa/m)

				Press	sure Los	s Table	e of Mul	tilayer	PEX Pip	e, Wat	er Temp	eratur	e = 20°0	)			
		16	×2.0	20	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75	x7.5
Flo	W	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		อ														Ø
40	0.01	0.098	0.043														
54	0.02		0.062												Ju	- 1	, a
76	0.02		0.097	0.105	0.028									6		01	
(110)	0.03	0.270	0.159	0.152	0.045	0.097	0.017			0.038	0.002				D.		
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		0.004		
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	0.040	0.004
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
460 572	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
573 688	0.16 0.19	1.407 1.690	2.412 3.419	0.792 0.951	0.637 0.854	0.507 0.608	0.223 0.305	0.300	0.065 0.088	0.198 0.238	0.024	0.121	0.008 0.010	0.078 0.094	0.003	0.056	0.001
720	0.19	1.768	3.419	0.991	0.834	0.608	0.305	0.360	0.088	0.238	0.033	0.145	0.010	0.094	0.004	0.088	0.002
850	0.20	2.088	3.673 4.783	1.174	1.276	0.637	0.330	0.377	0.096	0.249	0.036	0.151	0.011	0.098	0.004	0.071	0.002
916	0.24	2.000	4.783 5.392	1.174	1.438	0.752	0.430	0.445		0.274	0.048	0.177	0.015	0.118	0.005	0.084	0.002
1000	0.25	2.250	6.213	1.382	1.651	0.884	0.480	0.477	0.143	0.345	0.054	0.173	0.017	0.125	0.008	0.070	0.003
1146	0.28	2.430	7.755	1.583	2.052	1.013	0.738	0.600	0.207	0.345	0.080	0.241	0.025	0.156	0.007	0.113	0.003
1220	0.32	2.996	8.594	1.685	2.269	1.079	0.735	0.638	0.207	0.378	0.088	0.241	0.023	0.156	0.007	0.113	0.004
1373	0.34	3.372	10.447	1.897	2.207	1.214	0.983	0.718	0.227	0.474	0.107	0.237	0.020	0.187	0.010	0.135	0.005
1413	0.30	3.470	10.961	1.952	2.877	1.249	1.029	0.739	0.275	0.474	0.107	0.207	0.034	0.192	0.012	0.139	0.006
1413	0.37	3.561	11.447	2.003	3.000	1.282	1.072	0.759	0.322	0.501	0.116	0.305	0.037	0.172	0.013	0.142	0.006
1603	0.40	3.937	13.539	2.215	3.536	1.417	1.260	0.839	0.377	0.554	0.145	0.337	0.037	0.218	0.013	0.142	0.007
1690	0.47	4.151	14.795	2.335	3.858	1.494	1.372	0.884	0.410	0.584	0.140	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®		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	<b>(0</b> .010
1980	0.55	-	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	
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		0.013
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	C1.071	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
Mediu	um: Wa	iter; 1	mbar/m	= 100 P	'a/m												

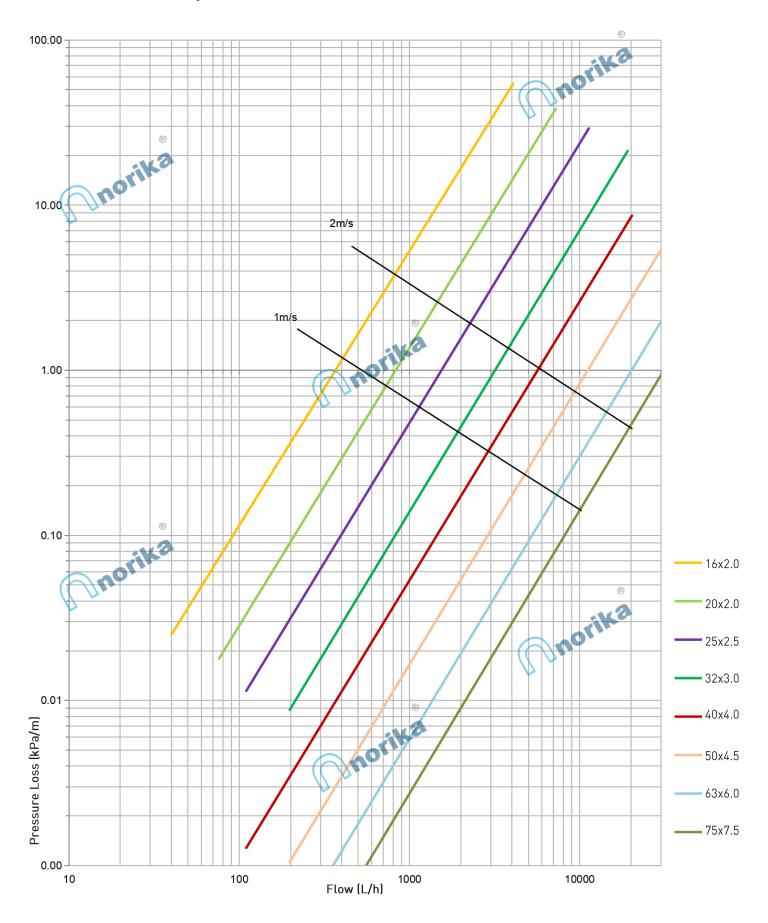
I         I					Press	sure Los	s Table	e of Mul	tilayer	PEX Pip	e, Wat	er Temp	eratur	e = 20°C	)			
ILI:         ILIA:			16	×2.0	203	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75	x7.5
ILM         IMA         IMA <thima< th=""> <thima< th=""> <thima< th=""></thima<></thima<></thima<>	Flo	w	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
4441       121       5.996       19.20       8.897       6.497       2.21       1.940       1.949       0.733       0.973       0.930       0.591       0.030       0.646       0.435       0.031         4422       1.31       4.521       1.199       4.123       7.747       2.46       2.741       1.230       0.244       0.240 <td>(L/h)</td> <td>(L/s)</td> <td>(m/s)</td> <td>(kPa/m)</td>	(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)
1422         1.22         1.22         1.954         2.979         4.941         2.19         2.101         1.611         0.752         0.922         0.242         0.643         0.084         0.741           4720         1.31         6.521         2.179         4.173         7.77         2.465         1.240         0.220         0.640         0.939         0.642         0.643         0.642         0.643         0.644         0.643         0.644         0.643         0.644         0.643         0.644         0.643         0.644         0.643         0.644         0.643         0.641         0.733         0.125         0.644         0.646         0.647         0.647         0.643         0.643         0.641         0.643         0.641         0.643         0.641         0.643         0.641         0.643         0.641 <th0.643< th=""> <th0.643< th=""></th0.643<></th0.643<>	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
1.720       1.31       1.6       6.521       2.199       4.173       7.77       2.469       2.441       6.430       0.844       0.993       0.264       0.642       0.099       0.142       0.440       0.449         6603       1.4       6.894       2.427       4.78       8.72       2.50       2.528       1.74       0.952       1.04       0.290       0.460       0.109       0.109       0.109         5500       1.54       7.54       2.807       4.86       9.77       2.757       1.731       1.109       1.164       0.240       0.757       0.114       0.520       0.544       0.579       0.141       0.276       0.571       0.131       0.271       0.577       0.141       0.276       0.571       0.132       0.291       1.464       0.346       0.787       0.148       0.400       0.797       0.148       0.404       0.797       0.148       0.404       0.797       0.148       0.404       0.797       0.148       0.404       0.797       0.148       0.404       0.797       0.148       0.404       0.797       0.148       0.404       0.797       0.148       0.404       0.797       0.141       0.797       0.141       0.797 <th< td=""><td>4340</td><td>1.21</td><td></td><td></td><td>5.996</td><td>19.250</td><td>3.837</td><td>6.697</td><td>2.271</td><td>1.940</td><td>1.499</td><td>0.733</td><td>0.913</td><td>0.230</td><td>0.590</td><td>0.084</td><td>0.426</td><td>0.039</td></th<>	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
4390       1.2       4.894       21.844       4.412       8.532       2.411       2.445       1.723       0.928       0.297       0.427       0.446       0.498         5301       1.47       0.599       2.4.71       4.788       8.777       2.561       2.578       1.740       0.592       1.646       0.297       0.446       0.193       0.104       0.104         6501       1.47       7.322       2.6024       4.689       1.222       1.311       1.101       1.101       1.44       0.342       0.737       0.112       0.640       0.731       0.103       0.103       1.101       1.101       1.101       0.211       0.441       0.730       0.134       0.540       0.033         6750       1.41       9.001       37.14       5.481       0.200       3.78       2.491       1.28       0.371       0.485       0.880       0.18       0.640       0.701         6700       1.72       9.996       4.498       6.397       15.391       3.785       4.882       1.781       1.522       0.544       0.840       0.711       0.711       0.711       0.711       0.711       0.711       0.721       0.721       0.731       0.733      <	4432	1.23		8	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
6003         .1.1         6.998         24.427         4.48         8.757         2.628         1.74         0.952         1.08         0.27         0.185         0.115         0.123         0.115         0.123         0.115         0.123         0.115         0.123         0.115         0.123         0.115         0.125         0.154           5500         1.54         7.654         8.807         4.898         1022         2.898         2.927         1.913         1.109         1.16         0.321         0.721         0.115         0.544         0.054           6150         1.71         8.497         3.419         5.781         110.09         3.740         3.741         2.280         1.464         1.371         0.455         0.886         0.168         0.400           6750         1.91         9.993         4.129         4.111         1.028         3.283         1.418         1.425         0.416         0.438         0.784         0.784         0.785         0.716         0.785         0.716         0.785         0.716         0.785         0.716         0.785         0.716         0.741         0.785         0.716         0.741         0.765         0.716         0.741	4720	1.31	-14	3	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
3300       1.47       7.222       2.8.024       4.486       9.476       2.732       2.736       1.831       1.028       1.15       0.321       0.716       0.156       0.544         5540       1.54       7.664       28.075       4.898       10.222       2.982       2.952       1.913       1.107       1.166       0.344       0.730       0.125       0.544       0.035         5790       1.41       7.999       30.194       5.119       1.028       3.029       3.187       2.000       1.19       1.248       1.242       0.342       0.732       0.738       0.148       0.664       0.070         6515       1.81       9.010       37.140       5.761       13.08       3.09       2.124       1.325       1.44       1.988       0.148       0.640       0.70         6520       1.92       9.533       4.129       6.101       1.727       3.610       4.348       2.497       1.735       1.520       0.444       0.748       0.741       0.730       0.730       0.730       0.730       0.730       0.735       0.735       0.735       0.735       0.735       0.735       0.735       0.735       0.735       0.735       0.735     <	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
5540       1.54       1.7       7.65       28.075       4.89       10.22       2.898       2.952       1.913       1.106       1.346       0.736       0.125       0.134       0.549         5790       1.41       1.7       7.999       30.19       5.19       10.984       3.029       3.187       2.000       1.186       1.218       0.327       0.787       0.143       0.549         64150       1.81       1.81       1.81       1.81       1.81       1.81       1.81       0.412       0.836       0.143       0.640       0.701         6470       1.92       9.533       41.29       5.101       1.422       3.518       4.862       2.99       1.535       1.516       0.716       0.938       0.160       0.460       0.710         7800       2.13       1.11       9.96       4.938       6.377       1.327       2.44       1.355       1.506       1.526       0.501       0.938       0.101       0.714       0.001         7800       2.13       1.146       0.498       1.217       0.334       1.425       0.581       0.44       0.214       0.757       0.101         7800       2.11       7.07 <th< td=""><td>5065</td><td>1.41</td><td></td><td></td><td>6.998</td><td>24.427</td><td>4.478</td><td>8.757</td><td>2.650</td><td>2.528</td><td>1.749</td><td>0.952</td><td>1.066</td><td>0.297</td><td>0.689</td><td>0.108</td><td>0.498</td><td>0.049</td></th<>	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
1790       1.41       1.4       7.99       30.194       5.119       10.984       3.029       3.187       2.000       1.218       1.271       0.737       0.737       0.134       0.569       0.001         6515       1.81       9.001       37.14       5.33       12000       3.218       3.309       2.124       1.326       1.294       0.412       0.836       0.448       0.404       0.076         6500       1.92       9.533       41.299       1.427       3.610       4.321       0.331       0.486       0.143       0.440       0.076         6700       1.92       9.533       41.299       0.142       3.60       4.321       2.281       1.446       1.846       1.475       1.828       0.398       0.108       0.678       0.084         7235       2.13       1.410       0.744       1.80       0.744       1.80       0.746       1.810       0.399       0.145         7240       2.46       1.43       0.322       2.686       2.546       5.56       2.56       1.646       0.635       1.027       0.227       0.778       0.128         7550       2.51       2.51       1.51       1.610       0.530	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
1510       1.71       1.84.97       33.419       5.438       12.00       3.218       3.539       2.124       1.326       1.294       0.412       0.836       0.148       0.404       0.076         6710       1.92       9.031       47.140       5.741       13.08       3.040       3.714       2.280       1.464       1.371       0.455       0.886       0.143       0.400       0.774         7235       2.01       9.994       4.893       6.307       15.917       3.765       4.662       2.499       1.646       0.435       0.798       0.100       0.784       0.795       0.100         7240       2.20       1       1       1       1       1       0.775       21.322       4.544       6.137       2.975       1.646       0.435       1.077       0.227       0.778       0.124         7950       2.51       1       1       1       1       1       1.800       2.44       1.800       0.441       1.80       0.460       0.833       1.244       1.804       0.401       1.10       0.797       0.727       0.738       0.124       1.818       0.401       1.11       0.790       1.241       0.930       1.310	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
6515       1.81       1.81       1.90       9.7.40       5.7.61       13.038       3.409       9.914       2.250       1.4.64       1.371       0.455       0.888       0.143       0.400         6900       1.92       9.533       41.299       6.101       1.4.227       3.610       4.323       2.38       1.618       1.452       0.501       0.988       0.180       0.781       0.084         7285       2.13       6.7.64       1.7.97       1.7.97       1.756       1.522       0.544       0.998       0.107       0.226       0.780       0.108         8460       2.41       6.7.67       21.342       4.544       5.356       2.565       2.564       1.600       0.578       0.107       0.226       0.889       0.133         9500       2.51       6.7       6.7       7.675       21.342       4.545       5.565       2.564       1.600       0.801       1.310       0.331       0.265       0.889       0.144         10100       2.830       2.649       5.002       2.697       3.302       2.614       2.011       0.771       0.781       0.303       2.411       0.330       0.331       0.929       0.144	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
6900       1.92       9.533       41.299       6.101       14.227       3.410       4.323       2.083       1.418       1.452       0.501       0.938       0.678       0.071         7235       2.01       9.996       44.983       6.397       15.391       3.785       4.666       2.49       1.526       0.544       0.964       0.975       0.711       0.001         7850       2.20       6.4       6.744       17.037       4.002       5.121       2.42       1.935       1.410       0.598       0.007       0.227       0.778       0.106         7860       2.41       6.764       17.037       2.024       4.541       6.139       2.99       2.040       1.804       0.800       1.201       0.268       0.898       0.114         10100       2.654       5.040       6.002       2.308       4.735       5.144       3.030       2.814       0.900       1.030       0.313       0.399       0.142         10100       2.67       5.010       4.57       8.014       4.131       5.018       3.010       2.51       1.000       3.65       1.164       3.130       2.51       1.000       3.65       1.164       3.13       3.	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
7235       2.01       9.996       4.4893       6.397       15.391       3.785       4.666       2.499       1.756       1.522       0.544       0.984       0.191       0.711       0.011         7450       2.13       2.20       1.610       6.574       1.703       18.120       4.144       5.385       2.735       2.656       1.666       6.335       1.077       0.227       0.778       0.106         8600       2.41       1.610       7.675       21.342       4.541       6.139       2.998       2.400       1.826       0.744       1.100       0.266       0.833       0.112         9500       2.66       6.68       8.032       2.548       5.022       2.814       2.010       1.834       0.349       1.000       0.313       0.399       0.144         11100       2.66       6.803       0.542       5.908       8.505       3.616       3.012       2.101       1.838       0.301       0.111       0.111       0.114         11100       2.47       9.701       2.508       8.505       3.696       3.310       2.215       1.070       1.455       0.380       1.511       1.111       0.1111       0.114       0.111	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
7450       2.13       1       6.744       17.037       6.002       5.121       2.642       1.935       1.640       0.598       1.040       0.244       0.752       0.106         7920       2.20       1       1       7.003       18.120       4.144       5.385       2.735       2.056       1.646       0.635       1.077       0.227       0.778       0.106         8660       2.41       1       7.675       21.342       4.541       6.137       2.988       1.904       0.800       1.310       0.225       0.889       0.133         9500       2.66       8.453       2.549       5.027       4.04       3.302       2.816       2.010       0.807       1.300       0.313       0.939       0.146         10100       2.83       9.01       2.849       5.353       8.059       3.64       3.310       2.211       1.348       0.349       1.010       1.057         11310       3.14       114       10.000       3.573       8.071       9.701       3.565       3.361       1.377       1.700       0.498       1.228       0.231         13300       3.72       1.701       1.674       1.71       1.71 <th< td=""><td>6900</td><td>1.92</td><td></td><td></td><td>9.533</td><td>41.299</td><td>6.101</td><td>14.227</td><td>3.610</td><td>4.323</td><td>2.383</td><td>1.618</td><td>1.452</td><td>0.501</td><td>0.938</td><td>0.180</td><td>0.678</td><td>0.084</td></th<>	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
7220         2.20         1 </td <td>7235</td> <td>2.01</td> <td></td> <td></td> <td>9.996</td> <td>44.983</td> <td>6.397</td> <td>15.391</td> <td>3.785</td> <td>4.686</td> <td>2.499</td> <td>1.756</td> <td>1.522</td> <td>0.544</td> <td>0.984</td> <td>0.195</td> <td>0.711</td> <td>0.091</td>	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
8680         2.41         C         7.675         21.342         4.54         6.139         2.499         1.82         0.744         1.180         0.266         0.853         0.123           9500         2.51         C         C         8.002         2.086         4.735         6.556         6.126         2.84         1.900         1.201         0.285         0.283         0.233         0.285         0.233         0.213         0.285         0.233         0.213         0.285         0.233         0.213         0.285         0.233         0.213         0.285         0.233         0.213         0.285         0.233         0.213         0.285         0.233         0.213         0.285         0.231         0.285         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.235         0.231         0.245         0.233 <t< td=""><td>7650</td><td>2.13</td><td></td><td></td><td></td><td></td><td>6.764</td><td>17.037</td><td>4.002</td><td>5.121</td><td>2.642</td><td>1.935</td><td>1.610</td><td>0.598</td><td>1.040</td><td>0.214</td><td>0.752</td><td>0.100</td></t<>	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
9050         2.51         1         0         0.00         1.23         0.285         0.889         0.133           9560         2.66         0         8.453         25.46         5.00         2.816         2.011         0.807         1.300         0.313         0.939         0.146           10180         2.83         0         9.001         28.548         5.302         5.578         8.857         3.676         3.102         2.511         1.070         1.455         0.380         0.151         0.174           10100         2.97         0         9.461         31.232         5.578         8.857         3.676         3.102         2.51         1.070         1.455         0.380         0.151         0.174           1310         3.14         0         0.00         3.576         5.787         8.67         3.64         3.102         2.51         1.070         1.455         0.380         0.151         0.111         0.104           1330         3.72         0         3.72         0         6.508         1.527         5.08         5.38         3.051         1.721         1.972         0.43         1.25         0.271         0.333           1450 <td>7920</td> <td>2.20</td> <td></td> <td></td> <td></td> <td></td> <td>7.003</td> <td>18.120</td> <td>4.144</td> <td>5.385</td> <td>2.735</td> <td>2.056</td> <td>1.666</td> <td>0.635</td> <td>1.077</td> <td>0.227</td> <td>0.778</td> <td>0.106</td>	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
9560       2.66       1       8.453       25.46       5.02       2.09       3.302       2.816       2.01       0.879       1.300       0.313       0.939       0.146         10180       2.83       1       0       9.001       28.46       6.324       8.059       3.516       3.030       2.142       0.981       1.384       0.349       1.000       0.162         10700       2.97       1       0       1.455       0.380       1.017       1.538       0.419       1.111       0.145         1310       3.14       1       0       1.000       34.57       5.917       9.761       3.906       3.621       2.30       1.177       1.538       0.419       1.111       0.145         1338       3.72       1       1       0.146       1.640       1.640       1.640       1.642       1.817       1.818       1.819       0.541       1.315       0.297         1450       4.03       1       1       0.145       1.640       1.640       1.642       3.601       1.627       3.419       1.818       0.404       1.451       0.328         1450       4.53       1       1.64       1.64       1.640	8680	2.41					7.675	21.342	4.541	6.139	<sup>©</sup> 2.998	2.409	1.826	0.744	1.180	0.266	0.853	0.124
10180       2.83       2.83       2.90       2.86.48       6.322       8.059       3.516       3.073       2.142       0.981       1.384       0.349       1.000       0.162         10700       2.97       2.97       9.461       31.22       5.598       8.857       3.696       3.310       2.251       1.070       1.455       0.380       1.051       0.176         11310       3.14       2.97       2.97       2.97       2.97       9.461       31.23       5.978       8.857       3.67       2.380       1.177       1.538       0.419       1.111       0.194         12500       3.47       2.97       2.97       1.9761       3.906       3.621       2.380       1.377       1.700       0.498       1.228       0.211         13380       3.72       2.97       2.97       1.384       4.01       0.051       1.315       0.817       1.972       0.643       1.425       0.298         13300       4.25       2.97       2.98       1.527       5.08       5.417       7.64       3.19       2.329       0.827       1.690       0.401       0.355         1300       5.08       4.53       4.97       4.97	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
10700       2.97	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
11310       3.14       1       10.00       34.576       5.917       9.761       3.906       3.621       2.380       1.177       1.538       0.419       1.111       0.141         12500       3.47       1       10.00       34.576       5.917       9.700       1.319       2.630       1.377       1.700       0.498       1.228       0.231         13380       3.72       1       10       1.508       1.513       1.819       0.561       1.315       0.259         14500       4.03       1.072       1.630       1.642       5.284       6.215       3.219       1.888       2.080       0.697       1.513       1.109       0.505       0.297         15300       4.53       1       1.614       1.617       1.687       5.48       6.215       3.219       1.888       2.080       0.697       1.690       0.601       0.601       0.661       0.601       0.675       3.249       2.112       2.16       0.764       1.610       0.568         17000       4.78       6.00       1.689       2.620       5.630       5.640       2.389       2.640       2.88       0.157       3.620       1.632       1.640       0.568	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
12500       3.47       A.1       A.17	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
13380       3.72       1	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
14500       4.03       4.03       4.03       4.03       4.04       4.05       1.024	12500	3.47							6.540	11.694	4.317	4.319	2.630	1.377	1.700	0.498	1.228	0.231
15300       4.25       4.25       4.25       4.25       4.25       4.25       4.25       4.25       4.25       4.27       4.28       4.28       4.21	13380	3.72							7.000	13.238	4.621	4.877	2.815	1.513	1.819	0.561	1.315	0.259
16300       4.53       4.53       6.53       6.975       3.429       2.112       2.216       0.764       1.601       0.365         17200       4.78       6       6       8.999       21.03       5.941       7.696       3.619       2.327       2.339       0.827       1.690       0.400         18300       5.08       6.00       9.503       6.620       3.650       2.642       2.889       0.915       1.798       0.461         19100       5.31       6.33       6.333       6.600       9.330       4.021       2.819       2.988       1.899       0.463         20280       6.63       6.63       6.63       6.64       6.64       3.643       3.002       1.281       2.169       0.588         23750       6.60       6.	14500	4.03							7.586	15.327	5.008	5.638	3.051	1.721	1.972	0.643	1.425	0.298
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       23.52       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       2.59       0.988       1897       0.466         20280       6.43       •       •       •       •       •       7.004       10.419       4.267       3.140       2.758       1.100       1.922       0.508         2080       6.13       •       •       •       •       •       •       •       •       0.66       3.602       1.281       2.169       0.587         23750       6.60       •       •       •       •       •       •       •       •       4.646       3.663       3.002       1.281       2.333       0.668         24000       7.22       •       •       •       •       •       5.857       3.875	15300	4.25							8.005	16.872	5.284	6.215	3.219	1.888	2.080	0.699	1.503	0.327
183005.085.081.7989.57423.5326.3218.6203.8502.6042.4880.9151.7989.438191105.31<	16300	4.53							8.528	18.992	5.630	6.975	3.429	2.112	2.216	0.764	1.601	0.365
19110       5.31       1       1       1       9.998       25.523       6.600       9.330       4.021       2.819       2.599       0.988       1877       0.466         20280       5.33       5.33       1	17200	4.78	®	)					8.999	21.035	5.941	7.696	3.619	2.327	2.339	0.827	1.690	<b>@</b> .400
20280       5.63       100       1.992       0.508         20080       6.13       100       1.992       0.508         23750       6.60       100       1.281       2.169       0.508         24000       7.22       100       1.281       2.169       0.508         28500       7.92       100       1.281       2.169       0.508         28500       7.92       100       1.281       2.169       0.508         28500       7.92       100       1.281       2.169       0.508         28500       7.92       100       1.281       2.169       0.508         28500       7.92       100       1.92       2.554       0.787         28500       7.92       100       1.91       2.173       2.898       0.989         31000       8.61       100       1.91       1.92       2.950       8.19       2.131       3.046       1.083         33250       9.24       10.22       1.281       2.181       3.141       2.173       2.898       0.989         36800       10.22       1.281       1.991       1.991       1.991       1.991       1.991       1.991	18300	5.08							9.574	23.532	6.321	8.620	3.850	2.604	2.488	0.915	1.798	0.438
22080       6.13       6.13       6.13       6.13       6.13       7.28	19110	5.31	11-						9.998	25.523	6.600	9.330	4.021	2.819	2.599	0.988	1.877	0.466
23750       6.60       6.60       4.977       4.187       3.229       1.461       2.333       0.668         26000       7.22       7.22       7.24       7.24       7.25       7.25       7.27         28500       7.92       7.93       7.92       7.93       7.93       7.93       7.93       7.93       7.94       7.93       7.94       7.93       7.94 <td>20280</td> <td>5.63</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>7.004</td> <td>10.419</td> <td>4.267</td> <td>3.140</td> <td>2.758</td> <td>1,100</td> <td>1.992</td> <td>0.508</td>	20280	5.63									7.004	10.419	4.267	3.140	2.758	1,100	1.992	0.508
26000       7.22       7.22       6       6       6       5.470       4.945       3.535       1.724       2.554       0.787         28500       7.92       7.92       6       6       5.976       5.857       3.875       2.039       2.800       0.929         29500       8.19       6       6       6.207       6.243       4.011       2.173       2.898       0.989         31000       8.61       6       6       6.522       6.839       4.215       2.381       3.046       1.083         33250       9.24       6       6       6.996       7.793       4.521       2.708       3.267       1.230         36800       10.22       6       6       6       6.996       7.793       4.521       2.708       3.615       1.481         40700       11.31       6       6       6       6       6       5.997       4.564       4.333       2.069	22080	6.13											4.646	3.663	3.002	1.281	2.169	0.587
28500       7.92	23750	6.60											4.997	4.187	3.229	1.461	2.333	0.668
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       9.24       6.924       6.996       7.793       4.521       2.708       3.267       1.230         36800       10.22       6.914       10.21       6.914       1.914       1.411       1.411         40700       11.31       6.914       6.914       6.914       1.914       1.783       2.069         44100       12.25       6.914       5.997       4.564       4.333       2.069	26000	7.22											5.470	4.945	3.535	1.724	2.554	0.787
31000       8.61       8.61       6.522       6.839       4.215       2.381       3.046       1.083         33250       9.24       6.944       6.946       7.793       4.521       2.708       3.267       1.230         36800       10.22       6.946       7.793       4.514       2.708       3.615       1.481         40700       11.31       6       6       6       6       6       5.997       4.564       4.333       2.069	28500	7.92											5.996	5.857	3.875	2.039	2.800	0.929
33250       9.24       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	29500	8.19											6.207	6.243	4.011	2.173	2.898	0.989
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	31000	8.61											6.522	6.839	4.215	2.381	3.046	1.083
40700       11.31       5.534       3.934       3.999       1.783         44100       12.25       8       5.997       4.564       4.333       2.069	33250	9.24											6.996	7.793	4.521	2.708	3.267	1.230
44100 12.25 © 5.997 4.564 4.333 2.069	36800	10.22													5.004	3.264	3.615	1.481
	40700	11.31													5.534	3.934	3.999	1.783
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       6.597       5.510       3.273         61100       16.97       6.079       5.060       3.785	44100	12.25													5.997	4.564	4.333	2.069
51500       14.31         56500       15.69         61100       16.97	48000	13.33									2				6.527	5.340	4.716	2.421
56500         15.69         5.551         3.273           61100         16.97         6.003         3.785	51500	14.31								TIN					7.003	6.079	5.060	2.757
61100 16.97 6.003 3.785								6									5.551	3.273
	61100	16.97						$\langle \rangle$	0-								6.003	
68000 18.89 6.681 4.615								Y										
72000 20.00 7.074 5.128	72000	20.00															7.074	5.128
Medium: Water; 1 mbar/m = 100 Pa/m			iter; 1	mbar/m	= 100 P	a/m												



### Pipes Pressure Loss at 20°C (kPa/m)

				Press	sure Los	s Table	e of Mul	tilayer	PEX Pip	e, Wat	er Temp	eratur	e = 45°C	)			
		16	×2.0	20	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75	x7.5
Flo		Speed	ΔP (kDa/m)	Speed	ΔP	Speed	ΔP	Speed	ΔP (kDa/m)	Speed	ΔP (kDa/m)	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 40	0.01 0.01	0.10	<sup>®</sup> 0.029														®
40 54	0.01		0.027												Ju		12
76	0.02		0.040	0.10	0.020											-A	
110	0.02	0.27	0.126	0.15	0.033	0.10	0.012			0.04	0.002			- ((	20		
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		Ň		
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	<sup>©</sup> 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		0.32	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		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	<b>(0</b> .009
1980	0.55		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		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		0.011
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 2400	0.64 0.67	5.62 5.89	20.865 22.259	3.16 3.32	5.510 5.980	2.02 2.12	1.919 2.081	1.20 1.26	0.558 0.605	0.79 0.83	0.211 0.229	0.48 0.50	0.067 0.072	0.31 0.33	0.024 0.026	0.22 0.24	0.012 0.012
2400	0.68	6.00	22.237	3.37	6.162	2.12	2.143	1.28	0.623	0.83	0.227	0.50	0.072	0.33	0.020	0.24	0.012
2545	0.88	6.25	24.507	3.52	6.616	2.18	2.302	1.33	0.668	0.88	0.255	0.54	0.074	0.35	0.027	0.24	0.013
2700	0.75	6.63	27.259	3.73	7.318	2.23	2.551	1.41	0.739	0.00	0.232	0.57	0.087	0.37	0.027	0.23	0.014
2770	0.77	6.80	28.464	3.83	7.637	2.45	2.666	1.45	0.772	0.96	0.277	0.58	0.091	0.38	0.032	0.27	0.015
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		©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		113	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
Medi	um: Wa	ter; 1	mbar/m	= 100 P	°a/m												

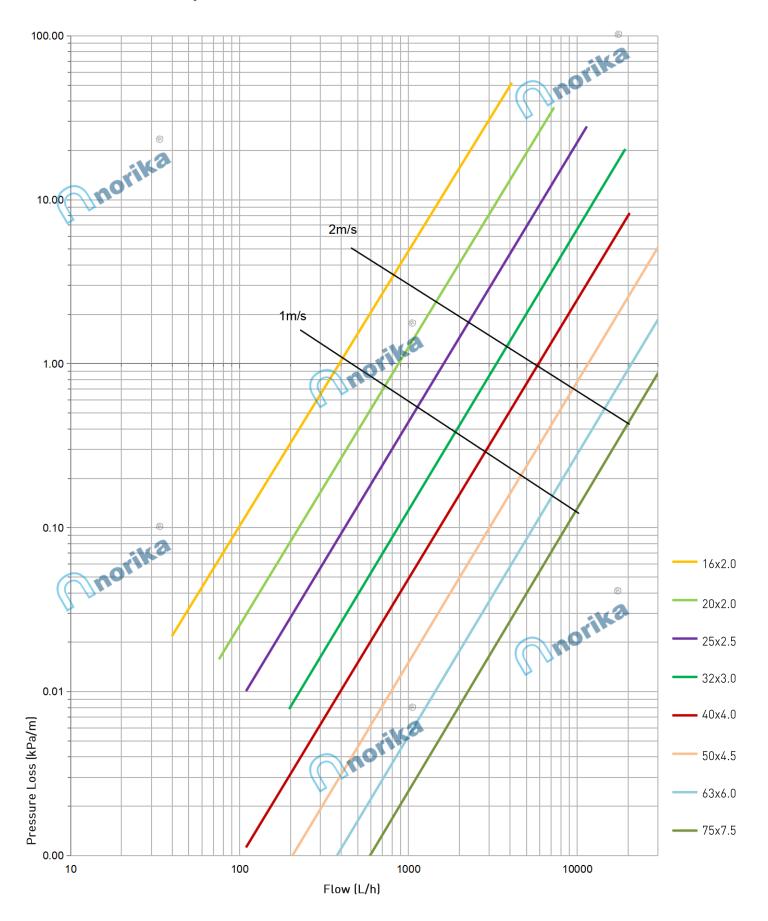
				Press	sure Los	s Tabl	e of Mul	tilayer	PEX Pip	e, Wat	er Temp	eratur	e = 45°C	)			
		16	×2.0	20	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75	x7.5
Flo	w	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)
4250	1.18			5.87	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	(	8	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	-15	3	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	<sup>©</sup> 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	<b>@</b> .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	11-						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									8				6.00	4.235	4.33	1.976
48000	13.33								orik	3				6.53	4.925	4.72	2.117
51500	14.31								TIL					7.00	5.674	5.06	2.620
56500	15.69						C	10								5.55	3.203
61100	16.97							V								6.00	3.617
68000	18.89						Ţ.									6.68	4.375
72000	20.00															7.07	4.729
Medi	um: Wa	iter; 1	mbar/m	= 100 P	'a/m												



### Pipes Pressure Loss at 45°C (kPa/m)

				Press	sure Los	s Table	e of Mul	tilayer	PEX Pip	e, Wat	er Temp	eratur	e = 60°0	)			
		16	×2.0	20	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75	x7.5
Flo	W	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)								
23	0.01																
29	0.01		2)														Ø
40	0.01	0.098	0.025														
54	0.02		0.037												Ju	- 1	, a
76	0.02		0.062	0.152	0.017									6		01	
(110)	0.03	0.270	0.117	0.274	0.030	0.097	0.011			0.038	0.001			((	n.		
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	0.000	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	0.0/0	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
460 573	0.13 0.16	1.130 1.407	1.311 1.875	0.792 0.951	0.349 0.495	0.407 0.507	0.120 0.178	0.241 0.300	0.035 0.050	0.159 0.198	0.013 0.019	0.097	0.004 0.006	0.063 0.078	0.001	0.045 0.056	0.001 0.001
688	0.16	1.690	2.539	0.931	0.495	0.608	0.178	0.300	0.050	0.198	0.019	0.121	0.008	0.078	0.002	0.056	0.001
720	0.17	1.768	2.739	1.174	0.717	0.637	0.256	0.377	0.077	0.238	0.028	0.143	0.008	0.074	0.003	0.071	0.001
850	0.20	2.088	3.623	1.266	0.943	0.752	0.235	0.445	0.100	0.247	0.020	0.179	0.007	0.116	0.003	0.084	0.001
916	0.24	2.250	4.112	1.382	1.067	0.810	0.378	0.479		0.316	0.043	0.193	0.012	0.125	0.004	0.090	0.002
1000	0.23	2.456	4.777	1.583	1.236	0.884	0.437	0.523	0.130	0.345	0.040	0.210	0.016	0.125	0.005	0.098	0.002
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	<b>0</b> .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	C1.071	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		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
Mediu	um: Wa	iter; 1	mbar/m	= 100 P	a/m												

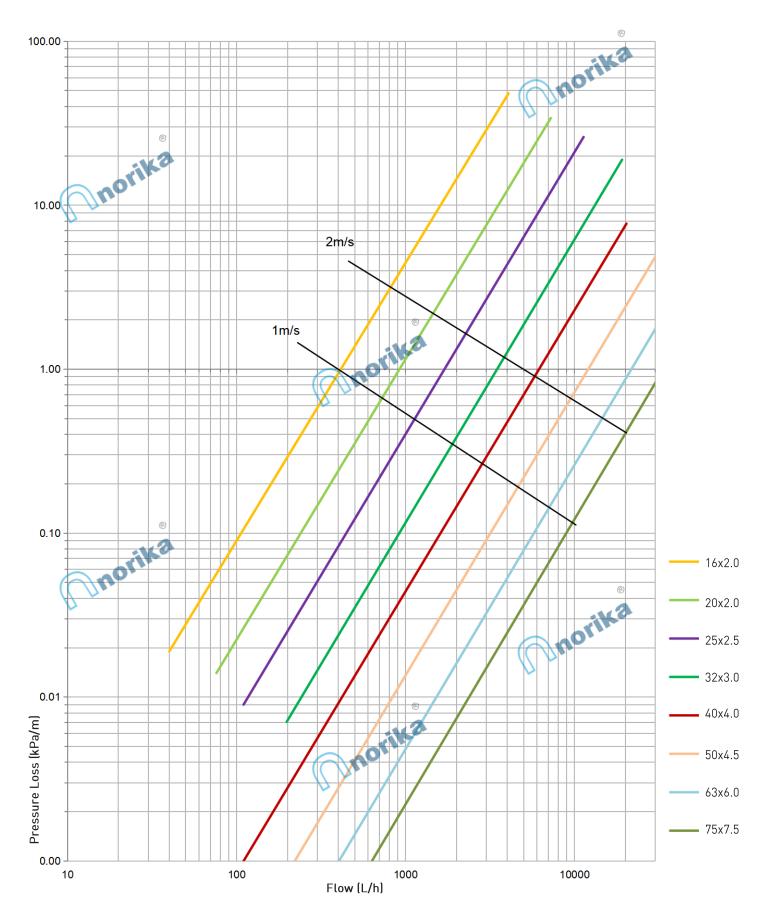
				Press	ure Los	s Table	e of Mul	tilayer	PEX Pip	e, Wat	er Temp	eratur	e = 60°C	)			
		16	×2.0	203	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75	x7.5
Flo	w	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP	Speed	ΔP
(L/h)	(L/s)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(kPa/m)	(m/s)	(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		8	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	-14	3	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	<sup>©</sup> 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	<b>@</b> .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	11-						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									8				5.997	4.033	4.333	1.827
48000	13.33								orik	3				6.527	4.719	4.716	2.137
51500	14.31								TIL					7.003	5.377	5.060	2.435
56500	15.69						C									5.551	2.892
61100	16.97						1	~								6.003	3.346
68000	18.89						-									6.681	4.081
72000	20.00															7.074	4.538
Mediu	um: Wa	iter; 1	mbar/m	= 100 P	a/m												



### Pipes Pressure Loss at 60°C (kPa/m)

	Pressure Loss Table of Multilayer PEX Pipe, Water Temperature = 80°C											eratur	e = 80°0	)			
		16	×2.0	20	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75	x7.5
Flo	w	Speed	ΔΡ	Speed	ΔP	Speed	ΔΡ	Speed	ΔP	Speed	ΔΡ	Speed	ΔP	Speed	ΔΡ	Speed	ΔΡ
(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		2)														Ø
40	0.01	0.098	0.021														
54	0.02		0.032												Ju	- 1	, a
76	0.02		0.057	0.105	0.015									6		01	
(110)	0.03	0.270	0.106	0.152	0.028	0.097	0.010			0.038	0.001			((	D.		
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		0.004		
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	0.040	0.004
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
460 572	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
573 499	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
688 720	0.19 0.20	1.690 1.768	2.307 2.492	0.951 0.995	0.599	0.608 0.637	0.212 0.229	0.360 0.377	0.063 0.068	0.238	0.024 0.026	0.145 0.151	0.007 0.008	0.094 0.098	0.003	0.068	0.001
850	0.20	2.088	3.310	1.174	0.854	0.637	0.229	0.377	0.088	0.249	0.026	0.151	0.008	0.098	0.003	0.071	0.001
916	0.24	2.000	3.767	1.266	0.834	0.732	0.341	0.443	0.100	0.274	0.034	0.177	0.011	0.118	0.004	0.084	0.002
1000	0.23	2.456	4.385	1.382	1.126	0.810	0.341	0.523	0.100	0.345	0.038	0.173	0.012	0.125	0.004	0.070	0.002
1146	0.20	2.815	5.559	1.583	1.423	1.013	0.498	0.600	0.145	0.345	0.055	0.241	0.014	0.156	0.005	0.113	0.002
1220	0.34	2.996	6.181	1.685	1.585	1.079	0.553	0.638	0.143	0.421	0.061	0.257	0.019	0.166	0.007	0.120	0.003
1373	0.34	3.372	7.361	1.897	1.945	1.214	0.678	0.718	0.102	0.474	0.075	0.289	0.024	0.187	0.007	0.135	0.003
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	0.024	0.192	0.007	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	0.007	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	0.002	0.337	0.030	0.218	0.007	0.157	0.004
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		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	<b>0</b> .007
1980	0.55		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	
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		0.009
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	ଝା.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
Mediu	um: Wa	iter; 1	mbar/m	= 100 P	'a/m												

				Press	ure Los	s Table	e of Mul	tilayer	PEX Pip	e, Wat	er Temp	eratur	re = 80°C	)			
		16	×2.0	20	×2.0	25	×2.5	32	x3.0	40	x4.0	50	x4.5	63	x6.0	75	x7.5
Flo	w	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	(	8	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	-15	3	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	S						8.999	15.927	5.941	6.419	3.619	1.924	2.339	0.669	1.690	<b>@</b> .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	11-						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									0				5.997	3.835	4.333	1.736
48000	13.33								orik	3				6.527	4.489	4.716	2.032
51500	14.31								J.I.					7.003	5.115	5.060	2.317
56500	15.69						(	/n								5.551	2.751
61100	16.97						1	~								6.003	3.181
68000	18.89															6.681	3.883
72000	20.00															7.074	4.318
Medi	um: Wa	iter; 1	mbar/m	= 100 P	a/m												



Pipes Pressure Loss at 80°C (kPa/m)

# **TEST CERTIFICATE** POTABLE WATER FITTINGS SCHEME

**Certificate Number** TC-J0243 : 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 (Pressfit)
Brand / Model	:	Norika / PIPPEX & PEXF5
Detail	:	Sizes (mm): 16, 20, 25, 32, 40, 50, 63 & 75
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)	:	2524186-OYC, 1820215/02A-OYC, 1820215/03A-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

This Certificate is part of a full report and should be read in conjunction with it. This Certificate remains the property of Singapore Test Lab Pte Ltd and shall be returned upon request. The use of this Certificate is subjected to the Terms and Conditions of Singapore Test Lab Pte Ltd. The manufacturer is solely responsible for the compliance of any product that has the same designation as the product type tested.



Singapore Test Lab Pte Ltd certifies according to ISO / IEC 17065

Singapore Test Lab Pte Ltd · 10B Enterprise Road · Singapore 629828 Tel: 6353 6393 Fax: 6353 6395





#### \*\*Exclusively indoor installation only.

	istation only.	_ COMF	PONENT PARTS	
STANDARD SPECIFICATIO	N	ITEM	PARTS	MATERIAL
Working Pressure	10 Bar	1	Outside layer	PEX-B (Silane Cross-
Working Temperature	0 ~ 70° <b>C</b>		,	linked Polyethylene)
			Middle layer	Aluminum
Applications	Hot and cold potable water system.	3	Inside layer	PEX-B (Silane Cross- linked Polyethylene)

#### DIMENSIONS

SKU	Outside Diameter	Inside Diameter	Thickness	Tolerance Of Pipe	Length	WEIGHT
	(mm)	(mm)	(mm)	Thickness (mm)	(mm)	(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 PIPE AND FITTINGS

### 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 / 2018 SS 375:2015

F5 PRESS-FIT





#### COMPONENTS:

#### Body

The main body of F5 PRESS-FIT is made out of Brass CW602N material, which greatly improves the corrosion resistance, eliminates processing stress, and ensures no cracking and dimensional stability.

#### Seal Ring

High-quality EPDM material with excellent weather resistance and corrosion resistance. Double seal to ensure no leakage.

#### **Plastic Block**

Safe and environmentally friendly PE material, with strong strength, effectively preventing the entry of impurities and protecting the fitting.

#### Sleeve

AISI304 material with weather resistance and corrosion resistance.

STANDARD SPECIFICATIO	Ν
Working Pressure	10 Bar
Working Temperature	0 ~ 70° <b>C</b>
Applications	Hot and cold potable water system, Underfloor heating system

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# 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.



# INSTALLATION GUIDE:

#### 3. Inserting

Choose the right size sleeved-fitting for the pipe, then aim the pipe end at the ring-shape hole of the fitting integrated with sleeve and slide the fitting insert into the pipe until it reaches the plastic block. Check the inserting depth by looking through the inspection holes on the sleeve shoulder to ensure that the pipe is completely inserted.



# 4 A A After clamp After clamp Before clamp

#### 4. Pressing

1 Select jaw .

2 Install jaw on to the Tool.

③ Adjust the Pressing Tool.

 $(\underline{4})$  Open the Pressing Tool and position the tool right onto the sleeve.

5 Close the handles until the two touch points on the handles touch each other.

6 Please don't release the handles before the jaw is fully closed.

PEX PIPE AND FITTINGS

### PEX PRESS-FIT FITTINGS (U PROFILE)

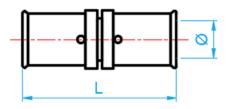
COMPLY WITH BS EN ISO 21003-1:2008 BS EN ISO 21003-3:2008 BS EN ISO 21003-5:2008 BS EN 12165:2016 AS/NZS 4020:2005 SS 375:2015

#### F5 EQUAL SOCKET

PEXF5ES063

PEXF5ES075





SIDE VIEW

0.900

1.250

PCS/CTN

320

224

120

90

45

35

15

10

#### DIMENSIONS SIZE Ø L WEIGHT SKU (mm)(mm)(mm)(kg) 16 11.8 53.0 PEXF5ES016 0.036 20 15.8 53.0 PEXF5ES020 0.043 25 19.8 66.2 0.109 PEXF5ES025 PEXF5ES032 32 25.8 66.2 0.144 PEXF5ES040 40 31.8 92.0 0.323 92.0 PEXF5ES050 50 40.8 0.463

50.7

59.6

138.0

138.5

63

75





PEX PIPE AND FITTINGS

PIPE

RINSED

GOOD

Building Cov

# norika

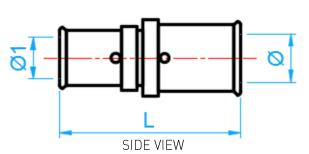
PEX PRESS-FIT FITTINGS (U PROFILE)

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

MANUAL





DIMENSIONS SIZE **Ø**1 L WEIGHT Ø SKU PCS/CTN (mm)(mm) (mm) (mm) (ka) 53.0 PEXF5RS02016 20x16 15.8 11.8 0.044 296 PEXF5RS02516 25x16 19.8 11.8 59.6 0.069 160 25x20 59.6 0.075 144 PEXE5RS02520 19.8 15.8 PEXF5RS03216 32x16 25.8 11.8 59.6 0.089 80 96 PEXF5RS03220 32x20 25.8 15.8 59.6 0.100 PEXF5RS03225 32x25 25.8 19.8 66.2 0.125 96 PEXF5RS04020 40x20 31.8 15.8 73.0 0.191 80 PEXF5RS04025 40x25 31.8 19.8 79.6 0.212 60 PEXF5RS04032 40x32 31.8 25.8 79.6 0.217 60 50x25 19.8 79.6 0.278 PEXE5RS05025 40.8 45 PEXF5RS05032 79.6 0.295 40 50x32 40.8 25.8 92.0 PEXF5RS05040 50x40 40.8 31.8 0.357 30 96.0 PEXF5RS06316 63x16 50.7 15.8 0.550 18 PEXF5RS06320 63x20 50.7 15.8 96.0 0.560 18 PEXF5RS06325 63x25 50.7 19.8 102.6 0.600 18 PEXF5RS06332 63x32 50.7 25.8 102.6 0.520 16 PEXF5RS06340 63x40 50.7 31.8 115.0 0.589 18 63x50 50.7 115.0 PEXF5RS06350 40.8 0.611 18 0.757 PEXF5RS07532 75x32 59.6 25.8 107.2 16 59.6 PEXF5RS07540 75x40 31.8 115.5 0.800 16 PEXF5RS07550 75x50 59.6 40.8 115.5 0.772 14 PEXF5RS07563 75x63 59.6 50.7 138.5 1.000 12

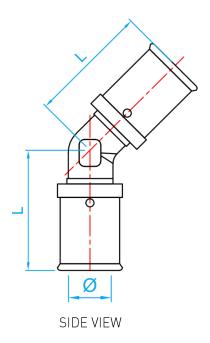
PEX PIPE AND FITTINGS

### PEX PRESS-FIT FITTINGS (U PROFILE)

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 45° EQUAL ELBOW





#### DIMENSIONS

SKU	SIZE (mm)	<b>ø</b> (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF5E45016	16	11.8	34.5	0.045	160
PEXF5E45020	20	15.8	37.0	0.067	144
PEXF5E45025	25	19.8	43.5	0.128	96
PEXF5E45032	32	25.8	44.5	0.200	45
PEXF5E45040	40	31.8	61.0	0.393	20
PEXF5E45050	50	40.8	64.0	0.567	15
PEXF5E45063	63	50.7	92.0	0.800	10
PEXF5E45075	75	59.6	92.0	1.583	6



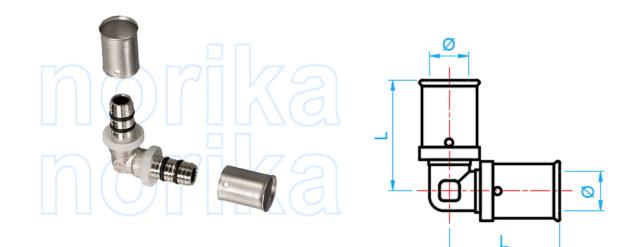


PEX PIPE AND FITTINGS

### PEX PRESS-FIT FITTINGS (U PROFILE)

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 90° ELBOW



SIDE VIEW

#### DIMENSIONS

SKU	SIZE (mm)	<b>ø</b> (mm)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF5E90016	16	11.8	37.0	0.051	256
PEXF5E90020	20	15.8	40.5	0.071	176
PEXF5E90025	25	19.8	49.0	0.136	88
PEXF5E90032	32	25.8	52.0	0.194	48
PEXF5E90040	40	31.8	68.0	0.392	36
PEXF5E90050	50	40.8	73.0	0.571	24
PEXF5E90063	63	50.7	103.0	1.060	10
PEXF5E90075	75	59.6	108.5	1.567	6





PEX PIPE AND FITTINGS

PIPE

RINSED

SINGAPORE

GREEN

BUILDING PRODUCT

GOOD Building Coul

 $\Pi$ 

MANUAL

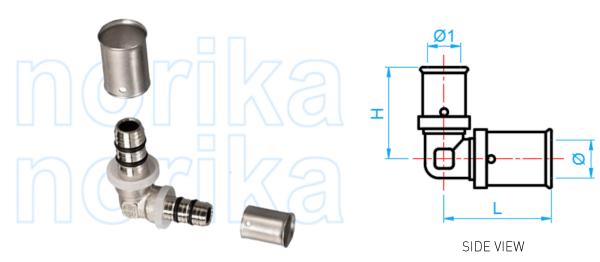
### PEX PRESS-FIT FITTINGS (U PROFILE)

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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norika

#### F5 90° REDUCING ELBOW



DIMENSIONS

SKU	SIZE (mm)	<b>ø</b> (mm)	<b>ø</b> 1 (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF5RE9002016	20X16	15.8	11.8	38.5	40.5	0.060	200
PEXF5RE9002516	25X16	19.8	11.8	45.5	42.5	0.092	128
PEXF5RE9002520	25X20	19.8	15.8	47.5	42.5	0.104	112
PEXF5RE9003216*	32X16	25.8	11.8	45.5	46.0	-	-
PEXF5RE9003220*	32X20	25.8	15.8	47.5	46.0	-	-
PEXF5RE9003225	32X25	25.8	19.8	49.5	52.5	0.160	80
PEXF5RE9004025*	40X25	31.8	19.8	60.0	55.0	-	-
PEXF5RE9004032*	40X32	31.8	25.8	64.0	55.1	-	-
PEXF5RE9005025*	50X25	40.8	19.8	60.0	60.0	-	-
PEXF5RE9005032*	50X32	40.8	25.8	64.0	60.0	-	-
PEXF5RE9005040	50X40	40.8	31.8	67.5	72.5	0.488	24
PEXF5RE9006332*	63X32	50.7	25.8	87.0	67.0	-	-
PEXF5RE9006340*	63X40	50.7	31.8	90.0	79.5	-	-
PEXF5RE9006350	63X50	50.7	40.8	95.5	79.5	0.900	8

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

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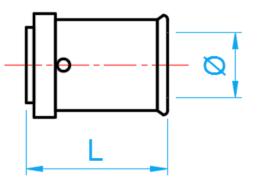
PEX PIPE AND FITTINGS

### PEX PRESS-FIT FITTINGS (U PROFILE)

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 END CAP





SIDE VIEW

#### DIMENSIONS SIZE Ø L WEIGHT SKU PCS/CTN (mm)(mm)(mm) (kg) PEXF5EC016 16 11.8 28.0 0.020 640 15.8 28.0 0.029 PEXF5EC020 20 448 PEXF5EC025 25 19.8 34.6 0.063 192 25.8 PEXF5EC032 32 34.6 0.094 128 PEXF5EC040 40 31.8 48.00.130 80 PEXF5EC050 50 40.8 48.0 0.184 72 PEXF5EC063 63 50.7 71 0.363 40 75 59.6 71 0.665 PEXF5EC075 20

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PEX PIPE AND FITTINGS

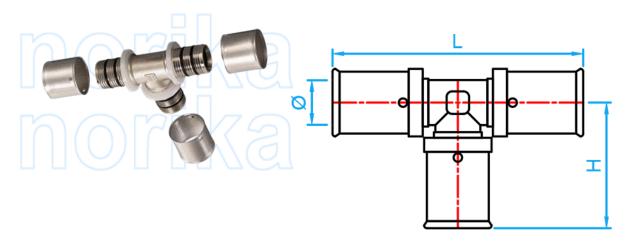
### PEX PRESS-FIT FITTINGS (U PROFILE)

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 EQUAL TEE







SIDE VIEW

DIMENSIONS	DIMENSIONS										
SKU	SIZE (mm)	<b>Ø</b> (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN					
PEXF5ET016	16	11.8	74	37.0	0.076	160					
PEXF5ET020	20	15.8	80	40.0	0.100	112					
PEXF5ET025	25	20.8	95	47.5	0.188	48					
PEXF5ET032	32	25.8	101	50.5	0.272	32					
PEXF5ET040	40	31.8	136	68.0	0.550	24					
PEXF5ET050	50	40.8	145	72.5	0.811	18					
PEXF5ET063	63	50.7	206	103.0	1.500	4					
PEXF5ET075	75	59.6	216	108.0	2.167	4					

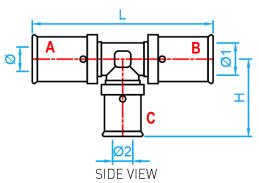
PEX PIPE AND FITTINGS

### PEX PRESS-FIT FITTINGS (U PROFILE)

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

T.





WEIGHT

(kg)

0.086

PCS/CTN

120

Н

(mm)

39.7

	$\Box \Box \nabla C$	21			
DIMENSIONS					
SKU	SIZE	Ø	Ø1	<b>Ø</b> 2	L
[A*B*C]	(A*C*B)	(mm)	(mm)	(mm)	(mm)
PEXF5RT0161620*	$16 \times 20 \times 16$	11.8	11.8	15.8	79.4
PEXF5RT0161625*	16×25×16	11.8	11.8	19.8	83.0
PEXF5RT0201616	20×16×16	15.8	11.8	11.8	76.0
PEXF5RT0202016	20×16×20	15.8	15.8	11.8	76.0
PEXF5RT0201620	20×20×16	15.8	11.8	15.8	80.0
DEVESRT0202025*	20 × 25 × 20	15.8	15.8	19.8	84.4

**F5 REDUCING TEE** 

PEXF5RT0161625*	16×25×16	11.8	11.8	19.8	83.0	45.0	0.120	80
PEXF5RT0201616	20×16×16	15.8	11.8	11.8	76.0	40.0	0.088	120
PEXF5RT0202016	20×16×20	15.8	15.8	11.8	76.0	40.0	0.100	112
PEXF5RT0201620	20×20×16	15.8	11.8	15.8	80.0	40.0	0.088	120
PEXF5RT0202025*	20×25×20	15.8	15.8	19.8	84.4	47.1	0.124	96
PEXF5RT0251616*	25×16×16	19.8	11.8	11.8	82.8	42.2	0.110	96
PEXF5RT0252016*	25×16×20	19.8	15.8	11.8	83.0	45.5	0.116	96
PEXF5RT0252516	25×16×25	19.8	19.8	11.8	87.0	41.5	0.142	72
PEXF5RT0251620*	25×20×16	19.8	11.8	15.8	86.5	42.2	0.128	70
PEXF5RT0251625*	25×25×16	19.8	11.8	19.8	94.8	51.5	0.157	70
PEXF5RT0252020*	25×20×20	19.8	15.8	15.8	86.8	42.2	0.131	70
PEXF5RT0252520	25×20×25	19.8	19.8	15.8	91.0	41.5	0.155	64
PEXF5RT0252025*	25×25×20	19.8	15.8	19.8	91.0	49.0	0.167	70
PEXF5RT0252532*	25×32×25	19.8	19.8	25.8	107.2	48.6	0.222	70
PEXF5RT0322020*	32×20×20	25.8	15.8	15.8	86.8	45.2	0.166	48
PEXF5RT0322025*	32×25×20	25.8	15.8	19.8	92.7	51.6	0.202	40
PEXF5RT0322032*	32×32×20	25.8	15.8	25.8	97.3	51.6	0.227	32
PEXF5RT0322520*	32×20×25	25.8	19.8	15.8	94.2	44.2	0.189	48
PEXF5RT0322525*	32×25×25	25.8	19.8	19.8	97.0	50.0	0.213	40
PEXF5RT0322532*	32×32×25	25.8	19.8	25.8	103.2	51.6	0.248	32
PEXF5RT0323216	32×16×32	25.8	25.8	11.8	87.0	44.5	0.190	40
PEXF5RT0323220	32×20×32	25.8	25.8	15.8	91.0	44.5	0.213	40
PEXF5RT0323225	32×25×32	25.8	25.8	19.8	97.0	50.0	0.218	40

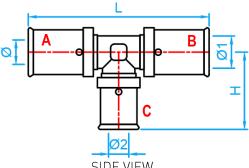
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PEX PIPE AND FITTINGS

### PEX PRESS-FIT FITTINGS (U PROFILE)

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





SIDE VIEW								
DIMENSIONS	$\Box \Box \nabla C$	21						
SKU	SIZE	Ø	Ø1	<b>ø</b> 2	L	Н	WEIGHT	PCS/CTN
(A*B*C)	(A*C*B)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)	
PEXF5RT0403225*	$40 \times 25 \times 32$	31.8	25.8	19.8	112.1	56.6	0.36	36
PEXF5RT0403232	40×32×32	31.8	25.8	25.8	120.1	56.6	0.393	36
PEXF5RT0404016	$40 \times 16 \times 40$	31.8	31.8	11.8	114.0	48.8	0.409	36
PEXF5RT0404020	$40 \times 20 \times 40$	31.8	31.8	15.8	114.0	48.5	0.389	36
PEXF5RT0404025	$40 \times 25 \times 40$	31.8	31.8	19.8	120.0	55.0	0.425	32
PEXF5RT0403232*	40×32×32	31.8	25.8	25.8	115.5	55.0	0.402	36
PEXF5RT0404032	40×32×40	31.8	31.8	25.8	128.0	57.0	0.478	28
PEXF5RT0503232*	50×32×32	40.8	25.8	25.8	120.1	61.6	0.488	20
PEXF5RT0504025*	$50 \times 25 \times 40$	40.8	31.8	19.8	-	-	-	-
PEXF5RT0504032*	50×32×40	40.8	31.8	25.8	134.0	61.6	0.57	20
PEXF5RT0504040*	$50 \times 40 \times 40$	40.8	31.8	31.8	-	-	-	-
PEXF5RT0505016	50×16×50	40.8	40.8	11.8	114.0	53.0	0.534	20
PEXF5RT0505020	$50 \times 20 \times 50$	40.8	40.8	15.8	115.0	53.5	0.548	20
PEXF5RT0505025	$50 \times 25 \times 50$	40.8	40.8	19.8	120.0	53.5	0.547	20
PEXF5RT0505032	$50 \times 32 \times 50$	40.8	40.8	25.8	128.0	60.0	0.600	18
PEXF5RT0505040	$50 \times 40 \times 50$	40.8	40.8	31.8	136.0	73.0	0.680	18
PEXF5RT0636320*	63×20×63	50.7	50.7	15.8	171	60.7	1.042	7
PEXF5RT0636325	63×25×63	50.8	50.8	19.8	174.0	68.6	1.014	7
PEXF5RT0636332	63×32×63	50.8	50.8	25.8	174.0	67.0	1.014	7
PEXF5RT0636340*	63×40×63	50.8	50.8	31.8	181.0	79.5	1.157	7
PEXF5RT0636350	63×50×63	50.8	50.8	40.8	191.0	79.5	1.390	8
PEXF5RT0757532	75×32×75	59.6	59.6	25.8	174.0	73.0	1.600	5
PEXF5RT0757540	$75 \times 40 \times 75$	59.6	59.6	31.8	194.0	87.0	1.880	4
PEXF5RT0757550*	$75 \times 50 \times 75$	59.6	59.6	40.8	194.0	85.0	2.475	4
PEXF5RT0757563	75×63×75	59.6	59.6	50.8	205.0	109.0	2.250	4

**F5 REDUCING TEE** 

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PEX PIPE AND FITTINGS

### PEX PRESS-FIT FITTINGS (U PROFILE)

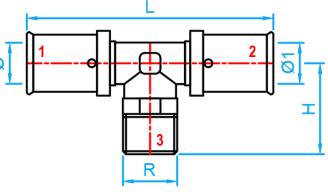
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#### F5 MI TEE

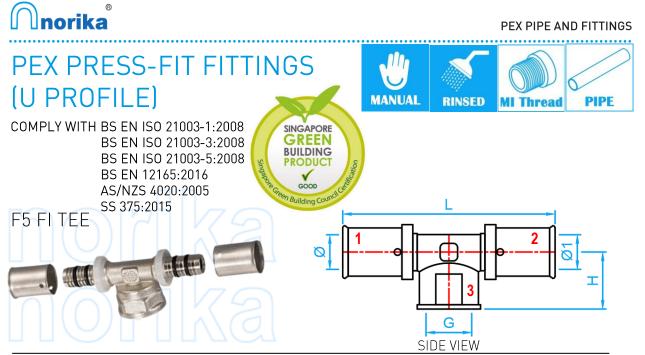




SIDE VIEW

DIMENSIONS			-				-	
SKU	SIZE (mm x mm x inch)	<b>Ø</b> (mm)	Ø1 (mm)	R BSPT (inch)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF5MIT01616	16×16×1/2"	11.8	11.8	1⁄2"	77	32.5	0.085	144
PEXF5MIT01620*	16×16×3/4"	11.8	11.8	3/4"	82	34.5	-	-
PEXF5MIT02016	20×20×1/2"	15.8	15.8	1⁄2"	77	34.5	0.117	120
PEXF5MIT020*	20×20×3/4"	15.8	15.8	3/4"	82	36.5	-	-
PEXF5MIT02516*	25×25×1/2"	19.8	19.8	1⁄2"	90	38.0	-	-
PEXF5MIT02520*	25×25×3/4"	19.8	19.8	3/4"	96	39.0	-	-
PEXF5MIT03220*	32×32×3/4"	25.8	25.8	3/4"	96	43.0	-	-
PEXF5MIT03225*	32×32×1"	25.8	25.8	1"	104	45.0	-	-
PEXF5MIT05040*	50×50×11/2"	40.8	40.8	11⁄2″	150	50.0	-	-

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#### DIMENSIONS

SKU         SIZE (mm x mm x inch)         Ø (mm)         Ø1 (mm)         G BSPT (mm)         L (mm)         H (mm)         WEIGHT (kg)         PCS/CTN           PEXF5FIT01616         16×16×1/2"         11.8         11.8         1/2"         82         23.0         0.089         120           PEXF5FIT01620*         16×16×3/4"         11.8         11.8         1/8         3/4"         88         24.0         0.113         80           PEXF5FIT02016         20×20×3/4"         15.8         15.8         1/2"         82         25.0         0.123         96           PEXF5FIT02516         25×25×1/2"         19.8         19.8         3/4"         88         26.0         0.161         64           PEXF5FIT02520         25×25×3/4"         19.8         19.8         3/4"         102         30.0         0.200         48           PEXF5FIT03216         32×32×1/2"         25.8         25.8         3/4"         102         30.0         0.244         32           PEXF5FIT03220         32×32×3/4"         31.8         25.8         3/4"         113.5         31.0         0.354         32           PEXF5FIT04020         40×40×3/4"         31.8         31.8         1"         131
PEXF5FIT01620*16×16×3/4"11.811.811.83/4"8824.00.11380PEXF5FIT0201620×20×1/2"15.815.81/2"8225.00.12396PEXF5FIT0202020×20×3/4"15.815.83/4"8826.00.12896PEXF5FIT0251625×25×1/2"19.819.81/2"9626.00.16164PEXF5FIT0252025×25×3/4"19.819.81/2"9626.00.16164PEXF5FIT0321632×32×1/2"25.825.81/2"10230.00.20048PEXF5FIT0322032×32×1/2"25.825.81/2"10230.00.24432PEXF5FIT0322532×32×1"25.825.81"11031.00.31324PEXF5FIT04032040×40×3/4"31.825.83/4"112631.00.42425PEXF5FIT0402040×40×3/4"31.831.81"13140.00.48330PEXF5FIT0402540×40×11"31.831.81"13140.00.48330PEXF5FIT04040*40×40×11/4"31.831.811"14438.00.55920PEXF5FIT0504020*50×40×3/4"40.831.834"12836.00.53022PEXF5FIT05020*50×50×3/4"40.840.83"12836.00.58822PEXF5FIT0502550×50×1"40.840.81"132<
PEXF5FIT0201620×20×1/2"15.815.815.81/2"8225.00.12396PEXF5FIT0202020×20×3/4"15.815.83/4"8826.00.12896PEXF5FIT0251625×25×1/2"19.819.81/2"9626.00.16164PEXF5FIT0250025×25×3/4"19.819.83/4"10227.00.20556PEXF5FIT0321632×32×1/2"25.825.81/2"10230.00.20048PEXF5FIT0322032×32×3/4"25.825.83/4"10230.00.24432PEXF5FIT0322532×32×1"25.825.81"11031.00.31324PEXF5FIT04032040×32×3/4"31.825.83/4"113.531.00.35432PEXF5FIT0402040×40×3/4"31.831.81"13140.00.48330PEXF5FIT0402540×40×11"31.831.81"13140.00.48330PEXF5FIT04024*40×40×11/4"31.831.81"14438.00.55920PEXF5FIT0504020*50×40×3/4"40.831.83/4"12836.00.53022PEXF5FIT05020*50×50×3/4"40.840.83/4"12836.00.58822PEXF5FIT0502550×50×1"40.840.81"13240.00.55122
PEXF5FIT0202020×20×3/4"15.815.83/4"8826.00.12896PEXF5FIT0251625×25×1/2"19.819.81/2"9626.00.16164PEXF5FIT0252025×25×3/4"19.819.83/4"10227.00.20556PEXF5FIT0321632×32×1/2"25.825.81/2"10230.00.20048PEXF5FIT0322032×32×3/4"25.825.83/4"10230.00.24432PEXF5FIT0322532×32×1"25.825.83/4"10230.00.31324PEXF5FIT04032040×32×3/4"31.825.83/4"113.531.00.35432PEXF5FIT0402040×40×3/4"31.831.81/4"12631.00.42425PEXF5FIT0402540×40×11"31.831.81/4"14438.00.55920PEXF5FIT04024*40×40×11/2"31.831.81/4"14438.00.59620PEXF5FIT0504020*50×40×3/4"40.831.83/4"12836.00.53022PEXF5FIT05020*50×50×3/4"40.840.83/4"12836.00.58822PEXF5FIT0502550×50×1"40.840.81"13240.00.55122
PEXF5FIT0251625×25×1/2"19.819.819.81/2"9626.00.16164PEXF5FIT0252025×25×3/4"19.819.834"10227.00.20556PEXF5FIT0321632×32×1/2"25.825.81/2"10230.00.20048PEXF5FIT0322032×32×3/4"25.825.81/2"10230.00.24432PEXF5FIT0322532×32×1"25.825.81"11031.00.31324PEXF5FIT04032040×32×3/4"31.825.83/4"113.531.00.35432PEXF5FIT0402040×40×3/4"31.831.83/4"12631.00.42425PEXF5FIT0402540×40×1"31.831.81"13140.00.48330PEXF5FIT0402540×40×1"31.831.811/4"14438.00.55920PEXF5FIT04040*40×40×11/2"31.831.811/4"12836.00.53022PEXF5FIT0504020*50×50×3/4"40.840.83/4"12836.00.58822PEXF5FIT05020*50×50×3/4"40.840.81"13240.00.55122
PEXF5FIT0252025×25×3/4"19.819.819.83/4"10227.00.20556PEXF5FIT0321632×32×1/2"25.825.8½"10230.00.20048PEXF5FIT0322032×32×3/4"25.825.83/4"10230.00.24432PEXF5FIT0322532×32×1"25.825.81"11031.00.31324PEXF5FIT04032040×32×3/4"31.825.83/4"113.531.00.35432PEXF5FIT0402040×40×3/4"31.831.83/4"12631.00.42425PEXF5FIT0402540×40×11"31.831.81"13140.00.48330PEXF5FIT04032*40×40×11/4"31.831.811/4"14438.00.55920PEXF5FIT0504020*50×40×3/4"40.831.83/4"12836.00.53022PEXF5FIT05020*50×50×3/4"40.840.81"13240.00.55122PEXF5FIT0502550×50×1"40.840.81"13240.00.55122
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PEXF5FIT04032*40×40×11/4"31.831.81¼"14438.00.55920PEXF5FIT04040*40×40×11/2"31.831.81½"15038.00.59620PEXF5FIT0504020*50×40×3/4"40.831.83¼"12836.00.53022PEXF5FIT05020*50×50×3/4"40.840.83¼"12836.00.58822PEXF5FIT0502550×50×1"40.840.81"13240.00.55122
PEXF5FIT04040*40×40×11/2"31.831.81½"15038.00.59620PEXF5FIT0504020*50×40×3/4"40.831.8¾"12836.00.53022PEXF5FIT05020*50×50×3/4"40.840.8¾"12836.00.58822PEXF5FIT0502550×50×1"40.840.81"13240.00.55122
PEXF5FIT0504020*         50×40×3/4"         40.8         31.8         3/4"         128         36.0         0.530         22           PEXF5FIT05020*         50×50×3/4"         40.8         40.8         3/4"         128         36.0         0.588         22           PEXF5FIT05025         50×50×1"         40.8         40.8         1"         132         40.0         0.551         22
PEXF5FIT05020*         50×50×3/4"         40.8         40.8         ¾"         128         36.0         0.588         22           PEXF5FIT05025         50×50×1"         40.8         40.8         1"         132         40.0         0.551         22
PEXF5FIT05025         50×50×1"         40.8         40.8         1"         132         40.0         0.551         22
PEXF5FIT05032 50×50×11/4" 40.8 40.8 11/4" 150 42.0 0.700 18
PEXF5FIT05040 50×50×11/2" 40.8 40.8 11/2" 150 42.0 0.710 20
PEXF5FIT05050* 50×50×2" 40.8 40.8 2" 163 44.0 0.881 30
PEXF5FIT0635020* 63×50×3/4" 50.7 40.8 ¾" 150 43.0 0.850 12
PEXF5FIT06320* 63×63×3/4" 50.7 50.7 3/4" 174 43.0 1.083 12
PEXF5FIT06325 63×63×1" 50.7 50.7 1" 180 45.0 1.092 12
PEXF5FIT06340* 63×63×11/2" 50.7 50.7 1½" 196 48.0 1.208 8
PEXF5FIT06350 63×63×2" 50.7 50.7 2" 214 51.0 1.250 8
PEXF5FIT06363 63×63×21/2" 50.7 50.7 21/2" 240 64.5 1.750 4
PEXF5FIT07540 75×75×11/2" 59.6 59.6 11/2" 209 52.0 1.647 8
PEXF5FIT07550 75×75×2" 59.6 59.6 2" 209 56.0 1.875 8
PEXF5FIT07563 75×75×21/2" 59.6 59.6 21/2" 240 61.5 2.251 4

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

#### ß norika PEX PIPE AND FITTINGS PEX PRESS-FIT FITTINGS (U PROFILE) MANUAL PIPE RINSED **FI Thread** SINGAPORE COMPLY WITH BS EN ISO 21003-1:2008 GREEN BS EN ISO 21003-3:2008 BUILDING PRODUCT BS EN ISO 21003-5:2008 GOOD BS EN 12165:2016 uilding Co AS/NZS 4020:2005 SS 375:2015 $\oslash$ Ľ **F5 MI ADAPTOR** SIDE VIEW

#### DIMENSIONS

DIMENSIONS	1					i
SKU	SIZE	Ø	L	R BSPT	WEIGHT	PCS/CTN
	(mm x inch)	(mm)	(mm)	(inch)	(kg)	
PEXF5MIA01616	16×1/2"	11.8	46.0	1/2"	0.046	400
PEXF5MIA01620	16×3/4"	11.8	47.0	3/4"	0.065	320
PEXF5MIA01625*	16×1"	11.8	48.0	1"	-	-
PEXF5MIA02016	20×1/2"	15.8	46.0	1⁄2"	0.056	320
PEXF5MIA02020	20×3/4"	15.8	47.0	3/4"	0.067	224
PEXF5MIA02516*	25×1/2"	19.8	52.6	1⁄2"	0.095	144
PEXF5MIA02520	25×3/4"	19.8	54.0	3/4"	0.104	144
PEXF5MIA02525	25×1"	19.8	55.0	1"	-0.119	128
PEXF5MIA03220	32×3/4"	25.8	54.0	3/4"	0.141	96
PEXF5MIA03225	32×1"	25.8	55.0	1"	0.142	96
PEXF5MIA03232	32×11/4"	25.8	58.5	11⁄4"	0.181	90
PEXF5MIA04025	40×1"	30.8	76.0	1"	0.287	72
PEXF5MIA04032	40×11/4"	30.8	79.0	11⁄4"	0.310	60
PEXF5MIA04040	40×11/2"	30.8	79.5	11⁄2″	0.383	60
PEXF5MIA05025*	50×1"	40.8	71.0	1"	-	-
PEXF5MIA05040	50×11/2"	40.8	79.0	11⁄2″	0.402	48
PEXF5MIA05050	50×2"	40.8	84.0	2"	0.475	40
PEXF5MIA06332*	63×11/4"	50.7	101.5	11⁄4"	-	-
PEXF5MIA06342*	63×11/2"	50.7	103.0	11⁄2"	-	-
PEXF5MIA06350	63×2"	50.7	107.0	2"	0.820	20
PEXF5MIA06363	63×21/2"	50.7	107.0	21/2"	1.038	20
PEXF5MIA07550*	75×2"	59.6	111.0	2"	_	-
PEXF5MIA07563	75×21/2"	59.6	111.0	21/2"	1.180	14
PEXF5MIA07575	75×3"	59.6	111.0	3"	1.186	12

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

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#### ß norika PEX PIPE AND FITTINGS PEX PRESS-FIT FITTINGS (U PROFILE) MANUAL RINSED PIPE **MI Thread** SINGAPORE COMPLY WITH BS EN ISO 21003-1:2008 GREEN BS EN ISO 21003-3:2008 BUILDING PRODUCT BS EN ISO 21003-5:2008 GOOD BS EN 12165:2016 Building Co AS/NZS 4020:2005 SS 375:2015 **F5 FI ADAPTOR (**) 0 SIDE VIEW

DIMENSIONS

DIMENSIONS						
SKU	SIZE	Ø	L	G BSP	WEIGHT	PCS/CTN
50	(mm x inch)	(mm)	(mm)	(inch)	(kg)	103/011
PEXF5FIA01616	16×1/2"	11.8	42.5	1/2"	0.051	320
PEXF5FIA01620*	16×3/4"	11.8	44.0	3/4"	0.069	240
PEXF5FIA02016*	20×1/2"	15.8	42.5	1⁄2"	0.054	280
PEXF5FIA02020	20×3/4"	15.8	44.0	3/4"	0.075	240
PEXF5FIA02025*	20×1"	15.8	45.5	1"	-	-
PEXF5FIA02516*	25×1/2"	19.8	49.0	1/2"	0.078	160
PEXF5FIA02520*	25×3/4"	19.8	50.5	3/4"	0.086	160
PEXF5FIA02525	25×1"	19.8	52.0	1"	0.135	96
PEXF5FIA03220*	32×3/4"	25.8	50.5	3/4"	0.111	128
PEXF5FIA03225*	32×1"	25.8	52.0	1"	0.141	96
PEXF5FIA03232*	32×11/4"	25.8	54.5	11⁄4″	0.177	84
PEXF5FIA04025*	40×1"	31.8	66.0	1"	0.250	80
PEXF5FIA04032	40×11/4"	31.8	67.0	11⁄4″	0.290	72
PEXF5FIA04040	40×11/2"	31.8	68.5	11⁄2″	0.330	60
PEXF5FIA05025*	50×1"	40.8	66.0	1"	0.350	48
PEXF5FIA05032*	50×11/4"	40.8	68.5	11⁄4″	-	-
PEXF5FIA05040*	50×11/2"	40.8	69.0	11⁄2″	0.375	40
PEXF5FIA05050	50×2"	40.8	75.0	2"	0.545	32
PEXF5FIA06325	63×1"	50.7	88.0	1"	0.595	20
PEXF5FIA06340*	63×11/2"	50.7	92.0	11⁄2″	-	-
PEXF5FIA06350	63×2"	50.7	98.0	2"	0.720	20
PEXF5FIA06363	63×21/2"	50.7	98.0	21/2"	0.929	16
PEXF5FIA07540*	75×11/2"	59.6	94.0	11⁄2″	-	-
PEXF5FIA07563*	75×21/2"	59.6	107.0	21/2"	1.089	12

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

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PEX PIPE AND FITTINGS

**FI Thread** 

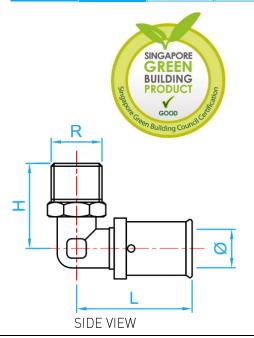
PIPE

### PEX PRESS-FIT FITTINGS (U PROFILE)

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 MI ELBOW





RINSED

MANUAL

DIMENSIONS	DIMENSIONS										
SKU	SIZE (mm x inch)	<b>ø</b> (mm)	R BSPT (inch)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN				
PEXF5MIE01616	16×1/2"	11.8	1/2"	38.5	31.5	0.061	200				
PEXF5MIE01620	16×3/4"	11.8	3/4"	41.0	33.5	0.086	160				
PEXF5MIE01625*	16×1"	11.8	1"	45.0	35.5	-	-				
PEXF5MIE02016	20×1/2"	15.8	1/2"	38.5	33.5	0.074	192				
PEXF5MIE02020	20×3/4"	15.8	3/4"	41.0	35.5	0.096	120				
PEXF5MIE02025*	20×1"	15.8	1"	45.0	37.5	-	-				
PEXF5MIE02516*	25×1/2"	19.8	1/2"	45.0	36.0	0.108	80				
PEXF5MIE02520*	25×3/4"	19.8	3/4"	48.0	37.0	0.126	96				
PEXF5MIE02525	25×1"	19.8	1"	52.0	39.0	0.163	96				
PEXF5MIE03220*	32×3/4"	25.8	3/4"	48.5	42.0	-	-				
PEXF5MIE03225*	32×1"	25.8	1"	52.0	43.0	0.200	64				
PEXF5MIE03232	32×11/4"	25.8	11⁄4″	57.0	46.0	0.299	64				
PEXF5MIE04025	40×1"	31.8	1"	68.0	42.0	0.295	40				
PEXF5MIE04032	40×11/4"	31.8	11/4"	71.0	44.5	0.352	30				
PEXF5MIE05025*	50×1"	40.8	1"	68.0	44.5	-	-				
PEXF5MIE05040	50×11/2"	40.8	11⁄2″	75.0	50.0	0.479	24				
PEXF5MIE05050*	50×2"	40.8	2"	82.0	53.5	-	-				
PEXF5MIE06340*	63×11/2"	50.7	11⁄2″	98.0	55.0	-	-				
PEXF5MIE06350*	63×2"	50.7	2"	105.0	60.0	-	-				

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

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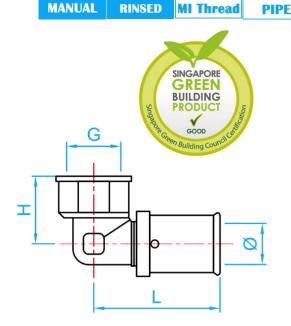
PEX PIPE AND FITTINGS

### PEX PRESS-FIT FITTINGS (U PROFILE)

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 FI ELBOW





SIDE VIEW

DIMENSIONS							
SKU	SIZE (mm x inch)	<b>ø</b> (mm)	G BSP (inch)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF5FIE01616	16×1/2"	11.8	1/2"	41	23	0.067	240
PEXF5FIE01620	16×3/4"	11.8	3/4"	44.0	24.0	0.086	144
PEXF5FIE02016	20×1/2"	15.8	1/2"	41.0	25.0	0.077	176
PEXF5FIE02020	20×3/4"	15.8	3/4"	44.0	26.0	0.099	120
PEXF5FIE02025*	20×1"	15.8	1"	48.0	26.5	-	-
PEXF5FIE02516*	25×1/2"	19.8	1/2"	48.0	26.0	0.109	96
PEXF5FIE02520	25×3/4"	19.8	3/4"	51.0	27.0	0.129	80
PEXF5FIE02525	25×1"	19.8	1"	55.0	28.0	0.158	72
PEXF5FIE03220*	32×3/4"	25.8	3/4"	51.0	29.5	0.164	72
PEXF5FIE03225*	32×1"	25.8	1"	55.0	30.5	0.195	64
PEXF5FIE03232	32×11/4"	25.8	11/4"	60.0	34.0	0.262	78
PEXF5FIE04025	40×1"	31.8	1"	65.5	33.0	0.260	40
PEXF5FIE04032	40×11/4"	31.8	11/4"	72.0	38.0	0.360	25
PEXF5FIE04040	40×11/2"	31.8	11/2"	75.0	38.0	0.412	25
PEXF5FIE05025*	50×1"	40.8	1"	66.5	37.0	0.368	25
PEXF5FIE05040*	50×11/2"	40.8	11/2"	75.0	42.0	0.483	30
PEXF5FIE05050	50×2"	40.8	2"	81.5	48.0	0.625	24
PEXF5FIE06325*	63×1"	50.7	1"	90.0	42.0	-	-
PEXF5FIE06350*	63×2"	50.7	2"	104.5	49.0	-	-

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PEX PIPE AND FITTINGS

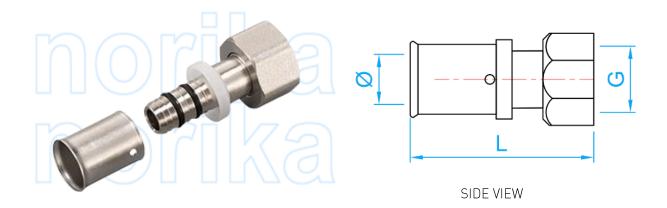
### PEX PRESS-FIT FITTINGS (U PROFILE)

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 DEMOUNTABLE FEMALE STRAIGHT UNION







#### DIMENSIONS

SKU	SIZE (mm x inch)	Ø (mm)	G BSP (inch)	L (mm)	WEIGHT (kg)	PCS/CTN
PEXF5FJC016*	16×1/2"	11.8	1⁄2"	51.0	0.060	384
PEXF5FJC01620*	16×3/4"	15.8	1/2"	52.0	0.077	200
PEXF5FJC02016*	16×1/2"	15.8	1/2"	52.0	0.067	240
PEXF5FJC020*	20×3/4"	15.8	3/4"	52.5	0.089	192
PEXF5FJC02520*	25×3/4"	19.8	3/4"	58.5	0.111	144
PEXF5FJC025*	25×1"	19.8	1"	61.0	0.156	96
PEXF5FJC03225*	32×1"	25.8	1"	61.0	0.172	96
PEXF5FJC032*	32×11/4"	25.8	11/4"	62.5	-	-
PEXF5FJC04032*	40×11/4"	31.8	11/4"	78.0	-	-
PEXF5FJC05040*	50×11/2"	40.8	11⁄2″	83.5	-	-

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

PEX PIPE AND FITTINGS

### PEX PRESS-FIT FITTINGS (U PROFILE)

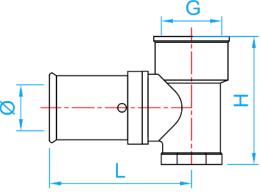
COMPLY WITH BS EN ISO 21003-1:2008 BS EN ISO 21003-3:2008 BS EN ISO 21003-5:2008 BS EN 12165:2016 AS/NZS 4020:2005 SS 375:2015

#### F5 FI WALLPLATE ELBOW



GOOD Building Cou





SIDE VIEW

MANUAL

DIMENSIONS							
SKU	SIZE (mm x inch)	<b>ø</b> (mm)	L (mm)	G BSP (inch)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF5FE016	16×1/2"	11.8	41.5	1/2"	38.5	0.096	112
PEXF5FE01620*	16×3/4"	11.8	44.0	3/4"	43.0	-	-
PEXF5FE02016*	20×1/2"	15.8	41.5	1⁄2"	43.0	0.108	96
PEXF5FE020*	20×3/4"	15.8	44.0	3/4"	44.0	0.135	96
PEXF5FE02520*	25×3/4"	19.8	50.5	3/4"	48.0	0.177	64

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

PEX PIPE AND FITTINGS

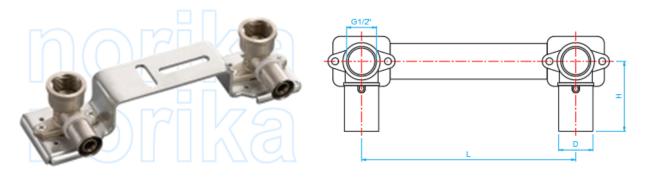
### PEX PRESS-FIT FITTINGS (U PROFILE)

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 ASSEMBLY DOUBLE ELBOW







SIDE VIEW

SKU	SIZE (mm)	D (mm)	L (mm)	H (mm)	WEIGHT (kg)	PCS/CTN
PEXF5FE016S*	16X1/2"	11.8	150	49.5	0.415	20
PEXF5FE02016S*	20X1/2"	15.8	150	51.0	0.450	16

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



### **Built For Water**



#### Main Office

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

#### **North Office**

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