Conectores en T reductores de EP ProPEX de hasta 1.5 in

Project information

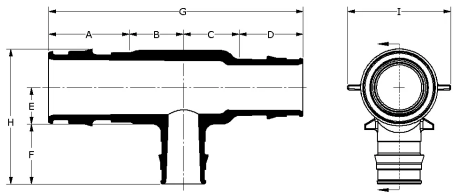
Job name:	Location:
Engineer:	Fecha de envío:
Contractor:	Presentada por:
Manufacturer's representative:	Approved by:

Technical data

Temp/pressure ratings	73 °F (23 °C) at 160 psi (11 bar) 180 °F (82 °C) at 100 psi (6.9 bar) 200 °F (93 °C) at 80 psi (5.5 bar)

Product information and application use

ProPEX® engineered polymer (EP) reducing tees make diverting connections for Uponor crosslinked polyethylene (PEX-a) tubing for use in hot and cold domestic potable water systems, residential fire sprinkler systems and hydronic radiant heating and cooling systems. Each end of the tee is manufactured with an Uponor ProPEX fitting for connections to Uponor AquaPEX® or Wirsbo hePEX™ tubing. Note: Branch size is listed last in the part descriptions.



Related: ProPEX EP reducing tees - 2in and up

Note: Temperature and pressure ratings stated are hydrostatic ratings. For domestic hot-water (DHW) and DHW recirculation installations, operating conditions should not exceed 140°F (60°C) at 80 psi (5.5 bar) in accordance with ASTM F2023. For additional information regarding application-specific temperature and pressure ratings, refer to the Uponor PEX Piping Systems Design and Installation Manual.

	Part name	Part no.	A [inch]	B [inch]	C [inch]	D [inch]	E [inch]	F [inch]	G [inch]	H [inch]	I [inch]	Cv Through
	ProPEX EP Reducing Tee, 1/2" PEX x 1/2" PEX x 3/4" PEX	Q4755575	0.719	0.71	0.71	0.719	0.5	0.955	2.858	1.765	0.87	7.7
	ProPEX EP Reducing Tee, 3/4" PEX x 1/2" PEX x 1/2" PEX	Q4757555	0.955	0.7	0.7	0.719	0.52	0.719	3.074	1.676	1.22	4.6
	ProPEX EP Reducing Tee, 3/4" PEX x 3/4" PEX x 1/2" PEX	Q4757550	0.955	0.69	0.69	0.955	0.54	0.719	3.29	1.696	1.22	14.2
	ProPEX EP Reducing Tee, 3/4" PEX x 3/4" PEX x 5/8" PEX	Q4757563	0.955	0.69	0.69	0.955	0.54	0.876	3.29	1.856	1.18	15.7
	ProPEX EP Reducing Tee, 3/4" PEX x 3/4" PEX x 1" PEX	Q4757710	0.955	0.865	0.865	0.955	0.69	1.191	3.64	1.881	1.18	15.7
	ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 3/4" PEX	Q4751775	1.191	0.775	0.775	0.955	0.65	0.955	3.696	2.195	1.48	12.8
	ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 1" PEX	Q4751751	1.191	0.925	0.925	0.955	0.65	1.191	3.996	2.431	1.48	12.9
	ProPEX EP Reducing Tee, 1" PEX x 1" PEX x 1/2" PEX	Q4751150	1.191	0.7	0.7	1.191	0.65	0.719	3.782	1.959	1.48	32.2
	ProPEX EP Reducing Tee, 1" PEX x 1" PEX x 3/4" PEX	Q4751175	1.191	0.85	0.85	1.191	0.65	0.955	4.082	2.195	1.48	27.8
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1" PEX x 3/4" PEX	Q4751317	1.455	0.925	0.925	1.191	0.75	0.955	4.496	2.386	1.82	21
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1" PEX x 1" PEX	Q4751311	1.455	1.03	1.03	1.191	0.75	1.191	4.706	2.622	1.82	11.7
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1 1/4" PEX x 1/2" PEX	Q4751350	1.455	0.75	0.75	1.455	0.83	0.719	4.41	2.199	1.82	45.2
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1 1/4" PEX x 3/4" PEX	Q4751337	1.455	0.9	0.9	1.455	0.75	0.955	4.71	2.386	1.82	43.4
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1 1/4" PEX x 1" PEX	Q4751331	1.455	1.03	1.03	1.455	0.75	1.191	4.97	2.622	1.82	33
	ProPEX EP Reducing Tee, 1 1/2" PEX x 1" PEX x 3/4" PEX	Q4751517	1.714	1.1	1.1	1.191	0.9	0.955	5.105	2.602	2.07	19.5
✔	ProPEX EP Reducing Tee, 1 1/2" PEX x 1" PEX x 1" PEX	Q4751511	1.714	1.1	1.1	1.191	0.9	1.191	5.105	2.839	2.07	18.9
	ProPEX EP Reducing Tee, 1 1/2" PEX x 1" PEX x 1 1/2" PEX	Q4751505	1.714	1.25	1.25	1.191	0.94	1.714	5.405	3.434	2.07	19
	ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/4" PEX x 3/4" PEX	Q4751537	1.714	0.9	0.9	1.455	0.85	0.955	4.969	2.552	2.07	33.1

© 2026 Uponor North America. All Rights Reserved

	ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/4" PEX x 1" PEX	Q4751531	1.714	1.05	1.05	1.455	0.85	1.191	5.269	2.789	2.07	36.4
	ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/4" PEX x 1 1/4" PEX	Q4751533	1.714	1.15	1.15	1.455	0.85	1.455	5.469	3.052	2.07	45.4
	ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 1/2" PEX	Q4751550	1.714	0.75	0.75	1.714	0.83	0.719	4.928	2.299	2.07	60.5
	ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 3/4" PEX	Q4751557	1.714	0.925	0.925	1.714	0.85	0.955	5.278	2.555	2.07	56
	ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 1" PEX	Q4751551	1.714	1	1	1.714	0.85	1.191	5.428	2.791	2.07	53.8
	ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 1 1/4" PEX	Q4751553	1.714	1.15	1.15	1.714	0.85	1.455	5.728	3.055	2.07	54.3
	ProPEX EP Reducing Tee, 3/4" PEX x 1/2" PEX x 3/4" PEX	Q4757557	0.955	0.7	0.7	0.719	0.52	0.955	3.074	1.913	1.22	5.4
	ProPEX EP Reducing Tee, 1" PEX x 1" PEX x 1 1/4" PEX	Q4751113	1.191	1	1	1.191	0.9	1.455	4.382	2.945	1.82	15
	ProPEX EP Reducing Tee, 1 1/4" PEX x 3/4" PEX x 1" PEX	Q4751371	1.455	1.06	0.9	0.955	0.75	1.191	4.37	2.622	1.82	13.9
	ProPEX EP Reducing Tee, 1 1/4" PEX x 3/4" PEX x 1 1/4" PEX	Q4751373	1.455	1.2	1	0.955	0.75	1.455	4.61	2.886	1.82	18.8
	ProPEX EP Reducing Tee, 1 1/4" PEX x 3/4" PEX x 3/4" PEX	Q4751377	1.455	0.9	0.8	0.955	0.75	0.955	4.11	2.386	1.82	7.3
	ProPEX EP Reducing Tee, 1" PEX x 1/2" PEX x 1" PEX	Q4751501	1.191	1	0.8	0.719	0.65	1.191	3.71	2.431	1.48	12.3
	ProPEX EP Reducing Tee, 1 1/2" PEX x 3/4" PEX x 1 1/2" PEX	Q4751575	1.714	1.3	1	0.955	0.9	1.714	4.969	3.394	2.07	22.9
	ProPEX EP Reducing Tee, 1 1/2" PEX x 3/4" PEX x 3/4" PEX	Q4751577	1.714	0.9	0.8	0.955	0.9	0.955	4.369	2.635	2.07	7.3
	ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 1/2" PEX	Q4751750	1.191	0.75	0.75	0.955	0.65	0.719	3.646	1.959	1.48	3.1
	ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 1 1/4" PEX	Q4751753	1.191	1	1	0.955	0.9	1.455	4.146	2.945	1.82	14.7

	Part name	Part no.	Equivalent length branch [ft]	Equivalent length through [ft]	Material group	Cv Branch	End Type 1	End Type 2	End Type 3	Prop 65 label required?	Weight per UOM [lbs/UOM]
	ProPEX EP Reducing Tee, 1/2" PEX x 1/2" PEX x 3/4" PEX	Q4755575	15.6	1	Engineered Polymer	5.4	ProPEX 1/2"	ProPEX 1/2"	ProPEX 3/4"	-	0.03
	ProPEX EP Reducing Tee, 3/4" PEX x 1/2" PEX x 1/2" PEX	Q4757555	6.4	3.5	Engineered Polymer	3.4	ProPEX 3/4"	ProPEX 1/2"	ProPEX 1/2"	-	0.04
	ProPEX EP Reducing Tee, 3/4" PEX x 3/4" PEX x 1/2" PEX	Q4757550	7.6	2	Engineered Polymer	3.1	ProPEX 3/4"	ProPEX 3/4"	ProPEX 1/2"	-	0.04
	ProPEX EP Reducing Tee, 3/4" PEX x 3/4" PEX x 5/8" PEX	Q4757563	15.6	1.5	Engineered Polymer	5.4	ProPEX 3/4"	ProPEX 3/4"	ProPEX 5/8"	-	0.05
	ProPEX EP Reducing Tee, 3/4" PEX x 3/4" PEX x 1" PEX	Q4757710	5.76	1.5	Engineered Polymer	8.7	ProPEX 3/4"	ProPEX 3/4"	ProPEX 1"	-	0.08
	ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 3/4" PEX	Q4751775	16.7	2.4	Engineered Polymer	5.3	ProPEX 1"	ProPEX 3/4"	ProPEX 3/4"	-	0.08
	ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 1" PEX	Q4751751	15.1	2.4	Engineered Polymer	10.5	ProPEX 1"	ProPEX 3/4"	ProPEX 1"	-	0.08
	ProPEX EP Reducing Tee, 1" PEX x 1" PEX x 1/2" PEX	Q4751150	6.5	1.2	Engineered Polymer	3.4	ProPEX 1"	ProPEX 1"	ProPEX 1/2"	-	0.08
	ProPEX EP Reducing Tee, 1" PEX x 1" PEX x 3/4" PEX	Q4751175	6.4	1.7	Engineered Polymer	8.2	ProPEX 1"	ProPEX 1"	ProPEX 3/4"	-	0.09
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1" PEX x 3/4" PEX	Q4751317	5.2	3.4	Engineered Polymer	9.3	ProPEX 1-1/4"	ProPEX 1"	ProPEX 3/4"	-	0.11
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1" PEX x 1" PEX	Q4751311	23	11	Engineered Polymer	8.4	ProPEX 1-1/4"	ProPEX 1"	ProPEX 1"	-	0.12
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1 1/4" PEX x 1/2" PEX	Q4751350	3.9	1.9	Engineered Polymer	4.1	ProPEX 1-1/4"	ProPEX 1-1/4"	ProPEX 1/2"	-	0.1
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1 1/4" PEX x 3/4" PEX	Q4751337	5.7	2.3	Engineered Polymer	8.9	ProPEX 1-1/4"	ProPEX 1-1/4"	ProPEX 3/4"	-	0.13
	ProPEX EP Reducing Tee, 1 1/4" PEX x 1 1/4" PEX x 1" PEX	Q4751331	6.3	4.2	Engineered Polymer	15.8	ProPEX 1-1/4"	ProPEX 1-1/4"	ProPEX 1"	No	0.14
	ProPEX EP Reducing Tee, 1 1/2" PEX x 1" PEX x 3/4" PEX	Q4751517	5.1	4	Engineered Polymer	9.3	ProPEX 1-1/2"	ProPEX 1"	ProPEX 3/4"	-	0.17
✔	ProPEX EP Reducing Tee, 1 1/2" PEX x 1" PEX x 1" PEX	Q4751511	6.5	4.3	Engineered Polymer	15.6	ProPEX 1-1/2"	ProPEX 1"	ProPEX 1"	-	0.18

© 2026 Uponor North America. All Rights Reserved

ProPEX EP Reducing Tee, 1 1/2" PEX x 1" PEX x 1 1/2" PEX	Q4751505	14.9	4.2	Engineered Polymer	26.5	ProPEX 1-1/2"	ProPEX 1"	ProPEX 1-1/2"	-	0.2
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/4" PEX x 3/4" PEX	Q4751537	11.3	4.2	Engineered Polymer	6.3	ProPEX 1-1/2"	ProPEX 1-1/4"	ProPEX 3/4"	No	0.18
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/4" PEX x 1" PEX	Q4751531	13.1	3.1	Engineered Polymer	11.2	ProPEX 1-1/2"	ProPEX 1-1/4"	ProPEX 1"	No	0.19
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/4" PEX x 1 1/4" PEX	Q4751533	17.7	2	Engineered Polymer	17	ProPEX 1-1/2"	ProPEX 1-1/4"	ProPEX 1-1/4"	No	0.21
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 1/2" PEX	Q4751550	6.3	2.4	Engineered Polymer	3.4	ProPEX 1-1/2"	ProPEX 1-1/2"	ProPEX 1/2"	-	0.14
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 3/4" PEX	Q4751557	5.4	2.9	Engineered Polymer	9	ProPEX 1-1/2"	ProPEX 1-1/2"	ProPEX 3/4"	-	0.2
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 1" PEX	Q4751551	6.9	3.1	Engineered Polymer	15.3	ProPEX 1-1/2"	ProPEX 1-1/2"	ProPEX 1"	No	0.21
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 1 1/4" PEX	Q4751553	4.1	3.2	Engineered Polymer	33.7	ProPEX 1-1/2"	ProPEX 1-1/2"	ProPEX 1-1/4"	-	0.22
ProPEX EP Reducing Tee, 3/4" PEX x 1/2" PEX x 3/4" PEX	Q4757557	16.1	2.3	Engineered Polymer	5.4	ProPEX 3/4"	ProPEX 1/2"	ProPEX 3/4"	-	0.04
ProPEX EP Reducing Tee, 1" PEX x 1" PEX x 1 1/4" PEX	Q4751113	6.5	1.2	Engineered Polymer	28	ProPEX 1"	ProPEX 1"	ProPEX 1-1/4"	-	0.13
ProPEX EP Reducing Tee, 1 1/4" PEX x 3/4" PEX x 1" PEX	Q4751371	11.91	-	-	12.1	ProPEX 1-1/4"	ProPEX 3/4"	ProPEX 1"	-	0.11
ProPEX EP Reducing Tee, 1 1/4" PEX x 3/4" PEX x 1 1/4" PEX	Q4751373	7.41	-	-	12	ProPEX 1-1/4"	ProPEX 3/4"	ProPEX 1-1/4"	-	0.13
ProPEX EP Reducing Tee, 1 1/4" PEX x 3/4" PEX x 3/4" PEX	Q4751377	9.7	-	-	12	ProPEX 1-1/4"	ProPEX 3/4"	ProPEX 3/4"	-	0.09
ProPEX EP Reducing Tee, 1" PEX x 1/2" PEX x 1" PEX	Q4751501	14.9	4.2	Engineered Polymer	5.7	ProPEX 1"	ProPEX 1/2"	ProPEX 1"	-	0.09
ProPEX EP Reducing Tee, 1 1/2" PEX x 3/4" PEX x 1 1/2" PEX	Q4751575	7.41	-	-	12	ProPEX 1-1/2"	ProPEX 3/4"	ProPEX 1-1/2"	-	0.19
ProPEX EP Reducing Tee, 1 1/2" PEX x 3/4" PEX x 3/4" PEX	Q4751577	6.69	-	-	11.7	ProPEX 1-1/2"	ProPEX 3/4"	ProPEX 3/4"	-	0.13
ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 1/2" PEX	Q4751750	15.1	2.4	Engineered Polymer	13.2	ProPEX 1"	ProPEX 3/4"	ProPEX 1/2"	-	0.07
ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 1 1/4" PEX	Q4751753	16.7	2.4	Engineered Polymer	12	ProPEX 1"	ProPEX 3/4"	ProPEX 1-1/4"	-	0.12

Part name	Part no.	Codes	Standards	Listings
Conectores en T reductores de EP ProPEX de hasta 1.5 in	All	IMC|UPC|IBC|IRC|IPC|NPC of Canada|UMC	ASTM F1960|ASTM E119/UL 263|ASTM E84|ASTM E814/ULC S115|ASTM F877|CSA B137.5|ULC S102.2|NSF/ANSI/CAN 61|ULC S101|NSF/ANSI 14	IAPMO-ES|ICC-ES-PMG|UL|U.P.Code|cQAIus P321|HUD MR 1269
In addition, the following parts have additional codes, standards, or listings:				
ProPEX EP Reducing Tee, 1/2" PEX x 1/2" PEX x 3/4" PEX	Q4755575	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 3/4" PEX x 1/2" PEX x 1/2" PEX	Q4757555	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 3/4" PEX x 3/4" PEX x 1/2" PEX	Q4757550	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 3/4" PEX x 3/4" PEX x 5/8" PEX	Q4757563	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 3/4" PEX x 3/4" PEX x 1" PEX	Q4757710	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 3/4" PEX	Q4751775			cNSFus-pw-fs
ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 1" PEX	Q4751751			cNSFus-pw-fs
ProPEX EP Reducing Tee, 1" PEX x 1" PEX x 1/2" PEX	Q4751150	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1" PEX x 1" PEX x 3/4" PEX	Q4751175	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1 1/4" PEX x 1" PEX x 3/4" PEX	Q4751317	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1 1/4" PEX x 1" PEX x 1" PEX	Q4751311	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1 1/4" PEX x 1 1/4" PEX x 1/2" PEX	Q4751350	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1 1/4" PEX	Q4751337	NSPC	UL 1821	cNSFus-pw-fs

© 2026 Uponor North America. All Rights Reserved

x 1 1/4" PEX x 3/4" PEX				
ProPEX EP Reducing Tee, 1 1/4" PEX x 1 1/4" PEX x 1" PEX	Q4751331	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1 1/2" PEX x 1" PEX x 3/4" PEX	Q4751517	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 1" PEX x 1" PEX	Q4751511	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 1" PEX x 1 1/2" PEX	Q4751505	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/4" PEX x 3/4" PEX	Q4751537	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/4" PEX x 1" PEX	Q4751531	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/4" PEX x 1 1/4" PEX	Q4751533	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 1/2" PEX	Q4751550	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 3/4" PEX	Q4751557	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 1" PEX	Q4751551	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 1 1/2" PEX x 1 1/4" PEX	Q4751553	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 3/4" PEX x 1/2" PEX x 3/4" PEX	Q4757557	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1" PEX x 1" PEX x 1 1/4" PEX	Q4751113	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1 1/4" PEX x 3/4" PEX x 1" PEX	Q4751371	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1 1/4" PEX x 3/4" PEX x 1 1/4" PEX	Q4751373	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1 1/4" PEX x 3/4" PEX x 3/4" PEX	Q4751377	NSPC	UL 1821	cNSFus-pw-fs
ProPEX EP Reducing Tee, 1" PEX x 1/2" PEX x 1" PEX	Q4751501	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 3/4" PEX x 1 1/2" PEX	Q4751575		UL 1821	cNSFus-pw
ProPEX EP Reducing Tee, 1 1/2" PEX x 3/4" PEX x 3/4" PEX	Q4751577		UL 1821	cNSFus-pw
ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 1/2" PEX	Q4751750	NSPC		cNSFus-pw
ProPEX EP Reducing Tee, 1" PEX x 3/4" PEX x 1 1/4" PEX	Q4751753	NSPC		cNSFus-pw

Installation

Use the appropriate ProPEX ring for PEX-a tubing. Refer to the Uponor Piping Pocket Guide, AquaSAFE™ Residential Fire Sprinkler Installation Guide or Uponor Radiant Installation Handbook for additional information.

Related applications

PEX-a Plumbing Systems

Hydronic Radiant Heating and Cooling Systems

Turf Conditioning Systems

Permafrost Prevention Systems

Footnotes

-

Contact information

Uponor Inc.
5925 148th Street West
Apple Valley, MN 55124
T 800.321.4739
F 952.891.2008

Uponor Ltd.
6510 Kennedy Road
Mississauga, ON L5T 2X4
T 888.594.7726
F 800.638.9517

© 2026 Uponor North America. All Rights Reserved