



Catalog
effective 07/15/09

R-flexTM

insulated piping systems



Insulated supply and return piping for:

- Hydronic heating
- Hydronic snow melting
- District heating
- Commercial and process piping
- Geothermal
- Agricultural piping
- Biomass heat sources
- Wood-fired boilers
- Solar
- Cooling towers & chilled water systems



A solid proven system.

R-flex is a pre-insulated, flexible, energy-saving PEX piping system with a durable, waterproof outer cover. It consists of a long-lasting PEX carrier pipe or pipes surrounded by thick insulation layers, all contained in a unique double-wall outer casing for maximum protection. The flexibility and light weight of R-flex make it far easier to install than rigid piping systems.

Superior protection.

Surrounding the inner PEX carrier pipe are several layers of cross-linked polyethylene foam with a closed cellular structure. This unique design provides R-flex with a low water vapor absorption, enhanced R-value insulation, and an excellent resistance to extreme temperatures.

Most importantly, R-flex is able to maintain these insulation properties over time. Other insulation types, such as polyurethane (PUR) foam, can crush when the pipe is bent, causing them to lose their insulative properties.

Barrier PEX offers several advantages.

- high resistance to corrosion and pressure at high temperatures
- exceptionally high abrasion resistance
- superb chemical resistance
- proven product with excellent longevity at high temperatures

Flexible, fast, and easy.

R-flex derives a unique benefit from the use of the polyethylene foam insulation and the double-wall outer shell; increased flexibility. This feature provides an advantage when running R-flex between buildings, around trench corners, or through wall penetrations.

The art of simplicity.

Traditional carrier pipes, such as copper or black iron, require installers to cut and install transition fittings to work around an obstacle. With R-flex, installers no longer have to cut pipe and add connecting points. R-flex bends around the obstacle.

Design it with RadiantWorks Professional®

RadiantWorks Professional allows designers to properly determine the amount of R-flex required for a project and an estimated amount of transitional heat loss.

Design it once. Design it right. Design with RadiantWorks Professional!

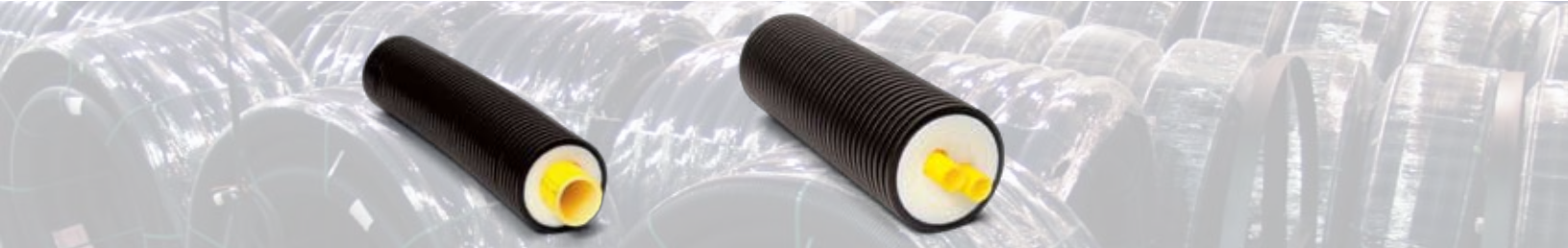


R-flex Single & Dual Coils

R-flex is a flexible pre-insulated PEX with a corrugated, double-wall HDPE cover suitable for direct burial. R-flex is manufactured in accordance with DIN 16892/16893, with a DIN 4726 oxygen barrier.

R-flex ratings: 200 Deg F at 80 psi; 180 Deg F at 100 psi; 73 Deg F at 160 psi

For coil sizes and weights, please see the "specifications chart" on page 10.



R-flex Single 328' Coils – Pre-insulated single oxygen barrier PEX with corrugated, double-wall HDPE cover.

DESCRIPTION	QTY.	MODEL#	ORDER#	WT.LBS.
R-flex Single, 40mm (~ 1.5") x 160mm OD Jacket	1	RFS-40X160-328	81012929	517
R-flex Single, 50mm (~ 2") x 160mm OD Jacket	1	RFS-50X160-328	81012886	552
R-flex Single, 63mm (~ 2.5") x 160mm OD Jacket	1	RFS-63X160-328	81012887	618
R-flex Single, 75mm (~ 3") x 200mm OD Jacket	1	RFS-75X200-328	81012889	922
R-flex Single, 90mm (~ 3.5") x 200mm OD Jacket	1	RFS-90X200-328	81012890	1048
R-flex Single, 110mm (~ 4") x 200mm OD Jacket	1	RFS-110X200-328	81012891	1250

R-flex Single – Custom lengths

DESCRIPTION	QTY.	MODEL#	ORDER#	WT.LBS.
R-flex Single, 40mm (~ 1.5") x 160mm OD Jacket		RFS-40X160-1	81012951	1.56/ft.
R-flex Single, 50mm (~ 2") x 160mm OD Jacket		RFS-50X160-1	81012952	1.67/ft.
R-flex Single, 63mm (~ 2.5") x 160mm OD Jacket		RFS-63X160-1	81012953	1.87/ft.
R-flex Single, 75mm (~ 3") x 200mm OD Jacket		RFS-75X200-1	81012954	2.8/ft.
R-flex Single, 90mm (~ 3.5") x 200mm OD Jacket		RFS-90X200-1	81012955	3.18/ft.
R-flex Single, 110mm (~ 4") x 200mm OD Jacket		RFS-110X200-1	81012956	3.79/ft.

*** A cut charge will be incurred with custom cut lengths. For cuts in 25 foot increments, the charge is \$75.00 (i.e. 25', 75', 150'). For any other length increment, the charge is \$150.00 (i.e. 80', 105', 170').**

R-flex Dual 328' Coils – Pre-insulated dual oxygen barrier PEX with corrugated, double-wall HDPE cover.

DESCRIPTION	QTY.	MODEL#	ORDER#	WT.LBS.
R-flex Dual, 1" x 125mm OD Jacket	1	RFD-1X125-328	81012879	363
R-flex Dual, 32mm (~ 1.25") x 125mm OD Jacket	1	RFD-32X125-328	81012880	407
R-flex Dual, 40mm (~ 1.5") x 160mm OD Jacket	1	RFD-40X160-328	81012882	585
R-flex Dual, 50mm (~ 2") x 200mm OD Jacket	1	RFD-50X200-328	81012884	894
R-flex Dual, 63mm (~ 2.5") x 200mm OD Jacket	1	RFD-63X200-328	81012885	1028

R-flex Dual – Custom lengths

DESCRIPTION	QTY.	MODEL#	ORDER#	WT.LBS.
R-flex Dual, 1" x 125mm OD Jacket		RFD-1X125-1	81012957	1.09/ft.
R-flex Dual, 32mm (~ 1.25") x 125mm OD Jacket		RFD-32X125-1	81012958	1.23/ft.
R-flex Dual, 40mm (~ 1.5") x 160mm OD Jacket		RFD-40X160-1	81012959	1.77/ft.
R-flex Dual, 50mm (~ 2") x 200mm OD Jacket		RFD-50X200-1	81012960	2.71/ft.
R-flex Dual, 63mm (~ 2.5") x 200mm OD Jacket		RFD-63X200-1	81012961	3.12/ft.

*** A cut charge will be incurred with custom cut lengths. For cuts in 25 foot increments, the charge is \$75.00 (i.e. 25', 75', 150'). For any other length increment, the charge is \$150.00 (i.e. 80', 105', 170').**

R-flex Dust Caps & Shrink Caps

Single Pipe Dust Caps – Non-waterproof - for interior terminations.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Single Pipe Dust Cap, 40mmx1, 160mm OD	1	RFDC-40X1X160	81012967	0.5
R-flex Single Pipe Dust Cap, 50mmx1, 160mm OD	1	RFDC-50X1X160	81012934	0.5
R-flex Single Pipe Dust Cap, 63mmx1, 160mm OD	1	RFDC-63X1X160	81012935	0.5
R-flex Single Pipe Dust Cap, 75mmx1, 200mm OD	1	RFDC-75X1X200	81012936	0.5
R-flex Single Pipe Dust Cap, 90mmx1, 200mm OD	1	RFDC-90X1X200	81012937	0.5
R-flex Single Pipe Dust Cap, 110mmx1, 200mm OD	1	RFDC-110X1X200	81012938	0.5

Dual Pipe Dust Caps – Non-waterproof - for interior terminations.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Dual Pipe Dust Cap, 1" x 2, 125mm OD	1	RFDC-1X2X125	81012939	0.5
R-flex Dual Pipe Dust Cap, 32mm x 2, 125mm OD	1	RFDC-32X2X125	81012940	0.5
R-flex Dual Pipe Dust Cap, 40mm x 2, 160mm OD	1	RFDC-40X2X160	81012941	0.5
R-flex Dual Pipe Dust Cap, 50mm x 2, 200mm OD	1	RFDC-50X2X200	81012942	0.5
R-flex Dual Pipe Dust Cap, 63mm x 2, 200mm OD	1	RFDC-63X2X200	81012943	0.5

Single Pipe Shrink Caps – Waterproof - required for all direct burial connections in protective casings or inspection chamber.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Single Pipe Shrink Cap, 40-50mm x 1, 160mm OD	1	RFSC-40-50X1X160	81012664	0.5
R-flex Single Pipe Shrink Cap, 63mm x 1, 160mm OD	1	RFSC-63X1X160	81012540	0.5
R-flex Single Pipe Shrink Cap, 75-110mm x 1, 200mm OD	1	RFSC-75-110X1X200	81012541	0.5

Dual Pipe Shrink Caps – Waterproof - required for all direct burial connections in protective casings or inspection chamber.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Dual Pipe Shrink Cap, 1" x 2 x 125mm OD	1	RFSC-1X2X125	81012542	0.5
R-flex Dual Pipe Shrink Cap, 32mm x 2 x 125mm OD	1	RFSC-32X2X125	81012543	0.5
R-flex Dual Pipe Shrink Cap, 40mm x 2 x 160mm OD	1	RFSC-40X2X160	81012544	0.5
R-flex Dual Pipe Shrink Cap, 50mm x 2 x 200mm OD	1	RFSC-50X2X200	81012545	0.5
R-flex Dual Pipe Shrink Cap, 63mm x 2 x 200mm OD	1	RFSC-63X2X200	81012546	0.5

Compression Adapters – PEX x MNPT, brass – for connecting R-flex to metal fittings. Included steel plate and bolt make it easy to slide collar over PEX.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex, Adapter, Comp, 1" x 1" MNPT	1	RFA-1X100MPT	81012552	1.0
R-flex, Adapter, Comp, 32mm x 1" MNPT	1	RFA-32X100MPT	81012553	1.0
R-flex, Adapter, Comp, 40mm x 1-1/4" MNPT	1	RFA-40X125MPT	81012554	1.5
R-flex, Adapter, Comp, 50mm x 1-1/2" MNPT	1	RFA-50X150MPT	81012665	2.5
R-flex, Adapter, Comp, 63mm x 2" MNPT	1	RFA-63X200MPT	81012556	3.5
R-flex, Adapter, Comp, 75mm x 2-1/2" MNPT	1	RFA-75X250MPT	81012589	4.0
R-flex, Adapter, Comp, 90mm x 3" MNPT	1	RFA-90X300MPT	81012558	7.5
R-flex, Adapter, Comp, 110mm x 4" MNPT	1	RFA-110X400MPT	81012590	10.0

R-flex Connections

Compression Couplings – PEX x PEX, brass – for joining R-flex coils together.



DESCRIPTION	QTY.	MODELNO.	ORDERNO.	WT.LBS.
R-flex, Coupling, Comp, 1" x 1"	1	RFC-1X100	81012837	2.0
R-flex, Coupling, Comp, 32mm x 32mm	1	RFC-32X32	81012838	2.5
R-flex, Coupling, Comp, 40mm x 40mm	1	RFC-40X40	81012839	3.5
R-flex, Coupling, Comp, 50mm x 50mm	1	RFC-50X50	81012840	5.0
R-flex, Coupling, Comp, 63mm x 63mm	1	RFC-63X63	81012841	8.0
R-flex, Coupling, Comp, 75mm x 75mm	1	RFC-75X75	81012842	10.5
R-flex, Coupling, Comp, 90mm x 90mm	1	RFC-90X90	81012843	17.0
R-flex, Coupling, Comp, 110mm x 110mm	1	RFC-110X110	81012844	24.0

Compression Elbows – PEX x PEX, brass



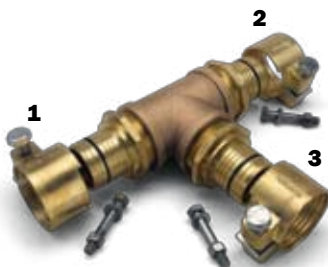
DESCRIPTION	QTY.	MODELNO.	ORDERNO.	WT.LBS.
R-flex, Elbow, Comp, 1" x 1"	1	RFE-1X100	81012845	2.0
R-flex, Elbow, Comp, 32mm x 32mm	1	RFE-32X32	81012846	2.5
R-flex, Elbow, Comp, 40mm x 40mm	1	RFE-40X40	81012847	4.0
R-flex, Elbow, Comp, 50mm x 50mm	1	RFE-50X50	81012848	5.5
R-flex, Elbow, Comp, 63mm x 63mm	1	RFE-63X63	81012849	8.5
R-flex, Elbow, Comp, 75mm x 75mm	1	RFE-75X75	81012850	11.0
R-flex, Elbow, Comp, 90mm x 90mm	1	RFE-90X90	81012851	18.5
R-flex, Elbow, Comp, 110mm x 110mm	1	RFE-110X110	81012852	27.0

Compression Tees, Equal – PEX x PEX x PEX, brass



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex, Tee, Comp, 1" x 1" x 1"	1	RFT-1X1X1	81012853	3.0
R-flex, Tee, Comp, 32 x 32 x 32	1	RFT-32X32X32	81012854	3.0
R-flex, Tee, Comp, 40 x 40 x 40	1	RFT-40X40X40	81012855	5.5
R-flex, Tee, Comp, 50 x 50 x 50	1	RFT-50X50X50	81012856	7.5
R-flex, Tee, Comp, 63 x 63 x 63	1	RFT-63X63X63	81012857	12.0
R-flex, Tee, Comp, 75 x 75 x 75	1	RFT-75X75X75	81012858	16.0
R-flex, Tee, Comp, 90 x 90 x 90	1	RFT-90X90X90	81012859	26.0
R-flex, Tee, Comp, 110 x 110 x 110	1	RFT-110X110X110	81012860	37.0

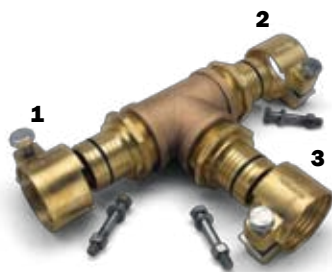
Compression Tees, Unequal – (1)Run x (2)Run x (3)Branch = PEX x PEX x PEX, brass



DESCRIPTION	(1 - 2 - 3)	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex, Tee, Comp, 40 x 40 x 32		1	RFT-40X40X32	81012861	5.0
R-flex, Tee, Comp, 40 x 32 x 40		1	RFT-40X32X40	81012862	5.0
R-flex, Tee, Comp, 40 x 32 x 32		1	RFT-40X32X32	81012863	5.0
R-flex, Tee, Comp, 50 x 50 x 40		1	RFT-50X50X40	81012864	6.5
R-flex, Tee, Comp, 50 x 40 x 50		1	RFT-50X40X50	81012865	6.5
R-flex, Tee, Comp, 50 x 40 x 40		1	RFT-50X40X40	81012866	6.5
R-flex, Tee, Comp, 63 x 63 x 50		1	RFT-63X63X50	81012867	11.0
R-flex, Tee, Comp, 63 x 50 x 63		1	RFT-63X50X63	81012868	11.0
R-flex, Tee, Comp, 63 x 50 x 50		1	RFT-63X50X50	81012869	11.0
R-flex, Tee, Comp, 75 x 75 x 63		1	RFT-75X75X63	81012870	16.0
R-flex, Tee, Comp, 75 x 63 x 75		1	RFT-75X63X75	81012871	16.0

R-flex Connections

Compression Tees, Unequal (continued) – (1)Run x (2)Run x (3)Branch = PEX x PEX x PEX, brass



DESCRIPTION	(1 - 2 - 3)	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex, Tee, Comp, 75 x 63 x 63		1	RFT-75X63X63	81012872	16.0
R-flex, Tee, Comp, 90 x 90 x 75		1	RFT-90X90X75	81012873	23.0
R-flex, Tee, Comp, 90 x 75 x 90		1	RFT-90X75X90	81012874	23.0
R-flex, Tee, Comp, 90 x 75 x 75		1	RFT-90X75X75	81012875	23.0
R-flex, Tee, Comp, 110 x 110 x 90		1	RFT-110X110X90	81012876	35.0
R-flex, Tee, Comp, 110 x 90 x 110		1	RFT-110X90X110	81012877	35.0
R-flex, Tee, Comp, 110 x 90 x 90		1	RFT-110X90X90	81012878	35.0

Threaded Brass Coupling (without R-flex Adapters)



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
Coupling, Brass, FPT, 1" x 1"	1	RC-100FPTX100FPT	81012902	1.0
Coupling, Brass, FPT, 1-1/4" x 1-1/4"	1	RC-125FPTX125FPT	81012903	1.0
Coupling, Brass, FPT, 1-1/2" x 1-1/2"	1	RC-150FPTX150FPT	81012904	1.0
Coupling, Brass, FPT, 2" x 2"	1	RC-200FPTX200FPT	81012905	1.5
Coupling, Brass, FPT, 2-1/2" x 2-1/2"	1	RC-250FPTX250FPT	81012906	3.0
Coupling, Brass, FPT, 3" x 3"	1	RC-300FPTX300FPT	81012907	4.0
Coupling, Brass, FPT, 4" x 4"	1	RC-400FPTX400FPT	81012908	5.5

Threaded Brass Elbows (without R-flex Adapters)



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
Elbow, Brass, FPT, 1" x 1"	1	RE-100PTFX100FPT	81012909	1.0
Elbow, Brass, FPT, 1-1/4" x 1-1/4"	1	RE-125FPTX125FPT	81012910	1.0
Elbow, Brass, FPT, 1-1/2" x 1-1/2"	1	RE-150FPTX150FPT	81012911	1.5
Elbow, Brass, FPT, 2" x 2"	1	RE-200FPTX200FPT	81012912	2.0
Elbow, Brass, FPT, 2-1/2" x 2-1/2"	1	RE-250FPTX250FPT	81012913	3.5
Elbow, Brass, FPT, 3" x 3"	1	RE-300FPTX300FPT	81012914	5.5
Elbow, Brass, FPT, 4" x 4"	1	RE-400FPTX400FPT	81012915	9.0

Threaded Brass Tees (without R-flex Adapters)



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
Tee, Brass, FPT, 1" x 1" x 1"	1	RT-100FPTX100FPTX100FPT	81012916	1.0
Tee, Brass, FPT, 1-1/4" x 1-1/4" x 1-1/4"	1	RT-125FPTX125FPTX125FPT	81012917	1.5
Tee, Brass, FPT, 1-1/2" x 1-1/2" x 1-1/2"	1	RT-150FPTX150FPTX150FPT	81012918	2.0
Tee, Brass, FPT, 2" x 2" x 2"	1	RT-200FPTX200FPTX200FPT	81012919	3.0
Tee, Brass, FPT, 2-1/2" x 2-1/2" x 2-1/2"	1	RT-250FPTX250FPTX250FPT	81012920	5.0
Tee, Brass, FPT, 3" x 3" x 3"	1	RT-300FPTX300FPTX300FPT	81012921	7.5
Tee, Brass, FPT, 4" x 4" x 4"	1	RT-400FPTX400FPTX400FPT	81012922	10.5

R-flex Bushings & Casings

Threaded Brass Bushings (without R-flex Adapters) – Use with Threaded Brass Tees to connect different R-flex run sizes.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
Bushing, Brass, 1-1/4"MPT x 1" FPT	1	RB-125MPTX100FPT	81012923	0.5
Bushing, Brass, 1-1/2"MPT x 1-1/4" FPT	1	RB-150MPTX125FPT	81012924	0.5
Bushing, Brass, 1-1/2"MPT x 1" FPT	1	RB-150MPTX100FPT	81012962	0.5
Bushing, Brass, 2"MPT x 1-1/2" FPT	1	RB-200MPTX150FPT	81012925	1.0
Bushing, Brass, 2"MPT x 1" FPT	1	RB-200MPTX100FPT	81012963	1.0
Bushing, Brass, 2-1/2"MPT x 2" FPT	1	RB-250MPTX200FPT	81012926	1.0
Bushing, Brass, 2-1/2"MPT x 1-1/2" FPT	1	RB-250MPTX150FPT	81012964	1.5
Bushing, Brass, 3"MPT x 2-1/2" FPT	1	RB-300MPTX250FPT	81012927	2.0
Bushing, Brass, 3"MPT x 2" FPT	1	RB-300MPTX200FPT	81012965	2.0
Bushing, Brass, 4"MPT x 3" FPT	1	RB-400MPTX300FPT	81012928	3.5
Bushing, Brass, 4"MPT x 2-1/2" FPT	1	RB-400MPTX250FPT	81012966	3.0

Protective Sleeve Casing for R-flex – For waterproof sealing and insulating of straight connections. Includes 2 HDPE halves, insulation, sealer kit, and bolts. Must add shrink caps to seal ends of R-flex.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Casing, Straight Sleeve, 125-200mm pipes	1	RFCS-125200	81012549	13.0

Protective Y Casing for R-flex – For waterproof sealing and insulating of dual to single connections. Includes 2 HDPE halves, insulation, sealer kit, and bolts. Must add shrink caps to seal ends of R-flex.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Casing, Y, 125-200mm pipes	1	RFY-125200	81012547	19.0

Protective Elbow Casing for R-flex – For waterproof sealing and insulating of elbow connections. Includes 2 HDPE halves, insulation, sealer kit, and bolts. Must add shrink caps to seal ends of R-flex.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Casing, Elbow, 125-200mm pipes	1	RFCE-125200	81012548	21.0

Protective Tee Casing for R-flex – For waterproof sealing and insulating of tee connections. Includes 2 HDPE halves, insulation, sealer kit, and bolts. Must add shrink caps to seal ends of R-flex.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Casing, Tee, 125-200mm pipes	1	RFCT-125200	81012550	26.0

R-flex Accessories

Protective Inspection Chamber for R-flex – Allows access to connections and/or valves. Includes HDPE chamber with 6 connection points, inspection lid, sealer kit and screws. Must add shrink caps to seal ends of R-flex, and jacket repair sleeves for sealing the R-flex to the chamber.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Inspect Chamber, 125-200mm pipes	1	RFIC-125200	81012551	75.0

R-flex Jacket Repair Tape – To repair accidental damage to R-flex outer cover. Wrap the tape over damaged area and heat with heat gun.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Heat Shrink Repair Tape, 3/4" x 33'	1	RFRT-075X33	81012591	7.0

R-flex Jacket Repair Sleeve – To repair accidental damage to R-flex outer cover. Slide the sleeve over damaged area and heat with heat gun.



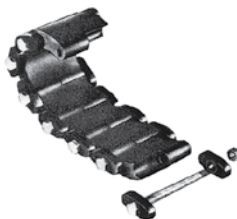
DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Shrink Repair Sleeve, 125mm	1	RFRS-125	81012592	1.0
R-flex Shrink Repair Sleeve, 160mm	1	RFRS-160	81012593	1.0
R-flex Shrink Repair Sleeve, 200mm	1	RFRS-200	81012594	1.0

R-flex Caution Tape – Place in backfill along entire length of R-flex.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Caution Tape	1	RFCT	81012947	1.0

R-flex Link Belt – Used when boring a hole in an existing wall. Seals wall penetrations between R-flex outer cover and wall.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Link Belt, 125mm outer casing	1	RFLB-125	81012948	1.5
R-flex Link Belt, 160mm outer casing	1	RFLB-160	81012949	5.0
R-flex Link Belt, 200mm outer casing	1	RFLB-200	81012950	6.0

R-flex Wall Sleeve & Link Belt Kit – Used when wall is to be poured in place. Seals wall penetrations between R-flex outer cover and wall.



DESCRIPTION	QTY.	MODEL NO.	ORDER NO.	WT.LBS.
R-flex Wall Sleeve and Belt Kit, 125mm outer casing	1	RFLBKit-125	81012931	12.0
R-flex Wall Sleeve and Belt Kit, 160mm outer casing	1	RFLBKit-160	81012932	10.0
R-flex Wall Sleeve and Belt Kit, 200mm outer casing	1	RFLBKit-200	81012933	13.0

Determining size and amount of R-flex to order

R-flex U.S. equivalents

	Metric	25 mm	32 mm	40 mm	50 mm	63 mm	75 mm	90 mm	110 mm
	US Equivalent	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"
Single	160 mm			81012929	81012886	81012887			
	200 mm						81012889	81012890	81012891
Dual	125 mm	81012879	81012880						
	160 mm			81012882					
	200 mm				81012884	81012885			
Approx. Max. Flow, gpm		12	17	25	40	70	90	140	200

Required calculation steps:

- Select the right pipe diameter:
 - Calculate the heat transfer.
 - Select the (carrier) pipe dimension for which the flow velocity does not exceed 7 ft/sec.
 - Choose either Single or Dual pipe system.
- Determine the total physical pipe length:
 - Split the pipe length into straight and angled segments.
 - Calculate the equivalent length of the angled segments (as a function of the tightest suitable bends achievable with the specific pipe dimension.
 - After the length of all segments have been determined, simply add them all together and add 5%.

Rule of Thumb

To accommodate for the thermal expansion forces and minimize the forces on the fittings:

- A 5% add-on on the total length is required
- To be distributed over the total length (serpentine)

Bending angle into equivalent length:

$$L = a/180 \times \pi \times (R + d/2)$$

a = the angle of the bend from its center

R = bending radius based on the inside radius

d = outer diameter HDPE-outer jacket

Example 45° turn:

$$L = 45/180 \times 3.14 \times (12 + 8/2)$$

$$L = 12.5 \text{ inches}$$

$$L = 1.05 \text{ ft}$$

Example 90° turn:

$$L = 90/180 \times 3.14 \times (12 + 8/2)$$

$$L = 25.13 \text{ inches}$$

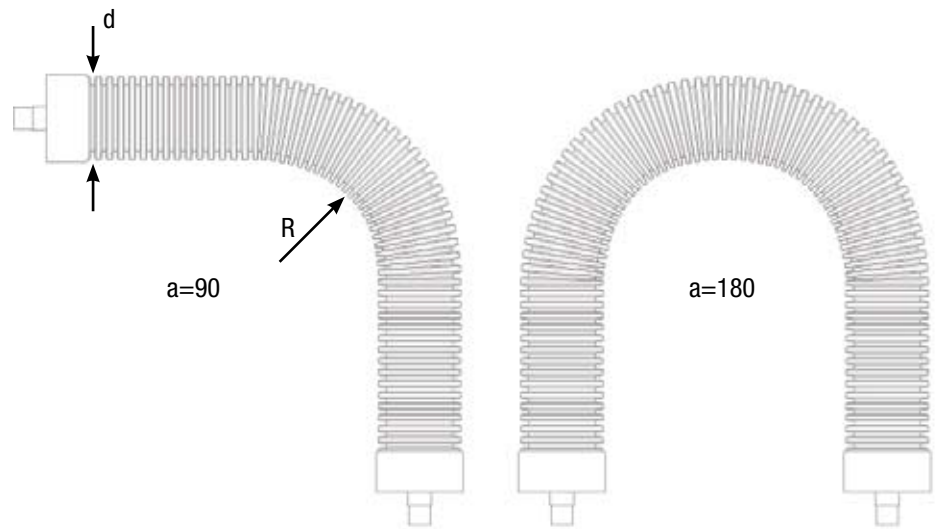
$$L = 2.09 \text{ ft}$$

Example 180° turn:

$$L = 180/180 \times 3.14 \times (12 + 8/2)$$

$$L = 50.27 \text{ inches}$$

$$L = 4.19 \text{ ft}$$



continued on next page

R-flex Bend Radius Equivalency Chart

	Description	Jacket OD	Bend Radius	(length needed for) 45° Bend	(length needed for) 90° Bend
Single	160/40	160 mm (6.3 in)	350 mm (13.8 in)	305 mm (1.00 ft.)	610 mm (2.00 ft)
	160/50		450 mm (17.8 in)	433 mm (1.42 ft.)	866 mm (2.84 ft)
	160/63		550 mm (21.7 in)		
	200/75	200 mm (7.9 in)	800 mm (31.5 in)	485 mm (1.59 ft.)	969 mm (3.18 ft)
	200/90		1100 mm (43.4 in)	491 mm (1.61 ft.)	981 mm (3.22 ft)
	200/110		1200 mm (47.3 in)	539 mm (1.77 ft.)	1079 mm (3.54 ft)
Dual	125/2x1"	4.9 in (125 mm)	11.8" (300 mm)	0.85 ft (259 mm)	1.7 ft (518 mm)
	125/2x32	125 mm (4.9 in)	300 mm (11.8 in)	259 mm (0.85 ft.)	518 mm (1.7 ft)
	160/2x40	160 mm (6.3 in)	600 mm (23.7 in)	512 mm (1.66 ft.)	1024 mm (3.36 ft)
	200/2x50	200 mm (7.9 in)	800 mm (31.5 in)	639 mm (2.10 ft.)	1278 mm (4.19 ft)
	200/2x63		1200 mm (47.3 in)	850 mm (2.79 ft.)	1700 mm (5.58 ft)

R-flex Specifications Chart

Specifications (conforms to DIN 16892, SDR-11)													
	Order #	Description	PEX ID	PEX OD	Jacket OD	Bend Radius	Coil Length	Coil Diameter	Coil Height	Coil Weight	Fluid Cap. / 100m (328ft)	Insulation Thickness	Casing R-Value
Single	81012929	160/40 R-flex	32.6 mm (1.28")	40 mm (1.57")	160 mm (6.30")	350 mm (13.8")	100 m** (328 ft)	2300 mm (90.6")	850 mm (33.50")	232 kg (512 lbs)	83.00 L (21.93 gal)	47.5 mm (1.88")	6.79
	81012886	160/50 R-flex	40.8 mm (1.61")	50.0 mm (1.97")		450 mm (17.80")				248 kg (547 lbs)	131.31 L (34.69 gal)	42.5 mm (1.68")	6.07
	81012887	160/63 R-flex	51.6 mm (2.03")	63.0 mm (2.48")		550 mm (21.7")				278 kg (613 lbs)	208.76 L (55.15 gal)	37.0 mm (1.46")	5.27
	81012889	200/75 R-flex	61.4 mm (2.42")	75.0 mm (2.95")	200 mm (7.90")	800 mm (31.5")			1400 mm (55.20")	416 kg (917 lbs)	296.67 L (78.37 gal)	52.0 mm (2.05")	7.4
	81012890	200/90 R-flex	73.6 mm (2.90")	90.0 mm (3.54")		1100 mm (43.4")				473 kg (1,043 lbs)	426.02 L (112.55 gal)	44.0 mm (1.74")	6.28
	81012891	200/110 R-flex	90.0 mm (3.55")	110.0 mm (4.33")		1200 mm (47.3")				564 kg (1,244 lbs)	638.41 L (168.65 gal)	34.0 mm (1.33")	4.84
Dual	81012879	125/2x1 R-flex*	0.863" (21.92 mm)	1.125" (28.58 mm)	4.90" (125 mm)	11.80" (300 mm)	100 m** (328 ft)	2300 mm (90.60")	850 mm (33.50")	358 lbs (162 kg)	19.94 gal (75.46 L)	1.11" (28.0 mm)	4.01
	81012880	125/2x32 R-flex	26.2 mm (1.03")	32.0 mm (1.26")	125 mm (4.90")	300 mm (11.80")				182 kg (402 lbs)	107.48 L (28.40 gal)	22.3 mm (0.88")	3.18
	81012882	160/2x40 R-flex	32.6 mm (1.28")	40.0 mm (1.57")	160 mm (6.30")	600 mm (23.70")			1400 mm (55.20")	263 kg (580 lbs)	166.00 L (43.86 gal)	34.0 mm (1.34")	4.84
	81012884	200/2x50 R-flex	40.8 mm (1.61")	50.0 mm (1.97")	200 mm (7.90")	800 mm (31.50")				403 kg (889 lbs)	262.62 L (69.38 gal)	46.0 mm (1.81")	6.57
	81012885	200/2x63 R-flex	51.6 mm (2.03")	63.0 mm (2.48")		1200 mm (47.30")				464 kg (1,023 lbs)	417.52 L (110.30 gal)	33.0 mm (1.30")	4.69

* Pex pipe is certified to ASTM F876, SDR-9 dimensions.

** Custom lengths are available upon request. Contact distributor for details.



WattsRadiant
Floor Heating & Snowmelting

TERMS AND CONDITIONS

Effective July 1, 2009

Billing & Shipping Information

Watts Radiant
4500 E. Progress Place
Springfield, MO 65803
417-864-6108 / FAX 417-864-8161

Remit To Address

Watts Radiant
Dept CH 10442
Palatine, IL 60055

1. **Standard Terms:**

Standard Terms are Net 30 Days. There are no discounts for paying on shorter terms.

2. **Placing Orders and Order Verification:**

Radiant will ship via air, ground or truck per customer's request. Air freight orders (UPS/ Red or Blue) must be received by 12:00 PM CST to be shipped the same day. Watts Radiant sends order verification via email within 24 hours of receiving order. *Please verify for correctness and notify Watts Radiant of any discrepancies within 24 hours.*

4. **Pricing:**

All pricing is subject to change without notification. All orders in process when such change occurs will be honored at old pricing. All quotations done 60 days prior to price change will be honored at old pricing.

5. **Specification Changes:**

Should you need to change specifications and/or scheduled release dates while work is in progress, Watts Radiant will make every effort to accommodate said Purchaser. However, it will be necessary for Watts Radiant to charge Purchaser for any services, labor, material or storage costs created due to such changes. Should Purchaser for any reason desire to cancel an order, Purchaser agrees to reimburse Watts Radiant for any cost and expense which result. The provisions of Watts Radiant quotations or acknowledgments shall prevail if purchase orders contain conditions that are different, with the understanding that any clerical errors are subject to correction.

6. **Shipping Discrepancies:**

Any discrepancy concerning type or quantity of material shipped must be brought to the attention of Watts Radiant within 15 days of receiving the material. *Watts Radiant will not be liable for any mis-shipped items if not notified within the 15 days.* It is a good accounting practice to inventory incoming material for completeness and for possible shipping damage. Any visible damage or shortages must be noted prior to accepting the material. Once the receiving personnel accepts the material on their dock, they have relieved the freight company of any responsibility.

7. **Return Policy:**

No returns will be given for material over one (1) year old from the date of purchase. After one (1) year, it will be at Watts Radiant's decision whether to take the product(s) back. *No returns, defective or not, will be accepted without first receiving a Return Materials Authorization (RMA) number from Watts Radiant.* Any returns received without this RMA# will be returned to the Purchaser at the Purchaser's expense. *Please make sure this RMA# is written clearly on the outside of the return.* Restock fees will be waived if an error has occurred for which Watts Radiant is responsible. If a product has been ordered and drop-shipped directly to you and for some reason it must be returned, we will charge whatever the restocking fee is from our vendor.

Restock Fees for Hydronic Heating Products

- **15%** fee for all standard WattsRadiant catalog items, excluding rentals. This applies to: Onix, RadiantPEX, WaterPEX and RadiantPEX-AL tubing and accessories; Fasteners and Tools; Hydronic Controls; Stainless Steel and CazzBrass manifolds; and Swedged, CustomCut, BaseBranch and CustomCut manifolds.
- **25%** fee for HydroNex modular mechanical panels; SubRay subfloor system; and R-flex tubing, fittings, and accessories.
- **50%** fee for HydroControls, Custom Tubular (copper) Manifolds, and any other special order products including pumps, electronic controls, heat exchangers, etc. as well Onix that is not 200', 300', 400', or 600' lengths
- **50%** fee for RadiantPEX+ custom length coils and R-flex custom length coils.

Restock Fees for Electric Heating Products

- **15%** fee for HeatWeave mats, WarmWire cable, HeatWeave UnderFloor mats and related electric heating controls and accessories. No electric mats or cables will be accepted if cut or damaged; they must be in new condition.

8. Unless otherwise stated, all products are sold F.O.B. shipping point.
9. Watts Radiant shall not be liable for delay or failure in performance for any cause of whatever nature beyond our reasonable control. In the event we are unable to fulfill our total commitments, Purchaser agrees to accept deliveries as and when allocated by us.
10. No Representative or Agent of Watts Radiant has authority to make any representation or agreement not set forth herein.



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