

TE Connectivity manufactures Raychem adhesives and sealants to accommodate a wide range of applications, materials, and environmental conditions.

Raychem brand adhesives include both thermosets and thermoplastics.

Thermosets are curable two-part epoxies or crosslinked elastomers.

Thermoplastics are hot-melt adhesives that flow when heated and set when cooled. They reflow when reheated to simplify component repair.

TE also manufactures Raychem brand products that include a thermoplastic adhesive or a mastic-type sealant for water holdout applications. The sealants adhere to non-oily substrates and can be removed where reentry is necessary.

Table of Contents

Selection Guide	5-1
Adhesive/Sealant Product Characteristics Table	5-2, 5-3
Adhesive/Sealant Selection Table	5-4
Raychem RT-555 High Temperature Heat Shrink Tape	5-5, 5-6
Installation Guide	5-7 to 5-9

Selection Guide

To determine the adhesive or sealant most compatible with a TE product, you must know the part's product type.

Use the Adhesive/Sealant Selection Table on page 5-4 to determine a Raychem part's product type and the adhesive/sealant compatible with that type.

Use the Adhesive/Sealant Product Characteristics Table (pages 5-2 and 5-3) to be sure the adhesive or sealant has the product characteristics your application requires.

To use the Selection Table, follow these four steps:

1. Under "Substrate Category," find the product material and product name/part number for the Raychem part.
2. Across the top of the table, find the part's product type and dash number.
3. At the intersection of the substrate category (product material/name/part number) and the product type (by designated dash number) you will find the part number for the most compatible adhesive for the TE product.

4. See the Adhesive/Sealant Product Characteristics Table to verify the characteristics of the adhesive/sealant you selected.

Note: Users should independently evaluate the suitability of the product for their application. Before ordering, check with TE for most current data.

Adhesive/Sealant Product Characteristics Tables

Product Type	Precoat Designation	Type	Operating Temperature Range	Product Designation	Available Form/ Packaging
Thermosets					
S1005	—	Two part epoxy adhesive	-55°C to 135°C	S1005-Kit-1	1 Kit = Two bottles 178ml (B), 89 ml (A)
S1006	—	Epoxy/ polyamide two-part paste	-55°C to 135°C [-67°F to 275°F]	S1006 Kit 8	50-ml dual syringe
				S1006 Kit A	Ten 3-gram packs
				S1006 Kit 1	1 kit = 2 x 15 gram packs
				S1006 Kit 2	1 kit = 4 x 7.5 gram packs
S1009	—	Epoxy/ polymercaptan two-part paste	-55°C to 135°C [-67°F to 275°F]	S1009 Kit A	Ten 3-gram packs
				—	50-ml dual syringe
S1255-04	—	One-part epoxy tape adhesive	-55°C to 200°C [-67°F to 392°F]	S1255-04	Tape [3/4 in. x .020 x 100 ft.]
S1124	—	Epoxy/polyamide two-part paste	-55°C to 150°C [-67°F to 302°F]	S1124 Kit 1	(see new adhesive brochure)
				S1124 Kit 8	(see new adhesive brochure)
S1125	—	Epoxy/polyamide two-part paste	-55°C to 150°C [-67°F to 302°F]	S1125 Kit 1	Five 10-gram packs
				S1125 Kit 2	Two 10-gram packs
				S1125 Kit 3	One 100-gram pack
				S1125 Kit 4	Five 10-gram packs
				S1125 Kit 5	One 10-gram pack
				S1125 Kit 8*	50-ml dual syringe
	/225	Precoated latent-curing epoxy/polyamide	-75°C to 150°C [-103°F to 302°F]	Precoat only on -25 molded parts	—
Thermoplastics					
S1017	/42	Hot-melt/ polyamide	-20°C to 60°C*** [-4°F to 140°F]	S1017	Tape [1 in. x .010 in. x 50 ft.]
S1030	/180 & /184	Hot-melt/ polyolefin	-80°C to 80°C [-112°F to 176°F]	S1030	Tape [3/4 in. x .010 in. x 33 ft.]
S1048	/86	Hot-melt, high performance	-55°C to 120°C [-67°F to 248°F]	S1048	Tape [1 in. x .026 in. x 100 ft.]
S1124	/164	Hot-melt/ elastomeric polymer	-55°C to 105°C [-67°F to 221°F]	S1124	Tape [3/4 in. x .018 in. x 100 ft.]
S1297	/97	Hot-melt/ polyamide adhesive	-20°C to 90°C [-4°F to 194°F]	S1297	Tape [1 in. x .010 in. x 10 ft.]
Sealants					
S1278	—	Hot-melt grey butyl sealant	-40°C to 90°C [-40°F to 194°F]	S1278-01	Tape [1 in. x .062 in. x 25 ft.]
				S1278-02	Tape [3-3/4 in. x .125 in. x 10 ft.]
S1305	—	Hot-melt grey butyl sealant	-40°C to 90°C [-40°F to 194°F]	S1305-01	Tape [1 in. x .062 in. x 25 ft.]

*Shelf life from date of manufacture.

**For specific adhesion properties, see product specification sheets.

***Passes cold bend at -40°C [-40°F] per RT-4204.

****Only S-1006 Kit A conforms to A-A-56031.

*Nozzles and handgun.

503-379 = application gun

503-385 = static mixing nozzles

(for S1125 Kit 8)

Adhesive/Sealant Product Characteristics Tables (Continued)

Pot Life at 23°C [73.4°F]	Curing Conditions	Shelf life* at or below 25°C [77°F]	Specifications**	Comments
Up to 2 hrs.	24 h at 23°C [73°F] min. 4 hrs @ 60°C [140°F] 1 hr @ 95°C [203°F] 24 min at 120°C [248°F]	12 months/1 year	RK6611	General purpose harnessing & potting adhesive
1 h	96 h at 20°C [68°F] min. or 1 hr at 120°C [248°F]	2 years 1 year Kit 8	RT-1006 RK-6612 A-A-56031	General purpose harnessing adhesive. Not used on fluoroelastomers, silicone or Kynar®; 20-minute pot life
20 min.	24 h at 20°C [68°F] min. or 1 hr at 85°C [203°F] 45 min at 120°C [248°F]	2 years 1 year Kit 8	RT-1009	General purpose harnessing adhesive. Not used on fluoroelastomers or silicone; 20-minute pot life
	90 min. at 155°C [311°F] min. or 15 min at 240°C [464°F]	1 year with refrigeration	RT-1014	One-part epoxy tape used with fluoroelastomer harness systems.
60 min.	24 h at 20°C min. or 1 hr at 85°C [185°F]	18 months	RT-1012	Tested to NBC requirements
90 min.	24 h at 20°C min. or 1 hr at 85°C [185°F]	18 months 18 months	RT-1011 RK-6619 VG-95343	Good fluid-resistant epoxy used with System 25
	Cure during installation of molded parts	36 months	VG-95343 RK-6630	Precoated epoxy system for System 25
—	120°C [248°F]	Unlimited	RT-1050/1	General purpose harnessing adhesive. Standard precoated adhesive for -3 and -4 molded parts
—	120°C [248°F]	Unlimited	RT-1050/6 RK-6017	Good low-temperature flexibility. Available as a preinstalled tape for molded parts
—	160°C [320°F]	Unlimited	RT-1050/3 RK-6626	Requires high temperature to achieve bonding. Highest service temperature for hot melt
—	150°C [275°F]	Unlimited	RT-1050/13	Requires reflowing in an oven at 150°C [302°F] for 90 minutes. Designed to bond to -51 molded parts.
—	120°C [248°F]	Unlimited	RW-2019	General purpose harnessing adhesive. Standard precoated adhesive in Sigmaform molded parts, CES and CSGA cable entry seals, and SST-FR heat-shrinkable tubing
—	110°C [230°F]	Unlimited	RW-2020	General purpose sealant and cable breakout area filler
—	110°C [230°F]	Unlimited	RW-2020	Halogen-free, flame-retardant sealant and cable breakout area filler

*Shelf life from date of manufacture.

**For specific adhesion properties, see product specification sheets.

***Passes cold bend at -40°C [-40°F] per RT-4204.

****Only S-1006 Kit A conforms to A-A-56031.

Adhesive/Sealant Selection Table

Substrate Category	Product Name Examples	Molded Part Material Dash Number													
		-3	-4	-6	-8	-12	-25	-50	-51	-55	-71	-100	-125	-130	
Polyolefin	RNF-100	S1005/ S1006	S1005/ S1006	—	—	—	—	—	—	—	S1005/ S1006	—	—	S1005 S1006	
	Versafit	S1009	S1009	—	—	—	—	—	—	—	S1009	—	—	S1009	
	CRN	S1017	S1017	—	—	—	—	—	—	—	S1017	—	—	S1017	
	BSTS	S1030	S1030	—	—	—	—	—	—	—	S1030	—	—	—	
	SST	S1048	S1048	—	—	—	—	—	—	—	S1048	—	—	—	
	HR	S1297	S1297	—	—	—	—	—	—	—	S1297	—	—	—	
Fluoro-polymer	KYNAR	S1009	S1009	—	S1009	—	S1125	—	—	—	S1009	—	S1009	—	
		S1048	S1048	—	—	—	—	—	—	—	S1048	—	S1048	—	
		S1125	S1125	—	—	—	—	—	—	—	S1125	—	S1125	—	
	RT555	—	—	—	—	S1255	—	—	—	S1255	—	—	S1255	—	
	HCTE	—	—	—	—	S1255	S1125	—	—	S1255	—	—	—	—	
CONVOLEX	—	—	—	—	S1125	—	—	—	S1125	—	—	—	—		
Vinyl	PVC	S1005/ S1006	S1005/ S1006	—	—	—	—	—	—	—	S1005/ S1006	—	—	—	
		S1009	S1009	—	—	—	—	—	—	—	S1009	—	—	—	
		S1017	S1017	—	—	—	—	—	—	—	S1017	—	—	—	
Elastomer	DR-25	—	—	—	—	—	S1125	S1125	S1125	—	—	—	—	—	
	NT	S1005/ S1006	S1005/ S1006	—	—	—	—	—	—	S1124	—	S1005/ S1006	—	—	
		S1009	S1009	—	—	—	—	—	—	—	—	S1009	—	—	
	NT-FR	S1017	S1017	—	—	—	—	—	—	—	—	S1017	—	—	—
		NT-FR	—	—	—	—	—	S1125	—	S1124	—	—	—	—	—
		SFR	—	—	*	—	—	—	—	—	—	—	—	—	—
		SRFR	—	—	*	—	—	—	—	—	—	—	—	—	—
RW-200	—	—	—	—	—	S1255	—	—	—	S1255	—	—	S1255		
VPB	—	—	—	—	—	—	—	S1125	—	—	—	—	—	—	
	—	—	—	—	—	—	—	S1255	—	—	—	—	—	—	
Zerohal	XFFR	—	—	—	—	—	—	—	—	—	—	S1030	—	—	
	ZHTM	—	—	—	—	—	—	—	—	—	—	S1030	—	—	

Substrate Category	Product Name Examples	Molded Part Material Dash Number		
		-770	-780	-790
Nuclear	RT770	S1264	—	—
	RT780	—	S1255-04	—
Fluoropolymer	RT790	—	—	S1255-04

*GE RTV 108 used with SFR SRFR and -6 (silicone) molded parts.

Raychem RT-555

High Temperature Heat Shrink Tape

The high temperature heat shrink tape is a bi-layer, side-entry, heat-recoverable sealing product whose length will shrink a predetermined percentage upon the application of heat in excess of 220°C (428°F).

Product Facts

- Wrap around tape form Heat resistant to +200°C
- Fluid resistant
- Seals up to 15 psi
- Peel strength of at least 10 lbs/in-width
- Recovers 35% minimum
- Convenient tape form accommodates sealing harnesses and connectors in the field
- 4 widths available: 3/4", 1", 1 1/2" and 2"
- 2 continuous lengths available: 25 and 50 feet



Applications

Commercial Aerospace, Military, Offshore Drilling, Down Hole Wire harness systems requiring high fluid and high temperature resistance

Repair tape for wire harness bundles

Repair of rock and debris damage on landing gear wiring

Mechanical

Peel strength higher than 10 lbs/in-width

Pressure seal up to altitudes of 75000' or 15 psi

Materials

The adhesive layer is a meltable fluoropolymer that will melt at the predetermined temperature lower than the recovery temperature of the tape backing.

Heat recoverable tape backing is made from high temperature crosslinked ETFE

Standards and Specs

TE Specification: RT-1381

Application Specification: TUS-41-3032 (Installation Guide)

Application Tooling

Raychem CV-1983 ThermoGun hot-air heating tool with TG-23, TG-24 reflectors

AD-1962 nozzle

Physical or Other Properties

Provided in side-entry heat-shrinkable tape form

The tape is suitable for use in wire harness systems requiring aggressive fluid and high temperature resistance.

Raychem RT-555 (Continued)

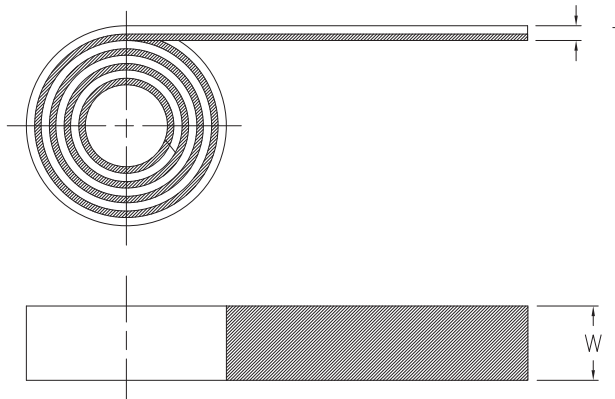
Product Dimensions and Ordering Information

Product Offering

Part Number	Package Type	Package Quantity
RT-555-T.75-A260-25	tape	25 feet
RT-555-T.75-A260-50	tape	50 feet
RT-555-T1.0-A260-25	tape	25 feet
RT-555-T1.0-A260-50	tape	50 feet
RT-555-T1.5-A260-25	tape	25 feet
RT-555-T1.5-A260-50	tape	50 feet
RT-555-T2.0-A260-25	tape	25 feet
RT-555-T2.0-A260-50	tape	50 feet

TABLE OF DIMENSIONS			
PART DESCRIPTION	W	LENGTH FEET(MIN)	T
RT-555-T.75-A260-XX	.75 [18.75]	25,50	.016 [.41]
RT-555-T1.0-A260-XX	1.0 [25]	25,50	.016 [.41]
RT-555-T1.5-A260-XX	1.5 [38]	25,50	.016 [.41]
RT-555-T2.0-A260-XX	2.0 [51]	25,50	.016 [.41]

Dimensions in inches [mm]



Installation Guide

Substrate Preparation Procedures

Preparation of the substrate depends on the part to be bonded. Following are two preparation procedures. The first applies to plated metals and adapters; the second applies to polymer molded parts, cable jackets, and tubing materials.

Molded Parts, Cable Jackets, and Tubing Materials

Thoroughly degrease the surface with a clean cloth or paper wipe dampened with a solvent. The cloth or paper should not be saturated with the solvent.

Allow the part to stand for a minute or two to allow complete evaporation of the solvent.

Carefully and evenly abrade the surface with #320/100 grit emery cloth. Wipe contaminants and abraded particles away with a clean cloth or paper wipe

Note:

- Avoid contamination of the prepared surface. If using primer, apply it according to the manufacturer's instructions and allow it to dry.
- Epoxy adhesives may cause skin and eye irritation. Be sure to observe the handling instructions.
- When using hot-melt adhesives on substrates with high heat-sink capacity (such as connector backshells), preheat the substrate until it is hot to touch, then apply the adhesive tape and shrink the molded part in place.

Caution:

The use of cleaning solvent is described in the preparation of various components for adhesive bonding.

Please observe the solvent manufacturer's safety recommendations. Several epoxy adhesives and solvent base primers are also described in some cases. For specific handling precautions, please consult the appropriate Raychem material safety data sheet for the adhesive being used.

Installation Procedures

The three sets of installation instructions that follow are based on the type and/or form of adhesive or sealant to be used.

Select the set of instructions that applies to your application.

Tape Adhesives and Sealants Connector Boot

1. Degrease the area of the adapter to which the boot will be bonded, using appropriate solvent on a paper tissue or clean cloth. Do not abrade the adapter.
2. Lightly abrade the bonding area of the cable jacket with #320 emery cloth, then wipe off loose particles with a tissue or clean cloth dampened with a solvent.
3. Lightly abrade and wipe 25.4 [1.0] back inside each end of the boot.
4. When using primer, apply a thin, uniform coating to the bonding surface and let it air dry (15–20 minutes).
5. Double-wrap the adhesive tape around the cleaned area of the adapter, placing slight tension on the tape as you wrap. Tack the ends in place with a soldering iron or hot tool.
6. Double-wrap adhesive tape around the cable jacket where the end of the boot is to be located.
7. Position the boot on the adapter and the cable. Apply heat, starting at the connector end.
8. Recover the connector end of the boot onto the adapter and continue heating until the area is fully recovered and the adhesive tape is properly melted.

9. Complete the recovery of the boot, continuing toward the cable end. Heat the cable end of the boot where the adhesive is placed, until the part is fully recovered and the tape has properly melted or flowed. The tape should appear wet, form a bead or fillet between the cable and boot, and show no definition between the layers of tape.
10. Where oven curing is required to complete adhesive bonding, heat the assembled harness in a preheated oven according to the following schedule:
 - S-1255-04:
90 mins. at 155°C [311°F]
 - S-1124:
90 minutes at 150°C [302°F]

Transition

1. Thoroughly degrease the surface with a clean cloth or paper wipe dampened with a solvent. The cloth or paper should not be saturated with the solvent. Allow the part to stand for a minute or two to allow complete evaporation of the solvent.
2. Lightly abrade the bonding area of the cable jacket with #320/100 grit emery cloth, then wipe off loose particles with a tissue or clean cloth.
3. Abrade and wipe the inside of each transition opening.
4. When using primer, apply a thin, uniform coating to the bonding surface and let it air dry (15–20 minutes).

(continued on next page)

Installation Guide (Continued)

5. Double-wrap the tape around the abraded areas of the cable, placing slight tension on the tape as you wrap. Tack the ends in place with a soldering iron or hot tool.
5. Center the molded part over the transition area. When properly positioned, the part should not fit tightly in the “branched” area of the breakout. A tight fit may cause the part to crease or wrinkle as it recovers. The tape should extend slightly beyond the end of the transition.
6. Apply heat to the center of the transition. Recover one leg of the transition, moving heat from the center of the transition to the adhesive opening of the leg. Repeat the procedure on each leg of the transition.
7. Continue heating each end of the transition until the part is fully recovered and the adhesive tape has properly melted or flowed. The tape should now appear wet, form a bead or fillet between the cable and transition, and show no definition between the layers of tape.
8. Where oven curing is required to complete adhesive bonding, heat the assembled harness in a preheated oven according to the following schedule:

S-1255-04:
90 minutes at 155°C [311°F]

S-1124:
90 minutes at 150°C [302°F]

Thermosets**Connector Boot**

1. Thoroughly mix the two parts according to the instructions provided with the kit.
2. Degrease the area of the adapter to which the boot will be bonded, using appropriate solvent on a paper tissue or clean cloth. Do not abrade the adapter.
3. Lightly abrade the bonding area of the cable jacket with #320 emery cloth, then wipe off loose particles with a tissue or clean cloth.
4. Lightly abrade back 25.4 mm [1.0] inside each end of the boot.
5. Using a spatula, apply the mixed adhesive to the adapter and shrink the boot to the end of the adapter.
6. Apply adhesive to the cable jacket and complete the shrinking process.
7. With a clean cloth, remove excess adhesive from all areas immediately.
8. Follow the curing conditions outlined in this guide.

Transition

1. Thoroughly mix the two parts according to the instructions provided with the kit.
2. Lightly abrade the bonding area of the cable jacket with #320 emery cloth, then wipe off loose particles with a tissue or clean cloth.
3. Abrade and wipe inside each opening of the transition.
4. Using a spatula, apply the mixed adhesive to the cable jacket.
5. Apply heat to the center of the transition. Recover one leg of the transition, moving heat from the center of the transition to the adhesive opening of the leg. Repeat the procedure on each leg.
6. Remove excess adhesive from all areas immediately with a clean cloth.
7. Follow the curing conditions specified for “thermosets” in the “Adhesive/Sealant Product Characteristics Table” on pages 5-2 and 5-3.

For /225 coated molded shapes, post-heating will be required to ensure correct installation. Please consult the relevant Code of Practice or contact TE for further details.

Installation Guide (Continued)

**Molded Parts Pre-coated
with Thermoplastic
Adhesive****Connector Boot**

1. Degrease the area of the adapter to which the boot will be bonded, using appropriate solvent on a paper tissue or clean cloth. Do not abrade the adapter or inside surface of the boot.
2. Lightly abrade the bonding area of the cable jacket with #320 emery cloth, then wipe off loose particles with a tissue or clean cloth dampened with solvent.
3. Position the boot on the adapter and cable. Apply heat starting at the connector end.
4. Recover the connector end of the boot onto the adapter and continue heating until the area is fully recovered and the adhesive is properly melted.
5. Complete the recovery of the boot, continuing toward the cable end of the boot until the part is fully recovered and the adhesive is properly melted. The adhesive should form a bead or fillet between the cable and boot when fully melted.
6. With a clean cloth, remove excess adhesive from all areas immediately.
7. Follow the curing conditions outlined in this guide.

Transition

1. Lightly abrade the bonding area of the cable jacket with #320 emery cloth, then wipe off loose particles with a tissue or clean cloth dampened with solvent.
2. Center the molded part over the transition area.
3. Apply heat to the center of the transition. Recover one leg of the transition, moving heat from the center of the transition to the adhesive opening of the leg. Repeat the procedure on each leg of the transition.
4. Continue heating each end until the part is fully recovered and the adhesive has properly melted. The adhesive should form a bead or fillet between the cable and transition when fully melted.
5. Follow the curing conditions specified for “thermosets” in the “Adhesive/Sealant Product Characteristics Table” on pages 5-2 and 5-3.

For /86 coated molded shapes, post-heating will be required to ensure correct installation. Please consult the relevant Code of Practice or contact TE for further details.

Engineering Notes

