



Tyco Electronics Corporation  
300 Constitution Drive  
Menlo Park, CA 94025 USA

**Raychem**

Specification  
This Issue:  
Date:  
Replaces:

**RT-1050/6**  
Issue 4  
May 14, 1999  
Issue 3

**THERMOFIT® ADHESIVE AND SEALANT  
THERMOFIT S-1030**

Thermofit S-1030 is a general purpose, flexible, thermoplastic adhesive based on a modified polyolefin composition and is supplied in tape form (3/4"x.01"x33 feet). It is also furnished as a coating on the interior of molded parts in accordance with the applicable specification control drawings. This material was developed to bond Thermofit heat-shrinkable products where flexibility is desired at low temperatures. Thermofit S-1030 adhesive bonds to many materials such as polyolefins, neoprene and to many metals such as steel and aluminum.

PROPERTY	UNIT	REQUIREMENT	METHOD OF TEST
<b>PHYSICAL</b>			
Visual		Pass	Section 4.3.1.1
Specific Gravity		1.0 max.	Section 4.3.1.2
Low Temperature Impact		-70 max	ASTM D 792
Brittleness	C	Pass	
Blocking (Cohesive @ 55° C)			4.3.1.7, ASTM D 746 4.3.1.8
Adhesive Peel*	Pounds/inch width		ASTM D 1146 Notes 1,2
Polyethylene to Polyethylene		25 minimum	
Neoprene to Neoprene		25 minimum	
PVC to PVC		15 minimum	
Polyethylene to Aluminum		25 minimum	Note 2B
<b>CHEMICAL</b>			
Water Absorption	Percent	1.0 maximum	Section 4.3.2.1 ASTM D 570
Corrosive Effect <sup>1</sup>		Pass	Section 4.3.2.2
16 hours at 121° C (250° F)			ASTM D 2671 Method B
Fungus Resistance		Rating of 1 or less	Section 4.3.2.5 ASTM G 21

<sup>1</sup>Use Thermofit RNF-100 to hold specimen in contact with mandrel.

<p>Solvent and Fluid Resistance  Polyethylene to Polyethylene  Peel Specimens  24 hours at 23° C  Followed by Adhesive Peel  Hydraulic Fluid (MIL-H-5606)  Hydraulic Fluid (MIL-H-46170)  Lube Oil (Mil-L-7808)  Lube Oil (Mil-L-23699)  Cleaning Compound (PC 437)  Lube Oil (VV-L-800)  Anti-Icing Fluid (MIL-A-8243)  5% Salt Water</p> <p>2 hours at 23° C  Followed by Adhesive Peel  Diesel Fuel #2  JP-4 Fuel (MIL-T-5624)  Decontamination Fluid DS-2</p>	<p>pounds/inch width</p>	<p>20 minimum  20 minimum  20 minimum  20 minimum  20 minimum  20 minimum  20 minimum  20 minimum  20 minimum</p> <p>20 minimum  20 minimum  20 minimum</p>	<p>Note 3</p> <p>Note 3</p>
<p><b>ELECTRICAL</b>  Volume Resistivity</p>	<p>ohm-cm</p>	<p>10<sup>10</sup> min</p>	<p>Section 4.3.3.1  ASTM D 257</p>
<p>Dielectric Strength</p>	<p>volts/mil</p>	<p>500 min</p>	<p>Section 4.3.3.2  ASTM D 149</p>

Acceptance Tests: Visual, Peel (Aluminum)

**NOTE 1 ADHESIVE PEEL SUBSTRATES**

Material	Use
Polyethylene.....	Thermofit RNF-100
Neoprene.....	Thermofit NT
PVC .....	Thermofit PVC
Aluminum .....	2024-T3 or equivalent

**NOTE 2 PEEL STRENGTH**

**A) Heat Shrinkable Tubing**

Recover a 6-inch length of the specified heat shrinkable tubing on a glass-laminated plastic or a metal tube 1-inch in diameter. Apply heat with a Thermofit 500A Thermogun equipped with a TG 13 reflector and operating at 288-343°C (550-650°F). Cool the recovered tubing to room temperature. After cooling, lightly abrade the outside of the recovered tubing and the insides of three 1-1/2-inch lengths of the specified 1-1/2 inch diameter expanded tubing with No. 320 emery cloth. Wipe with a clean cloth or paper towel wet with methyl ethyl ketone. Spiral wrap the adhesive tape, with a 50% overlap to produce a double thickness of adhesive, over the recovered tubing. Place a strip of 3/4 inch wide masking tape lengthwise over the adhesive tape to hold it in place and to provide unbonded ends to insert into tensile tester. (Figure A).

Place three 1-1/2-inch lengths of the tubings, abraded on the inside, over the adhesive, as shown in Figure A, and recover as described above. Continue heating for 30 seconds after the tubing has recovered. Place the assembly in an oven for 10 minutes at 150+3°C (302+5°F) to assure uniform heating. Cool to room temperature, and cut along one edge of the masking tape to remove the bonded assembly from the mandrel (Figure B). Cut a specimen 11 inch wide (Figure C) from the center of each double thickness.

Insert the unbonded ends of each specimen in the jaws of a tensile tester operating at a jaw separation speed of 2 inches per minute. Make readings of peel strength at every 1/2 inch of jaw separation after 1 inch initial separation. The average of five readings shall define peel strength.

**B) Heat Shrinkable Tubing to Aluminum**

Abrade an 18-inch length of 1-inch diameter aluminum pipe (2024 T-3 or equivalent) with No. 320 emery cloth and wipe with a clean cloth or paper towel wet with methyl ethyl ketone. Spiral wrap the adhesive tape on the mandrel, with a 50% overlap to produce a double thickness of adhesive. Place a strip of 3/4-inch wide masking tape lengthwise over the adhesive to hold it in place and to provide unbonded ends to insert into tensile tester. (Figure D)

Abrade, clean, recover and oven-heat three 1-1/2-inch lengths of 1-1/2 inch diameter RNF-100 as described in Section A above. After cooling to room temperature, cut tubing into 1-inch wide sections (Figure D). Cut each specimen along the edge of the masking tape to free unbonded ends of the tubing.

Place the specimen in a tensile testing machine, with the specimen around the positioning mandrel and the free end of the specimen inserted into the tensile testing machine jaw (Figure E). Construct the holding fixture so that the yoke is free to rotate during testing. Test with a jaw-separation speed of 2 inches per minute. Take readings of peel strength at every 1/2 inch of jaw separation after 11 inch initial separation. The average of five readings shall define peel strength.

**NOTE 3 FLUID RESISTANCE**

Immerse three polyethylene adhesive peel specimens, prepared in accordance with Notes 1 and 2 in each of the test fluids for the specified time periods. After immersion, lightly wipe the specimens and air dry them for 30-60 minutes at room temperature. Test the specimens for adhesive peel in accordance with Note 2.

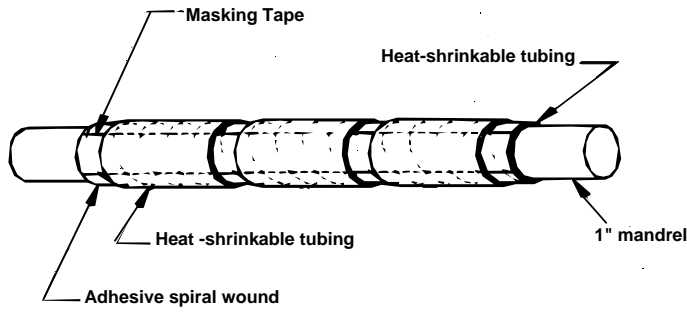


Figure A. Mandrel Assembly

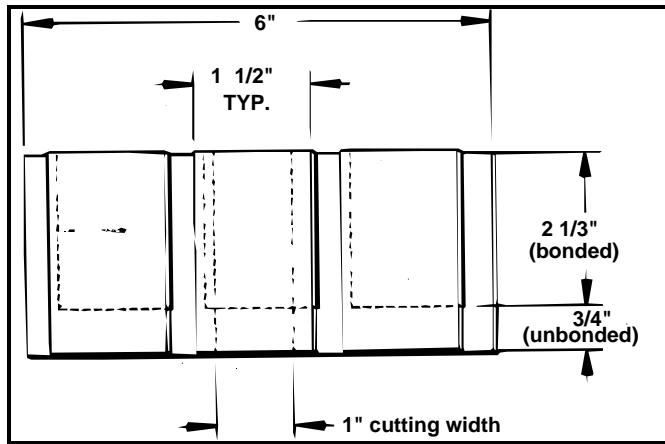


Figure B. Slab Specimen

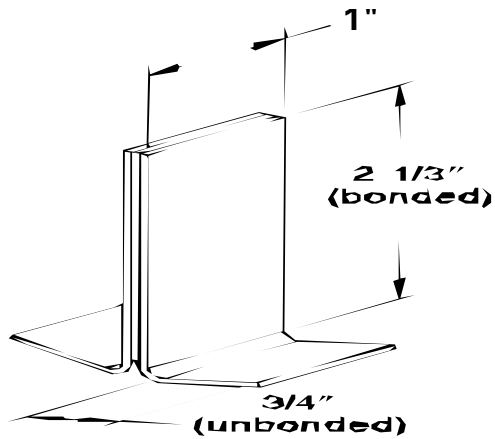


Figure C. Peel Strength Specimen

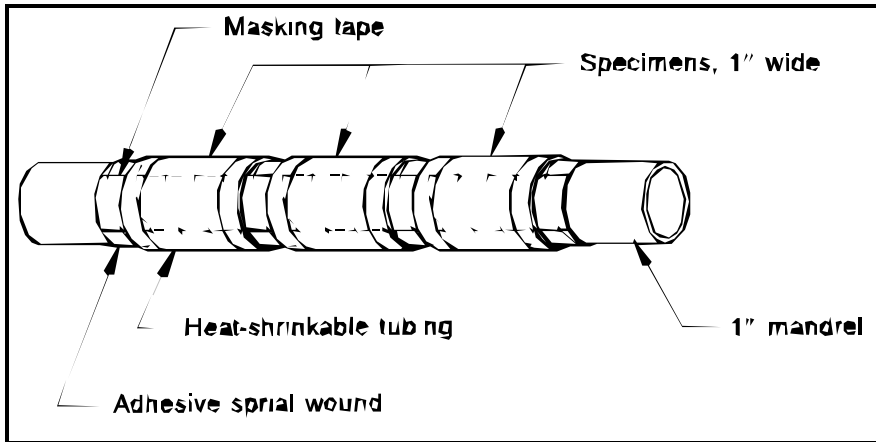


Figure D. Peel Specimen Preparation

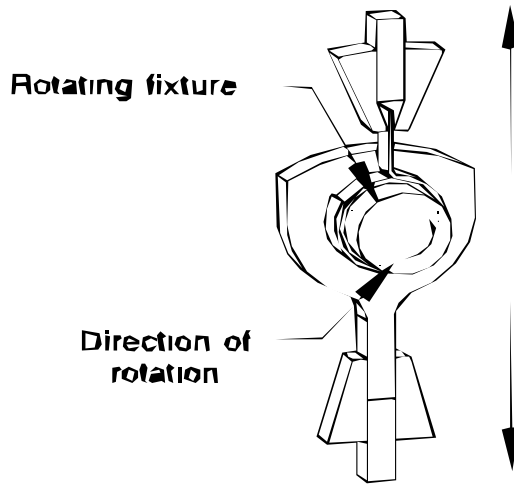


Figure E. Peel Specimen in Tensile Test



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.