



RW 2074-Revision 2

Raychem brand S1206 Precoated Latent Cure Adhesive

SCOPE

This Quality Assurance Specification establishes the quality standard for a cureable adhesive coated onto -25 moulded parts. The adhesive code once applied to the parts is /225.

Approved Signatories*

TE Connectivity Electronics : Approved electronically via DMTEc

* This document is electronically reviewed and approved - therefore no signatures will appear.

1. REVISION HISTORY

Revision Number	Change Request	Date	Incorporated By
0	Formerly RK 6630 Revn 4		
1	CR04-DM-0291	15 October 2004	Paul Dixon
2	CR10-DM-009	3 August 2010	Paul Dixon

2. REQUIREMENTS**2.1 Composition, Appearance and Colour**

The coating shall be of even thickness, having a textured surface and free from inclusions. The colour shall be uniformly grey.

2.3 Test Requirements

The testing shall be carried out using samples made from 202K153-25/225-0 moulded parts and substrates described in this specification. Test samples shall meet the requirements contained in Table 1.

2.3 Shelf Life

When stored in the original unopened packaging at temperatures not exceeding 25°C for up to 36 months, the adhesive shall continue to comply with the requirements of Table 1.

3. TEST METHODS

3.1 Peel test

3.1.1 Preparation and assembly of test specimens

Three test assemblies shall be prepared. Precoated moulded parts 202K153-25/225-0 are surface treated prior to coating and require no further treatment. The moulded part shall not be mishandled by squeezing or rubbing the fingers over the adhesive.

Aluminium mandrels 55 mm x 10 mm outer diameter and 7.5 mm inner diameter shall be degreased with Isopropanol, abraded with 100 grit emery cloth, then dry wiped with a tissue to remove abraded dust. Where peel tests to DR-25 are required a length of ½" sleeving greater than 55 mm long, shall be recovered onto the Aluminium peel mandrel by conditioning in an oven at 150 ± 3 °C for 20 minutes then allowed to cool to room temperature. The excess sleeving shall be trimmed off at either end of the aluminium mandrel. The outer surface of the DR-25 tubing shall then be degreased with Isopropanol, abraded 100 grit emery cloth, then dry wiped with a tissue to remove any dust or debris from abrasion.

A 10 mm wide strip of masking tape shall be positioned longitudinally over the bonding area of the test adaptor. A 5 mm to 10 mm wide strip of masking tape shall be positioned longitudinally over the bonding area of the aluminium mandrel or recovered sleeving. This will provide an unbonded area for insertion into a tensile testing machine.

Recover the J end of the moulded part onto the aluminium or DR-25 mandrel by heating with a CV1981 hot air gun.

Please refer to CoP 559 <<http://www.harnware.com/instructions.asp?prod=225>>. On full recovery of the J end of the moulded part excess adhesive may exude from the J end. This should be removed immediately by wiping the interface at the edge of the moulded part with a piece of folded emery cloth. Once this has been done the J end of the boot should be post heated for a further 45 seconds. Do not manipulate the joint while it is warm but allow it to cool to room temperature. The test specimen should be allowed to stabilize for 24 hours before testing.

3.1.2 Peel Test

The test shall be carried out at 23 ± 2 °C. After stabilizing, the three test specimens shall be trimmed level with the ends of the test adaptor and slit longitudinally along one edge of the masking tape. The width of the material to be peeled shall be measured and recorded. The five J end test specimens shall be trimmed by cutting through the part and DR-25 (where used) to the aluminium mandrel at the end of the parallel section of the J end, and by cutting through the DR-25 (where used) to the aluminium just beyond the J end of the moulded part, then slit axially along the masking tape. The width of the material to be peeled shall be measured and recorded. The test specimens shall then be fixed onto a rolling drum fixture which is attached to the lower jaw of a suitable tensile testing machine. The loosened flap of the test specimen shall then be fitted to the upper jaws of the tensile testing machine and peeled from the substrate at a rate of 50 ± 5 mm per minute. The mean peel force for each test specimen is calculated by taking 5 equispaced values from the chart after discarding the first and last 10% of the trace. Where the substrate fails prematurely, the peak value shall be taken. Calculate the peel strength using the following formula:

Peel strength (N/25 mm) = Average peel force/specimen width x 25

The test shall be carried out at 23 ± 2 °C. The mean peel force for each test specimen shall be recorded and the mean of all 5 results reported as the peel strength.

3.2 Dynamic shear strength

3.2.1 Preparation and assembly of test specimens

Three assemblies shall be prepared. Precoated moulded parts 202K153-25/225-0 are prepared prior to coating and require no further treatment. The moulded part should not be mishandled by squeezing or rubbing the fingers over the adhesive.

Test adaptors TFT 3105, shall be prepared by degreasing the outside surface of the adaptor with Isopropanol.

Aluminium rods 100 mm x 10 mm outer diameter shall be degreased with Isopropanol, abraded with 100 grit emery cloth then dry wiped with a tissue to remove abraded dust.

Holding the J end of the moulded part carefully, the H end of the moulded part shall be recovered onto the test adaptor by heating with a CV1981 hot air gun. Please refer to CoP 559 <<http://www.harnware.com/instructions.asp?prod=225>>. The moulded part shall then be recovered progressively towards the J end and onto the Aluminium rod in such a way that approximately 50 mm of the aluminium rod is exposed from the J end. On full recovery of the moulded part, excess adhesive may exude from the J end. This should be removed immediately by wiping the interface at the edge of the moulded part with a piece of folded emery cloth. Once this has been done the boot shall be post heated for a further 45 seconds each at the J and H ends. Do not manipulate the joint while it is warm but allow it to cool to room temperature. The test specimen shall then be allowed to stabilize for 24 hours before testing.

3.2.2 Dynamic shear strength

After stabilizing for 24 hours, the three test specimens shall be further stabilized in the dynamic shear strength test chamber for 60 minutes at the temperature specified in table 1. The test specimen shall then be tested by attaching the test adaptor to an appropriate fitting in the lower jaw of a suitable tensile testing machine and fixing the aluminium rod in the upper jaws. There shall be at least 25 mm between the end of the moulded part and the jaws. Where temperatures other than room temperature are required the tensile machine will need to be fitted with an environmental chamber to allow testing to be carried out at the required temperature. Strain shall be applied at a rate of 50 mm/minute. The maximum load in newtons shall be recorded and the mean value of the three test specimens reported as the dynamic shear strength.

3.3 Thermal shock

Three test specimens prepared as described in 3.1.1 (aluminium test mandrels only) and three test specimens prepared as described in 3.2.1 shall be conditioned in an air circulating oven at the temperature and for the time stated in table 1. The test specimens shall be tested for peel and dynamic shear strength and the results reported as mean peel and mean dynamic shear strength values after thermal shock.

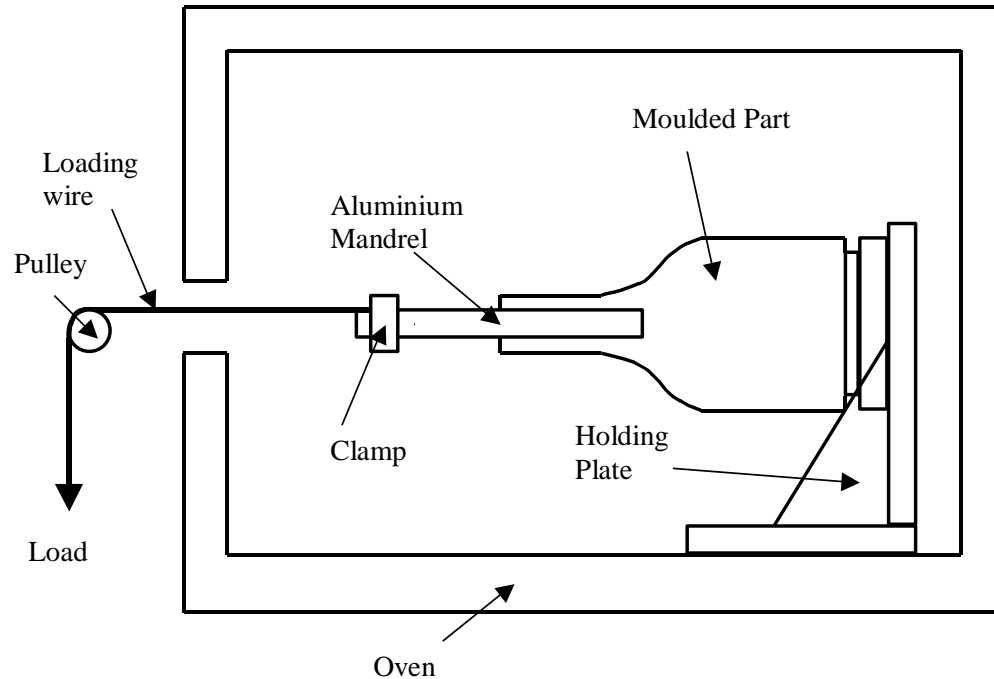
3.4 Thermal ageing and long term ageing

Three test specimens shall be prepared for each test as described in 3.1.1 (aluminium test mandrels only) and three test specimens prepared for each test as described in 3.2.1 shall be conditioned in an air circulating oven at the temperature and for the time stated in table 1. The test specimens shall be tested for peel and dynamic shear strength and the results reported as the mean peel and mean dynamic shear strength values after thermal ageing.

3.5 Static load test

Three test specimens shall be prepared as described in section 3.2.1 and shall be tested in a static load test chamber. Before testing the aluminium rod shall be marked along the edge of the J end of the moulded part.

Static load Chamber



Each test specimen shall be mounted onto the holding plate and the loading wire clamped to the aluminium rod. The test specimen shall then be stabilized in the static load test chamber for 60 minutes at the temperature specified in table 1. The load as specified in table 1 shall then be applied for a period of 4 hours and the distance the aluminium rod has pulled out of the moulded part and the moulded part elongation shall be recorded. Test specimens shall then be tested for dynamic shear strength at $23 \pm 2^\circ\text{C}$. The result shall be reported as the mean pull out distance and the mean dynamic shear strength value after static load for each static load test temperature.

3.6 Fluid resistance

Three test specimens shall be prepared as described in section 3.2.1 for each fluid to be tested. The adaptor end of the assembly shall be capped with a threaded aluminium plug to prevent ingress of fluid into the test specimen. The test specimens shall be conditioned in the fluid with a vertical orientation in such a way that the moulded component is totally immersed for the duration of the conditioning period and the top of the aluminium rod protrudes from the fluid. After conditioning in the specified fluid for the time and temperature shown in table 1, the test specimen shall be allowed to dry for between 18 and 24 hours before testing for dynamic shear strength as described in section 3.2.2. Results shall be reported as the mean dynamic shear strength value for each fluid

4. RELATED STANDARDS & issue

N/A

5. SAMPLING

Each batch of adhesive shall be routinely tested as described in CTS-1769-C-8.

Qualification tests shall be carried out to the requirements of the Design Authority.

6. PACKAGING

Packaging shall be in accordance with good commercial practice. Each package shall bear an identification label showing material quantity, description, batch number and "use before" date. Additional information shall be supplied as specified in the contract or order.

TABLE 1 Test Requirements

Test	Test Method	Test Requirements
Visual Examination	-	As per Clause 2.1
Peel strength -25 to aluminium -25 to DR-25	Clause 3.1	80N/25 mm minimum 60N/25 mm minimum
Dynamic shear strength Test temperature: -75 ± 3 °C -40 ± 3 °C 23 ± 2 °C 50 ± 2 °C 70 ± 2 °C 100 ± 3 °C 125 ± 3 °C 150 ± 3 °C	Clause 3.2	1750 N minimum 1750 N minimum 750 N minimum 500 N minimum 300 N minimum 200 N minimum 30 N minimum 30 N minimum
Thermal shock 215 ± 3 °C for 4 hours ± 15 minutes Peel Strength Dynamic shear strength at 23 ± 2 °C	Clause 3.3	100N/25 mm minimum 750 N minimum
Thermal ageing 160 ± 3 °C for 168 ± 2 hours Peel Strength Dynamic shear strength at 23 ± 2 °C	Clause 3.4	100N/25 mm minimum 750 N minimum
Static load Test temperature: 23 ± 2 °C 50 ± 2 °C 70 ± 2 °C 100 ± 3 °C 125 ± 3 °C 150 ± 3 °C Pull out distance Dynamic shear strength at 23 ± 2 °C	Clause 3.5 Clause 3.2.2	20 kg 12 kg 8 kg 5 kg 2 kg 2 kg 5 mm maximum 750 N

TABLE 1 Test Requirements (Cont'd)

Test	Test Method	Temperature °C (°F)	Time (Hours)	Test Requirements
Fluid Resistance	Clause 3.6			
• Propan-2-ol (S737)		23 ± 2 (75 ± 5)	24 ± 2	
• Anti Icing fluid (TL6850-021)		23 ± 2 (75 ± 5)	24 ± 2	
• Cleaning fluid EU (TL6850-017)		23 ± 2 (75 ± 5)	1 ± 5 min	
• Automotive gasoline (ISO 1817 Fluid B)		23 ± 2 (75 ± 5)	24 ± 2	
• Hydraulic fluid (Skydrol* 500 B4)		23 ± 2 (75 ± 5)	24 ± 2	
• Hydraulic fluid (H-542) (SAE J 170 3)		40 ± 2 (104 ± 5)	24 ± 2	
• Hydraulic fluid (H-544) (MIL-H-46170)		50 ± 2 (122 ± 5)	24 ± 2	
• Hydraulic fluid (H-515) (MIL-H-5606)		50 ± 2 (122 ± 5)	24 ± 2	
• Aviation fuel (ISO 1817 Fluid F)		50 ± 2 (122 ± 5)	24 ± 2	
• Water		50 ± 2 (122 ± 5)	24 ± 2	
• Lubricating oil (O-190) (VV-L-800C)		70 ± 2 (149 ± 5)	24 ± 2	
• Damping fluid (S-1724) (VV-D-1078B)		70 ± 2 (149 ± 5)	24 ± 2	
• Aircraft grease (G-354) (MIL-G-23827B)		70 ± 2 (149 ± 5)	24 ± 2	
• Lubricating oil (O-236)		70 ± 2 (149 ± 5)	24 ± 2	
• Lubricating oil (O-156) (MIL-L23699)		70 ± 2 (149 ± 5)	24 ± 2	
Dynamic shear strength at 23 ± 2 °C	Clause 3.2.2			750 N minimum

* Skydrol is a trademark of Monsanto

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