

ADHESIVE TECHNICAL SERVICES LTD

SAFT TESTING OF CONTACT ADHESIVES FOR SANGLIER LTD



19th December 2016

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INTRODUCTION

Adhesive Technical Services have been asked to test various contact adhesives for SAFT, shear adhesion failure temperature. This is to provide comparative results on the shear resistance at temperature of bonds made with these adhesives. The test requires that the bond is inclined at an angle of 2 degrees from the vertical so as to ensure a cohesive shear failure of the adhesive. Failure is the temperature at which the bond completely fails.

6 samples of contact adhesives were supplied for SAFT testing. Samples were labelled as follows:

Sample A
Sample B
Sample C
Sample D
Sample E
Sample F

Test pieces were prepared by Sanglier to criteria supplied by Adhesive Technical Services. Test pieces were required to fit Cheminstruments RT-8 shear tester. For this the adhesives were sandwiched between two pieces of Formica® type laminate of approximate thickness 1 mm. One piece was 75mm wide and 50 mm high to allow mounting on the shear tester. The second piece was 25 mm and 60 mm long, and with a pre-drilled hole for the hanging of the test weight. Adhesive contact area was 25mm x 25mm. See appendix 1 for adhesives references for samples supplied.

TEST METHOD

SAFT Test (ASTM D4498 – 07) with 100g weight.

| | |
|---------------|---|
| Instrument | : ChemInstruments RT-8 Shear Tester in air circulating oven |
| Substrates | : Formica® type laminate of approximately 1mm thickness |
| Load | : 100g |
| Contact Area | : 25 x 25 mm |
| Angle of test | : 2 degrees from the vertical |
| Temperature | : Raised by 5C every 10 minutes |
| No. of Tests | : minimum of 4 |

RESULTS

SAFT Testing – 100g on 25 x 25 mm

| | 100g weight – failure temperatures | 100g weight – Average failure temperature |
|----------|------------------------------------|---|
| Sample A | 98C 102C 98C 105C | 101C |
| Sample B | 98C 103C 100C 98C | 100C |
| Sample C | 95C 96C 97C 98C | 96C |
| Sample D | 100C 98C 99C 99C | 99C |
| Sample E | >150C >150C >150C >150C | >150C |
| Sample F | 78C 80C 75C 77C | 77C |

Observations and Comments.

It was noted that all bonds failed cohesively with a layer of adhesive on each surface.

Results indicate that Samples A, B and D have similar heat resistance. Sample C has a slightly lower heat resistance to these samples but not by too much. Sample F has the lowest heat resistance. Sample E has very good heat resistance.

An additional test was done on Sample E and this did not fail at 150C with a 1 kg weight.

*Steve Prestidge
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Appendix 1

References for samples supplied by Sanglier Limited.

| Sample Reference | Adhesive |
|------------------|-------------------------|
| Sample A | TPS008/29 |
| Sample B | Sanglier Tuskbond NC501 |
| Sample C | Sanglier Tuskbond NC101 |
| Sample D | Sanglier Tuskbond XPRO |
| Sample E | Sanglier Tuskbond CC900 |
| Sample F | StarStuk HL+ |