

## Mechanical Testing

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IN CONFIDENCE TO THE CLIENT

REPORT NO: MT-18/1122

## **CANTILEVER RIGIDITY TESTING OF REDLA BLUE/SILVER DUCT HANGING STRAP**

CLIENT: **REDLA PRODUCTS**  
ATTENTION: BRENT CLINNICK  
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PACKENHAM VIC 3810

DATE OF TEST: NOVEMBER 1<sup>ST</sup> 2018

DATE OF REPORT: NOVEMBER 7<sup>TH</sup> 2018

### **TEST SYNOPSIS:**

Redla Silver/Blue hanging strap used to support flexible heating and air conditioning duct was delivered to the MTS laboratory for cantilever rigidity testing (see Fig.1). As instructed by the client, the strapping tape was to be assessed for its ability to retain horizontal rigidity when cantilevered from a laboratory bench top. In the absence of a formal documented test procedure, cantilever testing was conducted in accordance with the client's interpretation of the VBA's performance test requirements.

As instructed by the client, testing was required to determine the following performance characteristics for the tape:

- 1. While in the as produced condition spooled directly from the roll with the silver side up, determine the magnitude of cantilever overhang that the Redla tape could sustain prior to sagging under its own weight.*
- 2. Upon hand manipulation of the tape by profile bending longitudinally along the tapes mid-point, determine the magnitude of cantilever overhang that the Redla tape could sustain prior to sagging under its own weight.*



**FIG.1**  
**REDLA HANGING STRAP**

Upon arrival at the laboratory the roll of tape was examined and the following details were recorded:

***Tape Supplier:*** Redla Products

***Tape Dimensions:*** 60m long x 75mm wide x 120 $\mu$ m thick

***Tape Appearance:*** Blue outer skin and Silver inner skin film

**RIGIDITY TEST PROCEDURE:**

Rigidity testing was conducted in a laboratory environment at an ambient room temperature of 20°C. Sample lengths of Redla strapping tape were carefully unspooled from the roll and allowed to lay flat wise on top of the test bench, silver side up (see Fig.2). The unspooled length of strap was gauge marked in 50mm increments for cantilever test measurement.

The free end of the strapping tape was then progressively slid off the edge of the test bench until the peak cantilever overhang had been achieved. The threshold of tape rigidity was recorded as the cantilever (overhang) distance at the point when the strap collapsed under its own weight.

Five (5) repeat tests were conducted for each strap configuration.

**TEST OBSERVATIONS/DATA:**

**As-produced (directly off spool) Test**

Tests conducted on strapping tape spooled directly from the roll and with the silver side up were capable of extending nominally 130mm from the edge of the bench before the onset of sag commenced (see Fig.3a). Once sagging had initiated, the tape was observed to collapse in an abrupt manner. Test data for this series of tests is provided in Table 1.

**Profile Manipulated Test**

Tests conducted on strapping tape which had been manipulated by hand to provide a longitudinal V-shaped profile were capable of extending nominally 600mm from the edge of the bench before the onset of sag commenced (see Fig.3b). As with the as produced tests, once sagging had initiated, the tape was observed to collapse in an abrupt manner. Test data for this series of tests is provided in Table 2.



**FIG.2  
STRAPPING TAPE  
PREPARED FOR TESTING**



**AS PRODUCED CANTILEVER  
130MM TEST DISPLACEMENT**



**V-SHAPE PROFILE MANIPULATED  
600MM TEST DISPLACEMENT**

Test Type Number	Cantilever Test Length (mm)
1	125
2	120
3	150
4	140
5	125
<b>Mean length</b>	<b>132</b>

**TABLE 1  
AS PRODUCED TEST DATA**

Test Type Number	Cantilever Test Length (mm)
1	650
2	575
3	600
4	580
5	600
<b>Mean length</b>	<b>601</b>

**TABLE 2  
PROFILE MANIPULATED TEST DATA**

Notes:

- Melbourne Testing Services (MTS) Pty Ltd shall not be liable for loss, cost, damages or expenses incurred by the client or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall MTS be liable for consequential damages including, but not limited to, lost profit, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested.
- It remains the responsibility of the client to ensure that the samples tested are representative of the entire product batch.
- MTS shall take no responsibility for the procurement and authenticity of the test product as described herein.
- This report is specific to the test items in their state at the time of testing. It should not be taken as a statement that all products in all states of repair, would also perform in the same manner.
- MTS shall take no responsibility for the installation procedures used for the test items as described herein.
- MTS shall take no responsibility for the interpretation or misinterpretation of the procedures or calculation methods as provided herein or for the appropriateness or validity of the test procedures for the test items described and reported herein.
- Testing of the Redla strapping tape as reported herein has been conducted with the blue side of the tape in the uppermost position. MTS advises that the orientation of the tape as tested was in accordance with the client specific instructions. With this in mind MTS notes that the rigidity performance of the strapping tape as reported herein may differ if the tape was orientated in the opposite direction or with the silver side uppermost.
- The tests as reported herein are considered Experimental Type Tests and therefore do not validate or certify the products with any Australian or International standards that may apply.
- MTS advises the reader that the performance of the Redla strapping tape for rigidity as reported herein is specific to the client's interpretation of the requirements for semi-rigid material as specifically referred to in AS 4254.1 Clause 2.5.3. With this in mind, MTS advises that AS 4254.1 Clause 12.5.3 does not provide any guidance or commentary as to a formal testing procedure, means of measurement or methodology for the interpretation of test results. As such, the test data and test observations as presented herein is considered informative only and does not validate the material as compliant with AS 4254.1 or any other Australian or International standards.

**Rod Wilkie**  
**AUTHORISED SIGNATORY**

