



Test Report Product Validation

Braganca-Paulista Electrical Components Test Laboratory
RUA AMPERE 304 Dist. Indl I BRAGANCA PAULISTA SAO PAULO BRAZIL 12929-570

Report Title: TERMINAL MQS REC
Report Number: RL150073
Revision: O
Date Issued: 26 feb 2015

Execution: Diogo Rojas
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Disposition of Samples: Dispose
Customer: FCA
Specification: Spec FCA PF-90012/2014 and USCAR 21.

List of Part Numbers: 963715-1

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Scope/Abstract and Conclusions

Purpose

Validation tests for customer FCA.

Summary

Please see conclusion at each group test.

1. RESULTS

Test Sequence/Environment	Requirements	Results
*Group 1 (Crimp analysis)		
Crimp Analysis	Informative	Please see photos at item 3.1.

Test Sequence/Environment	Requirements	Results															
*Group 2 (Crimp strength)																	
Item 6.4.1D																	
Visual inspection	There shall be no corrosion, discoloration, cracks, etc., which could affect the functionality of the part.	Pass.															
Crimp strength	0,50mm ² ≥ 75N 0,75mm ² ≥ 90N	Pass. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3">Crimp strength [N]</th> </tr> <tr> <th></th> <th>0,50mm²</th> <th>0,75mm²</th> </tr> </thead> <tbody> <tr> <td>Min.</td> <td>119,0</td> <td>142,5</td> </tr> <tr> <td>Average</td> <td>134,2</td> <td>155,7</td> </tr> <tr> <td>Max.</td> <td>144,0</td> <td>168,0</td> </tr> </tbody> </table>	Crimp strength [N]				0,50mm ²	0,75mm ²	Min.	119,0	142,5	Average	134,2	155,7	Max.	144,0	168,0
Crimp strength [N]																	
	0,50mm ²	0,75mm ²															
Min.	119,0	142,5															
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***Note:** Results extracted from TE test report nr. RL140857.

2. SAMPLE & WIRE DESCRIPTION

The Certification of Conformance (C of C), submitted with the test request, lacked the necessary information to verify the samples tested. Therefore the Test Lab cannot verify that the samples have been produced, inspected, and accepted as conforming to product drawing requirements, and made using the same core manufacturing processes and technologies as production or parts.

2.1. Group / Samples

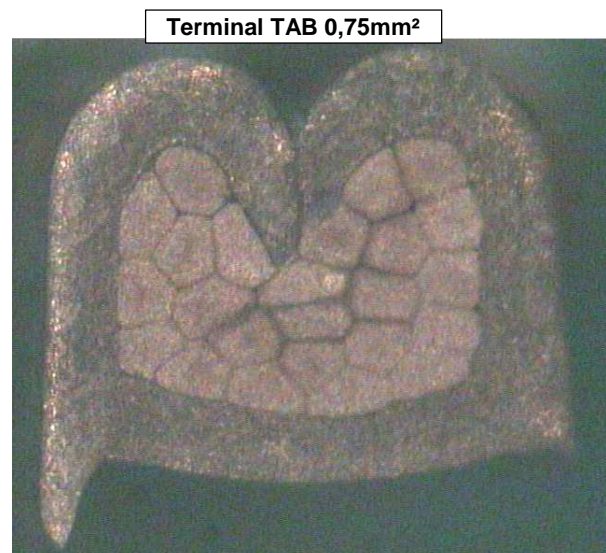
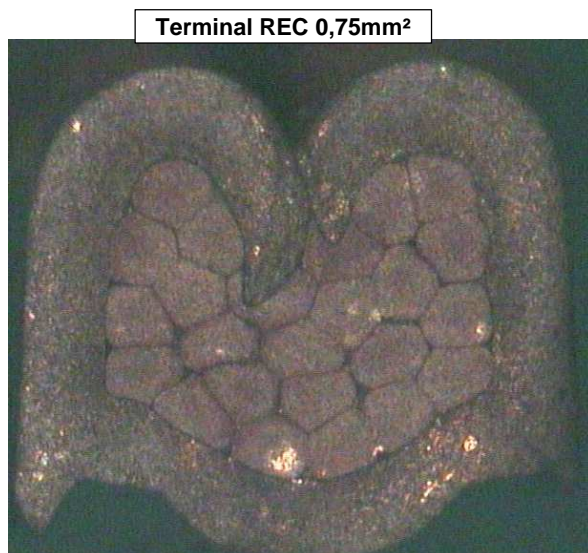
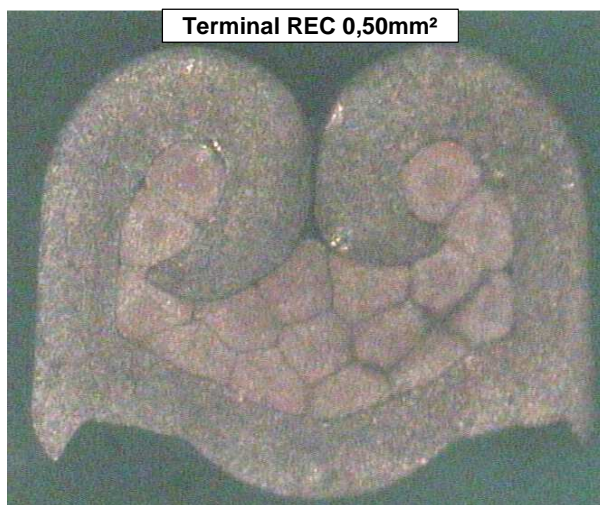
Group	Part Number	Rev.	Date Code	Sample Description	Quantity Tested
All groups	963715-1	K8	N/A	Terminal MQS REC	20

2.2. Wire Information

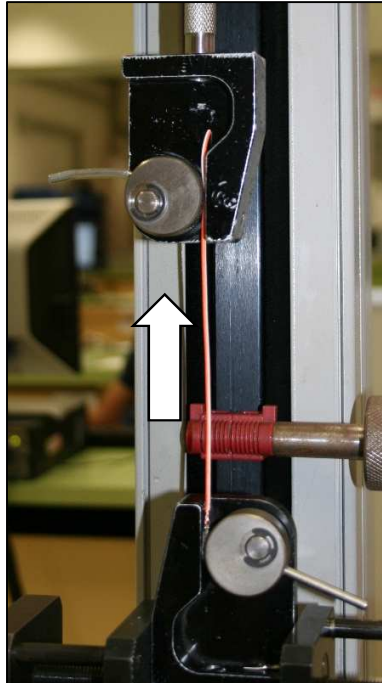
Group Number	Wire Gage	Overall Diameter	Strand Diameter	Number of Strands	Wire Length
All groups	0,50mm ²	1,53mm	0,19mm	16	300mm
All groups	0,75mm ²	1,75mm	0,19mm	24	300mm

3. SAMPLE PREPARATION

3.1. Crimp analysis



3.2. Crimp strength



4. TEST PROCEDURE

4.1. Crimp analysis

Perform a visual examination of crimp area.

4.2. Crimp strength

Measure the conductor pull-out strength.

5. TEST EQUIPMENT

All equipment containing a calibration number is calibrated and traceable through TE to the National Institute of Standards and Technology (NIST).

Instrument Description	Manufacturer	Model Number	Calibration Number	Purpose
Digital Dynamometer	Mecmesin	AFG-2500	92-339017-090	Crimp strength
Microscope	Carl Zeiss	Stemi 2000-C	91-339012-011	Crimp analysis
Digital Camera for Microscope	JVC	TK-C600	91-339048-002	Crimp analysis

6. APPROVALS

Approvals are secured electronically through the corporate document repository routing and approval system.

Testing & Report By: Diogo Rojas, Laboratory Engineer

Reviewed & Approved By: Paulo Almeida, Laboratory Coordinator