



GT-15-173

Flex Testing of TurboFlex Wires to AS4373 Method 704



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Flex Testing of Two Wire Specifications

961-004-T-C-2 & 961-003-N-C-0

Prepared for

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Revision History

Revision	Date	Edited by	Comments
--	11/02/2015	Michael Traskos	Original
A	11/05/2015	Michael Traskos	Editorial corrections, addition of weight on sample information.

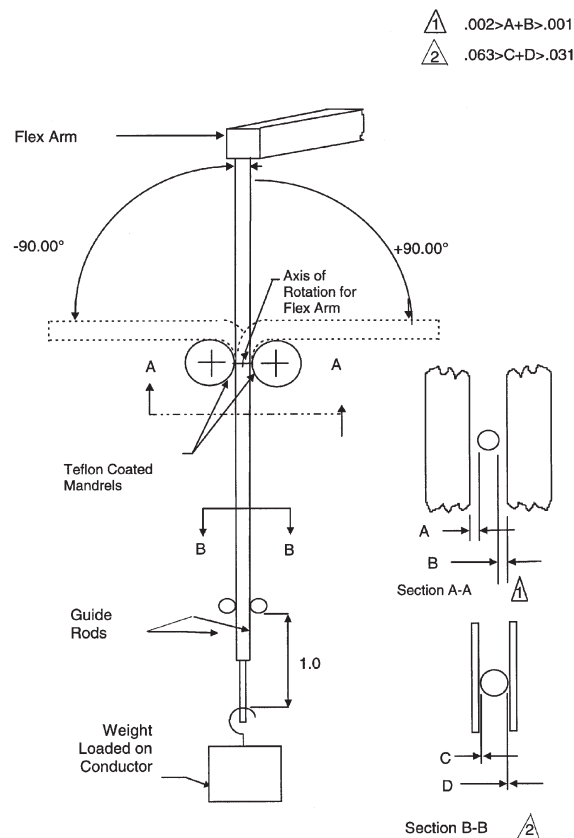
1 Summary

Flex endurance testing was performed on two (2) Glenair Turboflex wires provided to Lectromec. The part numbers for the two cables are 961-004-T-C-2 and 961-003-N-C-0. Per Glenair's drawing, each conductor is 8AWG and consists of 665 individual strands.

2 Flex Testing

2.1 Test Objective

The flex endurance test is a test designed to stress the wire conductor through mechanical flexing to cause conductor breakage. The schematic from AS4373 Method 704 is shown in the following figure.



The test performance is performed in two stages. The first stage, a wire is affixed to the flex arm and tested until failure. Failure is defined as abrasion through the wire insulation against the flex mandrels or the conductor and weight drops from the test fixture as a result of a broken conductor. Stage two is performed with two wires at a time, starting at 50% of the baseline failure point established in stage

one. Eight additional samples are tested to 60%, 70%, 80%, and 90% of the stage 1 value. At the completion of stage 2, the samples are examined for the number of broken strands.

2.2 Test Information

Test Specification: AS4373 Method 704

Additional Notes/Special Conditions: The weights on wires of specification 961-004-T-C-2 were reduced to 2lbs as heavier weights resulted in rapid wear of the insulation on the mandrels. Wires from specification 961-003-N-C-0 were tested with 4lb weights.

Test Parameters: **Mandrels:** 6x wire diameter

2.3 Test Results

The test results for the two specifications tested are shown in the following table.

P/N	Lectromec Sample ID	Flex Duration Cycles	Broken Strand Count	Weight on Wire (lbs.)
961-004-T-C-2	N500-S1-01	106,000		2
	N500-S1-02	50%	5	2
	N500-S1-03	50%	12	2
	N500-S1-04	60%	30	2
	N500-S1-05	60%	28	2
	N500-S1-06	70%	77	2
	N500-S1-07	70%	83	2
	N500-S1-08	80%	169	2
	N500-S1-09	80%	150	2
	N500-S1-10	90%	199	2
	N500-S1-11	90%	202	2
961-003-N-C-0	N500-S2-01	85,860		4
	N500-S2-02	50%	0	4
	N500-S2-03	50%	4	4
	N500-S2-04	60%	20	4
	N500-S2-05	60%	17	4
	N500-S2-06	70%	66	4
	N500-S2-07	70%	65	4
	N500-S2-08	80%	131	4
	N500-S2-09	80%	114	4
	N500-S2-10	90%	207	4
	N500-S2-11	90%	218	4