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KINECTRICS NORTH AMERICA INC. TEST REPORT FOR 3M COMPANY TENSILE TESTS ON 795 KCMIL ACCR COMPRESSION JOINT

Kinectrics North America Report: 9513-004-RC-0005-R00
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Three (3) tensile load tests were performed for 3M Company on their 795 kcmil ACCR conductor. The tests were performed on August 19, 2002 by Kinectrics North America Inc. personnel at 800 Kipling Avenue, Toronto, Ontario, M8Z 6C4, Canada.

OBJECTIVE

The objective of the tests was to determine the tensile breaking load of three (3) compression joints manufactured by Alcoa-Fujikura Ltd. installed on 3M's ACCR 795 kcmil conductor.

TEST SET-UP

The general set-up used for this test is shown in Figure 1. The distance between pulling eyes of the dead-ends was about 12.7 m (41.7 ft).

Instrumentation

A test machine having a load accuracy of ± 1% was used for this test. The MTS equipment associated with load cell #17356-0 that monitors the load and controls the load rate was last calibrated on February 13, 2002. It is due for calibration on February 13, 2003.

TEST PROCEDURE

A 795 kcmil ACCR (**A**luminium **C**onductor **C**omposite **R**einforced) conductor was supplied by 3M with the compression joint and epoxy dead-ends installed. The cable sample was installed in the test machine as shown in Figure 1. The rate of increase of load was approximately 1814 kgf/min (4000 lbf/min) until the cable failed. The breaking strength of the joint was defined as the load at which the cable pulled out of the joint or one or more wires of the cable failed.

TEST RESULTS

Table 1 shows the breaking load results.

Table 1: Breaking Load Results

Sample No.	Breaking Load (lbf)	Percent of RTS	Location of Failure
1	31,636	101%	Inside Splice
2	31,420	101%	≈ 6 ft from splice
3	31,444	101%	≈ 6 ft from splice

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DISCLAIMER

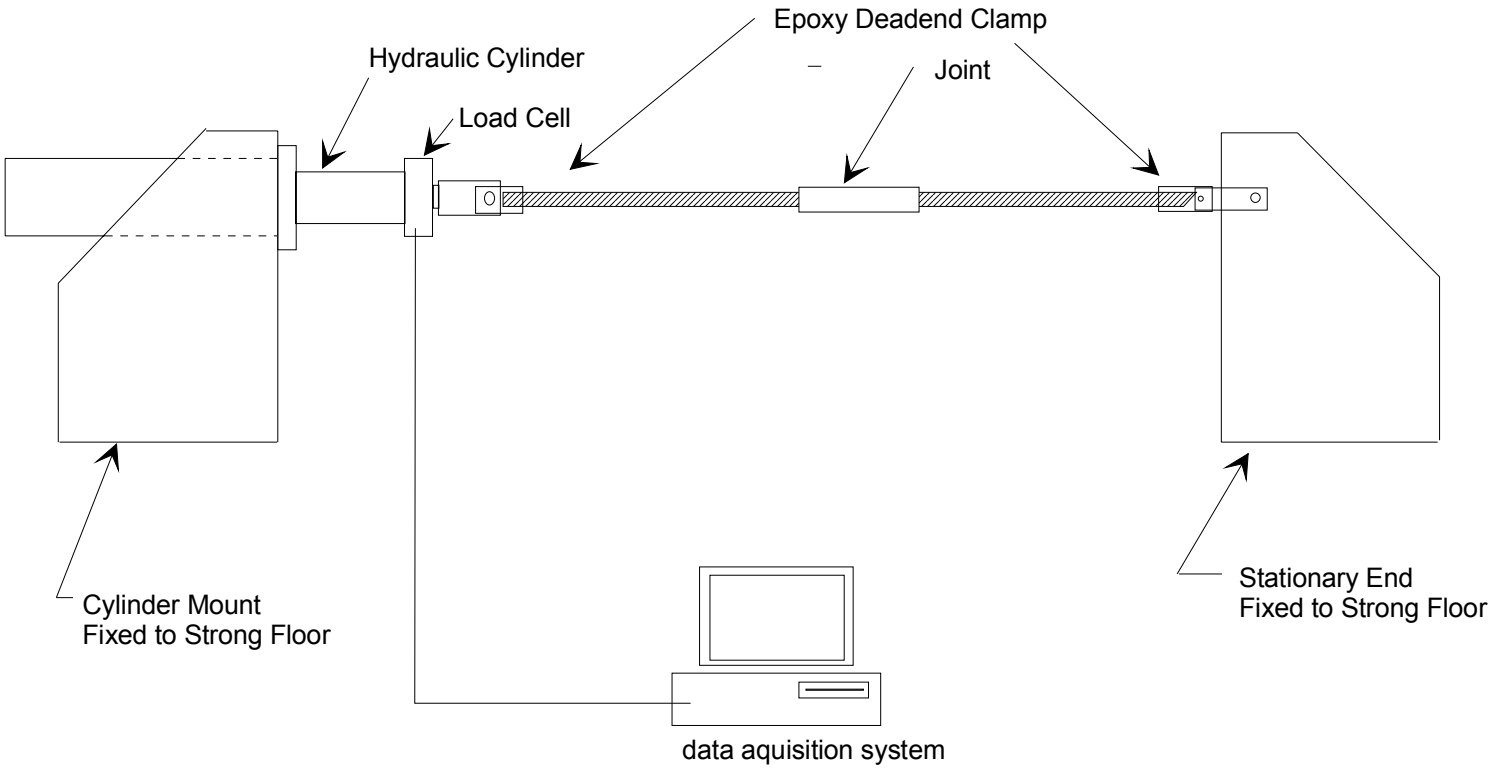

Figure 1: Setup of Tensile Performance Test