Testing of THERMOLIGN® Dead-End

For

1272-kcmil 3M Brand Composite Conductor

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Scope

This report will cover the description and results of laboratory testing of PLP's THERMOLIGN® Dead-End and 1272-kcmil 3M Brand Composite Conductor (also known as ACCR – Aluminum Conductor Composite Reinforced) manufactured by 3M Company.

The specific tests included in this report are:

- Room Temperature Tensile Test
- Sustained Load Test

The results for each test are reported separately.

Room Temperature Tensile Test

The Dead-End Assembly consists of a set of aluminum alloy structural rods and two separate dead-ends, one with aluminum-clad steel rods and one with aluminum alloy rods. When applied using a standard 40,000 lbs thimble-clevis, the aluminum-clad steel dead-end is attached to the normal groove of the thimble-clevis, and the aluminum alloy dead-end is positioned through the "work hole" in the front of the thimble-clevis (see Figure 1).

See Figure 2 and Table 1 for the results of the room temperature tensile testing of the Dead-End Assemblies for the 1272 ACCR Conductor.

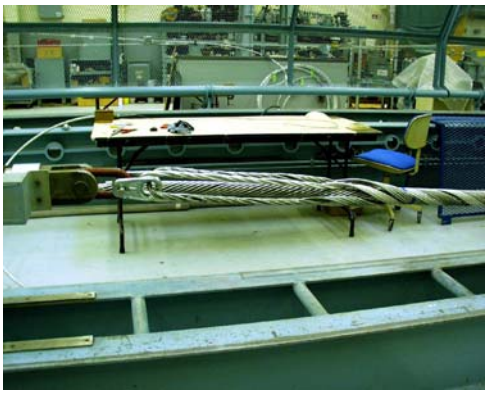

Figure 1 – 3-Piece Dead-End

Figure 2 – Typical Mid-Span Failure

Sample	Max. Load (lbs)	% RBS	Location of Failure
1	44,600	102	Mid-Span
2	44,600	102	Mid-Span
3	44,603	102	Mid-Span

Table 1 – Room Temperature Tensile Testing of
1272 Dead-End Assembly

Sustained Load Test

The purpose of this test is to demonstrate that the Dead-End assembly will hold at a high tension level (77% RBS) at room temperature for an extended period of time (168 continuous hours), per ANSI C119.4.

The test samples for this testing consist of a 60 ft. length of 1272 ACCR conductor terminated at both ends with a PLP Dead-End Assembly. The tension was maintained throughout the test period with the 55K Tensile Equipment.

At the end of the 168 hours of sustained high load, the sample was tensioned to failure in the same 55K Tensile Equipment. The test sample failed completely in mid-span (away from the dead-end assemblies) at a load of 43,999 lbs (101% RBS).

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