

## Southwire (U.S.) ACSS/TW Suwannee Conductor

Dead-end-connector and splice-connector systems were tensile tested for the Southwire ACSS/TW conductor to ensure that the ultimate tensile strength measured for each system met or exceeded 95% of the rated breaking strength of the conductor (31,445 lbs). ANSI C119.4 [22] provides guidance on the test methodology and acceptance criteria for ACSS conductor-connector systems.

Dead-end and splice compression connector assemblies were utilized for these tests. The compression connectors were all manufactured by AFL and were sized appropriately for their respective conductors (see Table 6-5).

Table 6-5. Southwire ACSS/TW connector specifications

Conductor Manufacturer	Southwire	
Conductor Geometry	959.6 kcmil, Type 16, ACSS/TW MA3 Suwannee	
Nominal Outer Diameter	1.11 in (27.86 mm)	
Construction	Twenty-two (22), 1350-O Temper trapezoidal aluminum wires (2 layers) over seven (7) 3.79 mm round high strength steel wires	
Rated Breaking Strength	33,100 lb.	
Dead-end Part No.	Aluminum Body	8130.125CHT/UHS
	Steel Eye	E9718.453
Splice Part No.	Aluminum Body	8030.125HT/UHS
	Steel Sleeve	4018.453

The samples were individually loaded into the test frame and pre-loaded to 2% of the RBS of the Southwire ACSS/TW conductor (662 lbs or 2.94 kN). A loading rate of 4,965 lbs/min was used for the Southwire ACSS connector-conductor tests.

The tension applied to the systems over the test time is plotted in Figure 6-3.

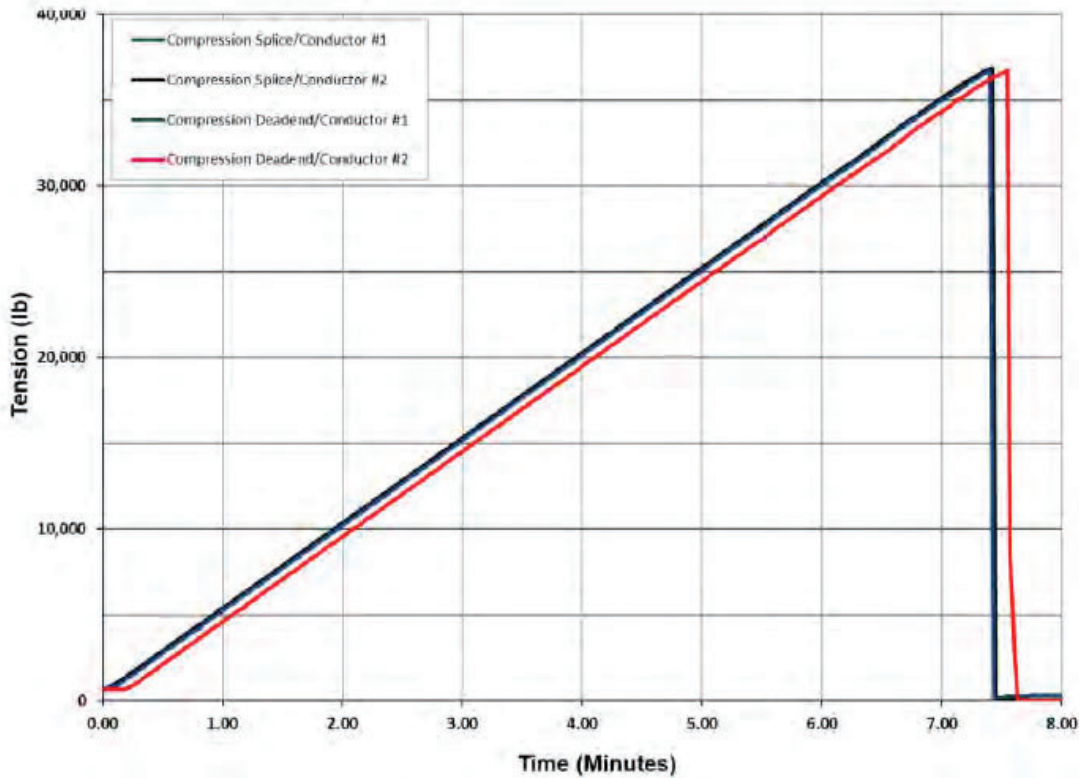


Figure 6-3. Southwire ACSS connector-conductor system UTS test: tension vs. time

The results from the UTS test of the connector-conductor samples are presented in Table 6-6. The compression dead-end and compression splice samples installed on Southwire Suwanee ACSS/TW conductor, as evaluated, met the specified acceptance criteria in ANSI C119.4 for tensile strength.

Table 6-6. Southwire ACSS connector-conductor system UTS test results

No.	Sample Description	Test Results		
		UTS (lbs)	UTS (% Conductor RBS)	Failure Location
1	Dead-end 1	26,657	110.8	14 ft from mouth of DE
2	Deade-nd 2	36,707	110.9	5 ft from epoxy
3	Splice 1	36,849	111.4	5 ft from epoxy
4	Splice 2	36,864	111.4	6 ft from epoxy