

DATA SHEET:

979 KCMIL_Fernow_AECC_TW_M3_TS



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	496.16	mm ²	979.15	kcmil
Encapsulated Aluminum Cross-Sectional Area	86.58	mm ²	0.13420	in ²
Diameter of Composite Core (Exclude Encapsulation)	8.0	mm	0.31500	in
Cross-sectional Area of Core (Exclude Encapsulation)	50.30	mm ²	0.07791	in ²
Overall Diameter of Conductor	27.000	mm	1.063	in
Cross-sectional Area of the Conductor (Exclude Covering)	546.40	mm ²	0.84695	in ²
Ultimate Tensile Strength of Conductor 1) ,2)	167.74	kN	37.71	kip
Rated Strength of Core - 399 ksi (2750 MPa)	138.21	kN	31.07	kip
Core Mass per unit length (Exclude Encapsulation)	87.00	kg/km	58.47	lb/kft
Conductor Mass per unit length	1449.92	kg/km	974.47	lb/kft
Fully Annealed Al Mass per unit length (Include Encapsulation)**	1362.92	kg/km	916.00	lb/kft
Maximum Emergency Temperature at Surface 3)	200	°C	392	°F
Coefficient of Linear Expansion Above Thermal Kneepoint (core)	0.500	x10 ⁻⁶ /°C	0.278	x10 ⁻⁶ /°F
Coefficient of Linear Expansion Below Thermal Kneepoint (conductor)	18.197	x10 ⁻⁶ /°C	10.110	x10 ⁻⁶ /°F
Final Modulus of Elasticity Above Thermal Kneepoint (based on core area)	150.0	GPa	21.8	Msi
Final Modulus of Elasticity Below Thermal Kneepoint (based on conductor area)	64.2	GPa	9.3	Msi
Aluminum Heat Capacity	1271.9	Watt-s/m-°C	215.4	Watt-s/ft-°F
Core Heat Capacity	74.3	Watt-s/m-°C	12.6	Watt-s/ft-°F
Encapsulation Thickness	2.60	mm	0.10236	in
Stranding Ratio	1.0225			
Covered Thickness	0.000	mm	0.000	in
Electrical Specifications	Metric		Imperial	
DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.0562	ohm/km	0.0904	ohm/mile
DC Resistance at 25°C	0.0573	ohm/km	0.0923	ohm/mile
DC Resistance at 75°C	0.0688	ohm/km	0.1107	ohm/mile
Temperature Coefficient of Resistance at 20°C	0.00408	1/°C	0.00227	1/°F
Frequency	60	Hz	60	Hz
AC Resistance at 25°C	0.0587	ohm/km	0.0944	ohm/mile
AC Resistance at 75°C	0.0699	ohm/km	0.1125	ohm/mile
AC Resistance at 180°C	0.0935	ohm/km	0.1505	ohm/mile
Ampacity 4)		1717	@180°C, & A	
		1811	@200°C, & A	
GMR (estimated)	10.89	mm	0.0357	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2512	ohm/km	0.404	ohm/mile
Capacitive Reactance	0.1488	Mohm-km	0.092	Mohm-mile

*979 KCMIL_Fernow_AECC_TW_M3_TS conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 496.2 sq. mm (979.1 kcmil)

**TS® Conductors are required to exhibit lay lengths (ratios) that conform to established ACSR and ACSS standards.

- 1) Fully Annealed Al rated tensile strength based on applicable standard. Core tensile strength based on 100% of its strength.
- 2) Strength at ambient temperature, Strength may be reduced to Rated Core Strength when temperature is above knee point
- 3) Maximum continuous operating temperature of 979 KCMIL_Fernow_AECC_TW_M3_TS is 180°C and a maximum emergency temperature of 200°C
- 4). Ampacity based on: 25°C ambient temperature, 2ft/s (0.6 m/s) perpendicular wind, 0.5 Emis 0.5 Absorb.60 Hz, sea level (0) elevation, 30°N line Azimuth, noon on June 10th (96W/sq.ft, 1033W/sq.m), clear atmosphere

The information contained herein is offered in good faith. All values are nominal unless specifically indicated as maximum or minimum. The actual configuration of a given size may vary between conductor manufacturers and may result in slight variations in some of the indicated values. Data herein is to be considered confidential and proprietary to TS Conductor

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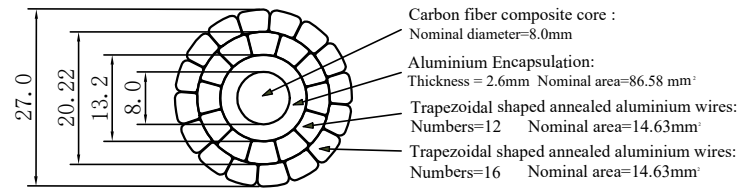
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Date Produced:

6/3/2025

TS Conductor Cross sectional drawing for customers

Expected value at production time



TS Conductor Corp.		
TS Fernow M3 8 (1.063) 979 ID:36733		
Design		2022/12/15
Check		
Ratify		