

DATA SHEET:

# TS Mitchell M3 9.5 (1.002) 817



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	413.77	mm <sup>2</sup>	816.57	kcmil
Encapsulated Aluminum Cross-Sectional Area	94.25	mm <sup>2</sup>	0.14608	in <sup>2</sup>
Diameter of Composite Core (Exclude Encapsulation)	9.5	mm	0.37400	in
Cross-sectional Area of Core (Exclude Encapsulation)	70.90	mm <sup>2</sup>	0.10987	in <sup>2</sup>
Overall Diameter of Conductor	25.450	mm	1.002	in
Cross-sectional Area of the Conductor (Exclude Covering)	484.70	mm <sup>2</sup>	0.75122	in <sup>2</sup>
Ultimate Tensile Strength of Conductor 1) ,2)	219.96	kN	49.45	kip
Rated Strength of Core - 399 ksi (2750 MPa)	194.92	kN	43.82	kip
Core Mass per unit length (Exclude Encapsulation)	123.00	kg/km	82.67	lb/kft
Conductor Mass per unit length	1258.27	kg/km	845.67	lb/kft
Fully Annealed Al Mass per unit length (Include Encapsulation)**	1135.27	kg/km	763.00	lb/kft
Maximum Emergency Temperature at Surface 3)	200	°C	392	°F
Coefficient of Linear Expansion Above Thermal Kneepoint (core)	0.500	x10 <sup>-6</sup> /°C	0.278	x10 <sup>-6</sup> /°F
Coefficient of Linear Expansion Below Thermal Kneepoint (conductor)	15.944	x10 <sup>-6</sup> /°C	8.858	x10 <sup>-6</sup> /°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)	69.7	GPa	10.1	Msi
Aluminum Heat Capacity	1060.7	Watt-s/m-°C	179.6	Watt-s/ft.°F
Core Heat Capacity	104.8	Watt-s/m-°C	17.8	Watt-s/ft.°F
Encapsulation Thickness	2.50	mm	0.09843	in
Stranding Ratio	1.0215			
Covered Thickness	0.000	mm	0.000	in
Electrical Specifications	Metric		Imperial	
DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.0672	ohm/km	0.1082	ohm/mile
DC Resistance at 25°C	0.0686	ohm/km	0.1104	ohm/mile
DC Resistance at 75°C	0.0823	ohm/km	0.1325	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	0.0695	ohm/km	0.1119	ohm/mile
AC Resistance at 75°C	0.0831	ohm/km	0.1337	ohm/mile
AC Resistance at 180°C	0.1116	ohm/km	0.1796	ohm/mile
Ampacity 4)		1543	@180°C, & A	
		1627	@200°C, & A	
GMR (estimated)	10.45	mm	0.0343	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2543	ohm/km	0.409	ohm/mile
Capacitive Reactance	0.1516	Mohm-km	0.094	Mohm-mile

\*TS Mitchell M3 9.5 (1.002) 817 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 413.8 sq. mm (816.6 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 TS Mitchell M3 9.5 (1.002) 817 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

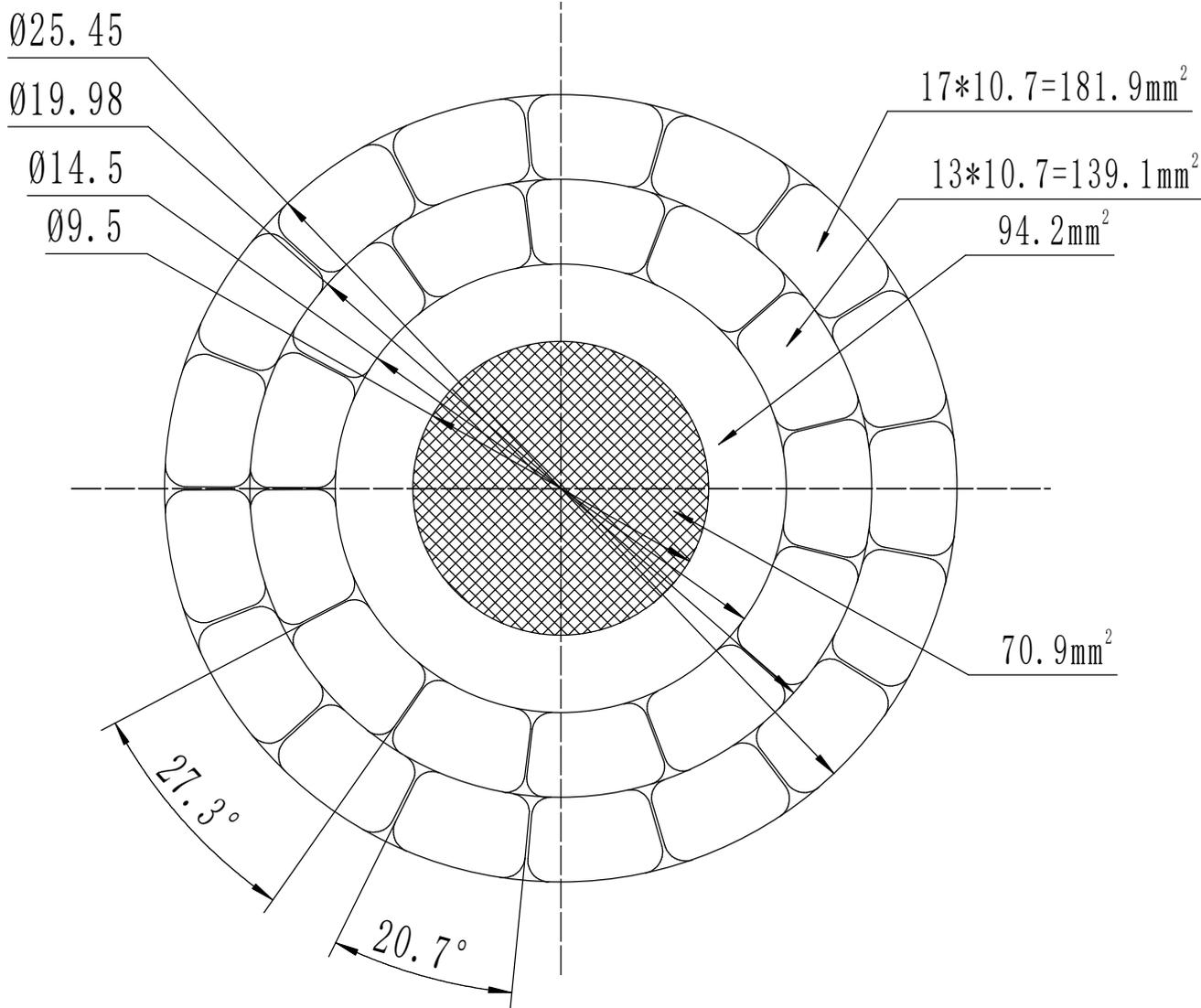
The information contained herein is offered in good faith. All values are nominal unless specifically indicated as maximum or minimum. The actual configuration of a given size may vary between conductor manufacturers and may result in slight variations in some of the indicated values. Data herein is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

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Date Produced:

3/4/2024



						TS Tern Lite BC150 9.5 2.5			TS Conductor		
标记						处数			分区		
更改文件号						签名			年、月、日		
设计						G			标准化		
审核									4.5:1		
工艺						批准					