

DATA SHEET:

TS Storm King M3 4 1.6 (0.448) Round 147



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	74.50	mm ²	147.02	kcmil
Encapsulated Aluminum Cross-Sectional Area	28.15	mm ²	0.04363	in ²
Diameter of Composite Core (Exclude Encapsulation)	4.0	mm	0.15700	in
Cross-sectional Area of Core (Exclude Encapsulation)	12.60	mm ²	0.01948	in ²
Overall Diameter of Conductor	11.379	mm	0.448	in
Cross-sectional Area of the Conductor (Exclude Covering)	87.10	mm ²	0.13495	in ²
Ultimate Tensile Strength of Conductor 1) ,2)	39.32	kN	8.84	kip
Rated Strength of Core - 312 ksi (2150 MPa)	34.61	kN	7.78	kip
Core Mass per unit length (Exclude Encapsulation)	22.00	kg/km	14.79	lb/kft
Conductor Mass per unit length	225.84	kg/km	151.79	lb/kft
Fully Annealed Al Mass per unit length (Include Encapsulation)**	203.84	kg/km	137.00	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)	16.115	x10 ⁻⁶ /°C	8.953	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)	70.5	GPa	10.2	Msi
Aluminum Heat Capacity	191.0	Watt-s/m-°C	32.3	Watt-s/ft.°F
Core Heat Capacity	18.6	Watt-s/m-°C	3.1	Watt-s/ft.°F
Encapsulation Thickness	1.60	mm	0.06299	in
Stranding Ratio	1.0200			
Covered Thickness	0.000	mm	0.000	in
Electrical Specifications	Metric		Imperial	
DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.3719	ohm/km	0.5985	ohm/mile
DC Resistance at 25°C	0.3795	ohm/km	0.6107	ohm/mile
DC Resistance at 75°C	0.4553	ohm/km	0.7328	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	0.3797	ohm/km	0.6110	ohm/mile
AC Resistance at 75°C	0.4555	ohm/km	0.7330	ohm/mile
AC Resistance at 180°C	0.6147	ohm/km	0.9893	ohm/mile
Ampacity 4)		515	@180°C, & A	
		540	@200°C, & A	
GMR (estimated)	4.65	mm	0.0152	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.3154	ohm/km	0.508	ohm/mile
Capacitive Reactance	0.1900	Mohm-km	0.118	Mohm-mile

*TS Storm King M3 4 1.6 (0.448) Round 147 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 74.5 sq. mm (147 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 Storm King M3 4 1.6 (0.448) Round 147 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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