TS Gould M3 9.5 (1.108) 1027



Governing Units: Metric

Fully Annealed Al Cross-sectional Area 520.51 mm² 1027.21 kcmil	Governing Units: Metric				
Encapsulated Aluminum Cross-Sectional Area 112.97 mm² 0.17511 in² 0.100 in 0.37400 in 0.37400 in 0.37400 in 0.10087 in² in² 0.10087 in²	Mechanical Specifications	Metric		Imperial	
Diameter of Composite Core (Exclude Encapsulation) 9.5 mm 0.37400 in	Fully Annealed Al Cross-sectional Area*	520.51		1027.21	1
Cross-sectional Area of Core (Exclude Encapsulation) 70.90 mm² 0.10987 in² Overall Diameter of Conductor 28.143 mm 1.108 in Cross-sectional Area of the Conductor (Exclude Covering) 591.40 mm² 0.91666 in² Ultimate Tensile Strength of Conductor 1), 2) 28.33 kN 50.88 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 1161ude Encapsulation)** 1429.88 kg/km 961.00 lb/kft Fully Annealed AllMass per unit length 1161ude Encapsulation)** 1429.88 kg/km 961.00 lb/kft Maximum Emergency Temperature at Surface 3) 200 °C 392 °F Coefficient of Linear Expansion Above Thermal Kneepoint (corductor) 17.04 x10.6°/C 0.278 x10.6°/P Final Modulus of Elasticity Above Thermal Kneepoint (based on corductor area) 150.0 GPa 21.8 Msi Allumi	Encapsulated Aluminum Cross-Sectional Area	112.97	mm ²	0.17511	in ²
Description	Diameter of Composite Core (Exclude Encapsulation)	9.5	mm	0.37400	
Cross-sectional Area of the Conductor (Exclude Covering) 591.40 mm² 0.91666 in² Ultimate Tensile Strength of Conductor 1), 2) 226.33 kN 50.88 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 1552.88 kg/km 1043.67 lb/kft Fully Annealed AlMass per unit length (Include Encapsulation)** 1429.88 kg/km 1961.00 lb/kft Fully Annealed AlMass per unit length (Include Encapsulation)** 1429.88 kg/km 1961.00 lb/kft Coefficient of Linear Expansion Above Thermal Kneepoint (core) 0.500 x10°°/C 392 °F Coefficient of Linear Expansion Below Thermal Kneepoint (conductor) 17.004 x10°°/C 9.447 x10°°/F Final Modulus of Elasticity Bove Thermal Kneepoint (based on core area) 150.0 GPa 21.8 Msi Final Modulus of Elasticity Below Thermal Kneepoint (based on cord area) 150.0 GPa 21.8 Msi	Cross-sectional Area of Core (Exclude Encapsulation)	70.90	mm ²	0.10987	in ²
Diffimate Tensile Strength of Conductor 1),2 226.33 kN 50.88 kip	Overall Diameter of Conductor	28.143		1.108	I
Rated Strength of Core - 399 ksi (2750 MPa)	Cross-sectional Area of the Conductor (Exclude Covering)	591.40	mm ²	0.91666	in ²
123.00 kg/km 82.67 lb/kft 103.00 kg/km 82.67 lb/kft 104.67 lb/kft 1552.88 kg/km 1043.67 lb/kft 1552.88 kg/km 1043.67 lb/kft 1652.88 kg/km 1043.67 lb/kft 1652.88 kg/km 1043.67 lb/kft 1429.88 kg/km 961.00 kg/kft 1429.88 kg/k	Ultimate Tensile Strength of Conductor 1) ,2)	226.33	kN	50.88	kip
Conductor Mass per unit length	Rated Strength of Core - 399 ksi (2750 MPa)	194.92	kN	43.82	kip
Fully Annealed AlMass per unit length (Include Encapsulation)**	Core Mass per unit length (Exclude Encapsulation)	123.00	kg/km	82.67	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) 17.004 x10.6°/C 9.447 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) 67.1 GPa 9.7 Msi Aluminum Heat Capacity 1334.3 watt-s/m⁻² 225.9 watt-s/m⁻² Core Heat Capacity 104.8 watt-s/m⁻² 17.8 watt-s/m⁻² Encapsulation Thickness 2.90 mm 0.11417 in Stranding Ratio 1.0225	Conductor Mass per unit length	1552.88	kg/km	1043.67	lb/kft
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) 17.004 x10 6/°C 9.447 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) 67.1 GPa 9.7 Msi Aluminum Heat Capacity 1334.3 watt-s/m-°C 225.9 watt-s/ft-*F Core Heat Capacity 104.8 watt-s/m-°C 17.8 watt-s/ft-*F Encapsulation Thickness 2.90 mm 0.11417 in Stranding Ratio 1.0225 mm 0.11417 in Covered Thickness 0.000 mm 0.000 in DC Resistance at 20°C (Fully Annealed Al 63% IACS) 0.0535 ohm/km 0.0861 ohm/mile DC Resistance at 25°C 0.0546 ohm/km 0.0879 ohm/mile DC Resistance at 75°C 0.00408 1/°C 0.00227 1/°F	Fully Annealed AlMass per unit length (Include Encapsulation)**	1429.88	kg/km	961.00	lb/kft
Coefficient of Linear Expansion Below Thermal Kneepoint (conductor) 17.004 x10°6/°C 9.447 x10°6/°F	Maximum Emergency Temperature at Surface 3)	200	°C	392	°F
Final Modulus of Elasticity Above Thermal Kneepoint (based on core area) 150.0 GPa 21.8 Msi	Coefficient of Linear Expansion Above Thermal Kneepoint (core)	0.500	x10 ⁻⁶ /°C	0.278	x10 ⁻⁶ /°F
Final Modulus of Elasticity Below Thermal Kneepoint (based on conductor area) 67.1 GPa 9.7 Msi	Coefficient of Linear Expansion Below Thermal Kneepoint (conductor)	17.004	x10 ⁻⁶ /°C	9.447	x10 ⁻⁶ /°F
Aluminum Heat Capacity 1334.3 Watt-s/m-°C 225.9 Watt-s/ft-°F Core Heat Capacity 104.8 Watt-s/m-°C 17.8 Watt-s/ft-°F Encapsulation Thickness 2.90 mm 0.11417 in Stranding Ratio 1.0225	Final Modulus of Elasticity Above Thermal Kneepoint (based on core area)	150.0	GPa	21.8	Msi
Core Heat Capacity 104.8 Watt-s/m²°C 17.8 Watt-s/ft-²F Encapsulation Thickness 2.90 mm 0.11417 in Stranding Ratio 1.0225 .	Final Modulus of Elasticity Below Thermal Kneepoint (based on conductor area)	67.1	GPa	9.7	Msi
2.90 mm 0.11417 in	Aluminum Heat Capacity	1334.3	Watt-s/m-°C	225.9	Watt-s/ft-°F
Stranding Ratio 1.0225	Core Heat Capacity	104.8	Watt-s/m-°C	17.8	Watt-s/ft-°F
Covered Thickness 0.000 mm 0.000 in Electrical Specifications Metric Imperial DC Resistance at 20°C (Fully Annealed AI 63% IACS) 0.0535 ohm/km 0.0861 ohm/mile DC Resistance at 25°C 0.0546 ohm/km 0.0879 ohm/mile DC Resistance at 75°C 0.0655 ohm/km 0.1054 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 0.0559 ohm/km 0.0899 ohm/mile AC Resistance at 75°C 0.0666 ohm/km 0.1072 ohm/mile AC Resistance at 180°C 0.0891 ohm/km 0.1433 ohm/mile Ampacity 4) 1783 @180°C, & A GMR (estimated) 11.46 mm 0.0376 ft Inductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2474 ohm/km 0.398 ohm/mile	Encapsulation Thickness	2.90	mm	0.11417	in
Electrical Specifications Metric Imperial DC Resistance at 20°C (Fully Annealed AI 63% IACS) 0.0535 ohm/km 0.0861 ohm/mile DC Resistance at 25°C 0.0546 ohm/km 0.0879 ohm/mile DC Resistance at 75°C 0.0655 ohm/km 0.1054 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 0.0559 ohm/km 0.0899 ohm/mile AC Resistance at 75°C 0.0666 ohm/km 0.1072 ohm/mile AC Resistance at 180°C 0.0891 ohm/km 0.1433 ohm/mile Ampacity 4) 1783 @180°C, & A GMR (estimated) 11.46 mm 0.0376 ft Inductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2474 ohm/km 0.398 ohm/mile	Stranding Ratio	1.0225			
DC Resistance at 20°C (Fully Annealed AI 63% IACS) 0.0535 ohm/km 0.0861 ohm/mile DC Resistance at 25°C 0.0546 ohm/km 0.0879 ohm/mile DC Resistance at 75°C 0.0655 ohm/km 0.1054 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 0.0559 ohm/km 0.0899 ohm/mile AC Resistance at 75°C 0.0666 ohm/km 0.1072 ohm/mile AC Resistance at 180°C 0.0891 ohm/km 0.1433 ohm/mile Ampacity 4) 1783 @180°C, & A GMR (estimated) 11.46 mm 0.0376 ft Inductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2474 ohm/km 0.398 ohm/mile	Covered Thickness	0.000	mm	0.000	in
DC Resistance at 25°C 0.0546 ohm/km 0.0879 ohm/mile DC Resistance at 75°C 0.0655 ohm/km 0.1054 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 0.0559 ohm/km 0.0899 ohm/mile AC Resistance at 75°C 0.0666 ohm/km 0.1072 ohm/mile AC Resistance at 180°C 0.0891 ohm/km 0.1433 ohm/mile Ampacity 4) 1783 @180°C, & A GMR (estimated) 11.46 mm 0.0376 ft Inductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2474 ohm/km 0.398 ohm/mile	Electrical Specifications	Metric		Imperial	
DC Resistance at 75°C 0.0655 0hm/km 0.1054 0hm/mile	DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.0535	ohm/km	0.0861	ohm/mile
Temperature Coefficient of Resistance at 20°C 0.00408 1/°C 0.00227 1/°F	DC Resistance at 25°C	0.0546	ohm/km	0.0879	ohm/mile
Frequency 60	DC Resistance at 75°C	0.0655	ohm/km	0.1054	ohm/mile
AC Resistance at 25°C AC Resistance at 75°C AC Resistance at 180°C AC Resistance at 180°C AC Resistance at 180°C AC Resistance at 180°C Ampacity 4) Comparison of the c	Temperature Coefficient of Resistance at 20°C	0.00408	1/°C	0.00227	1/°F
AC Resistance at 75°C 0.0666 ohm/km 0.1072 ohm/mile AC Resistance at 180°C 0.0891 ohm/km 0.1433 ohm/mile Ampacity 4) 1783 @180°C, & A BMR (estimated) 11.46 mm 0.0376 ft Inductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2474 ohm/km 0.398 ohm/mile	Frequency	60	Hz	60	Hz
AC Resistance at 180°C 0.0891 ohm/km 0.1433 ohm/mile Ampacity 4) 1783 @180°C, & A 1881 @200°C, & A GMR (estimated) 11.46 mm 0.0376 ft Inductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2474 ohm/km 0.398 ohm/mile	AC Resistance at 25°C	0.0559	ohm/km	0.0899	ohm/mile
Ampacity 4)	AC Resistance at 75°C	0.0666	ohm/km	0.1072	ohm/mile
Table Ampacity 4	AC Resistance at 180°C	0.0891	ohm/km		
1881 @200°C, & A	Ampacity 4)		1783		
Inductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2474 ohm/km 0.398 ohm/mile			1881	@200	°C, & A
	GMR (estimated)	11.46	mm	0.0376	ft
Capacitive Reactance 0.1468 Mohm-km 0.091 Mohm-mile	Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2474	ohm/km	0.398	ohm/mile
	Capacitive Reactance	0.1468	Mohm-km	0.091	Mohm-mile

^{*}TS Gould M3 9.5 (1.108) 1027 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivaeInt area is 520.5 sq. mm (1027.2 kcmil)

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

contact: info@tsconductor.com ID:25914 Date Produced: 12/5/2023

^{**}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.

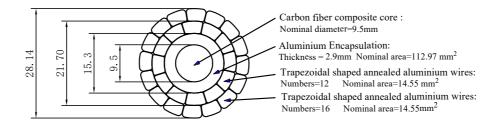
²⁾ Strength at ambient temperature, Strength may be reduced to Rated Core Strength when temperature is above knee point

³⁾ Maximum continuous operating temperature of TS Gould M3 9.5 (1.108) 1027 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

TS® Conductor Cross sectional drawing

Expected value at production time



TS Conductor Corp.

TS Gould M3 9.5 (1.108) 1027 ID:25914

Design	
Check	
Ratify	