

DATA SHEET:

632 KCMIL_Algonquin_AECC_TW_M3_TS



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	320.50	mm ²	632.49	kcmil
Encapsulated Aluminum Cross-Sectional Area	63.59	mm ²	0.09856	in ²
Diameter of Composite Core (Exclude Encapsulation)	6.5	mm	0.25600	in
Cross-sectional Area of Core (Exclude Encapsulation)	33.20	mm ²	0.05143	in ²
Overall Diameter of Conductor	21.793	mm	0.858	in
Cross-sectional Area of the Conductor (Exclude Covering)	353.70	mm ²	0.54821	in ²
Ultimate Tensile Strength of Conductor 1) ,2)	110.54	kN	24.85	kip
Rated Strength of Core - 399 ksi (2750 MPa)	91.32	kN	20.53	kip
Core Mass per unit length (Exclude Encapsulation)	58.00	kg/km	38.98	lb/kft
Conductor Mass per unit length	937.35	kg/km	629.98	lb/kft
Fully Annealed Al Mass per unit length (Include Encapsulation)**	879.35	kg/km	591.00	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)	18.126	x10 ⁻⁶ /°C	10.070	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)	64.6	GPa	9.4	Msi
Aluminum Heat Capacity	821.6	Watt-s/m-°C	139.1	Watt-s/ft-°F
Core Heat Capacity	49.1	Watt-s/m-°C	8.3	Watt-s/ft-°F
Encapsulation Thickness	2.30	mm	0.09055	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)	0.0869	ohm/km	0.1398	ohm/mile
DC Resistance at 25°C	0.0886	ohm/km	0.1426	ohm/mile
DC Resistance at 75°C	0.1063	ohm/km	0.1711	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	0.0895	ohm/km	0.1441	ohm/mile
AC Resistance at 75°C	0.1071	ohm/km	0.1723	ohm/mile
AC Resistance at 180°C	0.1440	ohm/km	0.2317	ohm/mile
Ampacity 4)		1294	@180°C, & A	
		1363	@200°C, & A	
GMR (estimated)	8.79	mm	0.0288	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2674	ohm/km	0.430	ohm/mile
Capacitive Reactance	0.1590	Mohm-km	0.099	Mohm-mile

*632 KCMIL_Algonquin_AECC_TW_M3_TS conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 320.5 sq. mm (632.5 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 632 KCMIL_Algonquin_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

contact: info@tsconductor.com

ID:26257

Date Produced:

6/3/2025

DATA SHEET:

TS Algonquin M3 6.5 (21.793) IEC 632



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
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DC Resistance at 25°C	0.0886	ohm/km	0.1426	ohm/mile
DC Resistance at 75°C	0.1063	ohm/km	0.1711	ohm/mile
Temperature Coefficient of Resistance at 20°C	0.00408	1/°C	0.00227	1/°F
Frequency	50	Hz	50	Hz
AC Resistance at 25°C	0.0892	ohm/km	0.1436	ohm/mile
AC Resistance at 75°C	0.1069	ohm/km	0.1720	ohm/mile
AC Resistance at 180°C	0.1439	ohm/km	0.2315	ohm/mile
Ampacity 4)		1295	@180°C, & A	
		1364	@200°C, & A	
GMR (estimated)	8.79	mm	0.0288	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2228	ohm/km	0.359	ohm/mile
Capacitive Reactance	0.1908	Mohm-km	0.119	Mohm-mile

*TS Algonquin M3 6.5 (21.793) IEC 632 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 320.5 sq. mm (632.5 kcmil)

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- 4). Ampacity based on: 25°C ambient temperature, 2ft/s (0.6 m/s) perpendicular wind, 0.5 Emis 0.5 Absorb. 50 Hz, sea level (0) elevation, 30°N line Azimuth, noon on June 10th (96W/sq.ft, 1033W/sq.m), clear atmosphere

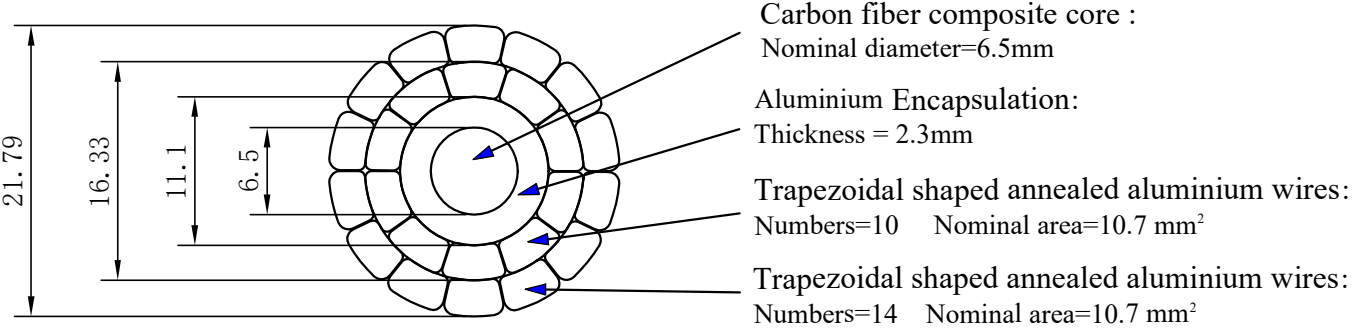
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ID:26264

Date Produced: 12/5/2023

TS Conductor Cross sectional drawing for customers



TS Conductor Corp.

TS Algonquin M3 6.5 (0.858) 632-ID:26257

Design

Date

Check

Date

Ratify

Date