

# TECHNICAL DATA SHEET

## Epsilon Advanced Conductor 530 - 71

High Temperature Low Sag Conductors

EPSILON  
CABLE

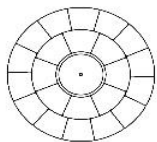
International size **DUBLIN**

ASTM Size **DRAKE**



Governing Units: Metric to US Customary (Unit conversion)

### STRANDING CONFIGURATION



	Metric			US Customary	
No. & Diameter of composite core	1 x 9.53	mm		1 x 0.375	in.
Aluminum layers construction / Height	22 TW x	4.66	mm	0.183	in.
1st layer composition and Øeq	8 x	5.63	mm	0.222	in.
2nd layer composition and Øeq	14 x	5.44	mm	0.214	in.
Lay Direction of outer layer	Right Hand (Z)				

### CONDUCTOR PROPERTIES

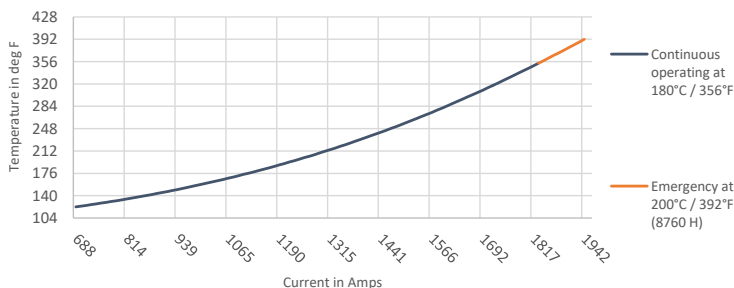
Cross Sectional Area - Annealed Aluminum (1350-O at 63%IACS)	524.8	mm <sup>2</sup>	1035.7	kcmil
Cross Sectional Area - Composite Core	71.3	mm <sup>2</sup>	0.1106	in. <sup>2</sup>
Total Area of Conductor Cross Section	596.1	mm <sup>2</sup>	0.9240	in. <sup>2</sup>
Nominal equivalent Aluminum Area (1350-H19 at 61%IACS)	542.0	mm <sup>2</sup>	1069.7	kcmil
Overall Diameter of Conductor	28.17	mm	1.109	in.
Mass per unit length - Annealed Aluminum	1,451.0	kg/km	975.0	lb/kft
Mass per unit length - Core	132.0	kg/km	88.7	lb/kft
Mass per unit length - Conductor	1,583.0	kg/km	1,063.7	lb/kft
Ultimate Tensile Strength of Conductor	191.5	kN	43.1	kips
Core Rated Tensile Strength	160.1	kN	36.0	kips
Coefficient of Linear Expansion Above Thermal Kneepoint	1.3	10 <sup>-6</sup> K <sup>-1</sup>	0.722	10 <sup>-6</sup> F <sup>-1</sup>
Coefficient of Linear Expansion Below Thermal Kneepoint	17.94	10 <sup>-6</sup> K <sup>-1</sup>	9.96	10 <sup>-6</sup> F <sup>-1</sup>
Final Modulus of Elasticity Above Thermal Kneepoint	123	GPa	17.84	Msi
Final Modulus of Elasticity Below Thermal Kneepoint	63	GPa	9.16	Msi

### THERMAL SPECIFICATIONS

Maximum Continuous Operating Temperature <sup>(2)</sup> (surface temperature)	180	°C	356	°F
Maximum Emergency Temperature / 8760 Hours <sup>(2)</sup> (surface temperature)	200	°C	392	°F
Thermal Heat Capacity for Annealed Aluminum Layers	1,385.7	W-s/m-°C	234.5	W-s/ft-°F
Thermal Heat Capacity for Composite Core	105.6	W-s/m-°C	17.9	W-s/ft-°F

### ELECTRICAL SPECIFICATIONS

Maximum DC Electrical Resistance at 20°C / 68°F (1370-O at 63%IACS)	0.0533	ohm/km	0.0858	ohm/mile
Temperature Coefficient of Resistance	4.07	10 <sup>-3</sup> K <sup>-1</sup>	2.109	10 <sup>-3</sup> F <sup>-1</sup>
AC Nominal Resistance at 25°C / 77°F (surface temperature)	0.0565	ohm/km	0.0909	ohm/mile
AC Nominal Resistance at 75°C / 167°F (surface temperature)	0.0670	ohm/km	0.1078	ohm/mile
AC Nominal Resistance at 180°C / 356°F (surface temperature)	0.0893	ohm/km	0.1438	ohm/mile
AC Nominal Resistance at 200°C / 392°F (surface temperature)	0.0936	ohm/km	0.1507	ohm/mile
AC Current Rating at 180°C / 356°F (surface temperature) <sup>(1)</sup>	1,837 A			
AC Current Rating at 200°C / 392°F (surface temperature) <sup>(1)</sup>	1,942 A			



#### Geometric Mean Radius (GMR)

11.46 mm 0.0376 ft.

#### Inductive Reactance Ø0.3m (Ø0.98ft) radius

0.206 Ω.km-1 0.3315 ohm/mile

#### Capacitive Reactance Ø0.3m (Ø0.98ft) radius

0.176 MΩ.km 0.1094 Mohm-mile

(1) Ampacity calculations based on IEEE Standard 738-2012, according to the following data:

25 °C / 77 °F ambient temperature, 0.61 m/s (2 ft/s) wind velocity with an angle of 90 °,  
1000 W/m<sup>2</sup> (92.9 W/ft<sup>2</sup>) solar radiation, 0.5 solar absorption coefficient,  
0.6 emissivity coefficient, Resistance AC at 60 Hz current frequency.

(2) Temperatures defined according to ASTM B987-20.

Reference standards for core properties: ASTM B987-20.

Reference standards for electrical specifications: IEC 62219.

Reference standards for stranding parameters: ASTM B857-14/IEC 62219.

Rated specifications may slightly change depending on conductor manufacturer.

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