TECHNICAL DATA SHEET

ECRC® 530 - 71

Epsilon Advanced Conductors

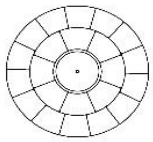
EPSILON CABLE

International size	**DUBLIN**
ASTM Size	**DRAKE**
Technical designation	ECRC® 530-AL0/71-S1



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

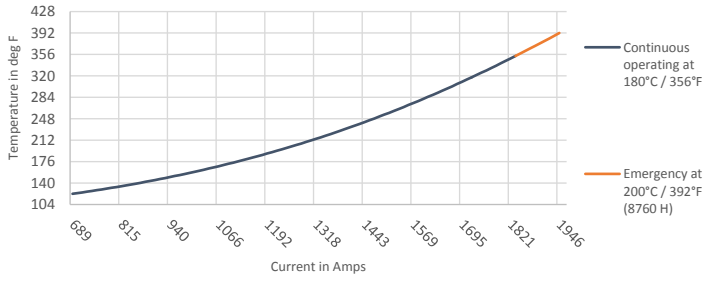
Cross Sectional Area - Annealed Aluminum (1350-O at 63%IACS)	524.8	mm^2	1035.7	kcmil
Cross Sectional Area - Composite Core	71.3	mm^2	0.1106	$in.^2$
Total Area of Conductor Cross Section	596.1	mm^2	0.9240	$in.^2$
Nominal equivalent Aluminum Area (1350-H19 at 61%IACS)	542.0	mm^2	1069.7	kcmil
Overall Diameter 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	$10^{-6}\ K^{-1}$	0.722	$10^{-6}\ F^{-1}$
Coefficient of Linear Expansion Below Thermal Kneepoint	17.94	$10^{-6}\ K^{-1}$	9.96	$10^{-6}\ F^{-1}$
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[2] (surface temperature)	180	°C	356	°F
Maximum Emergency Temperature / 8760 Hours[2] (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	4.03	$10^{-3}\ K^{-1}$	2.089	$10^{-3}\ F^{-1}$
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)	0.0669	ohm/km	0.1077	ohm/mile
AC Nominal Resistance at 180°C / 356°F (surface temperature)	0.0890	ohm/km	0.1432	ohm/mile
AC Nominal Resistance at 200°C / 392°F (surface temperature)	0.0932	ohm/km	0.1501	ohm/mile
AC Current Rating at 180°C / 356°F (surface temperature) [1]	1,841 A			
AC Current Rating at 200°C / 392°F (surface temperature) [1]	1,946 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/m² (92.9 W/ft²) 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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