TECHNICAL DATA SHEET

ECRC® 580 - 60

Epsilon Advanced Conductors

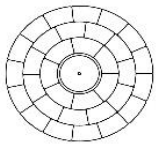
EPSILON CABLE

International size	**MILAN**
ASTM Size	**CORPUS CHRISTI**
Technical designation	ECRC® 580-AL0/60-S1



Governing Units: Metric to US Customary (Unit conversion)

STRANDING CONFIGURATION



	Metric		US Customary	
No. & Diameter of composite core	1 x 8.76	mm	1 x 0.345	in.
Aluminum layers construction / Height	33 TW x 3.39	mm	0.133	in.
1st layer composition and Øeq	7 x 4.75	mm	0.187	in.
2nd layer composition and Øeq	11 x 4.70	mm	0.185	in.
3st layer composition and Øeq	15 x 4.67	mm	0.184	in.
Lay Direction of outer layer	Right Hand (Z)			

CONDUCTOR PROPERTIES

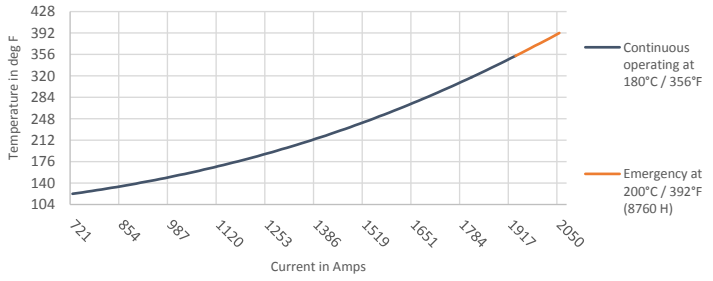
Cross Sectional Area - Annealed Aluminum (1350-O at 63%IACS)	572.5	mm²	1129.9	kcmil
Cross Sectional Area - Composite Core	60.3	mm²	0.0934	in.²
Total Area of Conductor Cross Section	632.8	mm²	0.9809	in.²
Nominal equivalent Aluminum Area (1350-H19 at 61%IACS)	591.3	mm²	1167.0	kcmil
Overall Diameter of Conductor	29.1	mm	1.146	in.
Mass per unit length - Annealed Aluminum	1,585.0	kg/km	1,065.1	lb/kft
Mass per unit length - Core	111.5	kg/km	74.9	lb/kft
Mass per unit length - Conductor	1,696.5	kg/km	1,140.0	lb/kft
Ultimate Tensile Strength of Conductor	169.6	kN	38.1	kips
Core Rated Tensile Strength	135.2	kN	30.4	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	18.86	10^{-6} K^{-1}	10.48	10^{-6} F^{-1}
Final Modulus of Elasticity Above Thermal Kneepoint	123	GPa	17.84	Msi
Final Modulus of Elasticity Below Thermal Kneepoint	61	GPa	8.92	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	1,513.7	W-s/m-°C	256.2	W-s/ft-°F
Thermal Heat Capacity for Composite Core	89.2	W-s/m-°C	15.1	W-s/ft-°F

ELECTRICAL SPECIFICATIONS

Maximum DC Electrical Resistance at 20°C / 68°F *(1370-O at 63%IACS)*	0.0490	ohm/km	0.0789	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)	0.0523	ohm/km	0.0841	ohm/mile
AC Nominal Resistance at 75°C / 167°F (surface temperature)	0.0618	ohm/km	0.0994	ohm/mile
AC Nominal Resistance at 180°C / 356°F (surface temperature)	0.0820	ohm/km	0.1320	ohm/mile
AC Nominal Resistance at 200°C / 392°F (surface temperature)	0.0859	ohm/km	0.1383	ohm/mile
AC Current Rating at 180°C / 356°F (surface temperature) [1]	1,938 A			
AC Current Rating at 200°C / 392°F (surface temperature) [1]	2,050 A			



Geometric Mean Radius (GMR)				
	11.75	mm	0.0385	ft.
Inductive Reactance Ø0.3m (Ø0.98ft) radius				
	0.205	Ω.km-1	0.3299	ohm/mile
Capacitive Reactance Ø0.3m (Ø0.98ft) radius				
	0.174	MΩ.km	0.1081	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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