TECHNICAL DATA SHEET

ECRC® 740 - 71

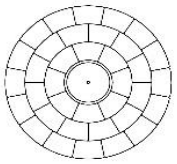
Epsilon Advanced Conductors

EPSILON CABLE

International size	**MUNICH**
ASTM Size	**BEAUMONT**
Technical designation	ECRC® 740-AL0/71-S1



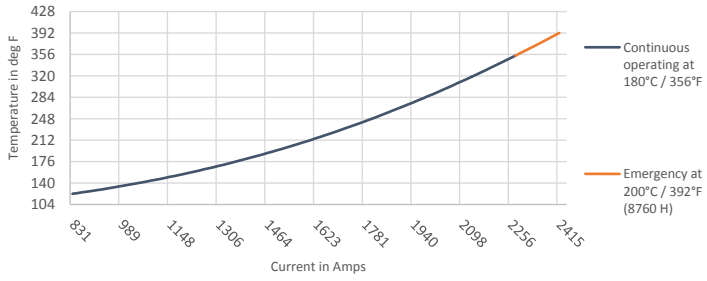
Governing Units: Metric to US Customary (Unit conversion)

STRANDING CONFIGURATION		Metric		US Customary	
	*No. & Diameter of composite core*	1 x 9.53	mm	1 x 0.375	in.
	Aluminum layers construction / Height	36 TW x 3.89	mm	0.153	in.
	1st layer composition and Øeq	8 x 5.00	mm	0.197	in.
	2nd layer composition and Øeq	12 x 5.11	mm	0.201	in.
	3st layer composition and Øeq	16 x 5.16	mm	0.203	in.
	Lay Direction of outer layer	Right Hand (Z)			

CONDUCTOR PROPERTIES				
Cross Sectional Area - Annealed Aluminum (1350-O at 63%IACS)	737.6	mm²	1455.7	kcmil
Cross Sectional Area - Composite Core	71.3	mm²	0.1106	in.²
Total Area of Conductor Cross Section	808.9	mm²	1.2538	in.²
Nominal equivalent Aluminum Area (1350-H19 at 61%IACS)	761.8	mm²	1503.4	kcmil
Overall Diameter of Conductor	32.87	mm	1.294	in.
Mass per unit length - Annealed Aluminum	2,042.0	kg/km	1,372.2	lb/kft
Mass per unit length - Core	132.0	kg/km	88.7	lb/kft
Mass per unit length - Conductor	2,174.0	kg/km	1,460.8	lb/kft
Ultimate Tensile Strength of Conductor	204.3	kN	45.9	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	19.14	10^{-6} K^{-1}	10.63	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	8.85	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	1,950.1	W-s/m-°C	330.1	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)*	0.0380	ohm/km	0.0612	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)	0.0416	ohm/km	0.0670	ohm/mile
AC Nominal Resistance at 75°C / 167°F (surface temperature)	0.0489	ohm/km	0.0786	ohm/mile
AC Nominal Resistance at 180°C / 356°F (surface temperature)	0.0644	ohm/km	0.1036	ohm/mile
AC Nominal Resistance at 200°C / 392°F (surface temperature)	0.0673	ohm/km	0.1084	ohm/mile
AC Current Rating at 180°C / 356°F (surface temperature) [1]	2,280 A			
AC Current Rating at 200°C / 392°F (surface temperature) [1]	2,415 A			



Geometric Mean Radius (GMR)				
	13.22	mm	0.0434	ft.
Inductive Reactance Ø0.3m (Ø0.98ft) radius				
	0.197	Ω.km-1	0.3170	ohm/mile
Capacitive Reactance Ø0.3m (Ø0.98ft) radius				
	0.167	MΩ.km	0.1038	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.

Revision 02

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