

**TECHNICAL SPECIFICATION**

**CONDUCTORS FOR OVERHEAD LINES- ROUND WIRE CONCENTRIC LAY STRANDED CONDUCTORS**

Technical Description	Units	Guaranteed Characteristics
<b>1. General Data</b>		
a)Manufacturer		HASÇELİK KABLO
b)Conductor type		All Aluminum Conductor
c)Conductor coding		AAC 70
d)Applied Standards		EN 50182
e)SAP Product Number		-
<b>2. Technical Drawing:</b>		
<b>3. Construction Data / Layers of Conductor:</b>		
Number of wires		19
-Aluminum	pcs.	19
a) Lay ratio		Number of wires
Center		1
Layer 1		6
Layer 2		12
Diameter of wires		Lay ratio of layer (min.-max.)
-Nominal diameter of Aluminum wires (D2)	mm	10-16
		10-14
		2,1
<b>4. Constructional and dimensional details</b>		
<b>4.1. Aluminum part (AL 1)</b>		
a)Number of wires	pcs.	19
b)Nominal diameter of wires	mm	2,1
c)Nominal section area of aluminum part	mm <sup>2</sup>	65,81
d)Tensile strength		
1)Before stranding (min.)	N/mm <sup>2</sup>	180
2)After stranding (min.)	N/mm <sup>2</sup>	171
e)Density at 20 C°	kg/dm <sup>3</sup>	2,703
f)Coefficient of linear expansion	K <sup>-1</sup>	23 x 10 <sup>-6</sup>
g)Max. resistivity at 20 C°	nΩm	28,264
h)Temperature coefficient		0,00403
<b>4.2. Conductor</b>		
a)Nominal Diameter of conductor (D1)	mm	10,5
b)Nominal section area of conductor	mm <sup>2</sup>	65,809
c)Aluminum to steel ratio		-
d)Conductor mass per unit length (approx.)	kg/km	180,87
e)Direction of lay of the external layer		Z
f)Conductor rated tensile strength	kN	11,85
g)Conductor rated tensile strength	kgf	1207,91
h)Modulus of Elasticity (E-Modulus)	kN/mm <sup>2</sup>	56,0
i)Thermal Elongation Coefficient	10 <sup>-6</sup> /C°	23,0
j)Permissible Maximum Working Stress ( %40 RTS)	N/mm <sup>2</sup>	72,0
k)Everyday Stress (EDS) ( 20% RTS)	N/mm <sup>2</sup>	36,0
l)Ultimate Exceptional Stress ( %70 RTS)	N/mm <sup>2</sup>	126,0
m)Minimum Bending Radius Installation (15XD1)	mm	158
n)Minimum Bending Radius Operation (30XD1)	mm	315
o)Geometric mean radius	m	0,0040
<b>5. Temperature Range</b>		
a)Installation	C°	-10 C° ~ +50 C°
b)Transportation and Operation	C°	-40 C° ~ +80 C°
<b>6. Electrical Technical Data Sheet</b>		
a)Maximum DC resistance of a conductor at 20 C°	Ω/km	0,4367
b)Maximum AC resistance of a conductor at 25 C°	Ω/km	0,4473
c)Maximum AC resistance of a conductor at 75 C°	Ω/km	0,5353
d)Maximum conductor temperature (Normal operation)	C°	80
e)Maximum conductor temperature (Short-circuit condition)	C°	200
f)Current Carrying Capacity*	A	287
*Assumed values for calculation of current carrying capacity:		
1)Solar Radiation	W/m <sup>2</sup>	900
2)Wind Velocity	m/s	0,6
3)Maximum conductor temperature	C°	80
4)Ambient temperature	C°	30
g)Short-circuit current** (1 second)	kA	6,6
h)Short Circuit Current Capacity	kA <sup>2</sup> s	43,8
**Assumed values for calculation of short-circuit current:		
1)Specific conductivity at 20 C°	1/(Ωm)	35,38
2)Temperature coefficient	1/K	0,00403
3)Specific thermal capacity	J/(kg K)	0,91
4)Conductor temperature of the beginning of a short-circuit	C°	40
5)Conductor temperature at the end of a short-circuit	C°	200
i)Total heat capacity of conductor	(J / m C°)	173
j)Inductive reactance	Ω/km	0,272
k)Capacitive reactance	MΩ.km	0,232
<b>7. Drum Labeling</b>		
The following information to be attached to the outside of both flanges of each drum;		
a)Name of Manufacturer		
b) Year of Manufacture		
c) Drum Number		
d) Cable Type		
e) Length		
f) Net Weight		
g) Gross Weight		