

**TECHNICAL SPECIFICATION**

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

1.	Technical Description	Units	Guaranteed Characteristics
<b>1. General Data</b>			
a)	Manufacturer		HASÇELİK KABLO
b)	Conductor type		All Aluminum Conductor
c)	Conductor coding		AAC 95
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		
	-Aluminum	pcs.	19
a)	Lay ratio	Number of wires	Lay ratio of layer (min.-max.)
	Center	1	-
	Layer 1	6	10-16
	Layer 2	12	10-14
	Diameter of wires		
	-Nominal diameter of Aluminum wires (D2)	mm	2,5
<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	2,5
c)	Nominal section area of aluminum part	mm <sup>2</sup>	93,27
d)	Tensile strength		
	1) Before stranding (min.)	N/mm <sup>2</sup>	175
	2) After stranding (min.)	N/mm <sup>2</sup>	166
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	12,5
b)	Nominal section area of conductor	mm <sup>2</sup>	93,266
c)	Aluminum to steel ratio		-
d)	Conductor mass per unit length (approx.)	kg/km	256,33
e)	Direction of lay of the external layer		Z
f)	Conductor rated tensile strength	kN	16,32
g)	Conductor rated tensile strength	kgf	1664,34
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>	70,0
k)	Everyday Stress (EDS) ( 20% RTS)	N/mm <sup>2</sup>	35,0
l)	Ultimate Exceptional Stress ( %70 RTS)	N/mm <sup>2</sup>	122,5
m)	Minimum Bending Radius Installation (15XD1)	mm	188
n)	Minimum Bending Radius Operation (30XD1)	mm	375
o)	Geometric mean radius	m	0,0047
<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	0,3081
b)	Maximum AC resistance of a conductor at 25 °C	Ω/km	0,3156
c)	Maximum AC resistance of a conductor at 75 °C	Ω/km	0,3777
d)	Maximum conductor temperature (Normal operation)	°C	80
e)	Maximum conductor temperature (Short-circuit condition)	°C	200
f)	Current Carrying Capacity*	A	359
*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	9,4
h)	Short Circuit Current Capacity	kA <sup>2</sup> s	87,9
**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)	245
j)	Inductive reactance	Ω/km	0,261
k)	Capacitive reactance	MΩ.km	0,222
<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		