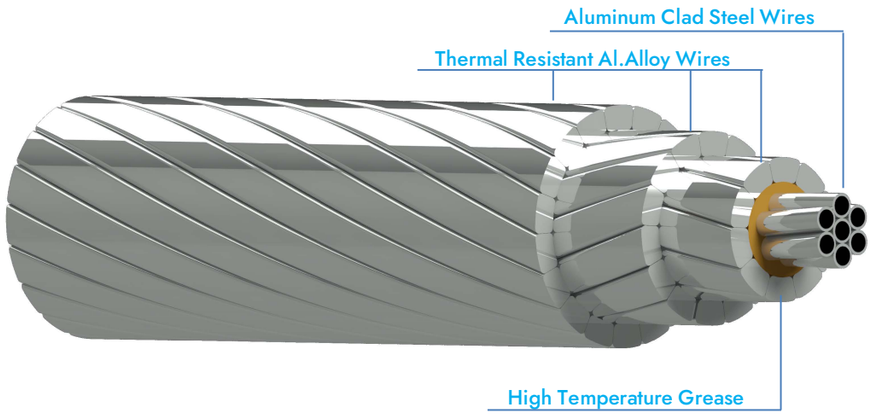
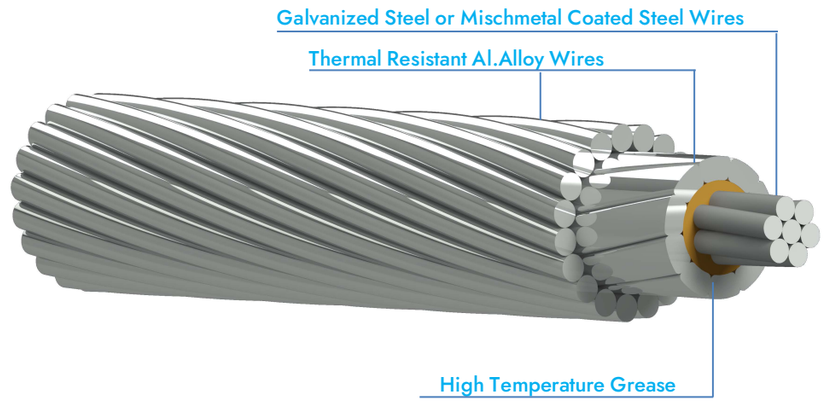
GAP TYPE THERMAL-RESISTANT ALUMINUM ALLOY CONDUCTOR, STEEL REINFORCED (GTACSR & GZTACSR)

High Temperature Thermal Resistant Alloy Conductor : Aluminum-Zirconium wires (Type-AT1 or AT3), concentrically stranded over a steel core having a small gap between the Steel core & thermal-resistant aluminum alloy layer. These combination offers best Mechanical as well as Electrical Characteristics. Extra High Strength Galvanized Steel (EST); or aluminum-claded Extra High Strength Steel (AW). Additional corrosion protection is achieved as High Temperature Grease is applied in Between GAP of Conductor.

Construction

Aluminium-Zirconium wires (Type-AT3 or AT-1), concentrically stranded over a steel core maintaing gap between the Steel core and first Aluminium Layer.





Values based on following Specifications:

- Thermal-resistant aluminium alloy wires (Type-AT3 or AT1) for overhead line conductor as per IEC 62004
- Concentric lay stranded overhead electrical conductors IEC 61089, IEC 62420
- Zinc-coated steel wires for stranded conductors IEC 888, ASTM B957 & more
- Zinc–5% Aluminum-Mischmetal Alloy-Coated Steel Core Wire EN 50540, ASTM B802, ASTM B803 or ASTM B958.
- Aluminium Clad Steel Wires, IEC 61232, ASTM B415, EN 50540 & More

Features:

- These can operate upto 210°C with specified strength loss,
- Can carry 100~150% more current as that of ACSR of the same size.
- For uprating lines, no modifications or reinforcement is required to the existing towers
- Limiting the sag increase with the increase of the temperature by the thermal expansion coefficient above knee-point related to the steel core

Available with Non-Specular (Dull) Surface Finish and Color Coated as per customized requirements.

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Conductor Size	Stranding				Cross-Sectional Area			Diameter of Complete Conductor	Weight			Rated Strength		DC Resistance @ 20°C	Current Capacity		
	No. of Wires		Wire diameter		TAL	Steel	Total		TAL	Steel	Total with Grease	Extra High Strength	Ultra High Strength		@ 85°C	@ 150°C	@ 210°C
	TAL	Steel	TAL	Steel													
(mm^2)	(No.)	(No.)	(mm)	(mm)	(mm^2)	(mm^2)	(mm^2)	(mm)	(Kg/Km)	(Kg/Km)	(Kg/Km)	(KN)	(KN)	(Ω/Km)	(Ampere)	(Ampere)	(Ampere)
175	8/12	7	3.35 (TW)	2.10	176.20	24.25	200.45	17.50	486.98	189.44	691.42	66.14	66.87	0.1668	409	698	859
190	12/16	7	2.92 (TW)	2.30	187.30	29.08	216.38	18.20	517.66	227.24	761.90	74.44	75.46	0.1569	425	728	896
195	20/12	7	2.40(R) 2.88(TW)	2.20	168.80	26.61	195.41	18.06	466.53	207.91	690.44	69.51	70.31	0.1741	403	689	849
218	18/12	7	2.78(R) 2.94(TW)	2.25	190.50	27.83	218.33	19.10	526.51	217.47	759.98	74.47	75.31	0.1542	433	744	917
240	8/12	7	4.02 (TW)	2.40	253.40	31.67	285.07	20.60	700.35	247.43	964.78	88.34	89.45	0.1159	507	877	1083
248	12/8	7	3.71(TW)	2.40	216.12	31.67	247.79	19.40	597.32	247.43	862.75	83.00	84.11	0.1360	463	796	981
287	18/12	7	3.15(R) 3.43(TW)	2.55	251.00	35.75	286.75	21.77	693.72	279.33	993.04	94.85	96.10	0.1171	510	886	1096
287	20/12	7	2.90(R) 3.55(TW)	2.55	251.00	35.75	286.75	21.77	693.72	279.33	993.04	95.33	96.58	0.1171	510	886	1096
310	16/12	7	3.90(R) 3.69(TW)	2.80	319.40	43.10	362.50	24.40	882.76	336.78	1241.54	116.10	117.60	0.0920	589	1033	1281
400	18/12	7	3.90(R) 4.45(TW)	2.80	401.40	43.10	444.50	26.90	1109.40	336.78	1468.18	129.16	130.67	0.0732	673	1190	1480
410	14/12	7	4.90(R) 3.99(TW)	3.00	414.00	49.48	463.48	27.60	1144.22	386.61	1554.83	138.95	140.68	0.0710	687	1218	1515
439	15/12	7	4.50(R) 4.04(TW)	2.90	392.50	46.24	438.74	26.84	1084.80	361.27	1469.07	132.44	134.06	0.0749	665	1176	1462
462	14/12	7	4.90(R) 3.99(TW)	2.95	414.30	47.84	462.14	27.60	1145.05	373.83	1542.88	136.47	138.14	0.0709	687	1219	1516
540	24/14/10	7	3.55(R) 3.98(TW)	3.10	536.20	52.83	589.03	31.30	1483.12	412.81	1920.93	164.15	166.00	0.0548	799	1436	1793
620	16/12/12	7	4.80(TW) 4.75(TW) 3.47(TW)	3.20	615.70	56.30	672.00	31.50	1703.01	439.88	2168.89	177.96	179.93	0.0478	856	1539	1922

NOTE :

Current capacity based on referenced conductor temperature, 0.56 m/s wind, 0 m Elevation, 0.45 Emmisivity, 0.80 absorptivity, 45°C Ambient temperature, 1045 W/m^2 Solar radiation

Customized conductor sizes based on customer's requirement can also be designed.

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GAP TYPE THERMAL-RESISTANT ALUMINUM ALLOY CONDUCTOR, ALUMINUM CLAD STEEL REINFORCED (GTACSR/AW & GZTACSR/AW)

Conductor Size	Cross-Sectional Area			Stranding				Diameter of Complete Conductor	Weight			Rated Strength		DC Resistance @ 20°C	Current Capacity		
	STAL	Steel	Total	No. of STAL Wires	No. of STAL Layers	No. of Steel Wires	Dia. of Steel Wires		STAL	Steel	Total	High Strength	Extra High Strength		@ 85°C	@ 150°C	@ 210°C
(mm^2)	(mm^2)	(mm^2)	(mm^2)	(No.)	(No.)	(No.)	(mm)	(mm)	(Kg/Km)	(Kg/Km)	(Kg/Km)	(KN)	(KN)	(Ω/Km)	(Ampere)	(Ampere)	(Ampere)
175	8/12	7	3.35 (TW)	2.10	176.20	24.25	200.45	17.50	486.98	160.46	647.44	57.65	62.26	0.1593	418	714	879
190	12/16	7	2.92 (TW)	2.30	187.30	29.08	216.38	18.20	517.66	192.48	710.14	65.28	69.93	0.1490	436	747	919
195	20/12	7	2.40(R) 2.88(TW)	2.20	168.80	26.61	195.41	18.06	466.53	176.11	642.64	60.20	65.25	0.1652	414	708	871
218	18/12	7	2.78(R) 2.94(TW)	2.25	190.50	27.83	218.33	19.10	526.51	184.21	710.72	64.73	70.02	0.1470	444	762	940
240	8/12	7	4.02 (TW)	2.40	253.40	31.67	285.07	20.60	700.35	209.59	909.94	78.36	83.43	0.1112	518	895	1105
248	12/8	7	3.71(TW)	2.40	216.12	31.67	247.79	19.40	597.32	209.59	806.91	73.03	78.09	0.1295	474	816	1006
287	18/12	7	3.15(R) 3.43(TW)	2.55	251.00	35.75	286.75	21.77	693.72	236.60	930.32	83.59	89.31	0.1117	523	908	1122
287	20/12	7	2.90(R) 3.55(TW)	2.55	251.00	35.75	286.75	21.77	693.72	26.60	720.32	84.07	89.79	0.1117	523	908	1122
310	16/12	7	3.90(R) 3.69(TW)	2.80	319.40	43.10	362.50	24.40	882.76	285.27	1168.03	102.52	109.41	0.0880	602	1056	1310
400	18/12	7	3.90(R) 4.45(TW)	2.80	401.40	43.10	444.50	26.90	1109.40	285.27	1394.67	115.59	122.48	0.0706	685	1212	1507
410	14/12	7	4.90(R) 3.99(TW)	3.00	414.00	49.48	463.48	27.60	1144.22	327.48	1471.70	123.36	131.28	0.0682	700	1242	1545
439	15/12	7	4.50(R) 4.04(TW)	2.90	392.50	46.24	438.74	26.84	1084.80	306.00	1390.80	117.87	125.27	0.0720	678	1200	1491
462	14/12	7	4.90(R) 3.99(TW)	2.95	414.30	47.84	462.14	27.60	1145.05	316.65	1461.70	121.40	129.05	0.0682	700	1242	1545
540	24/14/10	7	3.55(R) 3.98(TW)	3.10	536.20	52.83	589.03	31.30	1483.12	349.67	1832.79	149.36	156.23	0.0536	808	1452	1812
620	16/12/12	7	4.80(TW) 4.75(TW) 3.47(TW)	3.20	615.70	56.30	672.00	31.50	1703.01	372.60	2075.61	162.19	169.51	0.0467	865	1556	1944

NOTE :

Current capacity based on referenced conductor temperature, 0.56 m/s wind, 0 m Elevation, 0.45 Emmisivity, 0.80 absorptivity, 45°C Ambient temperature, 1045 W/m^2 Solar radiation.

Customized conductor sizes based on customer's requirement can also be designed.