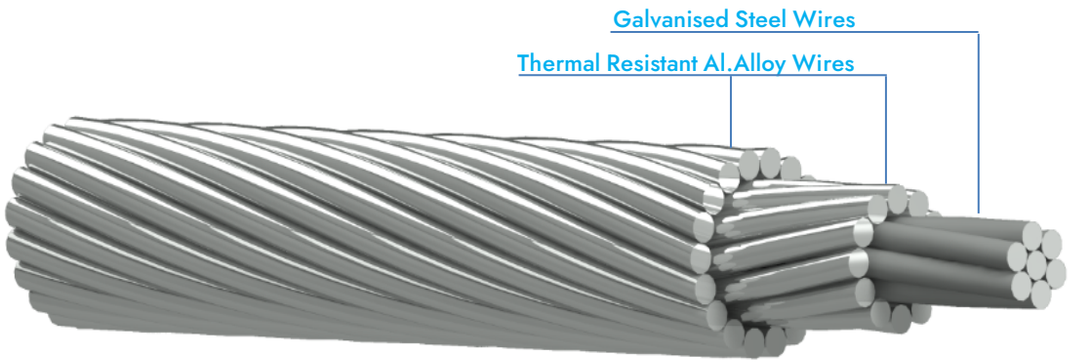
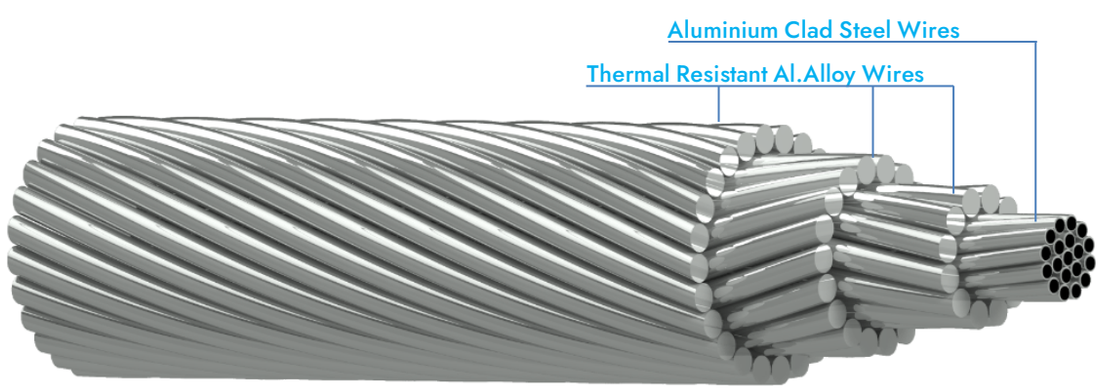
THERMAL RESISTANT ALUMINIUM CONDUCTOR STEEL REINFORCED (TACSR & TACSR/AW)

High Temperature Thermal Resistant Alloy Conductor : These are high ampacity conductors with inner core composed of Galvanized steel or Aluminum clad Steel & outer layer composed of thermal resistant aluminium alloy with round or trapezoidal shaped.

Construction

Aluminium-Zirconium wires (Type-AT1), concentrically stranded over a steel core.





Values based on following Specifications:

- Thermal-resistant aluminium alloy wires (Type-AT1) for overhead line conductor as per IEC 62004
- Round wire concentric lay overhead electrical stranded conductors IEC 61089
- Zinc-coated steel wires for stranded conductors IEC 888, ASTM B957 & more
- Aluminium Clad Steel Wires, IEC 61232, ASTM B415, EN 50540 & More

Features:

- These can operate upto 150°C with specified strength loss,
- Can carry 50 % to 60 % more current as that of ACSR of the same size.
- For uprating lines, no modifications or reinforcement is required to the existing towers

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

APAR
Tomorrow's solutions today

THERMAL RESISTANT ALUMINIUM CONDUCTOR STEEL REINFORCED - (TACSR)

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	Regular Strength	HS	EHS	UHS		@ 85°C	@ 150°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)	(KN)	(KN)	(Ω/Km)	(Ampere)	(Ampere)
58	6	1	3.50	3.50	57.73	9.62	67.35	10.50	158.42	74.84	233.26	21.28	22.63	23.59	23.93	0.5053	197	325
80	6	1	4.20	4.20	83.13	13.85	96.98	12.60	228.12	107.75	335.87	29.42	31.78	33.30	33.72	0.3509	246	410
95	6	1	4.50	4.50	95.43	15.90	111.33	13.50	261.87	123.70	385.57	33.78	36.48	38.23	38.71	0.3057	267	448
80	15	4	2.60	2.60	79.64	21.24	100.88	13.00	219.14	168.22	387.36	40.65	43.41	45.64	46.38	0.3673	242	404
100	15	4	2.90	2.90	99.08	26.42	125.50	14.50	272.63	209.25	481.88	50.26	53.70	56.47	57.40	0.2952	276	465
120	15	4	3.20	3.20	120.64	32.17	152.81	16.00	331.96	254.79	586.75	59.43	63.94	67.16	68.28	0.2425	311	527
120	30	7	2.30	2.30	124.64	29.08	153.72	16.10	343.77	227.22	570.99	58.29	62.07	65.12	66.14	0.2352	338	574
160	30	7	2.60	2.60	159.28	37.17	196.45	18.20	439.32	290.43	729.75	74.50	79.33	83.23	84.53	0.1841	393	672
200	30	7	2.90	2.90	198.16	46.24	244.40	20.30	546.55	361.29	907.84	92.08	98.09	102.95	104.57	0.1480	448	773
240	30	7	3.20	3.20	241.27	56.30	297.57	22.40	665.46	439.90	1105.36	108.90	116.78	122.41	124.38	0.1215	504	877
330	26	7	4.00	3.10	326.73	52.83	379.56	25.30	902.23	412.78	1315.01	117.46	124.86	130.14	131.99	0.0898	601	1056
410	26	7	4.50	3.50	413.51	67.35	480.86	28.50	1141.86	526.24	1668.10	149.26	158.69	165.43	167.78	0.0710	691	1230
480	45	7	3.70	2.47	483.85	33.54	517.39	29.61	1337.01	262.06	1599.07	124.70	129.06	132.58	133.76	0.0607	742	1325
520	54	7	3.50	3.50	519.54	67.35	586.89	31.50	1437.04	526.24	1963.28	167.68	177.11	183.84	186.20	0.0566	778	1398
560	54	19	3.63	2.18	558.85	70.92	629.77	32.68	1545.77	556.01	2101.78	183.44	193.37	200.46	202.59	0.0526	812	1465
610	54	7	3.80	3.80	612.42	79.39	691.81	34.20	1693.94	620.31	2314.25	192.10	205.59	214.33	216.71	0.0480	857	1553
630	54	19	3.85	2.31	628.65	79.63	708.28	34.65	1738.83	624.29	2363.12	201.88	212.23	220.59	223.38	0.0468	870	1579
680	54	7	4.00	4.00	678.59	87.96	766.55	36.00	1876.97	687.27	2564.24	210.81	225.76	235.44	238.08	0.0433	909	1658
680	45	7	4.40	2.90	684.24	46.24	730.48	35.10	1890.74	361.29	2252.03	167.98	173.99	178.85	180.47	0.0429	907	1651
710	54	19	4.09	2.45	709.47	89.57	799.04	36.79	1962.38	702.22	2664.60	227.46	239.10	248.50	251.64	0.0414	933	1706
800	54	19	4.34	2.61	798.85	101.65	900.50	39.09	2209.60	796.93	3006.53	257.13	270.34	281.02	284.57	0.0368	999	1840
810	45	7	4.80	3.20	814.30	56.30	870.60	38.40	2250.14	439.90	2690.04	193.59	201.47	207.10	209.07	0.0361	1003	1845
1120	72	19	4.45	1.78	1119.81	47.28	1167.09	44.50	3097.07	370.67	3467.74	239.99	246.61	251.33	252.75	0.0263	510	951
1160	84	7	4.20	4.20	1163.77	96.98	1260.75	46.20	3221.17	757.75	3978.92	298.51	314.99	325.66	328.57	0.0253	855	1602
1250	84	19	4.35	2.61	1248.39	101.65	1350.04	47.85	3455.38	796.93	4252.31	328.61	341.82	352.49	356.05	0.0236	860	1619
1520	84	7	4.80	4.80	1520.03	126.67	1646.70	52.80	4207.25	989.73	5196.98	379.25	391.92	414.72	418.52	0.0194	875	1668

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

APAR
Tomorrow's solutions today

THERMAL RESISTANT ALUMINIUM CONDUCTOR, ALUMINUM CLAD STEEL REINFORCED - (TACSR/AW)

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	High Strength	Extra High Strength		@ 85°C	@ 150°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)
58	6	1	3.50	3.50	57.73	9.62	67.35	10.50	158.42	63.39	221.81	20.32	22.15	0.4956	199	328
80	6	1	4.20	4.20	83.13	13.85	96.98	12.60	228.12	91.27	319.39	28.04	31.22	0.3442	248	414
95	6	1	4.50	4.50	95.43	15.90	111.33	13.50	261.87	104.78	366.65	31.55	35.84	0.2998	270	452
80	15	4	2.60	2.60	79.64	21.24	100.88	13.00	219.14	142.49	361.63	38.95	42.35	0.3369	252	422
100	15	4	2.90	2.90	99.08	26.42	125.50	14.50	272.63	177.24	449.87	48.15	52.38	0.2708	288	485
120	15	4	3.20	3.20	120.64	32.17	152.81	16.00	331.96	215.82	547.78	58.15	62.33	0.2229	324	550
120	30	7	2.30	2.30	124.64	29.08	153.72	16.10	343.77	192.47	536.24	55.96	60.61	0.2180	352	596
160	30	7	2.60	2.60	159.28	37.17	196.45	18.20	439.32	246.01	685.33	71.52	77.47	0.1706	408	698
200	30	7	2.90	2.90	198.16	46.24	244.40	20.30	546.55	306.03	852.58	88.38	95.78	0.1371	465	803
240	30	7	3.20	3.20	241.27	56.30	297.57	22.40	665.46	372.61	1038.07	106.65	113.96	0.1126	524	912
330	26	7	4.00	3.10	326.73	52.83	379.56	25.30	902.23	349.64	1251.87	115.35	122.21	0.0852	617	1085
410	26	7	4.50	3.50	413.51	67.35	480.86	28.50	1141.86	445.75	1587.61	142.53	155.32	0.0673	710	1263
480	45	7	3.70	2.47	483.85	33.54	517.39	29.61	1337.01	221.98	1558.99	118.63	124.00	0.0593	750	1340
520	54	7	3.50	3.50	519.54	67.35	586.89	31.50	1437.04	445.75	1882.79	160.94	173.74	0.0542	795	1428
560	54	19	3.63	2.18	558.85	70.92	629.77	32.68	1545.77	470.96	2016.73	175.64	189.11	0.0504	829	1496
610	54	7	3.80	3.80	612.42	79.39	691.81	34.20	1693.94	525.43	2219.37	186.54	202.42	0.0460	875	1586
630	54	19	3.85	2.31	628.65	79.63	708.28	34.65	1738.83	528.80	2267.63	195.51	208.25	0.0448	888	1613
680	54	7	4.00	4.00	678.59	87.96	766.55	36.00	1876.97	582.15	2459.12	204.65	222.24	0.0415	929	1694
680	45	7	4.40	2.90	684.24	46.24	730.48	35.10	1890.74	306.03	2196.77	164.28	171.68	0.0420	917	1669
710	54	19	4.09	2.45	709.47	89.57	799.04	36.79	1962.38	594.81	2557.19	220.29	234.62	0.0397	953	1742
800	54	19	4.34	2.61	798.85	101.65	900.50	39.09	2209.60	675.03	2884.63	249.00	265.26	0.0353	1020	1878
810	45	7	4.80	3.20	814.30	56.30	870.60	38.40	2250.14	372.61	2622.75	191.33	198.65	0.0352	1015	1867
1120	72	19	4.45	1.78	1119.81	47.28	1167.09	44.50	3097.07	313.97	3411.04	234.79	243.77	0.0259	1214	2281
1160	84	7	4.20	4.20	1163.77	96.98	1260.75	46.20	3221.17	641.85	3863.02	288.81	311.11	0.0246	1256	2369
1250	84	19	4.35	2.61	1248.39	101.65	1350.04	47.85	3455.38	675.03	4130.41	320.47	336.74	0.0229	1304	2475
1520	84	7	4.80	4.80	1520.03	126.67	1646.70	52.80	4207.25	838.34	5045.59	357.71	395.72	0.0188	1442	2785

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