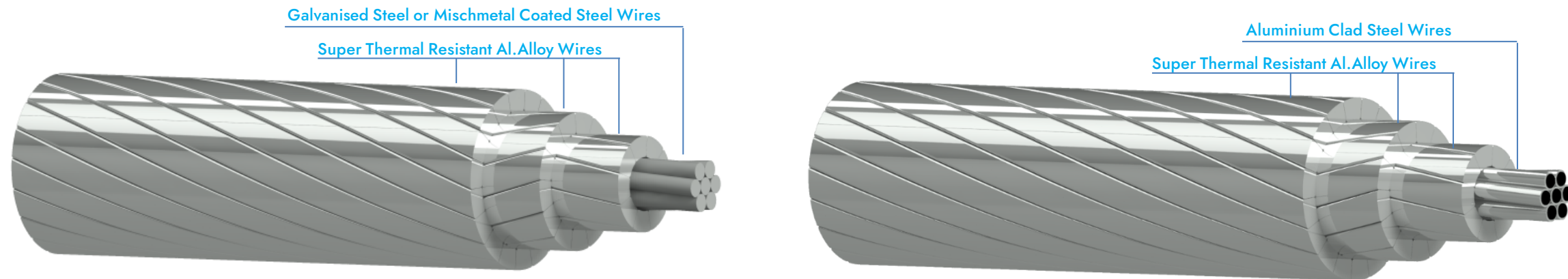


## SUPER THERMAL RESISTANT ALUMINIUM ALLOY CONDUCTOR STEEL REINFORCED (ZTACSR & ZTACSR/TW)

**High Temperature Thermal Resistant Alloy Conductor :** These are high ampacity conductors with inner core composed of Galvanized steel, Mischmetal Alloy Coated Steel or Aluminum clad Steel & outer layer composed of Super Thermal Resistant Aluminium alloy with round or trapezoidal shaped.

### Construction

Aluminium-Zirconium wires (Type-AT3), concentrically stranded over a steel core.



### Values based on following Specifications:

- Thermal-resistant aluminium alloy wires (Type-AT3) for overhead line conductor as per IEC 62004
- Concentric lay overhead electrical stranded conductors IEC 61089, IEC 62219 or ASTM B779
- 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

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

**SUPER THERMAL RESISTANT ALUMINIUM ALLOY CONDUCTOR STEEL REINFORCED - (ZTACSR)**

Conductor Size (mm <sup>2</sup> )	Stranding				Cross-Sectional Area			Diameter of Complete Conductor (mm)	Weight			Rated Strength				DC Resistance @ 20°C (Ω/Km)	Current Capacity		
	No. of Wires		Wire diameter		STAL (mm <sup>2</sup> )	Steel (mm <sup>2</sup> )	Total (mm <sup>2</sup> )		STAL (Kg/Km)	Steel (Kg/Km)	Total (Kg/Km)	Regular Strength (KN)	HS (KN)	EHS (KN)	UHS (KN)		@ 85°C (Ampere)	@ 150°C (Ampere)	@ 210°C (Ampere)
	STAL (No.)	Steel (No.)	STAL (mm)	Steel (mm)															
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	395
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	501
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	548
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	494
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	569
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	647
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	705
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	827
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	954
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	1086
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	1311
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	1531
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	1651
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	1745
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	1831
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	1944
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	1977
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	2079
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	2069
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	2140
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	2313
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	2319
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	1207	2267	2869
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	1240	2340	2963
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	1288	2442	3098
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	1425	2749	3506

**NOTE :**

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

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

**SUPER THERMAL RESISTANT ALUMINIUM ALLOY CONDUCTOR STEEL REINFORCED - (ZTACSR/TW)**

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	Regular Strength	HS	EHS	UHS		@ 85°C	@ 150°C	@ 210°C
	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(mm <sup>2</sup> )	(No.)	(No.)	(No.)	(mm)		(Kg/Km)	(Kg/Km)	(Kg/Km)	(KN)	(KN)	(KN)	(KN)		(Ampere)	(Ampere)	(Ampere)
170	170.45	9.46	179.91	14	2	1	3.47	15.60	469.95	73.57	543.52	38.83	40.15	41.10	41.43	0.1720	393	665	817
205	205.26	11.70	216.97	14	2	1	3.86	17.12	565.93	91.04	656.97	46.33	48.32	49.61	49.96	0.1428	440	750	922
240	241.70	39.19	280.89	18	2	7	2.67	19.80	666.37	306.23	972.60	88.60	93.69	97.81	99.18	0.1213	492	848	1046
280	281.98	45.92	327.90	20	2	7	2.89	21.40	777.43	358.78	1136.21	103.61	109.58	114.40	116.01	0.1039	540	936	1157
290	289.68	37.74	327.42	18	2	7	2.62	21.32	798.67	294.87	1093.54	92.34	97.24	101.21	102.53	0.1012	547	948	1171
320	322.26	52.49	374.75	20	2	7	3.09	22.88	888.49	410.16	1298.65	114.08	121.42	126.67	128.51	0.0910	585	1020	1262
340	336.85	54.90	391.75	20	2	7	3.16	23.38	928.73	428.95	1357.68	119.28	126.96	132.45	134.37	0.0870	601	1049	1300
390	389.25	50.81	440.06	20	2	7	3.04	24.72	1073.18	396.99	1470.17	122.17	129.28	136.14	137.92	0.0753	653	1146	1421
405	402.83	52.15	454.98	20	2	7	3.08	25.14	1110.62	407.51	1518.13	125.90	133.20	138.42	140.24	0.0728	666	1171	1453
480	479.69	47.20	526.89	35	3	7	2.93	26.98	1329.03	368.78	1697.81	136.68	142.82	147.78	149.43	0.0614	725	1283	1595
490	489.57	63.55	553.13	24	2	7	3.40	27.70	1349.78	496.58	1846.36	153.22	162.12	168.48	170.70	0.0599	738	1309	1629
525	523.67	26.85	550.53	30	3	7	2.21	27.50	1450.88	209.81	1660.69	114.77	118.53	121.22	122.02	0.0562	759	1347	1676
590	586.76	41.28	628.03	33	3	7	2.74	29.40	1625.66	322.50	1948.16	142.02	147.39	151.72	153.16	0.0502	813	1452	1810
625	625.07	79.63	704.69	38	3	19	2.31	31.32	1731.79	624.28	2356.07	196.93	207.29	215.65	218.43	0.0471	851	1528	1908
640	636.97	44.03	681.00	35	3	7	2.83	30.60	1764.78	344.04	2108.82	153.18	158.90	163.53	165.07	0.0462	853	1530	1910
680	676.24	85.95	762.20	39	3	19	2.40	32.58	1873.58	673.87	2547.45	212.81	223.98	233.01	236.02	0.0436	890	1606	2007
690	688.96	47.52	736.48	36	3	7	2.94	31.80	1908.82	371.30	2280.12	165.55	171.73	176.72	178.38	0.0428	892	1607	2008
725	725.09	91.78	816.87	39	3	19	2.48	33.72	2008.91	719.55	2728.46	227.69	239.62	249.26	252.47	0.0406	928	1680	2102
730	726.41	91.78	818.19	39	3	19	2.48	33.75	2012.56	719.55	2732.11	227.89	239.82	249.46	252.67	0.0405	929	1682	2105
740	737.40	51.14	788.54	36	3	7	3.05	32.92	2043.02	399.61	2442.63	175.50	182.66	187.78	189.57	0.0399	929	1680	2101
780	776.92	98.56	875.49	39	3	19	2.57	34.90	2152.52	772.72	2925.24	244.25	257.07	267.41	270.86	0.0379	965	1755	2199
790	789.13	54.55	843.69	36	3	7	3.15	34.05	2186.36	426.24	2612.60	187.59	195.23	200.69	202.59	0.0373	966	1753	2196
820	821.87	108.79	930.65	39	3	19	2.70	36.00	2277.05	852.87	3129.92	264.17	278.31	289.73	293.54	0.0358	998	1821	2284
840	839.80	58.07	897.88	36	3	7	3.25	35.14	2326.74	453.73	2780.47	199.66	207.79	213.59	215.63	0.0351	1000	1822	2285
880	876.90	111.22	988.11	42	3	19	2.73	37.10	2429.50	871.93	3301.43	275.65	290.10	301.78	305.67	0.0336	1035	1895	2379
890	891.08	61.70	952.78	42	3	7	3.35	36.18	2468.81	482.08	2950.89	211.95	220.59	226.76	228.92	0.0331	1034	1890	2373
900	901.93	73.54	975.47	42	3	19	2.22	36.70	2498.85	576.58	3075.43	233.44	243.73	251.09	253.29	0.0327	1044	1911	2399
980	976.36	123.77	1100.13	42	3	19	2.88	39.12	2705.08	970.38	3675.46	306.84	322.93	335.92	340.26	0.0302	1099	2027	2549
990	987.86	68.90	1056.76	42	3	7	3.54	38.10	2736.95	538.32	3275.27	230.76	242.48	252.12	254.53	0.0298	1097	2018	2539
1090	1092.45	88.84	1181.29	64	4	19	2.44	40.40	3041.47	696.52	3737.99	279.77	291.32	300.65	303.76	0.0271	1174	2178	2745
1330	1331.25	108.79	1440.04	64	4	19	2.70	44.60	3706.33	852.87	4559.20	341.60	355.74	367.16	370.97	0.0222	1308	2461	3117

**NOTE :**

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

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

**SUPER THERMAL RESISTANT ALUMINIUM ALLOY CONDUCTOR, ALUMINUM CLAD STEEL REINFORCED - (ZTACSR/AW/TW)**

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
170	170.45	9.46	179.91	14	2	1	3.47	15.60	469.95	62.32	532.27	37.88	39.68	0.1688	396.63	672	824
205	205.26	11.70	216.97	14	2	1	3.86	17.12	565.93	77.12	643.05	45.51	47.85	0.1401	443.93	757	931
240	241.70	39.19	280.89	18	2	7	2.67	19.80	666.37	259.39	925.76	85.46	91.73	0.1150	505.26	871	1074
280	281.98	45.92	327.90	20	2	7	2.89	21.40	777.43	303.90	1081.33	99.94	107.28	0.0985	554.52	961.598	1188
290	289.68	37.74	327.42	18	2	7	2.62	21.32	798.67	249.77	1048.44	91.35	97.38	0.0969	558.55	968	1197
320	322.26	52.49	374.75	20	2	7	3.09	22.88	888.49	347.42	1235.91	114.23	121.06	0.0862	600.80	1048	1297
340	336.85	54.90	391.75	20	2	7	3.16	23.38	928.73	363.34	1292.07	117.08	124.22	0.0825	616.90	1078	1335
390	389.25	50.81	440.06	20	2	7	3.04	24.72	1073.18	336.27	1409.45	120.14	128.27	0.0721	666.66	1171	1452
405	402.83	52.15	454.98	20	2	7	3.08	25.14	1110.62	345.17	1455.79	123.81	130.59	0.0697	680.27	1196	1485
480	479.69	47.20	526.89	35	3	7	2.93	26.98	1329.03	312.37	1641.40	132.91	140.46	0.0594	736.44	1304	1621
490	489.57	63.55	553.13	24	2	7	3.40	27.70	1349.78	420.63	1770.41	149.41	158.94	0.0573	753.78	1338	1664
525	523.67	26.85	550.53	30	3	7	2.21	27.50	1450.88	177.71	1628.59	111.82	116.92	0.0553	765.10	1358	1690
590	586.76	41.28	628.03	33	3	7	2.74	29.40	1625.66	273.17	1898.83	138.72	145.32	0.0490	822.53	1469	1832
625	625.07	79.63	704.69	38	3	19	2.31	31.32	1731.79	528.79	2260.58	190.56	203.30	0.0452	868.13	1560	1948
640	636.97	44.03	681.00	35	3	7	2.83	30.60	1764.78	291.41	2056.19	149.66	156.70	0.0452	862.55	1547	1931
680	676.24	85.95	762.20	39	3	19	2.40	32.58	1873.58	570.80	2444.38	205.93	219.69	0.0418	908.92	1640	2051
690	688.96	47.52	736.48	36	3	7	2.94	31.80	1908.82	314.51	2223.33	161.75	169.35	0.0418	902.60	1626	2032
725	725.09	91.78	816.87	39	3	19	2.48	33.72	2008.91	609.49	2618.40	220.35	235.03	0.0389	946.33	1714	2145
730	726.41	91.78	818.19	39	3	19	2.48	33.75	2012.56	609.49	2622.05	220.55	235.23	0.0389	947.27	1716	2148
740	737.40	51.14	788.54	36	3	7	3.05	32.92	2043.02	338.48	2381.50	173.46	180.11	0.0390	938.89	1698	2124
780	776.92	98.56	875.49	39	3	19	2.57	34.90	2152.52	654.53	2807.05	236.37	252.14	0.0363	984.91	1791	2244
790	789.13	54.55	843.69	36	3	7	3.15	34.05	2186.36	361.04	2547.40	185.41	192.50	0.0365	976.08	1772	2220
820	821.87	108.79	930.65	39	3	19	2.70	36.00	2277.05	722.42	2999.47	255.47	272.87	0.0343	1018.95	1860	2333
840	839.80	58.07	897.88	36	3	7	3.25	35.14	2326.74	384.33	2711.07	197.33	204.88	0.0343	1011.42	1843	2311
880	876.90	111.22	988.11	42	3	19	2.73	37.10	2429.50	738.56	3168.06	266.75	284.54	0.0322	1055.81	1934	2429
890	891.08	61.70	952.78	42	3	7	3.35	36.18	2468.81	408.35	2877.16	208.25	217.50	0.0323	1045.90	1913	2402
900	901.93	73.54	975.47	42	3	19	2.22	36.70	2498.85	488.39	2987.24	225.35	239.32	0.0318	1057.67	1937	2433
980	976.36	123.77	1100.13	42	3	19	2.88	39.12	2705.08	821.95	3527.03	296.94	316.74	0.0289	1121.93	2069	2603
990	987.86	68.90	1056.76	42	3	7	3.54	38.10	2736.95	455.98	3192.93	228.70	241.79	0.0291	1108.25	2040	2567
1090	1092.45	88.84	1181.29	64	4	19	2.44	40.40	3041.47	589.98	3631.45	272.66	286.88	0.0264	1189.26	2206	2782
1330	1331.25	108.79	1440.04	64	4	19	2.70	44.60	3706.33	719.98	4426.31	332.89	350.30	0.0216	1322.65	2490	3154

**NOTE :**

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

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