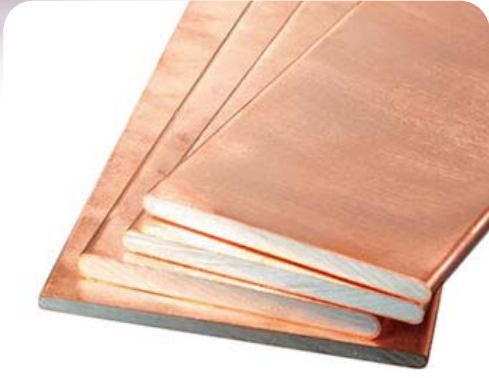




COPPER CLAD ALUMINUM COPPBAR™

COPPBAR™ Authorized distributor in Turkey

COPPBARTM is a bimetallic composite busbar engineered to provide an economic alternative to solid copper. It is a Copper Clad Aluminum Composite – comprised of cladding copper, aluminum core, and interfacial bonding layer – that delivers cost savings and weight advantages yet retains the surface properties of a copper busbar.

The Current – Carrying – Capacity of CCAC is equivalent to 86% of copper bus with a 20% volume ratio of copper.

Its light weight, low cost, and mechanical processing properties make it an excellent overall performance material.

FEATURES

- COPPBARTM is a lightweight, low cost engineered alternative to pure copper busbars.
- Reduces costs by 40%.
- Reduce weight by up to 60%.
- High electrical and thermal conductivity.
- Anti-blast, anti-vibration fatigue and strong corrosion resistance.
- Excellent soldering, welding and electroplating properties.
- Current carrying capacity is 86% / 83% of copper bar.
- Easy to bend, drill, cut and punch.
- Superior bonding strength and uniformity.

APPLICATION

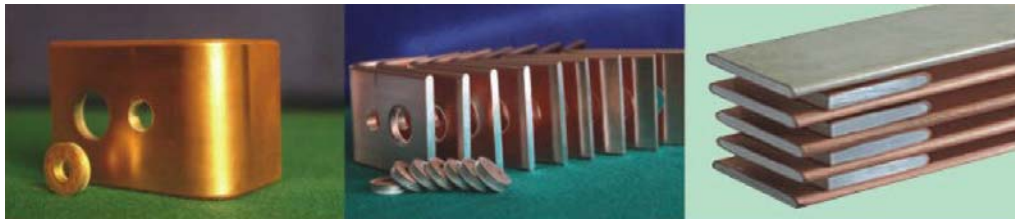
CCAC has far-reaching applications in multiple industries. Due to its light weight and low cost, it has been increasingly utilized in the automotive, aerospace, defense, electronics, refrigeration, and many other industries.

With its advantageous physical properties and significant economic benefits, CCAC is an excellent material that has much potential for a variety of applications.

TEST REPORT

- R2 - NPL Test Report
- T4 - China National Test Center
- T6 - China National Test Center

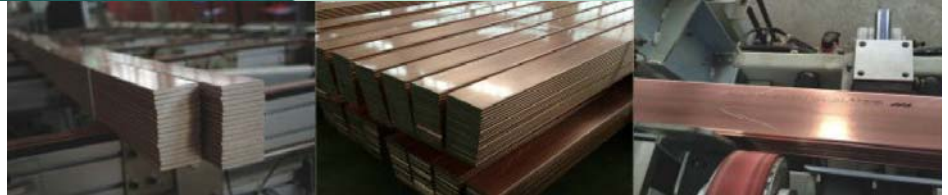
* Click the see test reports.



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COPBAR™ BUSBARS - AC/DC CURRENT RATINGS (20% COPPER VOL.)

COPBAR™ Authorized distributor in Turkey

Size	Corner Radius	Cross Sectional Area	Weight (Approx)	DC Resistance at 20°C	DC Resistance at 85°C	Current Rating (Amps): 50°C Rise Over 35°C Ambient Temp. (No. of Buses)							
						n =1		n =2		n =3		n =4	
mm	mm	mm²	kg/m	µOhm/m	µOhm/m	DC	AC	DC	AC	DC	AC	DC	AC
30x3	0.8	89.45	0.352	288	364	336	336	609	609				
40x3	0.8	119.45	0.471	216	272	431	430	771	768				
50x3	0.8	149.45	0.589	172	218	521	517	923	918				
60x3	0.8	179.45	0.707	144	181	608	602	1063	1056				
30x4	0.8	119.45	0.471	215	271	395	395	724	723				
40x4	0.8	159.45	0.628	161	203	506	505	917	915				
50x4	0.8	199.45	0.786	128	162	613	609	1098	1092				
60x4	0.8	239.45	0.943	107	135	716	710	1268	1260				
80x4	0.8	319.45	1.259	80	101	814	802	1427	1417				
30x5	0.8	149.45	0.589	172	216	449	449	830	828	1210	1198	1590	1567
40x5	0.8	199.45	0.786	131	166	573	572	1047	1039	1518	1496	1987	1934
50x5	0.8	249.45	0.983	105	132	692	689	1252	1238	1809	1774	2349	2260
60x5	0.8	299.45	1.180	87	110	807	804	1447	1429	2084	2036	2706	2582
80x5	0.8	399.45	1.574	66	83	917	907	1629	1603	2345	2283	3023	2865
100x5	0.8	499.45	1.968	52	66	1024	1008	1801	1769	2593	2517	3326	3131
30x6	0.8	179.45	0.707	148	187	501	501	933	928	1364	1348	1794	1759
40x6	0.8	239.45	0.943	110	139	636	635	1170	1158	1701	1669	2230	2094
50x6	0.8	299.45	1.180	87	111	769	765	1401	1379	2029	1968	2655	2520
60x6	0.8	359.45	1.416	74	93	903	897	1632	1596	2355	2258	3077	2867
80x6	0.8	479.45	1.889	55	69	1164	1147	2084	2036	3010	2878	3857	3577
100x6	0.8	599.45	2.362	44	56	1419	1381	2518	2462	3637	3469	4632	4297
120x6	0.8	719.45	2.835	37	46	1667	1585	2930	2868	4230	4026	5259	4869
30x8	1.2	238.76	0.941	110	138	592	591	1117	1104	1641	1609	2165	2091
40x8	1.2	318.76	1.256	82	104	748	745	1392	1390	2033	1964	2673	2521
50x8	1.2	398.76	1.571	66	82	902	894	1659	1624	2413	2390	3166	2907
60x8	1.2	478.76	1.886	55	68	1053	1040	1921	1853	2785	2591	3646	3256
80x8	1.2	638.76	2.517	41	51	1349	1323	2434	2304	3509	3131	4581	4143
100x8	1.2	798.76	3.147	32	41	1639	1594	2933	2728	4213	3612	5488	4439
120x8	1.2	958.76	3.778	27	34	1920	1840	3406	3164	4890	3780	6079	4389
40x10	1.2	398.76	1.571	67	84	858	851	1614	1572	2367	2251	3120	2871
50x10	1.2	498.76	1.965	53	67	1029	1016	1914	1842	2794	2598	3673	3265
60x10	1.2	598.76	2.359	44	55	1198	1178	2207	2097	3210	2902	4212	3621
80x10	1.2	798.76	3.147	32	41	1529	1488	2779	2580	4021	3452	5259	4263
100x10	1.2	998.76	3.935	26	33	1854	1786	3339	3035	4809	3948	6276	4866
120x10	1.2	1198.76	4.723	22	27	2174	2074	3887	3467	5582	4417	7271	5431
40x12	1.2	478.76	1.886	55	70	957	946	1818	1752	2677	2496	3536	3166
50x12	1.2	598.76	2.359	44	55	1144	1125	2148	2038	3148	2844	4146	3564
60x12	1.2	718.76	2.832	36	46	1329	1299	2469	2307	3606	3159	4740	3926
80x12	1.2	958.76	3.778	27	35	1508	1452	2467	2207	4012	3342	5058	4220
100x12	1.2	1198.76	4.723	22	27	2048	1952	3712	3286	5362	4243	7008	5236
120x12	1.2	1438.76	5.669	19	22	2399	2259	4314	3742	6210	4736	8100	5829
40x15	1.2	598.76	2.359	44	55	1100	1081	2115	2005	3130	2828	4143	3563
50x15	1.2	748.76	2.950	35	44	1310	1278	2486	2306	3660	3182	4834	3972
60x15	1.2	898.76	3.541	29	36	1516	1466	2848	2586	4177	3505	5504	4359
80x15	1.2	1198.76	4.723	22	27	1924	1834	3574	3314	5228	4428	6518	4958
100x15	1.2	1498.76	5.905	18	22	2320	2200	4256	3796	6182	5222	7699	5689
120x15	1.2	1798.76	7.087	15	18	2712	2507	4915	4095	7101	6029	9281	6375

Note: Recalculation graphs should be used for design conditions different than those stated. For compatibility, recalculation graphs computed for the same base. The calculated values on this data sheet are based on the following parameters:

Ambient Temperature: 35 °C

Busbar temperature: 85 °C

Temperature rise: 50 °C

n = number of bars in parallel

Current ratings assume still but unconfined air, with busbars mounted on edge. Current ratings are based on "Temperature Rise of Busbars" for multiple bars arrangement, the space between the bars is equal to busbar thickness.

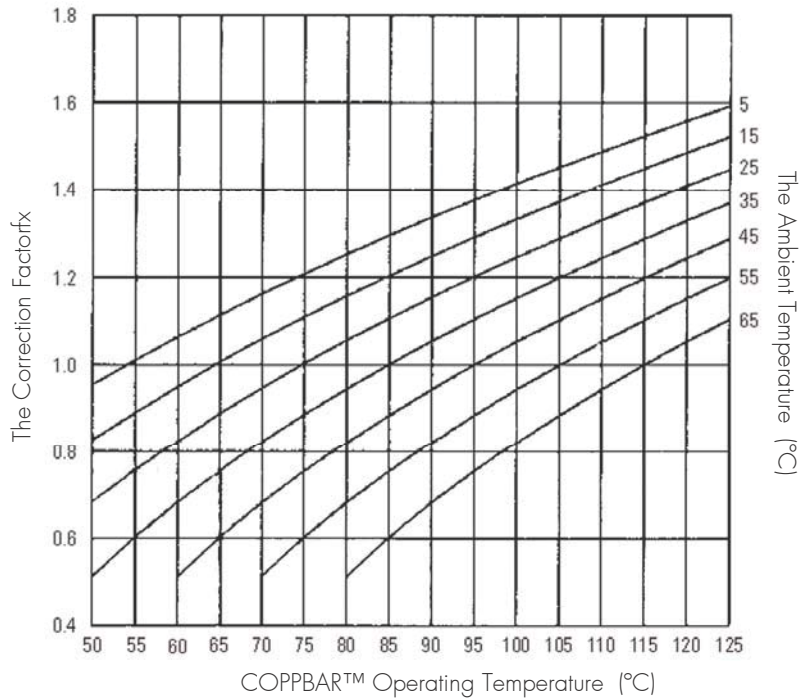
THE TEMPERATURE CORRECTION GRAPH

COPPBAR™ Authorized distributor in Turkey

Alternative Temperature Conditions

Obtain the temperature correction factor F_x by following:

1. Locate the new ambient temperature
2. Locate the COPPBAR™ operating temperature on the x-axis
3. Read out the temperature correction factor F_x from the y-axis



The temperature correction factor f_x could be determined from the graph in order to correct the COPPBAR™ current ratings for different design parameters. The following is a sample:

Specification	80 x 10
The new ambient temperature °C	35
The new COPPBAR™ temperature °C	65
DC current (from table) I_{dc}	1529
AC current (from table) I_{ac}	1488
The temperature correction factor (from graph) f_x	0.75
New DC current I_{dc}	1147
New AC current I_{ac}	1116

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COPPBAR™ HAKKINDA SIK SORULAN SORULAR

1- Solid bakır baraya göre COPPBAR™ 'ın avantajları nelerdir?

Aynı amperi taşıyan COPPBAR™ baralar daha ucuz ve hafiftir. Bu özellik yüksek kesitlerde daha da cazip hale gelmektedir.

2- COPPBAR™ baralarını üretimde nasıl kullanabilirim? (Delme, bükme, presleme vb.)

Geleneksel bakır baralar ile nasıl çalışıyorsanız COPPBAR™ da aynı şekilde kullanabilirsiniz. COPPBAR™ 90° den daha fazla bükülebilir. Bükme mandraline, bakır kısmına ve alüminyum çekirdeğe zarar vermez.

3- İlave korozyon riski taşıyan ortamlarda COPPBAR™ kullanılabilir mi?

Elektrik odaları dışında, yüksek nem içeren ortamlarda ve elektroliz (deniz havası) ortamlarda kesilmiş köşelerde ve delik açılmış bölgelerde daha fazla korozyon beklenmelidir. Bu yüzden ilave korozyondan koruma tavsiye ediyoruz. Tereddüt halinde boya kaplama, gres yağı ve asit içermeyen vazelin kullanabilirsiniz.

4- COPPBAR™, galvaniz kaplı vida ve paslanmaz çelik vidalar ile uyumlu mudur?

Evet, galvaniz kaplı ve paslanmaz çelik vidalarla rahatlıkla kullanılabilir.

5- Kısa devre olmaması için COPPBAR™ hangi ürünle desteklemeliyim?

Bakır baralar ile hangi ürünü destekliyorsanız, birçok durumda aynı ürünü kullanabilirsiniz.

6- COPPBAR™ baraları için özel destek izolatörleri mevcut mudur?

Piyasada mevcut birçok destek izolatörünü kullanabilirsiniz. COPPBAR™ kullanmaya karar verdiğinizde unutmayın ki, bakır baraya oranla %20 daha büyük kesit kullanmanız gerekmektedir.

7- COPPBAR™ 'ın termal ve dinamik kısa devre özelliklerini nasıl açıklarsınız?

Termal özellikleri bakır baralar ile aynıdır. Dinamik özellikleri ise bakır bara ile alüminyum bara arasında bulunan özelliklere sahiptir.

8- COPPBAR™ baraları hakkında daha fazla detaylı bilgiyi hangi DIN standardında bulabilirim?

DIN 43 670, Bölüm 2 (Alüminyum baralar, bakır giydirme) Bütün COPPBAR™ baraları için kullanılan standarttır.

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