

Copper and copper alloys

Premium quality, light and medium gauge coil and strip – made to your specifications

Copper and copper alloys

C10200	C21000	C26800	C70250
C11000	C22000	C51000	C72500
C12200	C23000	C51100	C75200
C19010	C24000	C51900	C77000
C19400	C26000	C52100	

Other alloys available by special arrangement.
Consult the mill directly.

Capabilities

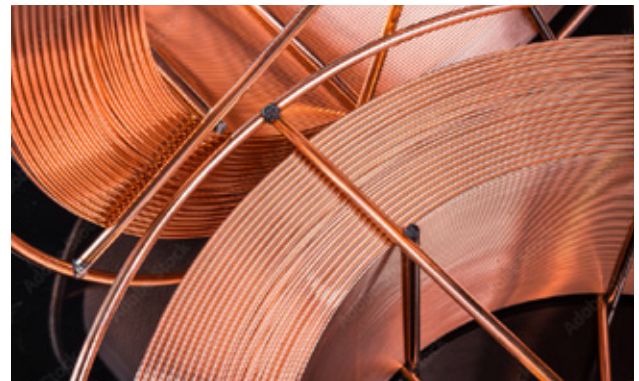
Rolling	Down to 0.002" thick
Slitting	0.200 - 17.000" wide
Order sizes	250 lbs. and up
Traverse-wound reels	500lb/1000lb
Pancake coils	Up to 580 PIW, I.D. ranging from 4" to 16"

NOTE: Wieland Heyco is a major supplier to distributors on a national basis and also offers toll conversion programs.

Why Wieland Heyco

Wieland Heyco has built a reputation for industry-leading quality, rapid response, outstanding technical support and on-time delivery. Our extremely short lead times can keep your inventories lean while meeting unpredictable spikes in demand. With over four decades of metals experience, Wieland Heyco has done it all, including pioneering the use of real-time 100% surface inspection to ensure pristine surface quality.

Our wide variety of products are ready to be turned around – accurately and quickly – to meet your specific demands. We consistently produce copper and copper alloys that we're proud to identify as Wieland Heyco.



Here's more of what sets us apart

- Non-contact gauge control at rolling eliminates diamond marks – essential for leadframe, connector, and decorative applications. Similarly, non-contact air wipes eliminate wiper marks typically seen on static, rubber-wiped product
- Proprietary oil filtration keeps rolling lubricant free of particulate matter and virtually eliminates any possibility of roll marks
- Automated on-line surface inspection (pioneered by Wieland Heyco), via Cognex vision systems, allows 100% surface integrity without reliance on error-prone human inspection
- Lead times at Wieland Heyco are consistently far shorter than those of our competitors
- Superior on-time delivery rate that outperforms the industry

Look to Wieland Heyco for:

- Rolling
- Strand annealing
- Slitting
- Stretch-band leveling
- Traverse winding

Copper and copper alloys specifications

		Coppers			
CDA no.		102	110	122	194
Alloy name		C10200	C11000	C12200	C19400
Density (1)		0.323	0.322	0.321	0.322
Mod of elast (2)		17	17	17	17
Elec cond (3)		97.16 (CR) - 100 (AN)		85	60
Thermal cond (4)		226	226	196	150
Coef of therm exp (5)		9.8	9.8	9.8	9.8
Annealed (TM00)	Tensile (6)		38 max.		40-63
	Yield (7)		10 nom.		16 min.
	Elong (8)		40 nom.		10 min.
	Rockwell (9)		15t-47-57		40-53
1/4 hard	Tensile		34-42		
	Yield		33 nom.		
	Elong		23 nom.		
	Rockwell		18-51		
1/2 hard (TM02)	Tensile		37-46		53-63
	Yield		37 nom.		36 min.
	Elong		20 nom.		6 min.
	Rockwell		43-57		52-63
3/4 hard (TM03)	Tensile		41-50		
	Yield		44 nom.		
	Elong		15 nom.		
	Rockwell		47-59		
Hard (TM04)	Tensile		43-52		60-70
	Yield		46 nom.		53 min.
	Elong		10 nom.		3 min.
	Rockwell		54-62		61-68
Ex hard (TM06)	Tensile		47-56		67-73
	Yield		51 nom.		64 min.
	Elong		4 nom.		2 min.
	Rockwell		56-64		67-69
Spring (TM08)	Tensile		50-58		70-76
	Yield		53 nom.		67 min.
	Elong		3 nom.		2 min.
	Rockwell		60-66		68-69
Ex spring	Tensile		52 min.		73-80
	Yield		51 min.		70 min.
	Elong		3 max.		1 min.
	Rockwell		61 min.		69-70

Yield, Elongation, and Rockwell values are presented as reference values only for materials > 0.0080 and are not to be construed as actual specifications. For chemistry data, see appropriate ASTM/CDA specification.

1. Lbs. per cu. in. at 68°F (annealed) (x27.68 gms./cu. cm at 20°C)
2. 106 PSI, tension
3. % IACS at 68°F (20°C) as annealed
4. BTU per sq. ft. per ft. per hr. per F° at 68°F (20°C)
5. Inches/inch/°F x 106 from 68°F to 572°F (20°C to 300°C)

6. x 1,000 PSI
7. x 1,000 PSI (0.2% offset)
8. % in 2 inches
9. 0.020" gauge and above (30T scale) Certain properties reprinted with permission of Olin Corp.

Copper and copper alloys specifications

		Brasses					
CDA no.		210	220	230	240	260	268
Alloy name		C21000	C22000	C23000	C24000	C26000	C26800
Density (1)		0.320	0.318	0.316	0.313	0.308	0.306
Mod of elast (2)		17	17	17	16	16	16
Elec cond (3)		56	44	37	32	28	27
Thermal cond (4)		135	109	92	81	70	67
Coef of therm exp (5)		10	10.2	10.4	10.6	11.1	11.3
Annealed (TM00)	Tensile (6)	34-40	36-42	39-47	44-54*	45-61	44-61
	Yield (7)	10 nom.	13 nom.	8 min.	20 min.*	10 min.	22 min.
	Elong (8)	45 nom.	48 nom.	43 min.	50 min.*	40 min.	45 min.
	Rockwell (9)	15-20	15-36	15-44		16-60	17-62
1/4 hard	Tensile	34-47	40-50	44-54	48-58	49-59	49-59
	Yield	31 nom.	33 nom.	23 min.	28 min.	21 min.	32 min.
	Elong	30 nom.	20 nom.	15 min.	24 min.	34 min.	39 min.
	Rockwell	34-51	38-53	42-57	42-60	43-57	43-57
1/2 hard (TM02)	Tensile	42-52	47-57	51-61	55-65	57-67	55-65
	Yield	44 nom.	48 nom.	43 min.	40 min.	42 min.	43 min.
	Elong	13 nom.	13 nom.	8 min.	16 min.	19 min.	33 min.
	Rockwell	46-57	52-61	56-64	56-66	56-68	50-66
3/4 hard (TM03)	Tensile	46-56	52-62	57-67	61-71	64-74	62-72
	Yield	50 nom.	54 nom.	51 min.	50 min.	55 min.	52 min.
	Elong	10 nom.	7 nom.	4 min.	8 min.	8 min.	23 min.
	Rockwell	52-60	58-64	63-68	63-70	65-70	67-71
Hard (TM04)	Tensile	50-59	57-66	63-72	68-77	71-81	68-78
	Yield	54 nom.	58 nom.	57 min.	59 min.	67 min.	55 min.
	Elong	5 nom.	4 nom.	4 min.	3 min.	6 min.	15 min.
	Rockwell	57-62	62-66	67-71	68-73	70-73	69-73
Ex hard (TM06)	Tensile	56-64	64-72	72-80	78-87	83-92	79-89
	Yield	59 nom.	64 nom.	65 min.	65 min.	79 min.	65 min.
	Elong	2 nom.	2 nom.	3 min.	2 min.	2 min.	3 min.
	Rockwell	62-66	67-71	70-74	72-76	74-76	74-76
Spring (TM08)	Tensile	60-68	69-77	78-86	85-93	91-100	86-95
	Yield	63 nom.	68 nom.	69 min.	72 min.	82 min.	69 min.
	Elong	2 nom.	2 nom.	3 min.	1 min.	1 min.	2 min.
	Rockwell	64-68	70-72	74-76	75-78	76-78	76-78
Ex spring	Tensile	61-69	72-80	82-90	89-97	95-104	90-99
	Yield	64 nom.	71 nom.	73 min.	74 min.	86 min.	70 min.
	Elong	1 nom.	1 nom.	2 min.	1 min.	1 min.	2 min.
	Rockwell	65-69	71-73	75-77	76-79	77-79	77-79

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Copper and copper alloys specifications

	Phosphor-bronzes				Cu-Ni & Ni-Ag			Cu-Ni-Si		
CDA no.	510	511	519	521	725	752	770	7025	19010	
Alloy name	C51000	C51100	C51900	C52100	C72500	C75200	C77000	C70250	C19010	
Density (1)	0.320	0.320	0.319	0.318	0.321	0.316	0.314	0.318	0.322	
Mod of elast (2)	16	16	16	16	20	18	18	19	0.322	
Elec cond (3)	15	20	14	13	11	6	5.5	40	50	
Thermal cond (4)	40	48	38	35	31	19	17	97.5	150	
Coef of therm exp (5)	9.9	9.9	10	10.1	9.2	9	9.3	9.8	9.3	
Annealed (TM00)	Tensile (6)	43-58	56-54	48-63	53-67	45-65	53-63	61-76	90-110	
	Yield (7)	19 min.	16 min.	34 nom.	23 min.	22 nom.	18 min.	32 nom.	65-90	
	Elong (8)	48 min.	45 min.	55 nom.	60 min.	35 nom.	29 min.	44 nom.	10	
	Rockwell (9)	24-59	16-50	25-64	27-68	50 max.	32-64	35-65		
1/4 hard	Tensile	49-61	46-58	53-66	63-75	55-75	58-72	69-87		
	Yield	22 min.	20 min.	48 nom.	35 min.	73 max.	26 min.	64 nom.		
	Elong	32 min.	25 min.	45 nom.	40 min.	5 min.	14 min.	26 nom.		
	Rockwell	43-63	35-65		59-71	72 max.	49-67	63-75		
1/2 hard (TM02)	Tensile	58-73	55-70	64-79	69-84	65-80	66-80	78-95	95-120	
	Yield	47 min.	42 min.	63 nom.	51 min.	69 nom.	48 min.	79 nom.	85-110	
	Elong	10 min.	12 min.	25 nom.	25 min.	10 nom.	6 min.	15 nom.	7	
	Rockwell	53-73	52-73	58-76	63-78	62-75	62-72	71-78		
3/4 hard (TM03)	Tensile	68-79	67-82	72-86	80-92		74-86	88-101	67-77	
	Yield	61 min.	64 min.	75 nom.	70 min.		69 min.	92 nom.	50 min.	
	Elong	10 min.	6 min.	14 nom.	18 min.		4 min.	8 nom.	12 min.	
	Rockwell	66-73	66-74		71-78		66-74	73-78		
Hard (TM04)	Tensile	76-91	72-87	80-96	85-100	75-90	78-91	91-109	100-125	71-81
	Yield	74 min.	70 min.	82 nom.	78 min.	81 nom.	75 min.	98 nom.	95-120	60 min.
	Elong	7 min.	2 min.	10 nom.	12 min.	3 nom.	3 min.	5 nom.	5	10 min.
	Rockwell	71-78	69-77	72-80	73-81	66-75	70-76	76-80		
Ex hard (TM06)	Tensile	88-103	84-99	91-106	97-112	80-95	86-98	102-117		75-86
	Yield	85 min.	81 min.	96 nom.	92 min.	86 nom.	85 min.	108 nom.		64 min.
	Elong	2 min.	1 min.	4 nom.	10 min.	2 nom.	3 min.	2 nom.		8 min.
	Rockwell	74-81	73-80		77-83	70-80	74-79	79-82		
Spring (TM08)	Tensile	95-110	91-105	98-113	105-119	85-100	90-101	108-123		84 min.
	Yield	92 min.	88 min.	104 nom.	100 min.	90 nom.	88 min.	113 nom.		74 min.
	Elong	1 min.	1 min.	3 nom.	3 min.	1 min.	1 min.	1 nom.		6 min.
	Rockwell	76-82	75-81		78-84	72-80	75-80	80 min.		
Ex spring	Tensile	100-114	96-109	102-117	110-122	90-105	96 min.	116 min.		
	Yield	98 min.	92 min.	108 nom.	105 min.	95 nom.	95 min.	115 min.		
	Elong	1 min.	1 min.	1 nom.	2 min.	2 max.	1 min.	1 max.		
	Rockwell	77-83	76-82		79-84	76-80	76 min.	81 min.		

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