

# Contact wire according to EN 50149

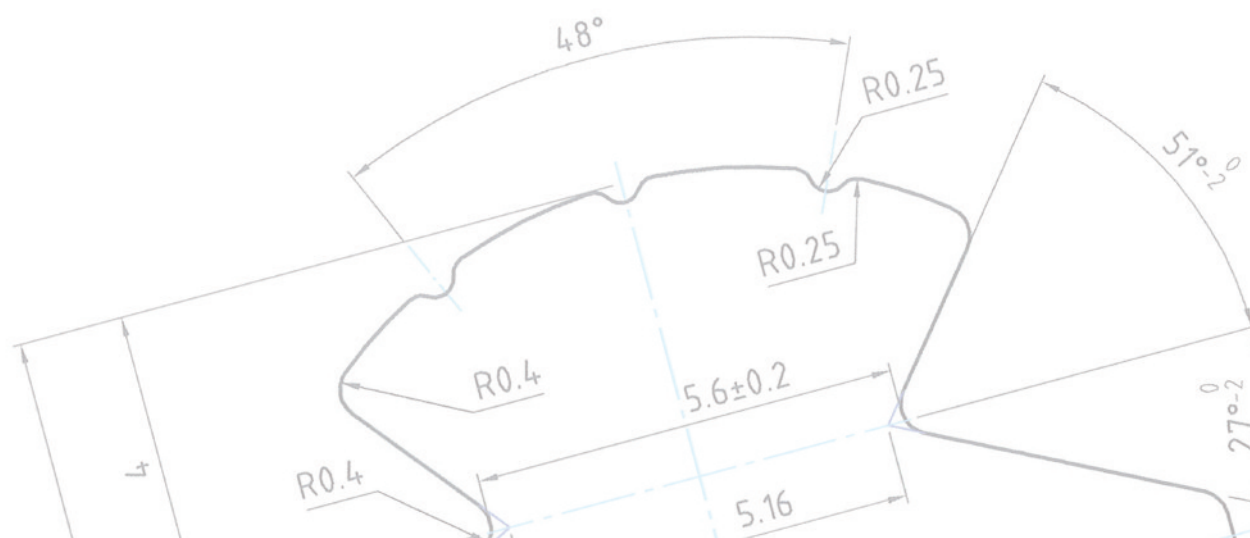
Material	Designation	Nominal cross section	Minimum breaking load	Wire diameter Construction			Maximum resistance	Percentage elongation after fracture A200		Minimum tensile strenght	Mass			Resistivity
		mm <sup>2</sup>	(1) kN	AC	BC	BF	at 20°C Ω/km	Min. %	Max. %	N/mm <sup>2</sup>	Min.	Nom.	Max.	Max. 10-08 Ωm
				mm	mm	mm					kg/km	kg/km	kg/km	
Normal strenght copper	Cu-ETP	80	27,5	10,60	-	-	0,229	3	10	355	690	711,5	733	1,777
	Cu-FRHC	100	34,5	12,00	12,00	11,04	0,183	3	10	355	862	889	916	1,777
	Cu-HCP	107	36,3	12,30	12,24	11,35	0,171	3	10	350	923	951,5	980	1,777
	CuOF	120	38,4	13,20	12,85	12,27	0,153	3	10	330	1035	1067	1099	1,777
		150	45,1	14,80	14,50	13,60	0,122	3	10	310	1293	1333,5	1374	1,777
High strenght copper and high strenght copper-silver alloy	Cu-ETP	80	29,1	10,60	-	-	0,229	3	8	375	690	711,5	733	1,777
	Cu-FRHC	100	36,4	12,00	12,00	11,04	0,183	3	8	375	862	889	916	1,777
	Cu-HCP	107	37,4	12,30	12,24	11,35	0,171	3	8	360	923	951,5	980	1,777
	CuOF	120	41,9	13,20	12,85	12,27	0,153	3	8	360	1035	1067	1099	1,777
	CuAg 0,10	150	52,4	14,80	14,50	13,60	0,122	3	8	360	1293	1333,5	1374	1,777
Normal strenght copper-silver alloy		80	28,3	10,60	-	-	0,229	3	10	365	690	711,5	733	1,777
		100	34,9	12,00	12,00	11,04	0,183	3	10	360	862	889	916	1,777
	CuAg 0,10	107	36,3	12,30	12,24	11,35	0,171	3	10	350	923	951,5	980	1,777
		120	40,7	13,20	12,85	12,27	0,153	3	10	350	1035	1067	1099	1,777
		150	50,9	14,80	14,50	13,60	0,122	3	10	350	1293	1333,5	1374	1,777
Copper-magnesium alloy		80	35,7	10,60	-	-	0,289	3	10	460	690	711,5	733	2,240
		100	43,7	12,00	12,00	11,04	0,231	3	10	450	862	889	916	2,240
	CuMg 0,2 (3)	107	45,7	12,30	12,24	11,35	0,216	3	10	440	923	951,5	980	2,240
		120	50,1	13,20	12,85	12,27	0,192	3	10	430	1035	1067	1099	2,240
		150	61,1	14,80	14,50	13,60	0,154	3	10	420	1293	1333,5	1374	2,240
Copper-tin alloy		80	40,4	10,60	-	-	0,385	3	10	520	690	711,5	733	2,778
		100	49,5	12,00	12,00	11,04	0,286	3	10	510	862	889	916	2,778
	CuMg 0,5	107	51,9	12,30	12,24	11,35	0,268	3	10	500	923	951,5	980	2,778
		120	57,0	13,20	12,85	12,27	0,239	3	10	490	1035	1067	1099	2,778
		150	68,4 (4)	14,80	14,50	13,60	0,191	3	10	470	1293	1333,5	1374	2,778
Copper-cadmium alloy		107	44,6	12,30	12,24	11,35	0,231	2	8	430	926	954,5	983	2,395
	CuSn 0,2	120	48,9	13,20	12,85	12,27	0,206	2	8	420	1038	1070,5	1103	2,395
		150	61,1	14,80	14,50	13,60	0,165	2	8	420	1298	1338	1378	2,395
		107	44,6	12,30	12,24	11,35	0,208	2	8	430	926	954,5	983	2,155
	CuSn 0,4	120	48,9	13,20	12,85	12,27	0,185	2	8	420	1038	1070,5	1103	2,155
Copper-cadmium alloy		150	61,1	14,80	14,50	13,60	0,148	2	8	420	1298	1338	1378	2,155
		80	33,4	10,60	-	-	0,258	2	7	430	694	715,5	737	2,005
		100	41,7	12,00	12,00	11,04	0,207	2	7	430	868	894,5	921	2,005
	CuCd 0,7	107	44,6	12,30	12,24	11,35	0,193	2	7	430	928	957	986	2,005
		120	50,1	13,20	12,85	12,27	0,172	2	7	430	1041	1073,5	1106	2,005
Copper-cadmium alloy		150	62,6	14,80	14,50	13,60	0,138	2	7	430	1301	1341,5	1382	2,005
		80	35,3	10,60	-	-	0,278	2	7	455	694	715,5	737	2,155
		100	43,2	12,00	12,00	11,04	0,222	2	7	445	868	894,5	921	2,155
	CuCd 1,0	107	46,2	12,30	12,24	11,35	0,208	2	7	445	928	957	986	2,155
		120	51,8	13,20	12,85	12,27	0,185	2	7	445	1041	1073,5	1106	2,155
	150	64,7	14,80	14,50	13,60	0,148	2	7	445	1301	1341,5	1382	2,155	

1) Calculated on minimum cross sectional area 2) A & B = type of clamping groove; C = Circular profile, F = Flat profile 3) France: max. resistivity 2,155 10-08 Ωm 4) Spain: min. breaking load = 75,7 kN

# Contact wire according to EN 50149

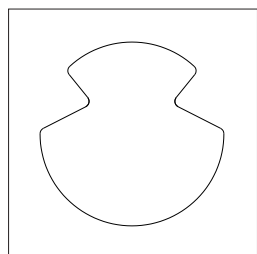
## Chemical composition

Material	Designation	Composition in %										
		Elements										
			Cu	Bi	O	P	Pb	Ag	Mg	Cd	Sn	Other elements
Normal and high strength copper	Cu-ETP	min	99,90									
		max	-	0,0005	0,040		0,005					0,03
	Cu-FRHC	min	99,90									
		max	-		0,040							0,04
	Cu-HCP	min	99,95									
		max	-	0,0005				0,005				0,03
CuOF	min	99,95			0,002							
	max	-	0,0005		0,007	0,005					0,03	
Normal and high strength copper-silver alloy	CuAg 0,10	min	rest					0,08				
		max	-	0,0005	0,040			0,12			0,03	
Copper-magnesium alloy	CuMg 0,2	min	rest						0,1			
		max	-			0,01			0,3		0,1	
	CuMg 0,5	min	rest						0,4			
max		-				0,01		0,7		0,1		
Copper-tin alloy	CuSn 0,2	min	rest								0,15	
		max	-								0,55	0,1
Copper-cadmium alloy	CuCd 0,7	min	rest							0,5		
		max	-							0,8	0,1	
	CuCd 1,0	min	rest							0,8		
max		-							1,2		0,1	

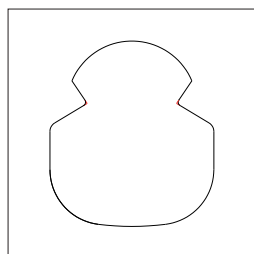


# Contact wire according to EN 50149

## Profiles

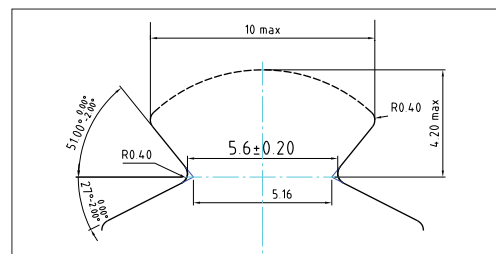


C

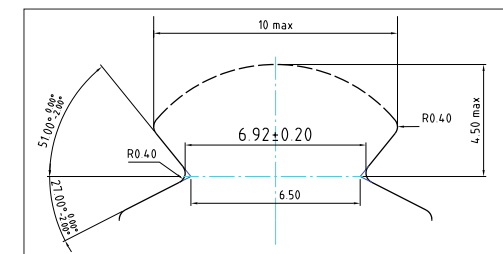


F

## Clamping grooves



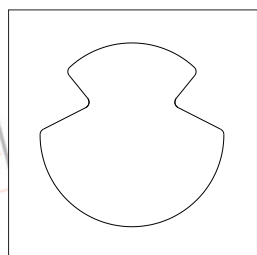
Type A



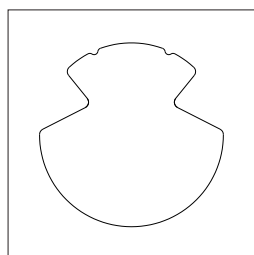
Type B

Whatever cross section of the wire is used, the dimensions of the clamping grooves shall be in accordance with either type A or type B as given here above

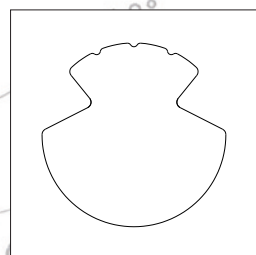
## Identification grooves



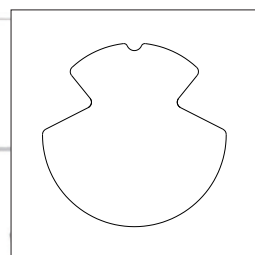
Cu



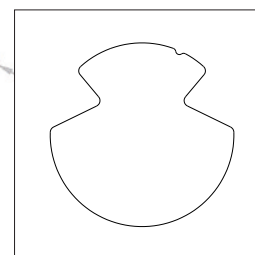
CuAg



CuMg



CuCd



CuSn

English identification grooves also possible





Lamifil nv, Frederic Sheidlaan, 2620 Hemiksem, Belgium  
phone: +32 3 870 06 11 | fax: +32 3 870 06 74 | email: lamifil@lamifil.be | www.lamifil.be