



Brake press set up aids



Tons required per linear foot to bend mild steel plate having 60,000 P.S.I. tensile strength
 The tonnage indicated in **black boxes** are for die openings 8 times thickness of metal

Thickness of metal

Width of die opening

Gauge	Inches	1/4"	5/16"	3/8"	7/16"	1/2"	3/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	10"	12"	
20	0.036	3.1	2.3	1.7	1.4	1.1																			
18	0.048	5.3	4.0	3.0	2.5	2.2	1.7	1.3																	
16	0.060	9.6	7.1	5.6	4.5	3.8	2.8	2.2	1.8	1.5															
14	0.075		11.9	9.2	7.6	6.3	4.7	3.5	3.0	2.5	2.1	1.8													
12	0.105				16.7	13.1	9.7	8.0	6.5	5.6	4.6	4.1	3.2												
11	0.120					19.2	14.2	11.1	9.0	7.5	6.3	5.5	4.4	2.9											
10	0.135						18.6	14.5	11.9	9.9	8.5	7.3	5.8	4.0											
3/16	0.188							27.4	23.1	19.3	16.4	14.3	11.2	7.5	5.7	4.4									
1/4	0.250									39.4	33.3	29.5	22.7	15.4	11.4	9.0	7.4	6.1							
5/16	0.313										50.4	39.8	27.0	19.7	15.3	12.7	10.5	7.7							
3/8	0.375											61.6	42.3	30.9	24.0	19.6	16.3	12.3	9.5						
7/16	0.438												61.7	45.8	35.4	28.6	24.4	17.3	14.8	11.2					
1/2	0.500													85.2	63.6	48.8	39.7	33.3	24.6	19.4	15.9	13.1			
5/8	0.625														110.0	86.2	70.0	58.3	43.1	33.3	27.4	23.3	16.9		
3/4	0.750															138.0	110.0	93.0	68.7	53.5	43.6	36.5	27.1	21.0	
7/8	0.875																165.0	137.0	104.0	80.7	64.6	52.9	39.7	31.6	
1	1.000																	197.0	143.0	113.0	91.2	76.2	56.3	44.2	

With an 8 to 1 die ratio the inside radius of a right angle bend is approximately equal to the thickness of the material.
 For other metals as compared to 60,000 P.S.I. tensile strength on chart.

soft brass 50% of pressure listed
 soft aluminum . . . 50% of pressure listed

stainless steel 50% more than listed
 chrome molybdenum . . . 100% more than listed

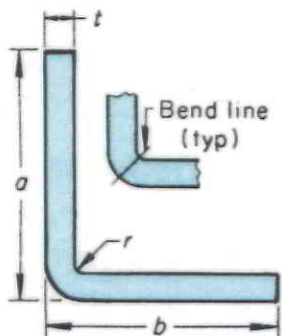
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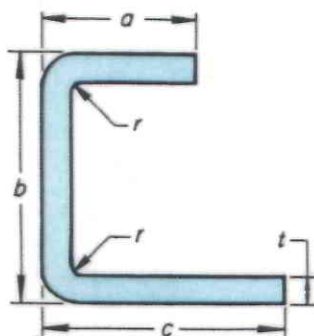
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Bend Allowances for 90° Bends in Low-Carbon Steel and Aluminum

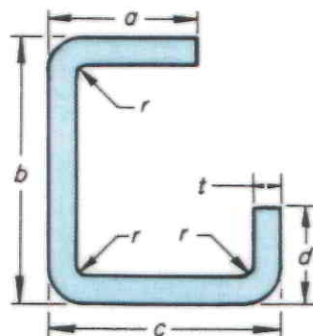
Metal thickness (t), in.	Bend allowance, in., for bends with inside radius (r) of:										
	1/32 in.		1/16 in.		3/32 in.		1/8 in.		1/4 in. (steel)	1/2 in. (steel)	
	Steel	Al	Steel	Al	Steel	Al	Steel	Al			
0.032	...	0.059	0.057	0.066	0.068	0.079	0.082	0.093	0.095	0.146	0.254
0.050	...	0.087	0.078	0.101	0.091	0.114	0.105	0.129	0.118	0.168	0.276
0.062	...	0.105	0.095	0.118	0.108	0.132	0.120	0.145	0.133	0.183	0.290
0.078	...	0.128	0.116	0.142	0.131	0.155	0.144	0.169	0.157	0.202	0.310
0.090	...	0.146	0.130	0.160	0.144	0.173	0.157	0.187	0.170	0.217	0.324
0.125	...	0.198	0.175	0.211	0.189	0.224	0.203	0.243	0.216	0.260	0.367
0.188	...	0.289	0.256	0.302	0.217	0.316	0.283	0.329	0.297	0.383	0.443
0.250	...	0.382	0.338	0.395	0.351	0.409	0.365	0.424	0.378	0.476	0.519
0.313	...	0.474	...	0.488	...	0.501	...	0.515	...	0.569	0.676
0.375	...	0.566	...	0.580	...	0.593	...	0.607	...	0.661	0.768
0.437	...	0.658	...	0.672	...	0.685	...	0.699	...	0.752	0.860
0.500	...	0.750	...	0.764	...	0.777	...	0.791	...	0.845	0.952



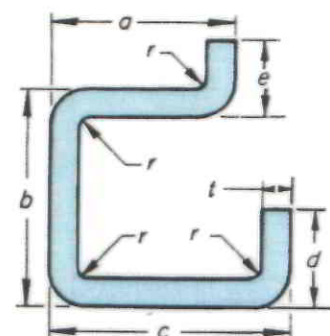
$$w = a + b - \text{bend allowance}$$



$$w = a + b + c - (2 \times \text{bend allowance})$$



$$w = a + b + c + d - (3 \times \text{bend allowance})$$



$$w = a + b + c + d + e - (4 \times \text{bend allowance})$$

NOTE: w = developed width of blank, t = metal thickness, r = inside radius of bend.