

STANDARD HOOK DETAILS

in accordance with ACI 318 Building Code

All grades of steel (minimum yield strengths)

D = Finished inside bend diameter
(includes springback)

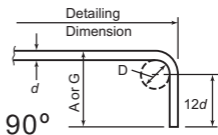
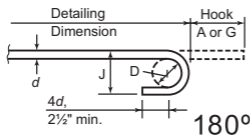
d = Bar diameter

ACI 318 min. bend diameter:

6d for #3 through #8

8d for #9, #10 and #11

10d for #14 and #18



RECOMMENDED END HOOK DIMENSIONS

BAR SIZE	D	180° HOOKS		90° HOOKS
		A or G	J	A or G
#3	2 1/4"	0' - 5"	0' - 3"	0' - 6"
#4	3"	0' - 6"	0' - 4"	0' - 8"
#5	3 3/4"	0' - 7"	0' - 5"	0' - 10"
#6	4 1/2"	0' - 8"	0' - 6"	1' - 0"
#7	5 1/4"	0' - 10"	0' - 7"	1' - 2"
#8	6"	0' - 11"	0' - 8"	1' - 4"
#9	9 1/2"	1' - 3"	0' - 11 3/4"	1' - 7"
#10	10 3/4"	1' - 5"	1' - 1 1/4"	1' - 10"
#11	12"	1' - 7"	1' - 2 3/4"	2' - 0"
#14	18 1/4"	2' - 3"	1' - 9 3/4"	2' - 7"
#18	24"	3' - 0"	2' - 4 1/2"	3' - 5"

STEEL TYPE	BAR SIZE RANGE	GRADE	MINIMUM YIELD (ksi)	MINIMUM TENSILE (ksi)
Carbon A615	#3 - #6	40	40	60
	#3 - #20	60	60	90
	#3 - #20	75	75	100
	#3 - #20	80	80	105
	#3 - #20	100	100	115
Low-Alloy A706	#3 - #18	60	60	80
	#3 - #18	80	80	100
Stainless	#3 - #18	60	60	90
	#3 - #18	75	75	100
Rail & Axle A996	#3 - #8	40	40	70
	#3 - #8	50	50	80
	#3 - #11	60	60	90
Low-Carbon	#3 - #18	100	100	150
	#3 - #11	120	120	150

ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	NOMINAL DIMENSIONS		
	AREA (in. ²)	WEIGHT (lb/ft)	DIAMETER (in.)
#3	0.11	0.376	0.375
#4	0.20	0.668	0.500
#5	0.31	1.043	0.625
#6	0.44	1.502	0.750
#7	0.60	2.044	0.875
#8	0.79	2.670	1.000
#9	1.00	3.400	1.128
#10	1.27	4.303	1.270
#11	1.56	5.313	1.410
#14	2.25	7.65	1.693
#18	4.00	13.60	2.257
#20	4.91	16.69	2.50

D = Finished inside bend diameter (includes springback)

d = Bar diameter

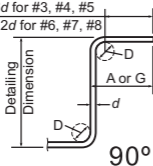
ACI 318 min. bend diameter:

6d for #3 through #8

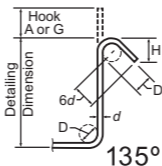
8d for #9, #10 and #11

10d for #14 and #18

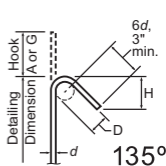
6d for #3, #4, #5
12d for #6, #7, #8



90°



135°



135°

RECOMMENDED STIRRUP/TIE HOOK DIMENSIONS					RECOMMENDED SEISMIC STIRRUP/TIE HOOK DIMENSIONS			
BAR SIZE	D	90°		135°	BAR SIZE	135° SEISMIC HOOK		
		A or G	A or G	H*		D	A or G	H*
#3	1½"	0' - 4"	4"	2½"	#3	1½"	4¼"	3"
#4	2"	0' - 4½"	4½"	3"	#4	2"	4½"	3"
#5	2½"	0' - 6"	5½"	3¾"	#5	2½"	5½"	3¾"
#6	4½"	1' - 0"	8"	4½"	#6	4½"	8"	4½"
#7	5¼"	1' - 2"	9"	5¼"	#7	5¼"	9"	5¼"
#8	6"	1' - 4"	10½"	6"	#8	6"	10½"	6"

* H dimension is approximate