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ASTM A615 Deformed and plain carbon steel bars for concrete reinforcement.

ASTM A615 covers deformed and plain carbon steel bars for concrete reinforcement. This specification covers bars and coils in four grades, Grade 40, Grade 60, Grade 75, and Grade 80. The grade designates the yield strength of the material, i.e. Grade 60 has a 60ksi minimum yield.

A615 Designation Numbers

Bar No.	Nominal Diameter
3	0.375"
4	0.500"
5	0.625"
6	0.750"
7	0.875"
8	1.000"
9	1.128"
10	1.270"
11	1.410"
14	1.693"
18	2.257"

A615 Mechanical Requirements

	Grade 40	Grade 60	Grade 75	Grade 80
Tensile, ksi	60	90	100	105
Yield, ksi	40	60	75	80
Elongation in 8"				
Bar size #3	11	9	7	7
4,5,6	12	9	7	7
7,8	-	8	7	7
9 thru 18	-	7	6	6

A615 Bend Test Requirements

Bar Designation#	Pin Dia. Grade 40	Pin Dia, Grade 60	Pin Dia, Grade 75	Pin Dia, Grade 80
3,4,5	3-1/2d	3-1/2d	5d	5d
6	5d	5d	5d	5d
7,8	-	5d	5d	5d
9,10,11	-	7d	7d	7d
14,18	-	9d	9d	9d

Weldability

Welding this material should be approached with caution since no specific provisions have been included to enhance weldability. If weldable rebar is required, rebar per ASTM A706 should be considered.



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