



## Foolad khoramdasht takstan analysis and standardization of manufactured products (hot rolled rebar used in concrete)

Size	Chemical mixture						Mechanical properties (bending)			Mechanical properties (traction)				Dimensional analysis												
	C (Carbon)	Si (Silica)	Mn (Manganese)	P (Phosphorus)	S (Sulfur)	Mandrel diameter	Bending angle	Description	High yield strength (MPa)	Tensile strength (MPa)	High tensile strength to yield strength ratio	Percentage of elongation after failure (A10)	Length of tread length (mm)		Step (mm)		Transverse tread width (mm)		Height of transverse tread 1/4 from the middle	Transverse tread height in the middle (mm)	Weight per unit length (kg/m)					
8	Aj 340 (AII) =A615 G40	Max 0.35	Max 0.65	Max 1.36	Max 0.05	Max 0.05	3d	180 degrees	No cracks, tears, fractures and ...	Aj 340 (AII) =A615 G40	min 340	min 500	min 1.25	min 16	0.75	Max 1.2	min 4.82	5.7	Max 6.55	0.8	Max 1.6	min 0.36	min 0.52	min 0.363	0.395	Max 0.426
	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05				Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12												
10	Aj 340 (AII) =A615 G40	Max 0.35	Max 0.65	Max 1.36	Max 0.05	Max 0.05	3d	180 degrees	No cracks, tears, fractures and ...	Aj 340 (AII) =A615 G40	min 340	min 500	min 1.25	min 16	1	Max 1.5	min 5.52	6.5	Max 7.47	1	Max 2	min 0.45	min 0.65	min 0.579	0.616	Max 0.652
	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05				Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12												
12	Aj 340 (AII) =A615 G40	Max 0.35	Max 0.65	Max 1.36	Max 0.05	Max 0.05	3d	180 degrees	No cracks, tears, fractures and ...	Aj 340 (AII) =A615 G40	min 340	min 500	min 1.25	min 16	1.25	Max 1.8	min 6.12	7.2	Max 8.28	1.2	Max 2.4	min 0.54	min 0.78	min 0.834	0.888	Max 0.941
	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05				Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12												
14	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05	3d	180 degrees	No cracks, tears, fractures and ...	Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12	1.25	Max 2.1	min 7.14	8.4	Max 9.66	1.4	Max 2.8	min 0.63	min 0.91	min 1.149	1.21	Max 1.270
16	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05	3d	180 degrees	No cracks, tears, fractures and ...	Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12	1.50	Max 2.4	min 8.16	9.6	Max 11.04	1.6	Max 3.2	min 0.72	min 1.04	min 1.501	1.58	Max 1.659
18	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05	6d	180 degrees	No cracks, tears, fractures and ...	Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12	1.50	Max 2.7	min 9.18	10.8	Max 12.42	1.8	Max 3.6	min 0.81	min 1.17	min 1.9	2	Max 2.1
20	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05	6d	180 degrees	No cracks, tears, fractures and ...	Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12	1.50	Max 3	min 10.2	12	Max 13.8	2	Max 4	min 0.90	min 1.30	min 2.346	2.47	Max 2.593
22	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05	6d	180 degrees	No cracks, tears, fractures and ...	Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12	1.50	Max 3.3	min 11.22	13.2	Max 15.18	2.2	Max 4.4	min 0.99	min 1.43	min 2.831	2.98	Max 3.129
25	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05	6d	180 degrees	No cracks, tears, fractures and ...	Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12	1.50	Max 3.75	min 12.75	15	Max 17.25	2.5	Max 5	min 1.13	min 1.63	min 3.696	3.85	Max 4.004
28	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05	6d	180 degrees	No cracks, tears, fractures and ...	Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12	2	Max 4.2	min 14.28	16.8	Max 19.32	2.8	Max 5.6	min 1.26	min 1.82	min 4.636	4.83	Max 5.023
32	Aj 400 (AIII) =A615 G60	Max 0.39	Max 0.65	Max 1.7	Max 0.05	Max 0.05	6d	180 degrees	No cracks, tears, fractures and ...	Aj 400 (AIII) =A615 G60	min 400	min 600	min 1.25	min 12	2	Max 4.8	min 16.32	19.2	Max 22.08	3.2	Max 6.4	min 1.44	min 2.08	min 6.057	6.31	Max 6.562