

DEFORMED BARS

Hot Rolled Deformed Bar is the core production between our melting and finishing operation. Our deformed bars geometry such as knots and ribs, their height, width, shape and spacing are well controlled during grooving and rolling to give maximum **bond strength** without affecting bendability and fatigue strength.

I. CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES

QATAR STEEL Std.	CHEMICAL COMPOSITION %					MECHANICAL PROPERTIES					BEND TEST	
	C max	MN max	P max	S max	YP kg/mm ² minimum	TS kg/mm ² minimum	Elongation % minimum	Test Piece (GL)	Bending Angle	Bending Diameter		
QD 30			0.050	0.050	30	49	14	No. 1	180°	Rated dia.x3.5		
QD 43	1.80		0.050	0.050	43	64	12	No. 2	180°	≤D16 Rated dia.x3.5 >D16 Rated dia.x4		
QD 47	0.25		0.050	0.050	47	1.8xAct.YS	14	5D	180°	Rated dia.x3		

No. 1 Test Piece: The gauge length shall be 8 times the diameter of steel bars up to 25 mm in nominal diameter
No. 2 Test Piece: The gauge length shall be 4 times the diameter of steel bars above 25 mm in nominal diameter
Rebend test for QD 47 is required

2. TOLERANCE ON DIMENSION

2.1. LENGTH

Length	Tolerance
up to 7 m	+ 40 mm - 0 mm
over 7 m	+ 50 mm - 0 mm

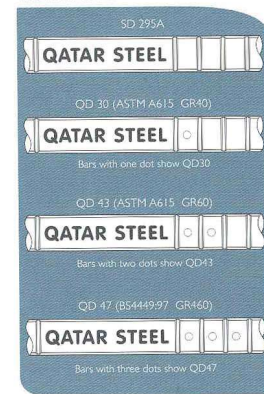
2.2. MASS

Size	Tolerance	
	Single Piece	One Set
D20 & under	± 6%	± 5%
D22 to D30	± 5%	± 4%
D32 to D40	± 4%	± 3.5%

3. NOMINAL DIMENSIONS, WEIGHT & TOLERANCE ON KNOTS

Bar Design	Nominal Dia. (d) mm	Nominal C.S Area Sq. mm	Unit Mass Kg/m	Max. Ave. Spacing of Knots mm	Knots Height		LgdRi Width mm	Nominal Mass Kg/Piece		
					Min. mm	Max. mm		6 m	9 m	12 m
D 8	8	50.27	0.395	5.6	0.3	0.6	3.14	2.37	3.56	4.74
D 10	10	78.54	0.617	7.0	0.4	0.8	3.9	3.70	5.55	7.40
D 12	12	113.1	0.888	8.4	0.5	1.0	4.7	5.33	7.99	10.66
D 14	14	153.9	1.21	9.8	0.6	1.2	5.5	7.26	10.89	14.52
D 16	16	201.1	1.58	11.2	0.7	1.4	6.3	9.48	14.22	18.96
D 18	18	254.5	2.00	12.6	0.8	1.6	7.1	12.00	18.00	24.00
D 20	20	314.2	2.47	14.0	1.0	2.0	7.9	14.82	22.23	29.64
D 22	22	380.1	2.98	15.4	1.1	2.2	8.6	17.88	26.82	35.76
D 25	25	490.9	3.85	17.5	1.3	2.6	9.8	23.10	34.65	46.20
D 28	28	615.8	4.83	19.6	1.4	2.8	11.0	28.98	43.47	57.96
D 30	30	706.9	5.55	21.0	1.5	3.0	11.8	33.30	49.95	66.60
D 32	32	804.2	6.31	22.4	1.6	3.2	12.6	37.86	56.79	75.72
D 36	36	1017.4	7.986	25.2	1.8	3.6	14.1	47.92	71.87	95.83
D 40	40	1256.6	9.864	28.0	2.0	4.0	15.7	59.18	88.78	118.37

4. MARKING



Deformed bars produced QASCO conform to various and international standards QD 30/QD 43/QD 47 (C BS4449: 1997 Grade 460 SSA 2/1992 (Saudi High T ASTM A615 Grade 40/Gr (American) and JIS G3111 (Japanese).

The registered trade mark 'QATAR STEEL' is rolled deformed rebars at an interval of about one meter, along identification marks.

5. ALLOWABLE LIMIT OF KNOTS

$$\text{Average Spacing of Knots} = 1/10(p_1 + p_2 + \dots + p_{10})$$

$$\text{Height of Knots} = 1/3(h_1 + h_2 + h_3)$$

$$\text{Width of longitudinal ribs} = g_1 + g_2$$

p - spacing
h - height
g - gap