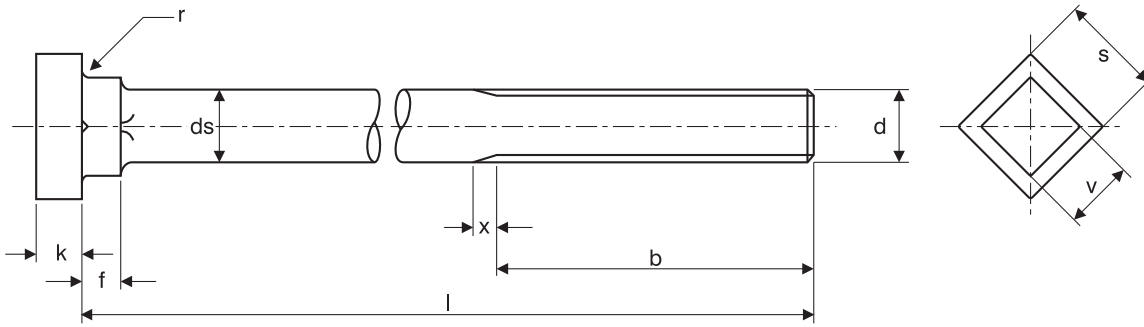


# Holding Down Bolts

## BS 7419 (Square Square) Grade 4.6 & 8.8



### BS 7419 Dimensions of square head bolts

Nominal size and thread diameter <i>d</i>	Pitch of thread <i>P</i>	Thread length <i>b</i>		Shank diameter <i>ds</i>		Thickness of head <i>k</i>			Radius under head <i>r</i>	Width across flats <i>s</i>		Thickness of underhead <i>f</i>			Underhead width across flats <i>v</i>		Thread runout <i>x</i>
		coarse pitch	min.	max.	min.	max.	nom.	min.		max.	min.	max.	nom.	min.	max.	min.	
(M12)	1.75	112.0	118.0	11.30	12.70	8.00	7.25	8.75	0.5	18.16	19.00	6.00	5.25	6.75	11.3	12.7	4.40
M16	2.00	116.0	122.0	15.30	16.70	10.00	9.25	10.75	0.6	23.16	24.00	8.00	7.25	8.75	15.30	16.70	5.00
M20	2.50	120.0	127.5	19.16	20.84	12.50	11.60	13.40	0.8	29.16	30.00	10.00	9.25	10.75	19.16	20.84	6.30
(M22)	2.50	122.0	131.0	21.16	22.84	14.00	13.10	14.90	0.8	31.16	32.00	11.00	10.25	11.75	21.16	22.84	6.30
M24	3.00	124.0	133.0	23.16	24.84	15.00	14.10	15.90	0.8	35.00	36.00	12.00	11.10	12.90	23.16	24.84	7.50
(M27)	3.00	127.0	137.0	26.16	27.84	17.00	15.95	16.05	1.0	40.00	41.00	13.50	12.60	14.40	26.16	27.84	7.50
M30	3.50	130.0	140.5	29.16	30.84	18.70	17.65	19.75	1.0	45.00	46.00	15.00	14.10	15.90	29.16	30.84	9.00
(M33)	3.50	133.0	145.0	32.00	34.00	21.00	19.95	22.05	1.0	46.80	50.00	16.50	15.60	17.40	32.00	34.00	9.00
M36	4.00	136.0	148.0	35.00	37.00	22.50	21.45	23.55	1.0	53.80	55.00	18.00	17.10	18.90	35.00	37.00	10.00
(M39)	4.00	139.0	152.0	38.00	40.00	25.00	33.95	26.05	1.0	58.10	60.00	19.50	18.45	20.55	38.00	40.00	10.00
M42	4.50	142.0	155.5	41.00	43.00	26.00	24.95	27.05	1.2	63.10	65.00	21.00	19.95	22.05	43.00	41.00	11.00
(M45)	4.50	145.0	160.0	44.00	46.00	28.00	26.95	29.05	1.6	68.10	70.00	22.50	21.45	23.55	44.00	46.00	11.00
M48	5.00	148.0	163.0	47.00	49.00	30.00	28.95	31.05	1.6	73.10	75.00	24.00	22.95	25.05	47.00	49.00	12.50

Sizes in brackets are non preferred standards.  
All dimensions are in millimeters

### Tolerance on nominal length

Nominal Length		Tolerance
Over	Up to and including	
250	315	±5.20
315	400	±5.70
400	500	±6.30
500	625	±6.80
625	800	±7.20
800	1000	±7.40
1000	1250	±7.60

### Preferred sizes

Nominal Length for thread ( <i>d</i> )				
M16	M20	M24	M30	M36
300	300	-	-	-
375	375	375	-	-
-	400	400	-	-
450	450	450	450	450
525	525	525	525	525
600	600	600	600	600
-	750	750	750	750
-	1000	1000	1000	1000

# Holding Down Bolts

## BS 7419 (Square Square) Grade 4.6 & 8.8

### Specification for bolts and reference standards

Characteristic		Standard
Material		Steel
Thread	Tolerance	8g
	Standard	BS 3643-1, BS 4643-2
Mechanical Properties	Property Class <sup>a</sup>	d ≤ 39mm: 4.6, 8.8 (see BS 6104-1) d > 39mm: as agreed
Tolerances	Product Grade	C
	Standard	BS 6322-1
Surface Finish	Self Colour	As processed
	Hot Dip Galvanised	BS 1706
	Sherardised	BS 4921
	Electroplated	BS 1706
Acceptability	For acceptance procedure, see BS 6587.	
Associated nuts <sup>b</sup>	BS 4190, BS 3692	
<p>a The designation symbol for the property classes according to BS 6104-1 can also be used for thread sizes above M39, provided that the finished product has all the properties assigned to the designation symbols in BS 6104-1.</p> <p>b When bolts of property class 8.8 are to be preloaded, nuts and hardened washers in accordance with BS 4395-1 should be specified.</p>		