



**Cooper & Turner Ltd**

**STRUCTURAL**

**BS 7419 SQUARE SQUARE  
HOLDING DOWN BOLTS  
PROPERTY CLASSES 4.6 & 8.8**

# BS 7419 Square Square Holding Down Bolts

## Property Classes 4.6 & 8.8

Issue: Draft  
Date: XX/XX/2015  
Approved: Draft

### BS 7419 SQUARE SQUARE BOLT DIMENSIONS

Thread size <b>d</b>		<b>M16</b>	<b>M20</b>	<b>M24</b>	<b>M30</b>	<b>M36</b>	<b>M42</b>	<b>M48</b>	<b>M56</b>	<b>M64</b>	
<b>P</b> pitch of thread		2	2.5	3	3.5	4	4.5	5	5.5	6	
<b>b</b>	<b>a</b>	max.	122	127.5	133	140.5	148	155.5	163	172.5	182
		min.	116	120	124	130	136	142	148	156	164
	<b>b</b>	max.	225	225	225	225	225	225	225	225	225
		min.	200	200	200	200	200	200	200	200	200
<b>ds</b>	max.	16.7	20.84	24.84	30.84	37	43	49	57.2	65.2	
	min.	15.3	19.16	23.16	29.16	35	41	47	54.8	62.8	
<b>k</b>	nom.	10	12.5	15	18.7	22.5	26	3.	35	40	
	max.	10.75	13.4	15.9	19.75	23.55	27.05	31.05	36.25	41.25	
	min.	9.25	11.6	14.1	17.65	21.45	24.95	28.95	33.75	38.75	
<b>r</b>	min.	0.6	0.8	0.8	1	1	1.2	1.6	2	2	
<b>s</b>	nom. / max.	24	30	36	46	55	65	75	85	95	
	min.	23.16	29.16	35	45	53.8	63.1	73.1	82.8	92.8	
<b>f</b>	nom.	8	10	12	15	18	21	24	28	32	
	max.	8.75	10.75	12.9	15.9	18.9	22.05	25.05	29.05	33.25	
	min.	7.25	9.25	11.1	14.1	17.1	19.95	22.95	26.95	30.75	
<b>v</b>	max.	16.7	20.84	24.84	30.84	37	43	49	57.2	65.2	
	min.	15.3	19.16	23.16	29.16	35	41	47	54.8	62.8	

<sup>a</sup> For nominal lengths  $l \leq 600$

<sup>b</sup> For nominal lengths  $l > 600$

Dimensions apply prior to coating

### CHARACTERISTIC

### STANDARD

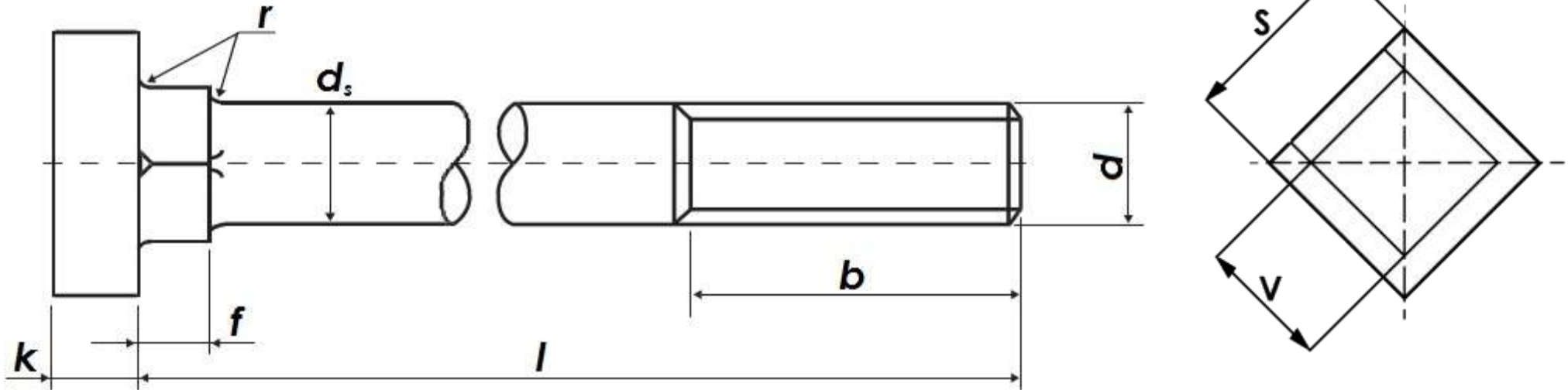
General Requirements	BS 7419	
Threads	BS 3643 Parts 1&2 tolerance class 8g	
Materials & Manufacture	BS EN ISO 898-1 Property Classes 4.6 & 8.8	
Mechanical Properties	BS EN ISO 898-1 Property Class 4.6 & 8.8	
Dimensions & Tolerances	BS 7419	
Finish/C coatings	SC/Black	BS 7419 - as processed
	HDG	BS 729 & BS 7371 Part 6
Product Marking	BS EN ISO 898-1	

### BS 7419 POPULAR SIZES\*

<b>M16</b>	<b>M20</b>	<b>M24</b>	<b>M30</b>
300	300	-	-
350	350	-	-
375	375	375	-
400	400	400	-
450	450	450	450
500	500	500	-
-	525	525	-
-	-	550	550
600	600	600	600
		750	750
			800

\*Other lengths and diameters are available provided the quantity required is sufficient to warrant manufacture





### 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

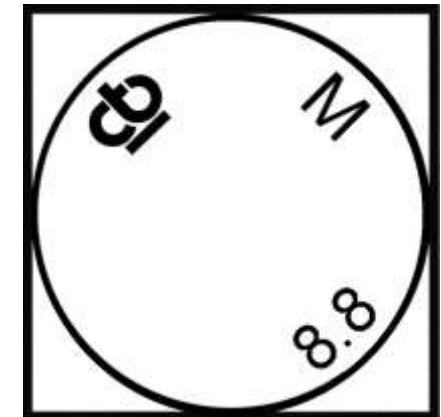
### BS 7419 BOLT and NUT combinations

Bolt Property Class & Finish	supplied with	Nut Property Class & Finish
4.6 - Self Colour		8 - Self Colour
4.6 - Galvanized		8 - Galvanized
8.8 - Self Colour		8 - Self Colour
8.8 - Galvanized		10 - Galvanized

### BS 7419 ULTIMATE TENSILE LOAD AND HARDNESS

Nominal Diameter & Thread Pitch	Stress Area	Property Class 4.6			Property Class 8.8		
		Tensile Load min	Hardness Rockwell RB		Tensile Load min	Hardness Rockwell HRC	
	mm <sup>2</sup>	kN	min	max	kN	min	max
M16 X 2	157	62.8	67	95	130	23	34
M20 X 2.5	245	98	67	95	203	23	34
M24 X 3	353	141	67	95	293	23	34
M30 X 3.5	561	224	67	95	466	23	34
M36 X 4	817	327	67	95	678	23	34

### BS 7419 HEAD MARKING



### BS 7419 TENSILE STRENGTH & HARDNESS FOR SPECIMENS MACHINED FROM PROPERTY CLASS 8.8 BOLTS

Tensile Strength min	Elongation min	Reduction of Area min	Hardness Rockwell HRC	
MPa	%	%	min	max
830	12	52	23	34

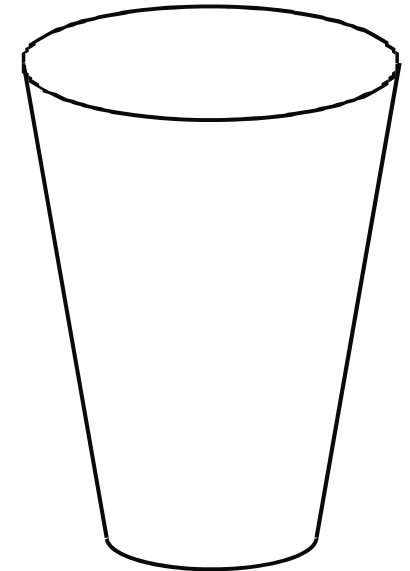
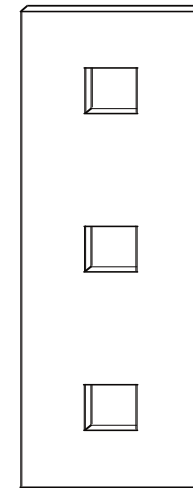
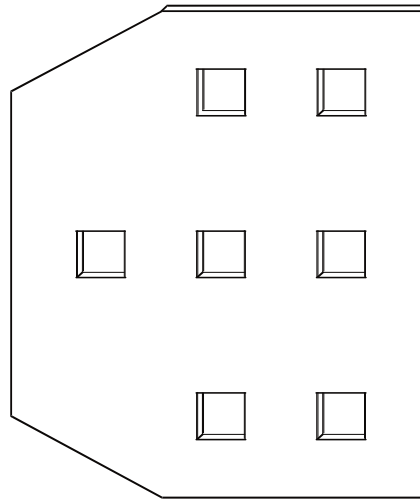
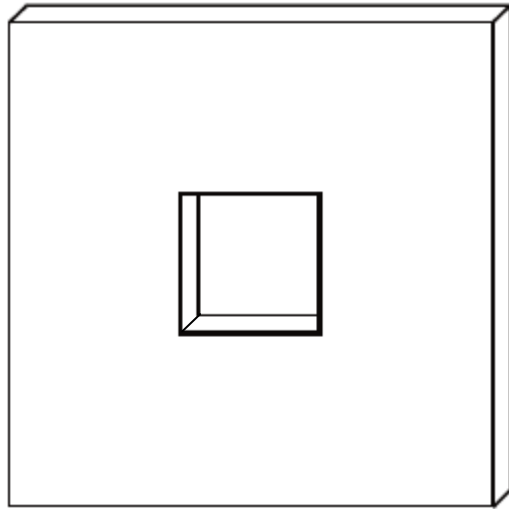
For bolts > M36 testing would generally be on machined test pieces

### BS 7419 CERTIFICATION

Property Class 8.8 bolts are supplied with a Test Certificate and Property Class 4.6 bolts are supplied with a Certificate of Conformity.

# Mild Steel Plate Washers & Waxed Cardboard Bolt Boxes for use with Holding Down Bolts

Issue: Draft  
Date: XX/XX/2015  
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Other Plate Washers are available by request

## MILD STEEL PLATE WASHER POPULAR SIZES

		Thickness				
		10	12	15	20	25
Sq	Thickness					
	100	✓	✓	✓	✓	✓
	120	✓	✓	✓	✓	✓
	150	✓	✓	✓	✓	✓

## WAXED CARDBOARD BOLT BOX DIMENSIONS

Length	ID Bottom	ID Top
229	25	70
305	25	92
381	27	108
457	32	114
534	32	118
610	32	132