



Cooper & Turner Ltd

STRUCTURAL

BS EN 14399-3

**HIGH STRENGTH WEATHERING STEEL
STRUCTURAL BOLTING ASSEMBLIES
FOR PRELOADING PROPERTY CLASS 8.8**

BS EN 14399-3 WEATHERING STEEL BOLT DIMENSIONS

Thread d		M24
P pitch of thread		3
b	Bolt ≤ 125	54
	Bolt > 125 ≤ 200	60
	Bolt > 200	73
c	maximum	0.8
	minimum	0.4
da	maximum	28.4
ds	maximum	24.84
	minimum	23.16
dw¹⁾	minimum	38.0
e	minimum	45.20
k	maximum	15.90
	minimum	14.10
r	minimum	1.5
s	maximum	41
	minimum	40

¹⁾ The maximum value of **dw** shall not exceed the actual width across flats

Dimensions are in millimetres

CHARACTERISTIC

STANDARD

General Requirements		BS EN 14399-1
Materials & Manufacture		ASTM A325M Type 3 BS EN ISO 898-1 Property Class 8.8
Finish	Self Colour/Black	BS EN 14399-3 – as processed
Mechanical Properties		BS EN 14399-3, BS EN ISO 898-1 8.8
Dimensions & Tolerances		BS EN 14399-3
Threads		ISO 261, ISO 965-2 tolerance 6g
Product Marking		BS EN 14399-3 + 'W'

IMPORTANT NOTE

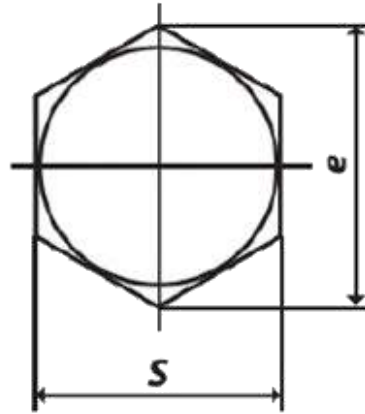
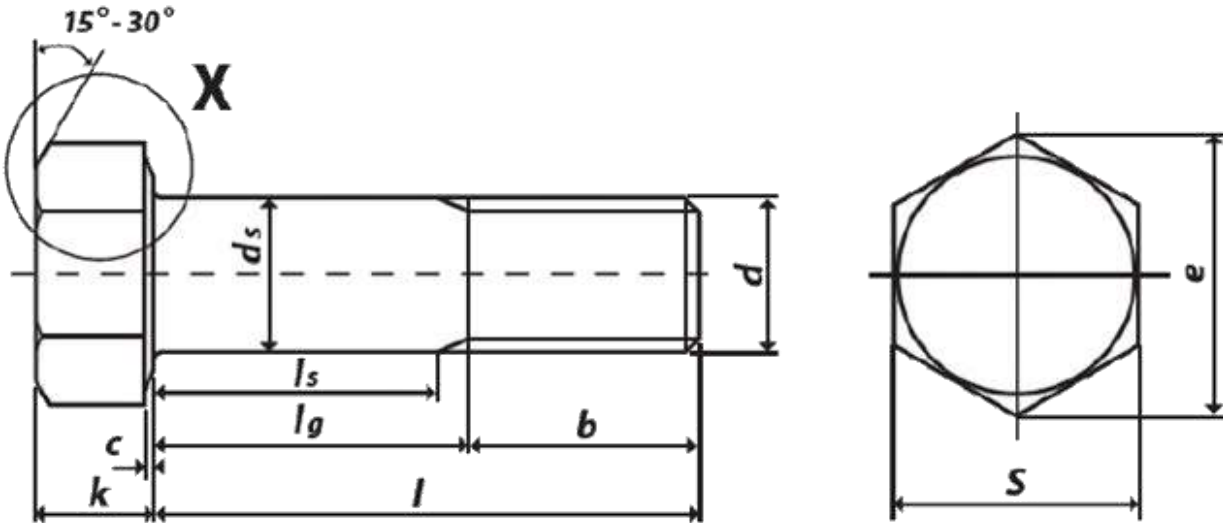
It is a requirement of BS EN 14399 that:

- ❖ The bolt, nut and washer assembly is supplied by one manufacturer who is responsible for the function of the assembly
- ❖ All the components are identified with the manufacturer's mark

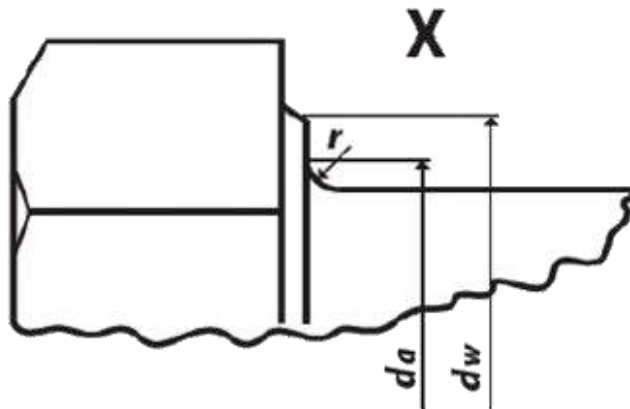
Cooper & Turner BS EN 14399-3 weathering steel preload assemblies are supplied in accordance with **k** class K0. "CE" marking can only be supplied if the whole assembly (bolt, nut & washer) is purchased.

INSTALLATION OF WEATHERING STEEL STRUCTURAL BOLTING ASSEMBLIES

It is recommended that these weathering steel structural bolt, nut and washer assemblies are installed using the UK part turn method as detailed in the Manual of Contract Documents for Highway Works (MCHW), Volume 1 - Specification for Highway Works Series 1800 Structural Steelwork, Clause 1808.5.1 Tightening of preloaded bolts paragraphs 4 and 5.



BS EN 14399-3
WEATHERING STEEL
HEAD MARKING



BS EN 14399-3 WEATHERING STEEL
MECHANICAL PROPERTIES OF
PROPERTY CLASS 8.8 BOLTS

Bolt Thread Diameter	Stress Area	Proof Load min.	Ultimate Load min.	Hardness Rockwell HRC	
	mm ²	kN	kN	min.	max.
M24	353	212	293	23	34

This drawing shows part threaded bolts and represents all those that appear below the bold line in the Table on Page 3, however, some of the shorter bolts are fully threaded – See footnote ¹⁾ in the Table on Page 3

BS EN 14399-3 WEATHERING STEEL BOLT LENGTH AND TOLERANCES

Thread d			M24	
l			ls min.	lg max.
nom.	min.	max.		
60	58.5	61.5	FT ¹⁾	FT ¹⁾
70	68.5	71.5	12 ¹⁾	17 ¹⁾
80	78.5	81.5	12 ¹⁾	17 ¹⁾
90	88.25	91.75	21	36
100	98.25	101.75	31	46
110	108.25	111.75	41	56
120	118.25	121.75	51	66
130	128	132	55	70
140	138	142	65	80
150	148	152	75	90
160	156	164	85	100
170	166	174	95	110
180	176	184	105	120
190	186	194	115	130
200	196	204	125	140

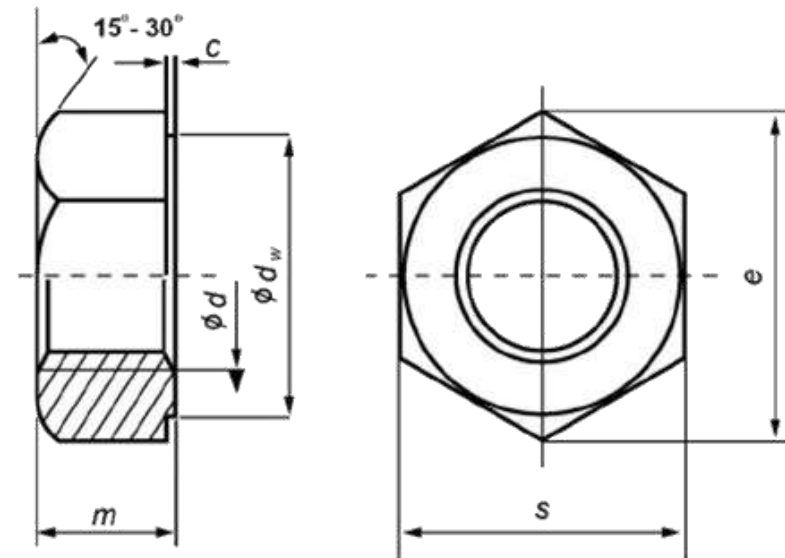
¹⁾ Bolts shown above the bold line have sufficient thread to meet the requirements of EN 1090-2. FT indicates fully threaded and in the near future all bolts above the bold line will be manufactured fully threaded

Dimensions are in millimetres

**BS EN 14399-3 WEATHERING
STEEL NUT DIMENSIONS**

Thread d		M24
P pitch of thread		3
c	maximum	0.8
	minimum	0.4
dw ¹⁾	minimum	38.0
e	minimum	45.20
m	maximum	21.5
	minimum	20.2
s	maximum	41
	minimum	40
¹⁾ The maximum value of dw shall not exceed the actual width across flats Dimensions are in millimetres		

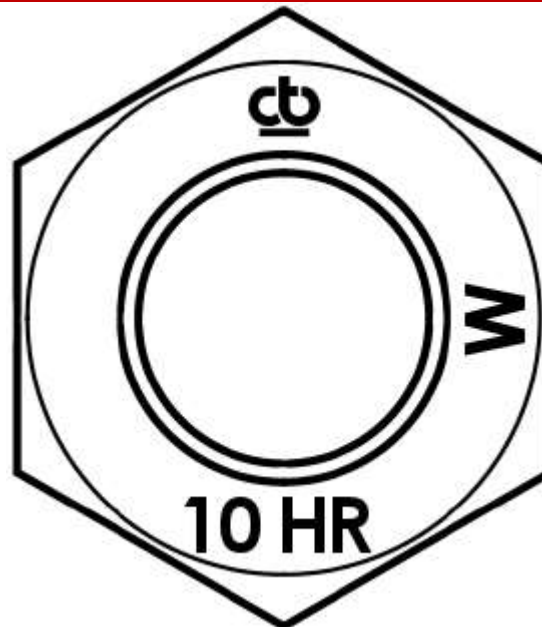
CHARACTERISTIC		STANDARD
General Requirements		BS EN 14399-1
Materials & Manufacture		ASTM A563M Class 10S3 (Chemical Composition) BS EN ISO 898-2 Property Class 10
Finish	Self Colour/Black	BS EN 14399-3 – as processed
Mechanical Properties		BS EN 14399-3, BS EN ISO 898-2 Class 10
Dimensions & Tolerances		BS EN 14399-3
Threads		ISO 261, ISO 965-2 tolerance 6H
Product Marking		BS EN 14399-3 +'W'



**BS EN 14399-3 WEATHERING STEEL PROOF LOADS VALUES OF
 PROPERTY CLASS 10 NUTS**

Nut Thread Diameter	Stress Area Test Mandrel	Tolerance Class 6H
	mm ²	Proof Load kN
M24	353	409.5

**BS EN 14399-3 WEATHERING
 STEEL NUT MARKING**



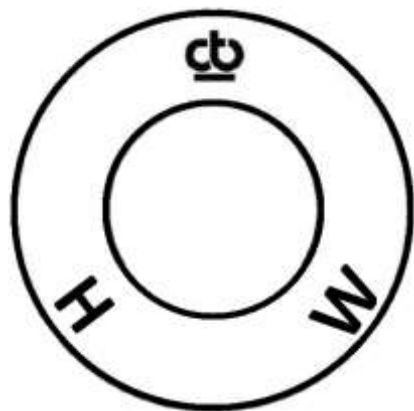
**BS EN 14399-5 WEATHERING STEEL
PLAIN WASHER DIMENSIONS**

Nominal Size $d^1)$		M24
d	minimum	25
	maximum	25.33
d	minimum	43.38
	maximum	44
h	nominal	4
	minimum	3.7
	maximum	4.3

¹⁾ Nominal thread diameter of associated bolts

Dimensions are in millimetres

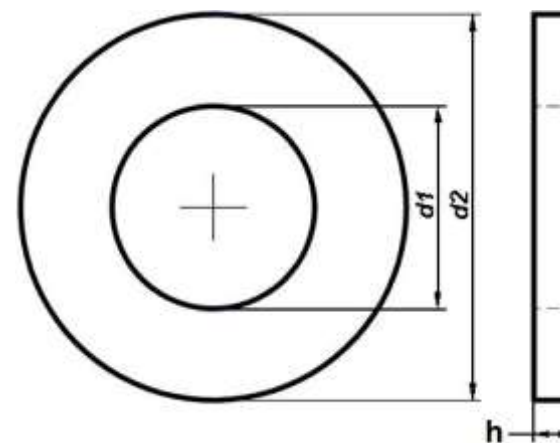
**BS EN 14399-5 WEATHERING
STEEL WASHER MARKING**



CHARACTERISTIC		STANDARD
General Requirements		BS EN 14399-1
Materials & Manufacture		ASTM F436M Type 3 (Chemical Composition) BS EN 14399-5
Finish	Self Colour/Black	BS EN 14399-5 – as processed
Mechanical Properties		BS EN 14399-5
Dimensions & Tolerances		BS EN 14399-5
Product Marking		BS EN 14399-5 + 'W'

BS EN 14399-5 WEATHERING STEEL MECHANICAL PROPERTIES OF PLAIN WASHERS

Nominal Size	Vickers Hardness (HV)	
	minimum	maximum
M24	300	370



Further information concerning these assemblies is contained in the sheet entitled 'Use of BS EN 14399-3 High Strength Weathering Steel Structural Bolting Assemblies for Preloading Property Class 8.8 Hex' which is available on our website.