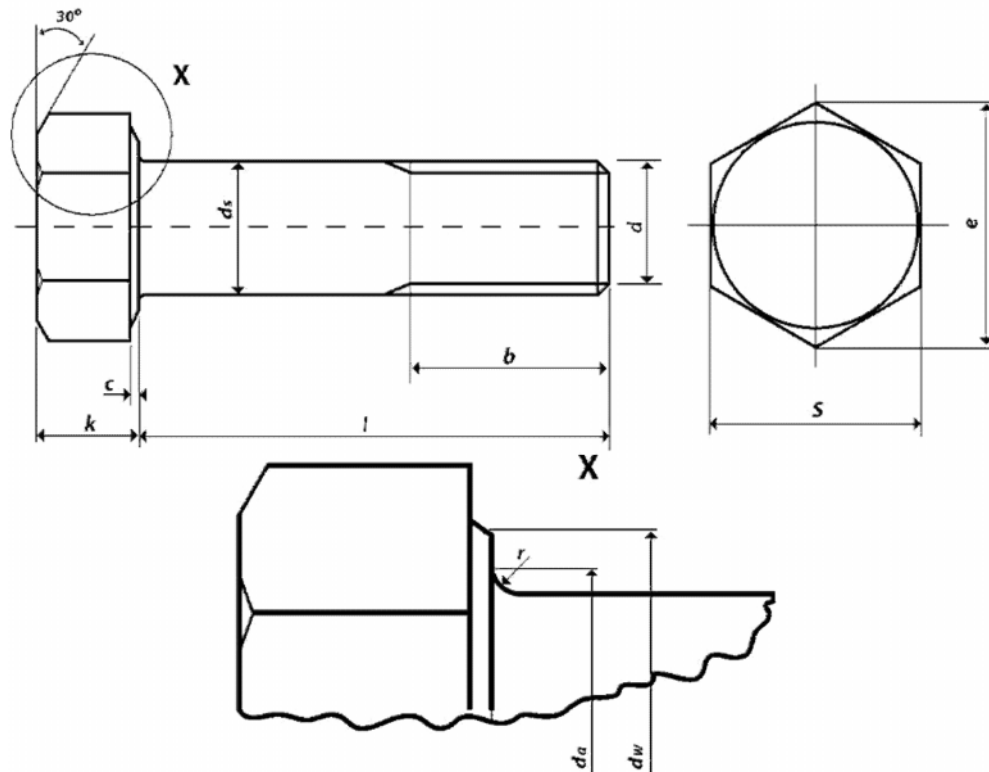


# HEAVY HEX WEATHERING STEEL STRUCTURAL BOLTING ASSEMBLIES BOLTS

Materials: Weathering steel in accordance with ASTM A325M Type 3 Grade A or equivalent.

Bolt Dimensions (ASME B18.2.3.7M & ISO 888 thread lengths)		
Thread size d		M24
P pitch of thread		3
b	Bolt 125	54
	Bolt > 125 to 200	60
ds	min.	23.16
	max.	24.84
s	min.	40.00
	max.	41.00
e	min.	45.20
	max.	47.34
k	min.	14.10
	max.	15.90
dw	min.	38.0
c	min.	0.4
	max.	0.8
da	max.	26.4
r	min.	1.0
All dimensions are in millimetres		

CHARACTERISTIC		STANDARD
Materials & Manufacture		ASTM A325M Type 3
Finish	Self Colour / Black	ASTM A325M Plain (non-coated)
Mechanical Properties		ASTM A325M (Equivalent to ISO 898-1 PC 8.8)
Dimensions & Tolerances		ASME B18.2.3.7M & ISO 888 thread lengths
Threads		ASME B1.13M tolerance class 6g
Workmanship		ASTM F788 / F788M
Product Marking		ASTM A325



Whilst this information is provided in good faith, no member of the Andaray group of companies shall be under any responsibility or liability in respect of errors or information that is found to be incorrect or for any reliance the user may place on it.

# HEAVY HEX WEATHERING STEEL STRUCTURAL BOLTING ASSEMBLIES BOLTS

Materials: Weathering steel in accordance with ASTM A325M Type 3 Grade A or equivalent.

BOLT LENGTH TOLERANCES	
Nominal Length (l)	Length Tolerance
Up to and including 50	± 1.2
Over 50 up to and including 80	± 1.5
Over 80 up to and including 120	± 1.8
Over 120 up to and including 150	± 2.0
Over 150	± 4.0
All dimensions are in millimetres	

A325M TYPE 3 HEAD



MECHANICAL PROPERTIES OF WEATHERING STEEL BOLTS A325M TYPE 3					
Nominal Diameter & Thread Pitch	Stress Area	Proof Load	Tensile Load min	Hardness Rockwell HRC	
	mm <sup>2</sup>			min	max
M24 x 3	353	212	293	25	34

## INSTALLATION OF WEATHERING STEEL STRUCTURAL BOLT, NUT AND WASHER ASSEMBLIES

It is recommended that these heavy hexagon Weathering Steel structural bolt, nut and washer assemblies are installed using the UK part turn method as detailed in the Steel Construction Institute Publication P382 – Steel Bridge Group: Model Project Specification For the Execution of Steelwork in Bridge Structures.

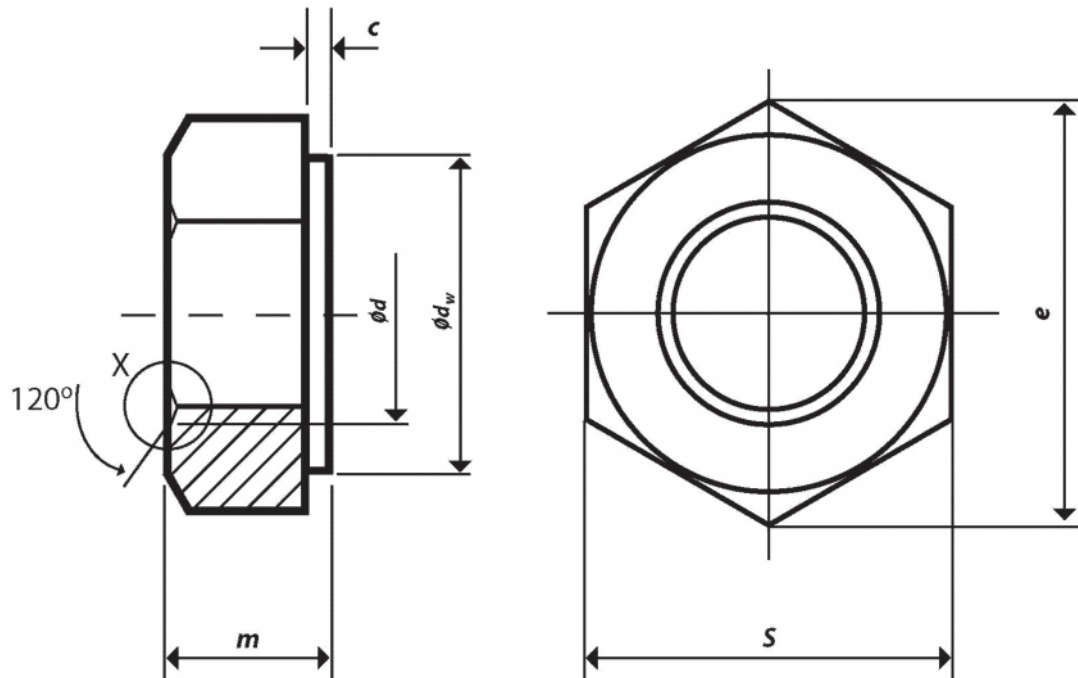
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# HEAVY HEX WEATHERING STEEL STRUCTURAL BOLTING ASSEMBLIES NUTS

Materials: Weathering steel in accordance with ASTM A563M Property Class 10S3

NUT DIMENSIONS									
Nominal size and thread pitch	s		e		m		dw	c	
	Width across flats		Width across corners		Thickness		Bearing face diameter	Washer face thickness	
	max	min	max	min	max	min	min	max	min
M24 x 3	41.00	40.00	47.34	45.20	24.2	22.9	38.0	0.8	0.4
All dimensions are in millimetres									

CHARACTERISTIC	STANDARD
Materials & Manufacture	ASTM A563M Class 10S3
Finish	Self Colour/Black
Mechanical Properties	ASTM A563M Class 10S3
Dimensions & Tolerances	ANSI B18.2.4.6M
Threads	ASME B1.13M tolerance class 6H
Workmanship	ASTM F812 / F812M
Product Marking	ASTM A563M Class 10S3



NUT PROOF LOAD & NUT HARDNESS 10S3			
Nominal size and thread pitch	Proof Load	Hardness	
		min	max
	kN	HRC	HRC
M24 X 3	439	26	38

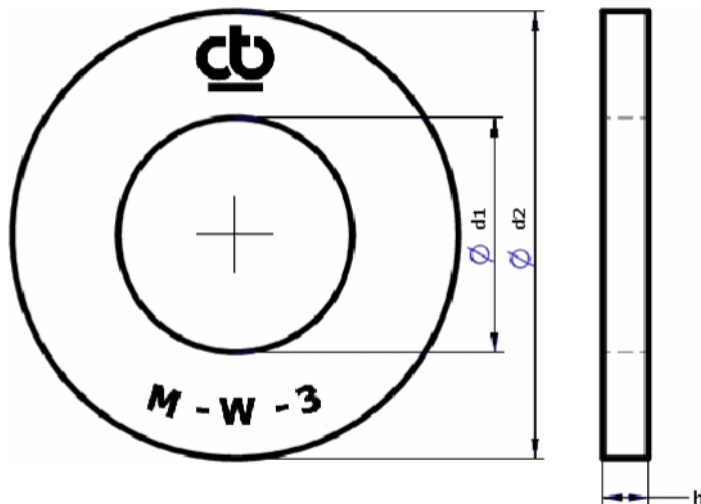
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# HEAVY HEX WEATHERING STEEL STRUCTURAL BOLTING ASSEMBLIES HARDENED STEEL WASHERS

Materials: Weathering steel in accordance with ASTM F436M Type 3

WASHER DIMENSIONS		
Nominal Washer Size		M24
d <sub>1</sub>	max	26.5
	min	26.0
d <sub>2</sub>	max	50.0
	min	48.4
h	max	4.6
	min	3.4
All dimensions are in millimetres		

CHARACTERISTIC		STANDARD
Materials & Manufacture		ASTM F436M Type 3
Finish	Self Colour / Black	ASTM F436M Plain (non-coated)
Mechanical Properties		ASTM F436M
Dimensions & Tolerances		ASTM F436M
Workmanship		ASTM F436M
Product Marking		ASTM F436M Type 3



WASHER MECHANICAL PROPERTIES		
Nominal Washer Size	Hardness (HRC)	
	Self Colour / Black	
	min	max
M24	38	45

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