

STRUCTURAL

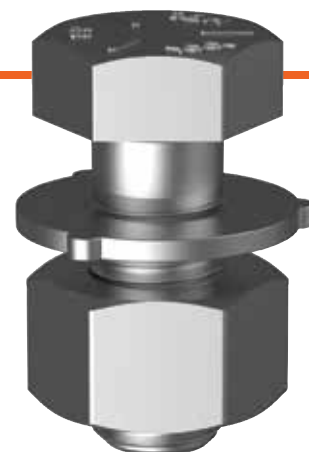
AS 1252: 2016 K0 8.8 HR Structural Assembly

» AS 1252: 2016 K0 8.8 HR replaces AS 1252: 1983 dimensional (1996 mechanical)

- » Fully adhering to the new standard.
- » Unique Batch head marking. See photo below
- » Verification Testing Reports included in the Supplier Declaration of Conformance [SDoC].
- » Full Quality Assurance documentation online.



Assembly testing was made to be 'normative' in AS 1252: 2016. **This makes it compulsory to do assembly testing for K0 assemblies.**



**HOT DIP GALVANISED
K0 STRUCTURAL ASSEMBLY
AS1252:2016 K0 / CLASS 8.8**

M20 x 50

50 pcs

Q:K02050

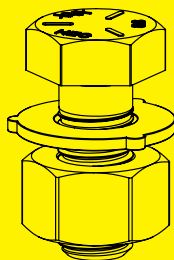
SDoC: This product complies to AS1252:2016 Part 1 and 2 (mandatory). ALL conforming documentation and quantity production units are available online at hobson.com.au/k0 or scan the below QR code.

KBHK0GCM200050

HEAT: JJT-E987654

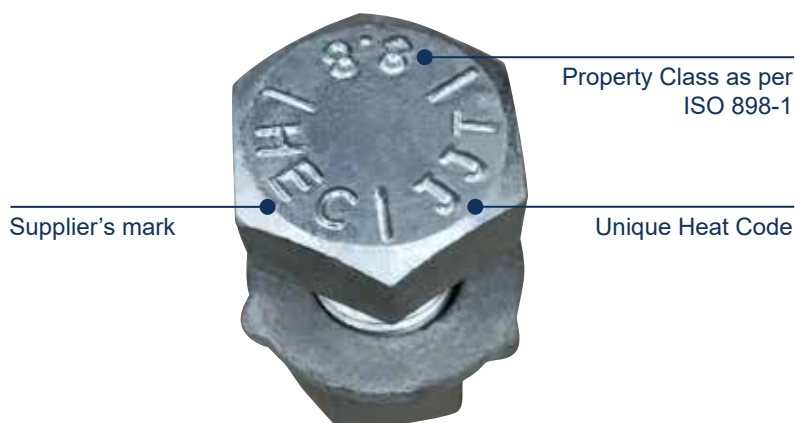


LOT: A123456
PO: 99999 NS1
CTN WGT: 16.00kg



K0 8.8 HR STRUCTURAL ASSEMBLY HOT DIP GALVANISED / AS1252:2016 K0 / CLASS 8.8

Part	Size	Length (mm)
KBHK0GCM120	M12	30-200
KBHK0GCM160	M16	40-700
KBHK0GCM200	M20	40-800
KBHK0GCM220	M22	55-200
KBHK0GCM240	M24	50-750
KBHK0GCM270	M27	80-200
KBHK0GCM300	M30	75-725
KBHK0GCM330	M33	130-230
KBHK0GCM360	M36	90-600



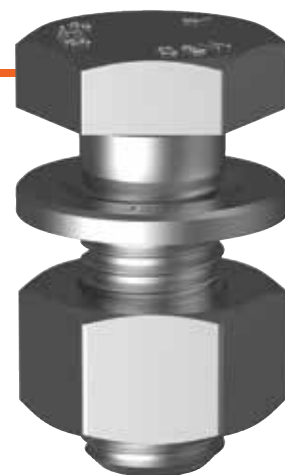
K0



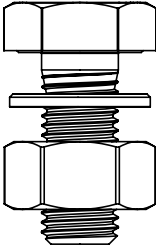

STRUCTURAL

EN 14399: 2005 K2 8.8 HR Structural Assembly

- » EN 14399: 2005 K2 8.8 HR [AS 1252: 2016 states that EN 14399 can be used as an 'alternative assembly type'].
- » Premium Range.
- » Unique batch head marking. See photo below.
- » Friction tightly controlled during manufacture. Refer details on the label for k factor and torque method.
- » Torque able to be used for tensioning.
- » Full Quality Assurance documentation online.



Carton Label

HR, HDG (EN14399-3 8.8 BOLT/ (1) EN14399-3 CL.8 NUT/ (1) EN14399-5 WASHER)		
KBHK2GCM240080	LOT# 2015351400	Quantity: 30 PCS
PO# 58949	Hobson Engineering 10 Clay Place Eastern Creek NSW 2766 AUSTRALIA	
Heat Code: 2MT		
		
935062901642		
M24x3.0Px80		
Torque Method according to EN1090-2		
① 1st : 430 Nm ② 2nd : 630 Nm		
k - class K2		
③ k_m : 0.120		
④ V_k : 0.06		
		KEG NO: 1
		PLT NO: 155

K2 8.8 HR STRUCTURAL ASSEMBLY HOT DIP GALVANISED / EN14399:2005 K2 / CLASS 8.8

Part	Size	Length (mm)
KBHK2GCM160	M16	40-100
KBHK2GCM200	M20	45-350
KBHK2GCM220	M22	65-130
KBHK2GCM240	M24	50-150
KBHK2GCM300	M30	75-500
KBHK2GCM360	M36	90-200



Manufacturer's mark

Unique Heat Code

Property Class as per
ISO 898-1 and HR

- ① The rated torque value required to bring the steel plies to firm contact (Snug or Bearing Joint).
- ② The rated torque value required to reach the correct tension in the assembly (Friction Joint).
- ③ The mean value of the k-factor obtained through testing.
- ④ V_k is the coefficient of variation of the k-factor values obtained in testing.



STRUCTURAL

Required Documentation

EN 14399: 2005 **K2** 8.8 HR
Assembly document structure.

» European Conformity (CE) Certificate.

The European Conformity (CE) mark is given to a manufacturer who has been assessed by a notified body and audited to the Harmonised European Standard (hEN) stating that they have the fabrication processes and quality management in place which is acceptable for the products manufactured. It is a requirement in the European Union to have the required CE marking on their products. A CE mark is only required in AS 1252: 2016 for the alternative and additional assembly types.

» Factory Production Control (FPC).

Inspection Certificate.

» Declaration of Performance (DoP).

AS 1252: 2016 **K0** 8.8 HR
Assembly document structure.

» Initial Type Testing Certificate (ITT) as demonstrated by the European Conformity (CE) Certificate.

» Factory Production Control (FPC).

Inspection Certificate.

» Verification Testing Report must be included in the Supplier Declaration of Conformance (SDoC).

Verification Testing is an additional layer to the quality assurance of the **K0** assemblies arriving in Australia.

Verification Testing must be completed by an independent ILAC (NATA equivalent global body) accredited laboratory.

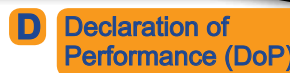
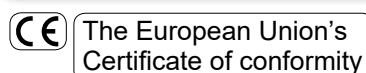
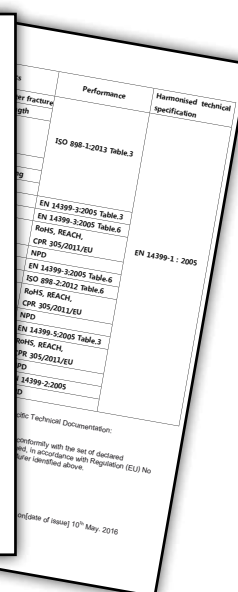
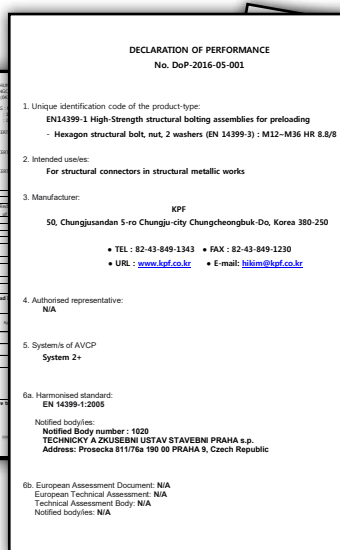
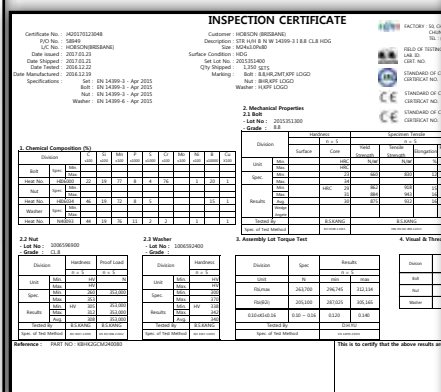
K2 Quality Assurance Documentation Online

2MT

FIND

Find Test Certificates by typing at least 3 characters of a Heat Number.
Then press the FIND button to retrieve links to all matching certificates.

Heat Number	Description	Category	Part Number	Certificates
2015351400-2MT	EN 8.8 K2 HDG BNW:M24 X 80	AS1252 Structural	KBHK2GCM240080	







STRUCTURAL

KO Quality Assurance **Documentation** Online

JJT

FIND

Find Test Certificates by typing at least 3 characters of a Heat Number. Then press the FIND button to retrieve links to all matching certificates.

Heat Number	Description	Category	Part Number	Certificates
JJT-E987654	K0 AS1252:2016 HDG BNW:M20 X 50	AS1252 Structural	KBHK0GCM200050	ITT   

Certificate of Conformity of Factory Production Control
This certificate is issued to:

**Manufacturer: Hobson Engineering
approved Factory No.02**

In compliance with Regulation (2007/118) of the European Parliament and of the Council of 4 March 2007 on the Construction Products Regulation or CPR, this certificate applies to the construction product:

Structural Retaining Assembly

This certificate attests that all processes concerning the approval and verification of conformity of performance and the performance described in Annex 2(a) of the standard(s):

EN 12439-1:2005 High-strength Structural Retaining Assembly For Retaining - Part 1: General Requirements

Under item 2(a) are specified and that the product fulfils all the prescribed requirements set out above.

The attached Schedule of the same date, details the regulating requirements, harmonized product standards and essential parameters and their test as part of this certificate.

This Certificate will remain valid as long as the test methods and/or factory production control requirements required in the technical document, used to assess the performance of the described characteristic, do not change, and the product, and the manufacturing conditions in the plant are not materially significant.

Certificate No.: 0038/CPN/SHAD071102/02
Original Approval: 02 January 2006
Current Certificate: 22 January 2017
Expiry Date: 22 January 2020
LRI Verified Body Number 0008

Amended on behalf of Lloyd's Register Verification

Certificate of Conformity of Factory Production Control No.: 0038/CPN/SHAD071102/02 Schedule

**Manufacturer: Hobson Engineering
approved Factory No.02**

Manufacturing Location and Products

Site: Chipping

Standard, Grade and Size

Standard, Grade and Size
EN12439-1:2005
EN12439-1:2005
M12.300-A (20-200) & B100 (0-100) (0-100)
M12.300-B100 (0-100) (0-100)
EN14388-2:2005
M12.300-A (20-200) & B100 (0-100) (0-100)
M12.300-B100 (0-100) (0-100)
EN14388-2:2005
M12.300-B100 (0-100) (0-100)

Testing Date: 02, 09/01/2017, 02/01/2017

Test Results:




Test	Result
EN12439-1:2005	02
EN14388-2:2005	02
EN12439-1:2005	02
EN14388-2:2005	02

Amended on behalf of Lloyd's Register Verification

INSPECTION CERTIFICATE																																																																																																														
Customer: Hexion			Invoice No.: HWG01			Factory: Hexion Engineering approved Factory No.02																																																																																																								
Product: HG AS1252-2016 HDG BWG MW4x10			ISC No.: 23398			Certificate No.: JA20170123053																																																																																																								
Client: E8			PO No.: 420000000004010			Date Shipped: 2-14-17																																																																																																								
Material: M24 11.5			Production Date: 2-14-17																																																																																																											
Marking: B&C E.8, JJB			Inspection Date: 2-14-17																																																																																																											
Batch: H			Assembly Trace No.: 201532400																																																																																																											
Washer: H			Qty Shipped: 10																																																																																																											
<p>Specifications: Bat. AS1252-2016 K-class-HD Bat. AS1250-2016 Washer AS1250-2016</p>																																																																																																														
<h3>2. Mechanical Properties</h3> <h4>2.1 Bulk</h4> <p>Lot No.: HWG01</p> <table border="1"> <thead> <tr> <th rowspan="2">Direction</th> <th colspan="5">Tensile</th> <th colspan="5">Business Results</th> <th colspan="2">Proof Load</th> <th rowspan="2">Basis Weight</th> </tr> <tr> <th>A = 0</th> <th>A = 90</th> <th>Yield Strength</th> <th>U.T.S.</th> <th>Elongation</th> <th>Reduction of Area</th> <th>Lead</th> <th>Elongation</th> <th>U.T.S.</th> </tr> </thead> <tbody> <tr> <td>Unit</td> <td>ksi</td> <td>ksi</td> <td>ksi</td> <td>ksi</td> <td>%</td> <td>%</td> <td>in</td> <td>%</td> <td>ksi</td> <td>ksi</td> <td>in</td> <td>in</td> </tr> <tr> <td>Spec.</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> </tr> <tr> <td>Results</td> <td>44</td> <td>55</td> <td>33</td> <td>55</td> <td>15</td> <td>25</td> <td>1.2</td> <td>25</td> <td>11.5</td> <td>11.5</td> <td>0.05</td> <td>0.05</td> </tr> <tr> <td>Unit</td> <td>ksi</td> <td>ksi</td> <td>ksi</td> <td>ksi</td> <td>%</td> <td>%</td> <td>in</td> <td>%</td> <td>ksi</td> <td>ksi</td> <td>in</td> <td>in</td> </tr> <tr> <td>Spec.</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> </tr> <tr> <td>Results</td> <td>44</td> <td>55</td> <td>33</td> <td>55</td> <td>15</td> <td>25</td> <td>1.2</td> <td>25</td> <td>11.5</td> <td>11.5</td> <td>0.05</td> <td>0.05</td> </tr> </tbody> </table>										Direction	Tensile					Business Results					Proof Load		Basis Weight	A = 0	A = 90	Yield Strength	U.T.S.	Elongation	Reduction of Area	Lead	Elongation	U.T.S.	Unit	ksi	ksi	ksi	ksi	%	%	in	%	ksi	ksi	in	in	Spec.	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Results	44	55	33	55	15	25	1.2	25	11.5	11.5	0.05	0.05	Unit	ksi	ksi	ksi	ksi	%	%	in	%	ksi	ksi	in	in	Spec.	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Results	44	55	33	55	15	25	1.2	25	11.5	11.5	0.05	0.05
Direction	Tensile					Business Results					Proof Load		Basis Weight																																																																																																	
	A = 0	A = 90	Yield Strength	U.T.S.	Elongation	Reduction of Area	Lead	Elongation	U.T.S.																																																																																																					
Unit	ksi	ksi	ksi	ksi	%	%	in	%	ksi	ksi	in	in																																																																																																		
Spec.	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:																																																																																																		
Results	44	55	33	55	15	25	1.2	25	11.5	11.5	0.05	0.05																																																																																																		
Unit	ksi	ksi	ksi	ksi	%	%	in	%	ksi	ksi	in	in																																																																																																		
Spec.	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:	Min:	Max:																																																																																																		
Results	44	55	33	55	15	25	1.2	25	11.5	11.5	0.05	0.05																																																																																																		
<h4>2.2 Net</h4> <p>Lot No.: HWG01</p> <table border="1"> <thead> <tr> <th rowspan="2">Direction</th> <th colspan="5">Tensile</th> <th colspan="2">Proof Load</th> </tr> <tr> <th>A = 0</th> <th>A = 90</th> <th>Yield Strength</th> <th>U.T.S.</th> <th>Elongation</th> <th>Reduction of Area</th> </tr> </thead> <tbody> <tr> <td>Unit</td> <td>ksi</td> <td>ksi</td> <td>ksi</td> <td>ksi</td> <td>%</td> <td>%</td> </tr> <tr> <td>Spec.</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> </tr> <tr> <td>Results</td> <td>44</td> <td>55</td> <td>33</td> <td>55</td> <td>15</td> <td>25</td> </tr> </tbody> </table>										Direction	Tensile					Proof Load		A = 0	A = 90	Yield Strength	U.T.S.	Elongation	Reduction of Area	Unit	ksi	ksi	ksi	ksi	%	%	Spec.	Min:	Max:	Min:	Max:	Min:	Max:	Results	44	55	33	55	15	25																																																																		
Direction	Tensile					Proof Load																																																																																																								
	A = 0	A = 90	Yield Strength	U.T.S.	Elongation	Reduction of Area																																																																																																								
Unit	ksi	ksi	ksi	ksi	%	%																																																																																																								
Spec.	Min:	Max:	Min:	Max:	Min:	Max:																																																																																																								
Results	44	55	33	55	15	25																																																																																																								
<h4>2.3 Washer</h4> <p>Lot No.: HWG01</p> <table border="1"> <thead> <tr> <th rowspan="2">Direction</th> <th colspan="5">Tensile</th> </tr> <tr> <th>A = 0</th> <th>A = 90</th> <th>Yield Strength</th> <th>U.T.S.</th> <th>Elongation</th> </tr> </thead> <tbody> <tr> <td>Unit</td> <td>ksi</td> <td>ksi</td> <td>ksi</td> <td>ksi</td> <td>%</td> </tr> <tr> <td>Spec.</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> </tr> <tr> <td>Results</td> <td>44</td> <td>55</td> <td>33</td> <td>55</td> <td>15</td> </tr> </tbody> </table>										Direction	Tensile					A = 0	A = 90	Yield Strength	U.T.S.	Elongation	Unit	ksi	ksi	ksi	ksi	%	Spec.	Min:	Max:	Min:	Max:	Min:	Results	44	55	33	55	15																																																																								
Direction	Tensile																																																																																																													
	A = 0	A = 90	Yield Strength	U.T.S.	Elongation																																																																																																									
Unit	ksi	ksi	ksi	ksi	%																																																																																																									
Spec.	Min:	Max:	Min:	Max:	Min:																																																																																																									
Results	44	55	33	55	15																																																																																																									
<h4>4. Assembly Test</h4> <p>Lot No.: HWG01</p> <table border="1"> <thead> <tr> <th rowspan="2">Direction</th> <th colspan="2">Clamped Length</th> <th rowspan="2">Spec. Min. Retention Max.</th> <th rowspan="2">Results Min. Retention Max.</th> </tr> <tr> <th>A = 0</th> <th>A = 90</th> </tr> </thead> <tbody> <tr> <td>Unit</td> <td>in</td> <td>in</td> <td>in</td> <td>in</td> </tr> <tr> <td>Spec.</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> </tr> <tr> <td>Results</td> <td>0.75 - 0.75</td> <td>0.240</td> <td>0.240</td> <td>0.240</td> </tr> <tr> <td>Unit</td> <td>in</td> <td>in</td> <td>in</td> <td>in</td> </tr> <tr> <td>Spec.</td> <td>Min:</td> <td>Max:</td> <td>Min:</td> <td>Max:</td> </tr> <tr> <td>Results</td> <td>0.75 - 0.75</td> <td>0.240</td> <td>0.240</td> <td>0.240</td> </tr> </tbody> </table>										Direction	Clamped Length		Spec. Min. Retention Max.	Results Min. Retention Max.	A = 0	A = 90	Unit	in	in	in	in	Spec.	Min:	Max:	Min:	Max:	Results	0.75 - 0.75	0.240	0.240	0.240	Unit	in	in	in	in	Spec.	Min:	Max:	Min:	Max:	Results	0.75 - 0.75	0.240	0.240	0.240																																																																
Direction	Clamped Length		Spec. Min. Retention Max.	Results Min. Retention Max.																																																																																																										
	A = 0	A = 90																																																																																																												
Unit	in	in	in	in																																																																																																										
Spec.	Min:	Max:	Min:	Max:																																																																																																										
Results	0.75 - 0.75	0.240	0.240	0.240																																																																																																										
Unit	in	in	in	in																																																																																																										
Spec.	Min:	Max:	Min:	Max:																																																																																																										
Results	0.75 - 0.75	0.240	0.240	0.240																																																																																																										
<h4>5. Visual & Thread Inspection</h4> <table border="1"> <thead> <tr> <th>Direction</th> <th>Inspection</th> <th>Thread</th> </tr> </thead> <tbody> <tr> <td>Unit</td> <td>OK</td> <td>OK</td> </tr> <tr> <td>Spec.</td> <td>Min:</td> <td>Max:</td> </tr> <tr> <td>Results</td> <td>OK</td> <td>OK</td> </tr> </tbody> </table>										Direction	Inspection	Thread	Unit	OK	OK	Spec.	Min:	Max:	Results	OK	OK																																																																																									
Direction	Inspection	Thread																																																																																																												
Unit	OK	OK																																																																																																												
Spec.	Min:	Max:																																																																																																												
Results	OK	OK																																																																																																												
<h4>6. Certification of Test Method</h4> <p>AS1252-2016</p>																																																																																																														

F **Factory Production Control (FPC)**

ITT Initial Type Testing (ITT)

161120341352

TEST REPORT

Report number,

Sample name,

C u s t o m e r ,

ZMTC/CJ-2017-4-WG2-2(Z)

Assembly (Bolt,Nut,Washer)

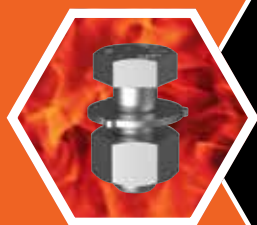
HOBSON ENGINEERING CO PTY. LTD.

Ningbo Zhongji Inspection of Machinery Parts Co.,Ltd

[illegible]

Robson Engineering Quality System: 1509001		Quality Matters
<p>SOC Compliance Statement</p> <p>Hobson Engineering Co Pty Ltd (ABN 38 000 293 958)</p> <p>18 Clay Plains</p> <p>EASTON CREEK NSW</p> <p>2756 AUSTRALIA</p> <p>Operates with an ISO 9001 quality management system.</p> <div style="text-align: right;">   </div>		
<ul style="list-style-type: none"> o Hobson Engineering Co Pty Ltd (ABN 38 000 293 958) has reviewed the Initial Type Testing (ITT) reports of the factory that produced the product. o Hobson Engineering Co Pty Ltd (ABN 38 000 293 958) has reviewed the Factory Production Control (FPC) reports for the items on this verification report of the factory that produced the product. o Hobson Engineering Co Pty Ltd (ABN 38 000 293 958) and the factory that produced these products have systems satisfying ISO 9001 and procedures are in place to maintain product integrity, including testing procedures and manufacturing product. o Hobson Engineering Co Pty Ltd (ABN 38 000 293 958) has reviewed the packaging and traceability requirements. o Hobson Engineering Co Pty Ltd (ABN 38 000 293 958) has reviewed the HAZOP/OTO attached verification test reports (VTR). o Hobson Engineering Co Pty Ltd (ABN 38 000 293 958) confirms compliance of this product to AS1020-2002:Part 1 and Part 2 (Summary). 	<p>Signed on the authorised competent person of Hobson Engineering Co Pty Ltd</p> <div style="text-align: center;">  </div> <p>Peter Hobson B.Eng (HNS)</p> <p>Quality Assurance Manager</p> <p>CEO</p>	

S Suppliers Declaration of Conformity (SDoC)



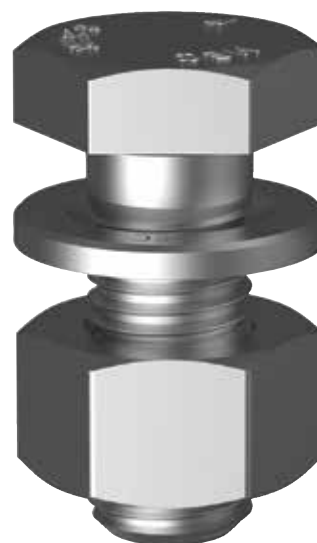
STRUCTURAL

K Classification of Bolt Systems

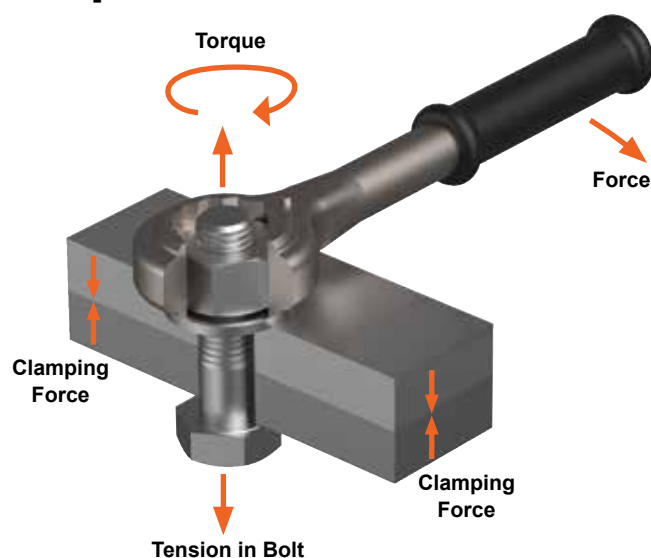
EN 14399 documentation provides performance values for designers along with tests to ensure that the assembly will perform as intended by the standard.

This European standard allows torque to be used when tightening structural bolts. This only applies for K1 and K2 assemblies where the torque-tension relationship is calibrated.

Structural Bolt assemblies that are manufactured to EN 14399 8.8 Type HR with K2 classification comply to the requirement of AS 1252: 2016 and can be used directly in the Australian market.



Torque and Tension?



Forces at play when a bolt is torqued.

Torque is the *rotational* force applied to a solid body.

Tension is the *axial* (along the shank) force applied to a solid body.

We can relate the torque applied to the nut to the tension achieved by the bolt. However, the effect of friction on surfaces that are in contact (threads and nut face) must be calibrated!

Friction

The formula below is applied to relate the tension achieved by the bolt from a specific torque on the nut.

$$M = F \cdot k \cdot d$$

M = torque required on the nut to achieve 'F'

F = required tension on the bolt

k = a factor applied to account for the torque loss primarily due to friction.

d = the thread diameter of the bolt

K Class

The K class of a bolt refers to the control of friction between the threads.

k-class and k-factor

k-class	k-factor
K0	—
K1	$0,10 \leq k_1 \leq 0,16$
K2	$0,10 \leq k_m \leq 0,23 \quad V_k \leq 0,06$

From EN 14399: 2005-04.



STRUCTURAL

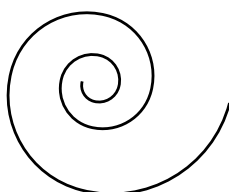
Structural Bolts Installation

AS 4100-1998

Working definitions:

Torque

The energy taken to twist the nut up the thread of the bolt (Measured in Nm).



Torque is not used as a measure for the tensioning of structural bolting. Bolt torque values are not shown in AS 4100/NZS 3404.

Mathematically, torque can be defined as:



Tension

The force generated in the bolt to clamp the steel plies together (Measured in kN).



Nominal Size	Pitch	Minimum Bolt Tension Kn
M12	1.75	51
M16	2.0	95
M20	2.5	145
M24	3.0	210
M30	3.5	335
M36	4.0	490

Note: the minimum bolt tension shown (AS 4100-1998) is approximately equivalent to the minimum proof loads shown in AS 1252.

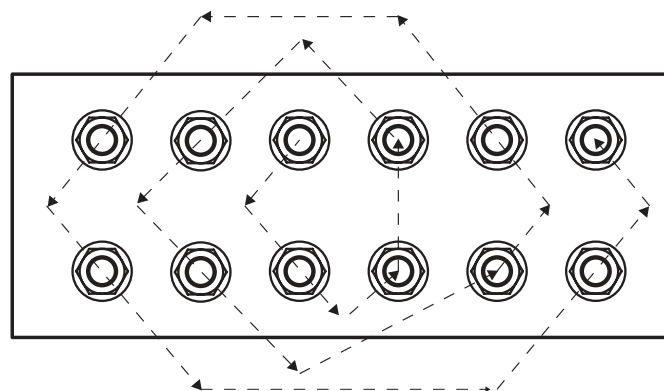
Snug tight

Prior to final tensioning of structural bolts the steel plies must be brought into effective contact. This is referred to as Snug-tight i.e. no gap between the steel plies.

Snug-tight can be achieved by a few impacts of an impact wrench or by the full effort of a person using a standard podger spanner. Correct bolt tension is required to ensure effective load transmission on the joint. Effective load transmission will not be achieved if a gap between the steel plates remains, which can occur if there is deformation from welding.

Tightening pattern

Snug-tightening and final tensioning of the bolts in a connection shall proceed from the stiffest part of the connection towards the free edges. An example interpretation of a systematic pattern for tightening is provided:



Delivery, storage and handling

Structural bolt assemblies supplied to AS 1252 must be stored in the manufacturers carton protected from wet weather. White rusting on the galvanised surface, dust and removal of the water soluble lubricant on the nut can severely effect installation and correct tensioning.

Re-use of structural assemblies

Under no circumstances can a structural bolt which has been fully tensioned (i.e. the minimum values shown above) be re-used. If a bolt has been tensioned and then has to be removed it must be marked accordingly and destroyed.



STRUCTURAL

HDG AS 1252: 2016 Class 8.8  K0 STRUCTURAL ASSEMBLY KBHK0GCM	HDG AS 1252: 2016 35-41 HRC  K0 STRUCTURAL WASHER WRK0GM	PLN AS 1252: 2016 35-41 HRC  K0 STRUCTURAL WASHER WRK0PM	HDG AS 1252: 2016 Class 8.8  K0 STRUCTURAL NUT NHK0GCM	PLN AS 1252: 2016 Class 8.8  K0 STRUCTURAL NUT NHK0PCM	HDG AS 1252: 2016 33-41 HRC  K0 TAPER WASHER 8° SQUARE WTK0GM	PLN AS 1252: 2016 33-41 HRC  K0 TAPER WASHER 8° SQUARE WTK0PM
HDG AS 1252: 1983 Class 8.8  STRUCTURAL ASSEMBLY KBHSTGCM	HDG AS 1252: 1983 26-45 HRC  STRUCTURAL WASHER WRSTGM	PLN AS 1252: 1983 35-45 HRC  STRUCTURAL WASHER WRSTPM	HDG AS 1252: 1983 Class 8  STRUCTURAL HEX NUT NHSTGCM	PLN AS 1252: 1983 Class 8  STRUCTURAL HEX NUT NHSTPCM	HDG AS 1252: 1983 26-45 HRC  TAPER WASHER 8° SQUARE WTSTGM	PLN AS 1252: 1983 35-45 HRC  TAPER WASHER 8° SQUARE WTSTPM
HDG EN 14399: 2005 Class 8.8  K2 STRUCTURAL ASSEMBLY KBHK2GCM	HDG EN14399-6 K2 32-45 HRC  K2 STRUCTURAL WASHER WRK2GM	PLN AS 1252: 1983 Class 8.8  STRUCTURAL BOLT BLANK BHSTPBM	SS 301 HEC  FEELER GAUGE 0.13MM XGF013	Cartridge 425g  STICK WAX LUBRICANT XXWSC		
			MGAL ASTM F959M Class 8.8  METRIC SQUIRTER® DTI WASHER WDSTGM	PLN ASTM F959M Class 10.9  METRIC SQUIRTER® DTI WASHER WD10PM	MGAL ASTM F959M Class 10.9  METRIC SQUIRTER® WASHER WD10MM	MGAL ASTM F959M Class 8.8  METRIC LOAD INDICATOR WISTGM



STRUCTURAL

**Save 25% on your bolting installation cost.
Ask us how.**

Bolting made Safe, Easy and Accurate

TONE® Electric Torque Control Wrench



PART: XT-STC7TE



PART: XT-STC12TE

Featuring:

- » 2 x Safety Reaction Arms
- » L-Shape Arm + Long Bar Arm 230mm
- » Light Weight (7TE 6.2kg, 12TE 9.0kg)
- » Non Impacting
- » Low Noise
- » Automatic Shut-off at Pre-set Torque
- » Torque Range 7TE 350-700Nm
- » Torque Range 12TE 500-1100Nm
- » 1" Square Drive (Both Models)

TONE®



Japanese Engineering