ICCONS®

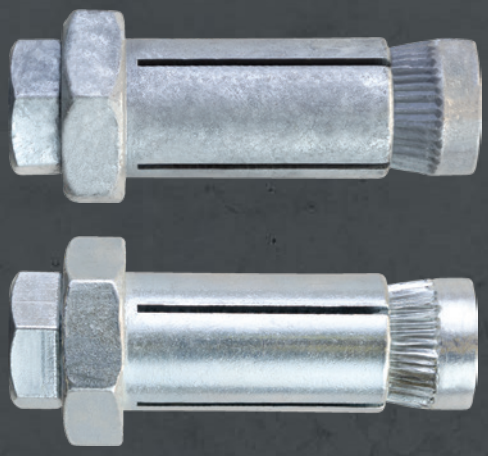
NCC™

ETA

ETA 25/0374

TDS | 1053.1

UNI-BOLT™



UNI-BOLT

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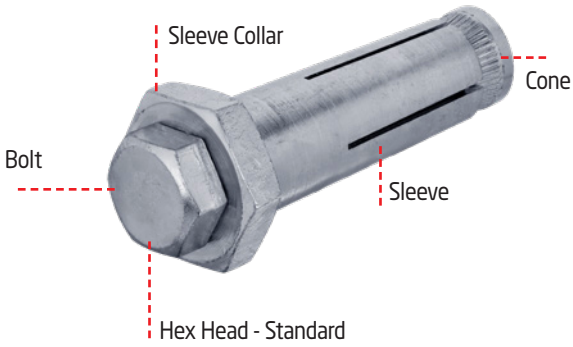
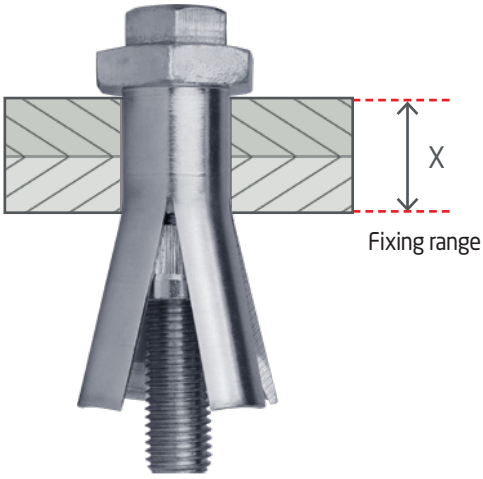
UNI-BOLT™

UNI-BOLT™ features a sleeve that expands inside the steel connection, creating a robust geometric interlock. It's versatile, designed for use with rectangular, square, and even circular hollow sections. The hexagonal head design allows for easy installation using a standard spanner.

Available in two finishes–Zinc Plated and Hot Dipped Galvanized, UNI-BOLT™ offers excellent durability in both mild and harsh environments. It comes in three different lengths, making it suitable for nearly any application.
UNI-BOLT™ is ETA assessed and suitable for design in accordance with AS 4100 (Steel Structures Standard), ensuring confidence and peace of mind for both designers and users.





ADVANTAGES

- Best approved performance
- Lowest labor costs
- Easy to use
- All section shapes
- Approved and Certified ETA loads
- Aesthetic finish
- Ideal for combined loads
- Different corrosion resistant options

APPLICATIONS

✓ Two hollow sections at 90 degrees using an end plate
✓ Hollow section below an I-Beam at 90 degrees using a combination of UNI-BOLT™ and BEAMCLAMP fixings
✓ Two hollow sections at 90 degrees using angle brackets
✓ Hollow section sleeve connection creating an aesthetic joint from the outside
✓ Angle to vertical hollow section post
✓ Rigging point to outside of hollow section
✓ Side fixing of handrail base to hollow section
✓ Top fixing of handrail base to hollow section
✓ Glazing bracket to hollow section

RANGE IDENTIFICATION

UNIBH-M_____

UNIBH-M_____G

Item	Designation	UNIBH-M_____	UNIBH-M_____G
1	**Bolt**	DIN 933 class 8.8 ISO 898-1, zinc-plated ≥ 5 µm ISO 4042 Zn5	DIN 933 class 8.8 ISO 898-1, hot dip galvanised EN-ISO 10684
2	**Sleeve**	Carbon steel, zinc-plated ≥ 5 µm ISO 4042 Zn5	Carbon steel, hot dip galvanised ENISO 10684
3	**Cone**	Carbon steel, zinc-plated ≥ 5 µm ISO 4042 Zn5	Carbon steel, hot dip galvanised ENISO 10684

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UNI-BOLT™

☐ Carbon Steel Zinc Clear

■ Carbon Steel Galvanised

Zinc Clear Part No.	Galvanised Part No.	Description	Set Screw Length (mm)	Clearance (mm)	Fixing Range (mm)	Torque (Nm)	qty.	qty.
UNIBH-M06045		UNI-BOLT™ M6 X 45 - ETA	45	11	5-23	13	100	150
UNIBH-M08050	**UNIBH-M08050G**	UNI-BOLT™ M8 X 50 - ETA	50		5-26		25	120
UNIBH-M08070	**UNIBH-M08070G**	UNI-BOLT™ M8 X 70 - ETA	70	14	26-46	25	20	120
UNIBH-M08090	**UNIBH-M08090G**	UNI-BOLT™ M8 X 90 - ETA	90		46-66		20	120
UNIBH-M10050	**UNIBH-M10050G**	UNI-BOLT™ M10 X 50 - ETA	50		5-22		20	120
UNIBH-M10070	**UNIBH-M10070G**	UNI-BOLT™ M10 X 70 - ETA	70	18	22-42	45	20	120
UNIBH-M10090	**UNIBH-M10090G**	UNI-BOLT™ M10 X 90 - ETA	90		42-62		20	120
UNIBH-M12055	**UNIBH-M12055G**	UNI-BOLT™ M12 X 55 - ETA	55		5-25		20	
UNIBH-M12080	**UNIBH-M12080G**	UNI-BOLT™ M12 X 80 - ETA	80	20	23-50	80	20	80
UNIBH-M12100	**UNIBH-M12100G**	UNI-BOLT™ M12 X 100 - ETA	100		48-70		20	
UNIBH-M16075	**UNIBH-M16075G**	UNI-BOLT™ M16 X 75 - ETA	75		8-35		10	
UNIBH-M16100	**UNIBH-M16100G**	UNI-BOLT™ M16 X 100 - ETA	100	26	35-60	190	10	60
UNIBH-M16120	**UNIBH-M16120G**	UNI-BOLT™ M16 X 120 - ETA	120		60-80		10	
UNIBH-M20100	**UNIBH-M20100G**	UNI-BOLT™ M20 X 100 - ETA	100		12-43		5	
UNIBH-M20120	**UNIBH-M20120G**	UNI-BOLT™ M20 X 120 - ETA	120	33	43-63	300	5	30
UNIBH-M20150	**UNIBH-M20150G**	UNI-BOLT™ M20 X 150 - ETA	150		63-93		5	

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LIMIT STATE DESIGN PERFORMANCE DATA UNI-BOLT

Description & Part Number		Dimensional / Installation Information										Design Capacities	
		Set screw length	Fixing range (dim x)		Across Flats of collar	Collar thickness	Bolt Socket	Dim A	Dim B	Hole Diameter	Installation Torque	Zinc Plated / Galvanised (* = G)	
UNI-BOLT	Product code (*=finish)	(mm)	Min	Max	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Nm)	Tension (kN)	Shear (kN)
M6	**UNIBH-M06045**	45	5	23	17	5.3	10	30	11	11 +1.0,-0.20	13	12.9	16.3
M8	**UNIBH-M08050***	50	5	26	22	6.3	13	35	13	14 +1.0,-0.20	23	23.1	29.1
	UNIBH-M08070*	70	26	46									
	UNIBH-M08090*	90	46	66									
M10	**UNIBH-M10050***	50	5	22	24	7.3	17	40	15	18 +1.0,-0.20	45	35.8	47.4
	UNIBH-M10070*	70	22	42									
	UNIBH-M10090*	90	42	62									
M12	**UNIBH-M12055***	55	5	25	26	8.3	19	50	18	20 +1.0,-0.20	80	41.1	64.2
	UNIBH-M12080*	80	23	50									
	UNIBH-M12100*	100	48	70									
M16	**UNIBH-M16075***	75	8	35	36	9.3	24	55	20	26 +2.0,-0.20	190	81.2	116.5
	UNIBH-M16100*	100	35	60									
	UNIBH-M16120*	120	60	80									
M20	**UNIBH-M20100***	100	12	43	46	11.3	30	70	25	33 +2.0,-0.20	300	106.2	183.3
	UNIBH-M20120*	120	43	63									
	UNIBH-M20150*	150	63	93									

Note:

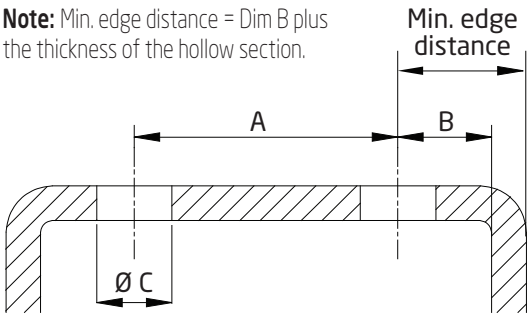
1. The above loads are Design Capacities based on independent testing conducted in accordance with EAD 330001-00-0602 and referenced in ETA 25/0374. Design Capacities may be used in design according to AS 4100. Design Capacities above incorporate a Capacity Factor (ϕ) for Strength Limit States of 0.8 in accordance with table 3.4 of AS 4100 for Bolted Connections.
2. For combined loading applications (Tension & Shear) UNI-BOLT must comply with the requirements highlighted in AS 4100 section 9.3.2.3 (Bolts subject to combined shear and tension).
3. The strength of the material UNI-BOLT is connecting into should be checked for structural capacity by a suitability qualified structural engineer responsible for the application.

* = fill the code with **"G"** for Hot Dip Galvanised

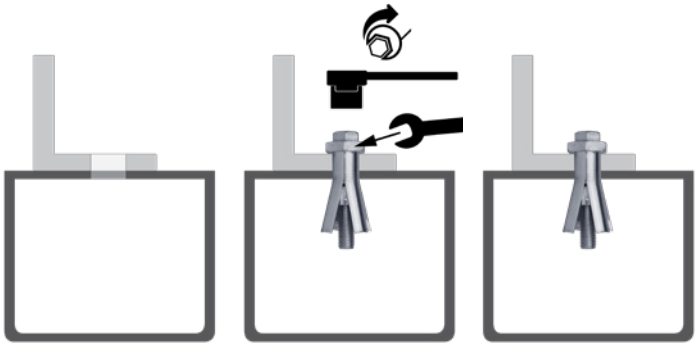
UNI-BOLT™ DIAMETER AND POSITIONING OF HOLES

Dia	Dim A	Dim B	Dim C	Tolerance
M06	30	11	11	+1.00. -0.25
M08	35	13	14	+1.00. -0.25
M10	40	15	18	+1.00. -0.25
M12	50	18	20	+1.00. -0.25
M16	55	20	26	+2.00. -0.25
M20	70	25	33	+2.00. -0.25

Note: Min. edge distance = Dim B plus the thickness of the hollow section.



INSTALLATION



Drill the sections to be fixed, ensuring that the holes required have the correct diameter and spacing. (See Dim C).

De-burr the holes.

Position the sections flush against each other, ensuring:

- The two sections are lined up and are flush without any gap. If necessary, use a clamp to hold the two sections and prevent a gap forming
- the holes are aligned, using a mandrel if necessary

Position the Bolts in the holes. Check the collar is resting flat on the section with no gap.

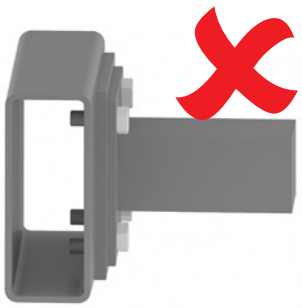
Hold the collar in position using a suitable open-ended wrench, then tighten the bolt to the torque specified. An impact tool/wrench is recommended for initial tightening to speed up installation.

Do not over tighten the UNI-BOLT™.

A torque wrench should always be used for final tightening to the correct torque value as specified in this document.

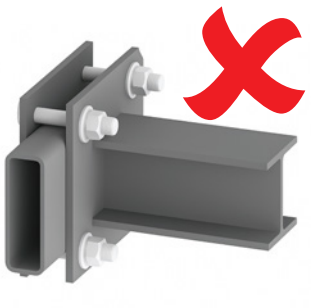
Remove the tool and check the tightening torque on the bolt. If necessary, correct the tightening torque. (Always use the manufacturers recommended torque on the reverse of this page, column headed "Torque" in the technical table.)

UNI-BOLT™ VS OTHER FIXINGS



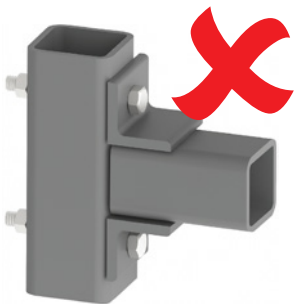
DRILLING & TAPPING

- Drill pilot holes
- Tap holes
- Connect bolts
- Tighten bolts to torque
- Weak connection



STRAPPING

- Place plate and bolts around one side
- Place plate on other side and align bolts
- Connect nuts and washers
- Tighten equally to avoid twisting



THRU BOLTING

- Drill clearance holes
- Drill clearance holes other side
- Connect bolts through aligned holes
- Tighten bolts to torque

WELDING

- Prepare surfaces to weld
- Position welding equipment
- Perform weld
- Leave to cool (under supervision)
- Perform proof test on the weld

UNI-BOLT™

- Drill clearance holes
- Insert UNI-BOLT™
- Tighten UNI-BOLT™ to torque

NOTES

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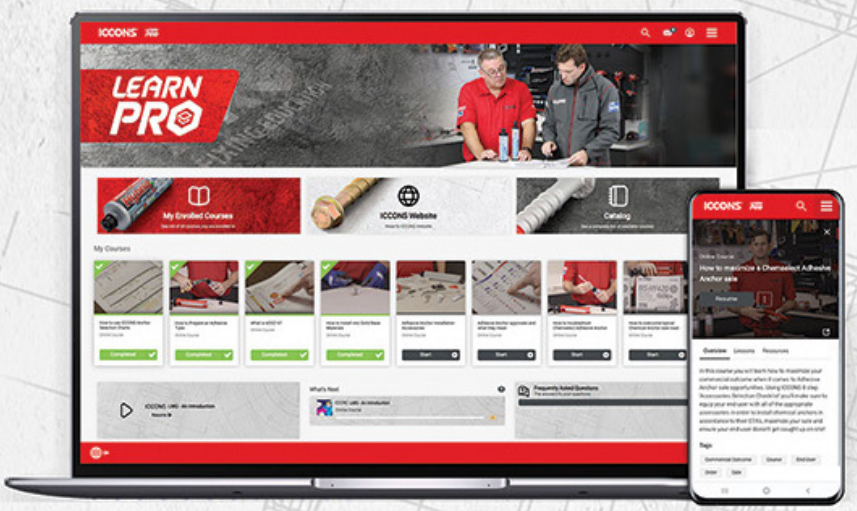
Fixing Education



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