

Intelligent Fastening for Membrane Roofing Systems

Fixing thermal insulation and waterproofing membranes to
steel, plywood and concrete decks



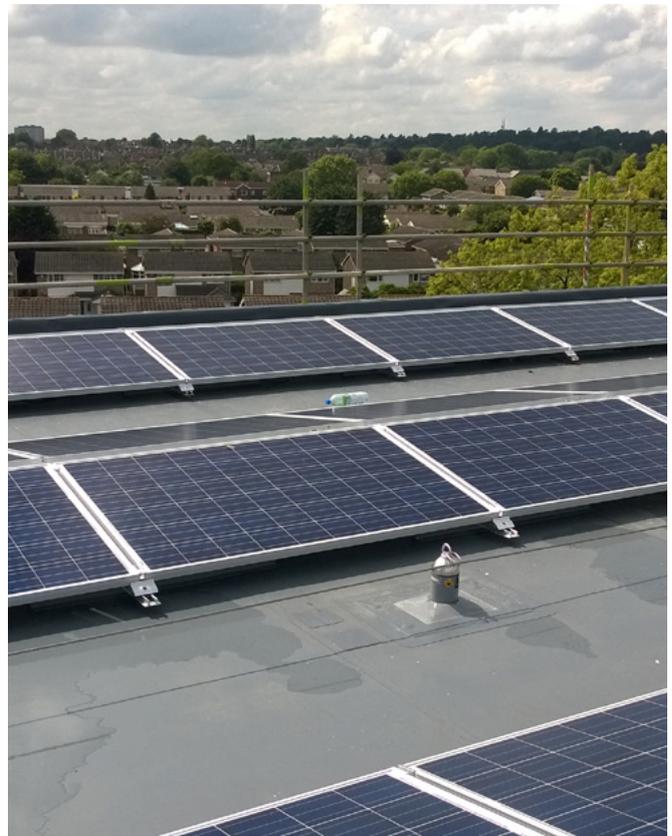
Intelligent Fastening for Membrane Roofing Systems

Developed by EJOT® for successful single-ply membrane installations

EJOT's original development of the 50mm tubewasher and fastener combination changed single-ply membrane installation techniques for good. EJOT introduced products that would successfully secure insulation or membrane-over-insulation back to the deck. This gave installers a simple route to purchase, stock management and above all, a faster high-quality installation.

Since then, our range of flat roofing products has grown to provide the widest choice; from the EcoSet automated installation tool to the highly versatile EJObar carrier system. The latest addition to the EJOT flat roofing portfolio is the HTK 2G 75mm tubewasher – developed for part-mechanical, part-bonded systems – ticking all the boxes set out by recommended guidelines published by the Single Ply Roofing Association (SPRA).

Quality products can only be as good as the technical support behind the range. EJOT's technical support team are based at our Applitec Testing and Development Centre within our UK manufacturing unit. It is their job to provide fast data and guidance to ensure correct specification from planning to purchase to installation.



Call 01977 68 70 40

or email: info@ejot.co.uk

1 Mechanical installation systems 4

HTK 2G 50
 Tubewasher/
 fastener
 combination
 For plywood or steel
 substrates



PAGE **6**

**Automated
 installation for
 HTK 50**
 EJOT® EcoSet for efficient
 installation of HTK 50



PAGE **12**

Ecotek 50
 Tubewasher/
 fastener
 combination
 For concrete substrates



PAGE **13**

FDD Plus
 Mechanical fix
 combination
 For concrete substrates



PAGE **16**

**Traditional
 mechanical fixing
 products**
 Stress Plates, Peel Rivets,
 Deck Fixing Fasteners



PAGE **20**

**2 Part-mechanical fix for
 adhesive installations 22**

HTK 2G 75
 Correct insulation fixing
 for part-adhesive installations
 For plywood or steel substrates in line with SPRA Guidelines



PAGE **24**

3 Ancillary flat roofing products 26

Opticore
 Membrane faced panel
 installation
 Cold rolled steel, hot rolled steel, and timber.



PAGE **26**

EJObar
 Flat roof bridging
 and carrier system
 Solar and M&E installations over PVC
 membrane



PAGE **28**

4 Technical support from EJOT® Applitec 30

**Technical
 specifications and
 testing information**



PAGE **31**

1

Mechanical installation systems

One tubewasher specification for insulation and membrane

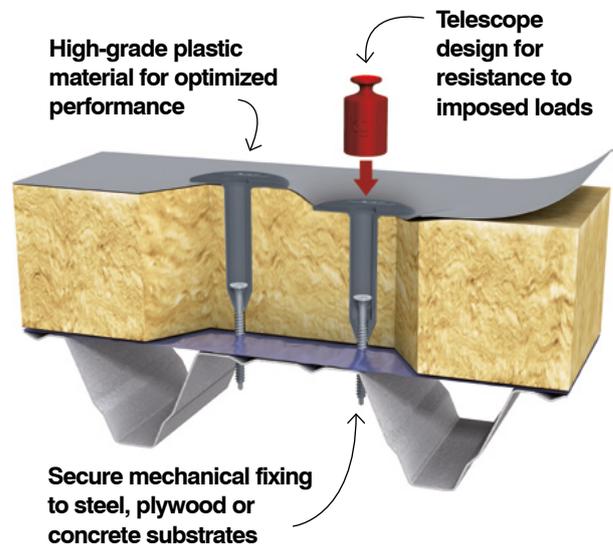
EJOT developed the original telescopic tubewasher / fastener installation system with the aim simplifying specification for contractors and installers.

By creating a dedicated range of high performance sleeves, it became possible to pick and mix fastener combinations to secure either insulation OR membrane-over-insulation to virtually any deck mechanically, using the same specification tubewasher.

With obvious stock and logistics benefits, the system has now become a standard for membrane installations and mechanical flat roofing installations. But it is EJOT's commitment to continued product development that really sets us apart.

Whichever EJOT combination you need, all of our flat roofing installation products share the same installation and performance benefits on new-build and retrofit projects:

- **Designed and manufactured by EJOT®**
- **High specification tubewashers**
- **Made from high-grade plastic material**
- **Telescope design for resistance to imposed loads**
- **Minimises cold bridging**
- **Prevents fastener head protrusion due to foot traffic**
- **Resistant to unwinding**
- **Security of known performance data**
- **Cost-efficient and versatile combinations**
- **Broad accessory range to aid installation**



EJOT HTK 2G 50:
 combines with TKR or TKE fastenings for installation of membrane and insulation into steel and plywood decks.

STEEL PLYWOOD

EJOT EcoTek:
 combines with FBS-R or FPS-E fastenings for installation of membrane and insulation into standard concrete and aerated concrete decks.

CONCRETE AERATED CONCRETE

EJOT FDD Plus:
 provides a pre-assembled solution for all common masonry substrates.

BRICK CONCRETE



Easy, versatile installation

The engineered strength of EJOT’s tubewashers allows installers to secure insulation OR membrane-over-insulation, to virtually any deck, using the same specification tubewasher.

50mm dia sleeve secures insulation and membrane

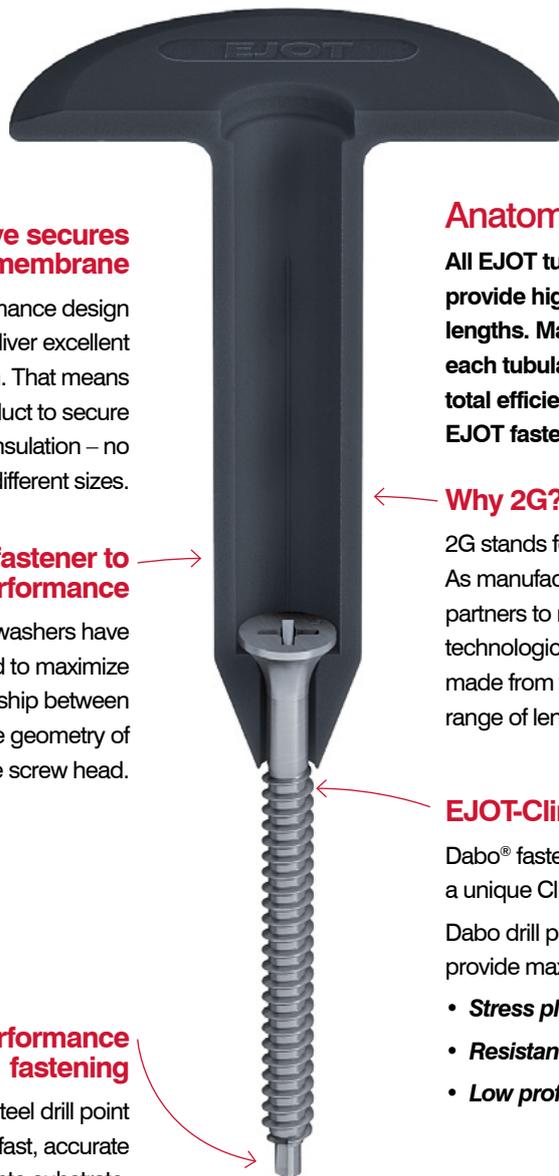
EJOT’s high performance design is engineered to deliver excellent load transmission. That means specifying one product to secure membrane and insulation – no need to order two different sizes.

Maximised fastener to sleeve performance

All EJOT tubewashers have been developed to maximize the relationship between sleeve and the geometry of the screw head.

EJOT performance fastening

Carbon steel drill point enables fast, accurate installation into substrate.



Anatomy of a tubewasher

All EJOT tubewashers have been developed to provide high load bearing strengths at a variety of lengths. Manufactured from high grade materials, each tubular design has been created to deliver total efficiency when combined with the correct EJOT fastener for a designated substrate.

Why 2G?

2G stands for Second Generation design. As manufacturers we work closely with industry partners to remain competitive and maintain a technological edge. Our HTK tubewashers are now made from the latest polyethelene enabling a broader range of lengths and more cost-effective purchase.

EJOT-Climadur Dabo® Fastener

Dabo® fasteners have a high corrosion resistance with a unique Climadur coating.

Dabo drill points and thread forms are designed to provide maximum mechanical performance:

- **Stress plate support thread**
- **Resistance to unwinding under cyclic loading**
- **Low profile and bugle head designs**



Quality assured

The EJOT Group worldwide, is committed to the development of new innovations and installation techniques for the modern building envelope. Our Product Managers work alongside our Technical teams globally, to deliver customer-driven solutions.

HTK 2G 50 Original tubewasher / fastener combination

For installing insulation and single ply membrane into steel and plywood decks

The unique material composition of the HTK 2G 50mm tubewasher design ensures a fast, reliable and secure installation for thermal insulation to substrate, and membrane-through-insulation to substrate.



HTK 2G 50

Application

Combines with either TKR or TKE fastener types to fix insulation with / without the single layer waterproof membrane to 0.7 to 1.2 mm steel or plywood decks. Available as separate components or pre-assembled on request – see combination guides on pages 8 to 11.

Ordering the HTK 2G 50mm tubewasher

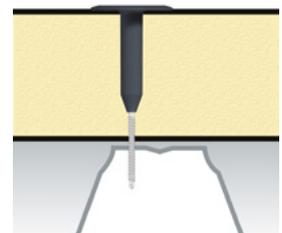
The versatility of EJOT's HTK 2G 50mm tubewasher means that installers can use the same washer / fastener combination to fix insulation only, or membrane and insulation back to the substrate. That makes for easier purchasing and stock management than buying different products for the complete mechanical installation.

The table below provides a guide to ordering the HTK 2G tubewasher as a separate purchase. This creates an ideal system to keep fastener and tubewasher stock in line with each other.

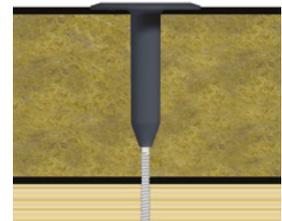
Ø x L (mm)	Washer (mm)	Recess Depth (mm)	Overall Depth (mm)	Min Qty
50 x 15	50	15	25	100
50 x 35	50	35	45	100
50 x 55	50	55	65	100
50 x 95	50	95	105	100
50 x 145	50	145	155	100
50 x 185	50	185	195	100
50 x 225	50	225	235	100
50 x 275	50	275	285	100
50 x 325	50	325	335	100

Order Example: HTK-2G-50 x 15

EJOT's technical support team will advise on the correct fixing centres in relation to wind-load calculations. The tube-washer and threaded fastener not only address cold-bridging concerns, the telescopic design also provides resistance to imposed loads.



Back to steel deck 0.7 - 1.2mm



Back to plywood deck

About EJOT Climadur Dabo® fasteners

Specifically for flat roofing applications, our Dabo® fasteners are engineered with a thread form and drill point to maximise mechanical performance. They have a low profile bugle head and combine with the HTK 2G tubewasher for fixing single layer membrane and insulation back to the substrate.

Dabo® fasteners are Climadur coated to meet the high corrosion protection requirements of ETAG 006 after 15 Kesternich cycles.

The EJOT-Climadur Dabo® TKR fastener provides the carbon steel option, whilst the TKE variant is manufactured from A4 Grade austenitic stainless steel with carbon steel drill point.

TKR - Carbon steel with organic corrosion resistant finish.



High quality carbon steel: DIN 7504

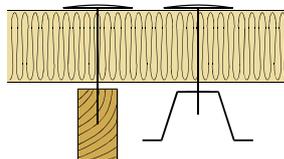
Carbon steel is the most common type of steel used in fastener production. EJOT manufactures using the highest quality grade case-hardened carbon steel in accordance to the DIN Standard 10666. The EJOT Climadur organic coating provides high corrosion resistance.

Application

Insulation and single layer waterproof membrane

- 0.7 to 1.2 mm steel or plywood deck

N.B. Fastener is fully threaded up to and including the TKR 50 only



Ø x L (mm)	Deck Type		Min Qty
	Steel Deck Min Insulation Max	Plywood Min Insulation Max	
4.8 x 35	5 - 15	N/A	100
4.8 x 50	5 - 30	5 - 10	100
4.8 x 60	15 - 40	10 - 20	100
4.8 x 70	25 - 50	20 - 30	100
4.8 x 80	35 - 60	30 - 40	100
4.8 x 90	45 - 70	40 - 50	100
4.8 x 100	55 - 80	50 - 60	100
4.8 x 110	65 - 90	60 - 70	100
4.8 x 120	75 - 100	70 - 80	100
4.8 x 130	85 - 110	80 - 90	100
4.8 x 140	95 - 120	90 - 100	100
4.8 x 150	105 - 130	100 - 110	100
4.8 x 160	115 - 140	110 - 120	100
4.8 x 170	125 - 150	120 - 130	100
4.8 x 180	135 - 160	130 - 140	100
4.8 x 200	155 - 180	150 - 160	100
4.8 x 220	175 - 200	170 - 180	100
4.8 x 240	195 - 220	190 - 200	100
4.8 x 260	215 - 240	210 - 220	100
4.8 x 280	235 - 260	230 - 240	100
4.8 x 300	255 - 280	250 - 260	100

For technical guidance where material specification may relate to special environmental conditions, please call out Technical team on 01977 687040

Applications where substrates may have an unknown carrying capacity, we provide on-site pull-out testing, meeting the requirements of ETAG 006.

TKE - Grade 4 Stainless Steel with organic corrosion resistant finish.



Grade 4 Stainless Steel: 316 1.4401

The introduction of molybdenum to this alloy increases the product's corrosion resistance.

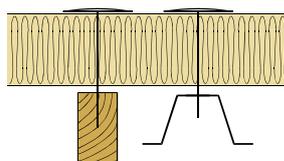
Molybdenum readily forms hard, stable carbides in alloys, and for this reason most of world-production of the element is in making many types of steel alloys, including high strength and super-alloys.

Application

Insulation and single layer waterproof membrane

- 0.7 to 1.2 mm steel or plywood

N.B. Fastener is fully threaded up to and including the TKE 50 only



Ø x L (mm)	Deck Type		Min Qty
	Steel Min Insulation Max	Plywood Min Insulation Max	
4.8 x 50	5 - 30	5 - 10	100
4.8 x 60	15 - 30	10 - 20	100
4.8 x 70	25 - 50	20 - 30	100
4.8 x 80	35 - 60	30 - 40	100
4.8 x 90	45 - 70	40 - 50	100
4.8 x 100	55 - 80	50 - 60	100
4.8 x 120	75 - 100	70 - 80	100
4.8 x 140	95 - 120	90 - 100	100
4.8 x 160	115-140	110-120	100
4.8 x 180	133-160	130-140	100
4.8 x 200	155-180	150-160	100

(steel and plywood max to follow)

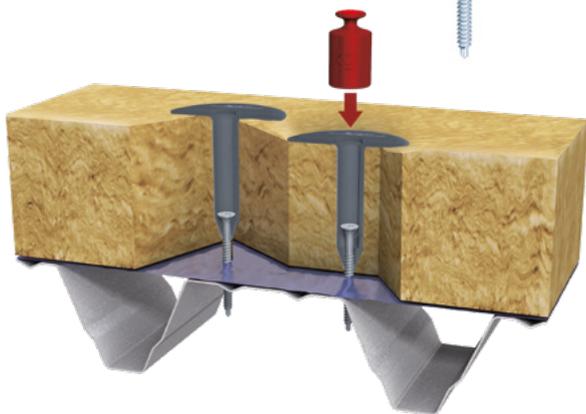
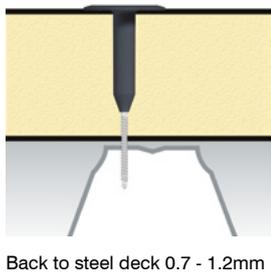
HTK 2G 50 tubewasher with TKR carbon steel fastener for steel decks

TKR fasteners are manufactured in carbon steel with a resistant organic finish



Application

Insulation and single layer waterproof membrane
- 0.7 to 1.2 mm steel deck.
Thermally broken fastener/washer combination for minimal cold bridging.



Tubewasher and fastener available as individual components or pre-assembled



Recommended Combinations:

Using the guide below, read across to match insulation depth to length of HTK tubewasher and correct combination of TKR fastener.

Insulation Thickness (mm)	HTK Length (mm)	TKR Length (mm)	Drive Bit mm 
30	15	35	P2 100mm
40	15	50	P2 100mm
50	15	60	P2 100mm
60	35	50	P2 100mm
70	35	60	P2 100mm
80	55	50	P2 100mm
90	55	60	P2 100mm
100	55	70	P2 100mm
110	55	80	P2 100mm
120	95	50	P2 150mm
130	95	60	P2 150mm
140	95	70	P2 150mm
150	95	80	P2 150mm
160	95	90	P2 150mm
170	145	50	P2 200mm
180	145	60	P2 200mm
190	145	70	P2 200mm
200	145	80	P2 200mm
210	185	50	P2 250mm
220	185	60	P2 250mm
230	185	70	P2 250mm
240	185	80	P2 250mm
250	225	50	P2 300mm
260	225	60	P2 300mm
270	225	70	P2 300mm
280	225	80	P2 300mm
290	225	90	P2 300mm
300	275	50	P2 350mm
310	275	60	P2 350mm
320	275	70	P2 350mm
330	275	80	P2 350mm
340	275	90	P2 350mm
350	325	50	P2 350mm
360	325	60	P2 350mm
370	325	70	P2 350mm
380	325	80	P2 350mm
390	325	90	P2 350mm
400	325	100	P2 350mm

HTK 2G 50 tubewasher with TKR carbon steel fastener for plywood decks

TKR fasteners are manufactured in carbon steel with a resistant organic finish



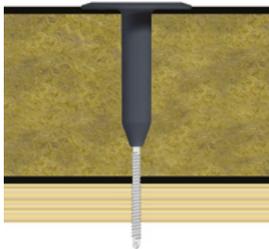
HTK 2G
Washer face = Ø50 mm



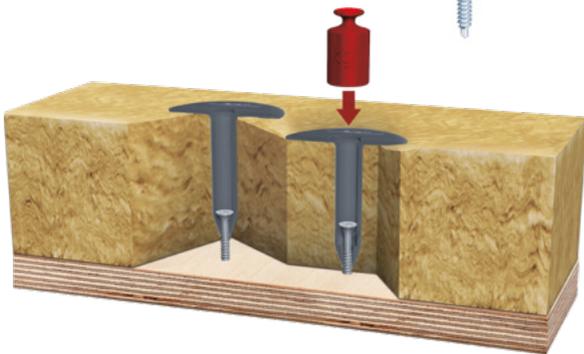
TKR

Application

Insulation and single layer waterproof membrane to ply deck.
Thermally broken fastener/washer combination for minimal cold bridging.



Back to plywood deck



Tubewasher and fastener available as individual components or pre-assembled



Recommended Combinations:

Using the guide below, read across to match insulation depth to length of HTK tubewasher and correct combination of TKR fastener.

Insulation Thickness (mm)	HTK Length (mm)	TKR Length (mm)	Drive Bit mm 
30	15	60	P2 100mm
40	15	70	P2 100mm
50	35	60	P2 100mm
60	35	70	P2 100mm
70	35	80	P2 100mm
80	55	70	P2 100mm
90	55	80	P2 100mm
100	55	90	P2 100mm
110	95	60	P2 100mm
120	95	70	P2 150mm
130	95	80	P2 150mm
140	95	90	P2 150mm
150	95	100	P2 150mm
160	95	110	P2 150mm
170	145	70	P2 200mm
180	145	80	P2 200mm
190	145	90	P2 200mm
200	145	100	P2 200mm
210	185	70	P2 250mm
220	185	80	P2 250mm
230	185	90	P2 250mm
240	185	100	P2 250mm
250	225	70	P2 300mm
260	225	80	P2 300mm
270	225	90	P2 300mm
280	225	100	P2 300mm
290	225	110	P2 300mm
300	275	60	P2 350mm
310	275	70	P2 350mm
320	275	80	P2 350mm
330	275	90	P2 350mm
340	325	60	P2 350mm
350	325	70	P2 350mm
360	325	80	P2 350mm
370	325	90	P2 350mm
380	325	100	P2 350mm
390	325	110	P2 350mm
400	325	120	P2 350mm

HTK 2G 50 tubewasher with TKE A4 grade stainless steel fastener for steel decks

TKE fasteners are manufactured from A4 Grade Austenitic Stainless Steel with a carbon steel drill point and organic corrosion resistant finish



HTK 2G 50
Washer face = Ø50 mm



TKE

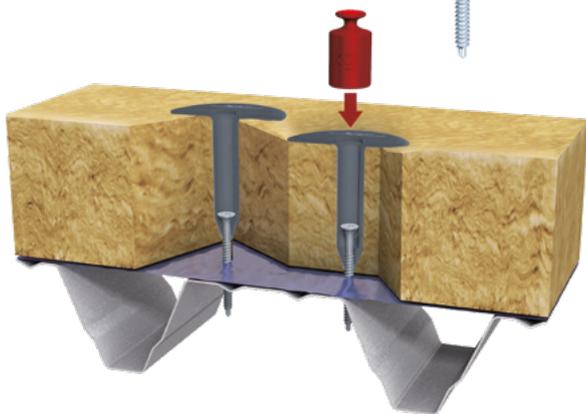
Application

Insulation and single layer waterproof membrane - 0.7 to 1.2 mm steel deck.

Thermally broken fastener/washer combination for minimal cold bridging.



Back to steel deck 0.7 - 1.2mm



Tubewasher and fastener available as individual components or pre-assembled



Recommended Combinations:

Using the guide below, read across to match insulation depth to length of HTK tubewasher and correct combination of TKE fastener.

Insulation Thickness (mm)	HTK Length (mm)	TKE Length (mm)	Drive Bit mm 
30	15	50	P2 100mm
40	15	50	P2 100mm
50	15	60	P2 100mm
60	35	50	P2 100mm
70	35	60	P2 100mm
80	55	50	P2 100mm
90	55	60	P2 100mm
100	55	70	P2 100mm
110	55	80	P2 100mm
120	95	50	P2 150mm
130	95	60	P2 150mm
140	95	70	P2 150mm
150	95	80	P2 150mm
160	95	90	P2 150mm
170	145	50	P2 200mm
180	145	60	P2 200mm
190	145	70	P2 200mm
200	145	80	P2 200mm
210	145	90	P2 200mm
220	145	100	P2 200mm
230	185	70	P2 250mm
240	185	80	P2 250mm
250	225	50	P2 300mm
260	225	60	P2 300mm
270	225	70	P2 300mm
280	225	80	P2 300mm
290	225	90	P2 300mm
300	275	50	P2 350mm
310	275	60	P2 350mm
320	275	70	P2 350mm
330	275	80	P2 350mm
340	275	90	P2 350mm
350	325	50	P2 350mm
360	325	60	P2 350mm
370	325	70	P2 350mm
380	325	80	P2 350mm
390	325	90	P2 350mm
400	325	100	P2 350mm

HTK 2G 50 tubewasher with TKE A4 grade stainless steel fastener for plywood decks

TKE fasteners are manufactured from A4 Grade Austenitic Stainless Steel with a carbon steel drill point and organic corrosion resistant finish



HTK 2G 50
Washer face = Ø50 mm

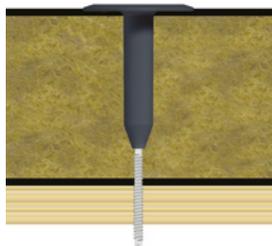


TKE

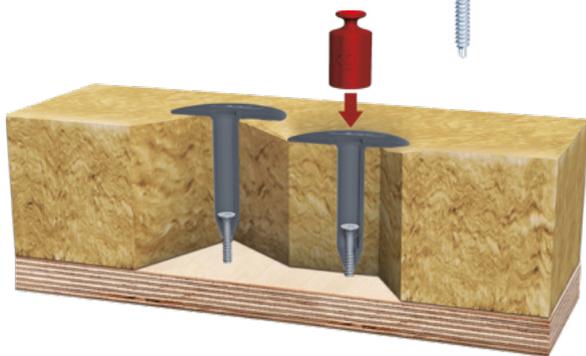
Application

Insulation and single layer waterproof membrane - 0.7 to 1.2 mm steel deck.

Thermally broken fastener/washer combination for minimal cold bridging.



Back to plywood deck



Recommended Combinations:

Using the guide below, read across to match insulation depth to length of HTK tubewasher and correct combination of TKE fastener.

Insulation Thickness (mm)	HTK Length (mm)	TKE Length (mm)	Drive Bit mm 
30	15	60	P2 100mm
40	15	70	P2 100mm
50	15	80	P2 100mm
60	35	70	P2 100mm
70	35	80	P2 100mm
80	55	70	P2 100mm
90	55	80	P2 100mm
100	55	90	P2 100mm
110	95	60	P2 100mm
120	95	70	P2 150mm
130	95	80	P2 150mm
140	95	90	P2 150mm
150	95	100	P2 150mm
160	95	110	P2 150mm
170	145	70	P2 200mm
180	145	80	P2 200mm
190	145	90	P2 200mm
200	145	100	P2 200mm
210	185	70	P2 250mm
220	185	80	P2 250mm
230	185	90	P2 250mm
240	185	100	P2 250mm
250	225	70	P2 300mm
260	225	80	P2 300mm
270	225	90	P2 300mm
280	225	100	P2 300mm
290	225	110	P2 300mm
300	275	60	P2 350mm
310	275	70	P2 350mm
320	275	80	P2 350mm
330	275	90	P2 350mm
340	325	60	P2 350mm
350	325	70	P2 350mm
360	325	80	P2 350mm
370	325	90	P2 350mm
380	325	100	P2 350mm
390	325	110	P2 350mm
400	325	120	P2 350mm

EJOT® ECOset HTK installation tool

Cordless Installation System for use with the HTK 2G 50 tubewasher



With its powerful 18V battery powered drive, EJOT® ECOset provides fast, easy installation and ensures that rooftop safety goes hand in hand.



EJOT's ECOset HTK installation tool automates the fixing of the HTK 2G 50 tubewasher / fastener combination system. That means super-fast installation, better roof-top safety and greater all-round efficiency. EJOT is the first manufacturer to offer a battery powered installation tool, eliminating electric cables and tripping hazards. An additional cartridge holder is available, allowing up to 50 extra Dabo® fasteners to be housed.

- **Powerful 18V battery powered drive**
- **For safe, fast and efficient installation of EJOT® HTK 2G 50mm tube washers with EJOT Dabo® TKR or TKE fasteners.**
- **Reduced installation times further with pre-assembled fasteners**
- **Easy and secure lock-in installations for different tubewasher lengths**
- **Fatigue-free fixing with high degree of installation reliability**
- **Insulation thickness (max. 260 mm)**
- **Variable length combinations with fast and direct locking adjustment**
- **HTK collator change in seconds (25 pieces pre-collated)**
- **Critical depth control means screws can not be overdriven**
- **Rental terms possible – please call to discuss**

EJOT EcoTek® tubewasher / fastener combination

For installing insulation and single ply membrane into concrete decks and beams

The unique material composition of the EJOT EcoTEK® 50mm tubewasher design ensures a fast, reliable and secure installation for thermal insulation, and membrane-through-insulation fixing to concrete substrates.



Ordering the EcoTEK® 50mm tubewasher

One tubewasher for the complete mechanical installation process to concrete substrates.

In exactly the same way that the HTK 2G 50mm tubewasher allows installers to use the same washer / fastener combination to fix insulation only or membrane-over-insulation, EJOT's EcoTEK tubewasher has been engineered specifically for concrete decks. That makes for easier purchasing and stock management.

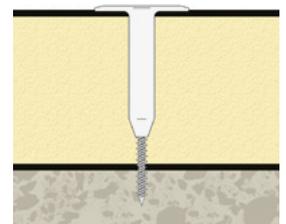
The table below provides a guide to ordering the EJOT EcoTEK® tubewasher as a separate purchase. This creates an ideal system to keep fastener and tubewasher stock in line with each other

Application

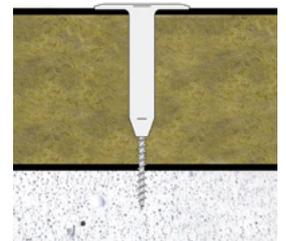
Combines with either FBS-R or FPS-E fastener types to fix insulation and single layer waterproof membrane to concrete and aerated concrete decks.

Ø x L (mm)	Washer (mm)	Recess Depth (mm)	Overall Depth (mm)	Min Qty
50 x 35	50	25	35	100
50 x 65	50	55	65	100
50 x 105	50	95	105	100
50 x 165	50	155	165	100
50 x 225	50	215	225	100
50 x 275	50	265	275	100
50 x 335	50	325	335	100

Order Example: EcoTek-50 x 35



EcoTek with FBS-R concrete screw



EcoTek with FPS-E aerated concrete screw

FBS-R and FPS-E fastener systems

Supplied as a separate purchase, these fasteners combine with the EJOT EcoTek tubewasher to provide fast and secure mechanical fixing of insulation and single ply membrane into concrete decks.

The FBS-R fastener range is manufactured from casehardened carbon steel with a zinc plating. EJOT's Climadur organic coating provides high corrosion protection. The FPS-E variant is manufactured from Grade 4 austenitic stainless steel and is ideally suited to mechanically fixing insulation and waterproof membranes to aerated concrete in compliance with ETAG 006.

FBS-R

Casehardened carbon steel for concrete decks



Features

- Combines with the EcoTek tubewasher for fixing flat roofing insulation
- Can be used with metal washers where fire protection is required
- Twin threads reduce installation torque
- Wide range of lengths available
- Manufactured from casehardened carbon steel
- Zinc plated and Climadur coated for corrosion protection



Torx® T30

Ø x L (mm)	Embedment-Min-EMB-Max	Hole Dia (mm)	Clamping Thickness-Min-ECT-Max	Min Qty
6.3 x 35	30-45	5	0-5	100
6.3 x 60	30-45	5	15-30	100
6.3 x 80	30-45	5	35-50	100
6.3 x 100	30-45	5	55-70	100
6.3 x 120	30-45	5	75-90	100
6.3 x 140	30-45	5	95-110	100
6.3 x 160	30-45	5	115-130	100
6.3 x 180	30-45	5	135-150	100
6.3 x 220	30-45	5	175-190	100
6.3 x 260	30-45	5	215-230	100
6.3 x 300	30-45	5	255-270	100

FPS-E

Grade 4 austenitic stainless steel for concrete and aerated concrete decks



Features

- Combines with the EcoTek tubewasher for fixing flat roofing insulation
- No predrilling required
- Fast and reliable fixing into aerated concrete
- Fully approved according to ETAG 006, ETA-07/0013
- Manufactured from corrosion resistant Grade 4 austenitic stainless steel



Torx® T30

Ø x L (mm)	Embedment-Min-EMB-Max	Hole Dia (mm)	Clamping Thickness-Min-ECT-Max	Min Qty
8.0 x 80	0-20	No drilling	0-5	100
8.0 x 100	60-70	No drilling	30-40	100
8.0 x 120	60-70	No drilling	50-60	100
8.0 x 160	60-70	No drilling	90-100	100
8.0 x 200	60-70	No drilling	130-140	100
8.0 x 240	60-70	No drilling	170-180	100
8.0 x 260	60-70	No drilling	190-200	100
8.0 x 280	60-70	No drilling	210-220	100
8.0 x 300	60-70	No drilling	230-240	100

When fixing back to a concrete deck EJOT would always recommended a pull out test is carried out on site by one of our experienced Sales Engineers.

Where material specification may relate to special environmental conditions, please call out Technical team on 01977 687040

Applications where substrates may have unknown carrying capacity, we provide on-site pull-out testing, meeting the requirements of ETAG 008.

EcoTek tubewasher with FBS-R carbon steel fastener for concrete decks

For fixing insulation and single layer waterproof membrane to concrete



EcoTek - 50 x L



FBS - R 6.3 x L

Fastener combination:

Refer to table

Minimum embedment:

30mm

Hole depth*:

45mm

Hole diameter:

5.0mm

Anchor system:

EcoTek and FBS-R

Deck:

Concrete



Torx® T30

*Hole depth is for guidance, please allow for site to site variations and tolerances

Specification Guide

Insulation Thickness	EcoTek Length	FBS-R Length
50	50 x 35	60
60	50 x 35	70
70	50 x 35	80
80	50 x 65	60
90	50 x 35	100
100	50 x 65	80
110	50 x 35	120
120	50 x 105	60
130	50 x 105	70
140	50 x 105	80
150	50 x 105	100
160	50 x 105	100
170	50 x 105	120
180	50 x 105	120
190	50 x 165	70
200	50 x 165	80
210	50 x 165	100
220	50 x 165	100
230	50 x 165	120
240	50 x 165	120
250	50 x 225	70
260	50 x 225	80
270	50 x 225	100
280	50 x 225	100
290	50 x 225	120
300	50 x 225	120
310	50 x 225	140
320	50 x 225	140
330	50 x 165	220
340	50 x 165	220
350	50 x 225	180
360	50 x 225	180

EcoTek tubewasher with FPS-E carbon steel fastener for concrete decks

For fixing insulation and single layer waterproof membrane into aerated concrete.



EcoTek - 50 x L



FPS - E 8.0 x L

Fastner combination:

Refer to table

Minimum embedment:

60mm

Anchor system:

EcoTek and FPS-E

Deck:

Aerated concrete

No pilot hole required

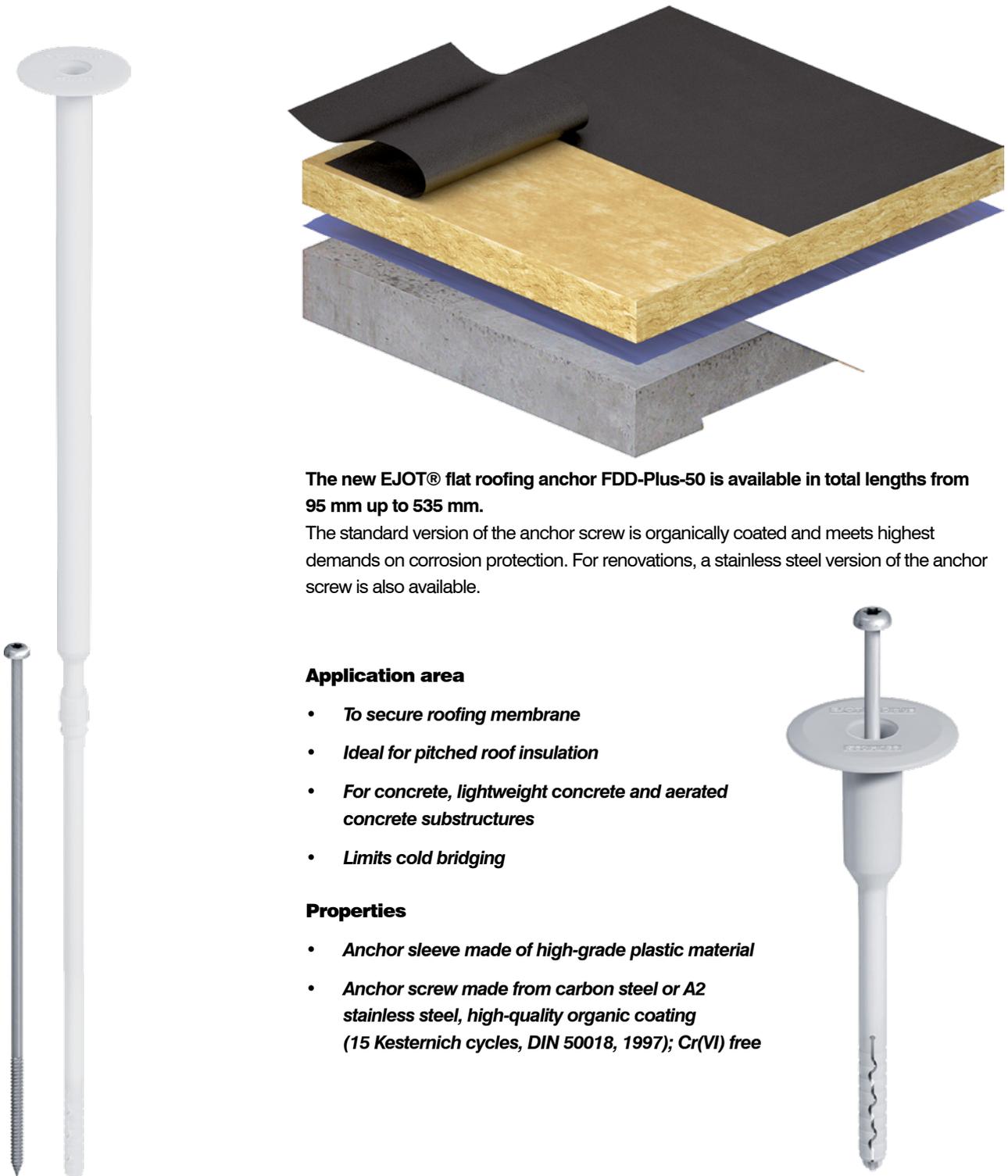


Torx® T30

	Roof Build-up max. ≥	EcoTek 50 x L				
		35	65	105	165	225
FPS-E-8.0 x L	100	60	90	130	190	250
	120	80	110	150	210	270
	160	120	150	190	250	310
	200	160	190	230	290	350
	240	200	230	270	330	390

EJOT® Flat Roofing Anchor FDD plus 50

The new anchor generation for fixing roofing membranes and insulation to all common solid substrates such as concrete, lightweight concrete and aerated concrete.



The new EJOT® flat roofing anchor FDD-Plus-50 is available in total lengths from 95 mm up to 535 mm.

The standard version of the anchor screw is organically coated and meets highest demands on corrosion protection. For renovations, a stainless steel version of the anchor screw is also available.

Application area

- *To secure roofing membrane*
- *Ideal for pitched roof insulation*
- *For concrete, lightweight concrete and aerated concrete substructures*
- *Limits cold bridging*

Properties

- *Anchor sleeve made of high-grade plastic material*
- *Anchor screw made from carbon steel or A2 stainless steel, high-quality organic coating (15 Kesternich cycles, DIN 50018, 1997); Cr(VI) free*

Ø washer (mm)	Anchor length (mm)	Substructure1) ≥ total panel thickness	Substructure2) ≥ total panel thickness	PU	Order description	Part number
Anchors with steel screws finished with high-quality organic Cr(VI) free coating (-R) Anchor with A2 stainless steel screws (-E)						
50	95	65	30	100	FDD-Plus-50x095 -R (-E)	8 720 095 -400 (-600)
50	115	85	50	100	FDD-Plus-50x115-R	8 720 115 400
50	135	105	70	100	FDD-Plus-50x135-R	8 720 135 400
50	155	125	90	100	FDD-Plus-50x155-R	8 720 155 400
50	175	145	110	100	FDD-Plus-50x175-R	8 720 175 400
50	195	165	130	100	FDD-Plus-50x195-R	8 720 195 400
50	215	185	150	100	FDD-Plus-50x215-R	8 720 215 400
50	235	205	170	100	FDD-Plus-50x235-R	8 720 235 400
50	255	225	190	100	FDD-Plus-50x255-R	8 720 255 400
50	275	245	210	100	FDD-Plus-50x275-R	8 720 275 400
50	295	265	230	100	FDD-Plus-50x295-R	8 720 295 400
50	335	305	270	100	FDD-Plus-50x335-R	8 720 335 400
50	375	345	310	100	FDD-Plus-50x375-R	8 720 375 400
50	415	385	350	100	FDD-Plus-50x415-R	8 720 415 400
50	455	425	390	100	FDD-Plus-50x455-R	8 720 455 400
50	495	465	430	100	FDD-Plus-50x495-R	8 720 495 400
50	535	505	470	100	FDD-Plus-50x535-R	8 720 535 400

1) Concrete C12/12; lightweight concrete LC12/13 2) Aerated concrete P 3.3

Approval

ETA-07/0013



Technical Data

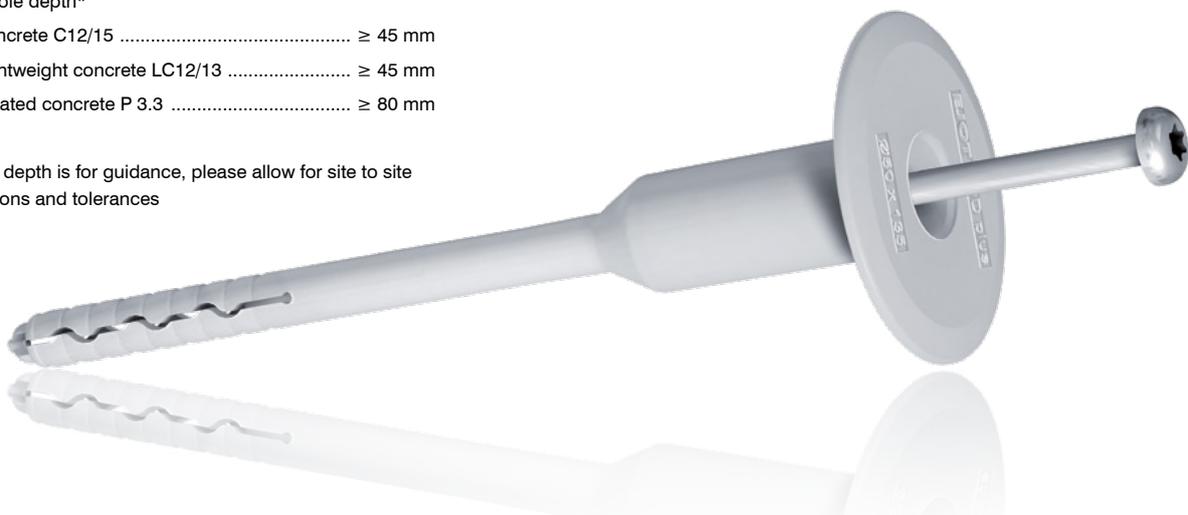
- Drill hole diameter 8 mm
- Drive anchor screw hexalobular T30
- Embedment depth
 - Concrete C12/15 ≥ 30 mm
 - Lightweight concrete LC12/13 ≥ 30 mm
 - Aerated concrete P 3.3 ≥ 65 mm
- Drill hole depth*
 - Concrete C12/15 ≥ 45 mm
 - Lightweight concrete LC12/13 ≥ 45 mm
 - Aerated concrete P 3.3 ≥ 80 mm

*Hole depth is for guidance, please allow for site to site variations and tolerances

Note

As a rule, pull-out tests have to be arranged with our service team for all renovation cases.

This product only comes pre-assembled and is an alternative to the more popular 'separate EcoTek + FBS-R / FPS-E combination.



Ancillary products for mechanical installations

Deck Fixings and Fasteners

EJOT SAPHIR® Self Drilling Light Section Fasteners

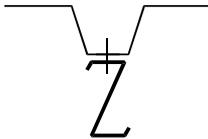
Carbon steel with organic corrosion resistant finish. Washered / unwashed.

LS



Application

Steel deck 0.7 to 1.2 mm in thickness into
- Steel sections from 1.2 to 3.0 mm in thickness



Ø x L (mm)	Unwashed		Min Qty
	Min	ECT Max	
5.5 x 25	1.2	8.0	100
5.5 x 32	1.2	9.0	100

Order Example Unwashed: LS 5.5 x 25
Order Example Washered: LS 5.5 x 25 A15

EJOT SAPHIR® Self-Drilling Heavy Section Fasteners

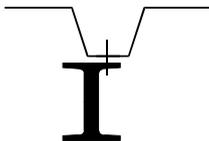
Carbon steel with organic corrosion resistant finish. Washered / unwashed.

HS



Application

Steel deck 0.7 to 1.2 mm in thickness into
Steel sections from
4.0 to 12.0 mm in thickness



Ø x L (mm)	Unwashed		Min Qty
	Min	ECT Max	
5.5 x 38	4.0	16.0	100

Order Example Unwashed: HS 5.5 x 38
Order Example Washered: HS 5.5 x 38 A15

EJOT SAPHIR® Self-Drilling Plywood Fasteners

Carbon steel with organic corrosion resistant finish. Unwashed.

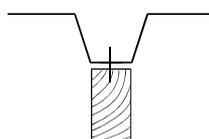
TS



Application

Steel deck 0.7 to
1.2 mm in thickness into
- Plywood and timber

Mechanical Performance is dependant on
embedment and grade of plywood and timber



Ø x L (mm)	Unwashed		Min Qty
	Min	ECT Max	
6.3 x 45			100
6.3 x 60			100

Order Example Unwashed: TS 6.3 x 45
Order Example Washered: TS 6.3 x 45 A15

Ancillary products for mechanical installations

Deck Fixings and Fasteners

EJOT SAPHIR® Self-Drilling Secondary Fasteners

Carbon steel with organic corrosion resistant finish and reduced drill point. Available washed or unwashed.

JF2



Application

For fixing laps of roofing or cladding sheets and flashings



Ø x L (mm)	Min ECT Max	Min Qty
5.5 x 25	0.5 - 10.0	100
Order Example Unwashed: JF2 - 2 5.5 x 25		
Order Example Washed: JF2 - 2 5.5 x 25 A15		

Peel Rivets

Aluminium body with steel mandrel.

PR



Application

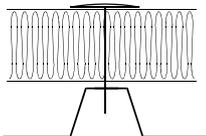
Insulation and single layer waterproof mem-brane
- Woodwool, aluminium, thin plywood and perforated steel decks and Stramit boards

The PR range can be used with the HTV 82/40 - 7 steel stress plate and HTV 70RU

* Below 19 mm build-up the mandrel stub may protrude above the rivet head and may need to be cropped.

PR rivets are suitable for use in 50 mm minimum thickness woodwool decking. Deduct 6 mm from maximum ECT. Protrusion must be a minimum 38 mm.

A site test is recommended in all woodwool applications.



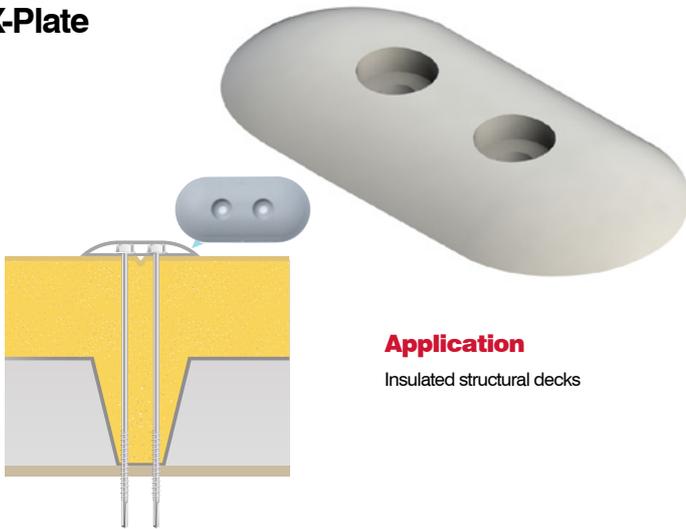
Ø x L (mm)	Insulation			Min Qty
	Pilot Hole (mm)	Profusion* (mm)	ECT Min Max	
6.4 x 38	7	32	0.1 - 6.0	100
6.4 x 50	7	32	0.1 - 8.0	100
6.4 x 80	7	32	5.0 - 43.0	100
6.4 x 100	7	32	30.0 - 68.0	100
6.4 x 100	7	32	55.0 - 93.0	100
6.4 x 150	7	32	80.0 - 118.0	100
6.4 x 175	7	32	105.0 - 143.0	100
6.4 x 200	7	32	130.0 - 168.0	100
Order Example: PR 6.4 x 38				

Ancilliary products for mechanical installations

Stress Plates

Galvanised carbon steel plates for load spreading when fixing insulation.

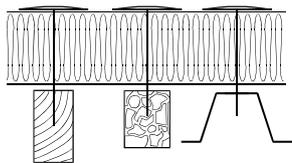
X-Plate



Application
Insulated structural decks

- Single unit washer plate for structural deck roof panels
- Two prefixed markers for centre of valley fixing
- Manufactured from Plastic: Nylon 6 - 30% Glass Filled
- 30mm positioning for faster installation into 40mm valley width
- For standard hexagon head self-drilling fasteners
- Self tapping fasteners can accommodate thicker hot-rolled steel rafters

HTV-70RU

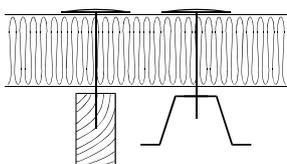


Application
Insulation
- Various substrates depending on fastener
Typical fasteners:
FBS-R

Ø x L (mm)	Dimensions		Min Qty
	Dia (mm)	Hole Size (mm)	
HTV 70RU	70	5.5	100

Order Example: HTV-70RU

HTV 82/40 Deep Dimple 5mm



Application
Membrane
- 0.7 - 1.2 mm Steel or Plywood Deck
Typical fasteners:
SW8R and TKR

Ø x L (mm)	Dimensions			Min Qty
	Length (mm)	Width (mm)	Hole Size (mm)	
82/40	82.0	40.0	5.0	100

Order Example: HTV-82/40-5

HTV-82 / 40TK



Application

Membrane laid on rigid insulants that cannot accept a deep recess
 - 0.7 - 1.2 mm steel or plywood deck.
 Typical fasteners: TKR

Ø x L (mm)	Dimensions			Min Qty
	Length (mm)	Width (mm)	Hole Size (mm)	
82/40TK	82.0	40.0	5.0	100
Order Example: HTV-82/40TK				

HTV-82 / 40F

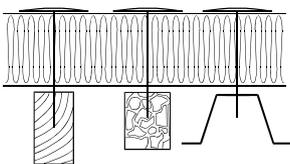


Application

Membrane via a fleece direct
 - Plywood and Concrete
 Typical fasteners:
 JT2-FR2 4.8 x 20
 ND-K 60 x 50 V or E

Ø x L (mm)	Dimensions			Min Qty
	Length (mm)	Width (mm)	Hole Size (mm)	
82/40 F	82.0	40.0	7.5	100
Order Example: HTV-82/40F				

HTV 82/40 Deep Dimple 7mm



Application

Membrane
 - Various substrates depending on fastener
 Typical fasteners:
 FBS-R and PR rivet

Ø x L (mm)	Dimensions			Min Qty
	Length (mm)	Width (mm)	Hole Size (mm)	
82/40-7	82.0	40.0	7.0	100
Order Example: HTV-82/40-7				

2 Part mechanical / part adhered installation systems

Correct mechanical fixing of insulation where membrane will be adhered.



Developed in accordance with the SPRA Design Guide for Single Ply Roofing



Since EJOT® introduced the intelligent tubewasher / fastener combination design, our range provided the complete mechanical fix solution.

Where installers prefer to mechanically fix insulation to the deck, then adhere the waterproofing membrane - EJOT UK has developed a unique 75mm diameter tubewasher which meets the SPRA guidelines for part-mechanical, part-adhered hybrid installations.

Made to the same exacting standards as its 50mm counterpart, the NEW HTK-2G-75mm tubewasher expands our range to the most complete from any single manufacturer.



- **Combines with appropriate fastener to secure insulation to steel profiles and plywood decks**
- **For use where the membrane layer will be adhered-bonded to the insulation surface**
- **For installations on new buildings and renovations**
- **Meets SPRA guidelines for part-adhered installations**
- **Helps to limit cold bridging**



75mm diameter tubewasher

For bonded/mechanical hybrid installations

EJOT developed the HTK-2G 75mm tubewasher to meet guidelines set out by the Single Ply Roofing Association, for bonded/mechanical hybrid installations. In the same way that its 50mm counterpart combines with either Dabo® TKE or TKE fasteners on fully mechanical installations, this new innovation is suitable for securing insulation back into either ply or profiled steel decks.

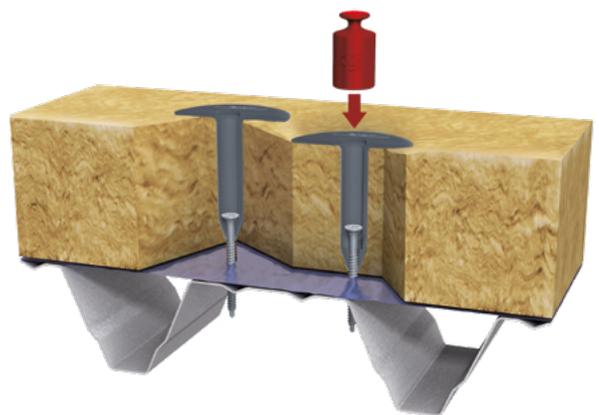
EJOT's technical support team will advise on the correct fixing centres in relation to wind-load calculations, while the tube-washer and threaded fastener not only address cold-bridging concerns, the telescopic design also provides resistance to imposed loads.



Ø x L (mm)	Washer (mm)	Recess Depth (mm)	Overall Depth (mm)	Min Qty
75 x 35	75	35	45	100
75 x 55	75	55	65	100
75 x 95	75	95	105	100
75 x 145	75	145	155	100

Order Example: HTK 2G 75-35

- 75mm diameter tubewasher
- Meets SPRA guidelines for part-adhered installations
- High quality polyethylene material
- For plywood and steel decks
- Telescope design for resistance to imposed loads
- Combines with EJOT Dabo® TKR and TKE fasteners
- Available loose or pre-assembled with fastener



HTK 2G 75 tubewasher with TKR carbon steel fastener for steel or timber decks

HTK 2G 75 / TKR combination for fixing membrane and insulation to steel.



HTK 2G
Washer face = Ø75 mm



Back to steel deck 0.7 - 1.2mm



TKR

Application

Insulation back to 0.7 to 1.2 mm steel deck.

Thermally broken fastener/washer combination for minimal cold bridging.

Recommended Combinations:

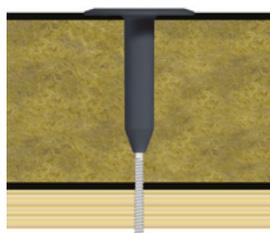
Using the guide below, read across to match insulation depth to length of HTK tubewasher and correct combination of TKR fastener.

Insulation Thickness (mm)	HTK Length (mm)	TKR Length (mm)	Drive Bit mm 
60	35	50	P2 100mm
70	35	60	P2 100mm
80	55	50	P2 100mm
90	55	60	P2 100mm
100	55	70	P2 100mm
110	55	80	P2 100mm
120	95	50	P2 150mm
130	95	60	P2 150mm
140	95	70	P2 150mm
150	95	80	P2 150mm
160	95	90	P2 150mm
170	145	50	P2 200mm
180	145	60	P2 200mm
190	145	70	P2 200mm
200	145	80	P2 200mm
210	145	90	P2 200mm
220	145	100	P2 200mm
230	145	110	P2 200mm
240	145	120	P2 200mm
250	145	130	P2 200mm
260	145	140	P2 200mm

HTK 2G 75 / TKR combination for fixing membrane and insulation to timber.



HTK 2G
Washer face = Ø75 mm



Back to plywood deck



TKR

Application

Insulation back to ply deck

Thermally broken fastener/washer combination for minimal cold bridging.

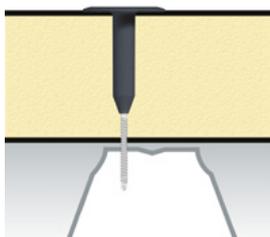
Insulation Thickness (mm)	HTK Length (mm)	TKR Length (mm)	Drive Bit mm 
60	35	70	P2 100mm
70	35	80	P2 100mm
80	55	70	P2 100mm
90	55	80	P2 100mm
100	55	90	P2 100mm
110	55	100	P2 100mm
120	95	70	P2 150mm
130	95	80	P2 150mm
140	95	90	P2 150mm
150	95	100	P2 150mm
160	95	110	P2 150mm
170	145	70	P2 200mm
180	145	80	P2 200mm
190	145	90	P2 200mm
200	145	100	P2 200mm
210	145	110	P2 200mm
220	145	120	P2 200mm
230	145	130	P2 200mm
240	145	140	P2 200mm
250	145	150	P2 200mm
260	145	140	P2 200mm

HTK 2G 75 tubewasher with TKE stainless steel fastener for steel or timber decks

HTK 2G 75 / TKE combination for fixing membrane and insulation to steel.



HTK 2G
Washer face = Ø75 mm



Back to steel deck 0.7 - 1.2mm



TKE

Application

Insulation back to 0.7 to 1.2 mm steel deck.

Thermally broken fastener/washer combination for minimal cold bridging.

Recommended Combinations:

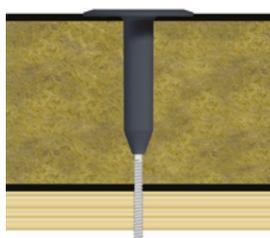
Using the guide below, read across to match insulation depth to length of HTE tubewasher and correct combination of TKE fastener.

Insulation Thickness (mm)	HTK Length (mm)	TKE Length (mm)	Drive Bit mm
60	35	50	P2 100mm
70	35	60	P2 100mm
80	55	50	P2 100mm
90	55	60	P2 100mm
100	55	70	P2 100mm
110	55	80	P2 100mm
120	95	50	P2 150mm
130	95	60	P2 150mm
140	95	70	P2 150mm
150	95	80	P2 150mm
160	95	90	P2 150mm
170	145	50	P2 200mm
180	145	60	P2 200mm
190	145	70	P2 200mm
200	145	80	P2 200mm
210	145	90	P2 200mm
220	145	100	P2 200mm

HTK 2G 75 / TKE combination for fixing membrane and insulation to timber.



HTK 2G
Washer face = Ø75 mm



Back to plywood deck



TKE

Application

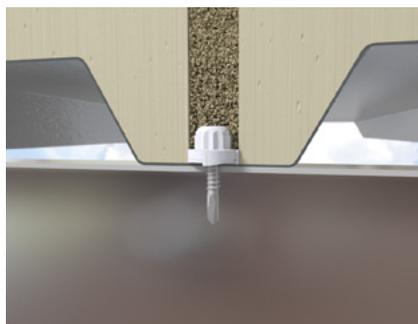
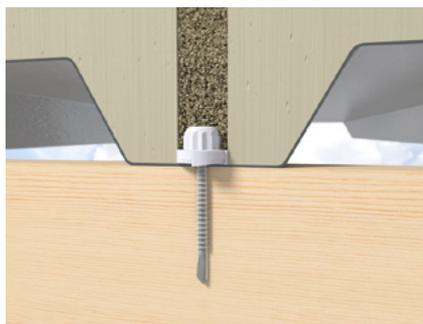
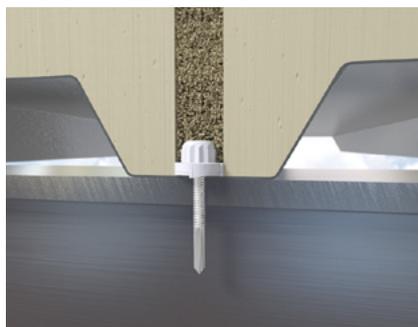
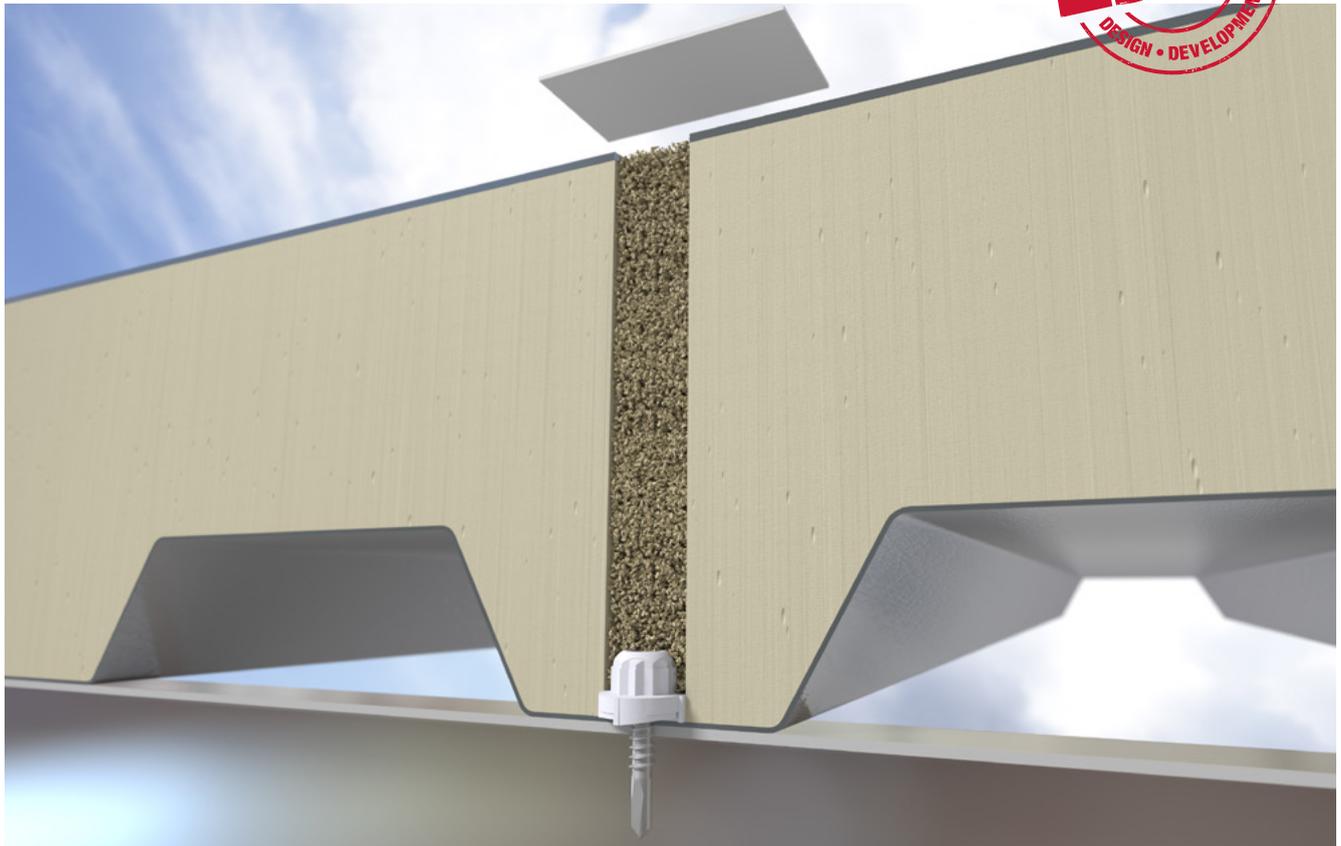
Insulation back to ply deck

Thermally broken fastener/washer combination for minimal cold bridging.

Insulation Thickness (mm)	HTK Length (mm)	TKE Length (mm)	Drive Bit mm
60	35	70	P2 100mm
70	35	80	P2 100mm
80	55	70	P2 100mm
90	55	80	P2 100mm
100	55	90	P2 100mm
110	55	100	P2 100mm
120	95	70	P2 150mm
130	95	80	P2 150mm
140	95	90	P2 150mm
150	95	100	P2 150mm
160	95	120	P2 150mm
170	145	70	P2 200mm
180	145	80	P2 200mm
190	145	90	P2 200mm
200	145	100	P2 200mm
210	145	120	P2 200mm
220	145	120	P2 200mm
230	145	130	P2 200mm
240	145	140	P2 200mm

3 Ancillary flat roofing products

EJOT® Opticore®
 The self-coring one-step fix for Membrane faced composite panels



Opticore is EJOT's unique and patented integral nylon head, designed to encapsulate fasteners from our high performance self-drilling range. Opticore is engineered to provide a dual drive fastening system that enables rapid self-coring of membrane faced insulation panels, and a secure fix into hot and cold rolled steel, and timber.

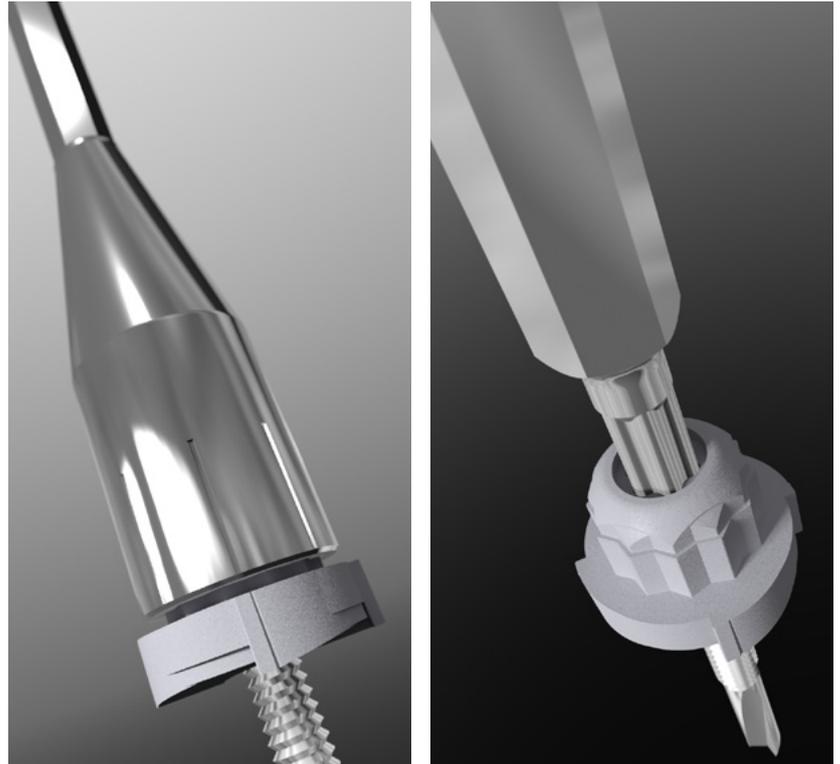
Key to the Opticore's advantage is the coring action created by strategically placed cutting fins. These simply snap free as the fastener 'pulls up' and the nylon to metal relationship means there is no compromise to the integrity of the panel's lining skin. The composition of the Opticore head also provides significantly better thermal retention values over metal counterparts.

EJOT® Opticore®
 Opticore's patented core-drilling head integrates with EJOT's high performance self-drilling fastener range

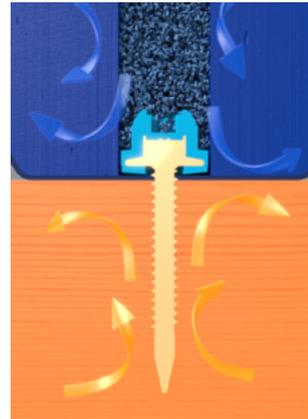
Dual drive options for rapid self-coring and installation into all substrates

The innovative design of the Opticore head provides installers with a choice of drive tools. An internal Torx 30 Plus creates a fast and secure installation where stitching or fixing to cold rolled steel. Once driven home the torque bit strips out the nylon teeth within the head creating a perfect fix every time.

An 11mm bi-hex external drive bar provides an improved 'surface over fix' ratio, creating a far more responsive installation into hot rolled steel and timber substrates.



The intergral Opticore head design is manufactured in high strength moulded nylon. The 'cutting fins' are unique to the Opticore patent, and create the smooth coring of the panel's insulation. On secure 'pull-up' of the fastener into the substrate, the fins simply snap away without any compromise to the integral lining.



A combination of hot box tests and thermal activity recording at EJOT's testing centre Applitec, has repeatedly shown that the composition of the Opticore head provides significantly better thermal retention values over all-metal fastenings.

Designed to encapsulate EJOT® self-drilling fasteners

The Opticore head is designed to encapsulate all high performance fasteners from our self-drilling range, creating a fast one-step fix for stitching, light section steel, heavy section steel and plywood.

Opticore Fasteners in Carbon Steel

Corrosion resistance finish with 'EJOT Climadur' organic coating.



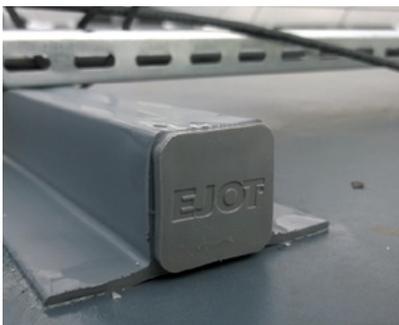
Opticore Fasteners in Stainless Steel

High quality stainless steel, grade 304 St/St, ISO group A2, DIN Werkstoff 1.4301



EJOT® EJObar

Membrane-friendly bridging and support bar for single-ply PVC roofing



EJObar is EJOT's membrane-friendly solution for securing or carrying mechanical & electrical essentials through to lightweight solar PV and thermal installations.

Fixing EJObar is easy. Installation is either by hot welding or for some applications, it can be simply used free-standing as a carrier system.



EJOT® PVC EJObar and TPO EJObar

EJObar has been subjected to rigorous strength-of-weld tests at our Applitec Development and Testing Centre. More than 20 reinforced PVC membranes and a comparable number of TPO membranes were subjected to a like for like programme of tensometer procedures using a 150mm long EJObar.

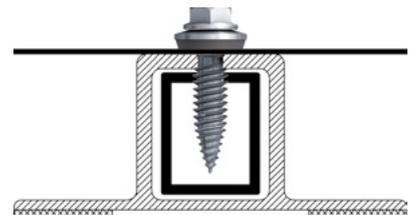
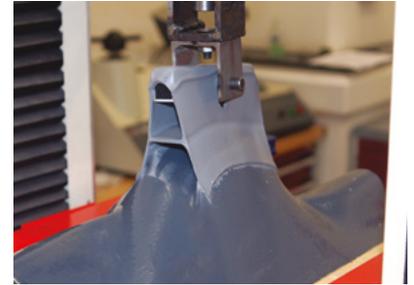
EJObar surpassed all reasonable criteria achieving an average 3.4 Kilonewton loading for PVC membranes and 2.14 Kilonewton for TPO.

PVC EJObar is formally approved by the following leading PVC membrane manufacturers: Renolit, Flag Soprema, Fatra, Wolfin for specific solar installations - and Iko for Mechanical and Electrical applications.

The EJOT brand

To carry the EJOT brand, we have to be sure our products are fit for purpose.

EJObar's sealing caps are injection moulded for a precision fit. A bonded sealant ensures EJObar's core remains watertight and protected from the elements at either end.



Core strength

At the heart of every EJObar is a strong, 2mm thick aluminium bar.

On all standard lengths, the aluminium insert runs the full length of the product providing EJObar's load bearing strength, whilst creating a perfect fixing base for EJOT's JF3 self-drilling fastener.



Secure fastening to EJObar

EJOT's JF3-2-5.5 x 25 S16 Stainless steel Bi-Met fastener creates a potential pullout performance of over 3.6KN. Manufactured from A2 (1.4301) austenitic stainless steel its a hardened carbon steel pierce point displaces material and will not rip EJObar's membrane sleeve. The fastener has European Technical approval ETA-10/0200.

Available in practical lengths

EJObar is supplied in a range of practical lengths and is available from the EJOT UK online webshop. You can choose from 0.3 and 0.5 for mechanical & electrical applications - 1.0m and 3.0m for PV solar installations.



For solar applications

Typically, we recommend the 1.0m and 3.0m EJObars, installed to recommended guidelines.



For M&E applications

Typically, 300mm and 500mm EJObars are ideal either hot welded or in some applications, free-standing.



For unusual applications

EJObar is a practical and flexible solution and can be deployed where the PVC membrane is creating pitch or shape. Call EJOT's technical team on 01977 687040.

4

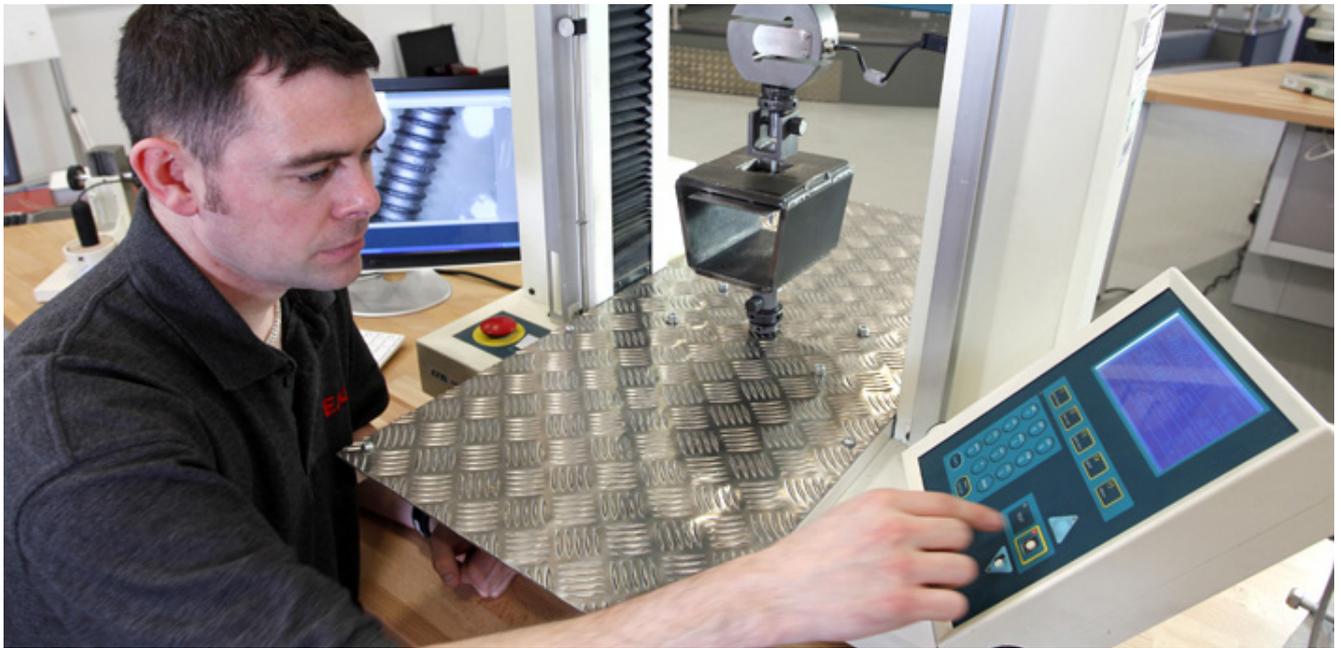
Technical support from EJOT® Applitec
Comprehensive Technical Support

APPLITEC - it's derived from two words; Application Technology. EJOT APPLITEC is at the heart of everything we do from research and design to testing and manufacturing.

Here in the UK, our Applitec Centre has become an industry-wide resource - often in partnership with many leading OEM's sharing an objective to develop better, more efficient products for the building envelope.

The Applitec team provide the technical support behind all EJOT products in application, or in development.

Call our technical team on 01977 687040

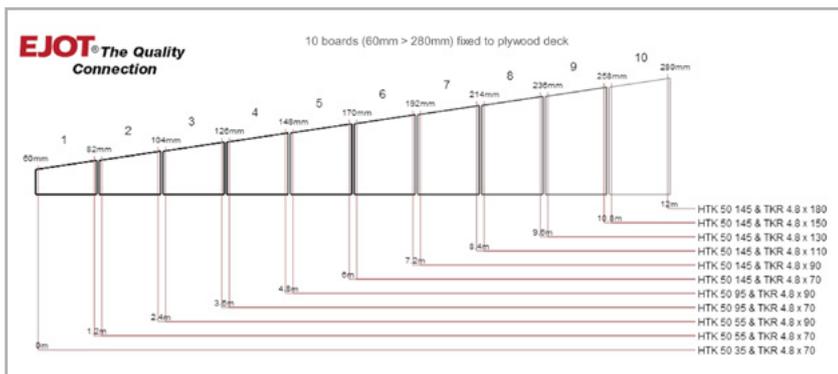


Wind loading calculations

Correct fixing specifications for mechanical or part-mechanical roofing installations for PVC membrane applications, require specific wind-loading calculations from EJOT's technical team and from the insulation manufacturers.

Environmental conditions and specification

EJOT's technical support includes advice and real-time performance forecasting relating to known environmental conditions. This includes accurate and latest data relating to the choice of fastener material and corrosion resistance.



Tapered systems and unusual designs

Where design specifications deploying PVC membrane are anything but 'flat', our technical team are able to guide designers, specifiers and installers with the correct combination of tube and screw for all depths of insulation. Calculations yield a straightforward guide to the minimum and maximum installation depths and the quantity of insulation boards to be fixed on the roof.

Request a site visit

EJOT UK offers a full on-site testing programme, carried out by qualified service technicians.

Please contact our Customer Service Team to request a 'Site Visit Request Form'.

Call 01977 687040

Email customerservice@ejot.co.uk

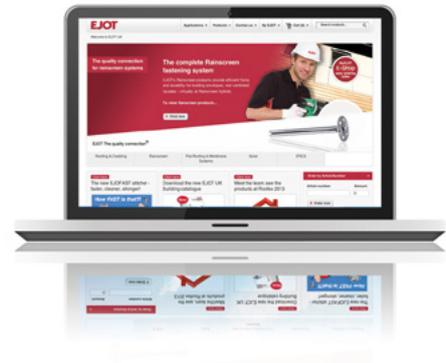
Visit ejot.co.uk



Buy online in the EJOT webshop

EJOT UK's webshop means you can buy EJOT's our flat roofing and membrane systems fixings online.

- **Technical information at a click**
- **Fast – easy to register, easy to navigate**
- **Quick search by Product or by Application**
- **Automatically creates your purchase history - saves valuable time**



Approvals



Conformité Européene:

European Conformity

The CE mark demands an annual audit of the factory production control and product quality assurance.



As a Full Member of the Construction Fixings Association, EJOT UK is committed to the promotion of 'Best Product' and 'Best Installation Practice'.

For technical guidance where material specification may relate to special environmental conditions, please call out Technical team on 01977 687040



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