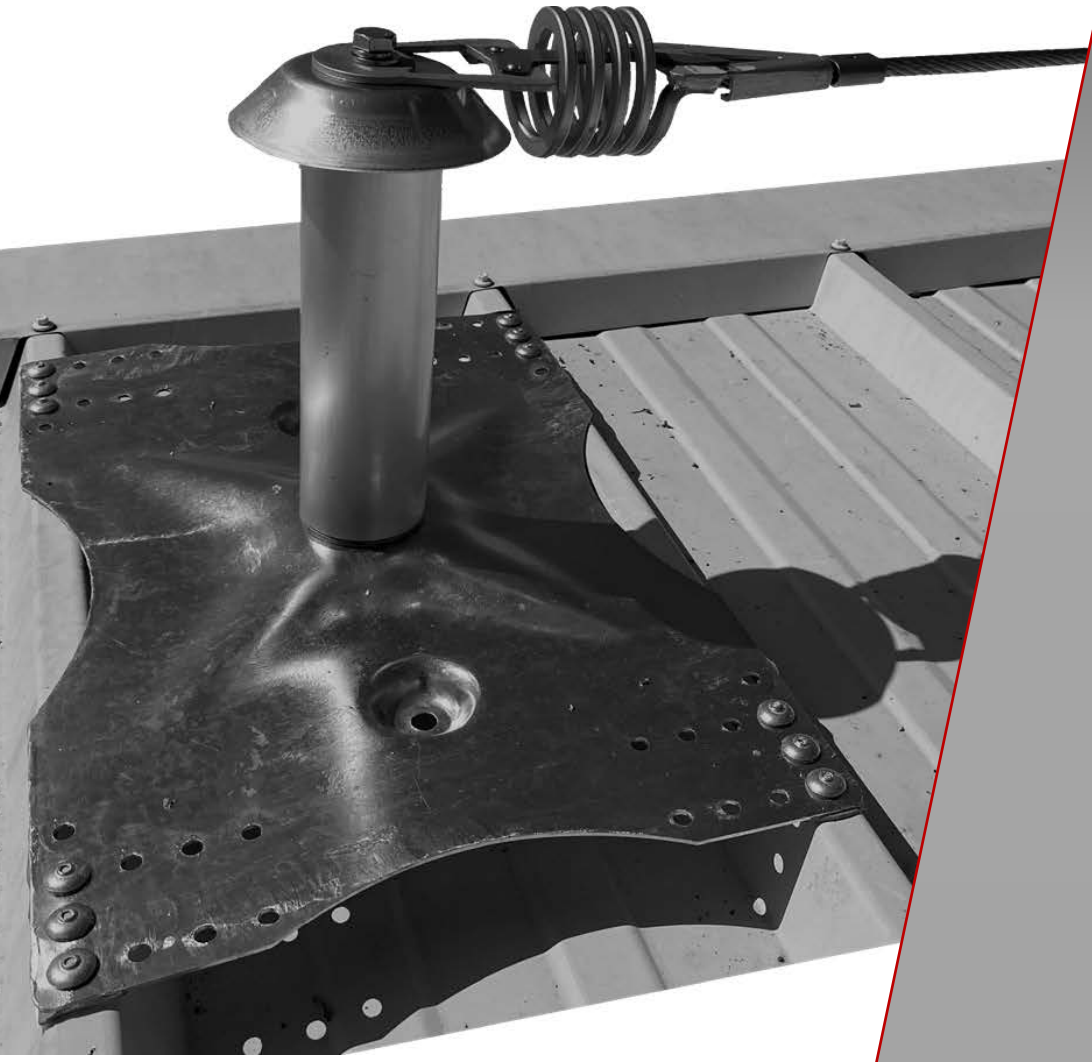
TECHNICAL SPECIFICATIONS & INSTALLATION INSTRUCTIONS



Installation instructions
NOT-EN-099

INTERFACE PB250

INTERFACE PB250

1. PREAMBLE

The PB250 interfaces are part of the CONEKT range of anchors and lifelines from the L'Echelle Européenne network of height specialists.

PB250 interfaces, base plates and corresponding fasteners allow the attachment of CONEKT lifelines directly on:

- Metal roof decking, thickness ≥ 0.63 mm.
- Steel roofs with waterproofing support, thickness ≥ 0.63 mm.
- OSB (Oriented Strand Board) or chipboard with seal, thickness ≥ 18 mm
- Perforated panel roofs, thickness ≥ 0.63 mm
- Sandwich panels with a superior thickness, thickness ≥ 0.5 mm.

CONEKT fall-protection systems provide safe movement and secure worksites for all types of personnel or technical operators working at heights on a building or machine.

When used in conjunction with fall-protection PPE (Personal Protective Equipment), CONEKT lifelines and anchors provide workers with freedom of movement at heights while being securely attached to the lifeline at all times.

This lifeline system is manufactured by L'Echelle Européenne in Saint Jean de Védas (France):

L'Echelle Européenne SAS
447 rue Henri Farman
34430 SAINT JEAN DE VEDAS
Tel: 04 67 27 36 55
E-mail: info@echelle-europeenne.com
Website: www.echelle-europeenne.com

A full-body safety harness is the only body-support device permitted for use in a fall-arrest system.

2. USE

The instructions and conditions of use presented in this manual must be strictly observed.

Before each use, the equipment must be checked by the user to ensure that it is in serviceable condition and operates correctly.

The user must perform a visual inspection to verify that:
- the equipment is in apparent good order and condition.
- none of the components are damaged or deformed.

A system must be immediately withdrawn from service if doubts arise as to its safety, or if it has been used to stop a fall.

It may not be returned to service until it has been inspected and re-certified as safe for use in writing by a competent person.

It is important to note that:

- The lifeline must be used by a person in good health and in full physical control.

- The equipment must only be used by a competent person adequately trained to use it safely. The correct procedures for PPE lifeline connection and use must be demonstrated to all operators before use.

- A rescue plan and the means to implement it must be put in place to deal with any emergencies that could arise during the work.

Please note that no alterations or additions should be made to the equipment without the prior written consent of the manufacturer, and that all repairs must be carried out in accordance with the manufacturer's operating procedures.

It is strictly forbidden to change, modify, add to or transform CONEKT lifeline interfaces.

It is important to be aware of the danger that may arise from using a combination of equipment where the function of any one item is affected by or interferes with the function of any other item.

Please note that, to ensure safety when using any fall-arrest system, the anchor arrangement or anchor point must always be correctly positioned and the work must be performed in such a way as to minimize the risk of falls and the height of a fall.

For safety reasons, it is essential to verify the clearance required under the user on the worksite before each potential use of a fall arrest system so that, in the event of a fall, the worker is protected from striking the ground or any other obstacle in the fall path.

To ensure user safety, if the product is resold outside the original country of destination, the reseller must provide instructions for its use, maintenance, periodic inspection and repair in the language of the country where the product is to be used.

The rules for combining PPE products must be followed to ensure that a fall-arrest system complies with standard EN363 (chapter VII).

A fall-arrest device must be checked each time it is used to ensure that the lifeline is in good working order (not deformed or corroded, and the fastenings are well-tightened).

The user must be equipped with a means of limiting the maximum dynamic forces exerted on the user during the arrest of a fall, to a maximum of 6 kN.

A full-body safety harness is the only body-support device permitted for use in a fall-arrest system. The user must be connected to the anchorage point by means of a suitable fall-restraint system (fall-arrest device or lanyard), at the sternal or dorsal attachment point of the harness.

A sign near the anchor informs the user of the date of installation and the last periodic inspection.

3. LIMITATIONS OF USE

As the strength of the lifeline depends directly on the quality of the support base, compliance can only be established if the support material exhibits no manufacturing defects or drop in performance resulting from installation or use (aging, overloading, exposure to chemicals or extreme weather, etc.).

CONEKT lifeline interfaces must be installed in accordance with good engineering practice, and in compliance with the recommendations of the manufacturer of the fixing elements (anchors, etc.).

For wood, through rods or counter-plates must be used.

The parts and accessories, as well as the position and quality of the structural anchors, must be exactly as described in these technical specifications.

4. WARRANTY, CARE AND MAINTENANCE

CONEKT components are guaranteed for 5 years.

Only periodic inspection can determine whether certain components should be removed from service.

All CONEKT lifeline components are treated to protect them against corrosion and UV radiation.

5. SYSTEM CHECK

CONEKT fall-arrest systems should be inspected regularly, as the user's safety is directly dependent on maintaining the efficiency, strength and durability of the equipment.

Periodic examinations must be conducted by a competent person at least once every twelve months and strictly in accordance with the manufacturer's periodic examination procedures.

The periodic inspection of CONEKT lifelines involves checking to ensure that all the components of the lifeline are in good overall condition. The CONEKT lifeline checklist defines all the inspection criteria. It is particularly important to check that all markings are present and legible and that signs are correctly filled in.

6. CERTIFICATE OF CONFORMITY

L'ECHELLE EUROPEENNE
Parc Marcel Dassault
447 Rue Henri Farman
34430 SAINT JEAN DE VEDAS - FRANCE

ATTESTATION DE CONFORMITÉ

POTELETS DYNAMIQUES

L'Echelle Européenne atteste que les interfaces basculantes PB250 + PL1, PL2 ou PL4 fixée avec vis auto-foreuses réf PBa, ou avec de rivets réf PBr, ou avec les lots de vis à bascule de type PB300 ont été testées sur différents supports de couverture :

- Bac sec trapézoïdal de 0.63mm d'épaisseur.
- Panneaux sandwich avec épaisseur de tôle supérieure de 0.5mm.
- Bac support d'étanchéité d'épaisseur 0.63mm.
- Bac support d'étanchéité perforé d'épaisseur 0.63mm.
- Panneau OSB d'épaisseur 18mm.

Lors de ces essais, une personne de l'Apave était présente en assistance aux essais.
Chaque interface a résisté à :

- Un test dynamique selon le mode opératoire de la norme EN 795 :2012.
- Un test statique jusqu'à 1200daN, sans rupture de l'interface et du support.

Les résultats de ces essais sont dans le rapport Apave 13210773-001-1 du 15 Juin 2023
Ces essais ont été réalisés le 17/05/2023 et le 14 juin 2023.

De nombreux autres essais ont également été réalisés précédemment.

Ces interfaces sont donc suffisamment dimensionnées pour recevoir les systèmes antichute Conekt EN 795 : 2012, qu'ils soient de type A, C ou D.

Ces composants doivent toutefois être mis en place dans le respect des notices de montage.

Fait à Saint Jean de Védas, le
21/06/2023

Benjamin LE GOAS
Ingénieur Développement

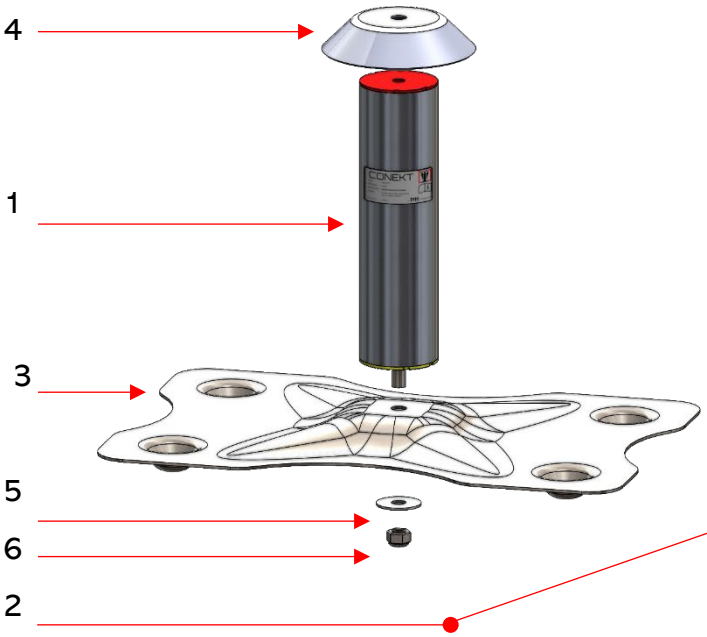
Benjamin LE GOAS

L'Echelle Européenne SAS au capital de 1 038 112.25 euros - RCS Montpellier 378 658 827 00035
APE 8229Z - N° TVA : FR84378658827
Parc DASSAULT - 447, Rue Henri FARMAN - 34430 ST JEAN DE VEDAS – France
Tél : 0033 (0)4 67 27 36 55 - Fax : 0033 (0)4 67 07 50 05
www.echelle-europeenne.com - email : info@echelle-europeenne.com

7. OVERVIEW OF COMPONENTS

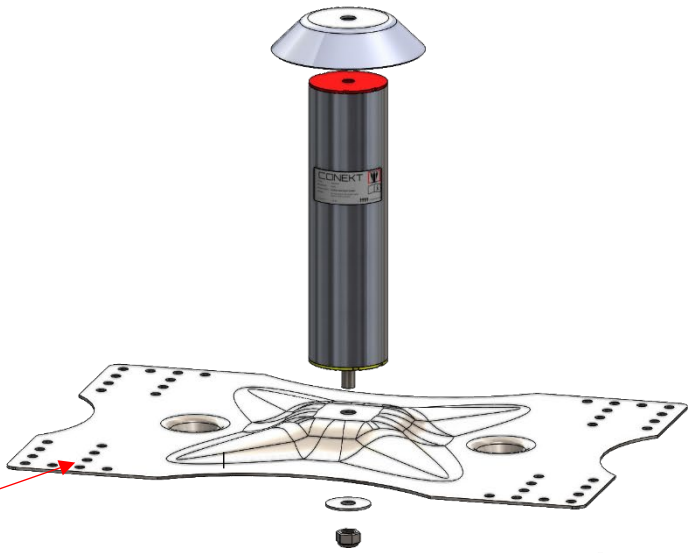
Base plate 500mm A0014091 (PB4)

+ post 250 mm A0014093 (PB250)



Base plate 360 mm A0014092 (PB2)

+ post 250 mm A0014093 (PB250)



A0014094 (B300)

Set of 2 M10 toggle bolts

Reference numbers of components

1 - A0014093 - Post 250 (PB250)

2 - A0014091 - Base plate 500 mm (PB2)

3 - A0014092 - Base plate 360 mm (PB4)

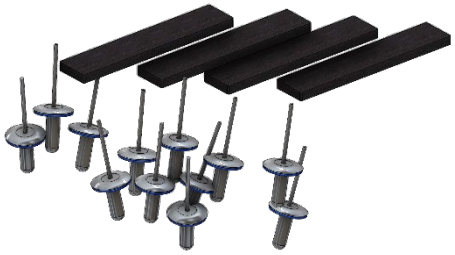
4 - A0014081- Aluminum collar flange supplied with PB250 (COLR).

5 - M12 Wide washer in stainless steel (supplied with PB250).

6 - M12 stainless steel Nylstop lock nut (supplied with PB250 - post).

A0014102 (PBa)

Set of 16 self-drilling screws

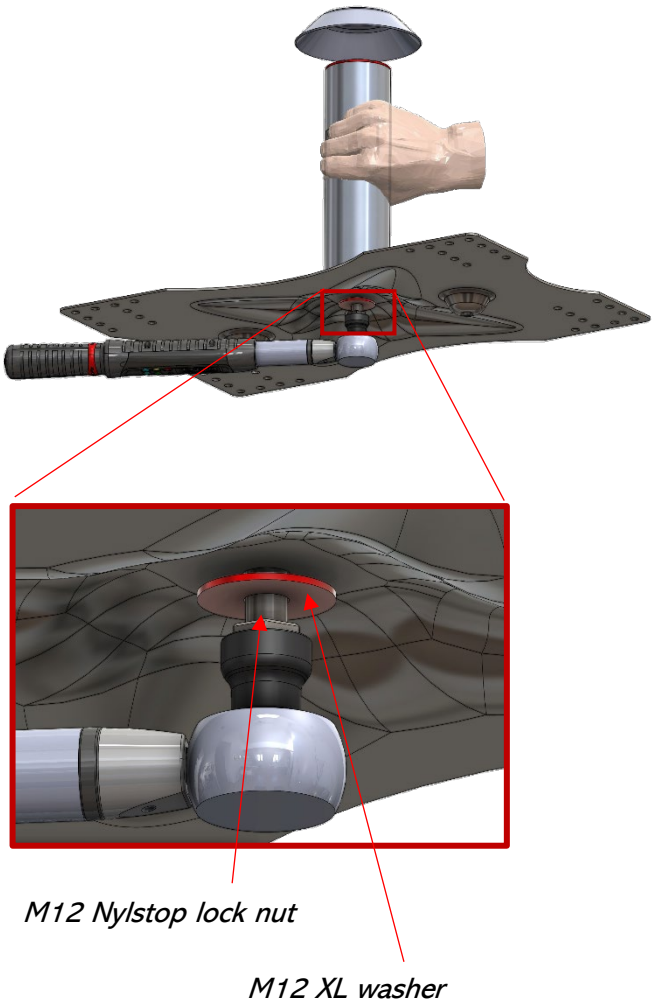


A0014103 (PBr)

Set of 12 Bulb-Tite 7.7 rivets

8. MOUNTING THE PB250 INTERFACES

a. Mounting the post on the base plate.



M12 Nylstop lock nut

M12 XL washer

When installing the post on the baseplate, position the XL washer under the plate. This washer ensures the post's rigidity, particularly when the lifeline is tensioned in the future.

Use a torque wrench or bolt gun to tighten the post to the correct torque.

Torque 50 Nm.

b. On metal decking or a sandwich panel.

The PB250 post is installed on metal decking with 16 Drillnox 5.5 self-drilling screws or 12 Bulb-Tite rivets supplied by L'Echelle Européenne. Sealant strips are supplied with the fastening kits

On sandwich panels with a cladding thickness ≥ 0.5 mm, the interface must be installed with 12 rivets.

Rivet mounting ensures greater resistance over time.

The interface consists of the following:

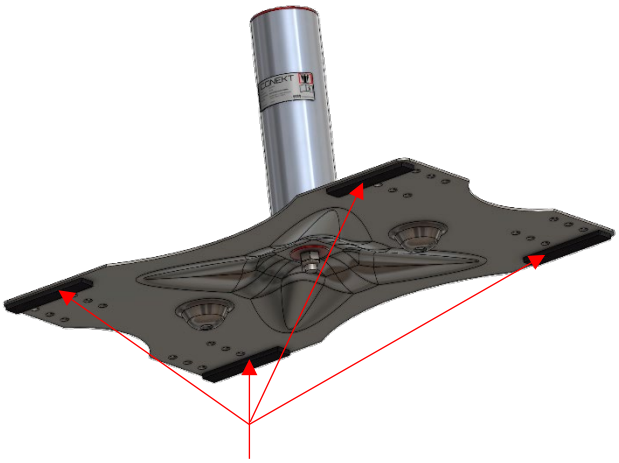
- the post with base plate for metal decking
- **12 Bulb-Tite 7.7 rivets or 16 Drillnox 6.3*25 mm self-drilling screws**
- sealant strips

To install the interface, you will need the following :

- a drill screwdriver.
- an 8 mm drill bit.
- a riveter suitable for 7.7 diameter rivets

The 500 mm baseplate (PB2) is designed to be installed on trapezoidal steel sections with wave crest spacings of 500, 250, 333 and 200 mm.

Before installation, attach the 4 sealant strips :

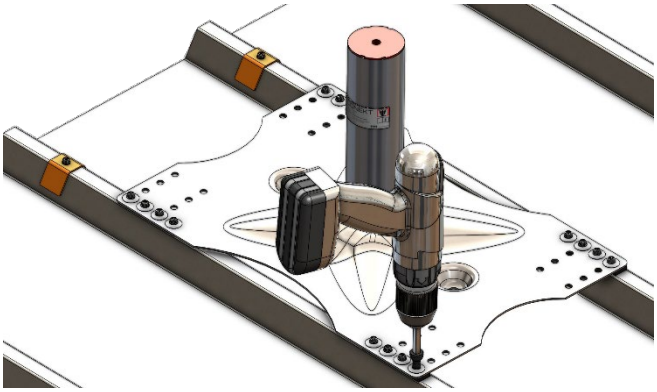


Sealant strips

Mounting with self-drilling screws.

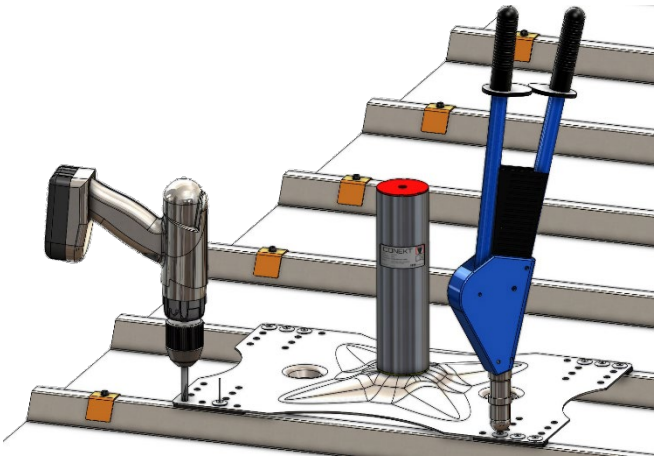
Position the interface on the wave crests and install the 16 self-drilling screws.

Be sure to use a torque limiting screwdriver or external torque limiter to avoid damaging the tapping screw thread.



Mounting with Bulb-Tite 7.7 rivets.

Drill the sheet using an 8 mm diameter drill bit, and install the 12 Bulb-Tite 7.7 rivets using a suitable manual or electric riveter.



c. MOUNTING ON METAL DECKING ROOF

When mounting on a metal decking roof, several parameters must be taken into consideration:

- If the panel roofing is perforated or solid. (Installation with 500 mm BASE PLATE or 360 mm BASE PLATE)
- Insulation thickness (important for choosing the length of the toggle bolts, as standard 30 cm toggles are too short when insulation thickness is over 20 cm.)
- The waterproofing substrate can also be in OSB (Oriented Strand Board) or chipboard.

On non-perforated insulated roofing panels.

This manual covers the installation of PB250 + PB2 or PB250 + PB4 (tilting posts with 2 or 4 toggles) on flexible load-bearing roofing elements with waterproofing substrate, without intervention from underneath.

The waterproofing membrane must be reconstructed where the post passes through, in accordance with standard industry practices (DTU series 40-3 and DTU series 43).

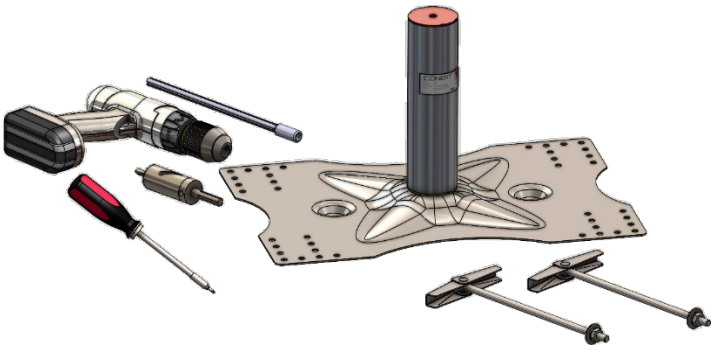
A watertight connection must be made with an **elevation in the height of the waterproof flashing to 150 mm and a peripheral overlap of the baseplate of 120 mm.**

Fastening systems with 2 toggles (500 mm plate) are designed for:

- Trapezoidal steel decking ≥ 0.63 mm, non-perforated.

The 4 toggle systems (360 mm plate) are designed for:

- **Trapezoidal steel decking ≥ 0.63mm, perforated.**
- **OSB wood panels, thickness ≥ 18 mm.**
- **Chipboard panels, thickness ≥ 18 mm**



These CONEKT interfaces are installed using 2 or 4 "butterfly" anchor bolts. These toggles are sold in lengths

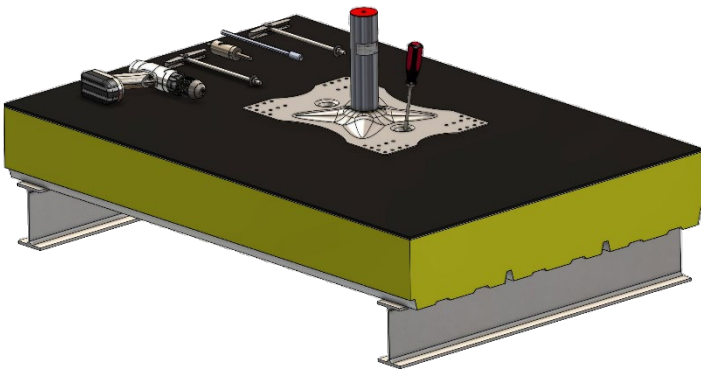
of 300 and 500 mm, in zinc-plated steel or 304 grade stainless steel.

The installation instructions cover the mounting of these systems on steel roof decking with insulaton and a bituminous membrane. For other types of waterproofing, such as PVC membranes, please follow the same installation steps.

The following tools are required for mounting the base plate:

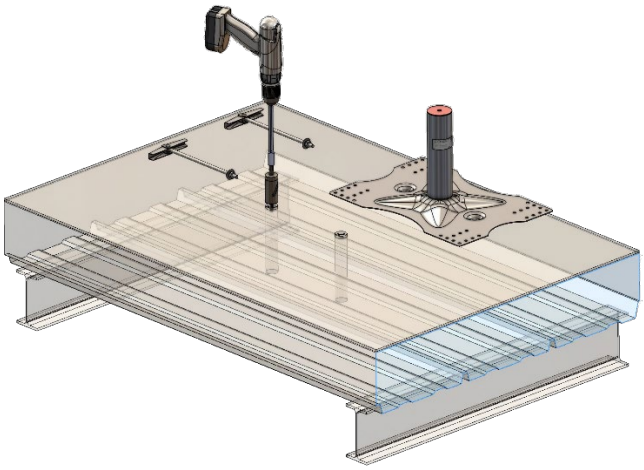
- a drill screwdriver.
- A 35 mm diameter **hole saw with an extension.**
- A 17 mm pipe wrench or a 17 mm socket with screwdriver.
- The materials required for the waterproof seal.
- A torque wrench.

1-After positioning the posts on the roof, use a screwdriver to locate the area of the metal decking area located between the waves. Locate the 2 or 4 fasteners. **This is because it is more difficult to drill with the hole saw on the waves:**



Using a hole saw and, if necessary, an extender, drill 2 or 4 holes with a diameter of millimetres.

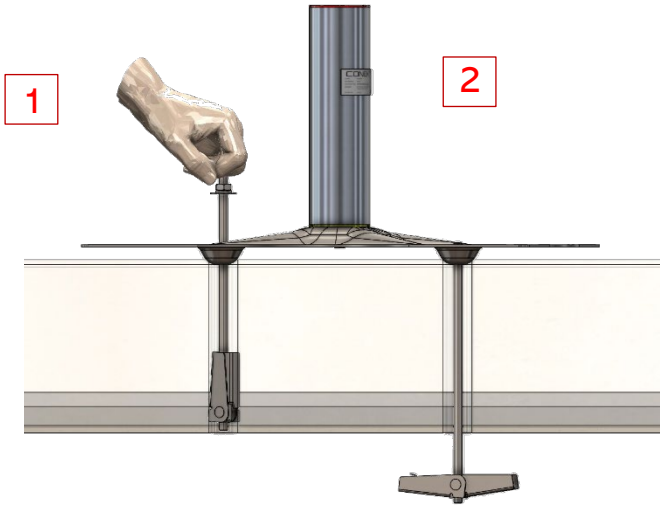
Remember that the post will be installed directly on the waterproofing membrane.



-The installation of the 2 or 4 screws is carried out as described below (the toggle bolts can be positioned on the plate before they are screwed in to avoid dropping them during mounting):

Insert the toggle bolts into the waterproofing complex.

During mounting, the spring-loaded wings of the butterfly anchors will automatically open behind the substrate without the intervention of the installer.

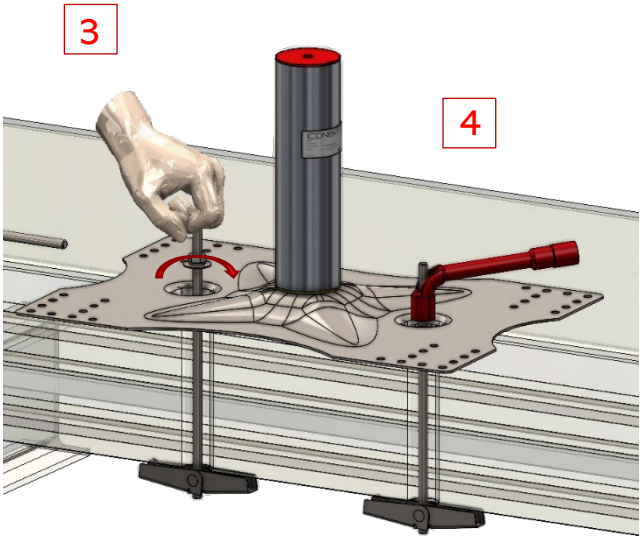


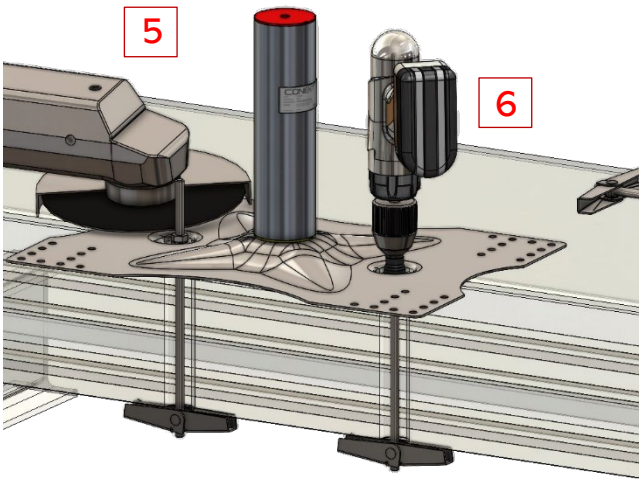
1- Fasten the toggle bolt into the hole.

2- Make sure that the toggle is securely anchored by tugging on the shaft several times.

3- Hold the shaft upright with one hand to lock the toggle and tighten the lock nut with the other hand.

4- Tighten the base plate with a pipe wrench.





5- Cut the M10 threaded rod two threads from the lock nut.

6- Tighten to torque: 15Nm using a bolt gun and 17 mm socket.

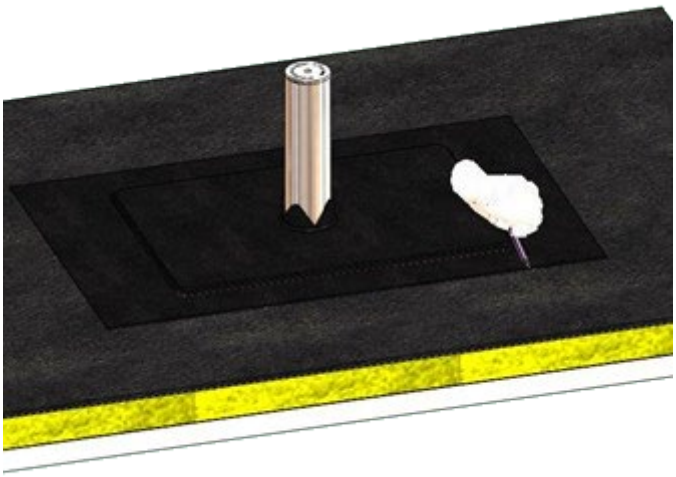
7- Restoring the waterproofing membrane:

Cut two pieces of waterproofing membrane larger than 770 mm by 600 mm and 220 mm by 150 mm. Cut a cross in the middle of the 770 x 600 bitumen sheet to allow the steel post to slide through. Cut-outs can be made in advance.

Apply adhesive bitumen varnish to the entire base plate and to the 150 mm strip of flashing material.

Heat if necessary to accelerate the setting of the varnish:

Position the 750 x 600 mm waterproofing sheet on the base plate, marking the circumference with chalk or a trowel:



Remove the bitumen sheet.

Then heat the perimeter of the base plate to recover the chips that have flaked off the bitumen membrane.

Now weld the bitumen sheet to the roof floor, heating the membrane and the prime substrate alternately. We recommend going back over the entire length of the joints with a heated trowel, both on the post and along the periphery of the base plate.

Then, at the base of the 70 mm-diameter post, add the 150 mm x 220 mm membrane sheet, to comply with the DTU (Unified Technical Document - French Building Regulations), and achieve a 150 mm watertight seal.

Once the waterproofing is complete, you can replace the collared flange and anchor point or lifeline component.

d. Other waterproofing supports

For other waterproofing substrates, such as OSB wood panels (thickness≥18 mm), chipboard (thickness ≥18 mm), an interface with 4 toggle screws is required. The installation steps are similar to those described above:

9. Documentation to be provided after installation

For the user, the installation documentation provides evidence that the installation has been carried out properly. Moreover, it is the essential basis for future examination of the anchoring device, given that in many cases the fixing of the anchor devices is not visible or accessible.

After installation, copies of the installation documentation should be handed over to the user. This documentation should be kept in the building for the purpose of subsequent examinations of the anchoring device.

The installation documentation should contain at least the following information:

– address and location of the installation;

– name and address of the installation company;

– name of the person in charge of the installation;

– product identification (manufacturer of the anchor device, type, model/article);

– fastening device (manufacturer, product, permissible tensile and transverse forces);

– the schematic installation plan, for example of the roof, and relevant user information, such as where the anchor points are located (e.g. relevant in case of snow).

This schematic plan should be affixed to the building in order to be visible or available for everyone (e.g. at the roof access point). (See Figure A.1).

Declarations given by the installer in charge should be signed by the installer and should certify at least that the anchorage device:

– was installed in accordance with the manufacturer's installation instructions;

– was carried out according to the plan;

– was fixed to the specified substrate;

– was fixed as specified (e.g. number of bolts, correct materials, correct position/location);

– was commissioned in accordance with the manufacturer's information;

– was supplied with photographic information/documentation, especially where fasteners (e.g. bolts) and the underlying substrate are no longer visible after completing the installation. The following figure shows an example of an installation plan.

It is recommended that, where more than one anchor point is to be photographed for identification purposes, the anchor devices should be marked with numbers, and this numbering should be incorporated into the anchor device inspection records and the schematic ground plan of the installation area.

INTERFACE PB250

CONEKT

Plan schématique de l'installation

Bâtiment/Structure

Adresse :

Remarques :

N° de commande :
Type de commande :
Forme du toit :
Dispositif d'ancrage

Client

Nom :
Adresse :

Contact :

N° de téléphone :

Installateur

Nom :
Adresse :

Chef installateur :

N° de téléphone :

Dispositif d'ancrage

Fabricant :
Identification du modèle/type

Composant du bâtiment

Composant 1 : par exemple plafond en béton
Composant 2 : par exemple poteau en béton
Matériau de construction : par exemple béton armé

Épaisseur minimale : par exemple : 250 mm
Épaisseur minimale : par exemple : 500 mm
Qualité: par exemple : C25/30

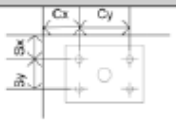
Fixations/Goujons

Données relatives aux fixations

Données non requises si fixation traversante

Situation réelle :

Diamètre du trou foré : _____ mm
Profondeur du trou foré : _____ mm
Couple : _____ Nm



Distance de bord Cx : _____ Cy: _____
Espacement axial Sx : _____ Sy: _____

Type:
Matériel :
Distance min. du bord (c) :
Espacement axial min. (s) :
Épaisseur min. du composant :
Résistance à la traction admissible
Force de rupture admissible:

Remarques :

Méthode de forage :
☐ Marteau
☐ Rotatif
☐ Clé dynamométrique

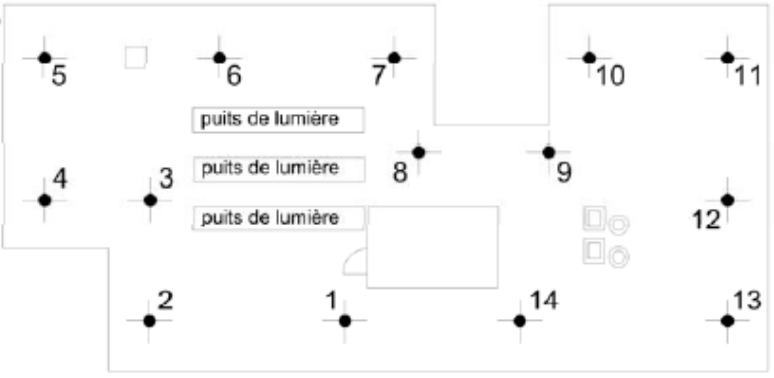
Dispositif d'essai :
☐ Nettoyage du trou foré
☐ Dispositif d'essai des fixations

Choc ☐ oui ☐ non
Système ☐ Humide ☐ Sec
☐ oui ☐ non

LISTE DE CONTRÔLE :

- ☐ Substrat sauf exception (aucun doute sur la capacité)
- ☐ Installation conforme aux instructions du fabricant
- ☐ Fixations recommandées utilisées
- ☐ Toutes les fixations photographiées avec numéro d'identification
- ☐ Fixations visibles
- ☐ Plan d'installation apposé sur le site →
- ☐ Immobilisation des vis par technique de fixation traversante
- ☐ Informations complémentaires

Plan au sol du toit



Force d'arrachement (kN), couple requis (Nm) ?

Point d'ancrage 1	Point d'ancrage 5	Point d'ancrage 9	Point d'ancrage 13
Point d'ancrage 2	Point d'ancrage 6	Point d'ancrage 10	
Point d'ancrage 3	Point d'ancrage 7	Point d'ancrage 11	
Point d'ancrage 4	Point d'ancrage 8	Point d'ancrage 12	

Fixations supplémentaires :

Remarques du chef installateur :

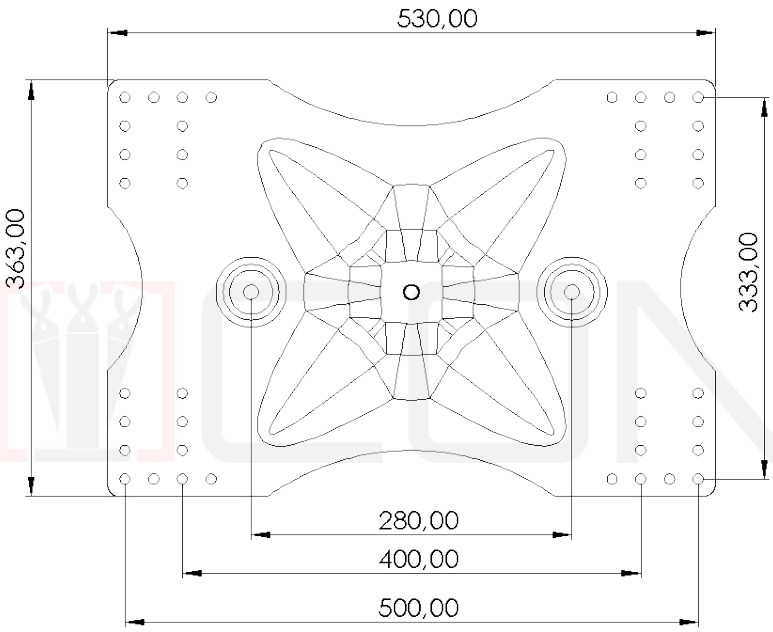
Date : **Signature:**

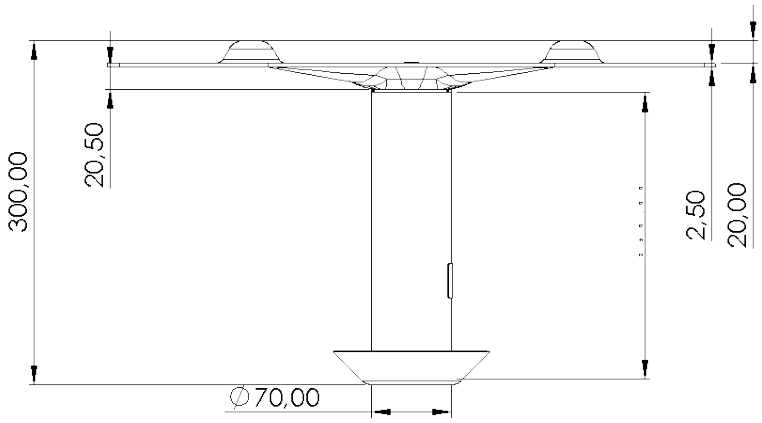
INTERFACE PB250

10. PRODUCT DATA SHEETS

Base plate 4 toggle bolts A0014091 (PB2)

+ post 250 A0014093 (PB250)





Description: The 250 post and corresponding 500 mm base plate comply with the requirements of the NF EN 795 standard.

This interface of lifelines and anchor points can be adapted to most profiled metal roofs, for slopes complying with DTU 40.35.

The metal decking must be at least 63/100° thick and have a trapezoidal profile. (For other types, please contact us for more information).

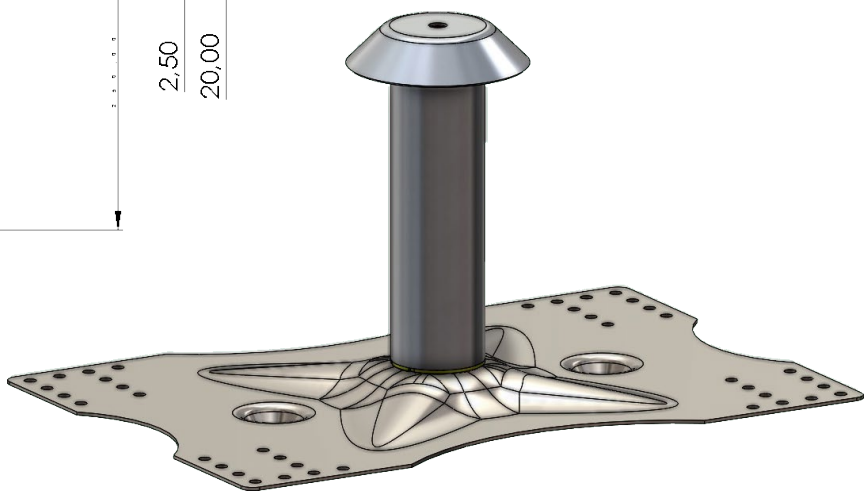
This product is standardized for wave widths of 500 mm, 400 mm, 333 mm, 250 mm and 200 mm.

As stipulated in the installation instructions, when the lifeline is mounted on this type of interface, it must meet special design and installation requirements, as the forces exerted on the interfaces must not exceed 950 daN. This means, in particular, that 0<angles<60° and that when there is an angle, the lifeline must have an absorber at each end.

*This interface is installed with the rivet kit ref. no. A0014103 (PBr) consisting of 12 Bulb-Tite 7.7 rivets, or the PBa self-drilling screw kit including 16 Drillnox 5.5*25 mm self-drilling screws for metal roofs or sandwich panels.*

This post is installed with a set of 2 toggle screws on metal decking (except for perforated roofing). There are 2 standard toggle lengths (300 mm, reference no. B300 and 500 mm, reference no. B500).

The PB4 + PB250 with 4 toggles must be used on other waterproofing substrates (perforated panels, chipboard over 18 mm thick and OSB over 18 mm thick).

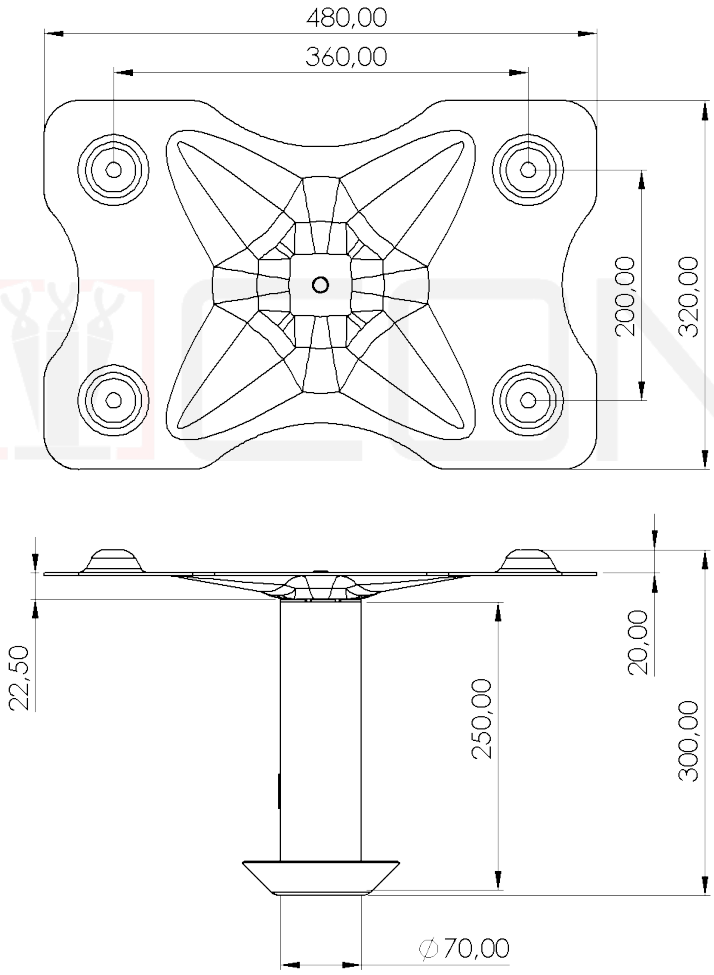


PB2 base plate composition:	S235 STEEL + Hot-dip galvanizing
PB250 composition of post:	STEEL S235 + Hot-dip galvanizing aluminum Post and collar flange.
Resistance on metal decking 0.63mm thick:	With 12 PBr rivets: >1800 daN With 16 self-drilling screws PBa: >1800 daN
Resistance on sealed metal decking, thickness > 0.5mm:	With 2 toggle bolts PBa: > 1200 daN
Approved standards:	EN 795:2012 and TS16415 :2013 type C
Weight:	4 kg

INTERFACE PB250

Base plate 4 toggle bolts *A0014092 (PB4)*

+ post 250 A0014093 (PB250)



Description: The PB250 + PB4 tilting post meets the requirements of EN 795 Class A and C.

This lifeline interface is specifically designed to be installed on the following substrates:

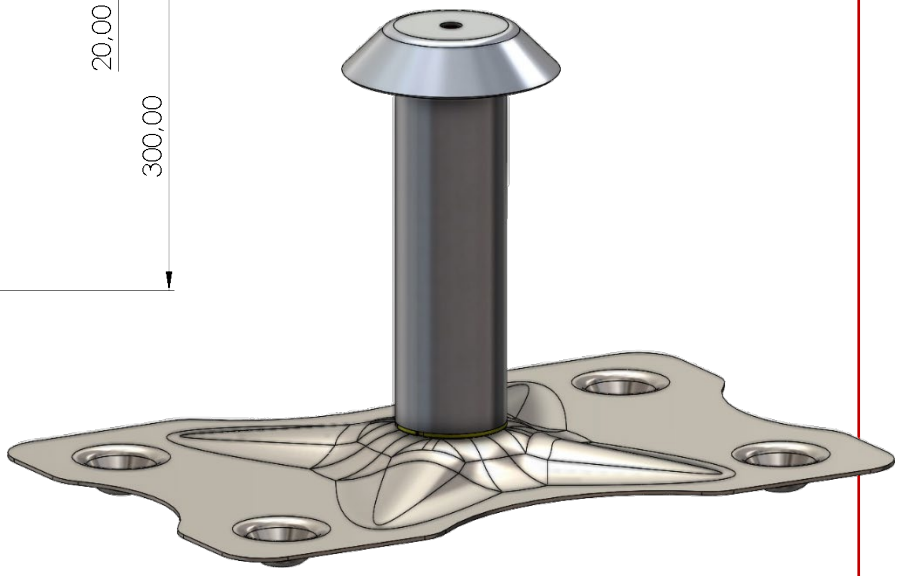
- Trapezoidal perforated steel roof profiles with a minimum thickness of 63/100.

- Chipboard panels thicker than 18 mm.

- OSB-type wood panels thicker than 18 mm

As stipulated in the installation instructions, when the lifeline is mounted on this type of interface, it must meet special design and installation requirements, as the forces exerted on the interfaces must not exceed 950 daN. This means, in particular, that 0<angles<60° and that when there is an angle, the lifeline must have an absorber at each end.

This interface is installed with 2 sets of 2 toggle bolts on the waterproofing support. There are 2 standard toggle lengths (300 mm, reference no. B300 and 500 mm, reference no. B500).



Composition of PB4:	S235 STEEL + Hot-dip galvanizing
PB250 composition of post:	S235 STEEL + Hot-dip galvanizing Aluminum post and collar flange
Resistance on perforated metal panels 0.63 mm thick:	With 4 M10 toggle bolts: >1800 daN
Resistance on OSB 18 mm wood panel:	With 4 M10 toggle bolts: >1800 daN
Approved standards:	EN 795:2012 and TS16415 :2013 type C
Weight:	3.5 kg

INTERFACE PB250

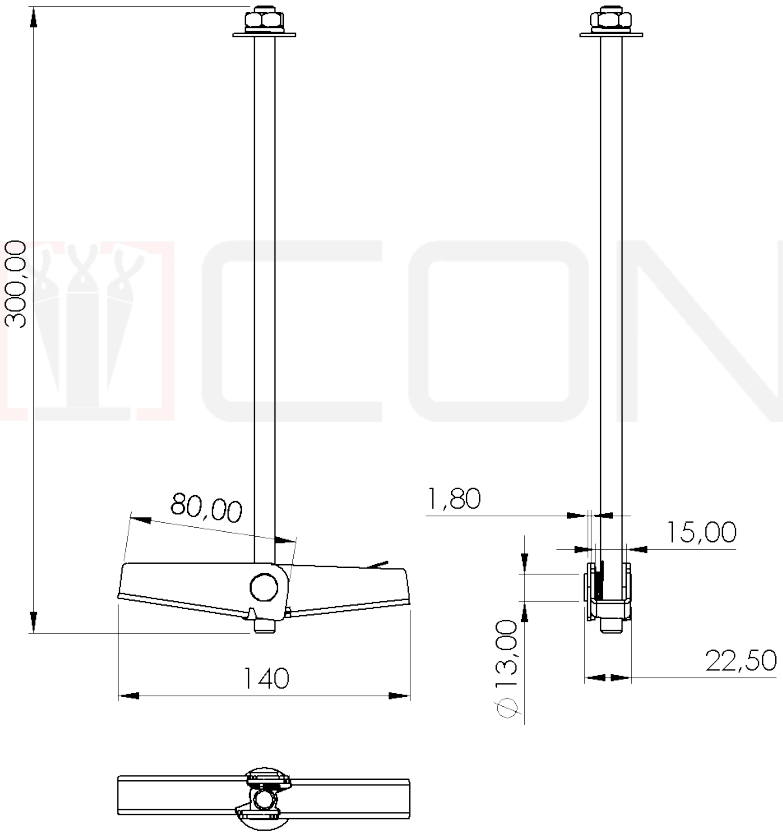
Set of 2 M10 toggle bolts

(Electrogalvanized steel or stainless steel sheets, length 300 mm or 500 mm)

Reference numbers: A0014094 (B300),

A0014095 (B500), A0014096 (B300 stainless steel),

A0014097 (B500 stainless steel).



Description: Set of 2 M10 toggles, length 300 mm or 500 mm.

Hole diameter: 35 mm.

For the following types of substrate supports:

- *Metal decking with waterproofing seal ≥ 0.63 mm.*
- *Plywood ≥ 18 mm*
- *Chipboard, OSB ≥ 18 mm*

▪ *The long threaded shaft of the toggle bolts means that they can be used on thick waterproofing complexes.*

▪ *Thanks to an integrated spring, the butterfly anchors open independently, for quick and easy installation.*

▪ *The wide toggle elements ensure even load distribution. This results in a high load capacity.*

Materials: galvanized steel or 304 grade stainless steel

Supplied with M10 nut, M10 wide washer and M10 grower washer.

Composition and finish:	S235 STEEL + electrogalvanizing 304 grade stainless steel + passivation
Weight:	0.65 kg in 300 mm length 0.85 kg in 500 mm length

INTERFACE PB250

Set of 16 self-drilling screws + EPDM strip

Reference numbers: A0014102 (PBa)

Description: Set of 16 Drillnox self-drilling screws 5.5 - 25 mm.

- Austenitic stainless steel A4 AISI (American Iron and Steel Institute) 316 L grade

- Hardened steel tip + Vulca stainless steel / EPDM washer

- Corrosion resistance > 30 cycles according to the Kesternich test

Max. drilling capacity: 18 mm

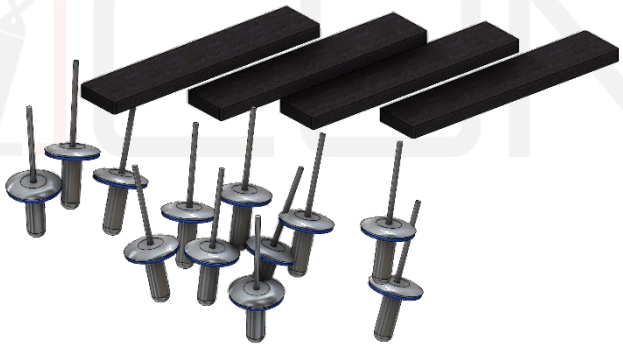
Washer: natural Vulca + stainless steel (diameter 16 mm)

Head: 6 mm

Composition and finish:	Austenitic stainless steel A4 Aisi 316 Case-hardened steel tip + Vulca washer Stainless steel / EPDM
Weight:	0.11 kg

Set of 12 Bulb-tite 7.7 rivets + EPDM tape

Reference numbers: A0014103 (PBr)



Description: Pack of 12 Bulb-Tite Rivets 7.7 lg 27 mm.

Rivet: Alu AlMg 5.

Washer: Alu AlCuMg1CA.

EPDM sealing washer

Hole diameter: 7.8 to 8.2mm.

Installation with a specifically-designed Gesipa riveting machine.

Composition and finish:	Rivet: Alu AlMg 5. Washer: Alu AlCuMg1CA.
Weight:	0.12kg