



TECHNICAL INFORMATION FILE

FLEEX LIFELINE

NOT – C02 - 02/2022

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1- PREAMBLE

The FLEEX lifeline is part of the FLEEX range of anchors and lifelines from the Echelle Canada network of work at height specialists.

The FLEEX lifeline is a fall arrest PPE of the horizontal flexible cable lifeline type with manual brackets on supports.

The FLEEX lifeline, when assembled according to these assembly instructions, complies with the following standards:

- EN-795-C - 2012
- TS 16.415 - 2013

The FLEEX lifeline is a piece of equipment allowing people to move around and to have work stations at height safely for any type of personnel or technical operator working on a building or on a machine.

Used with fall prevention PPE (Personal Protective Equipment), the FLEEX lifeline makes it possible to secure oneself to a work station at height or to move around at height.

This lifeline system is manufactured by L'Echelle Européenne in Saint Jean de Védas (France):
L'Echelle Européenne SAS
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34430 SAINT JEAN DE VEDAS, FRANCE
Telephone: +33 (0)4 67 27 36 55 - Fax: +33 (0)4 67 07 50 05
E-mail: info@echelle-europeenne.com - Web site: www.echelle-europeenne.com

The FLEEX lifeline is designed to be used by 3 users simultaneously.

FLEEX lifeline layouts can include spacings between intermediate points of up to 15 m.

The fall arrest harness is the only body-support device allowed to be used in a fall arrest system. Depending on the work situation and the configuration of the premises, the operator must be connected to the FLEEX lifeline by either a single lanyard or a double lanyard at the sternal or dorsal point of their harness.

The user must be connected to the FLEEX lifeline cable with a connector that complies with the EN362 standard.

For intermediate anchor brackets and F-A-202 and F-A-402 and EEHL745 corner brackets, it is recommended that a double lanyard complying with the EN355 standard be used.

In the event of a fall, the energy absorber will limit the applied force, the permanent deformation of the absorber means it cannot be used again.

2- USE

The instructions and conditions of use given in this technical manual must be strictly followed.

The FLEEX lifeline can be used by **3 people simultaneously**.

Before every use, the user must check the equipment, in order to ensure that it is usable and it is operating correctly.





The user must visually check:

- the overall good condition
- the proper tension in the cable
- that no component is worn or deformed
- that there is no visible trace of rust nor any sharp edges.

Any system must be immediately taken out of use:

- if there is any doubt about its safety; or
- if it has been used to arrest a fall;

The FLEEX lifeline is fitted with a fall indicator located on the energy absorber, reference F-L-101.

Absorber that has not been through a fall	Absorber that has been through a fall
 <p data-bbox="247 1361 737 1402">The marks on the absorber are aligned</p>	 <p data-bbox="842 1361 1359 1402">The marks on the absorber are deformed</p>
 <p data-bbox="427 1442 785 1471">The lifeline is suitable for use</p>	 <p data-bbox="906 1442 1391 1471">The lifeline is no longer suitable for use</p>

It should not be used again until a competent person has authorized its reuse in writing;

It is **important** to note that:

- The lifeline must only be used by a person in good health, and in full possession of their physical faculties.
- The equipment should only be used by a person trained and competent to use it safely;
- A rescue plan must be put in place to deal with any emergency that may arise during work;

Warning, no change or addition to the equipment may be made without the prior written consent of the manufacturer, and any repair must be carried out in accordance with the manufacturer's operating procedures;

It is strictly forbidden to change, modify, add or transform the components of the FLEEX line without the prior consent of L'ECHELLE EUROPEENNE.

It is important to take into account the risk that may arise when using several items where the safety function of one of the items may be affected by, or interfere with, the safety function of another item;

Warning, for any fall arrest system it is essential for safety that the layout and anchor point are always correctly positioned and that the work is performed in such a way as to minimize the risk of falls and the height of any fall.

If possible, the positioning of the FLEEX lifeline should ideally be above the operator in order to limit the required drop (fall height).

In a fall arrest system it is essential, for safety reasons, to check the required clearance under the user in the workplace before any possible use, so that, in the event of a fall, there is no collision with the ground, nor any other obstacle in the path of the fall.

Information on the risks that may affect the equipment's performance, such as extreme temperatures, dragging or wrapping lanyards or lifelines over sharp edges, the effects of chemical reagents, electrical conductivity, cutting, abrasion, climatic exposure, pendulum falls and the corresponding safety precautions that must be followed.

It is essential for the user's safety that, if the product is resold outside the country to which it is initially shipped, that the reseller provides the instructions for use, the instructions for maintenance, for periodic examinations and the instructions for repairs written in the language of the country where the product is to be used.

3- LIMITATIONS OF USE

The FLEEX lifeline is not intended to be used for suspended work.

When using the FLEEX lifeline, the following are strictly prohibited:

- Carrying out operations that involve people being suspended
- Carrying out operations involving loads being suspended from the cable

The PPE system must be connected to the lifeline by means of an EN362 connector fitted to the cable. The use of an EN 355 forked lanyard is recommended for the F-A-202, F-A-402 and EEHL745 corner brackets.

If the operator falls, the deformation of the absorber and the significant deflection of the cable act as a fall indicator.

The FLEEX lifeline is intended exclusively for the attachment of a personal fall protection system.

Since the strength of the lifeline is directly linked to the quality of the support, its compliance can only be established if the material(s) used in it is (are) free of any manufacturing defect or performance degradation as a result of its implementation or its use (aging, overload, chemical or climatic attacks, etc.).

The FLEEX line must only be used with CE marked securing equipment (harness, lanyard, etc.), used according to the manufacturer's recommendations.

The parts and accessories as well as the position and quality of the structural anchors must be strictly those described in this technical information file.

The safety line is used to secure a worker against falls, and under no circumstances may it be used as a suspension system (horizontal movement for handling equipment).

It is essential for the user's safety that, if the product is resold outside the country to which it is initially shipped, that the reseller provides the instructions for use, the instructions for maintenance, for periodic examinations and the instructions for repairs *written in the language of the country where the product is to be used.*

4- WARRANTY AND LIMITATIONS ON WARRANTY

The FLEEX lifeline is guaranteed **for 5 years.**

5- CARE AND MAINTENANCE

Lifelines designed with FLEEX system parts have an unlimited lifetime.

Only the periodic checking will lead to the discarding of certain components.

All components of the FLEEX lifeline are treated against corrosion and UV radiation.

The FLEEX lifeline components should be cleaned with soap and water. It is not necessary to use any chemicals on them. Use absolutely no other method.

Greasing the cable or the tensioning and absorbing parts is not recommended.

6- CHECKING THE SYSTEM

It is vital that regular periodic inspections of the FLEEX lifeline are carried out, as the safety of the user is strictly linked to maintaining the efficiency and strength of the equipment.

The periodic inspections must be performed at least once every twelve months by a competent person

Periodic inspections should only be performed by a competent person and in strict accordance with the manufacturer's periodic examination procedures.

The periodic verification of the FLEEX lifeline consists of ensuring the good overall condition of all the parts that make up the lifeline. The FLEEX check-sheet lists all the verification points. One special point to check: the marking of the parts must remain legible.

7- CERTIFICATE OF CONFORMITY



APAVE SUDEUROPE SAS
CENTRE D'ESSAIS ET CERTIFICATION DE FONTAINE
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ECHELLE EUROPEENNE

447 rue Henri Farman

34430 ST JEAN DE VEDAS

France

A l'attention de M. DUVINAGE

Fontaine, le 17 février 2017

Affaire suivie par : Guillaume QUINTIN
N/Réf. : FTPL1/17.02.0016
Affaire suivie par M QUINTIN Guillaume

Monsieur,

Par ce présent courrier, nous vous confirmons que l'équipement ci-dessous décrit a passé avec succès les essais des normes EN 795 :2012 et TS 16415 :2013 :

- Dossiers Apave : 16.6.0357 (EN 795) et 16.6.0358 (TS 16415)
- Type d'Equipement : Dispositif d'ancrage de type C
- Marque commerciale : ECHELLE EUROPEENNE
- Modèle : ligne de vie à passage manuel sur potelet FLEEX
- Nombre d'utilisateur autorisé à la fois : 1 personne conformément à la EN795:2012 et 3 personnes conformément à la TS16415 :2013
- Date de fin des essais (hors corrosion): 16 février 2017

Principales caractéristiques de l'équipement : dispositif d'ancrage de type C en câble inox 7x19 de diamètre 8mm pouvant être installé en monoportée ou en multiportées, portée minimale 3m et de portée maximale 15m, direction de charge sur potelet FLEEX de hauteur 200 mm.

Rappels importants :

1. Les dispositifs d'ancrage de type C ne sont pas des EPI (JOUE du 26 novembre 2015)
2. Le présent courrier ne constitue pas une attestation de conformité aux référentiels indiqués. La conformité à ces référentiels ne pourra être établie par le biais d'une attestation qu'une fois les essais de corrosion conformes et le dossier technique validé.

Nous restons à votre disposition pour tout renseignement complémentaire.

Nous vous prions d'agréer, Monsieur, mes sincères salutations.

Le charge d'Affaires

Guillaume QUINTIN

APAVE SUDEUROPE SAS Siège social : 8 rue J.J. Vernazza - Z.A.C. Saumaty-Séon - CS 60193 - 13322 MARSEILLE CEDEX 16
Tél. : 04 96 15 22 60 - Fax : 04 96 15 22 61 - Site internet : www.apave.com
Société par Actions Simplifiée au Capital de 6 648 544 € - N° SIREN : 618 720 925

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8- COMPONENTS OF THE SYSTEM

Meaning of the marking:





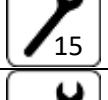


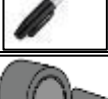

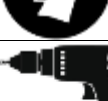



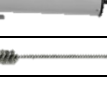

- 1- Manufacturer's name
- 2- Lifeline brand
- 3- Product reference number
- 4- Serial number
- 5- Standard number and year
- 6- Read the instructions carefully
- 7- Additional information

Reference	Component image	Reference	Component image
F-A-201 Anchoring post 200 mm		F-L-201 Cable terminal	
F-A-202 Angled anchoring post 200 mm		F-L-301 Olive tensioner	
F-A-401 Anchoring post 400 mm		F-A-402 Anchoring post 400 mm	
F-L-101 Absorber with fall indicator		EE HL 500 B Cable	
F-L-501 Lifeline seal		EESAZ090 Quick link	
F-L-401 Nameplate		F-L-302 Clevis tensioner	



<p>F-P-100 Interface plate for dry panel, sealed panel, sandwich panel or batten</p>		<p>F-P-200 Interface plate for concrete or flanging</p>	
<p>ANCREE Galvanized steel post</p>		<p>EEHL734-722 End plate for ANCREE post</p>	
<p>EEHL745 Angle pulley for ANCREE post</p>		<p>EEHL201 Straight manual intermediate bracket for ANCREE post and wall lifeline</p>	
<p>EEHL130 Manual internal angle bracket for wall lifeline</p>		<p>EEHL140 Manual external angle bracket for wall lifeline</p>	
<p>EEHL102 End anchor for wall lifeline</p>		<p>EEHL57279 Galvanized collar for ANCREE rigid post</p>	

9- INSTALLATION METHOD

Equipment needed for fitting:

Equipment	Instruction symbol	Characteristics
Electric crimping machine		
Flat wrench		24 mm
Flat wrench		19 mm
Flat wrench		17 mm
Flat wrench		15 mm
Flat wrench		13 mm
Cable cutter		
Marker		
Scotch tape		
Pair of protective gloves		EN 388 compliant
Drill		Steel: Ø 8.2 mm, Ø 9 mm, Ø 20 mm Concrete: Ø 12 mm
Riveting Pliers		
Hammer		
Blowgun		
Brush		

The stages of fitting

STAGE 1			
Stage 1 – 1	Insert the post's threaded rod into the host structure or a FLEEX interface and tighten the nut after fitting the washer.		
Stage 1 – 2	Do the same for each of the lifeline's posts. The end rings must be positioned on the same axis as the lifeline and the perpendicular intermediate rings.		
STAGE 2			
Stage 2 – 1	Install the energy absorber and a quick link on the end posts.		
Stage 2 – 2			
Stage 2 – 3			
STAGE 3			
Stage 3 – 1	Remove the pin and shaft from the terminal and install it on one of the end posts.		
Stage 3 – 2			
STAGE 4			
Stage 4 – 1	Pass the lifeline through the various posts that have been installed.		
Stage 4 – 2			
Stage 4 – 3			
<p>Follow the fitting stages with tensioner ref F-L-301</p> 		<p>Follow the fitting stages with tensioner ref F-L-302</p> 	
STAGE 5			
Stage 5.1 – 1	Open the manual tensioner by unscrewing each of the ends and then removing the pin and shaft.	Stage 5.2 – 1	Open the clevis tensioner by unscrewing each of the ends and then removing the pin and shaft.
Stage 5.1 – 2	Install the tensioner on the last end post.	Stage 5.2 – 2	Install the tensioner on the last end post.
STAGE 6			
Stage 6.1 – 1	Create a mark to cut the cable as shown in the diagram.	Stage 6.2 – 1	Create a mark to cut the cable as shown in the diagram.

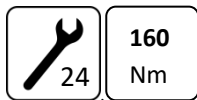
STAGE 7			
Stage 7.1 – 1	Remove the part of the tensioner used to crimp the cable.	Stage 7.2 – 1	Remove the part of the tensioner used to crimp the cable.
Stage 7.1 – 2	Remove the second part used to crimp the cable.	Stage 7.2 – 2	Place the part on the cable.
Stage 7.1 – 3	Place the second part used for crimping on the cable.	Stage 7.2 – 3	Insert the cable fully into the part used to crimp the cable following the dimensions shown on the diagram.
Stage 7.1 – 4	Position this part on the cable following the dimensions shown on the diagram.		
STAGE 8			
Stage 8.1 – 1	Screw in and tighten the two parts together	Stage 8.2 – 1	Bring in the electric crimper and crimp the cable. Follow the dimensions shown on the following diagram
Stage 8.1 – 2	Then tighten the locknut.	Stage 8.2 – 2	
Stage 8.1 – 3			
STAGE 9			
Stage 9.1 – 1	Screw in the central part of the tensioner while holding the part to be crimped with the other hand. That way you will not rotate the lifeline itself.	Stage 9.2 – 1	Screw in the central part of the tensioner while holding the part to be crimped with the other hand. That way you will not rotate the lifeline itself.
Stage 9.1 – 2	Once the cable has been tensioned, tighten the tensioner's two locknuts.	Stage 9.2 – 2	Once the cable has been tensioned, tighten the tensioner's two locknuts.
Stage 9.1 – 3		Stage 9.2 – 3	
STAGE 10			
STAGE 10	Install the nameplate with the two serflex		
STAGE 11			
STAGE 11	Install the seal		

10- ASSEMBLING THE LIFELINE

STAGE 1

Stage 1 – 1

Insert the threaded rod of the **F-L-201** or **F-L-401** post into its place and tighten the nut after putting on the washer.



Stage 1 – 2

Do the same for all the lifeline's posts.
Make sure that the end rings are positioned on the same axis (in the same direction) as the lifeline. (fig. 1)
Make sure that the intermediate rings are perpendicular (at a right angle) to the lifeline axis. (fig.2)
Always set the angle posts at 45° pointing inwards. (fig.3)

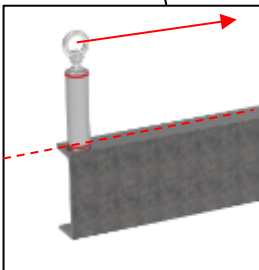
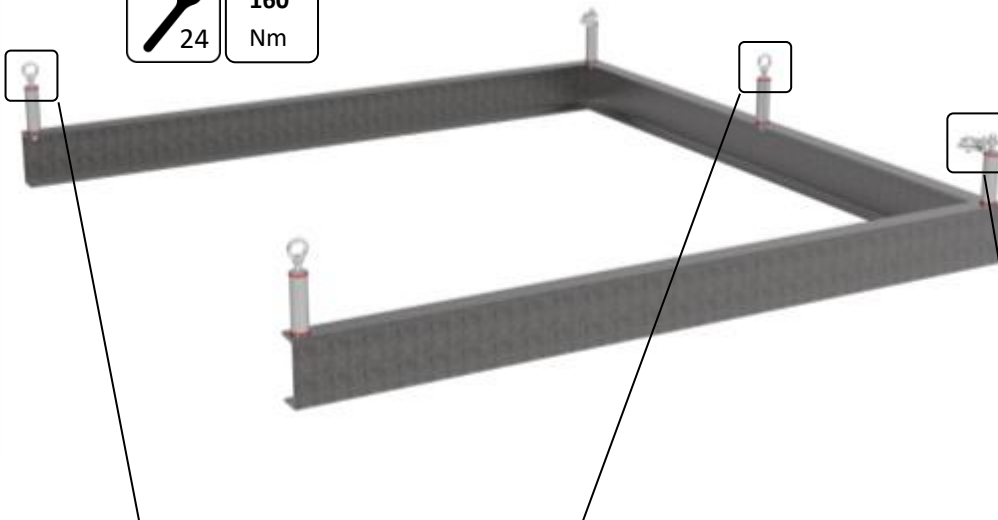


fig. 1

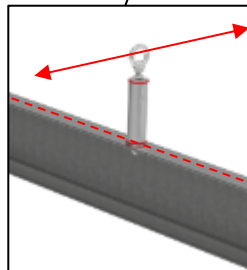


fig. 2

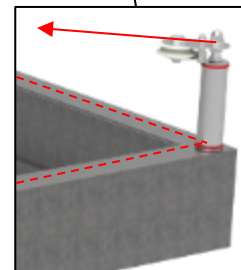
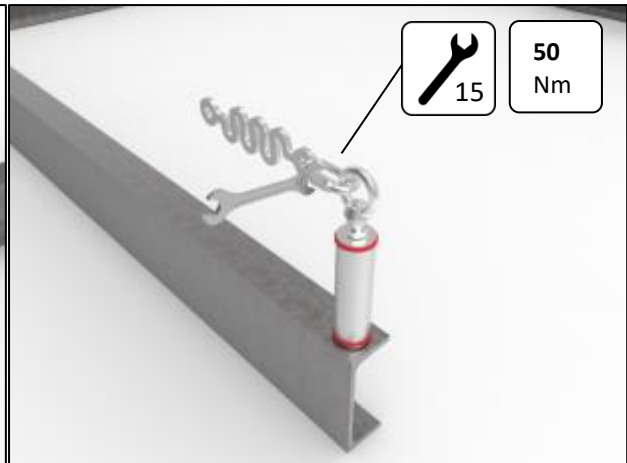
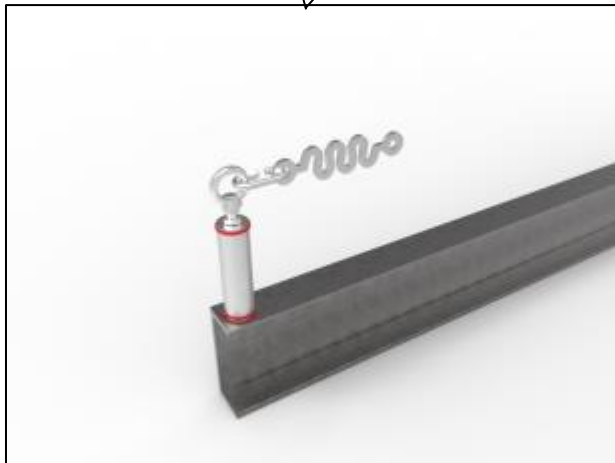
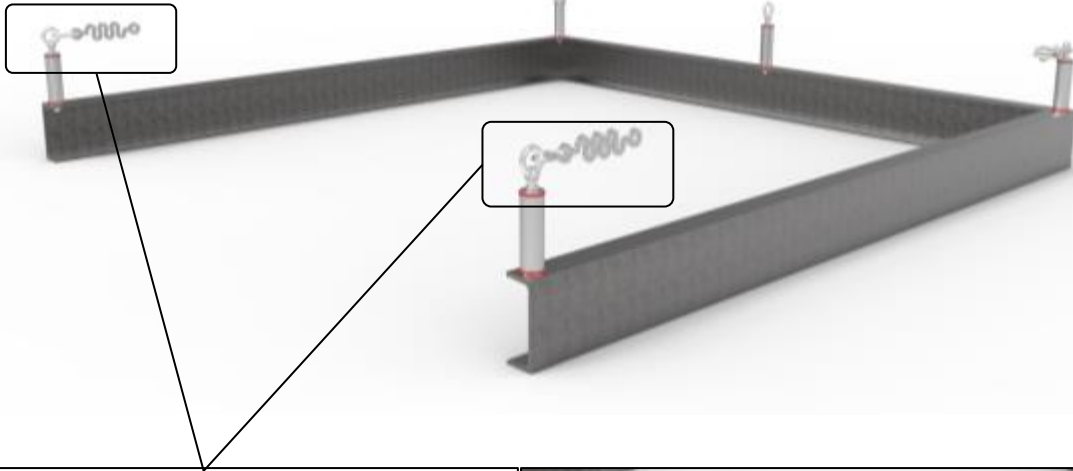


fig. 3

STAGE 2

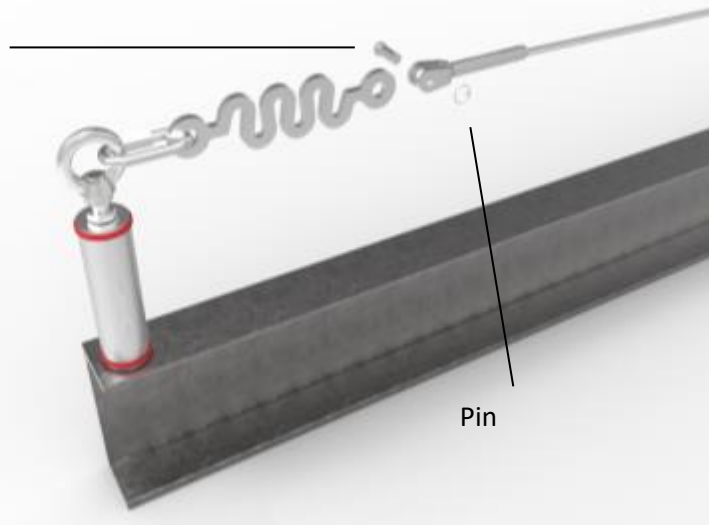
Stage 2 - 1	Install the energy absorbers ref. F-L-101 and the quick link on each end post.
Stage 2 - 2	
Stage 2 - 3	



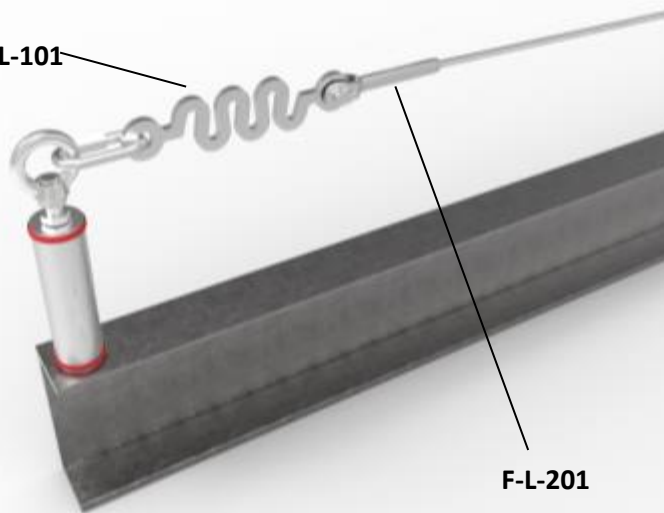
STAGE 3

Stage 3 – 1	Remove the pin and shaft from the cable terminal ref. F-L-201 and install it
Stage 3 – 2	on one of the energy absorbers.

Terminal shaft



F-L-101



F-L-201



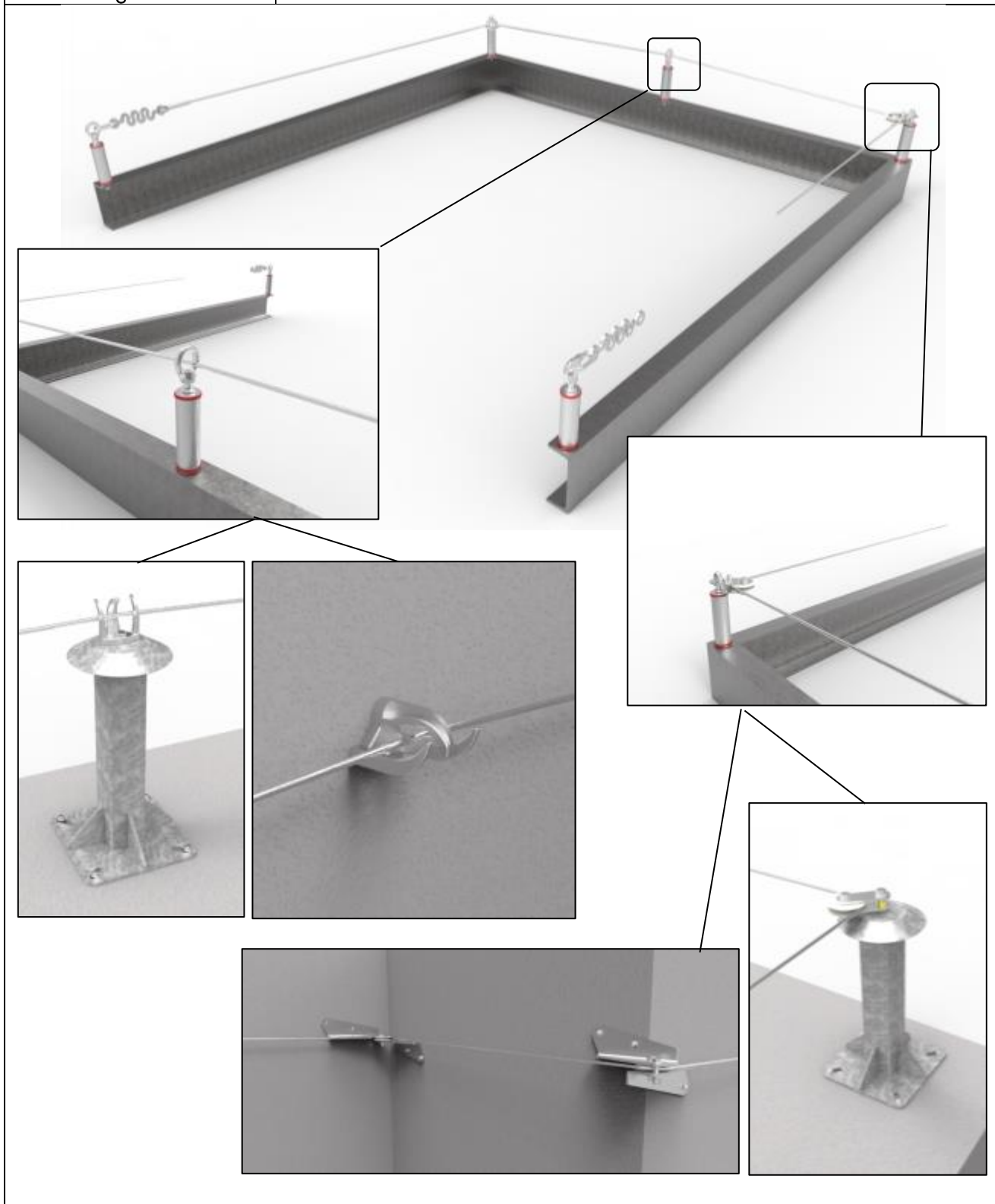
Installation of an energy absorber (F-L-101) and a terminal (F-L-201) on an ANCREE post



Installation of an energy absorber (F-L-101) and a terminal (F-L-201) on an end anchor for a wall lifeline

STAGE 4

Stage 4 – 1	Pass the lifeline cable ref EEHL500B through the various intermediate points that have been installed.
Stage 4 – 2	
Stage 4 – 3	



STAGE 5

IMPORTANT

Follow the fitting stages with
tensioner ref **F-L-301**

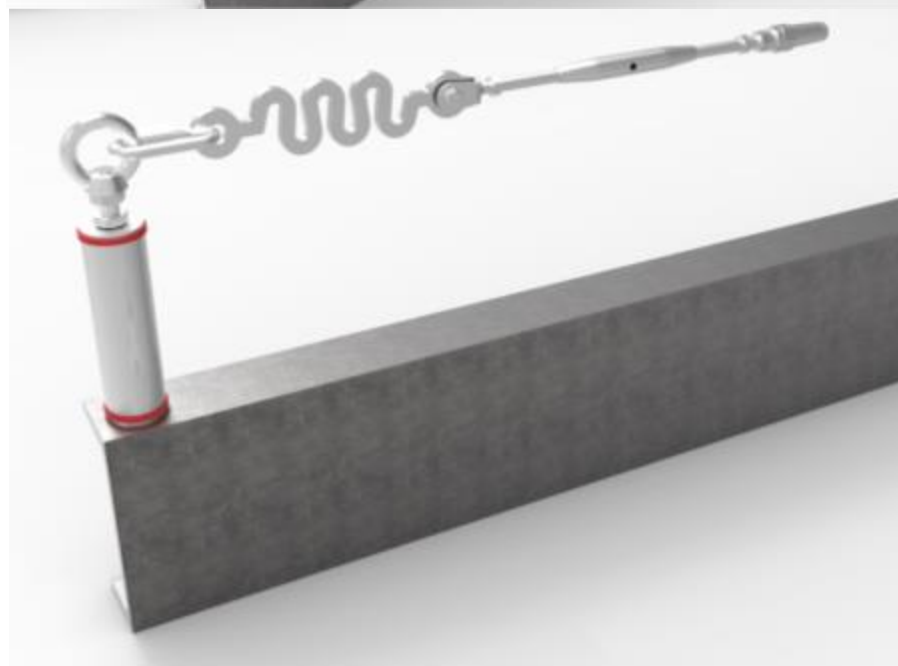
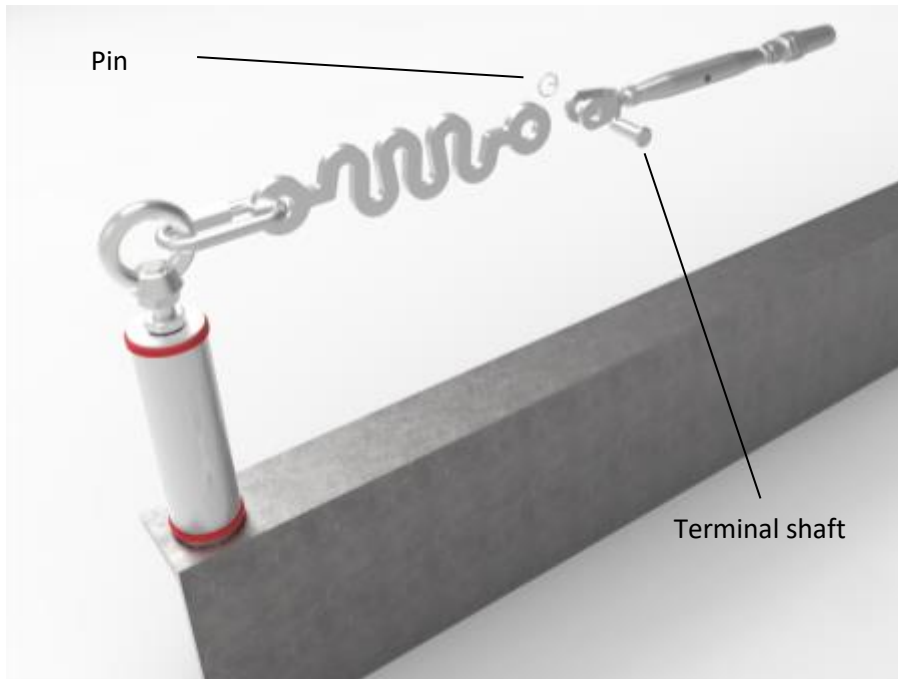


Stage 5.1 – 1

Open the manual tensioner **Ref. F-L-301** by unscrewing each of the ends and then removing the pin and shaft.

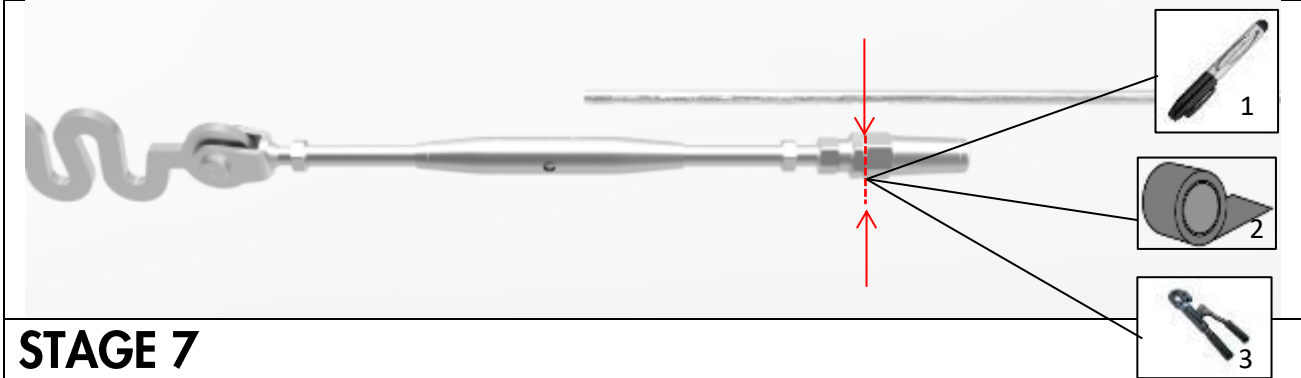
Stage 5.1 – 2

Install the tensioner onto the end post's absorber.



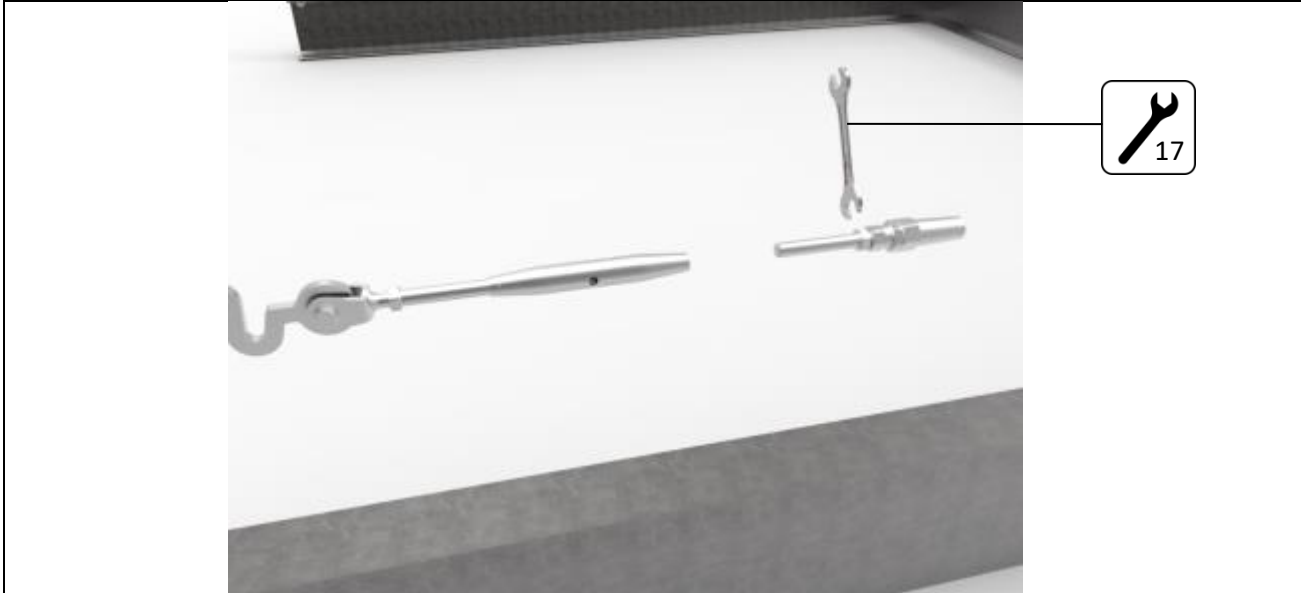
STAGE 6

Stage 6.1 – 1	Using the marker, make a mark on the cable as shown in the diagram. (1)
Stage 6.1 – 2	
Stage 6.1 – 3	

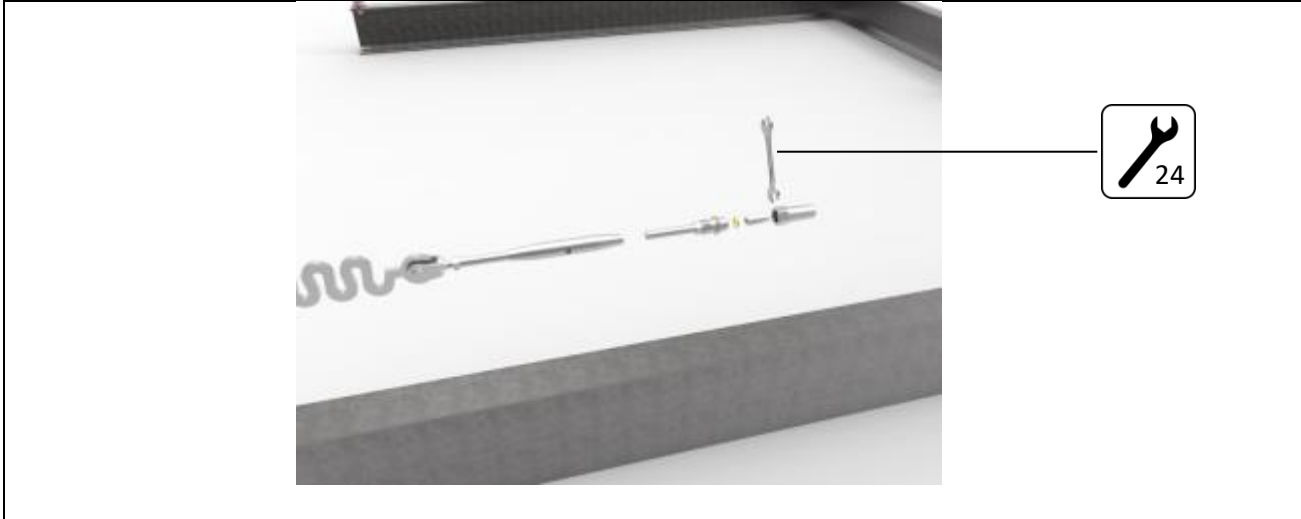


STAGE 7

Stage 7.1 – 1	Remove the part of the tensioner used to crimp the cable.
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Stage 7.1 – 2	Unscrew the conical base used to crimp the cable.
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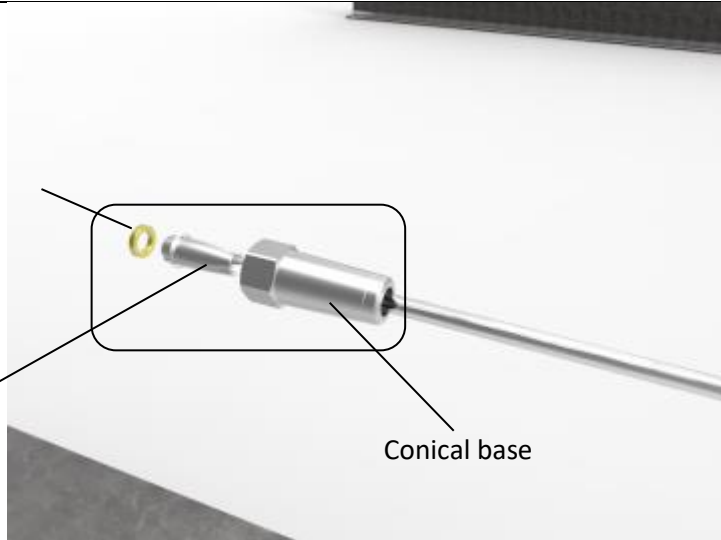


Stage 7.1 – 3	Place the assembly on the cable as shown in the diagram.
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Compression washer

Conical clamp

Conical base



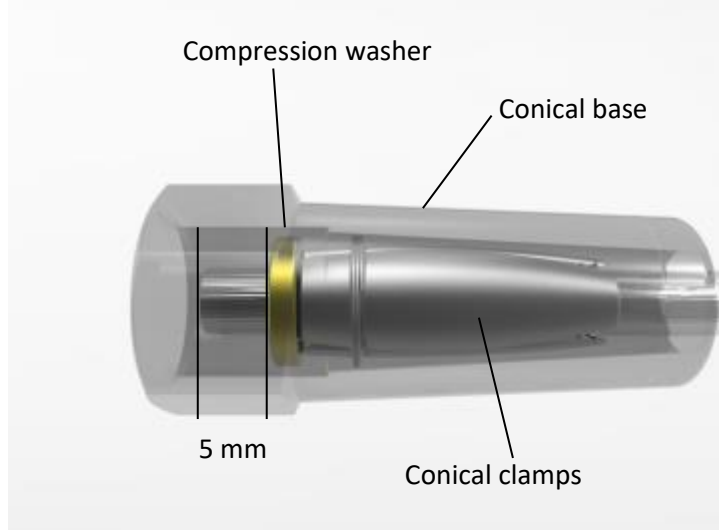
Stage 7.1 – 4 | Position the assembly on the cable following the dimensions shown on the diagram.

Compression washer

Conical base

5 mm

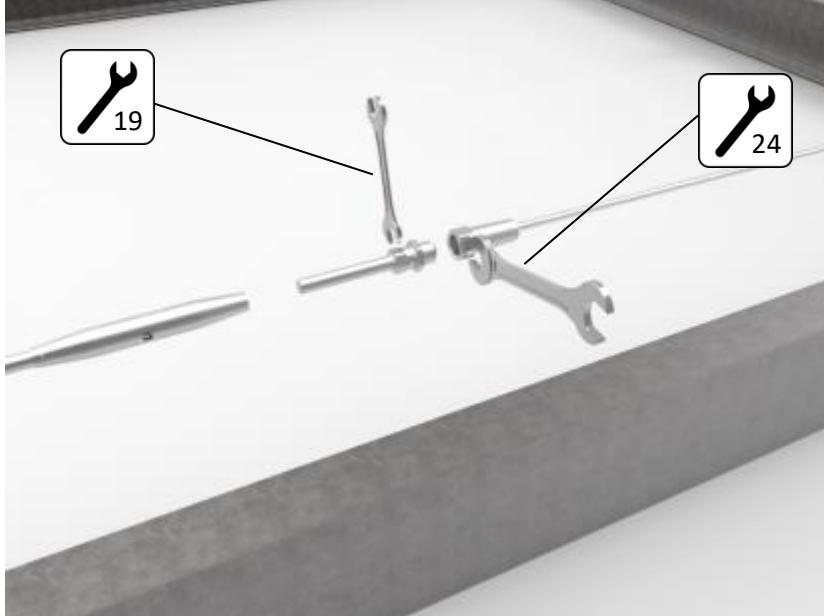
Conical clamps



STAGE 8

Stage 8.1 – 1

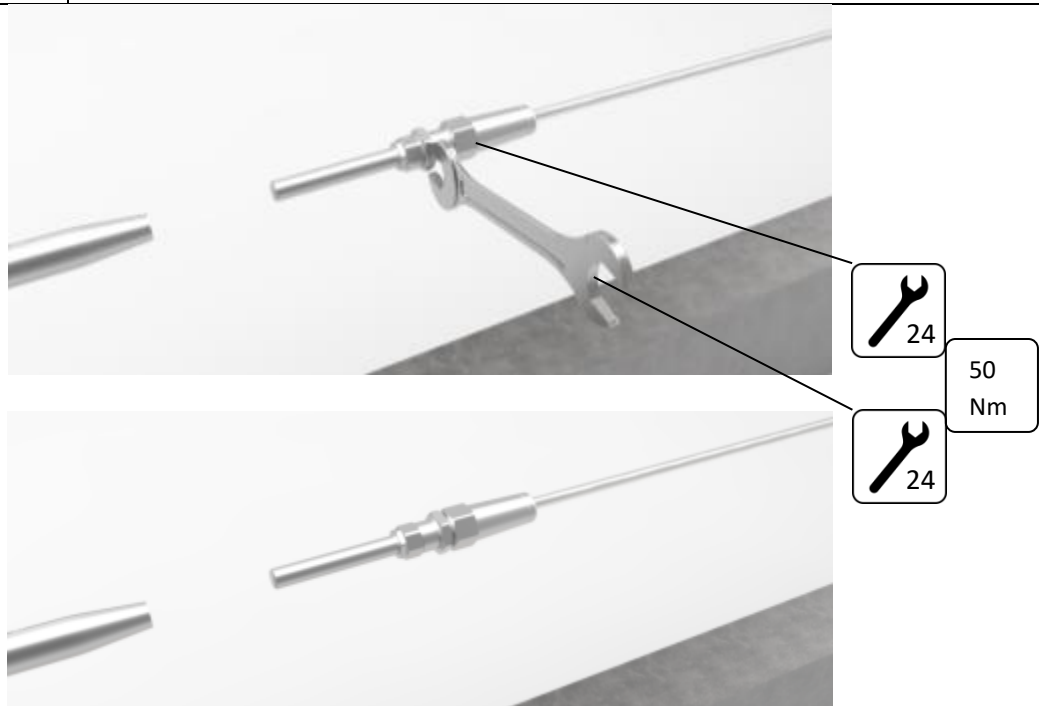
Screw in and tighten the two parts together



Stage 8.1 – 2

Then tighten the locknut.

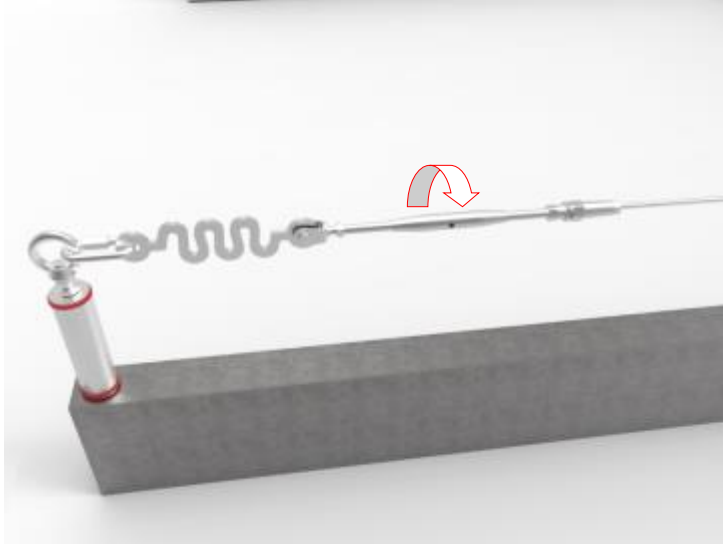
Stage 8.1 – 3



STAGE 9

Stage 9.1 – 1

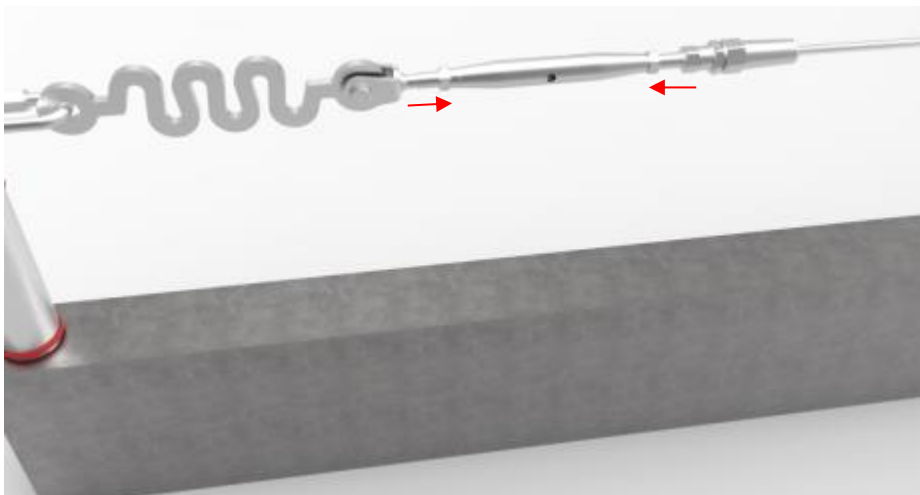
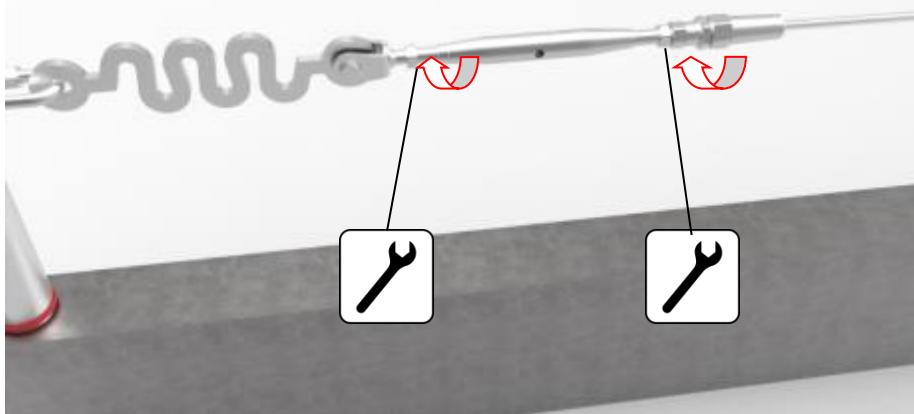
Screw in the central part of the tensioner while holding the part to be crimped with the other hand.
That way you will not rotate the lifeline itself.



Stage 9.1 – 2

Stage 9.1 – 3

Once the cable has been tensioned, tighten the tensioner's two locknuts.



STAGE 5

IMPORTANT

Follow the fitting stages with
tensioner ref **F-L-302**

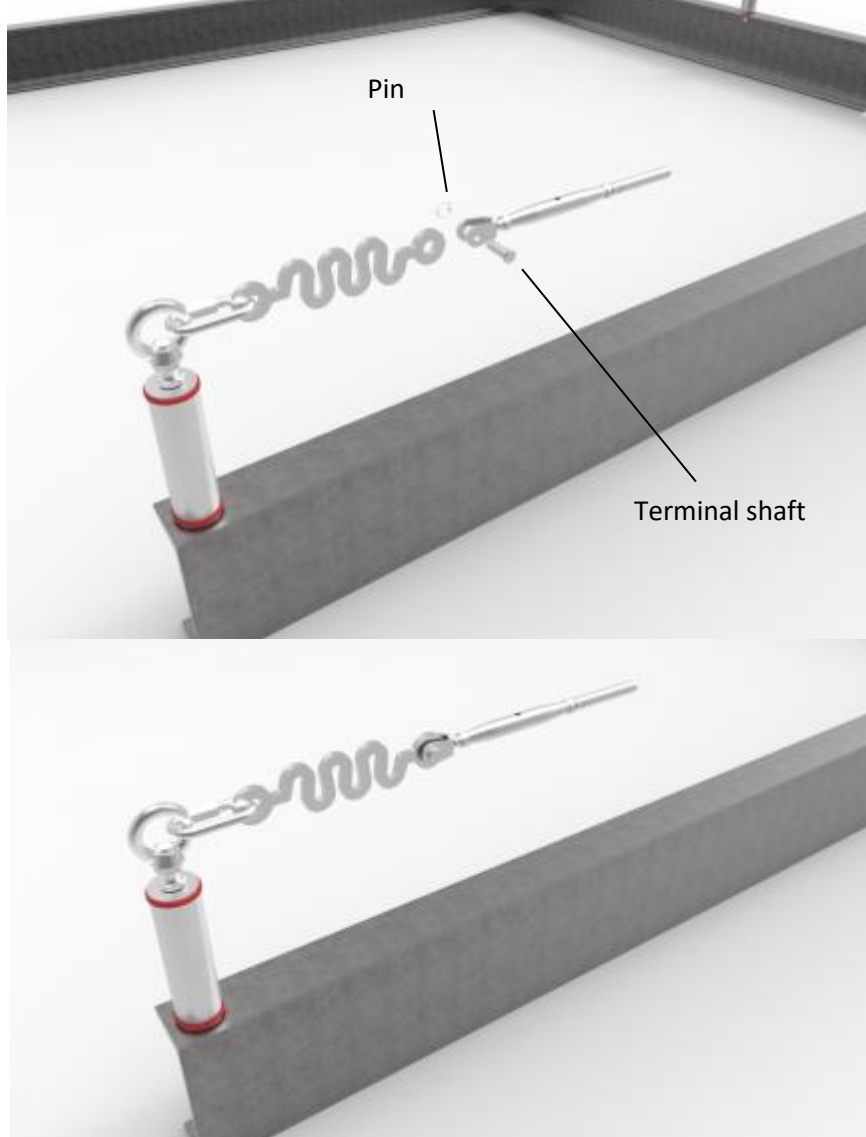


Stage 5.2 – 1

Open the clevis tensioner Ref. **F-L-302** by unscrewing each of the ends and then removing the tensioner's pin and shaft.

Stage 5.2 – 2

Install the tensioner onto the end post's absorber.



STAGE 6

Stage 6.2-1

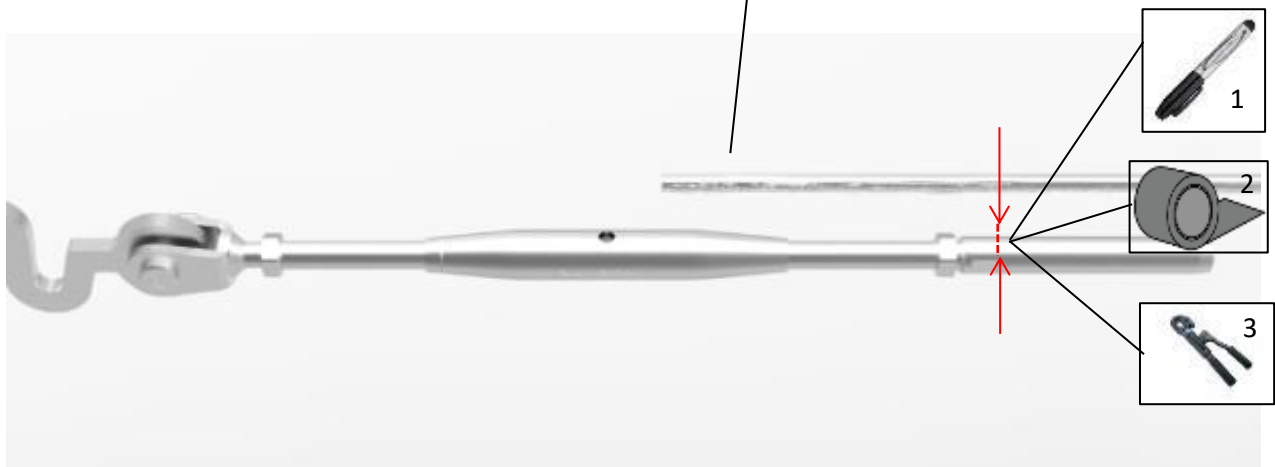
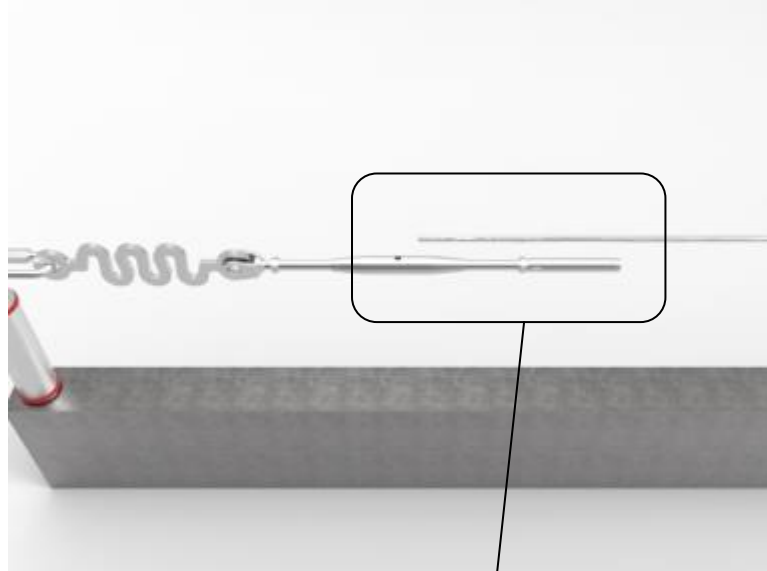
Using the marker, make a mark on the cable as shown in the diagram. (1)

Stage 6.2-2

Put a piece of tape on the mark (2).

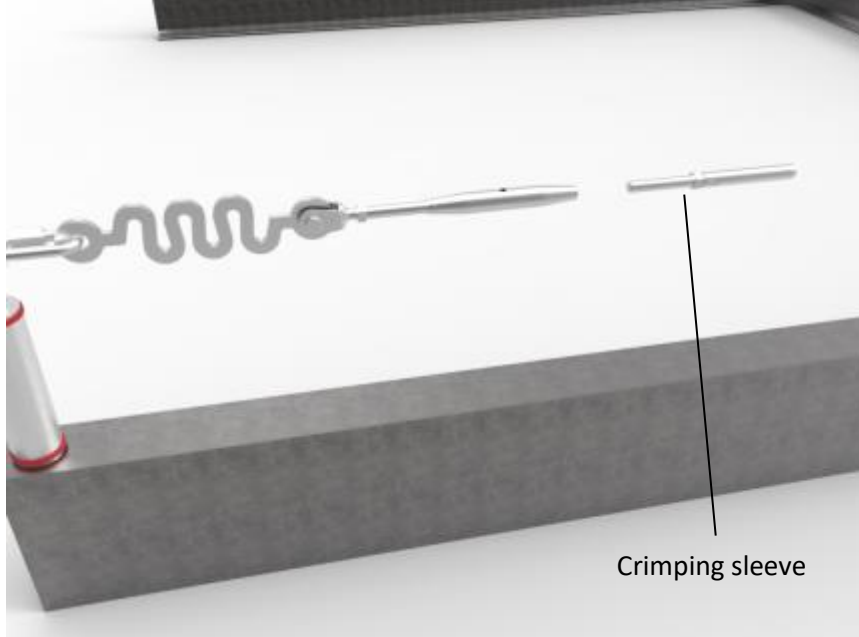
Stage 6.2-3

Using the cable cutters, cut the cable. (3)

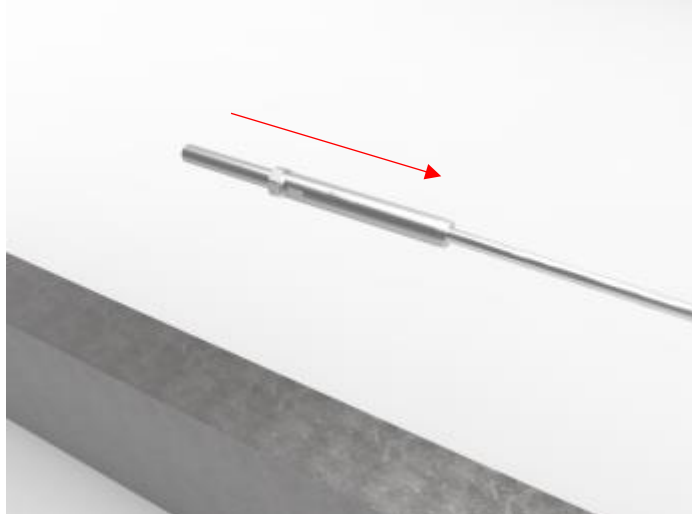


STAGE 7

Stage 7.2 – 1 | Remove the crimping sleeve from the tensioner used to crimp the cable.



Stage 7.2 – 2 | Place the sleeve on the cable



Stage 7.2 – 3 | Push the sleeve onto the cable following the dimensions shown on the diagram.



STAGE 8

Stage 8.2 – 1

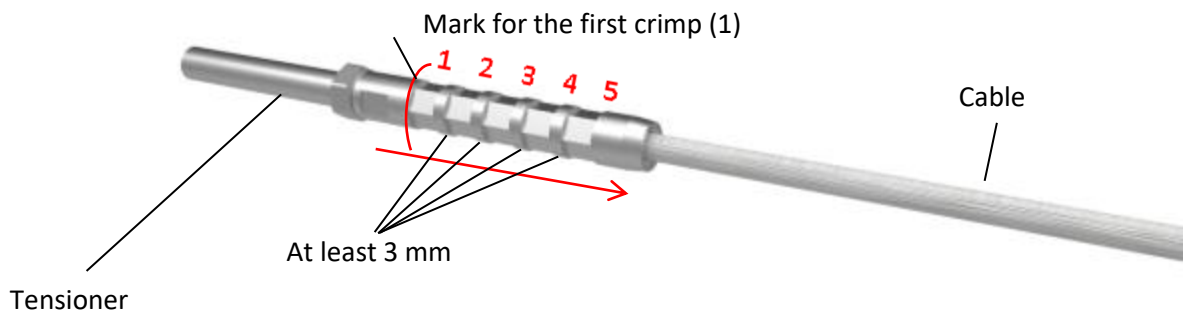
Position the electric crimper on the sleeve to crimp the sleeve.

Stage 8.2 – 2

Follow the dimensions shown on the following diagram.



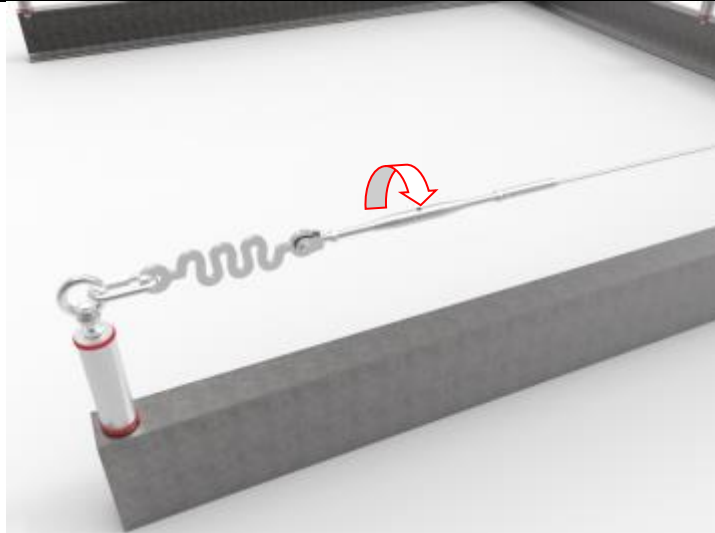
Using the crimper, crimp 5 times at least 3 mm apart.
The first crimp must be made using the mark on the sleeve (1).
Make sure to follow the order of the crimps as shown on the diagram.



STAGE 9

Stage 9.2 – 1

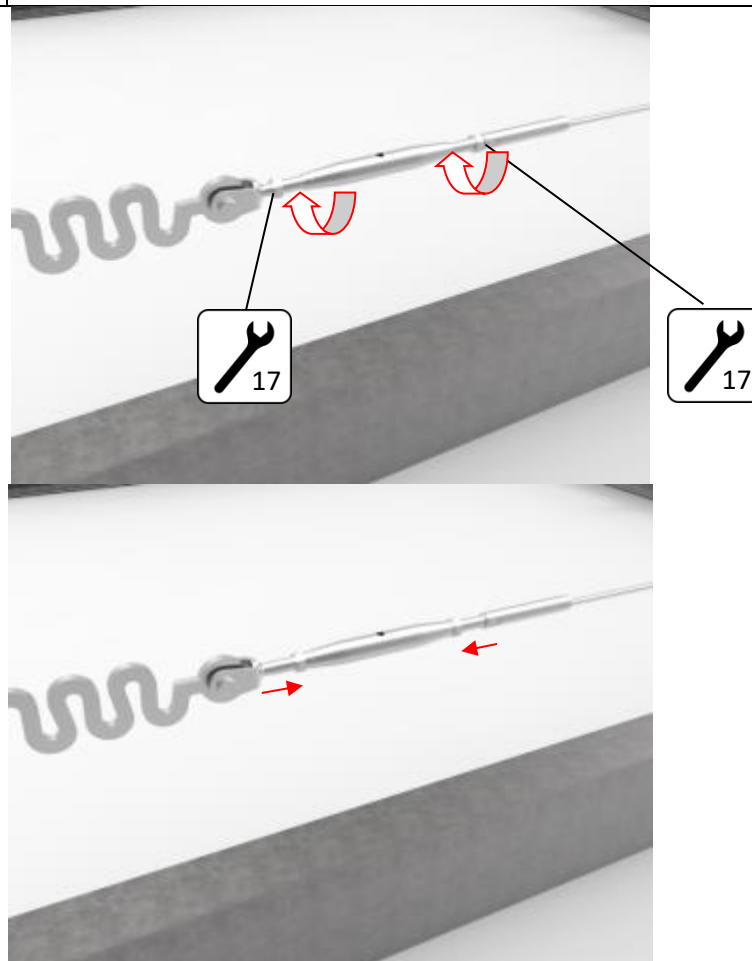
Screw in the central part of the tensioner while holding the part to be crimped with the other hand. That way you will not rotate the lifeline itself.



Stage 9.2 – 2

Stage 9.2 – 3

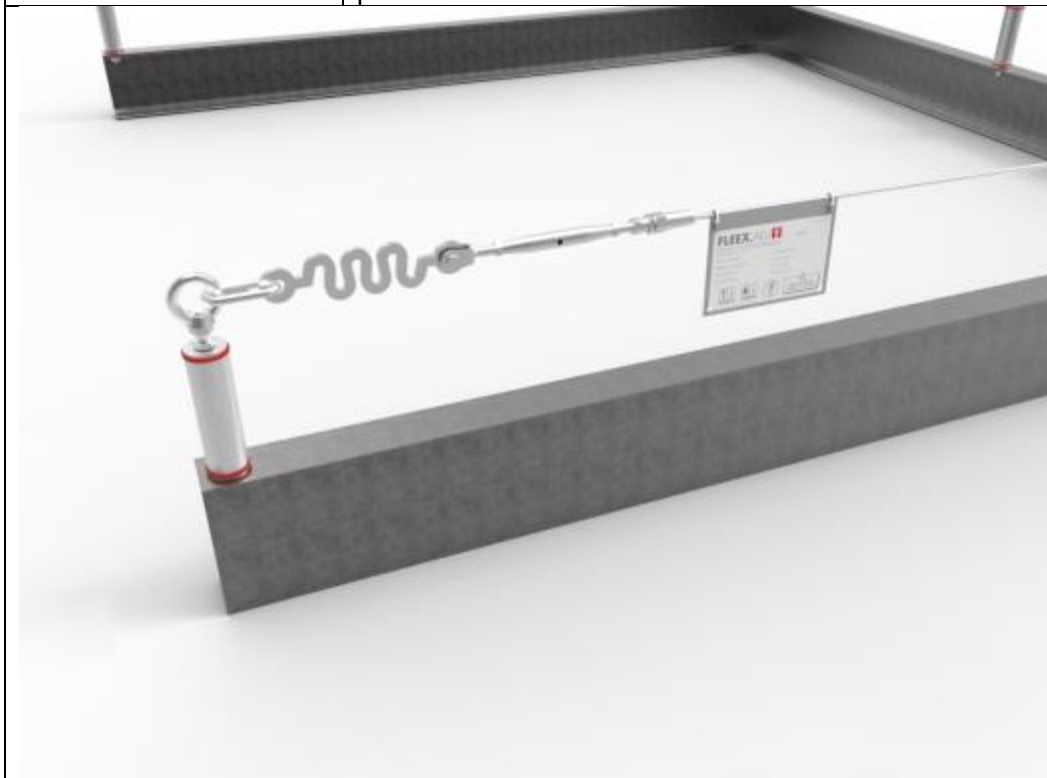
Once the cable has been tensioned, tighten the tensioner's two locknuts.



STAGE 10

STAGE 10

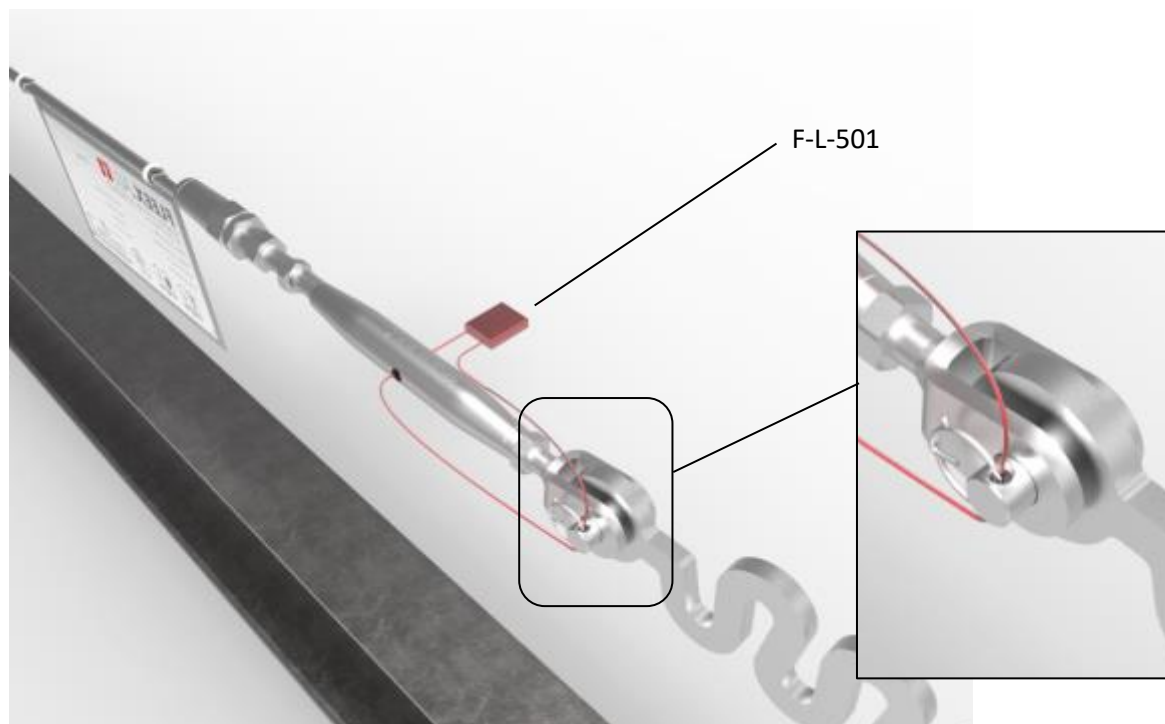
Install the nameplate Ref. **F-L-401** on the cable using the 2 clamping rings provided



STAGE 11

STAGE 11

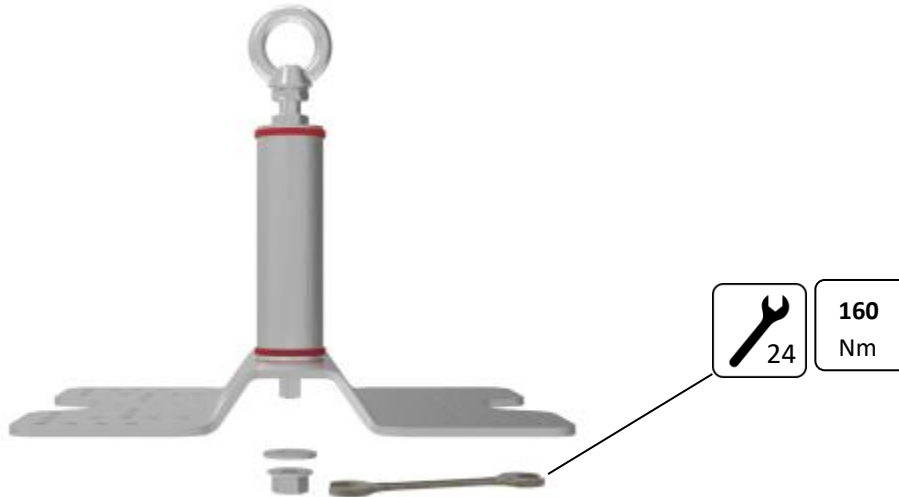
Install the seal Ref. **F-L-501**



11- Fitting the various anchors onto their supports

1) F-P-101-A

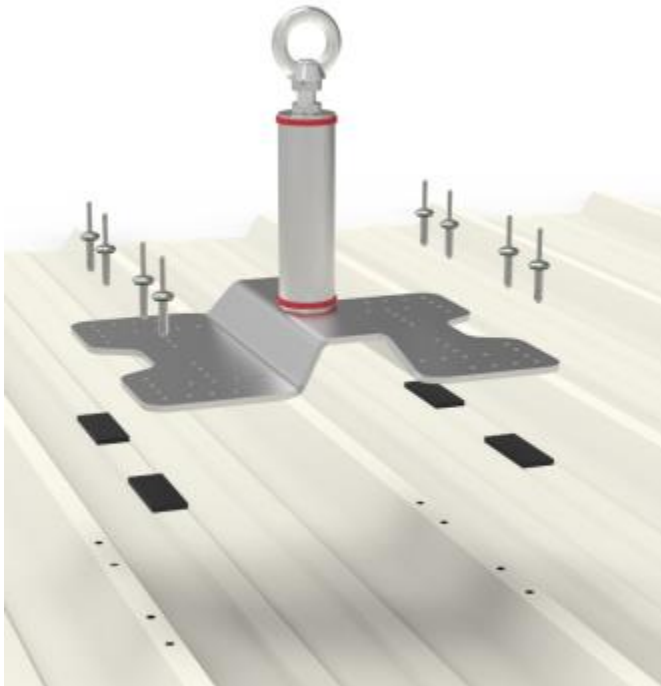
Stage 1: Assemble the post and plate.



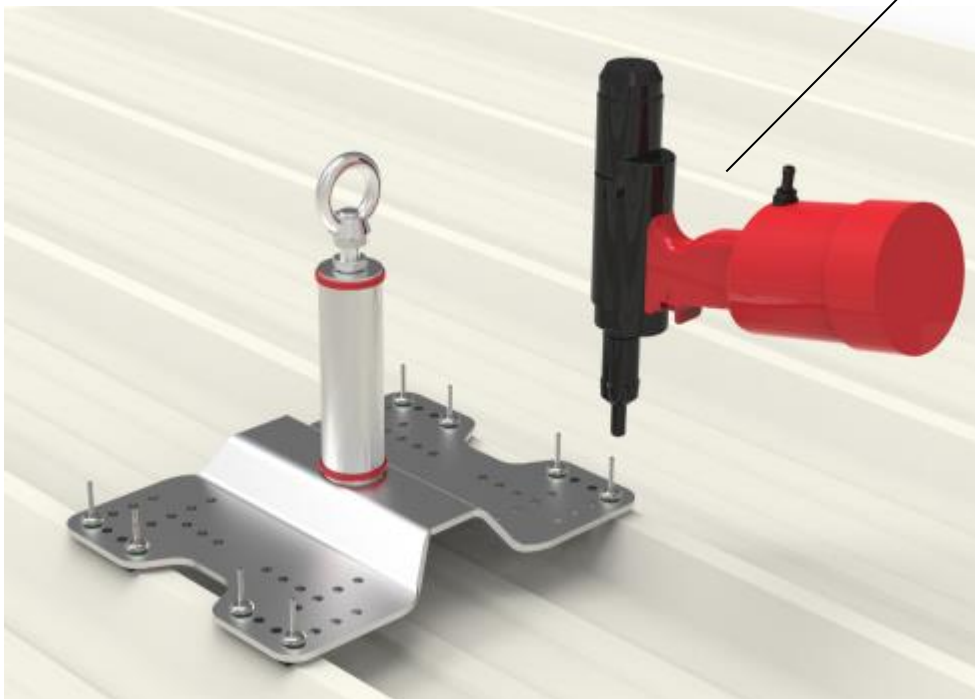
Stage 2: Position the anchor, mark the holes and drill the panel



Stage 3: Glue the EPDM foam under the plate and insert the rivets



Stage 4: Rivet the plate

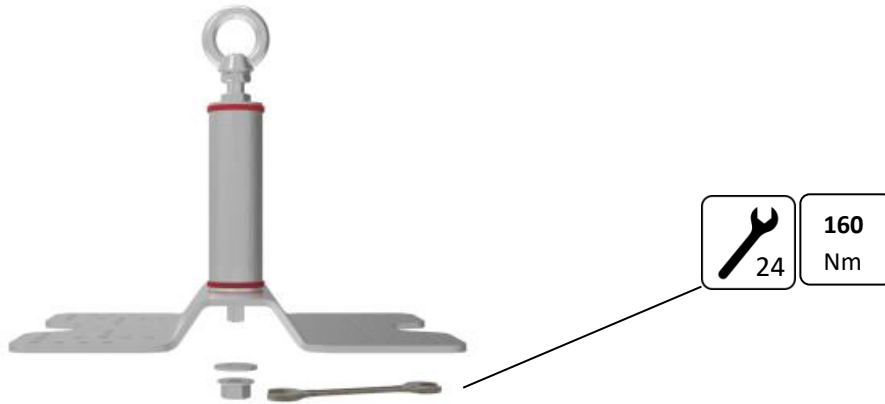




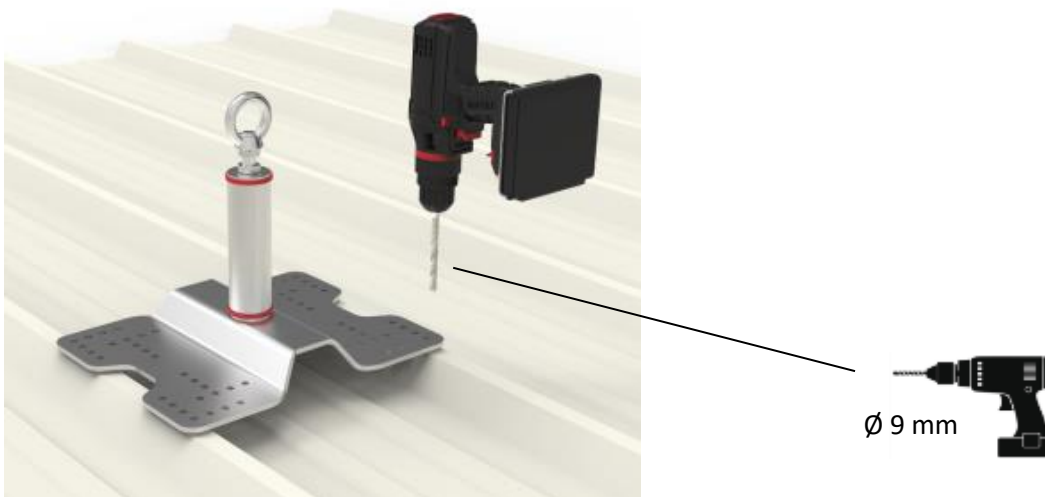
The anchor is correctly installed when the 8 rivets are uniformly distributed over the top of the panel ridges.

There must be at least 2 rivets per plate corner.

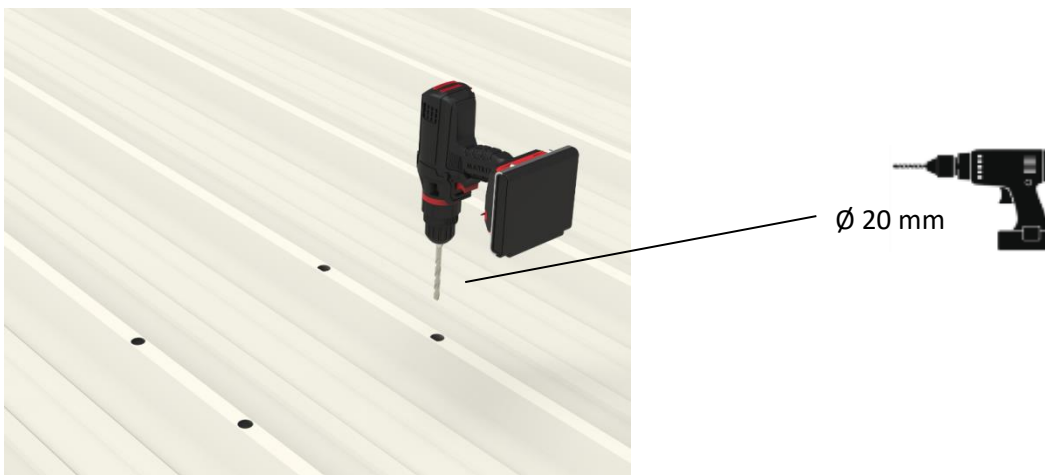
Stage 1: Assemble the post and plate.



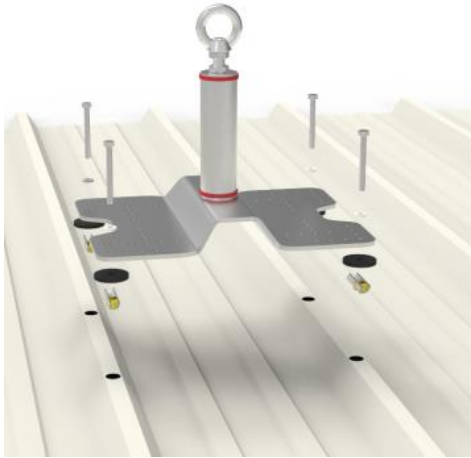
Stage 2: Position the anchor, mark the 4 holes then drill the plate and panel.



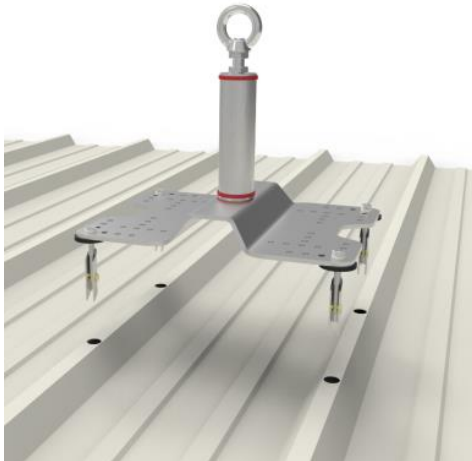
Remove the plate and drill out the panel with a Ø 20 mm steel bit.



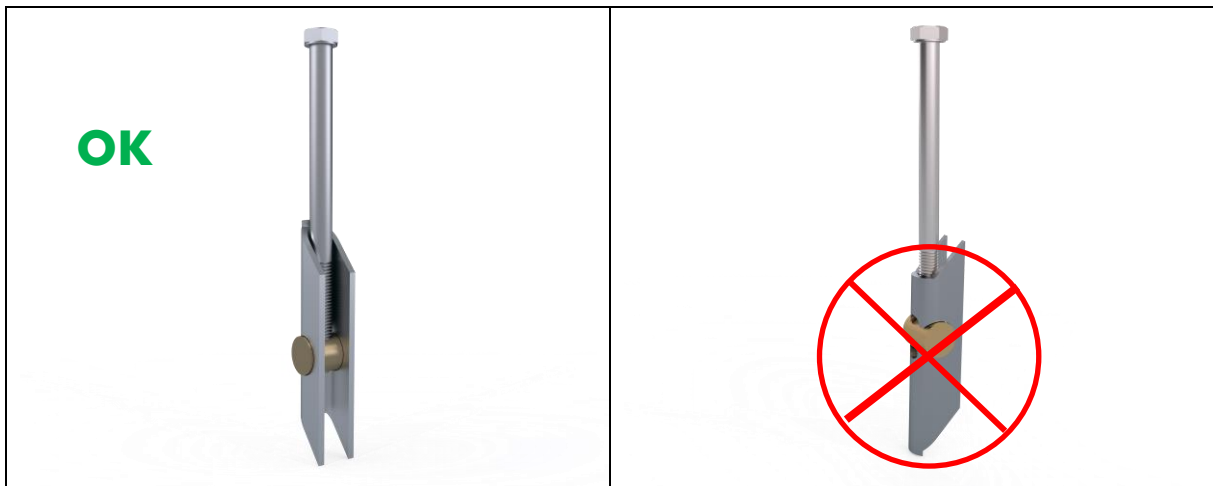
Stage 3: Assemble the gravity anchors on the plate



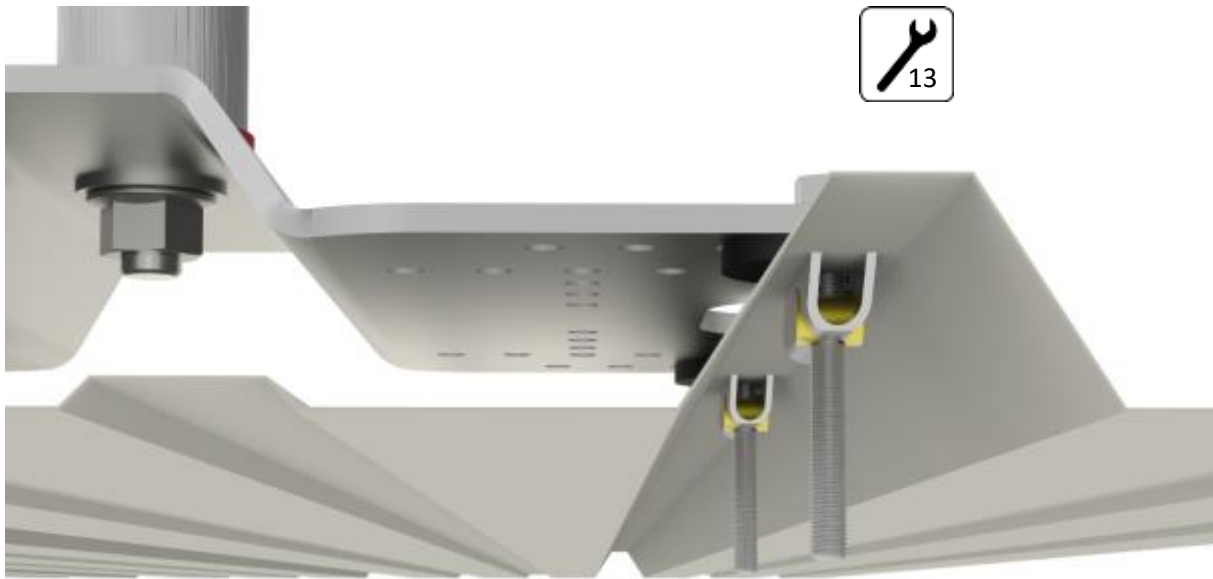
Stage 4: Put the gravity anchors into the vertical position and insert them into the panel.



NB: rocker positioning

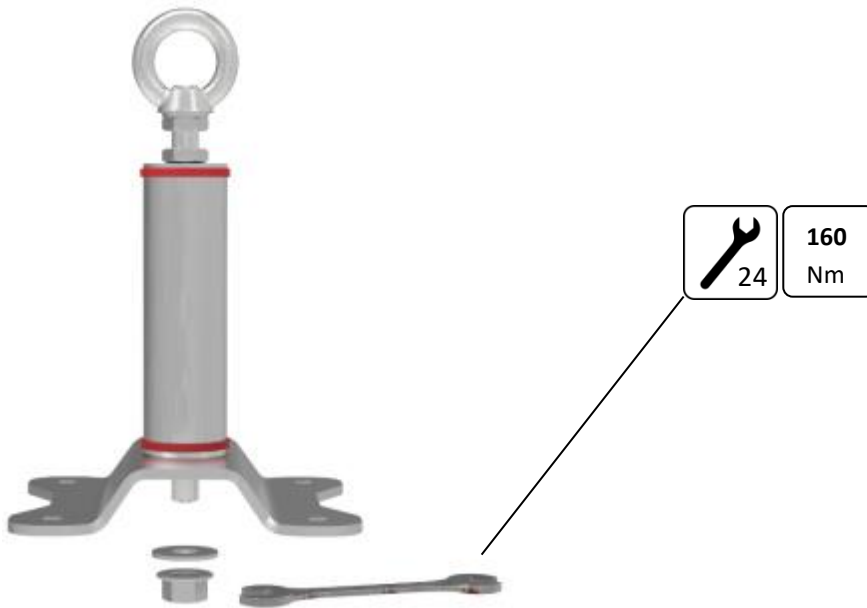


Stage 5: Flip the gravity anchors and tighten them until they compress the EPDM washers. Warning, the gravity anchors must be parallel to the panel ridges.



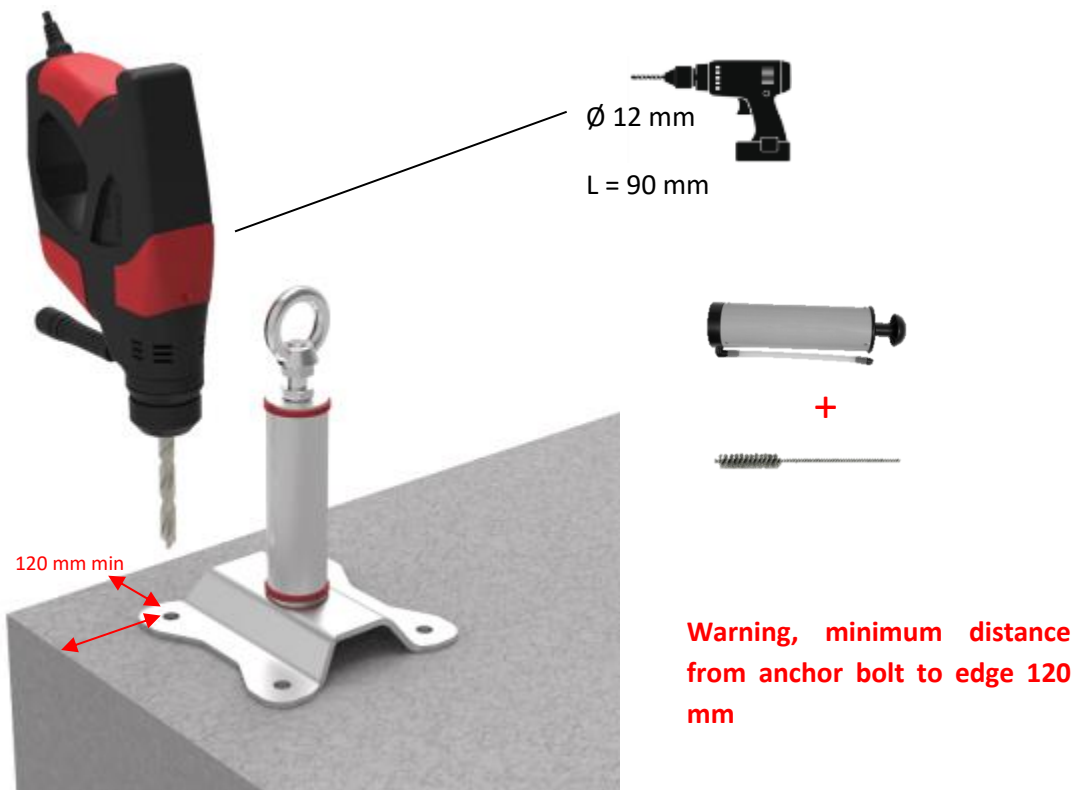
The anchor is now properly installed.

Stage 1: Assemble the post and plate

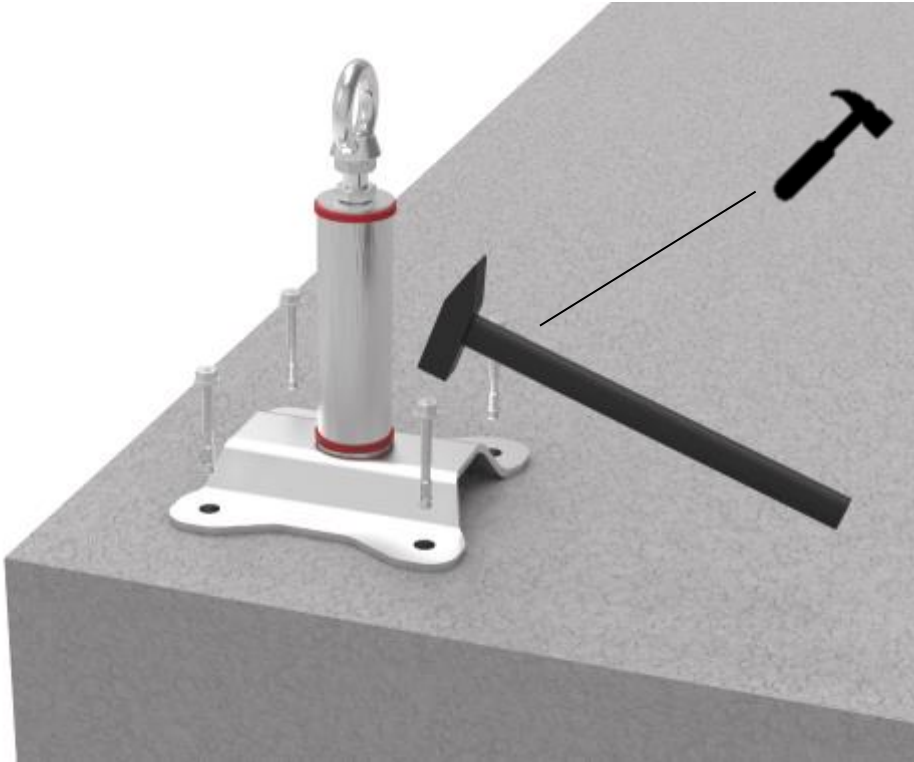


Stage 2: Position the anchor, mark the holes and drill the concrete.

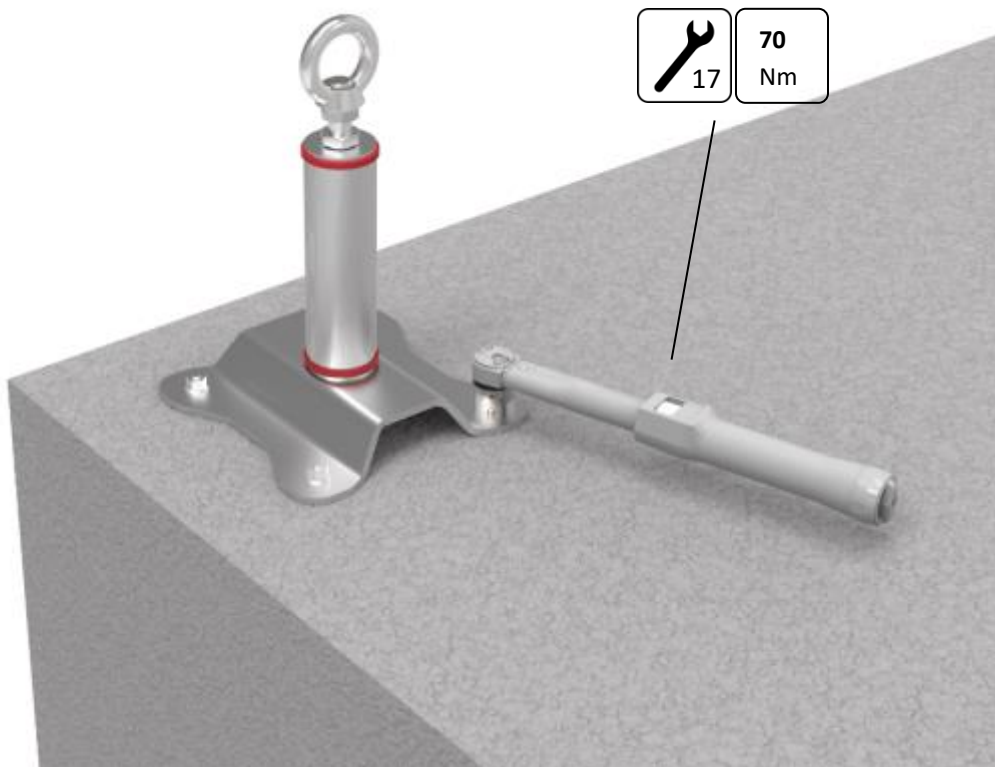
Clean out the holes with a blower and a brush.

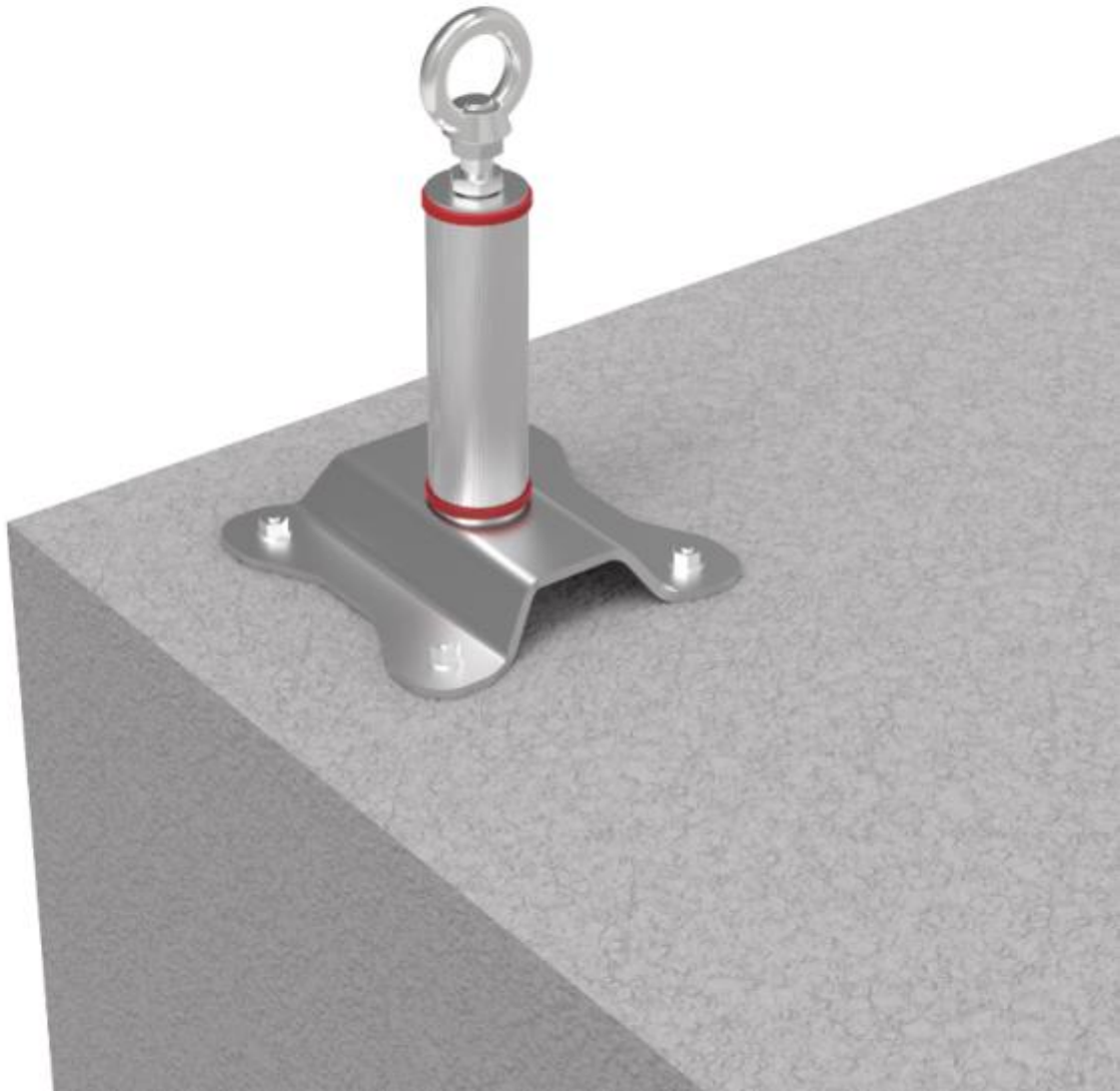


Stage 3: Insert and hammer the anchor bolts into the holes



Stage 4: Place the washers, screw in and tighten to the tightening torque



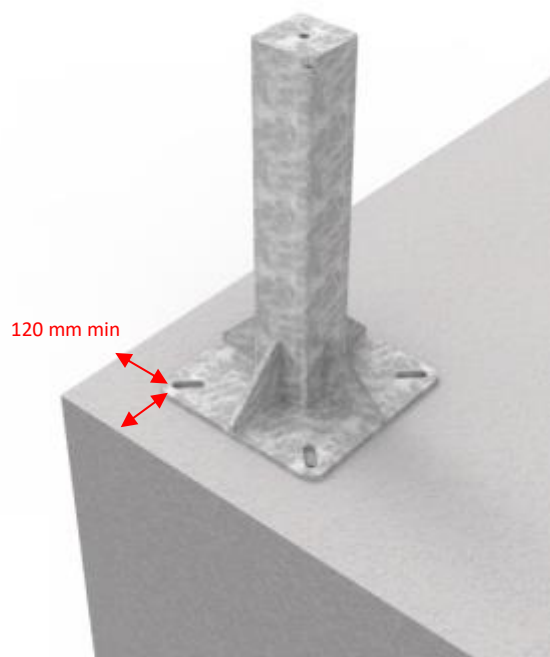


The anchor is now properly installed.

4) ANCREE post and all its various interfaces

a. Rigid ANCREE post

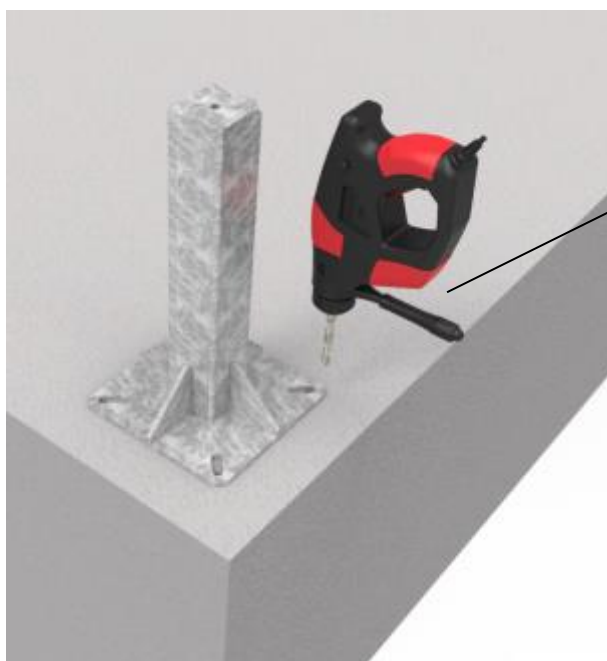
Stage 1: Position the anchor and mark the holes



Warning, minimum distance from anchor bolt to edge 120 mm

Stage 2: Drill the concrete.

Clean out the holes with a blower and a brush.



Ø 12 mm

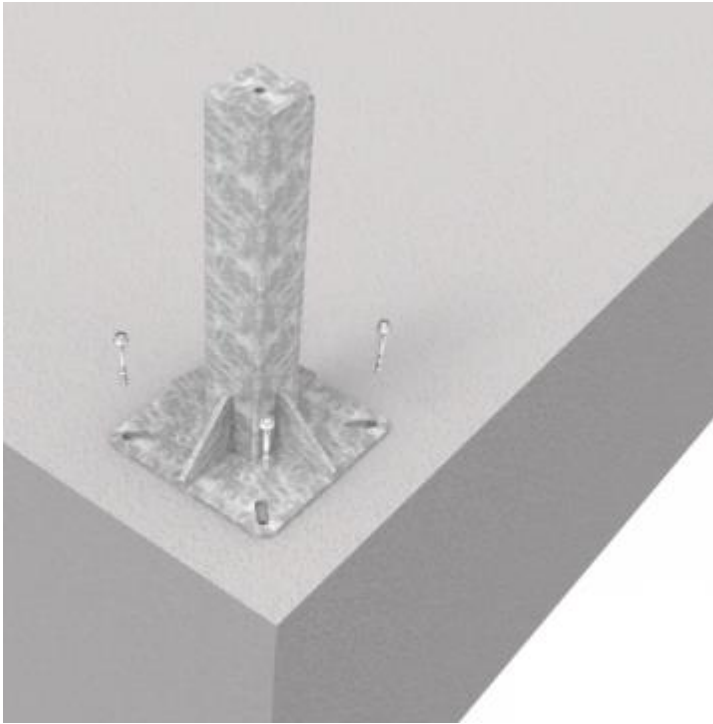
L = 90 mm



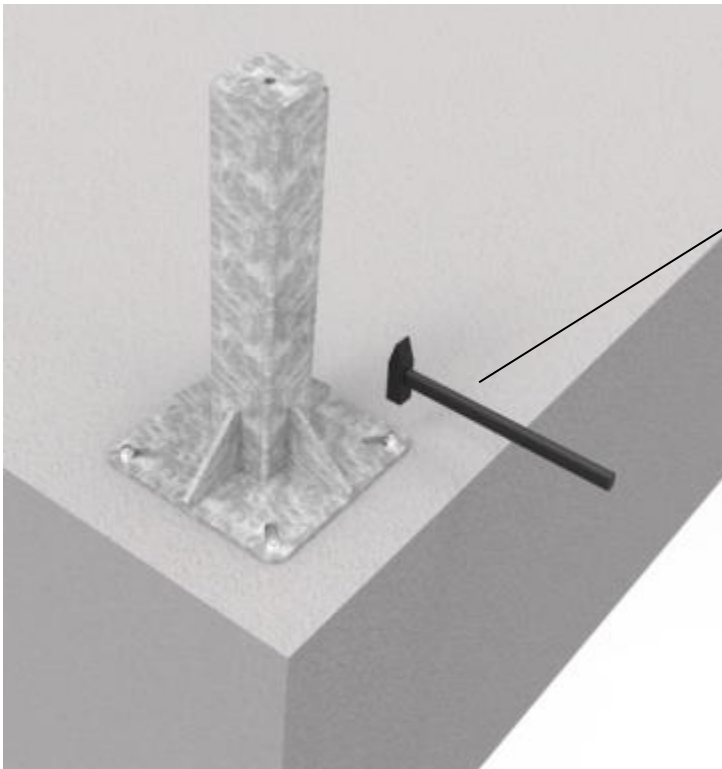
+



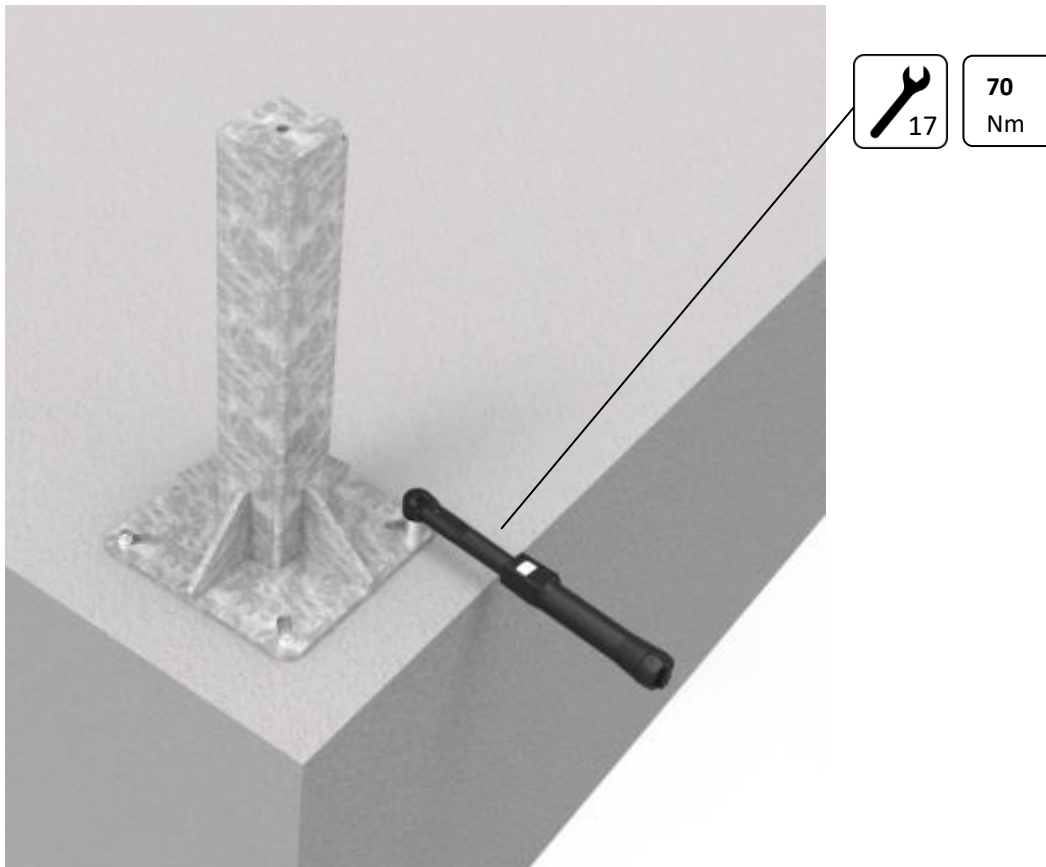
Stage 3: Insert the anchor bolts into the anchor and then into their corresponding holes



Stage 4: Hammer in the anchor bolts



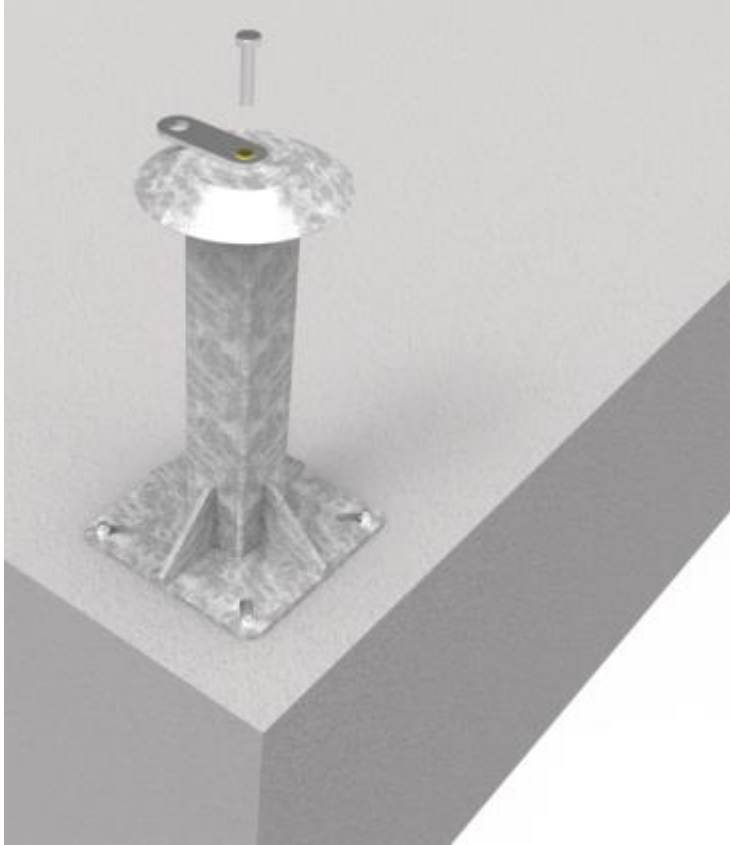
Stage 5: Place the washers, screw in and tighten to the tightening torque



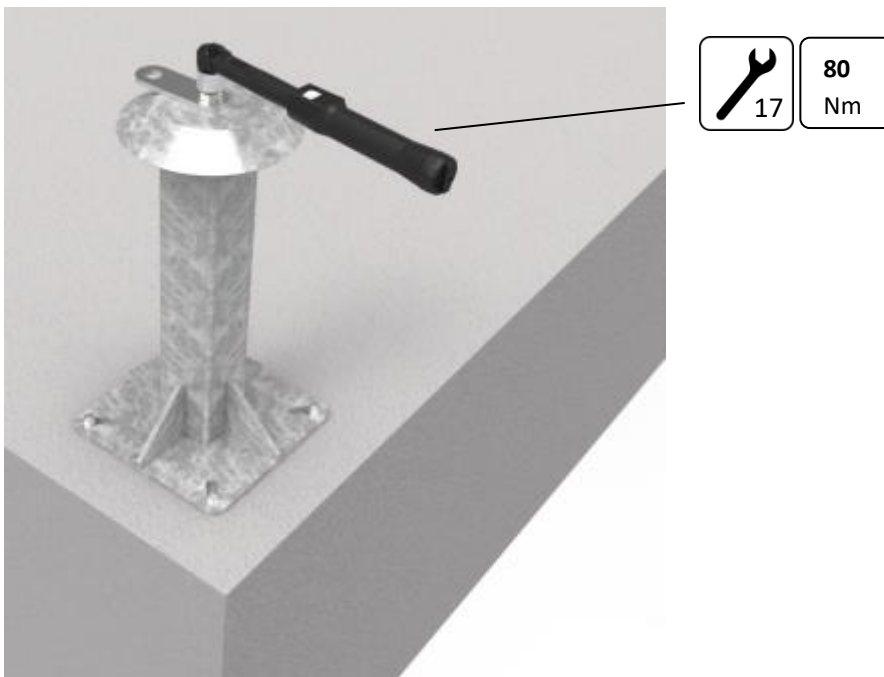
The anchor is now ready to have its interface fitted.

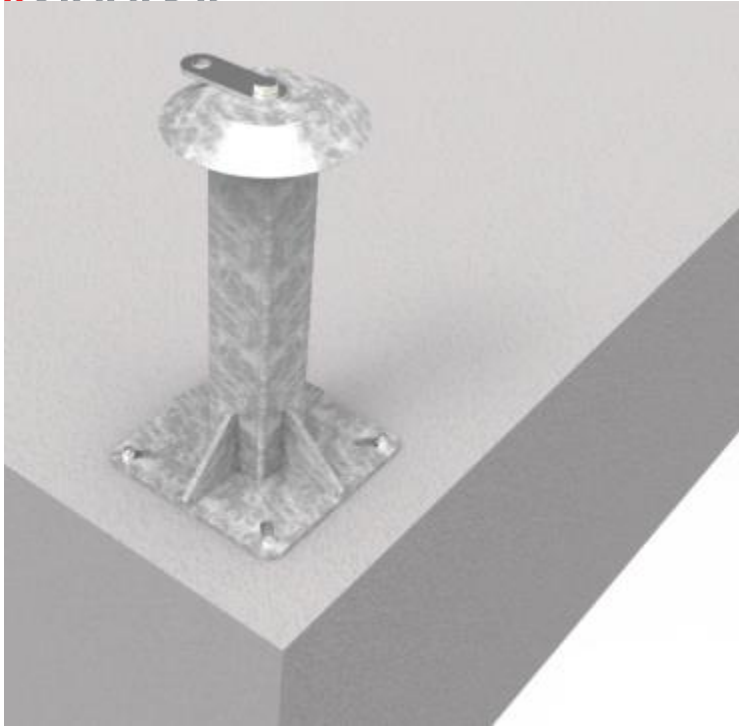
b. EEHL734-722 lifeline end plate

Stage 6: Position the galvanized collar on top of the post and hand screw on end piece EEHL734-722. Orient the end piece in the direction of the lifeline.



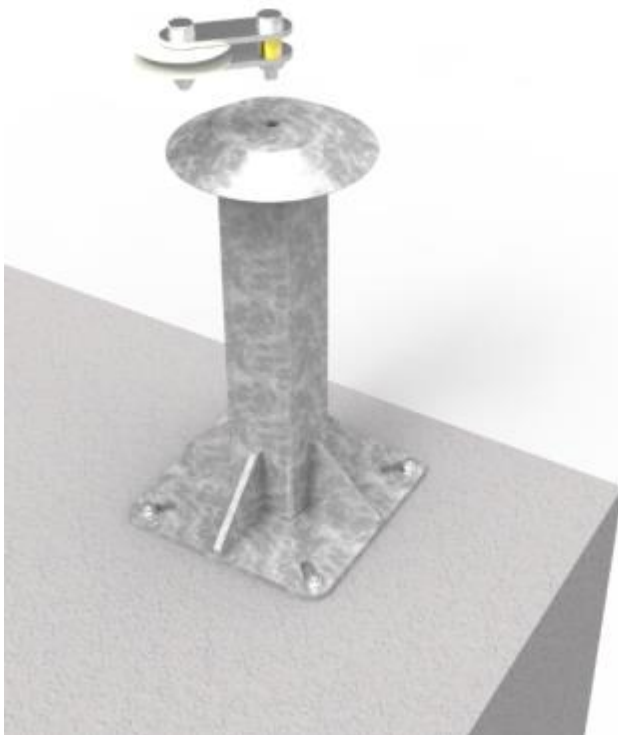
Stage 7: Tighten to its tightening torque



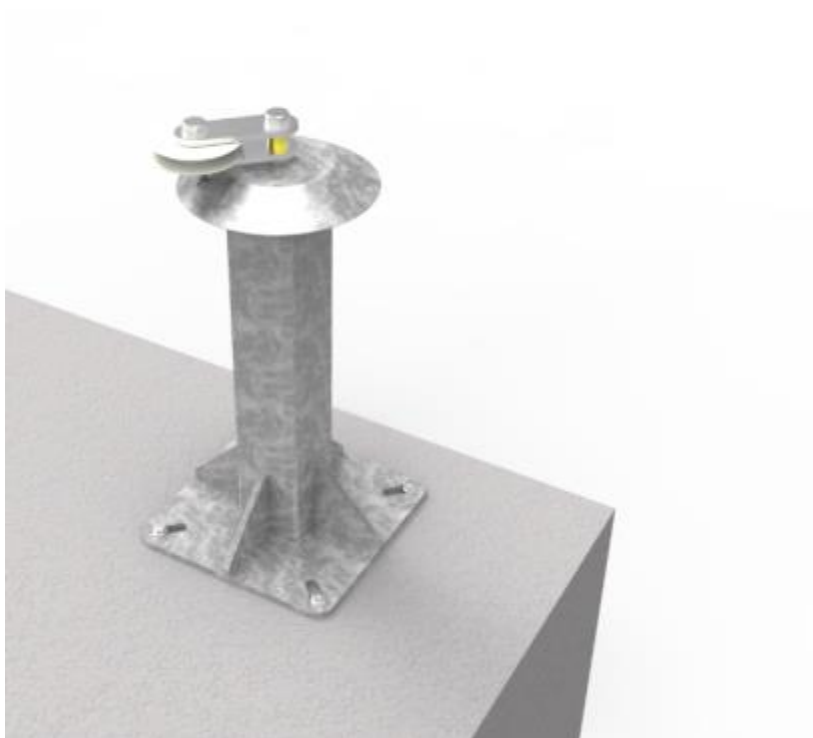
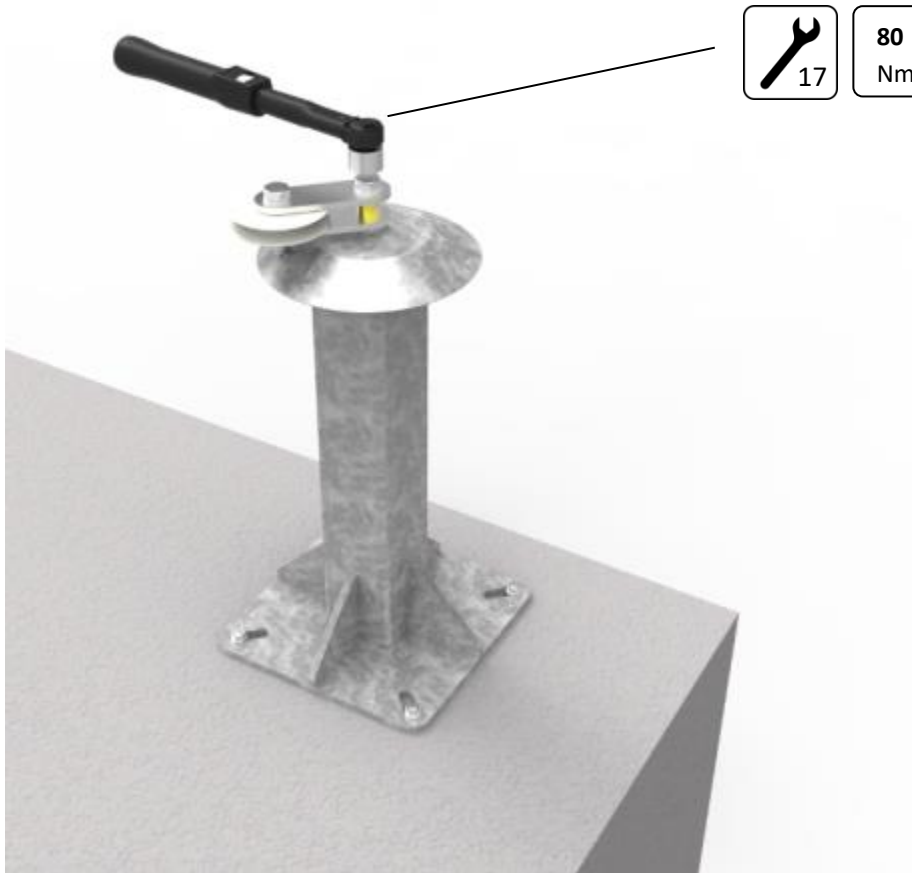


c. EEHL745 Angle pulley

Stage 6: Position the galvanized collar on top of the post and hand screw on the angle pulley. Orient the pulley at 45° facing inwards as in stage 1-2.



Stage 7: Tighten to its tightening torque.

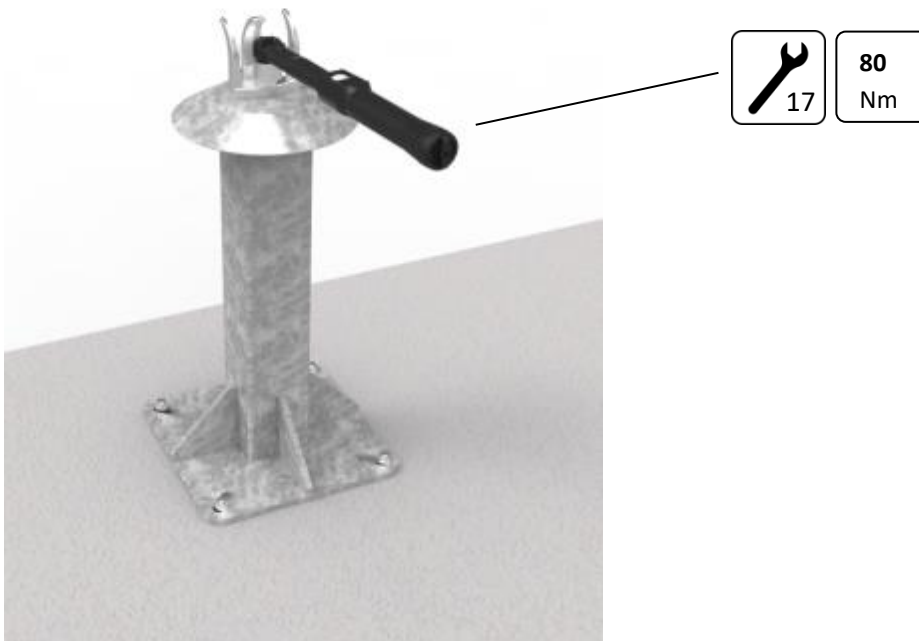


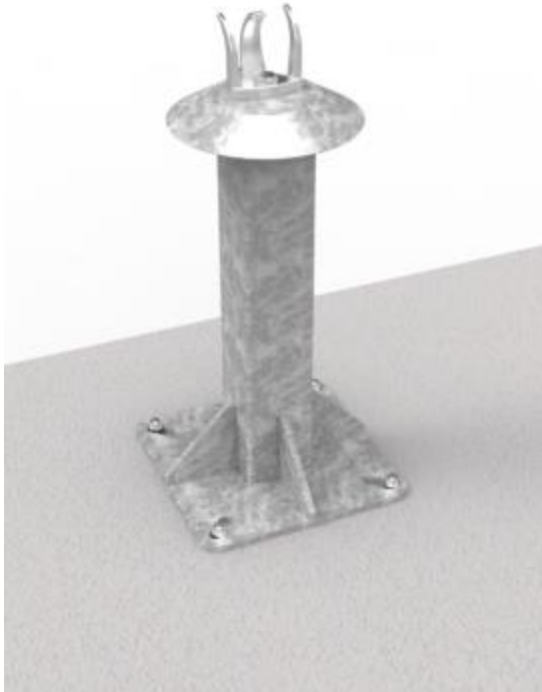
d. EEHL201 Straight manual intermediate bracket

Stage 6: Position the galvanized collar on top of the post and hand screw on piece EEHL201



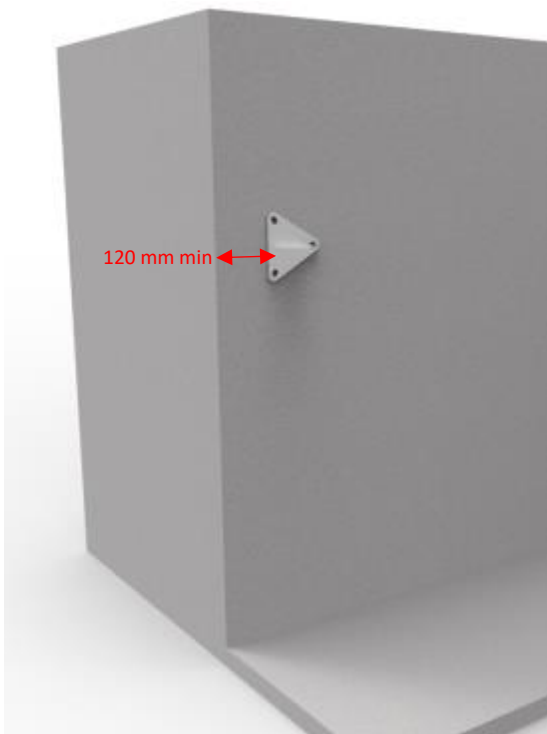
Stage 7: Orient it and tighten to its tightening torque.



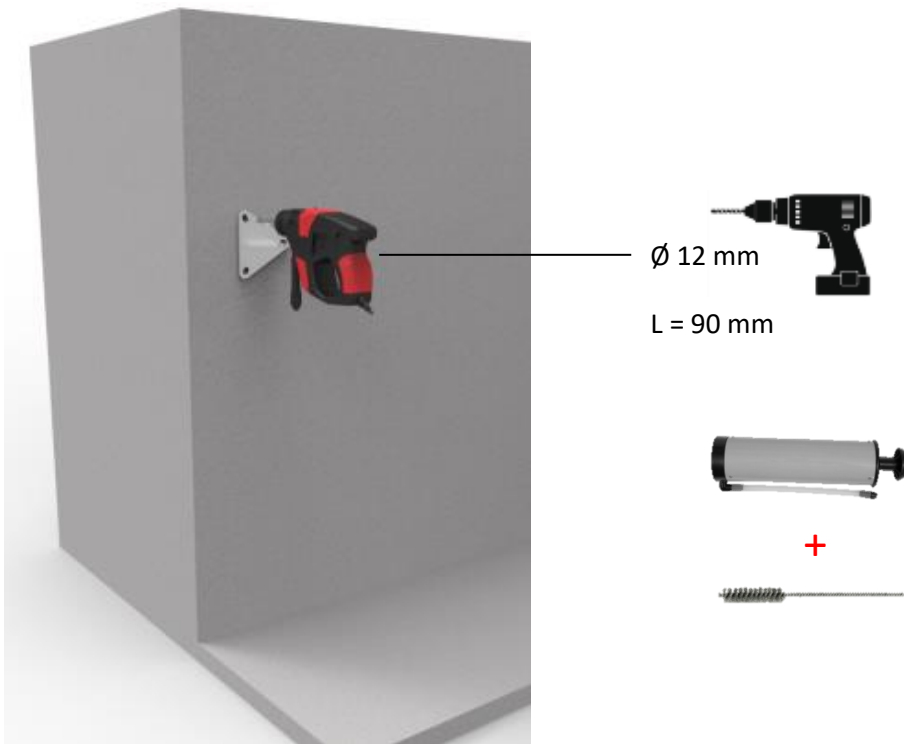


5) EEHL102 Wall lifeline end

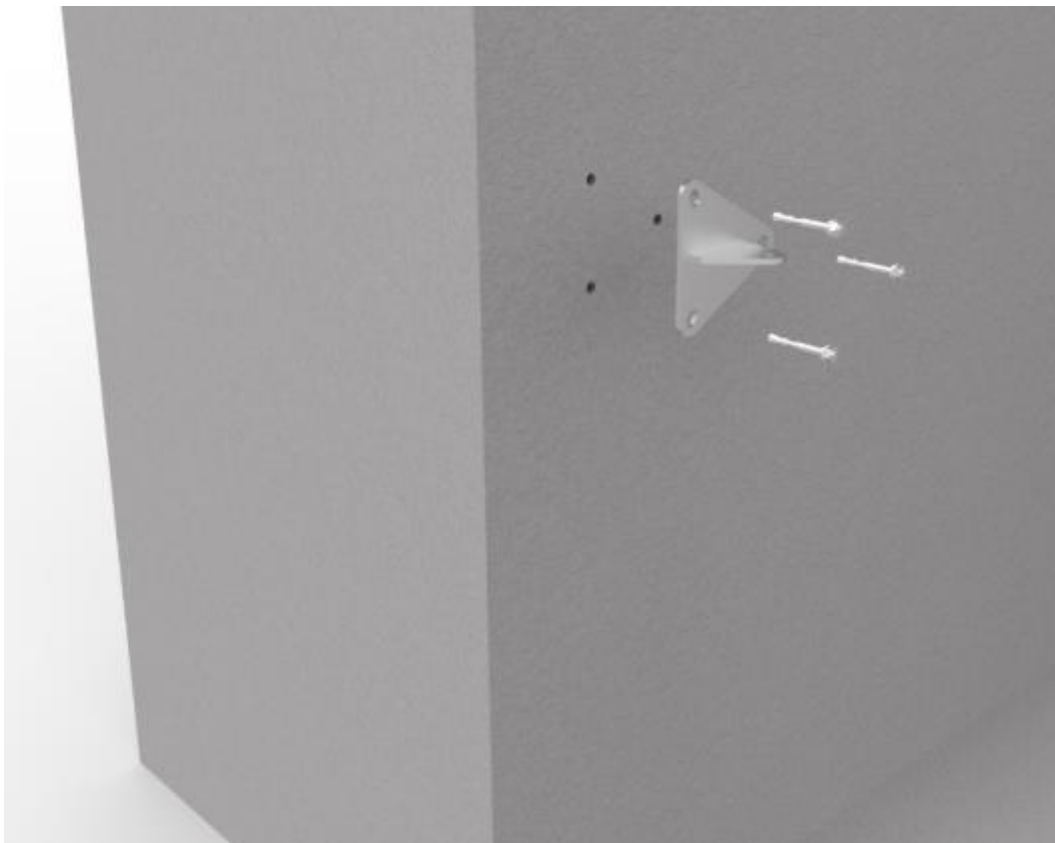
Stage 1: Position the anchor and mark the holes



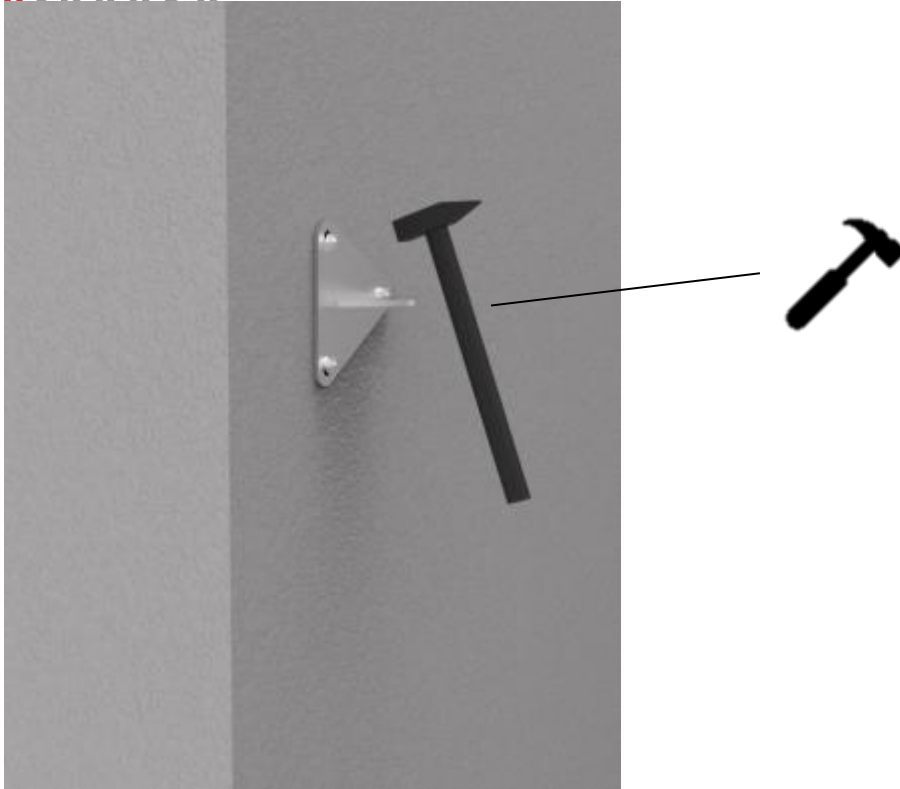
Clean out the holes with a blower and a brush.



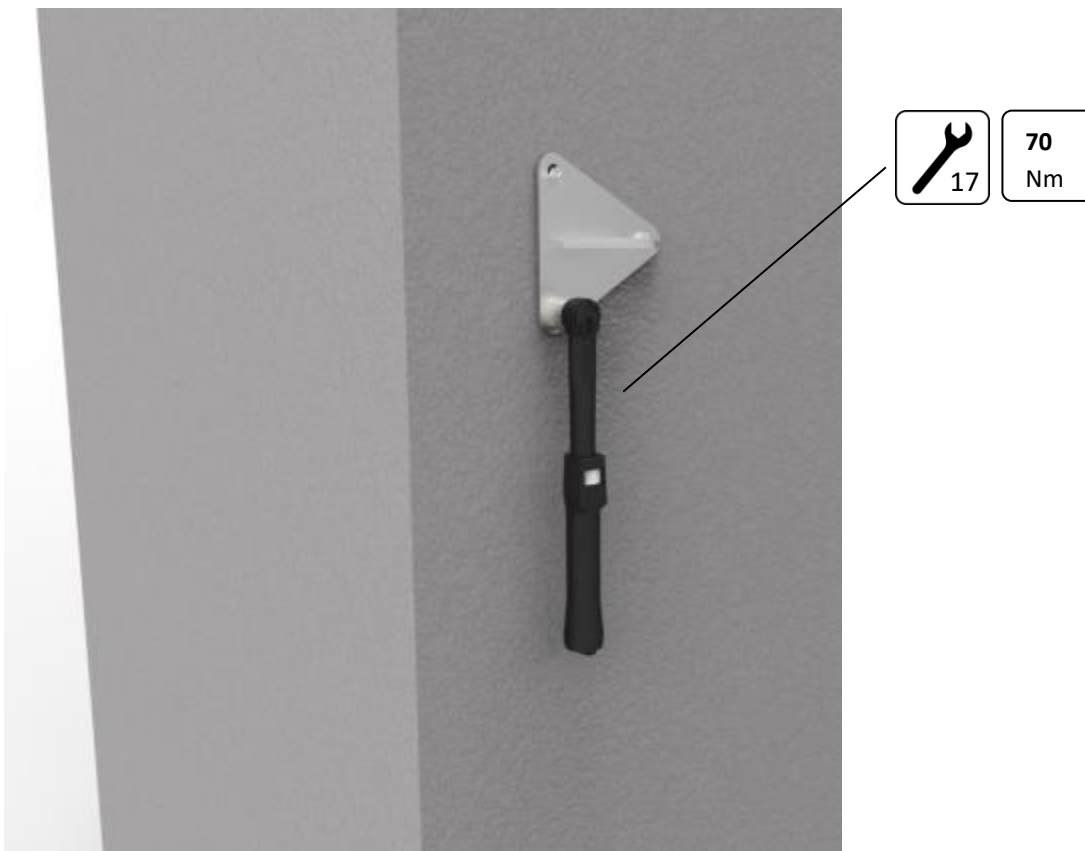
Stage 3: Insert the anchor bolts into the anchor and then into their corresponding holes



Stage 4: Hammer in the anchor bolts

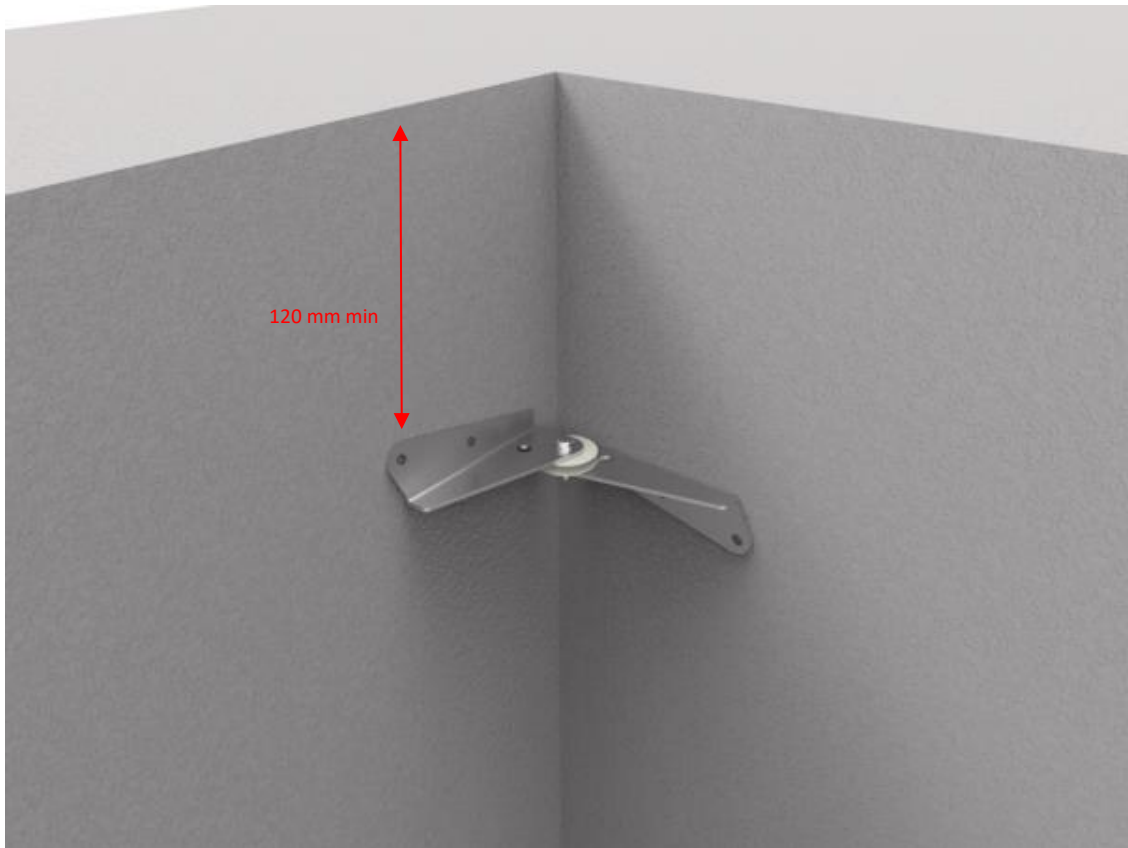


Stage 5: Place the washers, screw in and tighten to the tightening torque



6) EEHL130 Manual internal angle bracket for wall lifeline

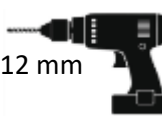
Stage 1: Position the anchor and mark the holes

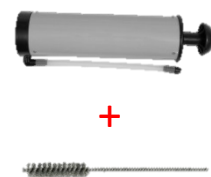


Stage 2: Drill the concrete

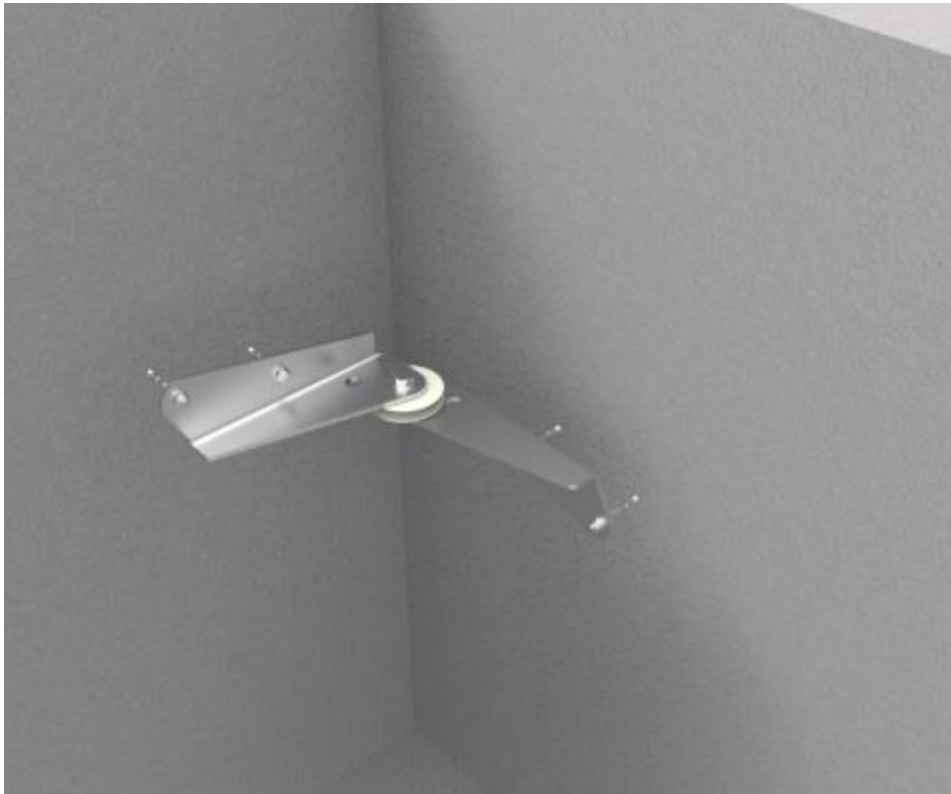
Clean out the holes with a blower and a brush.



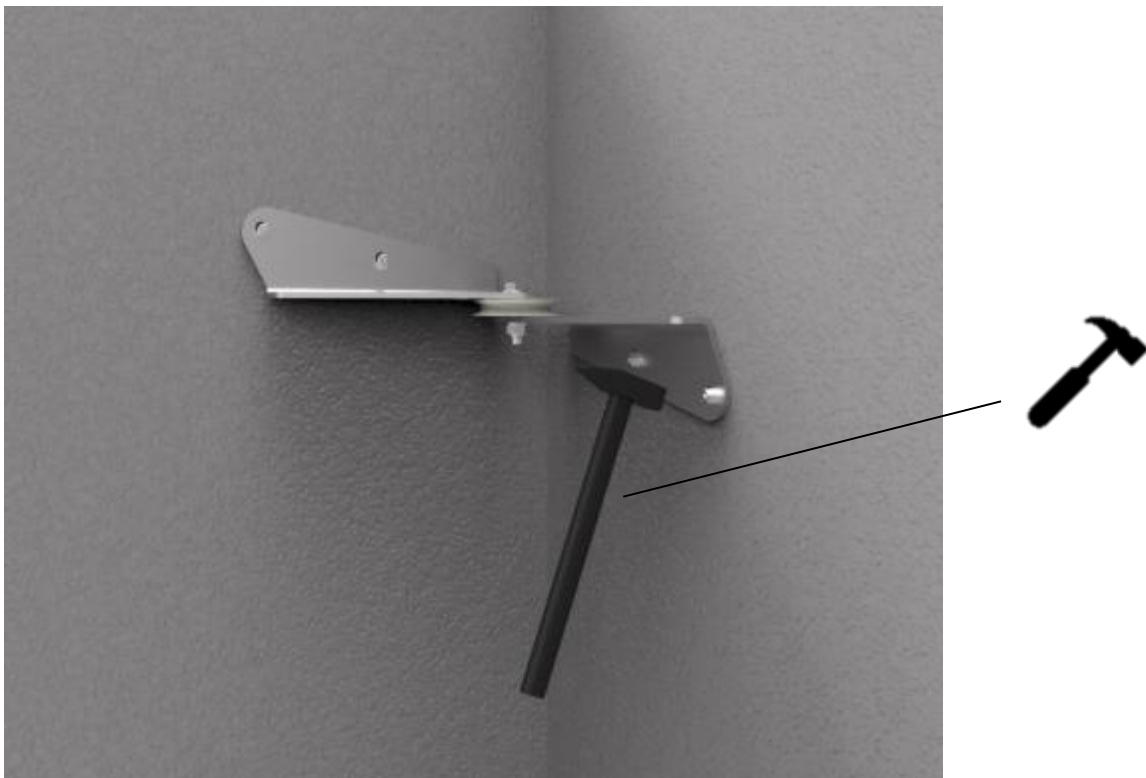

Ø 12 mm
L = 90 mm



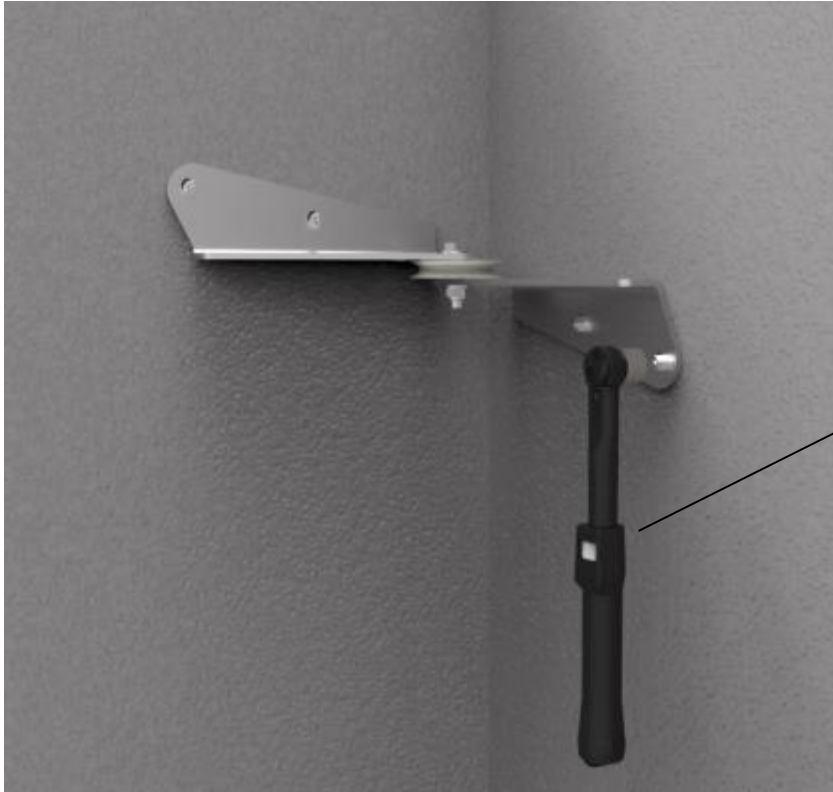
Stage 3: Insert the anchor bolts into the anchor and then into their corresponding holes



Stage 4: Hammer in the anchor bolts



Stage 5: Place the washers, screw in and tighten to the tightening torque

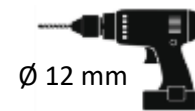
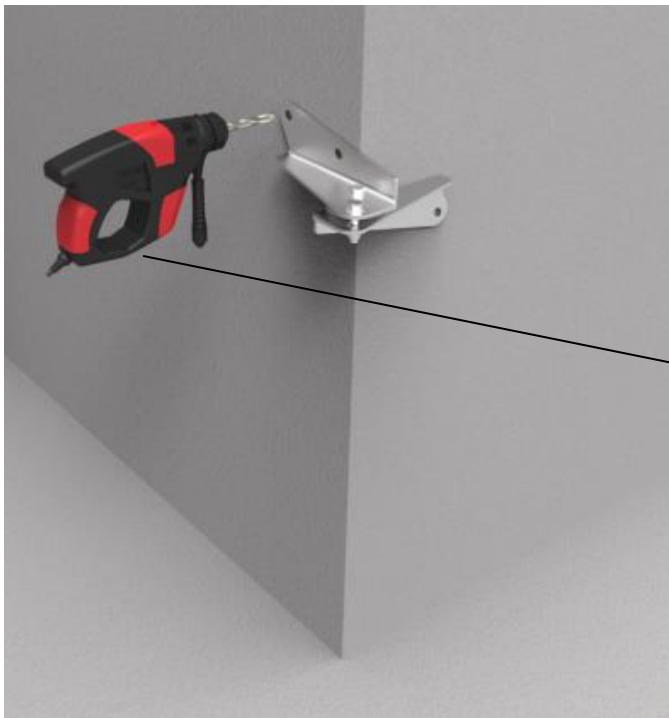


7) EEHL140 Manual external angle bracket for wall lifeline

Stage 1: Position the anchor and mark the holes



Clean out the holes with a blower and a brush.



L = 90 mm



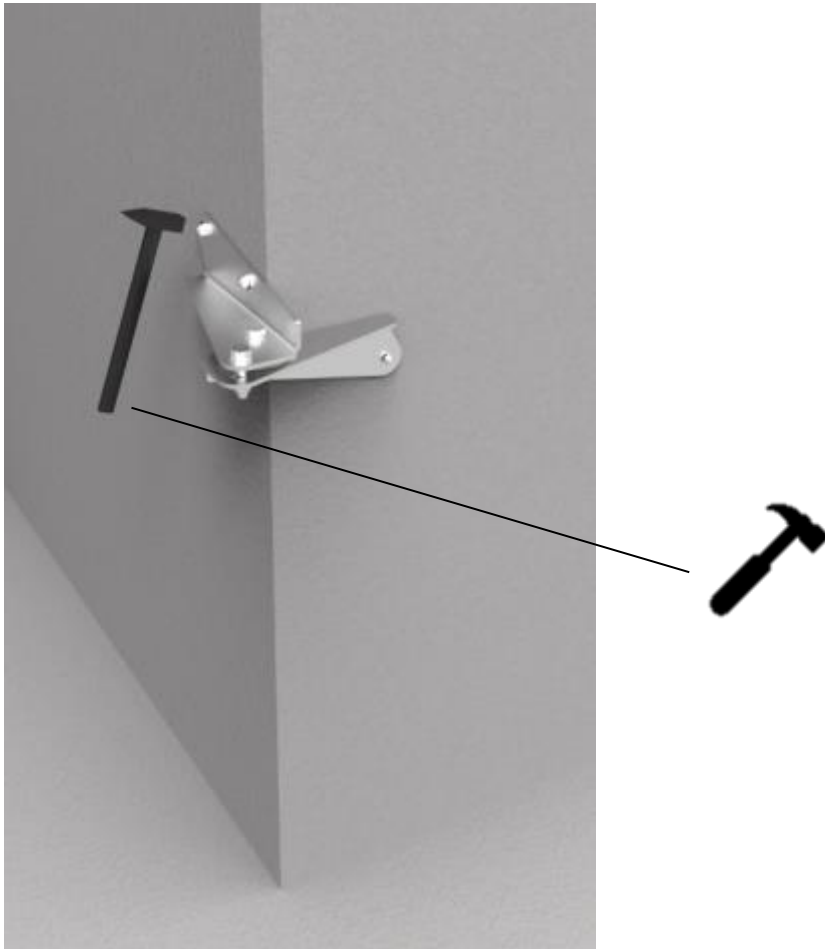
+



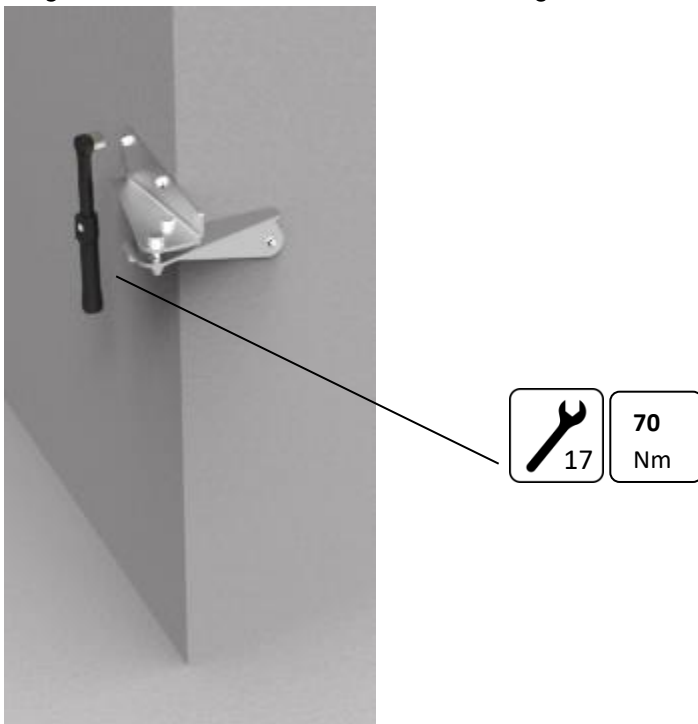
Stage 3: Insert the anchor bolts into the anchor and then into their corresponding holes



Stage 4: Hammer in the anchor bolts

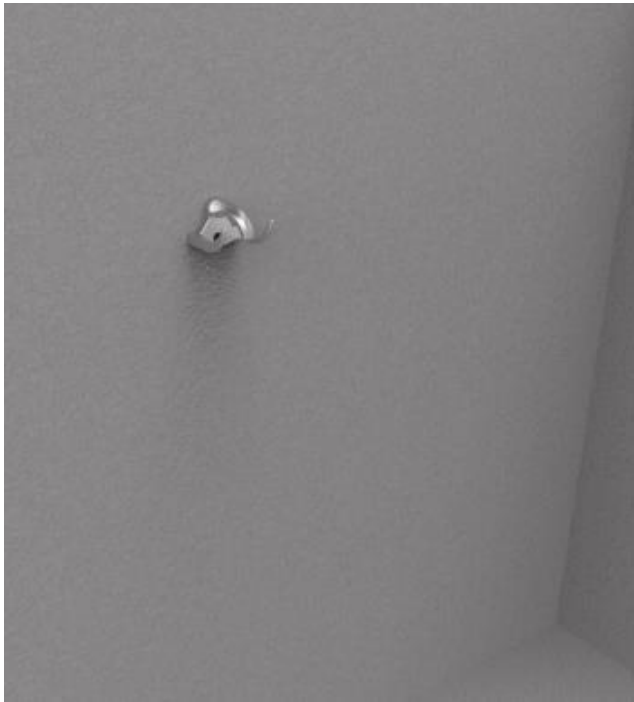


Stage 5: Place the washers, screw in and tighten to the tightening torque



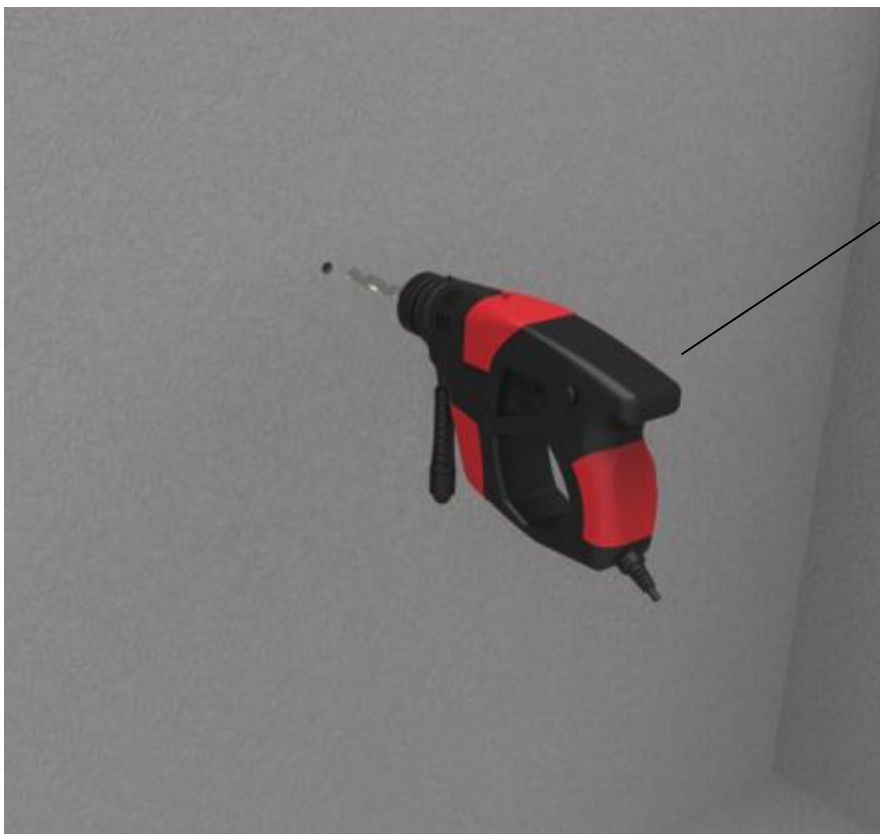
8) EEHL201 Straight manual intermediate bracket

Stage 1: Position the anchor and mark the hole



Stage 2: Drill the concrete

Clean out the holes with a blower and a brush.



Ø 12 mm

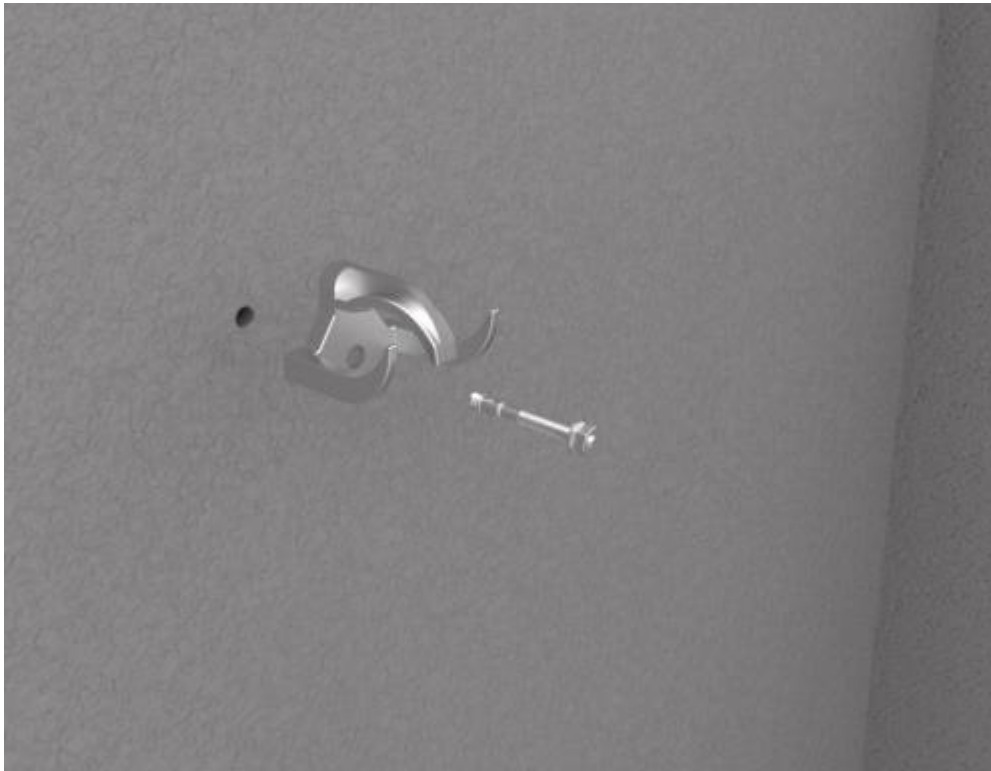
L = 90 mm



+



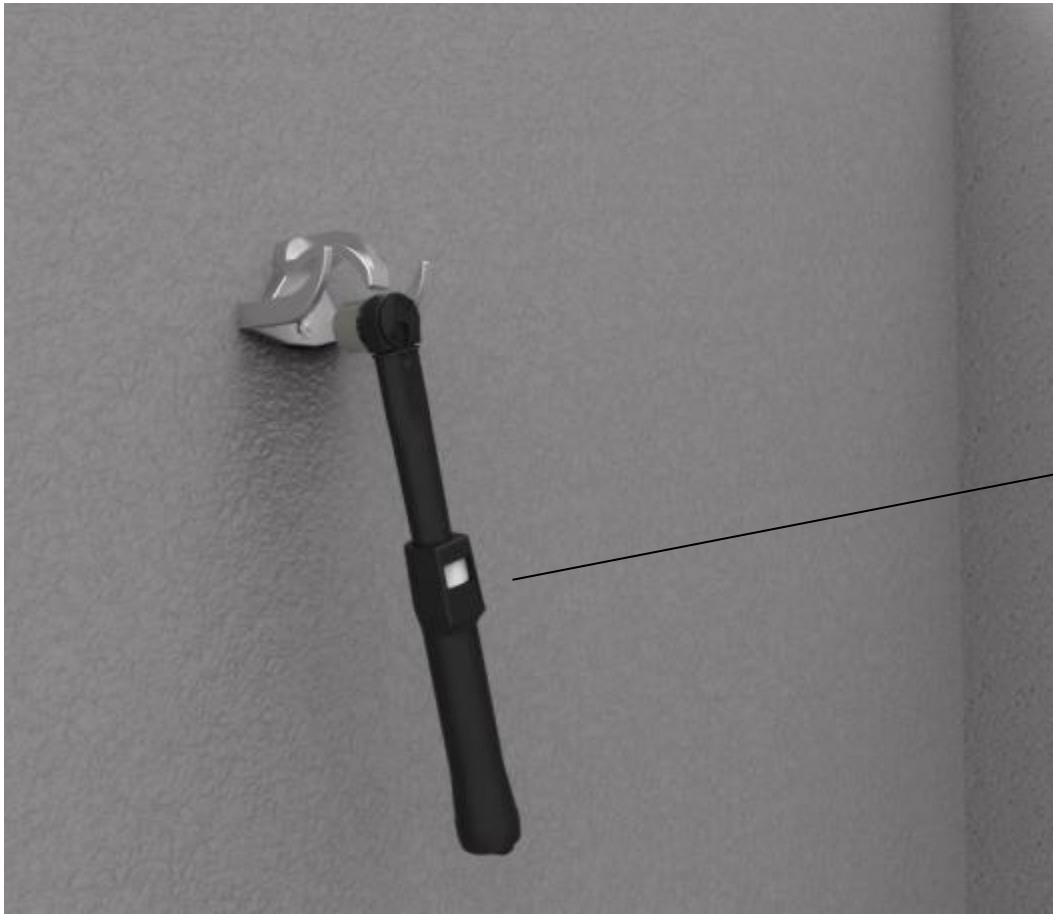
Stage 3: Insert the anchor bolt in the anchor and then the hole



Stage 4: Hammer the anchor bolt



Stage 5: Place the washers, screw in and tighten to the tightening torque

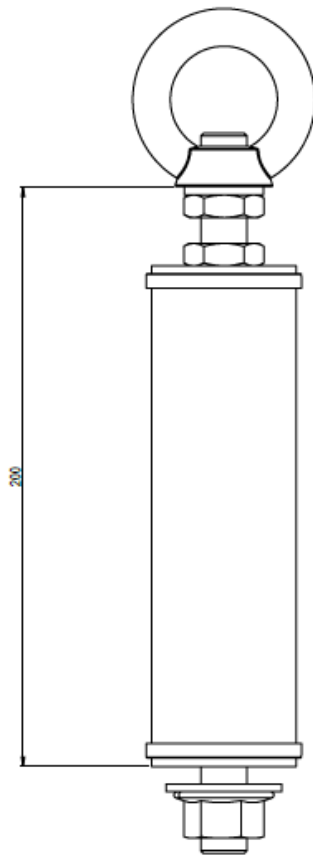




 17	70 Nm
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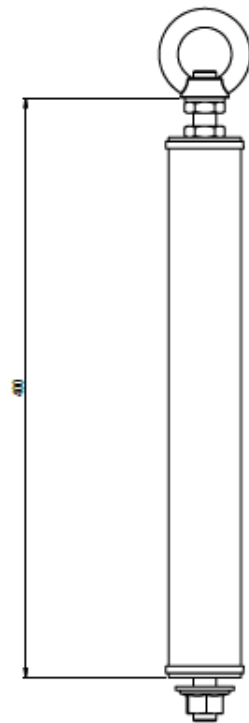
12- DATASHEETS FOR THE COMPONENTS




Reference	Manufacturer's name	Reference	Manufacturer's name
F-A-201 Anchoring post 200 mm		F-L-201 Cable terminal	
F-A-202 Angled anchoring post 200 mm		F-L-301 Olive tensioner	
F-A-401 Anchoring post 400 mm		F-A-402 Anchoring post 400 mm	
F-L-101 Absorber with fall indicator		EE HL 500 B Cable	
F-L-501 Lifeline seal		EESAZ090 Quick link	
F-L-401 Nameplate		F-L-302 Clevis tensioner	
F-P-100 Interface plate for dry panel, sealed panel, sandwich panel or batten		F-P-200 Interface plate for concrete or flanging	

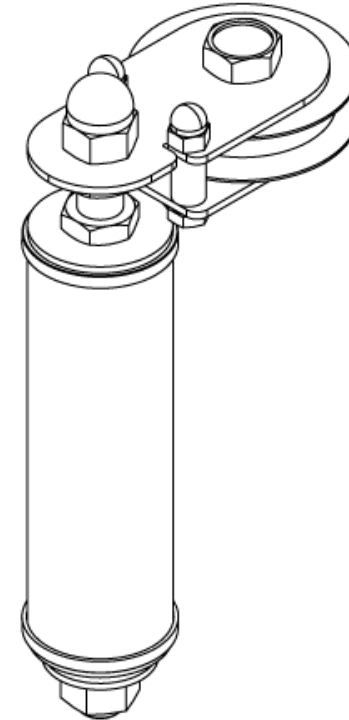
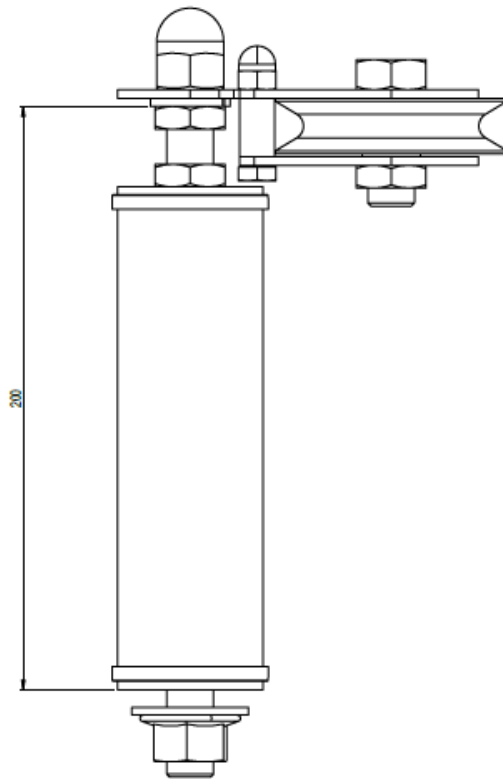
<p>ANCREE Galvanized steel post</p>		<p>EEHL734-722 End plate for ANCREE post</p>	
<p>EEHL745 Angle pulley for ANCREE post</p>		<p>EEHL201 Straight manual intermediate bracket for ANCREE post and wall lifeline</p>	
<p>EEHL130 Manual internal angle bracket for wall lifeline</p>		<p>EEHL140 Manual external angle bracket for wall lifeline</p>	
<p>EEHL102 End anchor for wall lifeline</p>		<p>EEHL57279 Galvanized collar for ANCREE rigid post</p>	






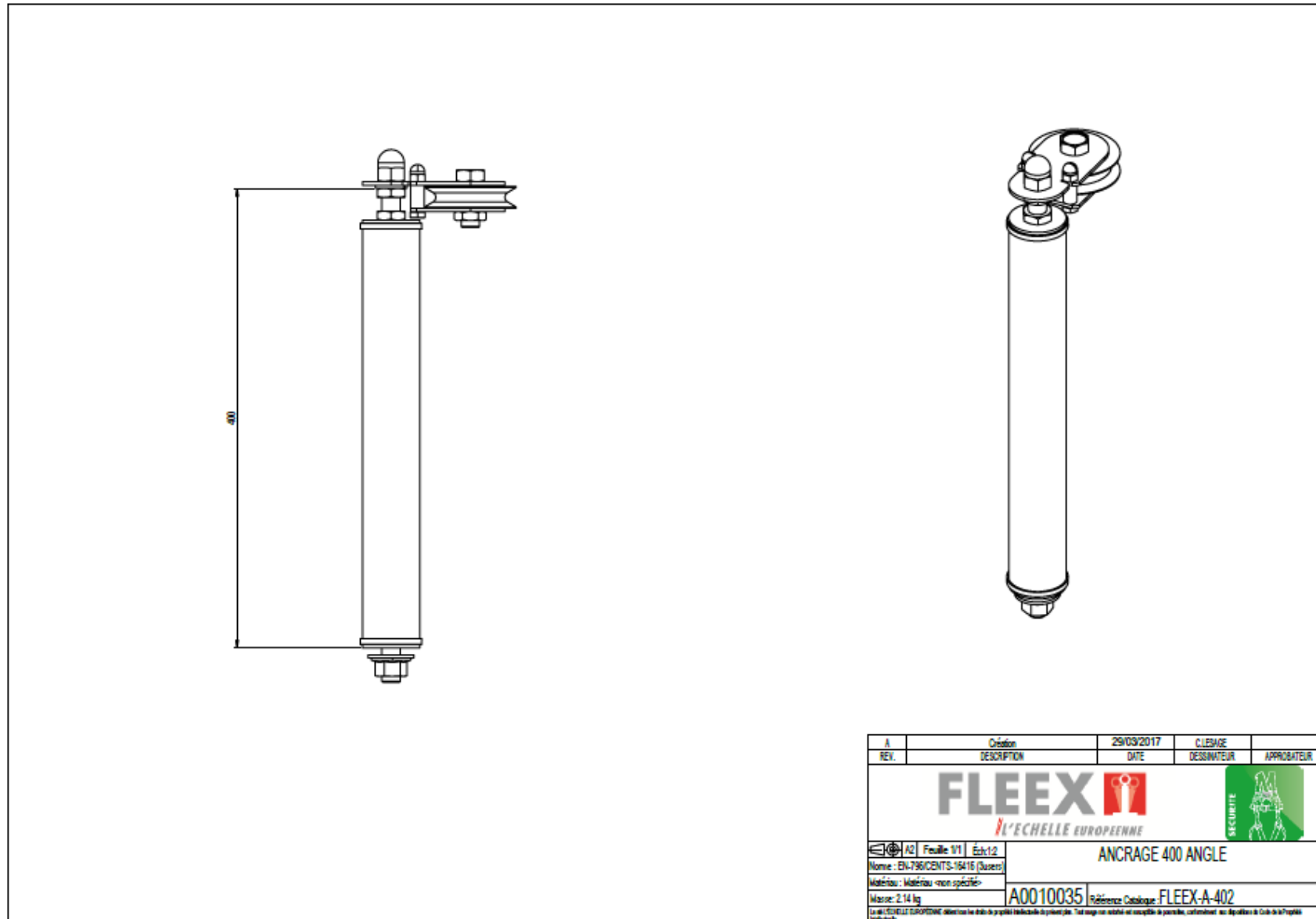
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REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX  L'ECHELLE EUROPEENNE				
Feuille 1/1 Ech:1:1		ANCRAGE 200		
Norme: EN-795/CENTS-16415 (Cluser)				
Materiau: Materiau «non spécifiés»				
Masse: 1,17 kg		Référence Catalogue: FLEEX-A-201		
<small>La société ECHELLE EUROPEENNE s'assure de la qualité de ses produits et de leur sécurité. Tout usage non autorisé est susceptible de porter atteinte à la sécurité de l'utilisateur.</small>				






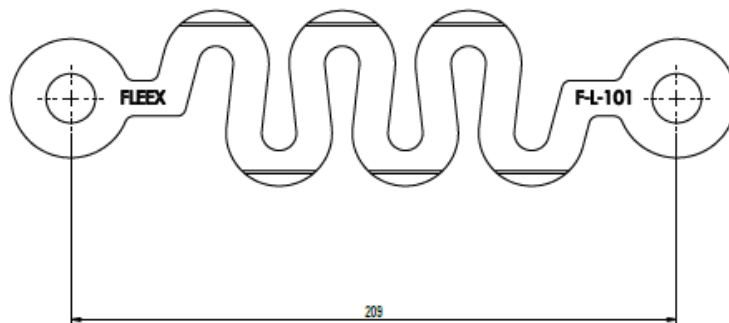
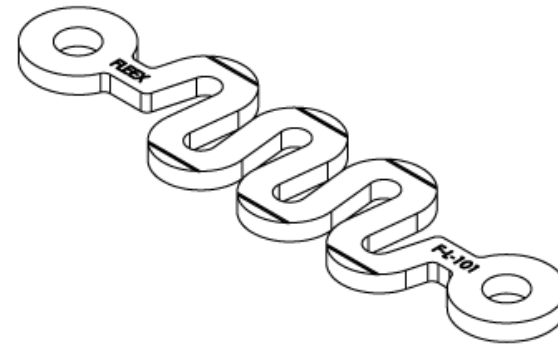
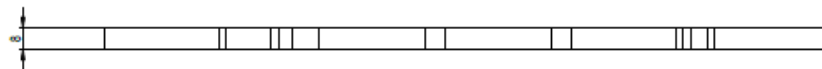
A	Création	29/03/2017	CLEPAGE	
REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 		SECURITE 		
<i>L'ECHELLE EUROPEENNE</i>		ANCRAGE 400		
 A2	Feuille 1/1	Ech 1:2		
Norme : EN 7960/CENTS-16416 (Jusqu'à)				
Matériau : Matériau non spécifié				
Masse : 1,76 kg				
		A0010033	Référence Catalogue FLEEX-A-401	
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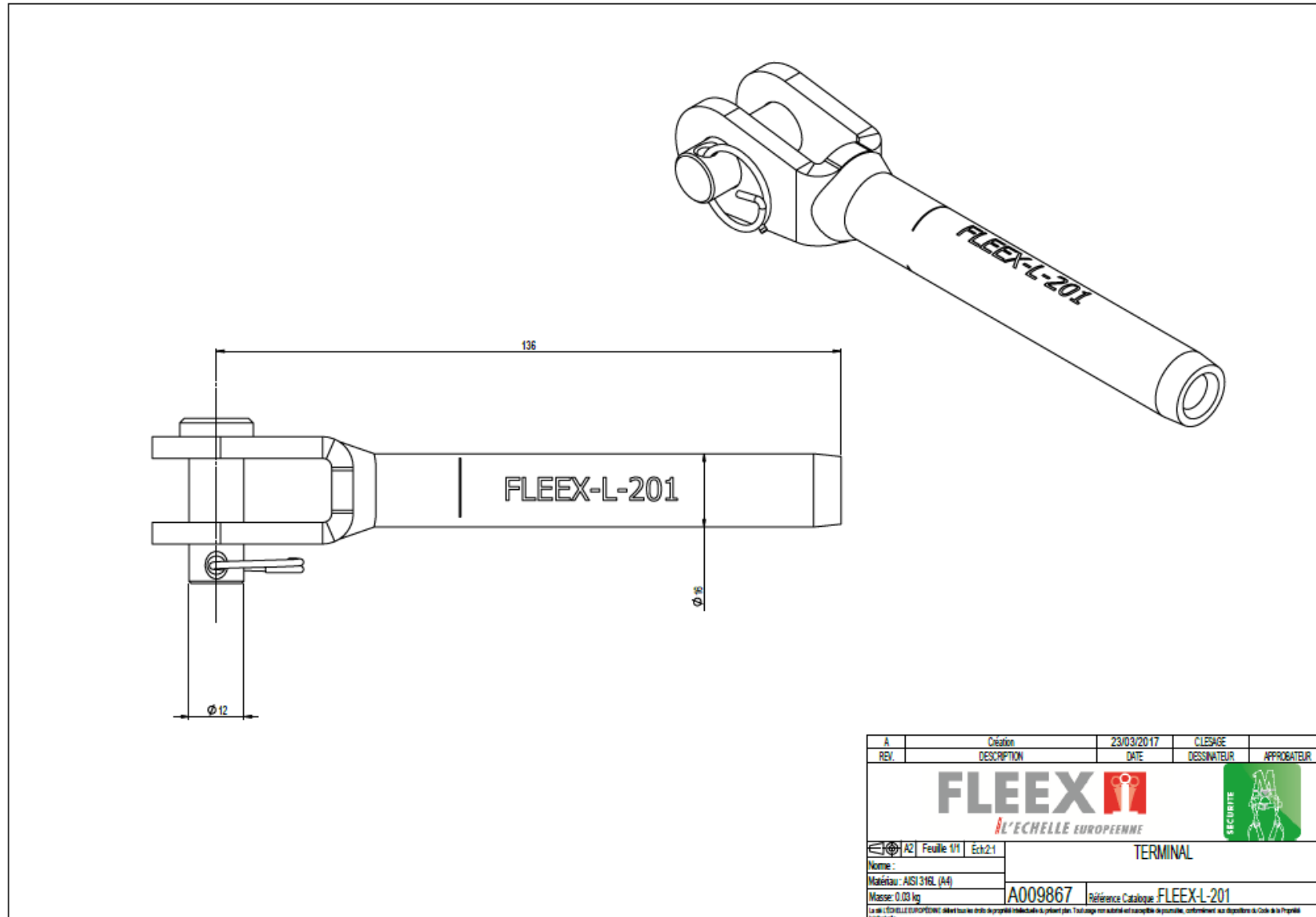
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REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 		IL'ECHELLE EUROPEENNE		SECURITE 
 A2	Feuille 1/1	Ech:1:1	ANCRAGE 200 ANGLE	
Norme : EN-795/CENTS-16415 (Gusers)				
Materiau : Materiau «non spécifiè»				
Masse: 1.54 kg		A0010034	Référence Catalogue: FLEEX-A-202	
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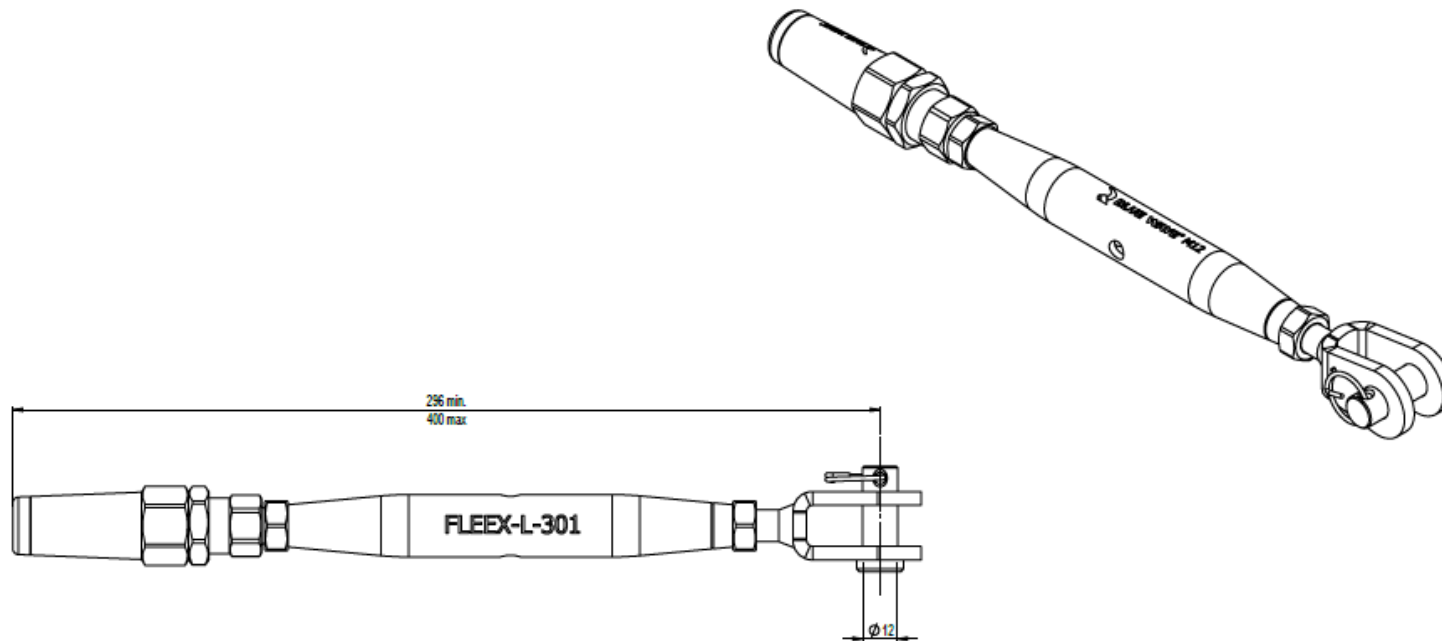
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FLEEX 		SECURITE 		
<i>L'ECHELLE EUROPEENNE</i>		ANCRAGE 400 ANGLE		
 A2	Feuille 01	Éch:1:2		
Norme : EN-796/CENTS-16416 (Dusert)				
Matériau : Matériau non spécifié				
Masse: 2.14 kg				
		A0010035	Référence Catalogue: FLEEX-A-402	
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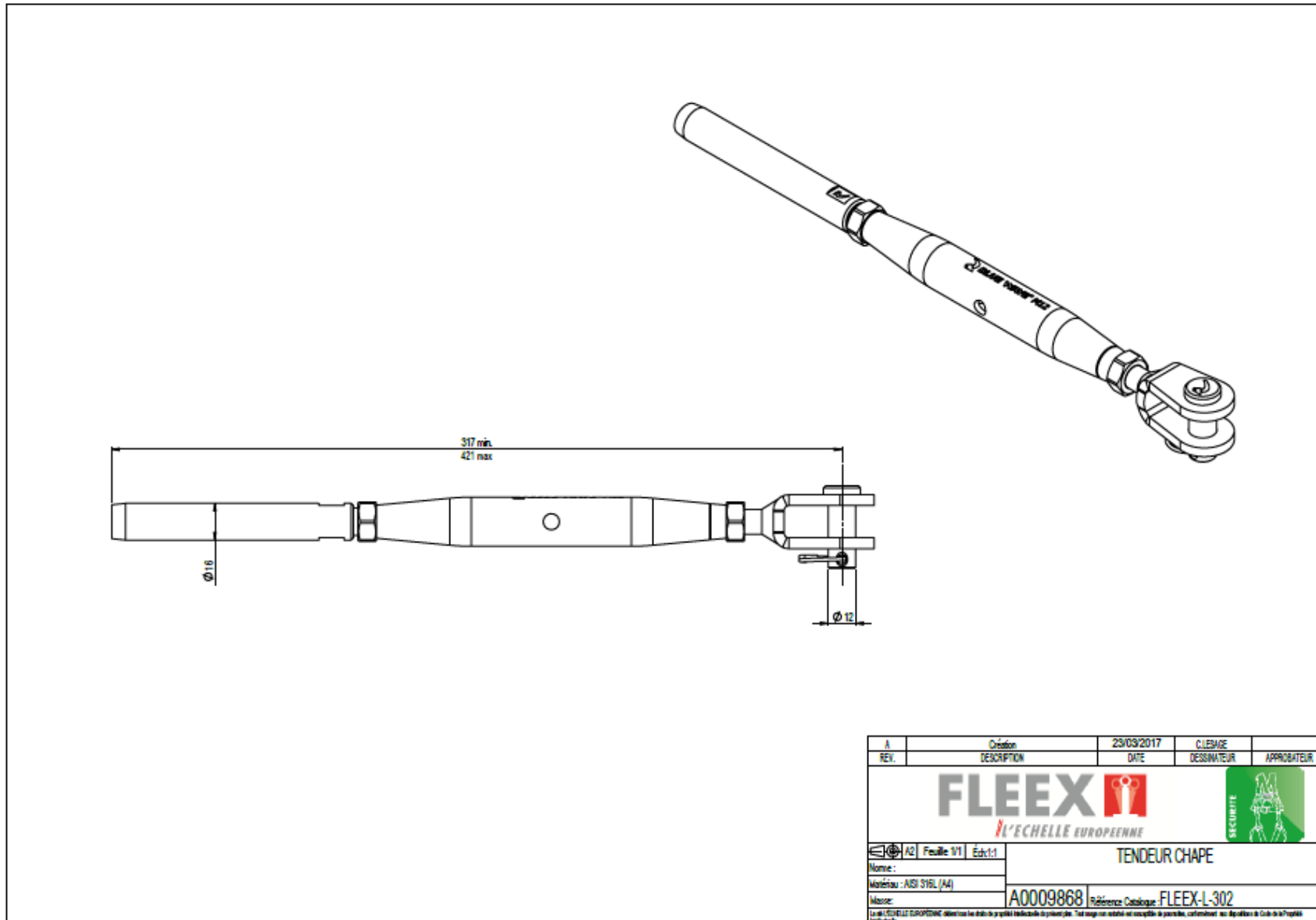
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FLEEX 		L'ECHELLE EUROPEENNE		
		ABSORBEUR LIGNE DE VIE		
Nom:		A0009926		
Materiau: AISI 304 (A2)		Référence Catalogue: FLEEX-L-101		
Masse: 0,5 kg				
<small>La société ECHELLE EUROPEENNE décline toute responsabilité intellectuelle et morale. Tout usage non autorisé est susceptible de poursuites, conformément aux dispositions du Code de la Propriété Intellectuelle.</small>				





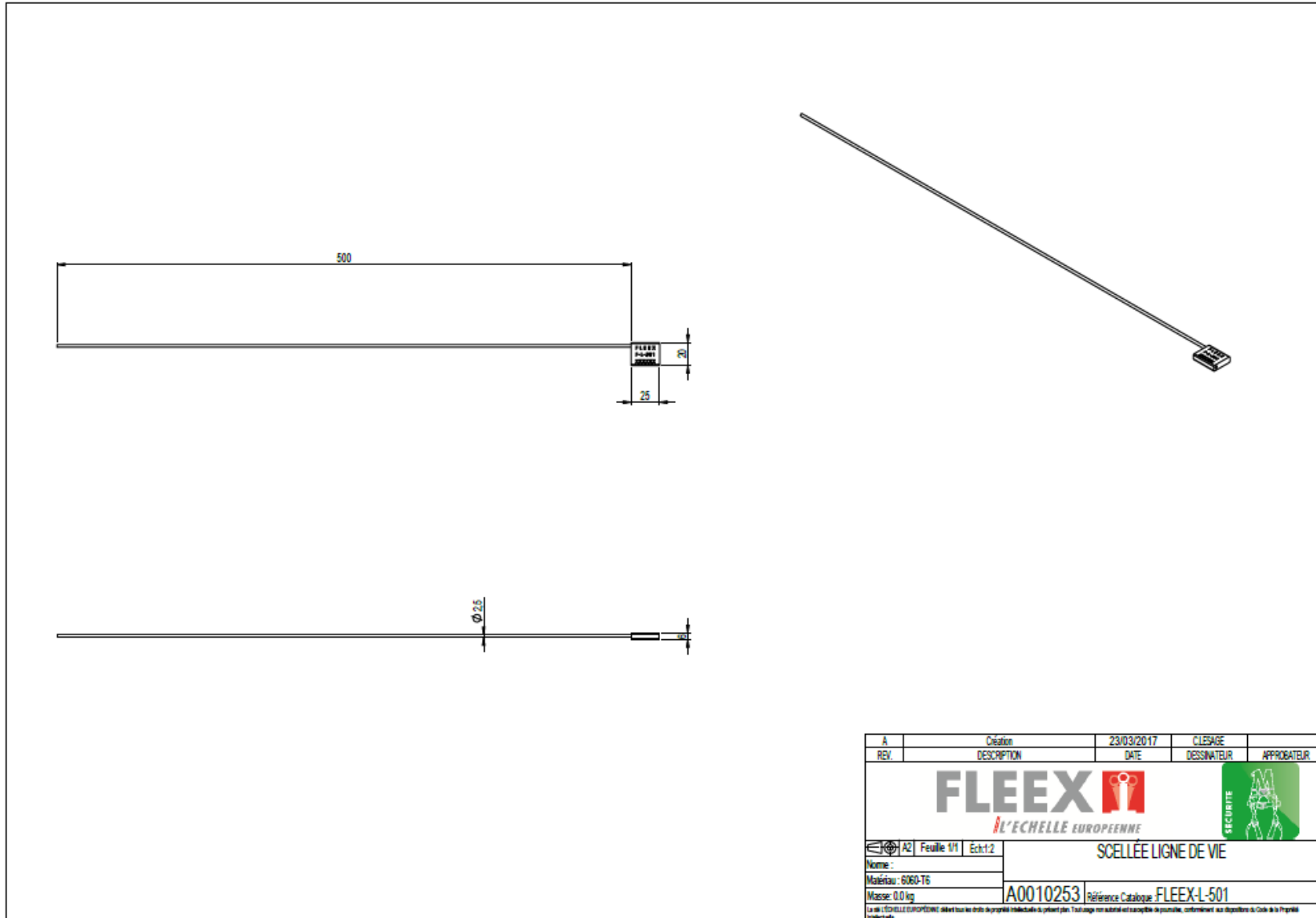
A	Creation	23/03/2017	CLEPAGE	
REV	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 				
<i>IL'ECHELLE EUROPEENNE</i>			TERMINAL	
Nom : _____		Référence Catalogue FLEEX-L-201		
Matériau : AISI 316L (A4)		A009867		
Masse : 0.03 kg				
<small>Le nom FLEEX EUROPEENNE est un nom de marque internationale et est utilisé sous licence par Fleex pour ses produits. Toute autre utilisation est interdite sans autorisation écrite de Fleex.</small>				





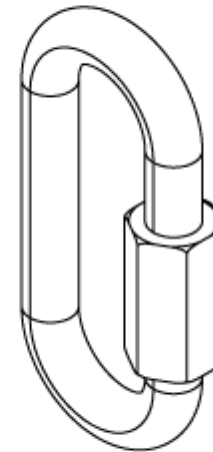
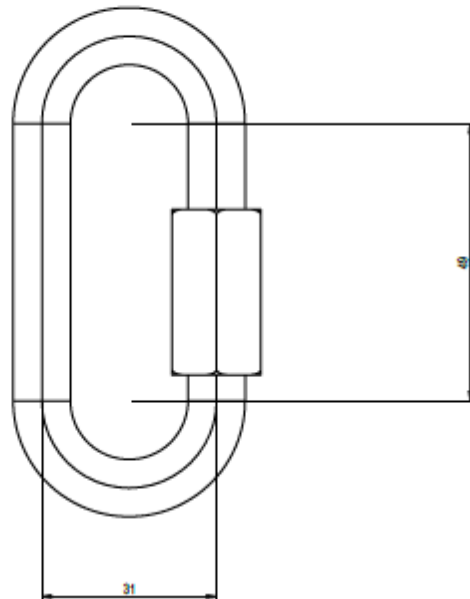
A	Creation	23/03/2017	CLESAGE	
REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 				
<i>l'ECHELLE EUROPEENNE</i>			TENDEUR MANUEL	
 A2	Feuille 1/1	Ech:1:1		
Nom :				
Materiau : AISI 316L (A4)				
Masse : 0,08 kg		A0009869	Référence Catalogue : FLEEX-L-301	
<small>La société ECHELLE EUROPEENNE décline toute responsabilité intellectuelle et morale pour l'usage non autorisé et susceptible de nuire, conformément aux dispositions du Code de la Propriété Intellectuelle.</small>				



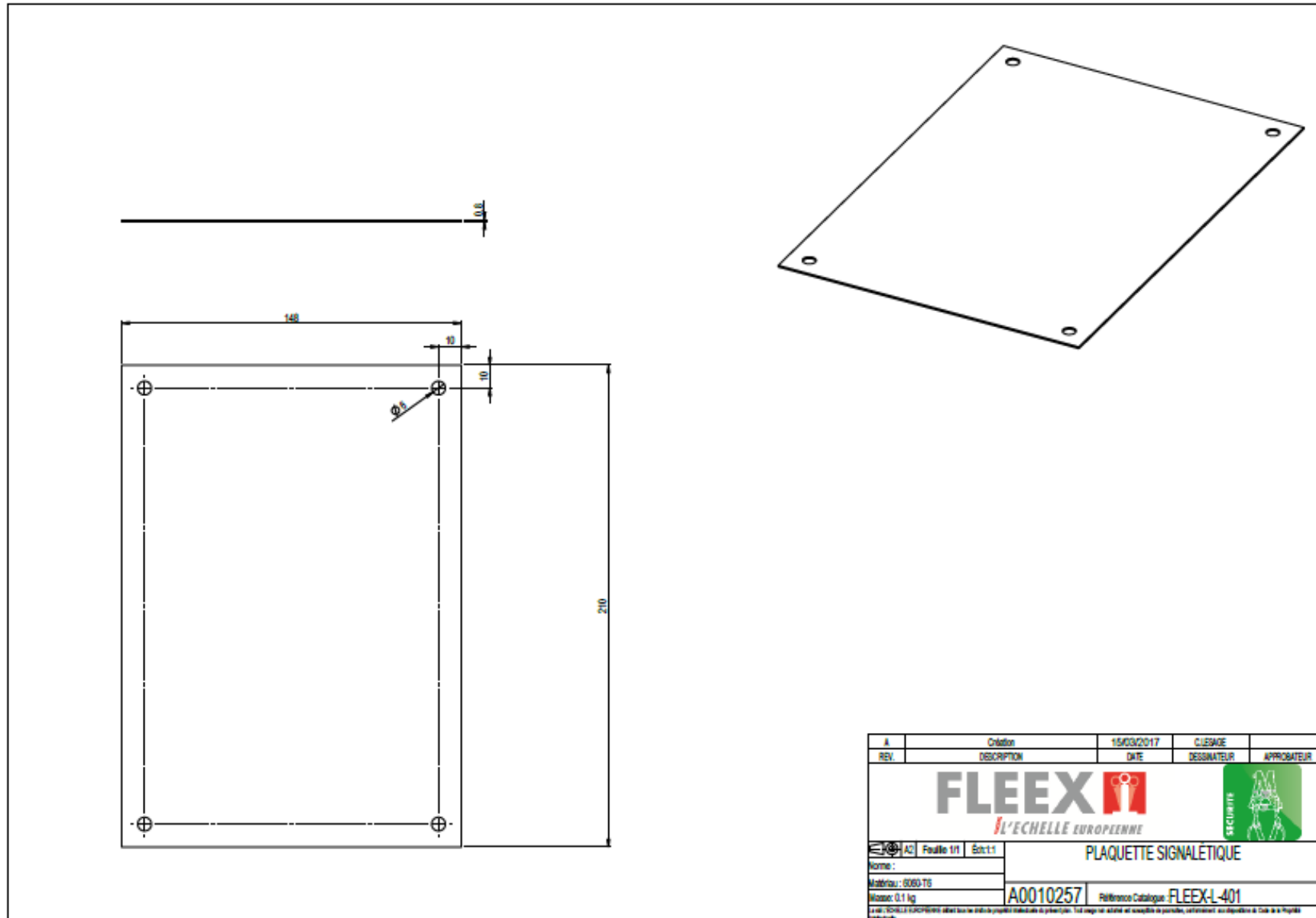
A	Création	23/09/2017	C.ÉBAGE	
REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 				
<i>L'ECHELLE EUROPEENNE</i>				
A2 Feuille 1/1 Édité 1		TENDEUR CHAPE		
Nom :				
Matériau : AISI 316L (A4)				
Masse :		A0009868 Référence Catalogue : FLEEX-L-302		
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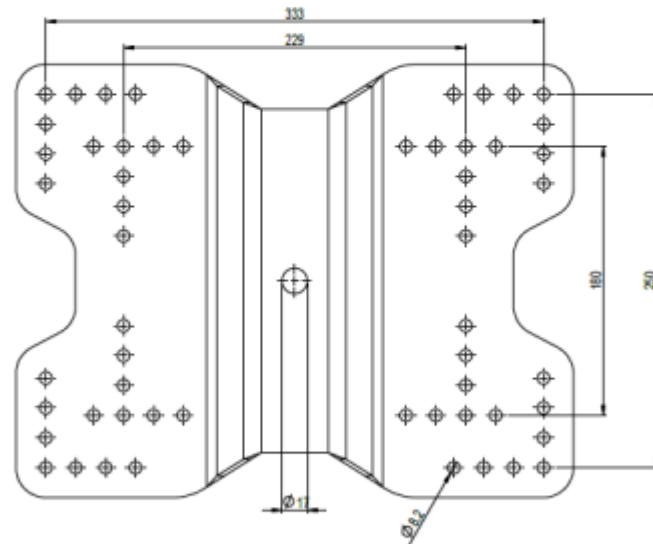
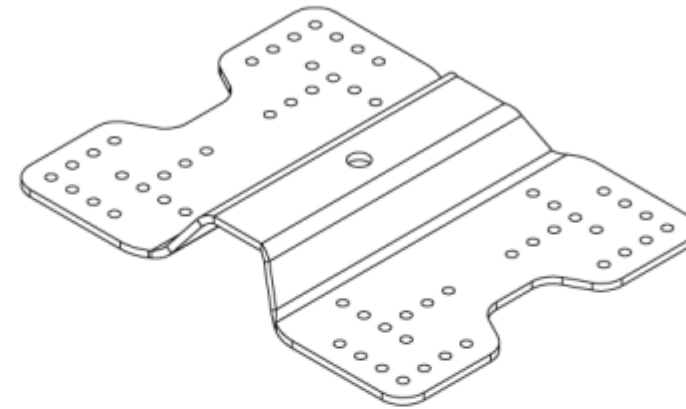
A	Creation	23/03/2017	CLESAGE	
REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 		L'ECHELLE EUROPEENNE		
A02 Feuille 1/1 Ech:1:2		SCELLÉE LIGNE DE VIE		
Norme :				
Matériau : 6060-T6				
Masse: 0.0 kg		A0010253 Référence Catalogue: FLEEX-L-501		
<small>La société ECHELLE EUROPEENNE décline toute responsabilité en matière de propriété intellectuelle et brevetée. Tout usage non autorisé est susceptible de poursuites, conformément aux dispositions du Code de la Propriété Industrielle.</small>				



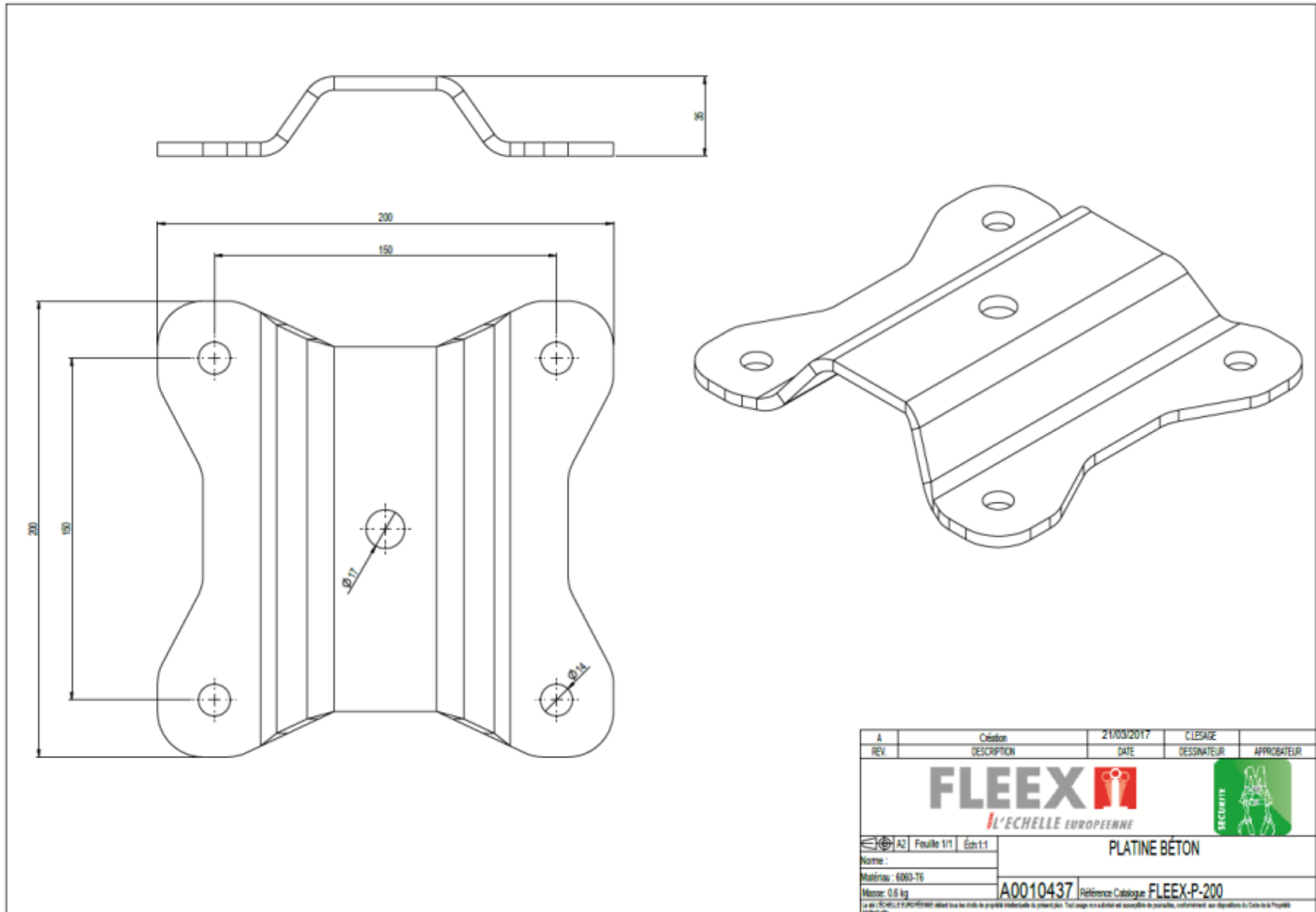
REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
	Creation	23/03/2017	CUESGE	
FLEEX  L'ECHELLE EUROPEENNE				
Norme : EN 12285		MAILLON RAPIDE INOX 1831510		
Matériau : AISI 316L (A4)		A0002264 Référence Catalogue EESA2090		
Masse : 0,35 kg				



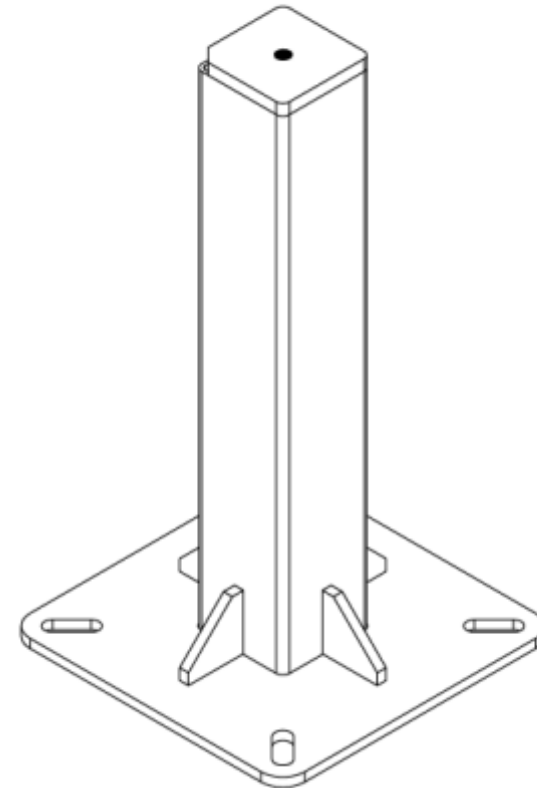
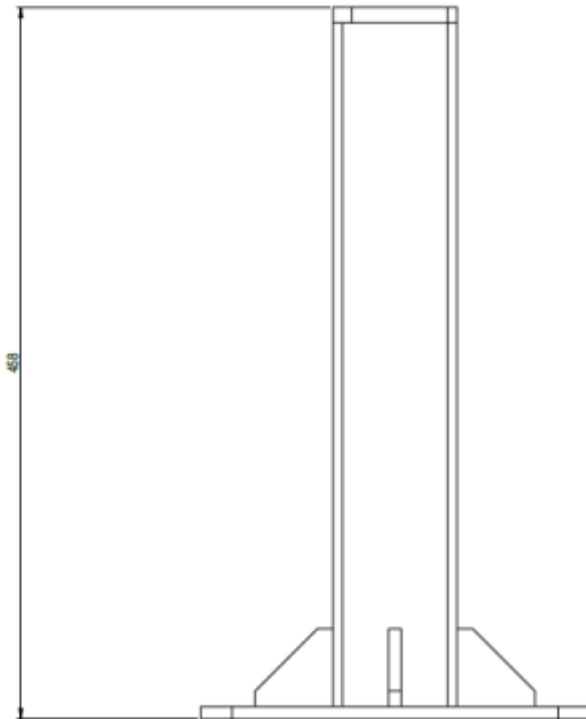
A	Création	15/03/2017	CLERAGE	
REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 		L'ECHELLE EUROPEENNE		
Norme : AD1		PLAQUETTE SIGNALÉTIQUE		
Matériau : 6060-T6		A0010257 Référence Catalogue : FLEEX-L-401		
Masse : 0.1 kg		<small>© 2017 FLEEX L'ECHELLE EUROPEENNE. Tous droits réservés. Toute réimpression ou utilisation non autorisée sans la permission écrite de la FLEEX est formellement interdite.</small>		



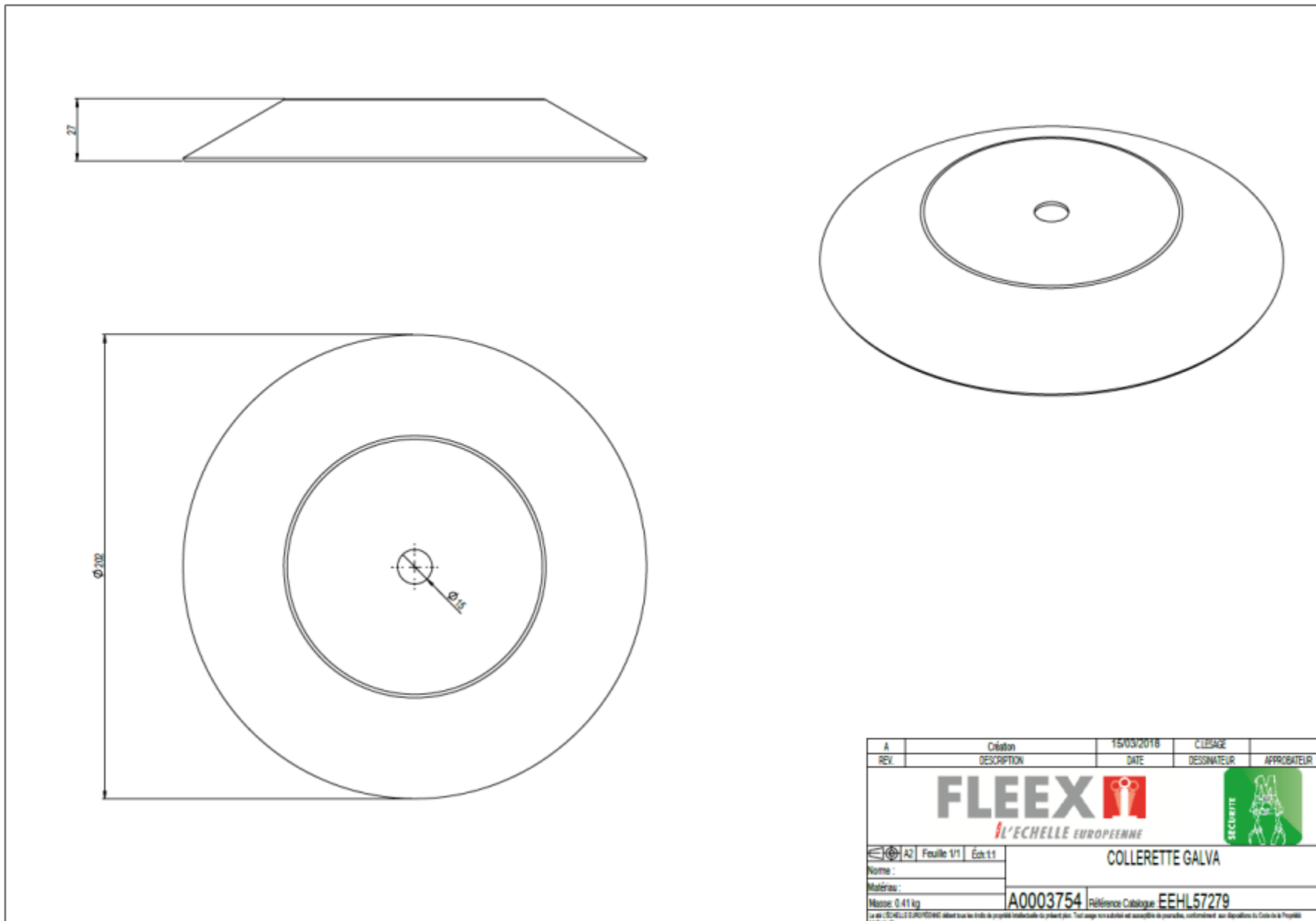
A	Criston	20/03/2017	CLEAGE	
REV	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 				
<i>L'ECHELLE EUROPEENNE</i>		PLATINE BAC SEC		
EN ISO 9001 A2 Feuille 1/1 Éch. 1:2 Nom : Matière : 6082-T6 Masse : 1,6 kg		A0010295 Référence Catalogue FLEEX-P-100		
<small>Le sig. L'ECHELLE EUROPEENNE est un des droits de propriété intellectuelle de FLEEX s.p.a. Tout usage non autorisé est susceptible de poursuites, conformément aux dispositions de la Loi sur la Propriété Industrielle.</small>				



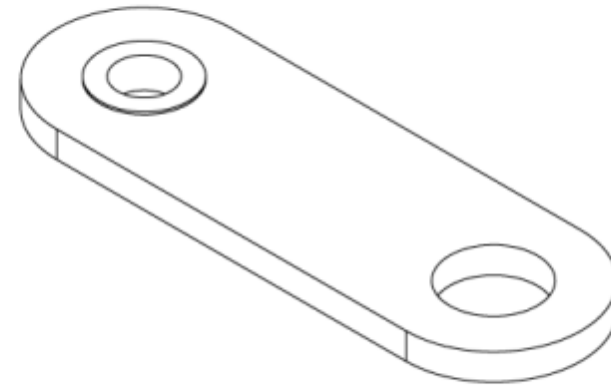
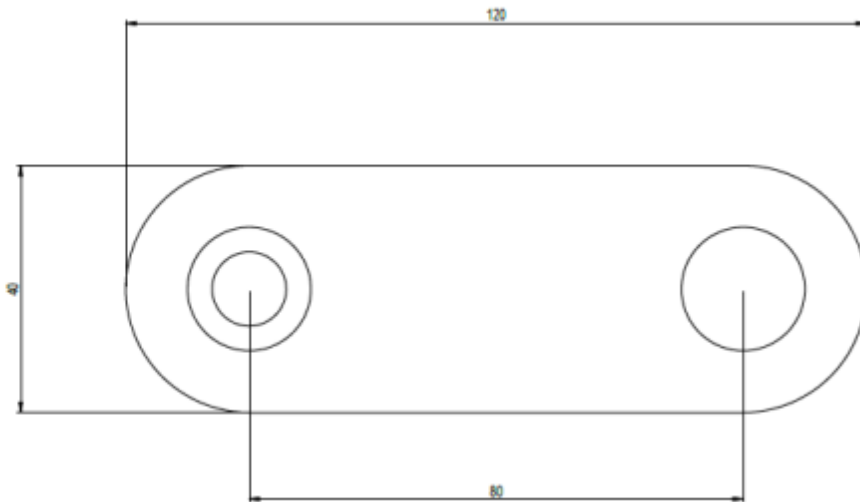
A	Creation	21/03/2017	CLESAGE	
REV	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 		L'ECHELLE EUROPEENNE		
A2 Feuille 1/1 Ech:1:1		PLATINE BÉTON		
Nom:				
Matériau: E090-T6				
Masse: 0,6 kg		A0010437 Référence Catalogue: FLEEX-P-200		
<small>Le logo L'ECHELLE EUROPEENNE est un des droits de propriété intellectuelle de Fleex. Tout usage non autorisé est susceptible de poursuites, conformément aux dispositions de l'article 70 de la Loi sur le droit d'auteur.</small>				



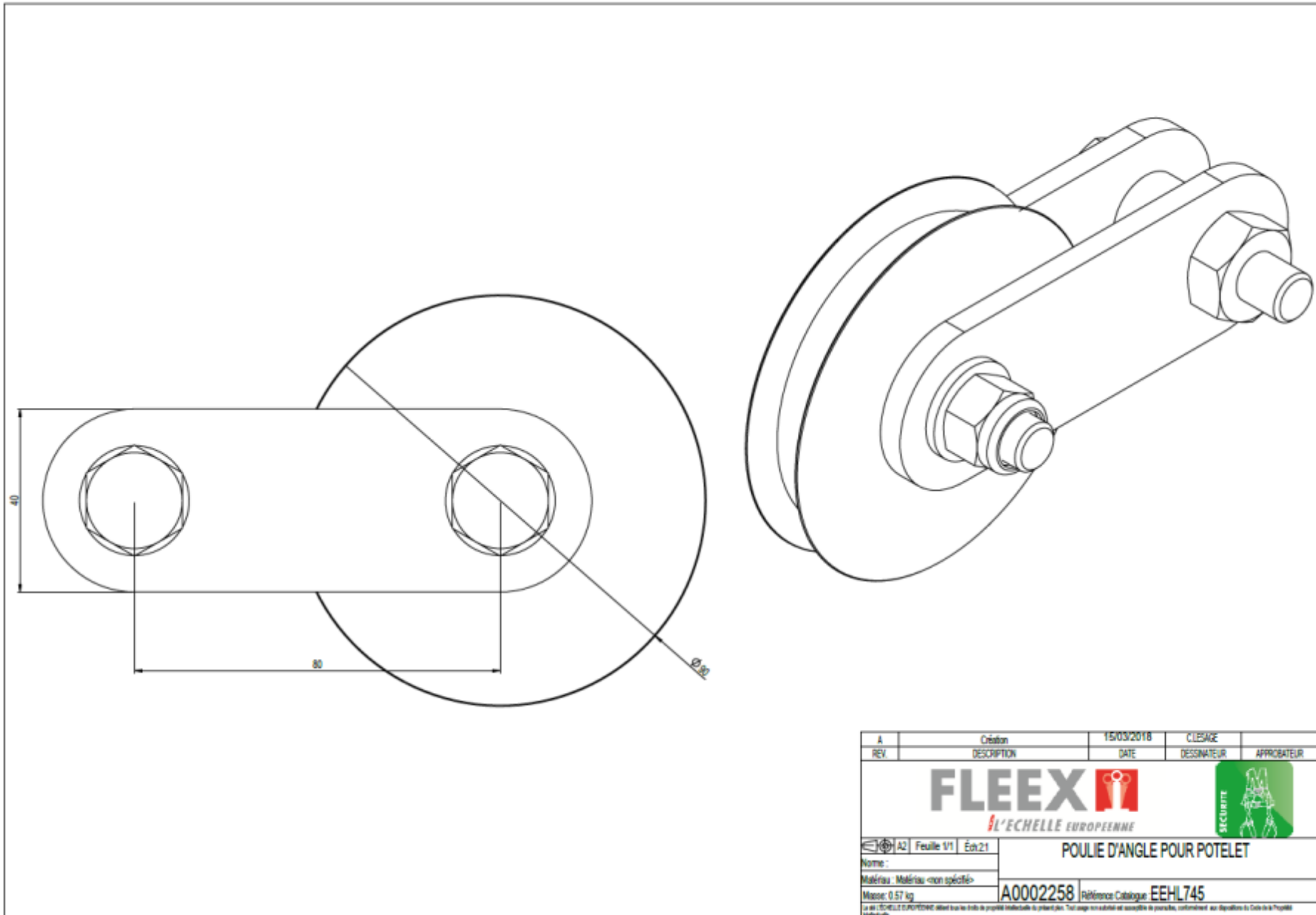
A	Creation	06/12/2017	CLESAGE	
REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 		L'ECHELLE EUROPEENNE		
Nom : ANCREE 2018				
Matériau : Acier galvanisé				
Masse : 7,5 kg		Référence Catalogue : ANCREE 2018		
<small>La société ECHELLE EUROPEENNE s'attend à ce que les clients ne soient pas responsables de la conception, de la fabrication, de l'installation ou de l'entretien de l'échelle.</small>				



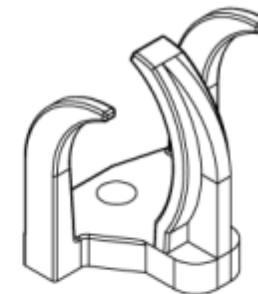
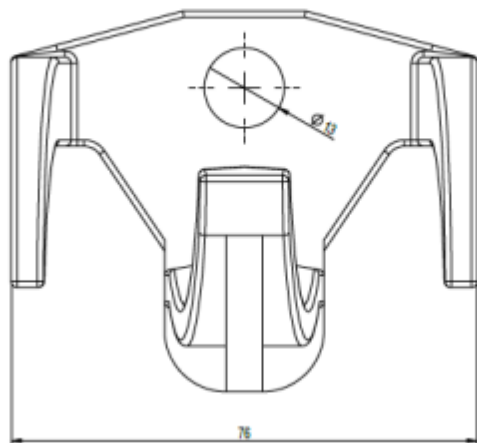
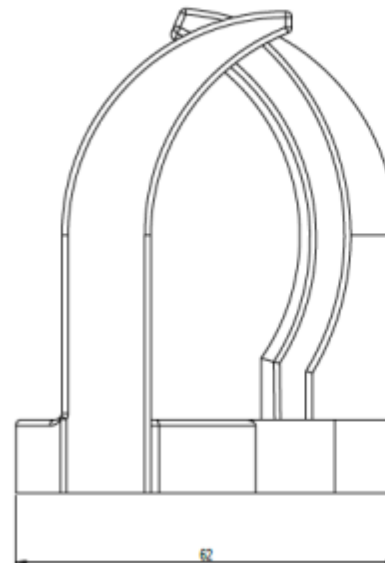
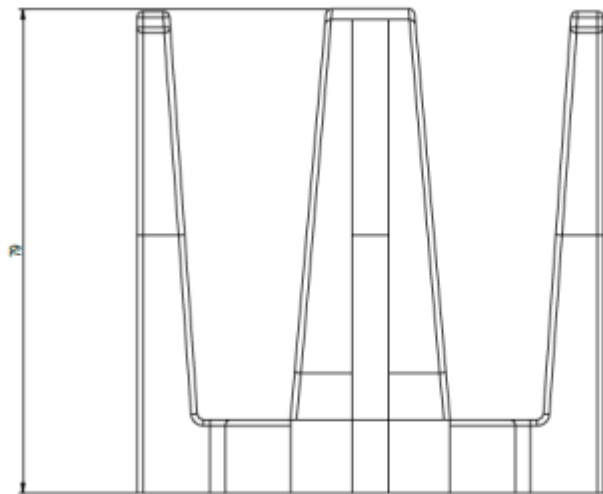
A	Creation	15/03/2016	CLESAGE	
REV.	DESCRIPTION	DATE	DESIGNATEUR	APPROBATEUR
FLEEX 				
<i>L'ECHELLE EUROPEENNE</i>				
 A2	Feuille 1/1	Ech 1:1	COLLERETTE GALVA	
Nom :				
Matériau :				
Masse: 0.41 kg		A0003754	Référence Catalogue: EEHL57279	
<small>La société FLEEX EUROPEENNE décline toute responsabilité en matière de propriété intellectuelle de ce produit. Tout usage non autorisé est susceptible de poursuites, conformément aux dispositions de la Loi sur le Droit de Propriété Industrielle.</small>				



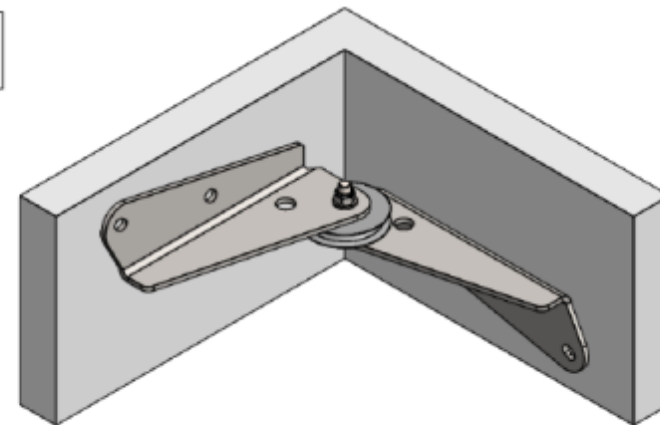
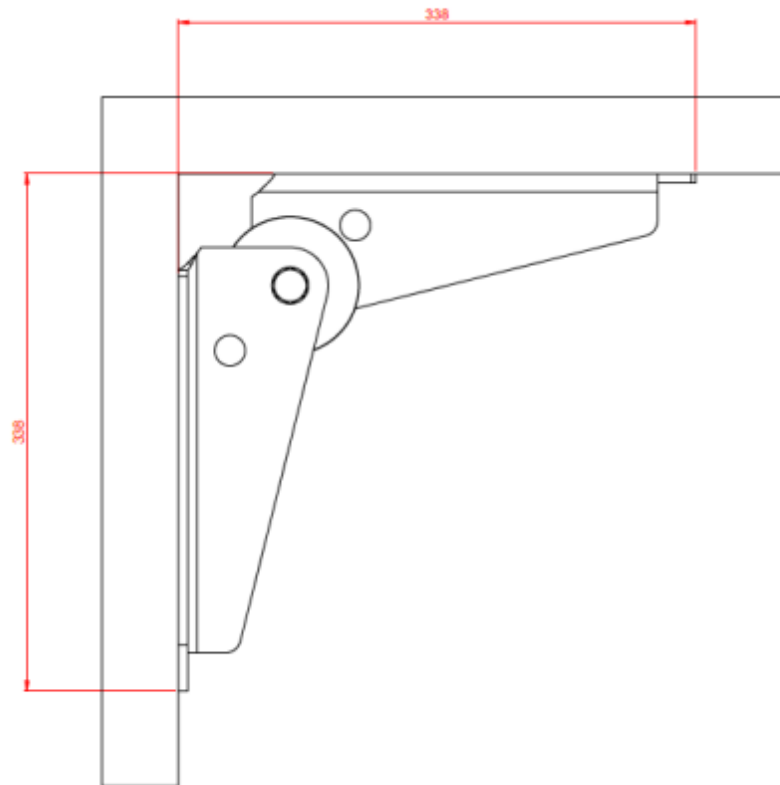
A	Création	15/03/2018	CLESAGE	
REV	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 		L'ECHELLE EUROPEENNE		
A2 Feuille 1/1 Éch:2:1		PLAQUE EXTRÉMITÉ		
Nom:		A0002257 Référence Catalogue: EEHL734-722		
Matériau: Matériau «non spécifié»				
Masse: 0,19 kg				



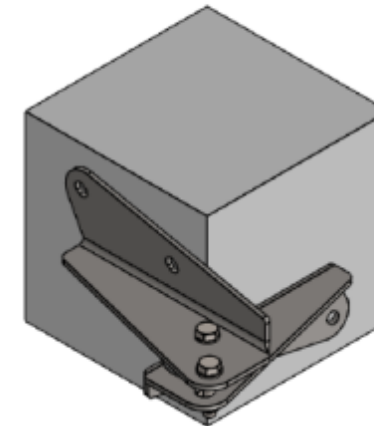
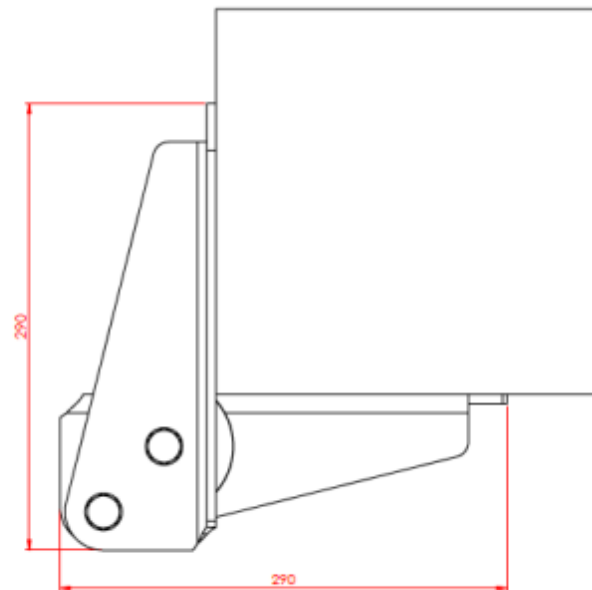
A	Création	15/03/2016	C.ESAGE	
REV	DESCRIPTION	DATE	DESIGNATEUR	APPROBATEUR
FLEEX 		L'ECHELLE EUROPEENNE		
A2 Feuille 1/1 Ech21		POULIE D'ANGLE POUR POTELET		
Nom:		A0002258		
Matériau: Matériau non spécifié		Référence Catalogue: EEHL745		
Masse: 0.57 kg		L'ECHELLE EUROPEENNE s'assure de la qualité individuelle de ses produits. Tout usage non autorisé est susceptible de porter préjudice, notamment aux personnes et aux biens. Les droits de propriété intellectuelle sont réservés.		



A	Création	30/11/2017	CESAGE	
REV.	DESCRIPTION	DATE	DESSINATEUR	APPROBATEUR
FLEEX 		L'ECHELLE EUROPEENNE		
				
		PASSAGE INTERMEDIAIRE DROIT MANUEL		
Norme :		A0002233 Référence Catalogue EEHL201		
Matériau : AISI 316L (A4)				
Masse : 0,4 kg				



<p>Les informations de ce document ont été vérifiées et certifiées par le fabricant sous réserve de la conformité des données fournies. L'usage n'est autorisé que pour les applications indiquées.</p> <p>Le montage de cet équipement doit être effectué en respectant les instructions de montage et les normes de sécurité en vigueur.</p> <p>Il est recommandé de consulter le fabricant pour toute question relative à l'installation et à l'entretien de cet équipement.</p> <p>Le fabricant ne sera pas responsable des dommages causés par une utilisation incorrecte de cet équipement.</p>			 <p>FLEEX L'ECHELLE EUROPEENNE</p>	 <p>SECURITE</p>
<p>Passage d'angle extérieur mural</p>				
NOM	DATE	A0002232		
Création	R. LEVREUR 28/10/2019			
Modification	10/12/2019			
Autre ref.	EEHL140			
Matériau : Aluminium (non spécifié)				
Masse	28,79 kg	ECHELLE1.2	Feuille 1/1	A3
Charge (max)		100 kg/marche		
Charge (total)		100 kg		
<p>Le fabricant ECHELLE EUROPEENNE détient tous les droits de propriété intellectuelle du présent plan. Tout usage non autorisé est susceptible de poursuites, conformément aux dispositions du Code de la Propriété Intellectuelle.</p>				





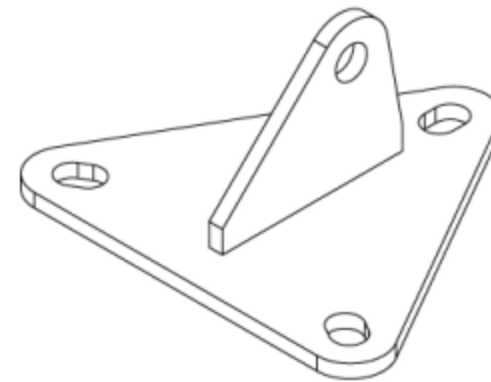
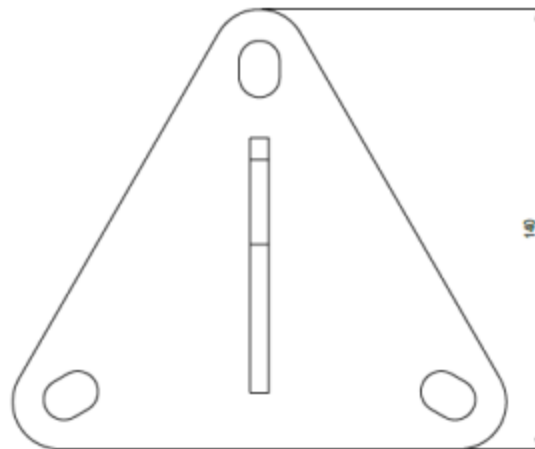
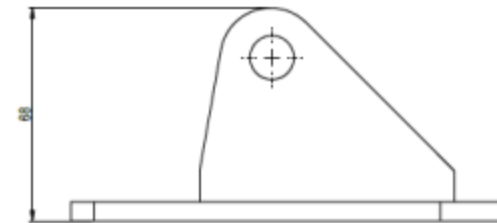
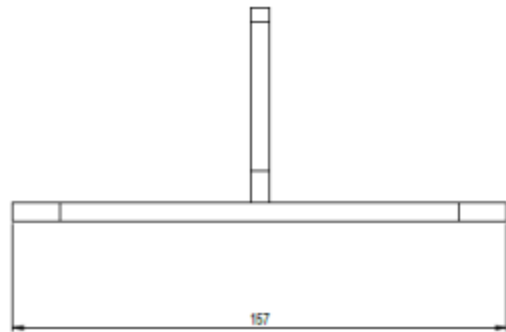

Passage d'angle extérieur mural

NOM	DATE
Création: KLEVERER	26/10/2018
Modification:	15/03/2019
Autre ref:	EEH, 1.40
Matériau: Matériau (non spécifié)	

A0002232

Masse: 40,74 kg	ECHELLE 1.2	Feuille 1/1	A2	Charge (max): 300 kg/m	Charge (max): 300 kg
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A	Création	30/11/2017	CLESAGE	
REV	DESCRIPTION	DATE	DESIGNATEUR	APPROBATEUR
FLEEX 				
<i>L'ECHELLE EUROPEENNE</i>				
Nom : PIÈCE D'EXTREMITÉ MURALE				
Matériau : AISI 303 (A1)				
Masse : 0,8 kg		Référence Catalogue : EEHL102		

13- TABLE OF FORCES AND DEFLECTIONS

		Longueur totale de la ligne de vie - Choisir le cas défavorable (Ligne de vie plus courte)																		
		3	4	5	6	7	8	9	10	11	12	13	14	15	20	30	50	70	100	
Travée la plus longue	3	0,88m 9,31kN	0,89m 9,25kN	0,89m 9,20kN	0,9m 9,14kN	0,91m 9,08kN	0,91m 9,03kN	0,92m 8,97kN	0,93m 8,91kN	0,93m 8,86kN	0,94m 8,81kN	0,95m 8,75kN	0,95m 8,70kN	0,96m 8,64kN	1m 8,36kN	1m08 8,36kN	1m08 8,36kN	1m08 8,36kN	1m08 8,36kN	
	4		1m04 10,21kN	1m05 10,10kN	1m05 10,00kN	1m06 9,89kN	1m07 9,79kN	1m08 9,69kN	1m08 9,58kN	1m09 9,48kN	1m10 9,38kN	1m11 9,27kN	1m11 9,17kN	1m12 9,06kN	1m16 8,55kN	1m27 8,55kN	1m27 8,55kN	1m27 8,55kN	1m27 8,55kN	
	5			1m20 10,95kN	1m21 10,80kN	1m21 10,66kN	1m22 10,51kN	1m23 10,36kN	1m24 10,21kN	1m25 10,06kN	1m25 9,92kN	1m26 9,77kN	1m27 9,62kN	1m28 9,48kN	1m32 8,74kN	1m46 8,74kN	1m46 8,74kN	1m46 8,74kN	1m46 8,74kN	
	6				1m34 11,57kN	1m35 11,38kN	1m36 11,19kN	1m37 11kN	1m38 10,81kN	1m39 10,62kN	1m40 10,44kN	1m41 10,25kN	1m42 10,06kN	1m43 9,87kN	1m48 8,93kN	1m65 8,93kN	1m65 8,93kN	1m65 8,93kN	1m65 8,93kN	
	7					1m48 12,10kN	1m49 11,87kN	1m50 11,64kN	1m51 11,41kN	1m53 11,18kN	1m54 10,95kN	1m55 10,72kN	1m56 10,50kN	1m57 10,27kN	1m63 9,12kN	1m83 9,12kN	1m83 9,12kN	1m83 9,12kN	1m83 9,12kN	
	8						1m62 12,56kN	1m63 12,29kN	1m65 12,02kN	1m66 11,75kN	1m68 11,48kN	1m69 11,21kN	1m70 10,94kN	1m72 10,66kN	1m79 9,31kN	2m04 9,31kN	2m04 9,31kN	2m04 9,31kN	2m04 9,31kN	
	9							1m76 12,96kN	1m78 12,64kN	1m79 12,33kN	1m81 12,01kN	1m83 11,70kN	1m85 11,38kN	1m87 11,07kN	1m96 9,49kN	2m23 9,49kN	2m23 9,49kN	2m23 9,49kN	2m23 9,49kN	
	10								1m90 13,32kN	1m92 12,96kN	1m94 12,59kN	1m96 12,23kN	1m98 11,86kN	2m00 11,50kN	2m11 9,68kN	2m40 9,68kN	2m40 9,68kN	2m40 9,68kN	2m40 9,68kN	
	11									2m03 13,64kN	2m06 13,22kN	2m08 12,80kN	2m11 12,38kN	2m14 11,96kN	2m27 9,87kN	2m59 9,87kN	2m59 9,87kN	2m59 9,87kN	2m59 9,87kN	
	12		Cable deflection								2m16 13,93kN	2m19 13,45kN	2m23 12,96kN	2m26 12,48kN	2m42 9,96kN	2m78 9,96kN	2m78 9,96kN	2m78 9,96kN	2m78 9,96kN	
	13		Maximum force at ends										2m30 14,18kN	2m34 13,62kN	2m38 13,01kN	2m58 10,25kN	2m97 10,25kN	2m97 10,25kN	2m97 10,25kN	2m97 10,25kN
	14												2m43 14,42kN	2m48 13,76kN	2m74 10,44kN	3m17 10,44kN	3m17 10,44kN	3m17 10,44kN	3m17 10,44kN	
	15													2m56 14,64kN	2m90 10,63kN	3m37 10,63kN	3m39 10,63kN	3m40 10,63kN	3m40 10,63kN	

Example of how to read the table	
1m72 10,66kN	1.72 m: For a lifeline with a total length of 15 m and a maximum span between anchors of 8 m, the maximum deflection of the cable following a fall is of 1.72 m.
	10.66 kN: For the same configuration, the maximum forces on the structures will be 10.66 kN.

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