Sicurpal

INSTRUCTION MANUAL
FOR ASSEMBLY, USE AND MAINTENANCE

LVB/LVBD

sicurpal.it

EDITION 2 - REVISION 0

Translation of original instructions.

1. REFERENCE STANDARDS

This manual has been drawn up in compliance with the following legal requirements and standards:

1. Legislative Decree No. 81 dated 9 April 2008 and subsequent modifications and additions

2. Certification standards:

- **UNI EN 795:2012*** valid for max. 1 (one) operator
- **CEN/TS 16415:2013*** valid for max. 4 (four) operators
- **UNI 11578:2015*** valid within Italy only, for max. 4 (four) operators

*See Chapter 7.

3. Reference standards:

- **UNI EN 365:1993**
- **UNI EN 363:2008**
- **UNI 11560:2014**
- **UNI 11158:2015**
- **Regulation UE 425/2016**

	Always read the manual carefully before using the system.
	This manual must always be available for consultation.

2. INTRODUCTION

This “Instruction manual for assembly, use and maintenance” refers to **SICURPAL LVB/LVBD** devices made of stainless steel. These devices comply with the requirements of standards **UNI EN 795: 2012**, **CEN/TS 16415:2013**, **UNI 11578:2015 Type A** and **Type C**. The **Type A SICURPAL LVB** anchorage systems are designed and approved to be used simultaneously by a maximum of 3 (three) operators. The **Type A SICURPAL LVBD** anchorage systems are designed and approved to be used simultaneously by a maximum of 6 (six) operators. They are likewise capable of withstanding a maximum strain of 15 kN. This allows them to be used as anchorages for provisional systems certified as **UNI EN 795 Type B**, subject to verification of the anchoring devices. The load that causes the device to start bending is 2 kN. The **Type C SICURPAL LVB/LVBD** anchorage systems are designed and approved to be used simultaneously by a maximum of 4 (four) operators.

2.1. WARRANTY

The warranty period for **SICURPAL PBS/PBSC** anchorage devices is maximum 10 years from the date of installation, if the latter is indicated. If this is not the case, the warranty is for 10 years from the date of the production batch indicated on the product label. The WARRANTY relates to the **LVB/LVBD** devices as a whole and their individual components, and covers in particular:

- Faults in manufacture
- Faults in materials
- Faults in welding

EXCEPTIONS

The warranty does not cover damage resulting from use in a manner not foreseen by this manual.

LIMITATIONS

In all cases the warranty is restricted to replacement of the elements or equipment acknowledged to be faulty after assessment by the **SICURPAL** technical department.

All faulty components must be returned to **SICURPAL**, who will assess their characteristics and, if the faults are confirmed, will replace them with conform material.

The warranty only applies to the returned elements, and does not cover the expense incurred for removal and reinstallation of the equipment in the system in which it is fitted.
The warranty also lapses if the material has been fitted and used in a manner not in compliance with the assembly and technical instructions issued by **SICURPAL**.
Any tampering with, or unauthorised replacement of, anchorage device components, use of unsuitable accessories, elements or components and/or improper use of the system will cause the warranty to lapse.
Failure to carry out periodic inspections will render the product guarantee void.

IMPROPER USE refers to use of the device:

- As a support to fix the television aerial;
- As a hook to move objects and/or materials;
- As a lightning conductor (although the device can be used for that purpose subject to the prior authorisation of a qualified technician who must plan and certify connection to the Faraday cage);
- Any other use that is not typical of an anchorage for a fall arrest system.

2.2. PACKING AND TRANSPORT

During storage in the warehouse the fall arrest systems must be suitably protected.
SICURPAL ensures that they are carefully packed prior to transport and assured against:

- Unforeseen stress
- Excessive heat or damp
- Contact with sharp edges
- Contact with corrosive substances or other substances that might damage the devices.

For better protection of the environment, **SICURPAL** has decided to reduce packaging to a minimum. For this reason several products may be sent within the same packaging.

2.3. NOTES ON DELIVERY

On receipt of the material, check that:

- The packages received are undamaged and properly wrapped;
- The goods supplied correspond with the order specifications;
- The delivery note is present;
- The product Declaration of Conformity is present;
- The product manual is present;
- If there is any damage, enter a reservation when signing the shipping document, and notify both the courier and the **SICURPAL** Logistics department within 48 hours of delivery. Detailed photographs are required to support the notification, In the absence of these, **SICURPAL** will not be responsible for any damage;
- In the case of faulty **SICURPAL** devices, contact the **SICURPAL** Logistics Department (Telephone number **SICURPAL** 059-81.81.79, e-mail: qualità@sicurpal.it).

	This manual must be **handed over** to the **installer**, **user** or **maintenance technician** of the anchorage system who, before carrying out installation, using or performing maintenance on the system, must read all the relevant instructions carefully and procure the materials and Personal Protection Equipment (P.P.E.) required to work in safety (see the Technical Roofing Plan). This document must form part of the Technical Construction File, together with design of the fall prevention system (**Encl. XVI Leg. Dec. 81/08**).

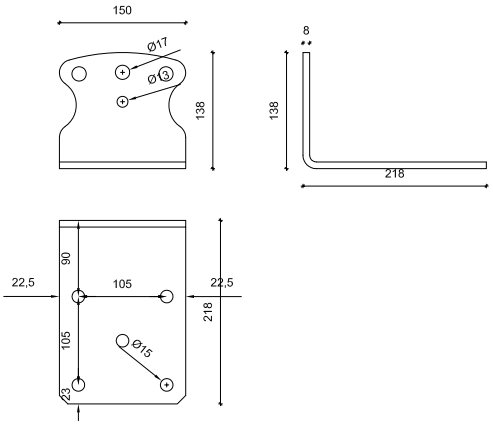
3. DESCRIPTION AND FIXING OF ANCHORAGE DEVICES

The products in the **SICURPAL LVB/LVBD** can be used to create lifelines of variable length between 4 metres and 60 metres, with minimum spans of 4 metres and maximum spans of 12 metres.

3.1. DESCRIPTION OF THE ANCHORAGE DEVICES

The **LVB/LVBD** devices are ideal to create an invisible ridge beam lifeline that is able to bypass intermediate points without having to unhook. They can be fixed directly to the structure or with a maximum overhang of 20 cm. using threaded bars, according to the designer's instructions.

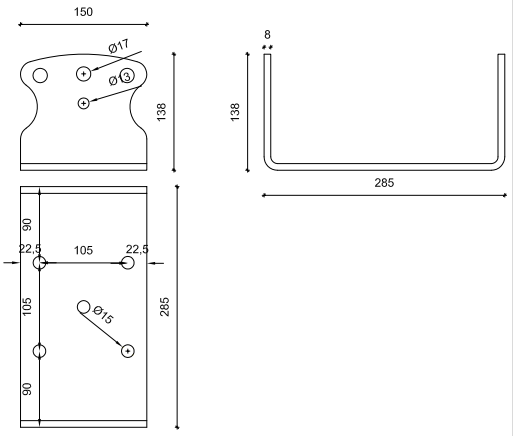
LVB – Cod. 000015



- Manufactured in stainless steel
- Base size 218x150x8 mm
- 4 fixing holes
- 4 holes to be used for anchorage or fixing of lifeline accessories
- 1 central hole for inspections
- The device can be fitted in an overhanging position using bars
- Max. overhang with respect to floor/fixing surface: 20 cm

Figure 3.1 - LVB device

LVBD – Cod. 001516



- Double connection device, allowing improved use of the P.P.E.s and enabling the lifeline to be fitted on both pitches of the roof
- Manufactured in stainless steel
- Base size 285x150x8 mm
- 4 fixing holes
- 8 holes to be used for anchorage or fixing of lifeline accessories
- 1 central hole for inspections
- The device can be fitted in an overhanging position using bars
- Max. overhang with respect to floor/fixing surface: 20 cm

Figure 3.2 - LVBD device

3.2. FIXING THE ANCHORAGE DEVICES

Installation of the **LVB/LVBD** anchorage devices must be carried out by trained staff, capable of assembling and dismantling the anchorage system (UNI 11560:2014) according to the indications provided in the Calculation Report drawn up by an authorised technician and containing all the detailed characteristics for the selected fastening (for example the fastening type, bar/screw dimensions, anchoring depth, distance from edges, etc.).
The following are some of the possible application methods, which are subject to verification by an authorised technician.

DEVICES	MATERIAL	FIXING METHOD				
		4 Bars/Bolts** ≤M12	Two-component Resin	Distribution plate + bolts	Counterplate	Mechanical solutions***
LVB	WOOD	✓	✓	✓	✓	
	STEEL	✓		✓	✓	✓*
	REIN-FORCED CONCRETE	✓	✓	✓	✓	✓*
LVBD	WOOD	✓		✓	✓	
	STEEL	✓		✓	✓	✓*
	REIN-FORCED CONCRETE	✓	✓	✓	✓	✓*

* Option possible if the product is installed in a supported position, not overhanging.
** The manufacturer recommends that the designer assess the use of vibration damping and self-locking systems (e.g. extra-large washers, self-locking nuts, split washers etc.) when fixing.
*** When mechanical solutions are used it is recommended that preference be given to systems certified for dynamic loads with a life-span longer than or equal to that of the product (30 years), in order to avoid sustaining additional costs in the future.

On the customer's request, the manufacturer can provide the assistance of a technician for the installation methods to be used for **SICURPAL** devices.
This manual is to be considered as an essential indication of how to install the anchorage system properly.
In spite of this, **SICURPAL** offers courses for designers, fitters and testers in order to improve their understanding of these instructions and pass on their know-how to ensure proper installation and reduce to a minimum possible on-site errors.

	**Based on the tests carried out by SICURPAL using the device certification protocol (UNI EN 795 and UNI 11578:2015), LVB/LVBD are designed and certified by the manufacturer for overhanging installation (max. 20 cm) using M10/M12 bars. Both the anchorage plate and the anchor (A2 stainless steel threaded bar) are the subject of the above certification. The qualified technician has the task of verifying the withdrawal and shear strength of the anchor (bar/resin) and of the support structure, as well as selecting the bars to be used for fixing, when fixing without overhang.**

3.3. DESCRIPTION OF THE LOAD DISTRIBUTION PLATES

The LVB/LVBD devices can be combined with various load distribution plates.
The device is fastened to the plates using bolts/threaded bars.
The most significant examples of this are shown below, purely as an illustration:

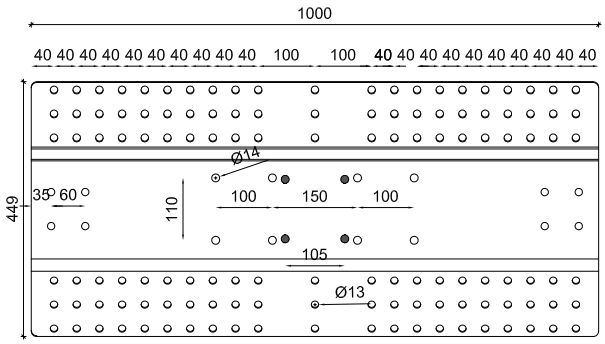


Figure 3.3 - Ridge beam load distribution device (Cod. 000218) for LVB/LVBD device

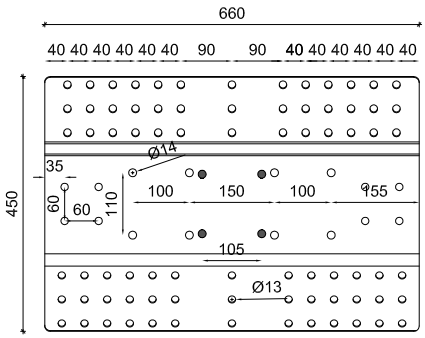


Figure 3.4 - Ridge beam load distribution device (Cod. 000213) for LVB/LVBD device

3.4. FIXING THE LVB/LVBD DEVICES WITH THE DISTRIBUTION PLATES

The LVB/LVBD device can be installed directly on the load distribution plate (position 1) or in an overhanging position (max. 20 cm) (position 2):

To install it as shown in position 1:

1. Position the LVB/LVBD device on the load distribution plate until the holes in the LVB/LVBD device are perfectly aligned with those on the distribution plate;
2. Insert the bars into the holes;
3. Prepare self-locking nuts and washers;
4. Tighten the nuts until completely fastened.

The steps involved in preparation and installation of the material when fixed in an overhanging position are given below, for illustration purposes:

1. Prepare bars of a suitable size;
2. Screw the normal nuts onto each end of the bar by approximately 5 cm;
3. Insert the bars in the holes on the distribution plate and bolt the end of the bar that comes out of the plate using a washer and self-locking nut. Repeat this operation on all four bars;
4. Position the load distribution plate and fix it to the structure using suitable fixing devices;
5. Position and finish screwing the bolts inserted as described above onto the bars, so that the pre-set overhang of the LVB/LVBD device is respected;
6. Insert the LVB/LVBD device into the bars, arranged as described above;
7. Lock the protruding ends of the bars using a self-locking nut. Repeat this operation on all four bars;
8. Use a torque wrench to check that they are correctly locked.

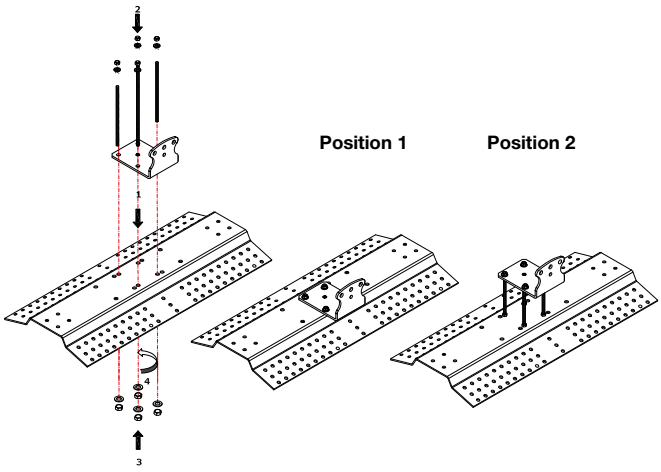


Figure 3.5 - LVB/LVBD device with distribution plate (Cod. 000218)

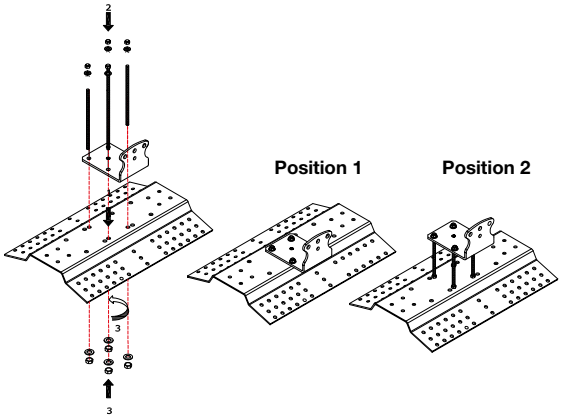


Figure 3.6 - LVB/LVBD device with distribution plate (Cod. 000213)

3.5. DESCRIPTION OF THE COUNTERPLATES

Fixing must be carried out with counterplates, threaded bars, washers and nuts in the following cases:

1. When, based on the technician's assessment, the dimensions of the support structure are not suitable for fixing with resins;
2. When the structure is in pre-compressed concrete, and therefore will not stand boring.

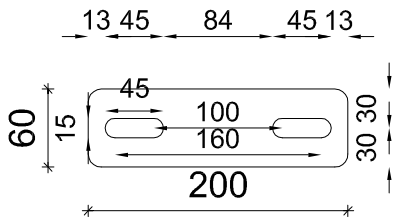


Figure 3.7 - Galvanised steel plate (Cod. 000196) for devices LVB/LVBD

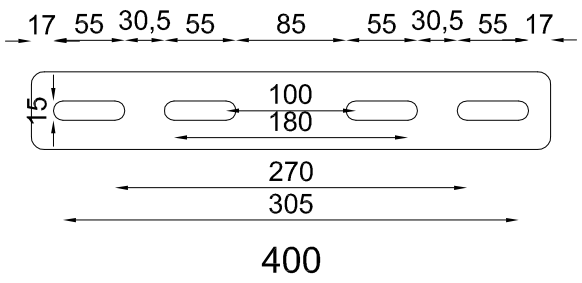


Figure 3.8 - Galvanised steel plate (Cod. 000203) for devices LVB/LVBD

3.6. ASSEMBLY OF THE LVB/LVBD DEVICE WITH COUNTERPLATES

Fixing the LVB in an overhanging position with counterplates is a somewhat complex procedure.

The assembly phases with counterplates are indicated below (Cod. 000196):

PHASE I

1. Insert the threaded bars in the upper counterplates (1) and fix them by locking the nuts (2) on top of the counterplates;
2. Insert the threaded bars in the lower counterplates (3) and fix them by locking the nuts (4) underneath the counterplates, so that the beam is tied on both sides;
3. Fix the height of the overhang (max. 20 cm) by positioning a nut and locking it (3). Carry out the same operation on the remaining bars.

PHASE II

After preparing the phase one as described, proceed with phase two:

4. Insert the LVB device (6) into the threaded bars and tighten e nuts (7).

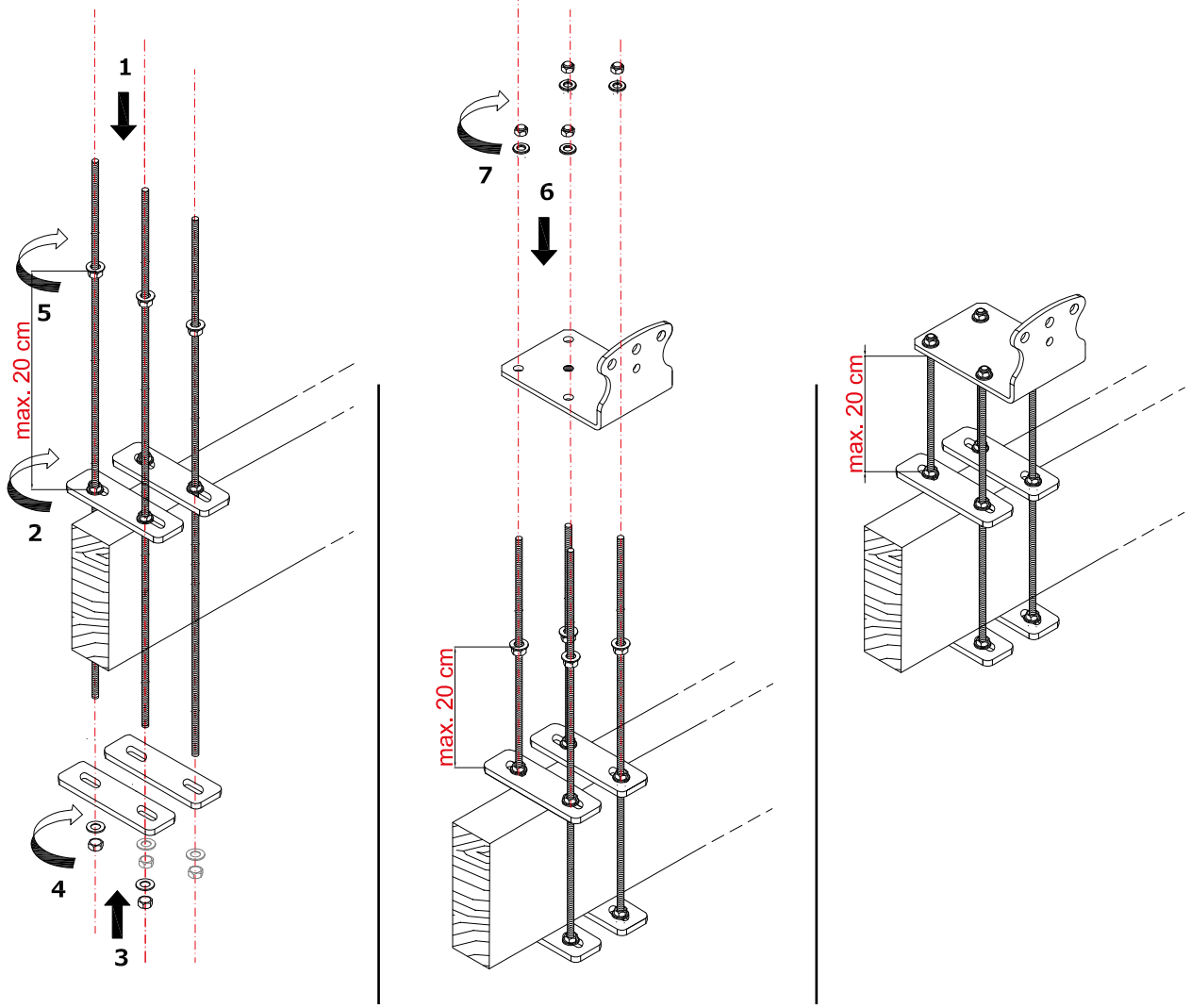


Figure 3.9 - LVB/LVBD device with counterplates (Cod. 000196)

The assembly phases with counterplates are indicated below (Cod. 000203):

PHASE I

1. Insert the threaded bars in the upper counterplates (1) and fix them by locking the nuts (2) above and beneath the counterplate;
2. Fix the height of the overhang (max. 20 cm) by positioning a nut and locking it (3);
3. Insert the LVB device (4) and fix it by locking the nuts (5).

PHASE II

After preparing the upper part of the beam as described, proceed with phase two:

4. Position the lower counterplates under the beam, aligning them with the upper ones;
5. Insert the threaded bars in the holes provided (6) and tighten the nuts to fix the beam (7) on both sides.

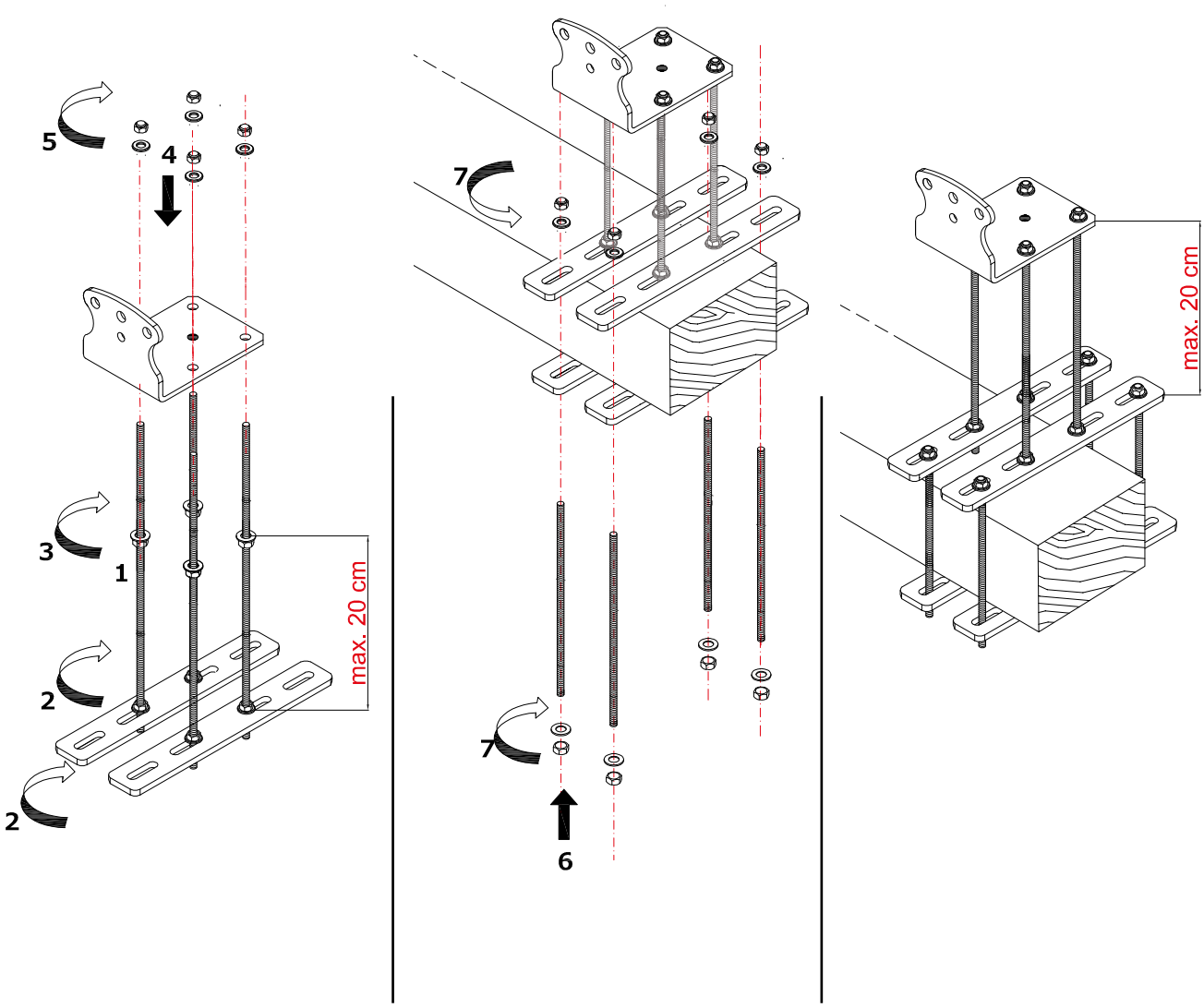


Figure 3.10 - LVB/LVBD device with counterplates (Cod. 000203)

4. DESCRIPTION AND ASSEMBLY OF THE ACCESSORIES

The accessories are to be installed on the upper part of the plates to complete the **LVB/LVBD** fall prevention system.

4.1. LIFELINE ACCESSORIES
CABLE Ø8

Cod. 000055
In AISI 316 stainless steel Ø 8 mm
49 strands with identification bar for product traceability

Figure 4.1

ABSORBER

Cod. 000033
Energy absorber for lifeline
In stainless steel AISI 304

Figure 4.2

QUICK LINK

Figure 4.3

Cod. 001518
Universal quick link

Cod. 001758
Economy quick link

Figure 4.4

END OF TRAVEL PLATE

Cod. 000636
End of travel device for 8 mm cable, including two fixing clamps.
The device prevents the operator from continuing beyond the point defined by the end of travel plate

Figure 4.5

MINI SUPPORT
FOR TURNBUCKLE/PIPE

Cod. 000765
For installation of the pipe turnbuckle (Cod. 000775) or guide pipe (Cod. 000307/000308/000309)
In stainless steel AISI 304
Hardware included: bolt 16x35 mm and ø16 mm washer in stainless steel

Figure 4.6

SUPPORT
FOR TURNBUCKLE/PIPE

Cod. 000194
For installation of the pipe turnbuckle (Cod. 000775) or guide pipe (Cod. 000307/000308/000309)
In AISI Stainless steel 304
Hardware included: bolt 16x35 mm and washer ø 16 mm in stainless steel

Figure 4.7

PIPE TURNBUCKLE

Figure 4.8

Cod. 000775
Turnbuckle with 250 mm thread in AISI 316 Stainless steel **to be pressed** for lifeline
Hardware included: 2 nuts and 1 washer ø14 in
stainless steel

Figure 4.9

Cod. 002477
Turnbuckle with 250 mm thread in AISI 316 Stainless steel **to be crimped** for lifeline
Hardware included: 2 nuts and 1 washer ø14 in stainless steel
The turnbuckle allows tensioning of the lifeline

JAW/PIPE TURNBUCKLE

Figure 4.10

Cod. 000294
AISI 316 Stainless steel turnbuckle with 250 mm closed pipe and one jointed jaw with Ø 12X40 mm fastening bolt

Figure 4.11

Cod. 002494
AISI 304 Stainless steel turnbuckle with 150 mm closed pipe and one jointed jaw with Ø 12X40 mm fastening bolt

DOUBLE JAW TURNBUCKLE

Figure 4.12

Cod. 000032
AISI 316 Stainless steel turnbuckle with 250 mm closed pipe and two jointed jaws with Ø 12X40 mm fastening bolts

Figure 4.13

Cod. 002493
AISI 304 Stainless steel turnbuckle with 150 mm closed pipe and two jointed jaws with Ø 12X40 mm fastening bolts

JAW TERMINAL

FIXED

Figure 4.14

Cod. 000292
AISI 316 Stainless steel terminal and fixed jaw with Ø 12X40 mm fastening bolt

JOINTED

Figure 4.15

Cod. 000293
AISI 316 Stainless steel terminal and jointed jaw with fastening bolt Ø 12X40 mm

FIXING KIT, Ø 8 CABLE

Cod. 001513
FIXING KIT, Ø 8 CABLE
In AISI 304 Stainless steel for Ø 8 mm cable required for fixing with rope clips

Figure 4.16

SEAL

Cod. 000290
Turnbuckle locking seal

Figure 4.17

LIFELINE ID

Cod. 000291
Lifeline identification code

Figure 4.18

ACCESS SIGN

Cod. 000296
Aluminium access sign to be positioned in the vicinity of every access point to the secured area

Figure 4.19

4.2. BYPASS LINE ACCESSORIES

INTERMEDIATE CABLE SUPPORT

Cod. 000501
Aluminium by-pass cable support

Figure 4.20

CORNER GUIDE PIPES

Figure 4.21
STRAIGHT PIPE
Cod. 000309

Figure 4.22
135° PIPE
Cod. 000307

Figure 4.23
90° PIPE
Cod. 000308

Pipe Ø 14 mm with thickness 2 mm
In AISI 304 Stainless steel
Capable of covering 90°/135°/180° corers
To be used in combination with the supports (Cod. 000194)

4.3. GLIDER ACCESSORIES

STRAIGHT FIXED CABLE SUPPORT FOR GLIDER

Cod. 001346
Fixed straight cable support for glider

Figure 4.24

STRAIGHT ADJUSTABLE CABLE SUPPORT FOR GLIDER

Cod. 001347
Straight adjustable cable support for glider 0°/45°

Figure 4.25

L.L. GLIDER

Cod. 001512
Safety glider for bypassable lifeline, allowing the operator to work without having to unhook, pause or slow down his movements
See Chapter 4, point 4.5, for information on the installation procedure, use and maintenance

Figure 4.26

4.4. ASSEMBLING THE ACCESSORIES

Once installed on the support structure, the **LVB/LVBD** device can be assembled with a variety of accessories. The following are some examples:

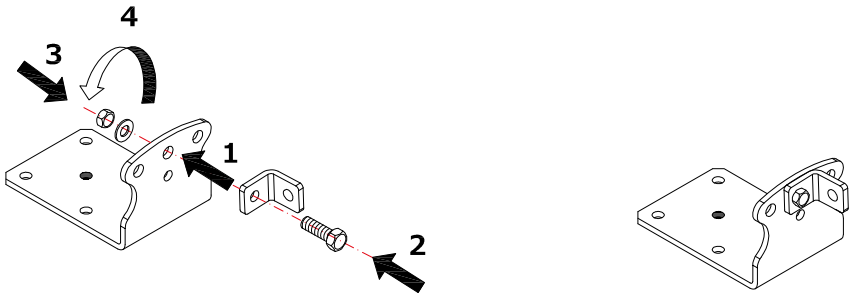


Figure 4.27 - Assembly of the LVB/LVBD device with a mini turnbuckle support (Cod. 000765)

1. Rest the mini turnbuckle support on the device until the hole is completely aligned with the one on the LVB/LVBD device;
2. Insert an M16 screw;
3. Prepare a self-locking nut and a washer to fasten the screw;
4. Tighten the self-locking nut until it is completely locked at 80 Nm.

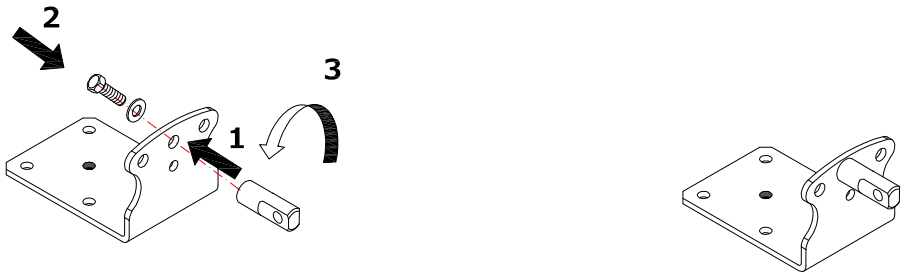


Figure 4.28 - Assembly of the LVB/LVBD device with a turnbuckle support (Cod. 000194)

1. Rest the turnbuckle support on the device until the hole is completely aligned with the one on the LVB/LVBD device;
2. Insert an M16 screw from the opposite side to the turnbuckle and prepare a washer to fix the turnbuckle;
3. Screw up the turnbuckle until it is completely locked at 80 Nm (to lock the turnbuckle better it is recommended that thread-locking fluid be used).

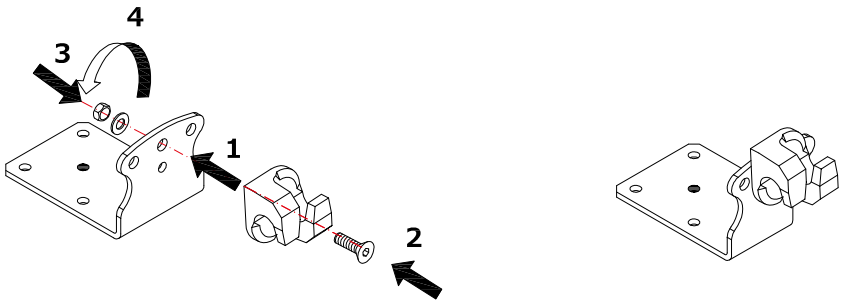


Figure 4.29 - Assembly of the LVB/LVBD device with an aluminium cable support (Cod. 001094)

1. Rest the aluminium cable support on the device until the hole is completely aligned with the one on the LVB/LVBD device;
2. Insert an M16 countersunk screw into the hole;
3. Prepare a self-locking nut and a washer to fasten the screw;
4. Tighten the self-locking nut until it is completely locked at 80 Nm.

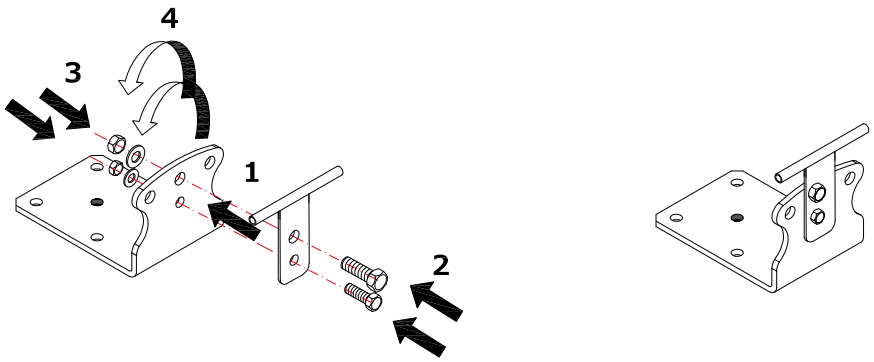


Figure 4.30 - Assembly of the LVB/LVBD device with fixed straight cable support for glider (Cod. 001346)

1. Rest the fixed straight cable support for glider on the device until the holes are completely aligned with those on the LVB/LVBD device;
2. Insert an M16 screw into the larger hole and an M10 screw into the smaller hole;
3. Prepare 2 self-locking nuts and 2 washers from the opposite side to fasten the screws;
4. Tighten the nuts until they are completely locked (to 80 Nm for the M16 bolt and to 20 Nm for the M10 bolt).

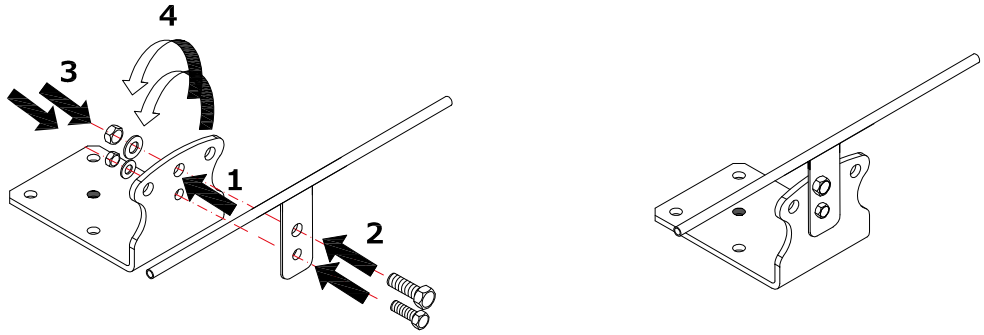


Figure 4.31 - Assembly of the LVB/LVBD device with adjustable straight cable support for glider (Cod. 001347)

1. Rest the adjustable straight cable support for glider on the device until the holes are completely aligned with those on the LVB/LVBD device;
2. Insert an M16 screw into the larger hole and an M10 screw into the smaller hole;
3. Prepare 2 self-locking nuts and 2 washers from the opposite side to fasten the screws;
4. Tighten the nuts until they are completely locked (to 80 Nm for the M16 bolt and to 20 Nm for the M10 bolt).

4.5. INSTALLATION, USE AND MAINTENANCE OF THE GLIDER

The safety glider is used for bypassable lifelines of significant lengths, to allow the operator to work without having to unhook, pause or slow down his movements. This is possible if the lifeline is also equipped with the following accessories:

- Fixed straight cable support for glider (Cod. 001346)
- Adjustable straight cable support for glider (Cod. 001347)

The glider consists of two assembled, sliding parts. This allows the glider to be hooked up and unhooked from the lifeline by means of two intentional actions. The front part contains two stops:

Figure 4.32
Stop 1 - Serves to lock the two parts of the glider finally and intentionally.
Stop 2 - This is a safety stop that serves to open the glider and subsequently allow it to be hooked up to the lifeline.

Figure 4.33 - The rear part of the glider contains two teeth, which have the sole purpose of allowing the mobile part to be gripped and
made to slide (after applying a slight downward force).
(See Figure 4.34)

The following illustrates how to install the glider on the lifeline:

Figure 4.34

Figure 4.35 - Glider open

1. Unscrew stop 1;
2. Pull stop 2 outwards and at the same time grip the mobile part of the glider and press downwards slightly (see Figure 4.34);
3. Fasten the glider to the lifeline cable and release the grip, so that the glider closes again (returns to its original position);
4. Turn stop 1 until it is completely tight;
5. Hook the snap shackle (OXAN TL) included with the device into the bore at the bottom.

The same procedure is used to remove the glider.
For proper maintenance of the glider, it is recommended that a jet of compressed air and a cleaning product for brakes and metals be used in case of blockage.

⚠	**The device must only be opened for maintenance by Sicurpal technicians.**

5. INDICATIONS FOR FITTING THE LIFELINE

The following are the operations to be carried out to complete installation of the **LVB/LVBD lifeline**:

1. Assemble the accessories (see Chapter 4.4.);
2. Fix the turnbuckle at one end and the energy absorber at the other end, or in series;
3. Fix the intermediate accessories in the case of a line with multiple spans*
*In the case of lifelines with multiple spans of different lengths, it is recommended that the energy absorber be installed in the shortest span;
4. Fix the cable.

To fix the cable, two main methods can be used:

4.1. Method 1: FITTING WITH CRIMPING

The terminals in the **LVB/LVBD** lifeline can be:

- crimped
- fixed jaw (Cod. 000292)
- jointed jaw (Cod. 000293)
- jaw/pipe turnbuckle (Cod. 000294/002494)

Each pipe to be crimped has an open bore that allows the correct positioning of the cable to be checked both before and after crimping.
The procedure used for crimping is as follows:
a) Insert the cable all the way into the pipe and check that it is present using the bore;
b) Use a crimping tool to make the first crimping, checking that the cable is still visible inside the pipe;
c) Perform the other crimping operations at a distance of approximately 8 mm from the previous one, turning the crimping tool by about 20° each time (see **Figure 5.1**). This operation is compulsory for aesthetic reasons, to avoid a pipe that is not straight and not in axis.

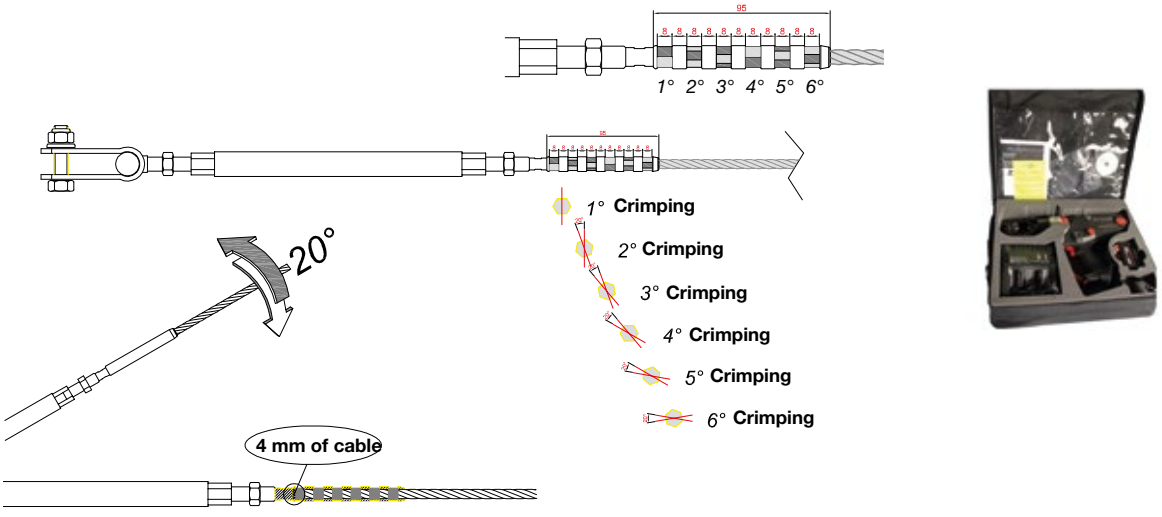
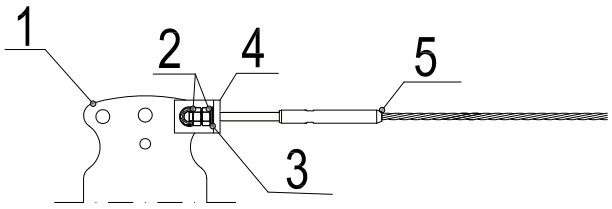


Figure 5.1 - Crimping

EXAMPLES:
All **LVB/LVBD** products comply with standards UNI EN 795:2012, CEN/TS 16415:2013 and with UNI 11578:2015.
Crimped or pressed connections comply with all three of the above mentioned standards.
The following are a series of ways in which the lifeline can be assembled:

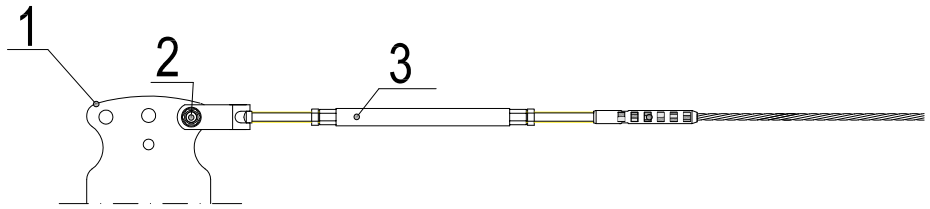
END 1



- **UNI EN 795:2012**
- **CEN/TS 16415:2013**
- **UNI 11578:2015**

Figure 5.2

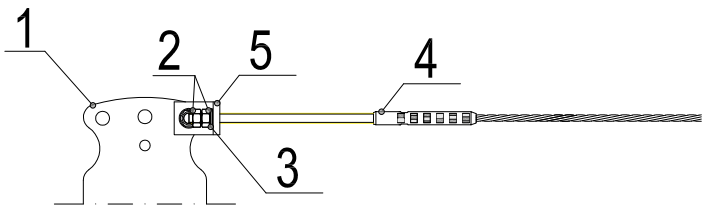
1. Install the LVB/LVBD device (1) as described in the preceding chapters;
2. Connect the pipe turnbuckle (5) (Cod. 000775) with two nuts M12x40 (2) + washer (3) using a mini turnbuckle support (4);
3. Press the cable inside the pipe.



- **UNI EN 795:2012**
- **CEN/TS 16415:2013**
- **UNI 11578:2015**

Figure 5.3

1. Install the LVB/LVBD device (1) as described in the preceding chapters;
2. Fix the J/P turnbuckle (3) to the LVB/LVBD device (1) using an M12x40 bolt (2);
3. Crimp the cable.

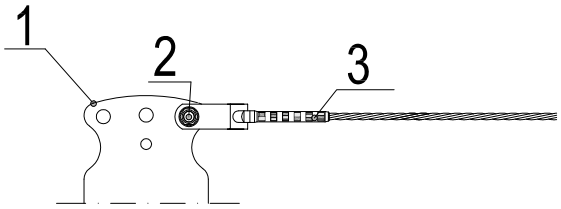


- UNI EN 795:2012
- CEN/TS 16415:2013
- UNI 11578:2015

Figure 5.4

1. Install the LVB/LVBD device (1) as described in the preceding chapters;
2. Connect the pipe turnbuckle (4) (Cod. 000775) with two nuts M12x40 (2) + washer (3) using a mini turnbuckle support (5);
3. Crimp the cable (See Chap. 5, point 4.1.).

END 2



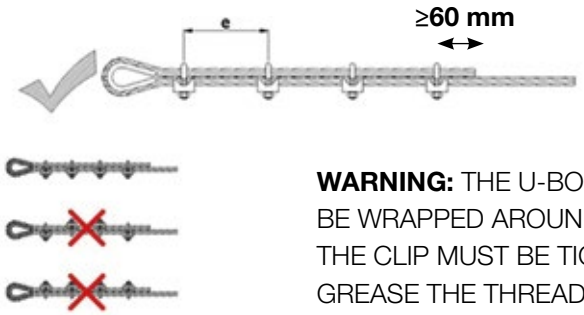
- UNI EN 795:2012
- CEN/TS 16415:2013
- UNI 11578:2015

Figure 5.5

1. Install the LVB/LVBD device (1) as described in the preceding chapters;
2. Connect the jointed jaw terminal (Cod. 000293) /fixed jaw terminal (3) (Cod.000292) to the device in one of the upper holes, using an M12x40 nut (2);
3. Crimp the cable (See Chap. 5, point 4.1.).

4.2. Method 2: FITTING WITH WIRE ROPE CLIPS

a) Insert the cable into the smaller heat-shrinkable sheathing and then into the larger one, before bending the cable;
b) Position the 4 rope clips on the 8 mm diameter cable, taking care to ensure that the first rope clip is as close as possible to the thimble, so that the value of the distance between clips "e" is between 30 mm and 60 mm and in any case not less than 30 mm or greater than 60 mm (see **Figure 5.6**).
The length of the dead cable must be in relation to the distance "e" between clips, while the length of the cable at the end of the clips must always be more than 60 mm;



WARNING: THE U-BOLT PART OF THE ROPE CLIP MUST BE WRAPPED AROUND THE DEAD PART OF THE CABLE.
THE CLIP MUST BE TIGHTENED TO 3.3 Nm.
GREASE THE THREADS BEFORE TIGHTENING.

Figure 5.6 - Positioning cable with rope clips

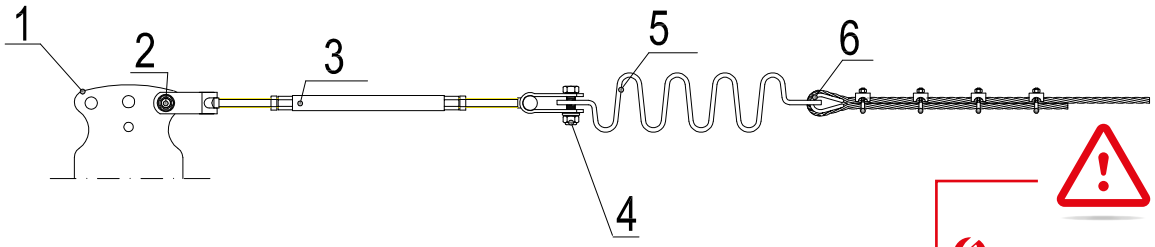
c) Tighten the 8 nuts in the clips using a torque wrench set to 3.3 Nm (EN 14399);
d) Initial tightening of the clips must be with the cable slack and without using a torque wrench, while final tightening must be using a torque wrench and with the cable taut;
e) Tension the cable;
f) Position the wider heat shrinkable sheathing over the four rope clips and heat it until it has shrunk completely into place (see **Figure 5.7**).

Figure 5.7 - Heating the sheathing

	During heating of the sheathing the following risks are present: **· Risk of fire** **· Risk of heat** **· Risk of explosion** **· Risk of intoxication**

EXAMPLES:
Unlike crimped and pressed connections, connections made using wire rope clips are only compliant with standard UNI 11578:2015.

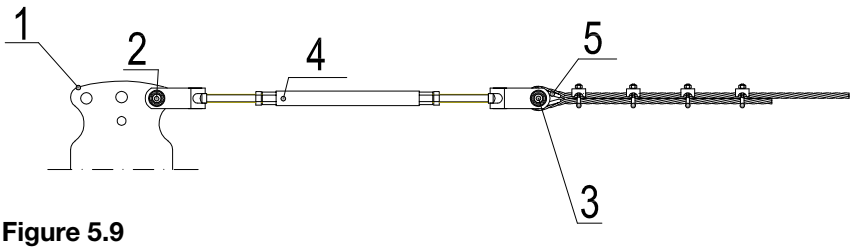
END 1



UNI 11578:2015

Figure 5.8

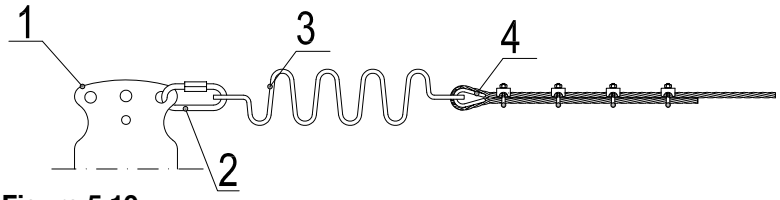
1. Install the LVB/LVBD device (1) as described in the preceding chapters;
2. Connect the J/J turnbuckle (3) (Cod. 000032) to the LVB/LVBD device using an M12x40 nut + washer(2);
3. Connect the opposite end of the turnbuckle to the energy absorber (5) (Cod. 000644) using an M12x40 bolt + washer (4);
4. Insert a thimble (6) into the other end of the energy absorber, in order to pass the steel cable through;
5. Fix the cable with 4 rope clips (See Chapter 5, point 4.2.).



UNI 11578:2015

Figure 5.9

1. Install the LVB/LVBD device (1) as described in the preceding chapters;
2. Connect the J/P turnbuckle (3) (Cod. 000032) to the LVB/LVBD device using an M12x40 nut + washer(2);
3. Connect the opposite end of the turnbuckle to a thimble (5), which is used to pass the steel cable;
4. Fix the cable with 4 rope clips (See Chapter 5, point 4.2.).

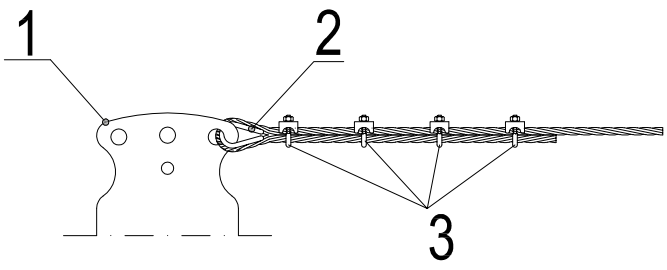


UNI 11578:2015

Figure 5.10

1. Install the LVB/LVBD device (1) as described in the preceding chapters;
2. Insert a quick link (2) into one of the upper holes. This serves to connect the LVB/LVBD device (1) to an energy absorber (3);
3. Pass a thimble (4) through the other end of the energy absorber, allowing the steel cable to slide;
4. Fix the cable with 4 rope clips (See Chapter 5, point 4.2.).

END 2



UNI 11578:2015

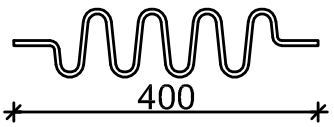
Figure 5.11

1. Install the LVB/LVBD device (1) as described in the preceding chapters;
2. Pass a thimble (2) into the hole in the LVB/LVBD (1). This is used to pass the cable through;
3. Fix the cable with 4 rope clips (3) (See Chapter 5, point 4.2.).

5. Complete installation of the lifeline by turning the turnbuckle (Cod. 000775/000032/002493/000294/002494) until the line is taut.
For proper tensioning of the line:
- Check the length of the energy absorber and tighten the cable until the absorber lengthens by 5-10 mm (equivalent to a traction force of approximately 100/150 daN) (Cod. 000033) (see **Figure 5.12**);
- If you have the test KIT, the cable tension can be measured using cell C - Cable Tensioning.

CHECKING THE ENERGY ABSORBER

Starting length
40 cm (400 mm) ±0.5 cm (5 mm)



Length after pre-tensioning
40.5-41 cm (405-1410 mm) ±0.5 cm (5 mm)

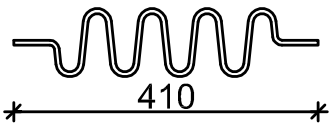


Figure 5.12

In the case of lengthening by more than 45 cm (450 mm), replace the absorber.

6. Positioning the turnbuckle seal.

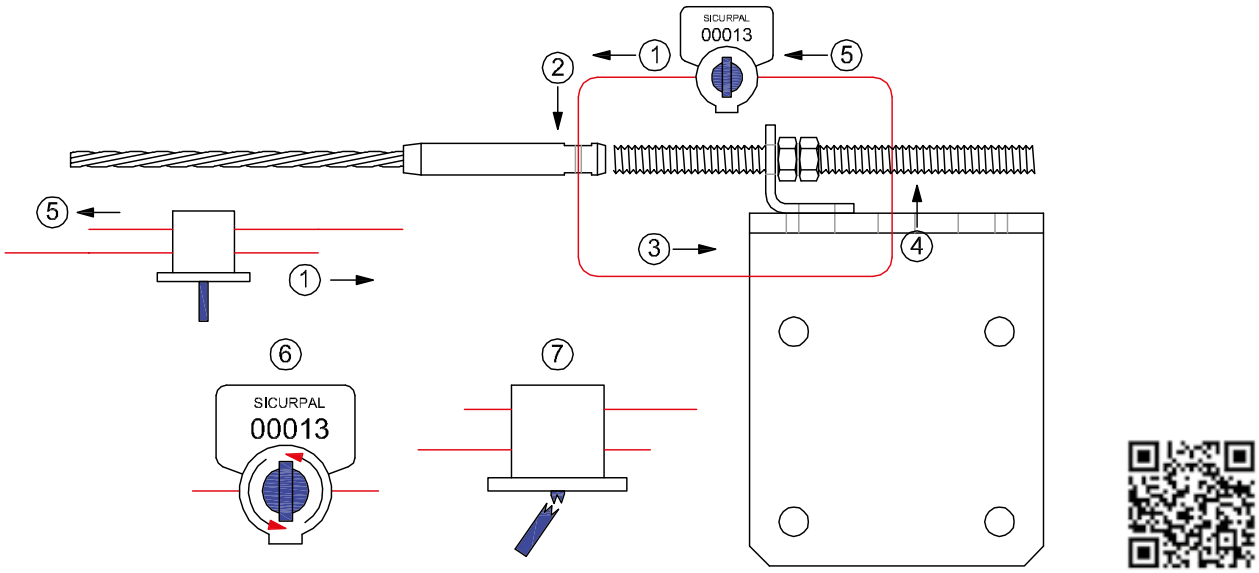


Figure 5.13

1. Pass one end of the wire cable through one of the two bores in the safety seal;
2. Continue by inserting the metal wire into the bore in the turnbuckle (Cod. 000775/000032/002493/000294/002494) or into one of the two jaws;
3. Continue by inserting the wire into the turnbuckle support or into the remaining jaw;
4. Continue by bringing the metal wire up to the safety seal;
5. Insert the wire into the remaining bore in the safety seal, pulling it tight;
6. After tightening the metal wire, turn the locking device in the seal and eliminate the excess wire;
7. Seal the whole by breaking the locking device grip.

For the sake of clarity, it is recommended to watch the explanatory video on the Sicurpal website:
https://www.youtube.com/watch?v=AfKvLSx-AFU

7. Install the lifeline identification code (Cod. 000291), which identifies the system and is used to find all the necessary information in terms of system components and the location of devices in the event of subsequent inspections.

	Crimped connections are compliant with: **UNI EN 795:2012** **CEN/TS 16415:2013** **UNI 11578:2015**
	Connections with wire rope clips are compliant with: **UNI 11578:2015**

EXAMPLE OF LIFELINE WITH LVB DEVICES:

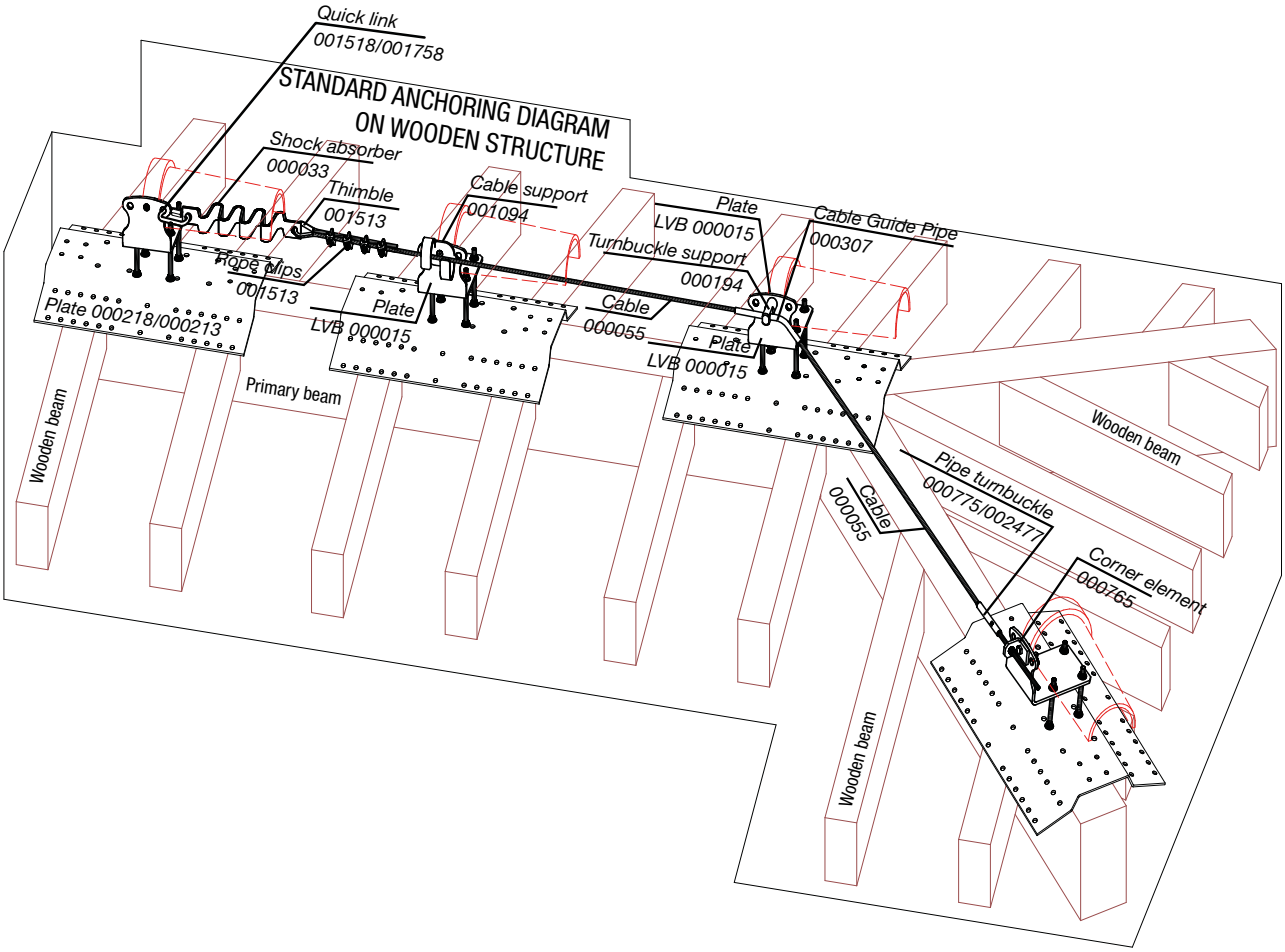


Figure 5.14 - LVB lifeline fixed with a ridge beam load distribution plates on a wooden support structure.

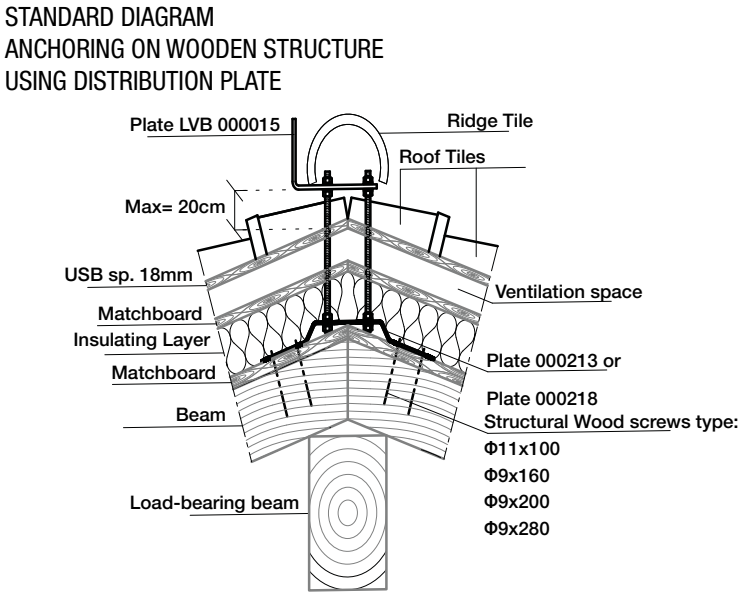


Figure 5.15 - Cross-section of the LVB device fixed with a ridge beam load distribution plate on a wooden support structure.

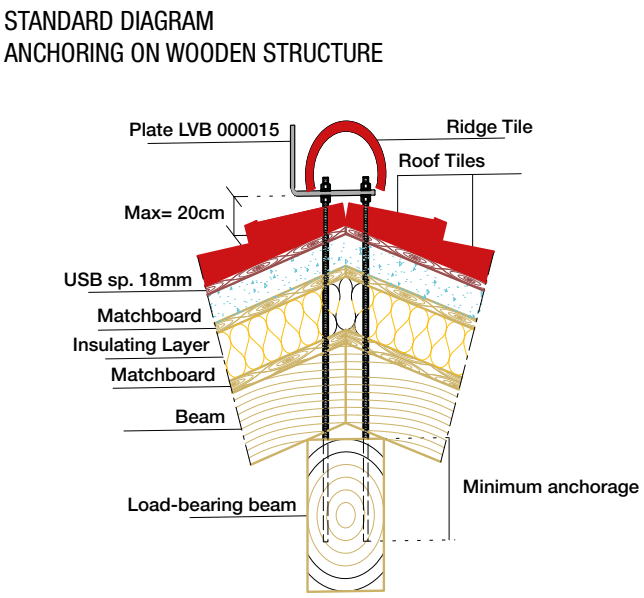


Figure 5.16 - Cross-section of the LVB device fixed to a wooden support structure.

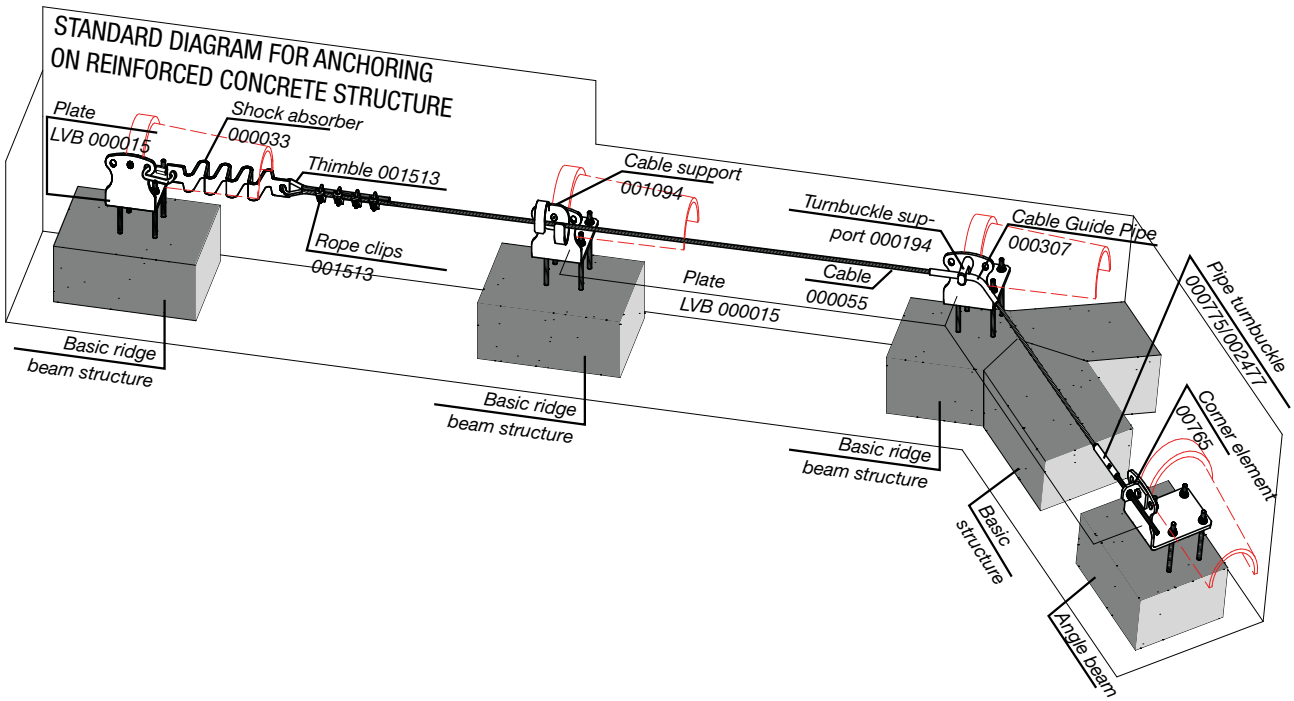


Figure 5.17 - LVB lifeline fixed to a cement support structure.

6. USE OF FALL PREVENTION SYSTEMS

The **LVB/LVBD** line devices suitable for use by operators, comply with the minimum requirements of standards **UNI EN 363:2008**, **UNI 11560:2014** and **UNI 11158:2015** and with the provisions of Leg. Dec. 81/08 and subsequent modifications and additions, art. 115.
They are suitable for use in the following types of personal protection system:

- ✓ Retention systems;
- ✓ On-site positioning systems;
- ✓ Fall arrest systems;
- ✓ Rescue systems.

A personal fall protection system consists of an assembly of components designed to protect the worker from falling from a height, including a body harness and a connection system, which can be fastened to the anchorage system.
It should be remembered that Leg. Dec. 81/08 and subsequent modifications and additions, art. 77 paragraph 5, letter a, indicates the essential nature of training in the use of personal fall protection systems and the relevant Category III P.P.E. (Personal Protection Equipment) (Leg. Dec. 475/1992).

6.1. RETENTION SYSTEMS

A retention system is a personal fall protection system that prevents the worker from reaching areas in which there is a risk of falling from a height (UNI 11560:2014).

Table of deflections in the case of retention and/or positioning of an operator with an applied load of 70 Kg

MAX SPAN Length (m)	1 SPAN		2 SPANS		4 SPANS		TOT LINE L. (m)	
	WEIGHT [Kg]	DEFLEC-TION [m]	WEIGHT [Kg]	DEFLEC-TION [m]	WEIGHT [Kg]	DEFLEC-TION [m]	WEIGHT [Kg]	DEFLEC-TION [m]
4	4.00		8.00		24.00		60.00	
	0.70	0.16	0.70	0.19	0.70	0.24	0.70	0.58
8	8.00		16.00		32.00		60.00	
	0.70	0.30	0.70	0.35	0.39	0.62	0.70	0.73
12	12.00		24.00		48.00		60.00	
	0.70	0.44	0.70	0.51	0.70	0.76	0.70	0.89

The values indicated in the table "Table of deflections in the case of retention and/or positioning of an operator" must be taken into account by the operator who is using the retention and/or positioning (UNI EN 358).

6.2. ON-SITE POSITIONING SYSTEMS

An on-site positioning system is a personal fall protection system that allows the worker to work while restrained so as to prevent falling from a height. (UNI 11560:2014).

6.3. FALL ARREST SYSTEMS

A fall arrest system is a personal fall protection system that stops a free fall and restricts the impact on the worker's body during stoppage of the fall.
Table of dynamic deflections in the case of fall arrest of four operators, to calculate the clearance

DIRECT FIXING

MAX SPAN Length (m)	1 SPAN		2 SPANS		4 SPANS		TOT LINE L. (m)	
	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]
4	4.00		8.00		16.00		60.00	
	11.85	0.80	11.44	0.81	10.69	0.84	9.03	0.98
8	8.00		16.00		32.00		60.00	
	12.51	1.09	11.74	1.13	10.48	1.20	9.48	1.32
12	12.00		24.00		48.00		60.00	
	12.69	1.33	11.54	1.40	10.14	1.53	9.73	1.58

FIXING WITH OVERHANG (10 CM)

MAX SPAN Length (m)	1 SPAN		2 SPANS		4 SPANS		TOT LINE L. (m)	
	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]
4	4.00		8.00		24.00		60.00	
	9.99	0.88	9.85	0.89	9.31	0.94	8.47	1.03
8	8.00		16.00		32.00		60.00	
	10.64	1.23	10.33	1.26	9.78	1.32	8.93	1.42
12	12.00		24.00		48.00		60.00	
	11.29	1.54	10.58	1.59	9.75	1.69	9.35	1.73

FIXING WITH OVERHANG (15 CM)

MAX SPAN Length (m)	1 SPAN		2 SPANS		4 SPANS		TOT LINE L. (m)	
	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]
4	4.00		8.00		24.00		60.00	
	9.03	0.97	8.91	0.98	8.54	1.02	7.88	1.10
8	8.00		16.00		32.00		60.00	
	9.65	1.35	9.38	1.38	8.89	1.43	8.32	1.50
12	12.00		24.00		48.00		60.00	
	10.05	1.67	9.63	1.71	8.86	1.79	8.60	1.83

FIXING WITH OVERHANG (20 CM)

MAX SPAN Length (m)	1 SPAN		2 SPANS		4 SPANS		TOT LINE L. (m)	
	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]	LOAD [kN]	DEFLEC-TION [m]
4	4.00		8.00		24.00		60.00	
	8.72	1.03	8.62	1.04	8.27	1.07	7.55	1.15
8	8.00		16.00		32.00		60.00	
	9.35	1.42	9.06	1.44	8.64	1.49	8.09	1.57
12	12.00		24.00		48.00		60.00	
	9.83	1.75	9.34	1.79	8.63	1.87	8.38	1.90

6.4. RESCUE SYSTEMS

A rescue system is a personal fall prevention system with which the worker can save himself or others, to prevent free falls.

Use of the rescue system puts workers and/or others into a situation whereby they are able to prevent a risk of falling from a height, as it reduces the probability of this occurring to a minimum.

A rescue system:

- Avoids free falling both of the person being rescued and of the rescuer during the rescue operation;
- Can be used to lift or lower the person being rescued to a safe place.

7. TECHNICAL DATA

		DEVICES	
		LVB	**LVBD**
Net weight	**[Kg]**	3	4.5
Product height	**[mm]**	138	
Anchorage device dimensions	**[mm]**	218x150	285x150
Number of structural anchor bores	**n°**	4	
Material used		AISI 304 STAINLESS STEEL	
Number of users per device as UNI EN 795:2012 Type A	**max**	1	
Number of users per device as CEN/TS 16415:2013 Type A	**max**	3	6
Number of users per lifeline as UNI EN 795 Type C	**max**	1	
Number of users per lifeline as CEN/TS 16415:2013 and UNI 11578:2015 Type C	**max**	4	
Maximum weight of each user	**[Kg]**	125	
Minimum distance between lifeline anchorage devices	**[m]**	4	
Maximum distance between lifeline anchorage devices	**[m]**	12	
Maximum length of lifeline	**[m]**	60	
Number of P.P.E. anchor bores*	**n°**	3	6

*** The availability of anchorage bores for P.P.E. varies according to the number of accessories fixed to the devices.**

8. EXAMPLES OF MARKING

Each removable component in the system is clearly marked, as shown below:

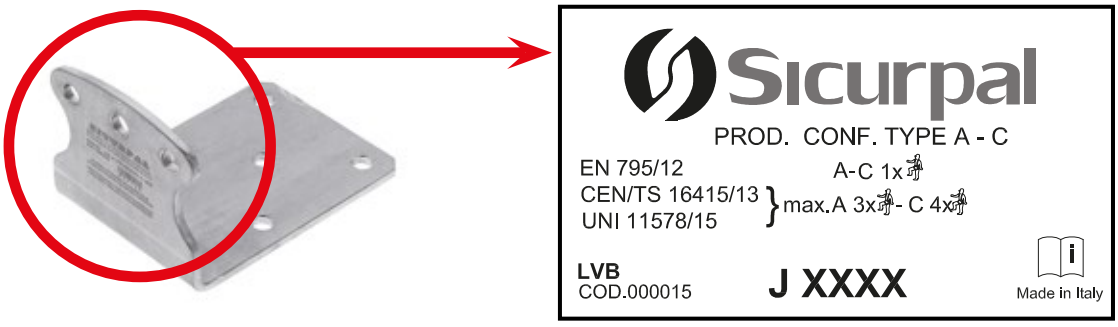


Figure 8.1

Sicurpal	Manufacturer's name and identification mark
EN 795/2012 **CEN/TS 16415/2013** **UNI 11578/2015**	Certification standards
LVB	Name of anchorage device
G XXXX	Production batch number
1X	Max. No. operators allowed
Cod. 000263	Product identification code
	Read the instructions in the manual

	In the absence of a mark the device is to be considered non compliant and must be replaced.

9. INSPECTION AND MAINTENANCE SCHEDULE

Standard UNI 11560:2014 envisages four types of inspection. The manufacturer has implemented this standard and applies it as follows:

9.1. INSPECTION ON FITTING

Inspection of the components prior to assembly and inspection of the system after assembly, must be carried out by the fitter in accordance with the instructions provided by **SICURPAL** as the device manufacturer, the anchorage system designer and the structural engineer (UNI 11560:2014).

SICURPAL, as the manufacturer, prescribes the following operations:

- Verification, prior to installation, of the expiry date of chemical anchoring agents, if use of these agents is foreseen;
- After installation, carry out a traction test (the **LVB/LVBD** devices can only be pulled upwards by pulling on the bars or installing a ring nut in the central hole and pulling the device upwards) on the end devices and on all the devices forming a curve/crossing (see Figure 9.1). This test, which does not damage the product, serves to verify that the anchorage and the support structure.
  After this test, the device **must not** have suffered any deformation.

Figure 9.1

9.2. INSPECTION PRIOR TO USE

Before using the **SICURPAL** anchorage devices, the following preliminary visual inspections must be carried out:

- Waterproofing;
- Wear;
- Rusting/corrosion;
- Deformation of components (see Chapter 5.5);
- Abnormal deformation of the cable;
- Tensioning of the cable;
- Locking of the nuts and bolts on visible devices;
- State of any moving parts.

⚠	**If any anomalies are found in the system after performing these checks, it must not be used. It is also necessary to prevent access by other users and to inform the client, who must withdraw the system from service and, if necessary, arrange for it to be restored to normal use, by requesting the intervention of competent persons.**

Before accessing the roof area, the user must check the fall clearance in all parts of the roof where there is a risk of falling, so as to eliminate any risk of colliding with the ground or with other obstacles along the path in the event of a fall.
Before going onto the roof, make sure that the weather and environmental conditions are not likely to cause a health risk for the fall prevention system user. The user must check the Technical Plan for any dangers of swing fall and for any special requirements.

9.3. PERIODIC INSPECTION

Periodic inspection of every anchorage system must be carried out by a competent person*. Inspection should be carried out annually for the devices and at the intervals recommended by the structural engineer as regards the structural anchorage system.
In any case, the interval between two periodic inspections must not be more than 2 years for controls on the anchorage system and 4 years for controls on the support structure and anchoring devices (UNI 11560:2014 see System Instruction Manual).

	**For further information please contact your local authorised dealer or SICURPAL.**

9.4. SPECIAL INSPECTION

After notification of a fault or after a fall, the anchorage system must immediately be put out of use. After this, a special inspection must be carried out by **SICURPAL** or a company authorised by **SICURPAL**, to identify any action that needs to be taken to restore the anchorage system, the anchors and the support structure to their proper performance levels (UNI 11560:2014).

9.5. MAINTENANCE

Maintenance must be carried out, if necessary, following the special inspection. If the maintenance involves replacing components and/or operations on the support structure, if necessary involving an authorised technician, (UNI 11560:2014) the maintenance technician must issue a declaration indicating that the required maintenance has been properly carried out, confirming that the system is suitable for use.

** A competent person is a person who knows current requirements for inspections prior to use, periodic and special inspections, the recommendations and instructions issued by the manufacturer and applicable to the component, sub-system or system in question (UNI EN 365 § 3 "terms and definitions").*

10. WARNINGS AND RECOMMENDATIONS

10.1. INSTALLATION

10.2. USE

The devices in the **LVB/LVBD** range must only be installed after a qualified technician has assessed the risks of falling from a height, and verified the suitability of the structures on which the devices are to be installed.	The **SICURPAL** anchorage devices must only be used by persons authorised by the employer (or customer) who have fully read and understood the instructions provided in this manual. They must also be trained, instructed and experienced in the use of Category III P.P.E.
The qualified structural engineer must also indicate the most suitable fixing method according to the type of base material, the size and the mechanical characteristics of the bearing structures onto which the product is to be installed. Installation must take place according to the performance values provided by the manufacturer.	The **SICURPAL** anchorage devices must only be used by persons equipped with P.P.E. that comply with specific technical standards, are subjected to regular maintenance and have not exceeded the manufacturer's expiry date.
During installation of the **SICURPAL** anchorage devices it is strictly forbidden to use components other than the ones supplied without the manufacturer's authorisation.	The manufacturer is likewise to be considered free from any responsibility for accidents due to improper use of the system and failure to observe the warnings and recommendations contained in this manual. In this case the responsibility will lie with the client and/or employer.
The installer must make sure that the materials and supports to which the anchorage devices are to be fixed are compliant with and suited to the requirements of the Calculation Report.	The choice of P.P.E. to be employed when using the anchorage devices must be made and indicated by the employer (or client) in the working safety plan.
It is absolutely forbidden to create new bores, enlarge existing ones or modify the shape of the device without the prior written authorisation of the manufacturer **SICURPAL**. Doing so will render the warranty and product conformity null and void.	

10.3. INSPECTIONS AND MAINTENANCE

If the user connected to the **SICURPAL** devices suffers a fall, the anchorage system must be put out of use and all its components must be checked by **SICURPAL**.	If the anchorage devices become bent or damaged, they must be replaced immediately. Replacement of any products must be carried out by **SICURPAL** or by authorised and qualified technicians.
The **LVB/LVBD** devices must only be returned to service after they have been finally certified by **SICURPAL** or a company authorised by **SICURPAL**.	

	The manufacturer will not be held liable for any accidents deriving from failure to comply with the standards and indications given in this manual.
	As well as verifying the anchorage system, the user must also make sure all the control procedures are carried out for all the system anchoring elements (energy absorbers, lanyards, harnesses, etc.).

In the case of faulty **SICURPAL** devices, contact the **SICURPAL** Logistics Department (Telephone number **SICURPAL** 059-81.81.79, e-mail: qualità@sicurpal.it).

10.4. EARTHING

In areas at risk of lightning, according to standard CEI 81-10, connect the underside of the device fixing plat to an equipotential/earthing circuit using a cable with eyelet terminal of a suitable cross-section to allow for protection from lightning.
This operation must be carried out by a qualified technician pursuant to Ministerial Decree N° 37 dated 22-1-2008.
This operation is not mandatory, and is the responsibility of the client/owner of the building.

	Check that the anchorage device is fixed and properly installed according to these instructions.
	SICURPAL will not be held liable in any way for earthing of the system.

11. MANUFACTURER'S NOTE

The following is the information requested in point 7 of standard UNI EN 795:2012:

A) The **LVB Type A** anchorage device can be used by **1 (one) operator** following certification tests under UNI EN 795:2012, max. **3 (three) operators** following certification tests under Technical Specification CEN/TS 16415:2013.
The **LVBD Type A** anchorage device can be used by **1 (one) operator** following certification tests under UNI EN 795:2012, max. **6 (six) operators** following certification tests under Technical Specification CEN/TS 16415:2013.
The **LVB**, **LVBD Type C** anchorage system can be used by max. **4 (four) operators** following certification tests using Technical Standards UNI CEN/TS 16415:2013 and UNI 11578:2015.

B) The anchorage device can be used with fall arrest systems, provided the Personal Protection Equipment contains an energy absorber.

C) The maximum load transmittable by the **Type A** anchorage device is ft = 7.278 kN in a horizontal direction parallel to the roof and in any direction (valid for **1 (one) operator** hooked to the post – **UNI EN 11578:2015**).
The maximum load transmittable by the **Type A** anchorage device is ft = 11.05 kN in a horizontal direction parallel to the roof and in any direction (valid for **2 (two) operators** hooked to the post – **UNI EN 11578:2015**).
The maximum load transmittable by the **Type A** anchorage device is ft = 11.21 kN in a horizontal direction parallel to the roof and in any direction (valid for **1 (one) operator** hooked to the post – **UNI EN 16415:2013**).
The maximum load transmittable by the **Type C** anchorage device is ft = 9.00 kN in a horizontal direction parallel to the roof and in the direction of the cable and of fall (valid for **1 (one) operator** hooked to the line – **UNI EN 795:2012**).
The maximum load transmittable by the **Type C** anchorage device is ft = 9.76 kN in a horizontal direction parallel to the roof and in the direction of the cable and of fall (valid for **4 (four) operators** hooked to the line – **UNI EN 11578:2015**).

D) The maximum deflection value of the **LVB/LVBD** anchorage device and the maximum movement value of the anchorage point are 2.2°.
The maximum deflection of the Type C **LVB/LVBD** line is 183 cm.

E) See Chapter 6.

F) The anchorage devices are made exclusively of metal, so that it is not necessary to provide additional information on the materials from which they are made.

G) It is necessary to mark the System Register or the card located near the roof access points, after every inspection.

H) Not relevant - Type B anchorage devices.

I) i) At the present time, intermediate anchorages with an angle of 90°/135°/180° are not foreseen.
ii) The Type C **LVB/LVBD** anchorage devices may be used with retracting type fall arrest devices, provided they have been tested by the manufacturer.
iii) The potential dangers that might arise when using the fall prevention system with Sicurpal **LVB/LVBD** products, are:
- falling from a height with operator hanging,
- swing effect,
- collision with obstacles beyond the edge of the roof, due to insufficient clearance,
- vertical fall due to breakage of the roof,
- falling through open or breakable skylights and dormer windows.
There might also be other residual dangers, which depend on the type of roof in question and must be

assessed on a case by case basis.

J) i) The anchorage devices can be installed on roof and/or flat surfaces with slopes of up to 16° that need to be made safe.

ii) The manufacturer allows direct connection to the anchorage line, subject to installation of a mobile anchor point using a connector (UNI EN 362) fixed directly to the anchor line, or using a glider as mobile anchor point.

iii) When using connectors (UNI EN 362), it is possible to use the fall prevention system without removing the mobile anchor from the lifeline. Also when using the mobile glider and vertical cable support for glider (Cod. 000192) it is possible to use the fall prevention system without removing the mobile anchor from the lifeline. However, in the case of curves that involve a break in the lifeline, it is necessary to use a lanyard (UNI EN 354) with connectors (UNI EN 362) to hook up to the next lifeline before disconnecting from the one being used. When using a connector (UNI EN 362) as mobile anchor point in the presence of vertical cable supports for glider, it is likewise necessary to use a lanyard (UNI EN 354) to hook up to the next span before disconnecting from the span of the lifeline being used.

K) Not relevant - Type E anchorage devices.

L) On completing installation, the installer must provide the client with the Declaration of Proper Installation - Appendix A1 UNI EN 795:2012 signed by himself, as proof and warranty of proper and appropriate installation. This will be considered the basic documentation for subsequent periodic examinations. The client is responsible for keeping said documentation so that it can be consulted by maintenance technicians/installers/users. More detailed documentation will be kept by **SICURPAL** and can be consulted, subject to appointment, by calling +39 059.818179.

According to Appendix A2 - Guide to the documentation to be supplied after installation, the documentation required by the client who decides to carry out installation independently must comprise:

- address and location of the installation;
- name and address of the installing company;
- name of the person responsible for installation;
- product identification (name of the anchorage device manufacturer, type, model/article);
- fixing device (manufacturer, product, allowed traction and transversal forces);
- outline installation plan and information pertinent to the user/client, such as the position of anchorage points.

The outline installation plan should be affixed at the entrance points to the building, so that it is visible or available to all.

The Declaration of Proper Installation provided by the installer in charge must contain the following information relating to the anchorage device:

- It has been installed in compliance with the installation instructions provided by the manufacturer;
- The installation plan, described above, has been followed;
- It has been fixed to the substrate indicated;
- It has been fixed as indicated (number of bolts, proper materials, proper position, proper location);
- It has been commissioned in compliance with the manufacturer's instructions;
- Photographic/documentary information has been provided.

It must be remembered that, when more than one anchorage point has to be photographed for identification, the anchorage devices must be marked with numbers and these numbers must be incorporated in the inspection reports for the anchorage device and in the outline drawing of the installation area.

M) The anchorage device must only be used for fall prevention P.P.E.s and not for lifting equipment. For more detailed information on this question, please see chapter 2.1. "Warranty".

N) The **LVB/LVBD** devices are not fitted with a fall indicator, so no information on how to inspect the fall indicator is provided in this Manual.

Sicurpal

NOTES

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Sicurpal

Via dei Mestieri, 12
41030 Bastiglia (MO)
Tel. +39.059.818179
Fax. +39.059.909294
www.sicurpal.it
info@sicurpal.it