

■ Green Up the Roof!



## TECHNICAL MANUAL

**DiaSafe® Single**

**DiaSafe® Line Multi**

**DiaSafe® Glide**

### Fall Protection Anchoring Systems

Permanently secured anchor devices as per standards EN 795:2012 and CEN/TS 16415:2013



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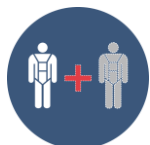
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# 1 Description of symbols

Pictograms in the Technical Manual have the following meanings:



System users are obliged to carefully read this manual and the related service book, and shall closely follow all relevant safety regulations and user requirements listed herein.



Utilization modes of the safety system based on the number of persons using the system simultaneously: (1+1 persons are considered as standard case.)

- **SOLO System:** In case of use by 1+1 persons, the system can be used even by two persons simultaneously, but the fall arresting function can be guaranteed only if the falls take place at different times.



- **DUO System:** In case of permanent simultaneous use by 2 persons, the fall arresting function is also guaranteed if the falls happen at the same time.



The fall arresting system can be used by more users simultaneously, so that maximum 1+1 users can be connected into each second span.



Usage of personal protective equipment is required (in accordance with EN 361 and EN 363). Manufacturer's prescriptions of the given equipment shall be observed.



Danger, which could lead to severe injury or death.

## 2 Introduction – General description

### 2.1 Single anchoring points

#### 2.1.1 DiaSafe® Single

The **DiaSafe® Single** was developed as a safety technical system working as a single anchoring point based on the standards **EN 795:2012 (Type A)** and **CEN/TS 16415:2013**, for the simultaneous catch of **2 persons**, in case of max. 5° roof angle, permanently secured by layering sequence. The anchoring point can be used solely with personal protective equipment defined according to EN 363:2008.

### 2.2 Line wire-rope system

#### 2.2.1 DiaSafe® Line Multi

The **DiaSafe® Line Multi** was developed as a horizontal wire-rope safety technical system based on the standards **EN 795:2012 (Type C)** and **CEN/TS 16415:2013**, for the simultaneous catch of max. **1+1 persons**, in every second post space, in case of max. 5° roof angle, permanently secured by layering sequence. The anchoring point can be used solely with personal protective equipment defined according to EN 363:2008.

#### 2.2.2 DiaSafe® Glide

The **DiaSafe® Glide** was developed as a horizontal wire-rope safety technical system with traveller, working based on the standards **EN 795:2012 (Type C)** and **CEN/TS 16415:2013**, for the simultaneous catch of **2 persons**, in case of max. 5° roof angle, permanently secured by layering sequence. The anchoring point can be used solely with personal protective equipment defined according to EN 363:2008.

#### 2.2.3 Possibility of combinations with RoofX® systems

All types of **DiaSafe® Glide** and **RoofX® Glide** safety systems (**RoofX®-C Glide**, **RoofX®-W/T Glide**, **DiaSafe® Glide**, **Wall-Fix® Glide**) can be combined with each other in order to create a continuous wire-rope system that can be fixed to various surfaces. In such cases the system functions and number of permitted users shall be adjusted according to the least favourable conditions.

The highest manufacturing quality of the fall arrester anchoring systems is guaranteed by the manufacturer's quality management system complying with the standards ISO 9001:2009 and ISO 14001:2005, from the high-level product development through the selection of high-quality base materials up to the final quality control.

## 3 Safety instructions

### 3.1 General safety instructions

- The safety system may only be installed and used by appropriately trained, competent persons who are familiar with the safety system in accordance with this Technical Manual and the Installation Guide.
- The system user must be familiar and comply with the local, and labour safety regulations.
- The system may only be used by people who:
  - are trained in the use of PPE (Personal Protective Equipment).
  - are physically and psychologically fit (health restrictions such as heart and circulatory problems, medication, alcohol consumption, etc. reduce user safety).
  - understood and accepted the possibilities, restrictions and risks of using the protective equipment.
- The rescue of anyone who may have fallen down must be provided on site.
- Before works begin, measures must be taken to ensure that no objects can fall down from the workspace. The area under the workspace (pavement, ...etc.) is to be kept clear.
- If after the acceptance of the safety system, renovation work is undertaken in its immediate vicinity, it must be established that this renovation has no impact on the safety of the installed safety system! In case of doubt, the installer or the manufacturer must be consulted.
- After being subjected to the stress of fall, the entire safety system is to be taken out of operation and inspected by a qualified professional.
- The installed safety system must not be altered in any way.
- It is forbidden to use the safety system as a lightning protection system. Components of the lightning protection system statically should not load the safety system. The system is not allowed to be used as an earth cable. Relevant regulations must be complied with.
- Never hang loads on the safety system that are not approved in this manual, and never use it as an alpinist suspension point.
- The system is never to be used as alpinist anchoring points. The system shall not be loaded with any further weight different from its original purpose.
- The fall prevention anchoring systems can be installed and inspected only by specialists in possession of a required certificate authorising them for the given system, and specialists of the competent authorities or inspectorates.
- A basic tenet of the effective operation of the fall protection anchoring system in the long term is regular maintenance - at least every 12 months in the manner prescribed by the manufacturer.
- It is forbidden to use the system until it has been inspected and completely or partially replaced if the system has fulfilled its function!
- If the maintenance is not carried out regularly, the system may be used exclusively at the responsibility of the owner/maintainer.
- The timing of inspections recommended by the manufacturer in the instructions of the installed system (in individual cases) may also depend on the local legal requirements, on the frequency of use, and on local conditions (e.g. chemical damage, frequent lightning, etc.).
- The DiaSafe® system may be extended only through the use of original accessories, developed by the manufacturer of the system. The installation and use of parts or products from other manufacturers, even if their appearance is very similar, is strictly prohibited.
- The installer should make sure that the receiving structure is able to bear the load what comes with the system installation. If there is any doubt, consult with a structural engineer.

- The DiaSafe® fall protection anchoring system may be installed and used only according to the manufacturer's guidelines in the Technical Manual.
- If the system has fulfilled its fall arrest function, following a fall, the system must be immediately withdrawn from use. An immediate inspection must be performed before the system is used again. The system must be replaced entirely or partially depending on the findings of the inspection.
- If the Technical Manual is lost, or the Service Manual is completed or seriously damaged, get in touch with your distributor.

## 3.2 Application

- In order to protect lives the Technical Manual should be read carefully, and the included manufacturer's notices and instructions must be observed, especially before first use of the system. The Service Manual does not replace the Technical Manual. You should thoroughly study the Technical Manual before starting to use the system.
- The minimum free space necessary under the edge is calculated as follows: **Deformation of the anchor device in case of stress + manufacturer's specification of the PPE (Personal Protective Equipment) used, including deflection of the cable + body height + 1m safety margin.**
- For installations higher than 1000 m above sea level, the distance between the posts will decrease by 30%, while the wire-rope sagging will increase by 30%.
- In heavy snowfall, the roof surface in the area of the fall protection system must be kept clear, so that the snow can not affect the undisturbed functioning of this system.
- Proper use of the individual components, including the PPE must be ensured, since the effectiveness of the fall prevention system is otherwise not guaranteed.
- System checks should be carried out at least once in **every 12 months**. Check interval durations depend on relevant regional regulations, system use frequency, as well as local conditions (e.g. chemical hazards).
- Attachment to the fall protection system is completed with a carabiner and must be used with a PPE in accordance with standards EN 361 (safety harness) and EN 363 (fall arrest system).
- If the system will be used with a direct connection (a carabiner) or a traveller made by another manufacturer according to EN 362 as long as the traveller doesn't run through the column head-special care must be taken during the coupling. The required distance for the couplings is max. 15 cm.
- In case of using personal protective equipment according to EN 360 or EN 365-2 special care must be taken, and the properties of the equipment needed to be taken into account in the calculations.
- **ATTENTION!** For horizontal use, only such connecting elements can be used which are designed for this purpose and tested for the respective edge type (sharp edges, trapezoidal sheet, steel grids, concrete, etc.).
- Do not use fall arrest systems if wind speeds exceed normal parameters according to local safety regulations!
- DiaSafe® systems should only be used in a frosted environment if they have been installed in unfrosted conditions or if at least one unfrosted period has elapsed between installation and first use. If safe use of the system in frost is not guaranteed, it must not be used.
- Do not use fall arrest systems if wind speeds exceed normal parameters.
- The fall protection system must not be used by children or pregnant women.

In the EN 795 standard an installation documentation has had to be made since 2012 for every anchoring system. This documentation must include detailed information about the following: location, company carrying out the installation, installer responsible, system installed. Also there must be a Delivery/receipt record completed (it is found in the Service Manual), which verifies that the installation has been performed professionally in accordance with standards. Furthermore, there must be drawn up a construction plan, which shows the places of the anchoring points and the steps of

installation must be photographed as well. Special care must be taken with elements of the anchoring system which are going to be covered after the installation. If, on a given location, there are separate roof areas and different types of anchoring systems are installed, a distinct documentation must be made for each roof area and each system.

## 4 Manufacturer's responsibility, warranty

- Manufacturer's responsibility covers faulty products, unless the fault occurred as a result of inappropriate use. Manufacturer shall only replace faulty or damaged components. No further claims (indirect or property damage) are acknowledged by the manufacturer.
- Because of the unknown site conditions, the manufacturer assumes no responsibility for the warranty about damage caused by diversion from the Technical Manual (improper use, incorrect installation or other reasons).
- A major prerequisite of long-term fall protection system operation is regular maintenance as prescribed by the manufacturer. Should maintenance steps fail to be executed in due time, then the system can only be used for own risk. Should any damage or accident happens on an unchecked system the manufacturer's responsibility shall terminate.
- DiaSafe® systems can be extended using original accessories developed exclusively by the manufacturer. Should any components or products of any other manufacturer be installed or used in the system, manufacturer's responsibility and guarantee terminate immediately.
- Should the system not be installed or assembled by the manufacturer or a contractor authorised for installation, the manufacturer shall accept no claims, other than for faulty products.
- Should a fall occur, the system must be discarded and it is PROHIBITED to use it any longer! System use can only be resumed after an official interim inspection. In accordance with the inspection, relevant system components or the whole system must be overhauled or replaced. As long as the distraint or the inspection is not carried out, the manufacturer is not liable for the use of the system any longer.
- Manufacturer shall cease to take any further responsibility for the system in the following cases: damage and alterations due to environmental conditions, normal wear and tear, misuse and an aesthetic alteration.
- Particular attention has been paid to producing these instructions. However it is not possible to show all the potential versions and these instructions do not therefore claim to be exhaustive. DIADEM® APP GmbH shall not be liable for any usage or application error, which may arise from the misinterpretation of the methods shown here.

### 4.1 General terms of warranty

For the DiaSafe® fall protection anchoring systems range, we undertake a General Manufacturer's warranty of **60 months**, valid from the day of the sale of the product by Manufacturer.

The warranty does not cover:

- Any loss of time, inconvenience, administrative costs or any other consequential damages suffered by the owner/maintainer as a consequence of a malfunction under warranty.
- Repair or replacement of spare parts, due to the following causes:
  - Wear and tear from normal use.
  - Damage or alteration due to negligence or improper use.
  - Activated fall arrest function, requiring replacement.
- Any modification of the system, or of any part thereof, without the manufacturer's approval.
- Uses not intended or expressly prohibited by the manufacturer.

- Damage caused by the user's physical condition or health (with special regard to the weight limit: 130kg/person) and thus improper use.
- Damage caused by the owner/maintainer's failure to adequately maintain, service or repair any part of the system.
- Other causes, such as: damage due to extreme environmental impact; natural wear and tear, aesthetic alteration, etc.

Loss of warranty rights, including, among others:

- Damage occurring following incorrect installation of the product, or installation not following the guidelines.
- Loss of function and other faults due to improper use.
- Deterioration, structural damage, loss of function of the installed product due to external impact.
- Loss of function or structural damage due to natural causes (lightning strike, etc.).
- Evidence of damage caused by unauthorised and/or non-professional repair, mounting, or impact.

## 4.2 Expected lifetime

The DiaSafe® safety systems maximum lifetime is 10 year from the date of correct installation – In case of the intended use, optimal condition, and without any visible damage.

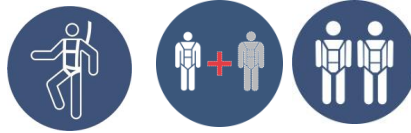
The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works. These provisions are based upon the current state of the art and the available knowledge and experience. The indications given as to the working life of the construction product cannot be interpreted as a guarantee, but are regarded only as a means for expressing the expected economically reasonable working life of the product.



## 5 System design, components

### 5.1 DiaSafe® Single anchoring points

#### 5.1.1 DiaSafe® Single



**Post structure:** DS Single anchor post + DS amoeba-shaped damping plate with ballasting mat (3x3 m)

**Properties:** no need to break through the layering sequence of the roof insulation to perform the installation

**Load direction:** 360° (horizontal)

**Material:** stainless steel 1.4404 (anchor post), glass-fibre reinforced plastic (amoeba-shaped damping plate)

**Fixation:** specified ballast material (detailed in Point 6)

**Standard height:** 300 mm

*Custom sizes can be ordered (300-1400 mm)*

#### 5.1.2 DiaSafe® Single / Anchor point components



**DS Single anchor post**

**Product No.:** 100369

**Material:** Stainless steel 1.4404

**Size:** 300 mm x 250 mm



**DS amoeba-shaped damping plate with ballasting mat (3x3m)**

**Product No.:** 100302

**Material:** Glass-fibre reinforced plastic

**Size:** 3x3m

#### 5.1.3 Recommended carabiner to connect to the system



**Applied standard:** EN 362:2013

**Max. diameter:** Ø 12 mm

## 5.2 DiaSafe® Glide wire-rope system

### 5.2.1 DiaSafe® Glide



**Post structure:** DS Glide anchor post + DS amoeba-shaped damping plate with ballasting mat (3x3 m)

**Properties:** no need to break through the layering  
sequence of the roof to perform the installation

**Load direction:** 360° (horizontal)

**Material:** stainless steel 1.4301 (anchor post),  
stainless steel 1.4408 (head),  
glass-fibre reinforced plastic (amoeba-shaped damping plate)

**Fixation:** specified ballast material (detailed in Point 6)

**Min. distance of posts:** 1.5 m

**Optimal distance of posts:** 7.5 m (*max. 8 m*)

**Standard height:** 300 mm

### 5.2.2 DiaSafe® Glide / Wire-rope system components



**DS post**

**Product No.:** 100520

**Material:** Stainless steel 1.4301

**Size:** Ø250mm x 285mm



**DS amoeba-shaped damping plate with ballasting mat (3x3m)**

**Product No.:** 100302

**Material:** Glass-fibre reinforced plastic

**Size:** 3x3m



**DS stainless steel wire-rope**

**Product No.:** 100268

**Material:** Stainless steel 1.4404

**Diameter:** Ø 8mm (7 × 19 strands)

**Tensile strength:** F = 33.4 kN



**DS Glide head Kit**

**Product number:** 130937

**Material:** Stainless steel 1.4408

**Attached:** M12 self-locking nut, flat washer, spring washer



**DS Swaged square end**  
**Product No.:** 100354  
**Material:** Stainless steel 1.4404



**DS DiaGlider-Fix (without carabiner)**  
**Product No.:** 100471  
**Material:** Stainless steel  
**Application:** Placed on the wire, not detachable.



**DS Wire-rope terminating shrinkable tube**  
**Product No.:** 090845  
**Size:** Ø 9 mm



**DS Swaged turn buckle (in case of closed system)**  
**Product No.:** 100356  
**Material:** Stainless steel 1.4404  
**Adjustable length:** 325 - 400 mm



**DS Holder (optional: for system beginning, ending and T-branching)**  
**Product No.:** 100513  
**Material:** Stainless steel 1.4301



**DS Cable Thimble (optional)**  
**Product number:** 100279  
**Material:** Stainless steel 1.4404  
**Size:** 58 x 38 mm



**DS Multi-turn buckle (optional)**  
**Product number:** 100259  
**Material:** Stainless steel 1.4404  
**Adjustable length:** 290 - 415 mm



**DS Multi clamp (optional)**  
**Product No.:** 100470  
**Material:** aluminium (body), stainless steel (screw)



**DS DiaGlider with carabiner (optional)**  
**Product No.:** 100350  
**Material:** Stainless steel

## 5.3 DiaSafe® Line Multi wire-rope system

### 5.3.1 DiaSafe® Line Multi



- Post structure:** DS Multi anchor post + DS amoeba-shaped damping plate with ballasting mat (3x3 m)
- Properties:** no need to break through the layering sequence of the roof to perform the installation
- Load direction:** 360° (horizontal)
- Material:** Stainless steel 1.4404 (anchor post), glass-fibre reinforced plastic (amoeba-shaped damping plate)
- Fixation:** specified ballast material (detailed in Point 6)
- Min. distance of posts:** 1.5 m
- Optimal distance of posts:** 7.5 m (max. 8 m)
- Standard height:** 300 mm
- Custom sizes can be ordered (300-1400 mm)*

### 5.3.2 DiaSafe® Multi / Wire-rope system components:



#### DS amoeba-shaped damping plate with ballasting mat (3x3m)

**Product No.:** 100302

**Material:** Glass-fibre reinforced plastic

**Size:** 3x3m



#### DS Multi anchor post

**Product No.:** 100316

**Material:** Stainless steel 1.4404

**Size:** Ø250mm x 300mm



#### DS Multi fixing head

**Product No.:** 100318

**Material:** Stainless steel 1.4404

**Size:** Ø 28 x 60 mm

**Attached:** DIN912 M10x20 mm set screw



#### DS Multi retainer ring

**Product No.:** 100319

**Material:** Stainless steel 1.4404

**Size:** Ø 31.5 mm x 23 mm



#### DS stainless steel wire-rope

**Product No.:** 100268

**Material:** Stainless steel 1.4404

**Diameter:** Ø 8 mm (7 × 19 strands)

**Tensile strength:** F = 33.4 kN



**DS Wire-rope terminating shrinkable tube**  
**Product No.:** 090845  
**Size:** Ø 9 mm



**DS Multi rectangular anchoring ring**  
**Product number:** 100317  
**Material:** Stainless steel 1.4404  
**Size:** 57.5 mm x 87.5 mm  
**Material thickness:** Ø 8 mm



**DS Cable Thimble**  
**Product number:** 100279  
**Material:** Stainless steel 1.4404  
**Size:** 58 x 38 mm



**DS Multi-turn buckle**  
**Product number:** 100259  
**Material:** Stainless steel 1.4404  
**Adjustable length:** 290 - 415 mm



**DS Multi clamp**  
**Product No.:** 100470  
**Material:** aluminium (body), stainless steel (screw)

### 5.3.3 Recommended carabiner to connect to the system



**Applied standard:** EN 362:2013  
**Max. diameter:** Ø 12 mm

## 5.4 DiaSafe® systems accessories



**DS amoeba-shaped damping plate with ballasting mat (5x5m)**  
**Product No.:** 100368  
**Material:** Glass-fibre reinforced plastic  
**Size:** 5x5m



**DS Auxiliary ballasting mat**  
**Product No.:** 320317  
**Material:** Polypropylene



**DS Auxiliary rising attachment**  
**Product No.:** 100304  
**Material:** Glass-fibre reinforced plastic



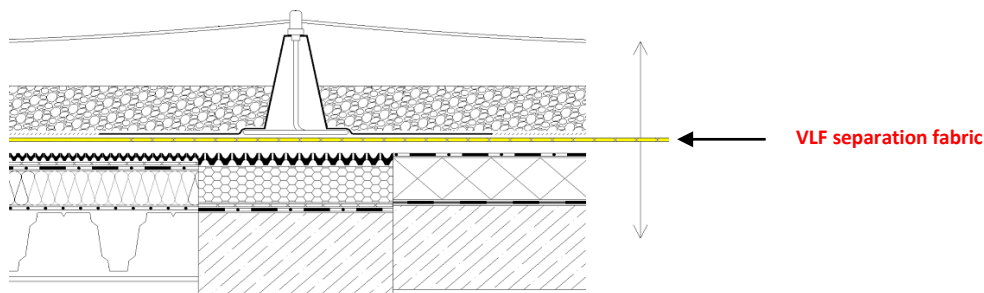
**DS Signal cone**  
**Product No.:** 100373  
**Material:** Glass-fibre reinforced plastic

## 6 Load bearing structure and ballast layer



### 6.1 Load bearing structure

DiaSafe® systems were tested and examined on a number of surface types and structures (roofs with steel, reinforced concrete and wooden structure). Their performance is controlled on the most prevailing waterproofing materials (bituminous, PVC, TPO or EPDM) and roof panes. The system is applicable on any roof system which is able to bear the extra load originating from the installation and use of the system.



#### Warning!

The system cannot be installed on substructure with grained or rolling structure (e.g.: gravel or planting medium).

### 6.2 Ballast material

Stability of the system is ensured by the ballast layer which can be planting medium for green roof, otherwise gravel surfacing or other bulk material. DiaSafe® anchoring points can be used on roofs with maximum 5° slope angle.

It shall be ensured that the surface weight of the ballast layer in dry state on the entire surface of the ballasting mat:

If the system is **SOLO**, i.e. its is used by **1+1 persons**:

- **should be 80 kg/m<sup>2</sup> at least when applying standard (3x3 m) ballasting mat**
- **or minimum 720 kg per post, if the system is used by 1+1 persons.**
- **thickness of the ballast layer is minimum 3 cm in any case**

If the system is **DUO**, i.e. it is used by **2 persons**:

- **should be 200 kg/m<sup>2</sup> at least when applying standard (3x3 m) ballasting mat**
- **or minimum 1800 kg weight per post.**
- **thickness of the ballast layer is minimum 3 cm in any case**

<b>Solo</b>	number of users	1+1
	standard mat size	3x3 m
	surface weight	80 kg/m <sup>2</sup>
	total weight per post	720 kg
<b>Duo</b>	number of users	2
	standard mat size	3x3 m
	surface weight	200 kg/m <sup>2</sup>
	total weight per post	1800 kg



Standard mat sizes belonging to the anchor points is 9 m<sup>2</sup> (3×3 m) and optionally 25 m<sup>2</sup> (5×5 m), respectively. The specified minimum ballast layer thickness of minimum 3 cm shall always be ensured. When applying custom mat sizes, the minimum ballast surface weight shall be determined according to the Technical Manual to which assistance is provided by the table series below:

#### Solo – 1+1 users

Mat size	Total weight	Surface weight	Layer thickness: gravel, sand $\gamma = 1600 \text{ kg / m}^3$	Layer thickness: planting medium $\gamma = 1000 \text{ kg / m}^3$	Layer thickness: planting medium $\gamma = 800 \text{ kg / m}^3$
m <sup>2</sup> (m × m)	kg	kg/m <sup>2</sup>	cm	cm	cm
4.0 (2 × 2)	720	180	10.5	18.0	22.5
6.0 (3 × 2)	720	120	7.0	12.0	15.0
9.0 (3 × 3)	720	80	5.0	8.0	10.0
12.0 (3 × 4)	720	60	min. 3.5	6.0	7.5
16.0 (4 × 4)	720	45	min. 3.0	4.5	6.0
20.0 (4 × 5)	800	40	min. 3.0	4.0	5.0
25.0 (5 × 5)	875	35	min. 3.0	3.5	4.0
30.0 (5 × 6)	900	30	min. 3.0	3.0	3.5
35.0 (5 × 7)	1050	30	min. 3.0	3.0	3.5
40.0 (5 × 8)	1200	30	min. 3.0	3.0	3.5

#### Duo - 2 users

Mat size	Total weight	Surface weight	Layer thickness: gravel, sand $\gamma = 1600 \text{ kg / m}^3$	Layer thickness: planting medium $\gamma = 1000 \text{ kg / m}^3$	Layer thickness: planting medium $\gamma = 800 \text{ kg / m}^3$
m <sup>2</sup> (m × m)	kg	kg / m <sup>2</sup>	cm	cm	cm
4.0 (2 × 2)	1800	450	28,5	45,0	56,5
6.0 (3 × 2)	1800	300	19,0	30,0	37,5
9.0 (3 × 3)	1800	200	12,5	20,0	25,0
12.0 (3 × 4)	1860	155	9,5	15,5	19,0
16.0 (4 × 4)	1920	120	7,5	12,0	15,0
20.0 (4 × 5)	1900	95	6,0	9,5	12,0
25.0 (5 × 5)	2000	80	min. 5,0	7,5	9,0
30.0 (5 × 6)	2400	80	min. 5,0	6,0	7,5
35.0 (5 × 7)	2800	80	min. 5,0	5,5	6,5
40.0 (5 × 8)	3200	80	min. 5,0	min. 5,0	6,0

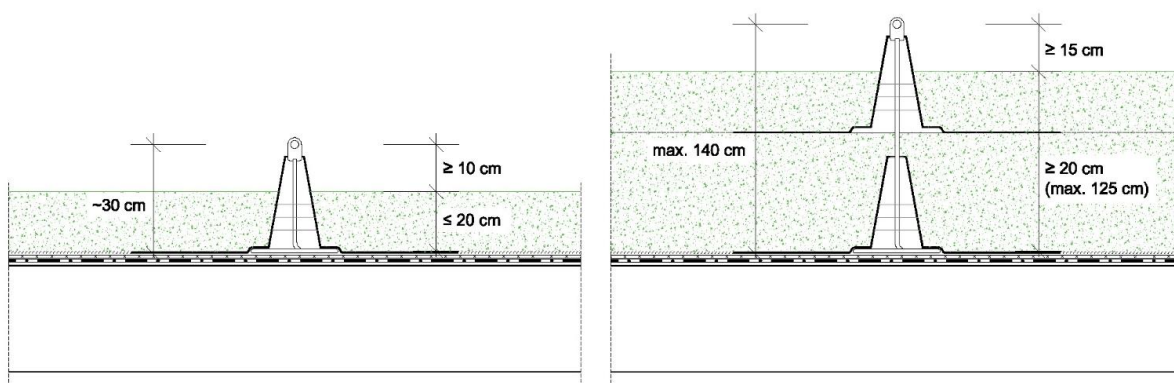
If the surface of the ballasting mat shall be increased, application of an auxiliary ballasting mat is required. If the surface of the ballasting mat shall be reduced for geometric reasons, the standard ballasting mat must be folded back to the appropriate size or cut, but in this case, the minimum distance of the mat measured from the centre point of the damping plate cannot be smaller than 50 cm at any

point, and special attention shall be paid to the existence of the appropriate ballast weight. It is prohibited to cut or damage the glass-fibre reinforced plastic in any way.

### Warning!

Because the thickness of the ballast layer may change by time (people walk on it, it is eroded by wind or rain etc.), the actual layer thickness must be controlled before each use by visual inspection at least. The ballast layer must always cover the ballasting mat on the entire surface. In case of inadequate layer thickness, additional ballast material is required. The various types of ballast materials (substrate, gravel etc.) can be combined within one system; in such a case uniform weight distribution of the mixed ballast materials shall be ensured. For this help is provided by the marking placed on the anchor post of the damping plate, which is described in detail in the Installation Guide.

#### 6.2.1 Installation of the system in the case of ballast materials with various layer thicknesses



Thickness of ballast material  $\leq 20$  cm

Thickness of ballast material  $\geq 20$  cm

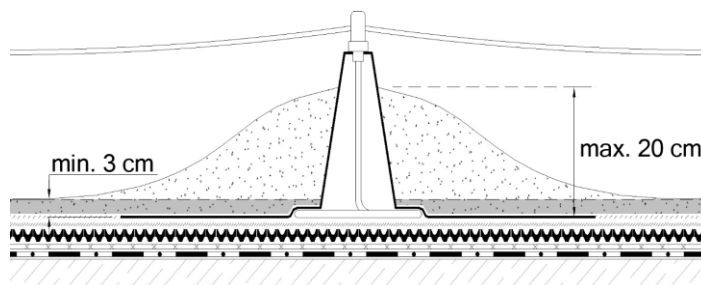
Layer thickness of the ballast materials on green roofs can be different. If thickness of the ballast layer is maximum 20 cm or less, the system can be installed in the regular way. For larger layer thickness the system can be installed using a custom size anchor post and DS auxiliary rising element. This applies both for the wire-rope and single systems.

#### 6.2.2 Uniform layer thickness

Basically, the uniform weight distribution of the ballast materials shall be ensured. Only the minimum layer thickness shall be ensured. The top of the post of the DiaSafe® systems shall be at least 10 cm above the surface of the ballast layer.

#### 6.2.3 Varying layer thickness

Uneven ballast layer is permitted under observance of the load parameters.





## 7 Information on system installation and usage

- The system guarantees full-scale safety for the user, regardless of the sag of the wire.
- Sag of the wire may change during the lifetime of the system, e.g. due to the mounting actions, thermal expansion or other dynamic effects. It is important that the DiaSafe® systems are not anchored systems, the wire does not need to be entirely tight, on the contrary, overtight wires originating from the incorrectly adjusted sag of the wire disadvantageously affect the efficiency and durability of the anchoring system.
- If posts of the system are distorted due to the incorrect wire tension during or after the installation, it means that the system was overstretched. The allowed distortion of the posts is 45° measured from the vertical axis in any direction, but the side of the cone (from the point measured back vertically 10 mm from the top of the cone to the bottom) as well as its bottom part shall remain intact, they must keep their integrity.
- Such bending of a post due to mounting, thermal expansion or other dynamic effects means solely an aesthetic change to the system, it cannot be subjected to manufacturer's warranty procedure.
- The system is capable to accomplish its function even in the above cases.
- When using according to the respective intended use, the fixing element of post head of the Multi system can be used - released and then fixed again - safely so many times on the occasion of the mandatory check before maintenance, inspection and use, until no tear of a filament on the wire can be experienced and the clamping bolt can be operated as intended.

## 8 System installation and annual inspection information

### 8.1 System installation and annual inspection

- For the commissioning of the system, the Service Manual and the handover protocol shall be completed in compliance with the test criteria. The validating sticker shall be placed on the control label.
- The annual inspection shall be documented in writing. The test criteria and detailed information are included in the Service Manual. Based on the international guidelines and the manufacturer's instructions, the inspection shall be performed without test load.

### 8.2 Information regarding required free fall height

To appropriately fulfil the fall arresting function of the system it is required to consider the correct free fall height both for planning and before being put into service. To consider this, assistance is provided by the respective existing provisions.

#### **Warning!**

**The system cannot fulfil any fall arresting function if the free fall height does not reach the minimum of 6.25 m height which is to be corrected with the displacement of the anchor point in any case.**

## 9 Documentation

The manufacturer provides documentation for each **DiaSafe®** system attached and in digital, downloadable form. The installed falling arrest system can be registered on the **DIADEM® Online** registration interface. The Service Manual is prepared during registration.

Parts of the documentation:

- Technical Manual (printed or downloadable)
- Installation Guide (printed or downloadable)
- Service Manual (furnished with individual serial number): (printed)
  - Handover protocol
  - Checking protocol
  - Validating decal
- Control label (printed)

At the annual inspection, the expert performing the inspection is obliged to place the control label validating the appropriate state of the installed fall arresting system on the control label of the system.

### Warning!

In lack of a validly filled and logged Service Manual and/or Online System Registration the state of the system becomes uncontrolled and its functionality becomes uncontrollable. This completely excludes the Manufacturer's responsibility for eventual damages, faults or injuries.

## 10 Technical data

**Maximum forces and displacements (Temperature: 20 °C):**

System	Type	Test	Deflection [mm]	Max. Force Post [kN]	System build-up
<b>DiaSafe®</b>	Single	Dynamic	498	7,56	Single
<b>DiaSafe®</b>	Glide	Dynamic	1947	6,23	Glide (8m LINE)
<b>DiaSafe®</b>	Glide / Glide	Dynamic	2497	5,60	combined with <b>RoofX®-C Glide</b> (8m LINE)
<b>DiaSafe®</b>	Multi	Dynamic	2452	6,81	Line Multi (8m LINE)
<b>DiaSafe®</b>	Single	Static	-	25,16	Single
<b>DiaSafe®</b>	Multi	Static	-	13,76	Line Multi

Sufficient clearance under the usage area shall be ensured in any case! Depending on the length of wire the displacement may highly deviate from the data specified by the manufacturer.

## 11 Installation

### 11.1 Presses usable for pressing

The DiaSafe® anchoring systems were tested and approved by pressings produced by REMS radial presses. The following models are suitable for pressing:

REMS Power-Press  
 REMS Power-Press SE  
 REMS Power-Press ACC  
 REMS Akku-Press  
 REMS Akku-Press ACC



These machines exert 36 kN pressing force which finally results in 100 kN force.

The manufacturer of the press must inspect all radial presses annually for appropriate operation. Make sure that the used press has a certificate which verifies the inspection of the press within 12 months.

In addition to the above list, when using a different press, the use of presses with equivalent technical specifications is required or they must be approved by the manufacturer of the DiaSafe® systems.

#### 11.1.1 Pressing jaw and lining to be used for pressing

Pressing shall be performed with T12 press lining in any case, which fits in the standard pressing jaw.



T 12 press lining and pressing jaw

When using the press - with special attention to the lifetime of the pressing jaws and press linings - the manufacturer's specifications shall be observed. The T 12 press lining of the press was developed specifically for the DiaSafe® Glide systems. This can be procured directly from the manufacturer of the press or from the distributor or manufacturer of the DiaSafe® system.

**All other installation information can be found in the product specific Installation Guide.**

## 12 Disposal

Do not dispose of the fall protection system in the house waste. Following national requirements, gather the used parts and dispose of them in an environmentally responsible fashion.

## 13 Manufacturer, certification

The **DiaSafe®** fall protection systems have been tested and certified by TÜV Austria Services GmbH.

**Baumusterprüfbescheinigung**  
Certificate

Nr.: 1895-1911-PSA16-067-Z

**Hersteller:** DIADEM® APP Kft.  
Fehérvári út 75  
H - 9028 Győr

**Produkt:** Persönliche Absturzsicherungs- und Anschlagseinrichtungen Typ C  
Personal fall protection equipment - Anchor devices type C

**Type:** DiaSafe® - Ballasted Gille Solo

**Beschreibungen:** Zulässige Varianten - Siehe Anhang  
Valid types - see annex

**Prüfgrundlagen:** ÖNORM EN 795:2012 (ident EN 795:2012)  
ÖNORM EN 365:2004 (ident EN 365:2004)

**Bemerkungen:** Siehe Anhang  
Remarks: See annex

Hiermit bestätigt die TÜV AUSTRIA SERVICES GMBH, dass das oben angeführte Produkt den grundlegenden Sicherheitsanforderungen entspricht. Grundlage dieses Zertifikates ist das zur Prüfung und Zertifizierung vorgelegte Prüfmuster und die technische Dokumentation.  
Hereby TÜV AUSTRIA SERVICES GMBH confirms that the above mentioned product meets the essential safety requirements. The certificate is based on the test specimen and the technical documentation submitted to the test and the certification.

1202-1606-PSA16-067-Z  
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Ing. Georg Gottschlich  
Geprüft  
examined

Dipl.-Ing. Georg Spitznagel  
Freigegeben  
released

31.10.2024  
Gültig bis  
valid till

TÜV AUSTRIA SERVICES GMBH  
G8 security & Energy  
A-1230 Wien, Deutschstrasse 10  
R-Num: P-2-001a-Rev.01

**Zertifikat - Certificate**  
Nr.: 1598-1803-PSA18-023-Z

**Baumusterprüfbescheinigung**

**Hersteller:** APP Kft.  
Fehérvári út 75  
H - 9028 Győr

**Produkt:** Persönliche Absturzsicherungs- und Anschlagseinrichtungen Typ C  
Personal fall protection equipment - Anchor devices type C

**Type:** DiaSafe® - Ballasted Line Multi

**Beschreibungen:** Zulässige Varianten - Siehe Anhang  
Valid types - see annex

**Prüfgrundlagen:** ÖNORM EN 795:2012 (ident EN 795:2012)  
ÖNORM EN 365:2004 (ident EN 365:2004)

**Bemerkungen:** Siehe Anhang  
Remarks: See annex

Hiermit bestätigt die TÜV AUSTRIA SERVICES GMBH, dass das oben angeführte Produkt den grundlegenden Sicherheitsanforderungen entspricht. Grundlage dieses Zertifikates ist das zur Prüfung und Zertifizierung vorgelegte Prüfmuster und die technische Dokumentation.  
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21.03.2018  
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Ing. Georg Gottschlich  
Prüfstelle  
examining department

Ing. Paul Preisler  
Zertifizierungsstelle  
certifying department

29.02.2023  
Gültig bis  
valid till

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Seite 1 von 1  
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