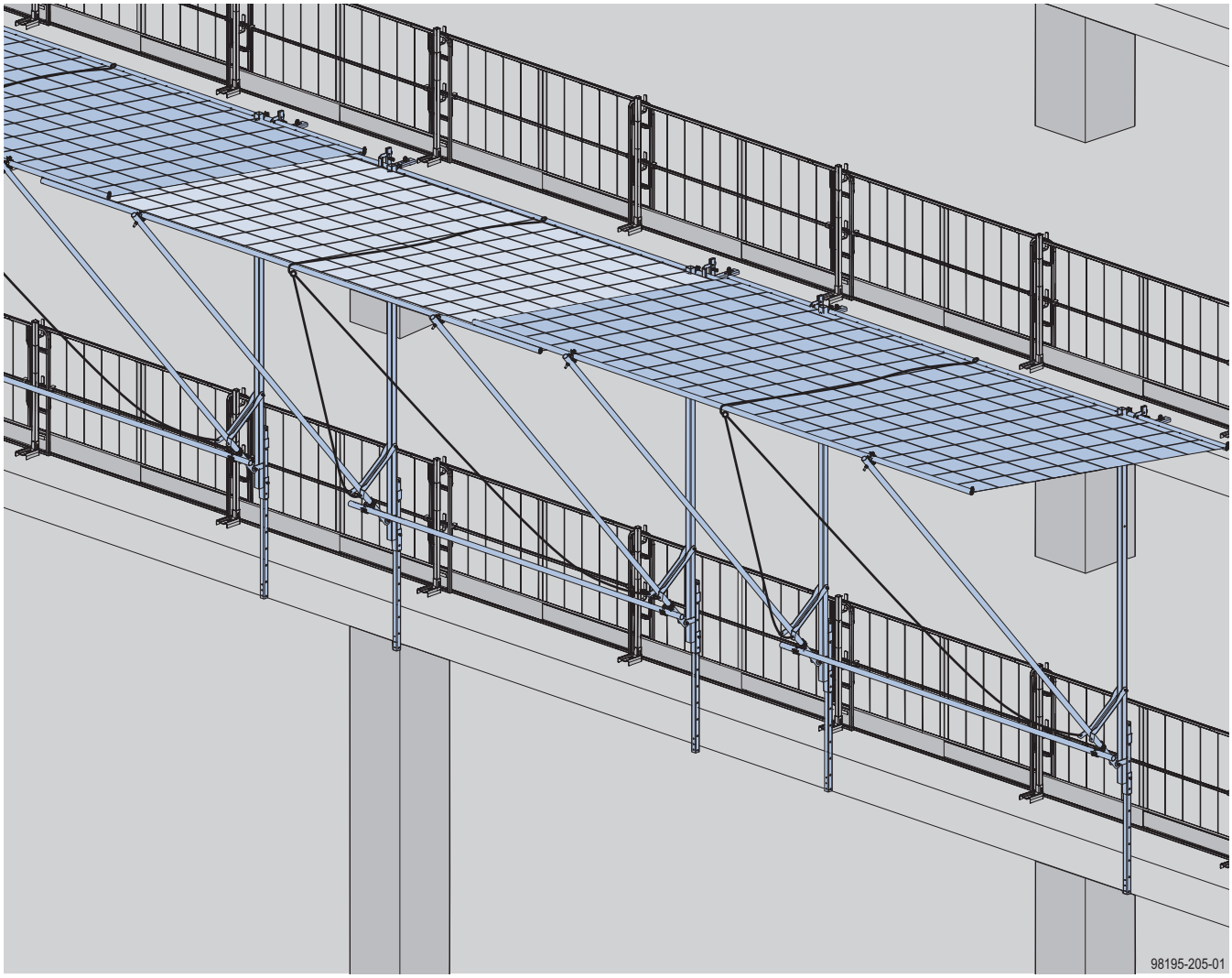
999819502 - 10/2023
en-GB

The Formwork Experts.

# Xsafe catch fan

## User Information

Instructions for assembly and use (Method statement)



# Contents

# Introduction

## Elementary safety warnings

### User target groups

- This booklet is aimed at all persons who will be working with the Doka product or system that it describes. It contains information on the standard design for setting up this system, and on correct, compliant utilisation of the system.
- All persons working with the product described herein must be familiar with the contents of this booklet and with all the safety instructions it contains.
- Persons who are incapable of reading and understanding this booklet, or who can do so only with difficulty, must be instructed and trained by the customer.
- The customer is to ensure that the information materials provided by Doka (e.g. User Information booklets, Instructions for Assembly and Use, Operating Instruction manuals, plans etc.) are up to date and available to all users, and that they have been made aware of them and have easy access to them at the usage location.
- In the relevant technical documentation and formwork utilisation plans, Doka shows the workplace safety precautions that are necessary in order to use the Doka products safely in the usage situations shown.
  In all cases, users are obliged to ensure compliance with national laws, standards and regulations throughout the entire project and to take appropriate additional or alternative workplace safety precautions where necessary.

### Hazard assessment

- The customer is responsible for drawing up, documenting, implementing and continually updating a hazard assessment at every job-site.
  This booklet serves as the basis for the site-specific hazard assessment, and for the instructions given to users on how to prepare and utilise the system. It does not substitute for these, however.

### Remarks on this booklet

- This document can be used as general Instructions for Assembly and Use (Method Statement) or be incorporated into site-specific Instructions for Assembly and Use (Method Statement).
- **The graphics, animations and videos in this document or app sometimes depict partially assembled assemblies and may require additional safety equipment and/or measures to comply with safety regulations.**
  The customer must ensure all applicable regulations are complied with, even if they are not shown or implied in the graphics, animations and videos provided.
- **Individual sections contain further safety instructions and/or special warnings as applicable.**

### Planning

- Provide safe workplaces for those using the formwork (e.g. for when it is being erected/dismantled, modified or repositioned etc). It must be possible to get to and from these workplaces via safe access routes!
- **If you are considering any deviation from the details and instructions given in this booklet, or any application which goes beyond those described in the booklet, then revised static calculations must be produced for checking, as well as supplementary assembly instructions.**

### Regulations; industrial safety

- All laws, Standards, industrial safety regulations and other safety rules applying to the utilisation of our products in the country and/or region in which you are operating must be observed at all times.
- If a person or object falls against, or into, the sideguard component and/or any of its accessories, the component affected may only continue in use after it has been inspected and passed by an expert.

## Rules applying during all phases of the assignment

- The customer must ensure that this product is erected and dismantled, reset and generally used for its intended purpose in accordance with the applicable laws, standards and rules, under the direction and supervision of suitably skilled persons.
  These persons' mental and physical capacity must not in any way be impaired by alcohol, medicines or drugs.
- Doka products are technical working appliances which are intended for industrial / commercial use only, always in accordance with the respective Doka User Information booklets or other technical documentation authored by Doka.
- The stability and load-bearing capacity of all components and units must be ensured during all phases of the construction work!
- Do not step on or apply strain to cantilevers, closures, etc. until suitable measures to ensure their stability have been correctly implemented (e.g. by tie-backs).
- Strict attention to and compliance with the functional instructions, safety instructions and load specifications are required. Non-compliance can cause accidents and severe injury (risk of fatality) and considerable damage to property.
- Sources of fire in the vicinity of the formwork are prohibited. Heaters are permissible only when used correctly and situated a correspondingly safe distance from the formwork.
- Customer must give due consideration to any and all effects of the weather on the equipment and regards both its use and storage (e.g. slippery surfaces, risk of slipping, effects of the wind, etc.) and implement appropriate precautionary measures to secure the equipment and surrounding areas and to protect workers.
- All connections must be checked at regular intervals to ensure that they are secure and in full working order.
  In particular threaded connections and wedged connections have to be checked and retightened as necessary in accordance with activity on the jobsite and especially after out-of-the-ordinary occurrences (e.g. after a storm).
- It is strictly forbidden to weld Doka products – in particular anchoring/tying components, suspension components, connector components and castings etc. – or otherwise subject them to heating.
  Welding causes serious change in the microstructure of the materials from which these components are made. This leads to a dramatic drop in the failure load, representing a very great risk to safety.
  It is permissible to cut individual tie rods to length with metal cutting discs (introduction of heat at the end of the rod only), but it is important to ensure that flying sparks do not heat and thus damage other tie rods.
  The only articles which are allowed to be welded are those for which the Doka literature expressly points out that welding is permitted.

## Assembly

- The equipment/system must be inspected by the customer before use, to ensure that it is in an acceptable condition. Steps must be taken to exclude components that are damaged, deformed, or weakened due to wear, corrosion or rot (e.g. fungal decay).
- Using our safety and formwork systems together with those of other manufacturers can create risks that may lead to injury and damage to property. This requires separate verification by the user.
- The equipment/system must be assembled and erected in accordance with the applicable laws, standards and rules by trained customer personnel whilst maintaining any applicable safety inspections that may be required.
- It is not permitted to modify Doka products; such modifications constitute a safety risk.

## Closing the formwork

- Doka products and systems must be set up so that all loads acting upon them are safely transferred!

## Pouring

- Do not exceed the permitted fresh-concrete pressures. Over-high pouring rates overload the formwork, cause greater deflection and risk breakage.

## Stripping the formwork

- Do not strip out the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be stripped out!
- When stripping out the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges, special pry-bars or system features such as Framax stripping corners.
- When stripping out the formwork, do not endanger the stability of any part of the structure, or of any scaffolding, platforms or formwork that is still in place!

## Transporting, stacking and storing

- Observe all country-specific regulations applying to the handling of formwork and scaffolding. For system formwork the Doka slinging means stated in this booklet must be used – this is a mandatory requirement.
  If the type of sling is not specified in this document, the customer must use slinging means that are suitable for the application envisaged and that comply with the regulations.
- When lifting, always make sure that the unit to be lifted and its individual parts can absorb the forces that occur.
- Remove loose parts or secure them so that they cannot slip out of position and drop.
- When lifting formwork or formwork accessories with a crane, no persons must be carried along, e.g. on working platforms or in multi-trip packaging.
- All components must be stored safely, following all the special Doka instructions given in the relevant sections of this document!

## Maintenance

- Only original Doka components may be used as spare parts. Repairs may only be carried out by the manufacturer or authorised facilities.

## Miscellaneous

The weights as stated are averages for new material; actual weights can differ, depending on material tolerances. Dirt accretions, moisture saturation, etc. can also affect weight.
We reserve the right to make alterations in the interests of technical progress.

## Eurocodes at Doka

**The permissible values stated in Doka documents** (e.g. $F_{perm}$ = 70 kN) **are not design values** (e.g. $F_{Rd}$ = 105 kN)**!**

- It is essential to avoid confusing permissible values with design values!
- Doka documents will continue to state the permissible values.

Allowance has been made for the following partial factors:

- $\gamma_F$ = 1.5
- $\gamma_{M,\ timber}$ = 1.3
- $\gamma_{M,\ steel}$ = 1.1
- $k_{mod}$ = 0.9

Consequently, all the design values for an EC design calculation can be determined from the permissible values.

## Symbols used

The following symbols are used in this document:

**DANGER**
This is a notifier drawing attention to an extremely dangerous situation in which non-compliance with this notifier will lead to death or severe, irreversible injury.

**WARNING**
This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to death or severe, irreversible injury.

**CAUTION**
This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to slight, reversible injury.

**NOTICE**
This is a notifier drawing attention to a situation in which non-compliance with this notifier can lead to malfunctions or damage to property.

**Instruction**
Indicates that actions have to be performed by the user.

**Sight-check**
Indicates that you need to do a sight-check to make sure that necessary actions have been carried out.

**Tip**
Points out useful practical tips.

**Reference**
Cross-references other documents.

# Services

## Support in every stage of the project

- Project success assured by products and services from a single source.
- Competent support from planning through to assembly directly on site.

### Project assistance from start to finish

Every single project is unique and calls for individualised solutions. When it comes to the forming operations, the Doka team can help you with its consulting, planning and ancillary services in the field, enabling you to carry out your project effectively, safely and reliably. Doka assists you with individual consulting services and customised training courses.

### Efficient planning for a safe project sequence

Efficient formwork solutions can only be developed economically if there is an understanding of project requirements and construction processes. This understanding is the basis of Doka engineering services.

### Optimise construction workflows with Doka

Doka offers special tools that help you in designing transparent processes. This is the way to speed up pouring processes, optimise inventories and create more efficient formwork planning processes.

### Custom formwork and on-site assembly

To complement its system formwork range, Doka offers customised formwork units. And specially trained personnel assemble load-bearing towers and formwork on site.

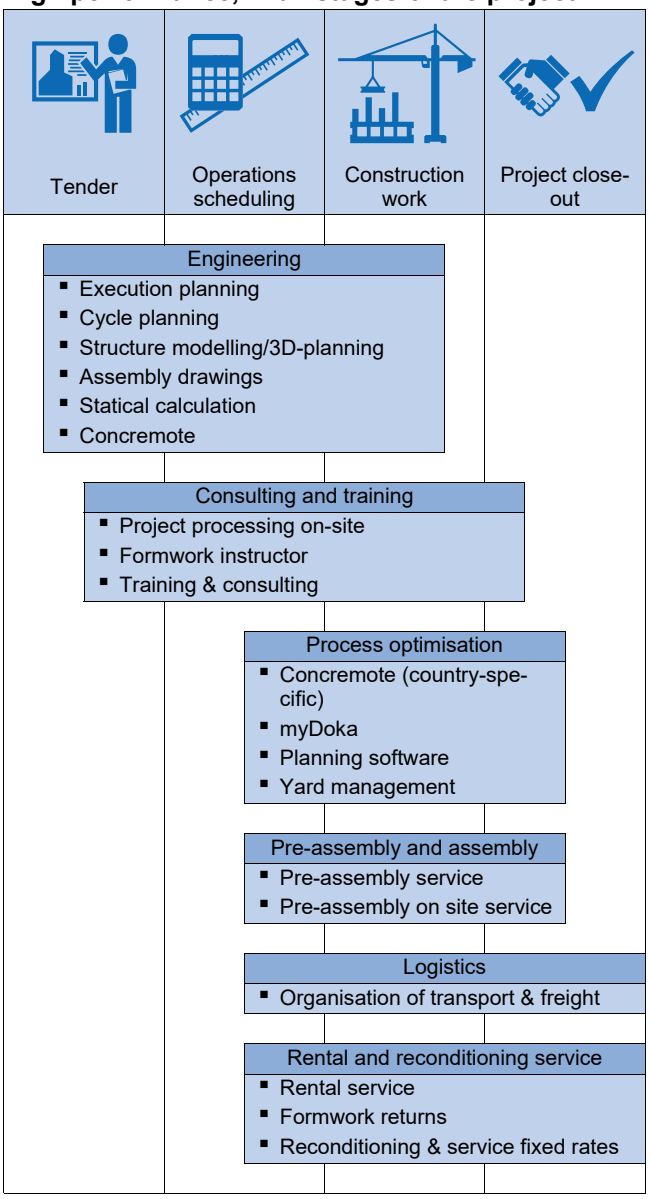
### Just-in-time availability

Formwork availability is a crucial factor in realising your project on time and on budget. The worldwide logistics network puts the necessary formwork quantities on site at the agreed time.

### Rental and reconditioning service

The formwork material needed for any particular project can be rented from Doka's high-performing rental park. Doka Reconditioning cleans and overhauls both client-owned equipment and Doka rental equipment.

**High performance, in all stages of the project**

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# System description

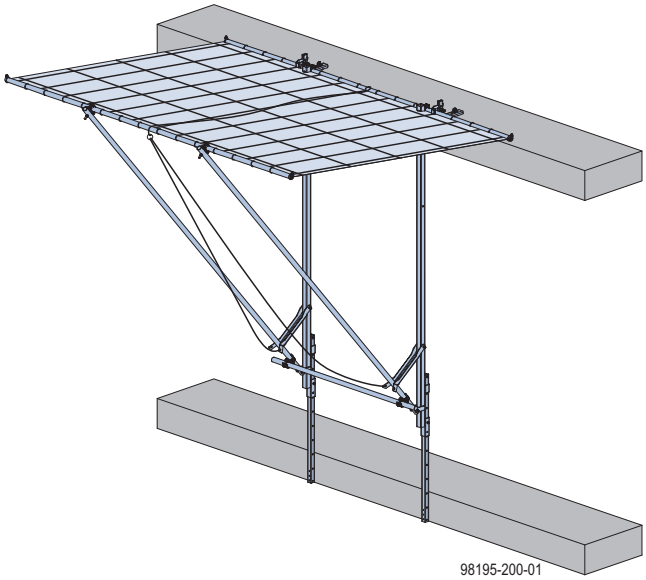
The Xsafe catch fan is Doka's innovative safety solution, offering complete protection against falling objects on construction sites.

The system is EN 1263-1 certified and scores with easy installation and fast repositioning in all project phases.

With its triple-layer net the Xsafe catch fan can catch large objects and also debris and small pieces of rubble.

**NOTICE**

The Xsafe catch fan is not a substitute for edge protection!




## Easy-Lock system

- Reduced crane time thanks to pre-installation of the floor shoes
- Faster installation of the catch fan thanks to the Easy-Lock system and the point-by-point attachment of the net to the horizontal tube

## Quick-folding mechanism

- Time is saved by the innovative 2-in-1 folding mechanism that automatically unlocks the wind bracings from above
- In adverse weather conditions, the Xsafe catch fan can be quickly and safely folded closed and secured

## Triple-layer net

- The 60x60 mm mesh net is the primary net for catching heavy objects
- The 20x20 mm mesh net is the second layer and it protects against medium-sized objects such as gravel or stones
- The fine-mesh layer protects against small objects such as bolts and nuts

## Universal vertical support

- The height-independent vertical extensions permit use up to a storey height of 4.20 m without adaptations
- The support bracket can be adjusted in steps to suit slab thicknesses up to 40 cm

## Corner unit

- Corner unit compliant with EN 1263-1
- The folding version of the corner unit enables easy operation and repositioning.
- The Easy-Lock system enables easy attachment to the structure.

## Xsafe catch fan units

The system is available in two sizes, 4.00m and 6.00m, and two versions, standard and extra-wide, and as a corner unit:

- Xsafe catch fan 6.00x3.10m
- Xsafe catch fan 4.00x3.10m
- Xsafe catch fan 6.00x4.80m extra wide
- Xsafe catch fan 4.00x4.80m extra wide
- Xsafe corner catch fan 4.70x4.70m

**NOTICE**

Extra-wide units can be used for additional protection at places where objects could fall beyond the standard unit. The extended catch area is not EN 1263-1 compliant.

**NOTICE**

The Xsafe corner catch fan 4.70mx4.70m has to be attached to the adjacent Xsafe catch fan units on both sides.

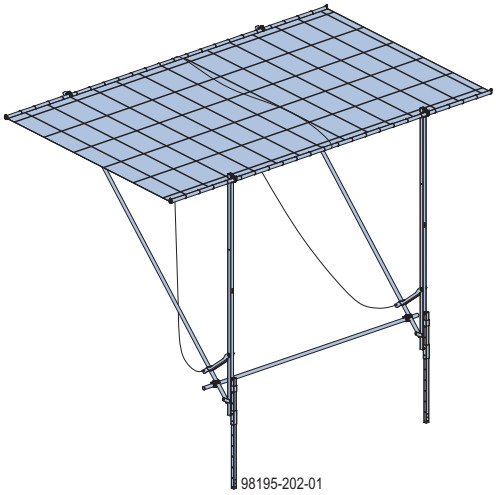
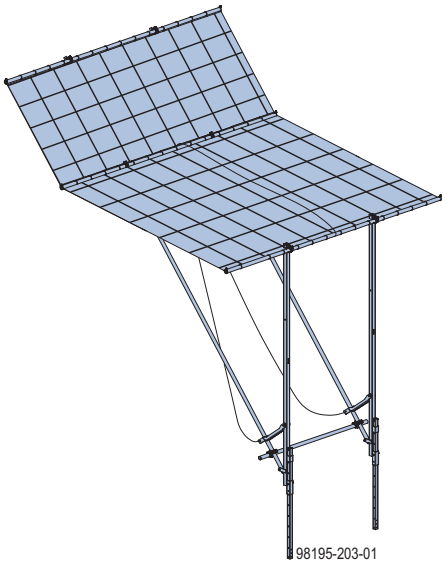
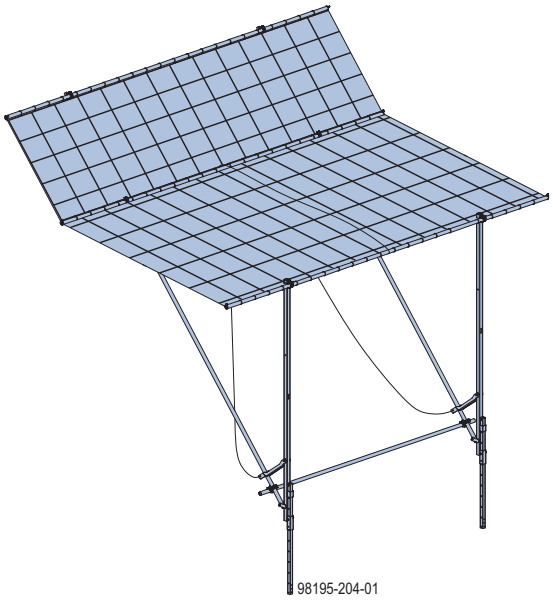
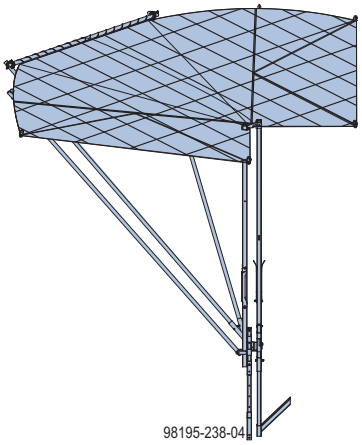
## Reliable tests and handling

All applications of the Xsafe catch fan are tested and certified in accordance with EN 1263-1.

All steel components are hot-dip galvanised for increased durability.

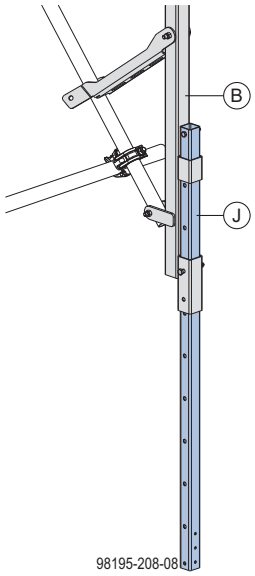
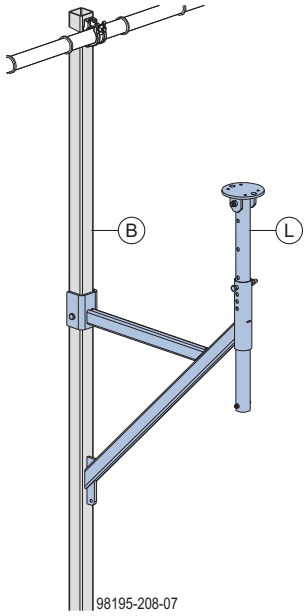
# Versions of Xsafe catch fans

## Versions of Catch nets XCF

| Xsafe catch fan 4.00x3.10m | Xsafe catch fan 6.00x3.10m |
|---|---|
|  98195-200-04 |  98195-202-01 |
| **Xsafe catch fan 4.00x4.80m extra wide** | **Xsafe catch fan 6.00x4.80m extra wide** |
|  98195-203-01 |  98195-204-01 |
| **Xsafe corner catch fan 4.70x4.70m** | |
|  98195-238-04 | |

## Versions of floor supports

There are two options for supporting Xsafe catch fans on the structure:

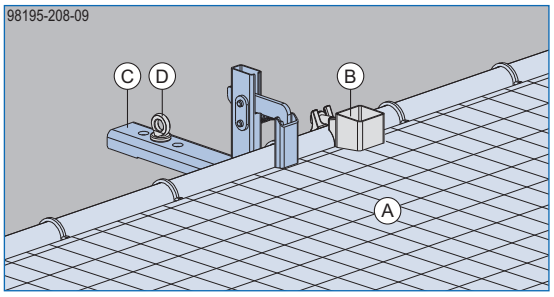
| Vertical profile extension 1.55m XCF | Support bracket XCF |
|---|---|
|  |  |
| For storey heights ≤ 4.20 m | For storey heights > 4.20 m or stepped floor |

**B** Vertical profile 3.50m XCF
**J** Vertical profile extension 1.55 XCF
**L** Support bracket XCF

## Means of attachment to floor slab

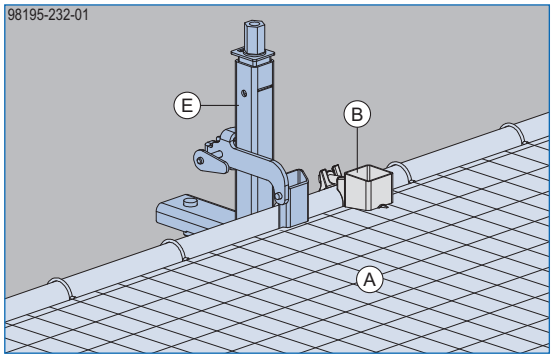
There are two options for attaching Xsafe catch fans to the floor slab:

### Floor shoe XCF



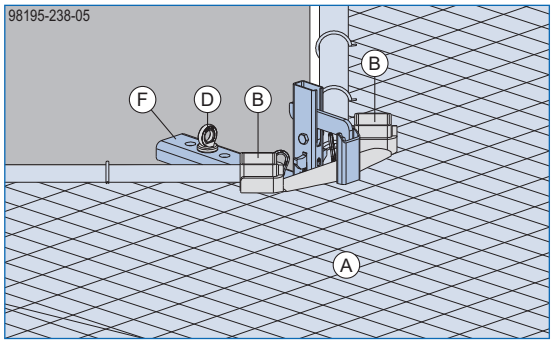

**A** Catch net XCF
**B** Vertical profile 3.50m XCF
**C** Floor shoe XCF
**D** Doka express anchor 16x125mm

### Floor clamp XCF




**A** Catch net XCF
**B** Vertical profile 3.50m XCF
**E** Floor clamp XCF

### Corner floor shoe XCF



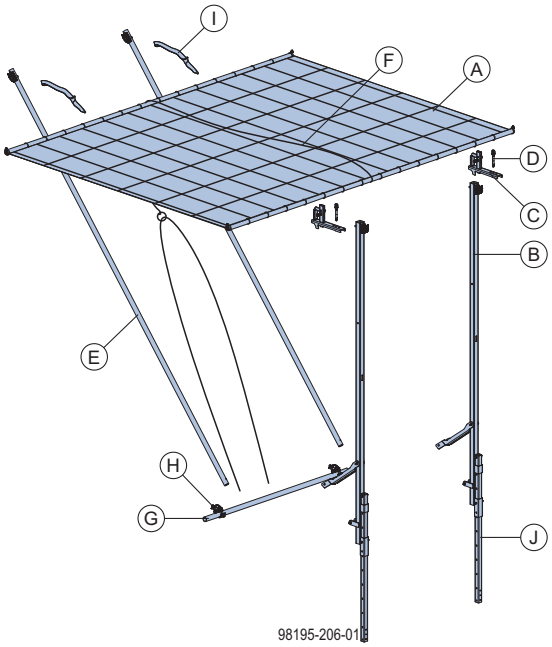

**A** Catch net XCF
**B** Vertical profile 3.50m XCF
**D** Doka express anchor 16x125mm
**F** Corner floor shoe XCF

## Weights of the catch fan versions

| | Floor supports | |
|---|---|---|
| **Xsafe catch fans** | Vertical profile extension 1.55m XCF | Support bracket XCF |
| | **Weight [kg]** | |
| Xsafe catch fan 4.00x3.10m | 138.7 | 149.5 |
| Xsafe catch fan 6.00x3.10m | 162.9 | 173.7 |
| Xsafe catch fan 4.00x4.80m extra wide | 165.1 | 175.9 |
| Xsafe catch fan 6.00x4.80m extra wide | 198.3 | 209.1 |
| Xsafe corner catch fan 4.70x4.70m | 181.5 | - |

# System overview

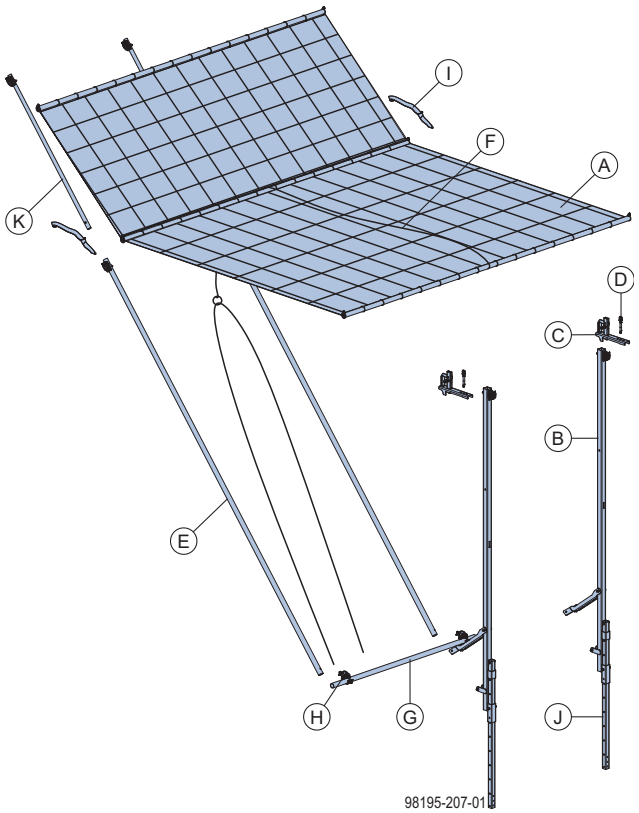
### Catch fan 4.00x3.10m or 6.00x3.10m




### Items needed for one catch fan

| Pos. | Article name | Units |
|---|---|---|
| A | Catch net 4.00x3.10m or 6.00x3.10m XCF | 1 |
| B | Vertical profile 3.50m XCF | 2 |
| C | Floor shoe XCF or Floor clamp XCF | 2 |
| D | Doka express anchor 16x125mm | 2 |
| E | Diagonal tube 4.70m XCF | 2 |
| F | Folding rope XCF | 1 |
| G | Scaffold tube 48.3mm 2.00m or 4.00m | 1 |
| H | Normal coupler 48mm | 2 |
| I | Lifting sling 0.5t 1.00m | 2 |
| J | Vertical profile extension 1.55m XCF<br>or Support bracket XCF (not shown) | 2 |

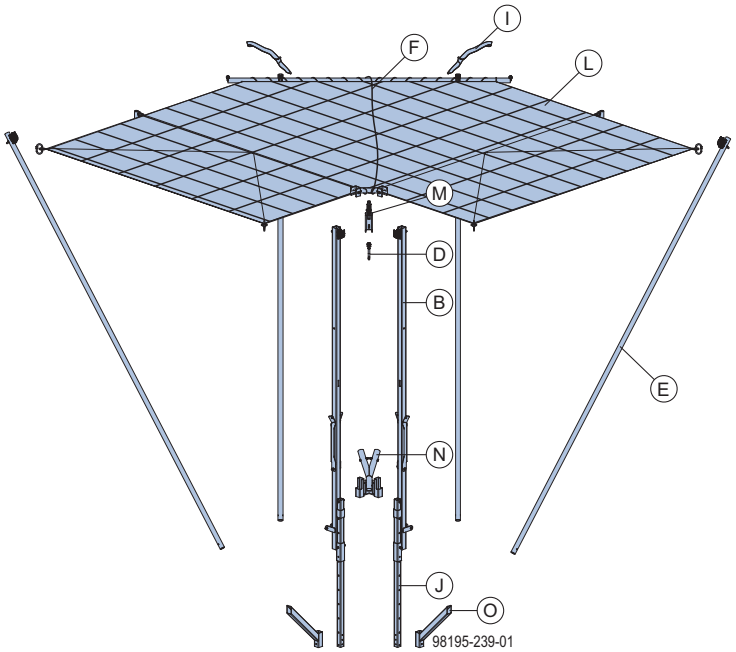
### Catch fan 4.00x4.80m or 6.00x4.80m extra wide




### Items needed for one catch fan, extra-wide version

| Pos. | Article name | Units |
|---|---|---|
| A | Catch net 4.00x4.80m or 6.00x4.80m XCF | 1 |
| B | Vertical profile 3.50m XCF | 2 |
| C | Floor shoe XCF or Floor clamp XCF | 2 |
| D | Doka express anchor 16x125mm | 2 |
| E | Diagonal tube 4.70m XCF | 2 |
| F | Folding rope XCF | 1 |
| G | Scaffold tube 48.3mm 2.00m or 4.00m | 1 |
| H | Normal coupler 48mm | 2 |
| I | Lifting sling 0.5t 1.00m | 2 |
| J | Vertical profile extension 1.55m XCF<br>or Support bracket XCF (not shown) | 2 |
| K | Diagonal tube extension 1.74m XCF | 2 |

## Corner catch fan 4.70x4.70m




### Items needed for one corner catch fan

| Pos. | Article name | Units |
|---|---|---|
| B | Vertical profile 3.50m XCF | 2 |
| D | Doka express anchor 16x125mm | 1 |
| E | Diagonal tube 4.70m XCF | 4 |
| F | Folding rope XCF | 1 |
| I | Lifting sling 0.5t 1.00m | 2 |
| J | Vertical profile extension 1.55m XCF | 2 |
| L | Corner catch net 4.70x4.70m XCF | 1 |
| M | Corner floor shoe XCF | 1 |
| N | Corner connector XCF | 1 |
| O | Corner positioning profile XCF | 2 |

**Note:**

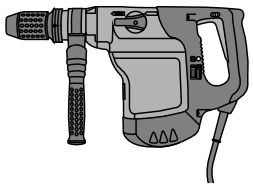
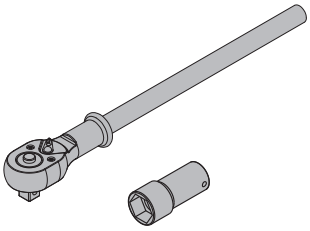
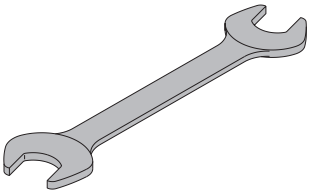
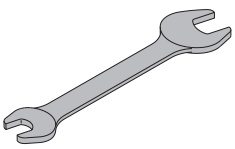
Material needed in addition for each of the two adjacent Xsafe catch fans:

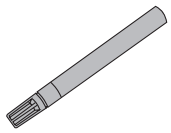
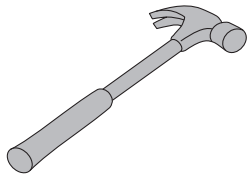
- 1 x Scaffold tube 48.3mm 4.00m
- 2 x Swivel coupler 48mm

# Assembly instructions

- Everyone involved in the work must wear the personal fall-arrest system (PFAS) equipment necessary for the work activity and for the work environment and be trained and competent for the task.
- Before the work of assembling the catch fans on the jobsite commences, make sure that a level, clean area measuring 7 x 10 m is available for the activity, so that there is enough space for stacking the assembled catch fans.
- It is NOT permissible for the work of assembly to be undertaken below construction work in progress, where there is a risk of falling debris.
- The assembly team must ensure that a construction crane can access the assembly area.

## List of tools needed for assembly

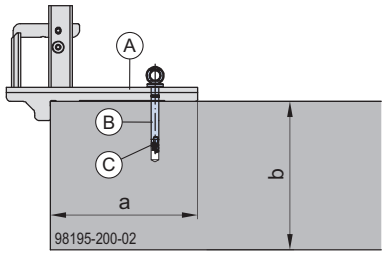
| | |
|---|---|
| Power drill |  |
| Drill bit 16 mm for express anchors |  |
| Drill bit 25 mm for Floor clamp XCF |  |
| Reversible ratchet with box nut 22 mm length |  |
| Box nut 19 mm |  |
| Box nut 30 mm |  |
| Fork wrench 22 mm |  |
| Fork wrench 19 mm |  |

| | |
|---|---|
| Impact screw driver |  |
| Tape measure |  |
| Marker |  |
| Hammer |  |
| Chalk line |  |

# Anchoring on the structure

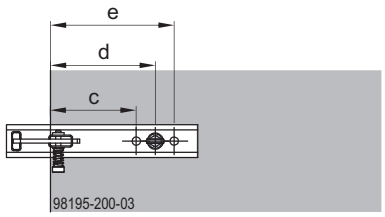
## Floor shoe XCF

The standard method of anchoring the Floor shoe XCF to the structure is with the Doka express anchor 16x125mm.




a ... 31 cm
b ... Slab thickness min. 9.5 cm

| | |
|---|---|
| **A** | Floor shoe XCF |
| **B** | Doka express anchor 16x125mm |
| **C** | Doka coil 16mm |




Distance from edge:
c ... 18 cm
d ... 22 cm
e ... 26 cm

**Required minimum cube compressive strength of the concrete for Doka express anchors 16x125mm:**

When used with **Vertical profile extension 1.55m XCF**:
Required minimum cube compressive strength of the concrete ($f_{ck,cube,min}$): **min. 10 N/mm²** (concrete B10)

When used with **Support bracket XCF**:
Required minimum cube compressive strength of the concrete ($f_{ck,cube,min}$): **min. 30 N/mm²** (concrete B30)

Follow the 'Doka express anchor 16x125mm' User Information booklet or the fitting instructions for the alternative anchor-bolt!

**Required safe working load limit for alternative anchor-bolts:**

When used with **Vertical profile extension 1.55m XCF**:
Tensile force: $N_d$ = 24 kN ($N_{perm.}$ = 16 kN)
Shear force: $V_d$ = 14 kN ($V_{perm.}$ = 9.3 kN)

When used with **Support bracket XCF**:
Tensile force: $N_d$ = 11 kN ($N_{perm.}$ = 7.3 kN)
Shear force: $V_d$ = 12 kN ($V_{perm.}$ = 8 kN)

**Note:**
Follow the manufacturers' applicable fitting instructions.

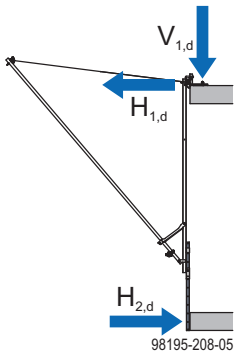
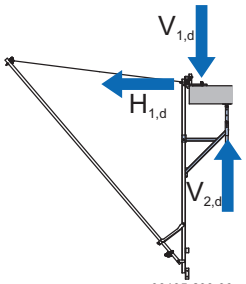
**NOTICE**
Together with the structural engineer, make sure that the structure on which the Xsafe catch fans are to be installed (floor slabs) can bear the applied loads.

Animation: https://player.vimeo.com/video/281800669

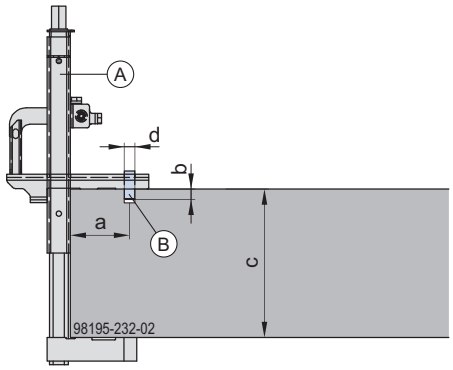
**Forces acting on the structure [kN]*)**

| Forces occurring | Vertical force | Horizontal force | Compressive force | | Resulting force **R** at the slab edge ($V_1$ - $V_2$) |
|---|---|---|---|---|---|
| | **$V_1$** | **$H_1$** | **$V_2$** | **$H_2$** | |
| With vertical profile extension | 16 | 12 | - | 12 | 16 |
| With Support bracket XCF | 38 | 14 | 30 | - | 8 |

*)... These forces can be assumed as 'exceptional loads' because they were measured in EN 1263-1 tests (ball weighing 100 kg dropped from a height of 7 m)

| With vertical profile extension | With Support bracket XCF |
|---|---|
|  |  |

# Floor clamp XCF




a ... Distance from edge 12.5 cm
b ... Drilling depth min. 2.5 cm
c ... Slab thickness 15 - 40 cm
d ... Hole diameter 25 mm

**A** Floor clamp XCF

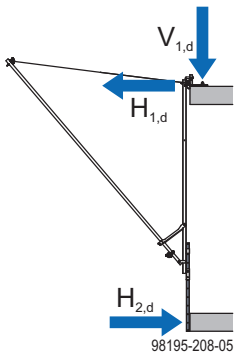
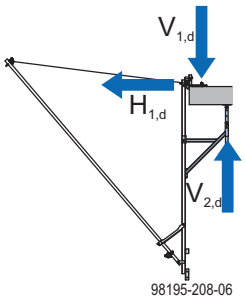
**B** Pin of the Floor clamp XCF

Required minimum cube compressive strength of the concrete ($f_{ck,cube,min}$): **min. 30 N/mm²** (concrete C25/30)

### Forces acting on the structure [kN]*)

| Forces occurring | Vertical force | Horizontal force | Compressive force | | Resulting force **R** at the slab edge ($V_1$ - $V_2$) |
|---|---|---|---|---|---|
| | **$V_1$** | **$H_1$** | **$V_2$** | **$H_2$** | |
| With vertical profile extension | 16 | 12 | - | 12 | 16 |
| With Support bracket XCF | 38 | 14 | 30 | - | 8 |

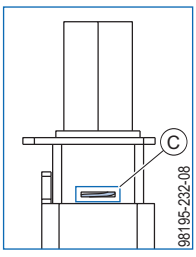
*)... These forces can be assumed as ‘exceptional loads’ because they were measured in EN 1263-1 tests (ball weighing 100 kg dropped from a height of 7 m)

| With vertical profile extension | With Support bracket XCF |
|---|---|
|  |  |



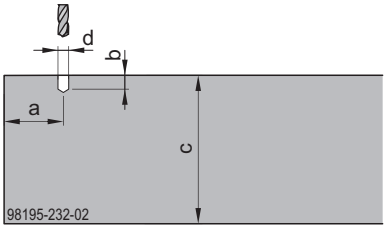


Check that the pressure spring is still intact (see mark). When the spring is in the “not pulled tight” state, reference slot **(C)** must be visible.



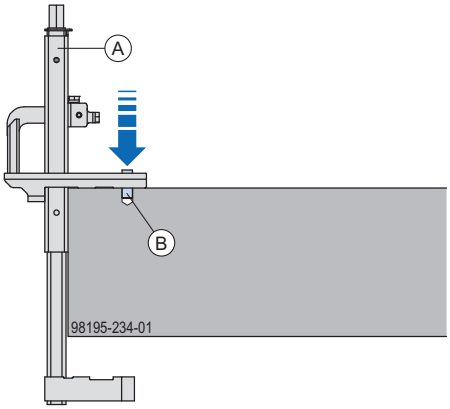

## Assembly

➤ Drill the holes for the Floor clamps XCF parallel with the edge of the slab. Drill the holes to a diameter of 25 mm and a depth of min. 2.5 cm and centred at a distance of 12.5 cm back from the slab edge.




a ... Distance from edge 12.5 cm
b ... Drilling depth min. 2.5 cm
c ... Slab thickness 15 - 40 cm
d ... Hole diameter 25 mm

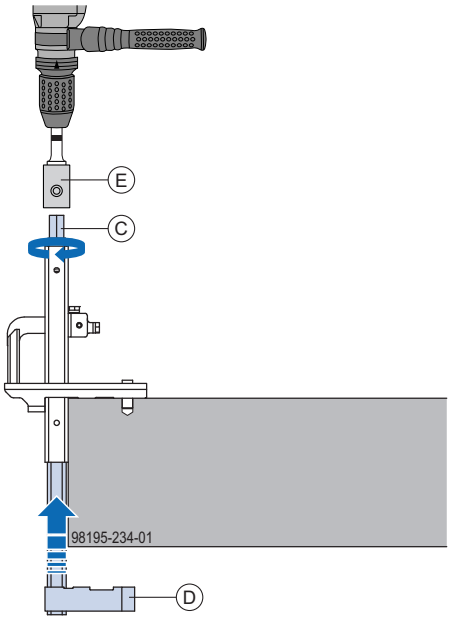
➤ Position Floor clamps XCF at the slab edge, with the pins seated in the holes.




**A** Floor clamp XCF

**B** Pin of the Floor clamp XCF

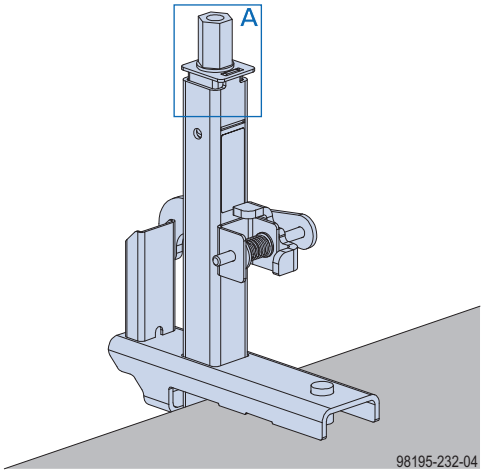
➤ Tighten the hexagon with a Box nut 30 and an impact screw driver, for example.



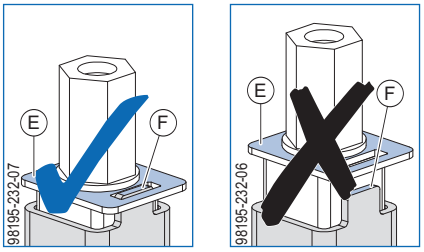

| | |
|---|---|
| **C** | Hexagon (width across flats 30 mm) of the Floor clamp XCF |
| **D** | Bottom clamping unit of the Floor clamp XCF |
| **E** | Box nut 30 |

Required tightening torque: **50 Nm**

Check that the hexagon is tightened such that the plate with slot **(E)** is flush with the tab **(F)**.



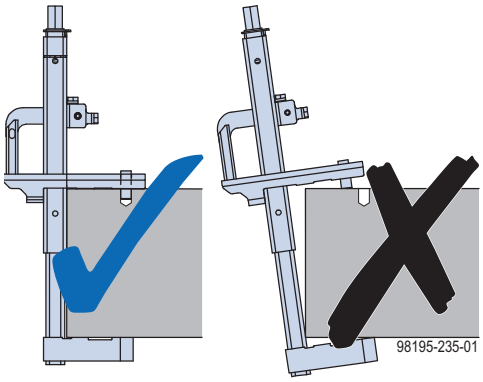

**Close-up A**



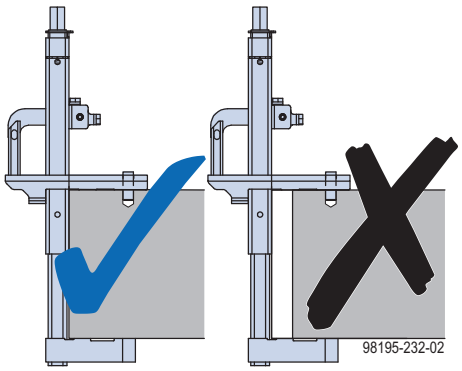

**WARNING**

➤ Only clamp the Floor clamp XCF to components that can reliably transfer the forces involved!

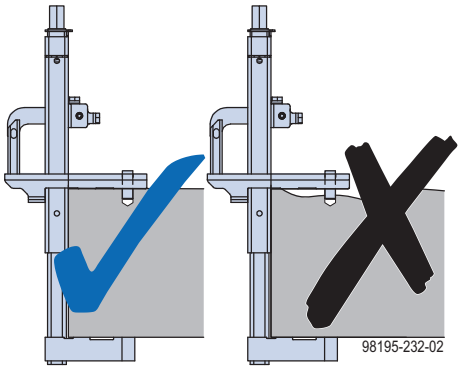
- Check that the pin of each Floor clamp XCF is correctly seated in the drilled hole.




- Check that the supporting face of each Floor clamp XCF is flat against the end face of the slab (maximum gap ≤ 10 mm).

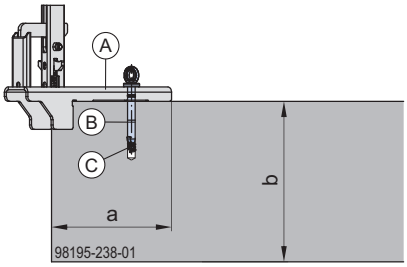



- Check that the supporting face of the U-section is flat against the top of the slab.



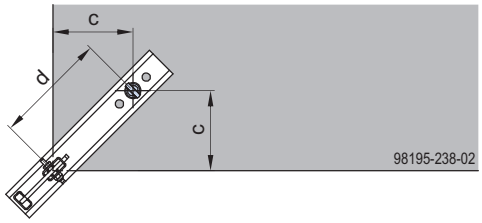
# Corner floor shoe XCF

The standard method of anchoring the Corner floor shoe XCF to the structure is with the Doka express anchor 16x125mm.




a ...25.4 cm
b ...Slab thickness min. 9.5 cm

| | |
|---|---|
| **A** | Corner floor shoe XCF |
| **B** | Doka express anchor 16x125mm |
| **C** | Doka coil 16mm |




c ... 16.9 cm
d ... 23.9 cm

**Required minimum cube compressive strength of the concrete for Doka express anchors 16x125mm:**

When used with **Vertical profile extension 1.55m XCF**: Required minimum cube compressive strength of the concrete ($f_{ck,cube,min}$): **min. 10 N/mm²** (concrete B10)

Follow the 'Doka express anchor 16x125mm' User Information booklet or the fitting instructions for the alternative anchor-bolt!

Required safe working load limit for alternative anchor-bolts:

When used with **Vertical profile extension 1.55m XCF**: Tensile force: $N_d$ = 24 kN ($N_{perm.}$ = 16 kN) Shear force: $V_d$ = 14 kN ($V_{perm.}$ = 9.3 kN)

**Note:**
Follow the manufacturers' applicable fitting instructions.

**NOTICE**

Together with the structural engineer, make sure that the structure on which the Xsafe catch fans are to be installed (floor slabs) can bear the applied loads.

Animation: https://player.vimeo.com/video/281800669

**Forces acting on the structure [kN]*)**

| Forces occurring | Vertical force | Horizontal force | Compressive force | | Resulting force R at the slab edge ($V_1$ - $V_2$) |
|---|---|---|---|---|---|
| | $V_1$ | $H_1$ | $V_2$ | $H_2$ | |
| With vertical profile extension | 16 | 12 | - | 12 | 16 |

*)... These forces can be assumed as 'exceptional loads' because they were measured in EN 1263-1 tests (ball weighing 100 kg dropped from a height of 7 m)

# Structural design

## Wind pressure

1) Determine the wind pressure as a function of the wind speed, the building environment and the structure height.
2) Use the corresponding catch nets from the tables below.

| $v_p$ | $q_p$ | Standard 4.00m | | Standard 6.00m | |
|---|---|---|---|---|---|
| ≤ 64 km/h | 0.2 kN/m² | ✓ | ✓ | ✓ | ✓ |
| ≤ 144 km/h | 1.0 kN/m² | ✓ | ✓ | ✓ | ✓ |
| > 144 km/h | 1.0 kN/m² | *) | *) | *) | *) |

| $v_p$ | $q_p$ | Extra wide 4.00m | | Extra wide 6.00m | |
|---|---|---|---|---|---|
| ≤ 64 km/h | 0.2 kN/m² | ✓ | ✓ | ✓ | ✓ |
| > 64 km/h | 0.2 kN/m² | *) | *) | *) | *) |

*) Following additional measures are necessary:

- Top bracing:
  - Loop lashing strap round outer horizontal tube (middle horizontal tube of extra-wide catch net), secure with express anchor
  - Brace diagonal profile with lashing strap
- Bottom bracing:
  - Loop lashing strap round vertical profile, secure with express anchor

## Remedies

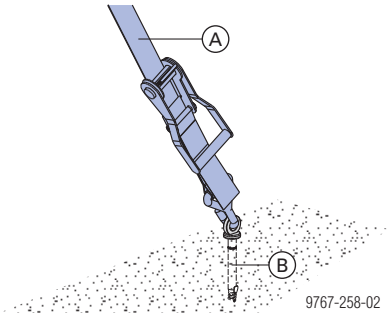
### with Lashing strap 5.00m and Doka express anchor 16x125mm

**WARNING**

➤ Compliance with the specifications for tie-back angle and attachment point is essential in order for the wind loads to be transferred.

➤ Prepare an anchorage point in the ground with the Doka express anchor.

➤ Engage the lashing strap (always at the bottom first, to the catch fan) and tension the strap.




**A** Lashing strap 5.00m
**B** Doka express anchor 16x125mm

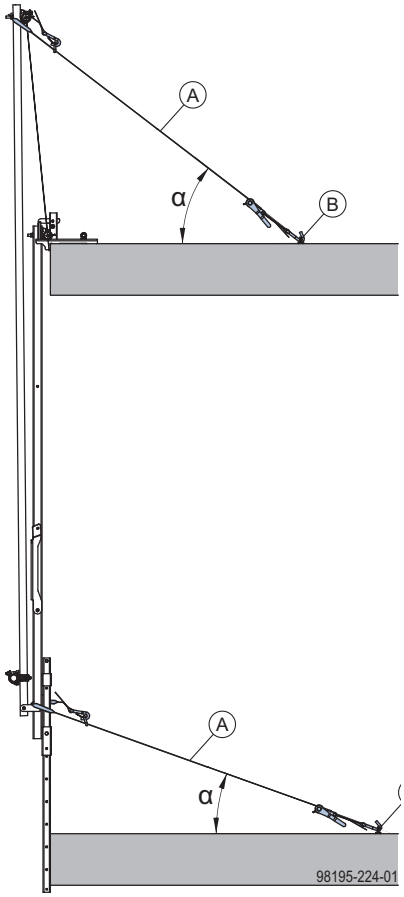
The **Doka express anchor** can be re-used many times over.

Follow the directions in the 'Doka express anchor 16x125mm' and 'Lashing strap 5.00m' User Information booklets.

Always perform a static check if other-make heavy-duty dowels are used to fabricate anchorages in the floor slab.

Follow the manufacturers' applicable fitting instructions.

### Practical example




α ... Bracing angle max .60°

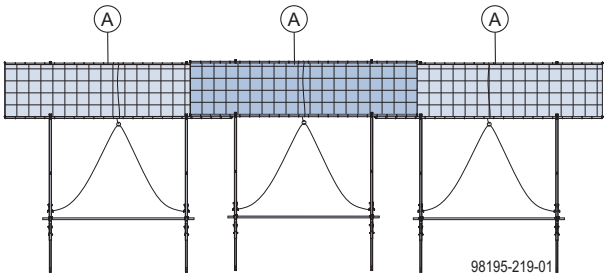
**A** Lashing strap 5.00m
**B** Doka express anchor 16x125mm

# Instructions for assembly and use (Method statement)

## Easy utilisation planning

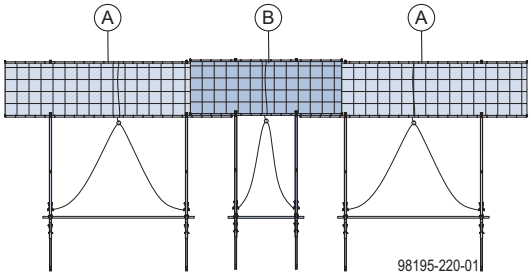
The catch fans 6 m in breadth are used for the regular zone, the catch fans 4 m in breadth are used primarily for closure zones.

### Typical zone




**A** Xsafe catch fan 6.00m

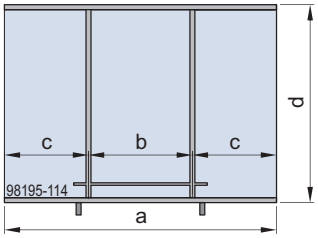
### Closure zone




**A** Xsafe catch fan 6.00m
**B** Xsafe catch fan 4.00m

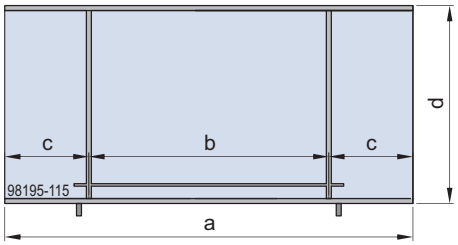
## Structure of the Xsafe catch fans

### Xsafe catch fan 4.0m



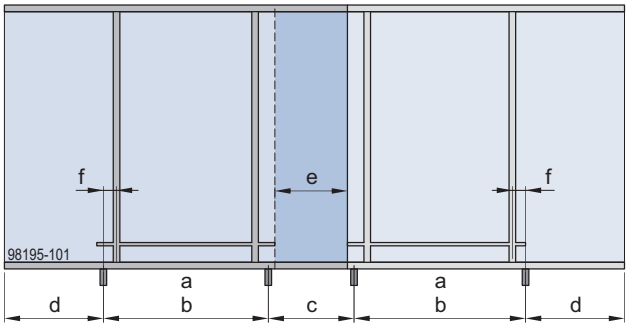

a ... 400 cm
b ... 160 cm
c ... 120 cm
d ... Width of standard catch fan: 310 cm, extra wide: 480 cm

### Xsafe catch fan 6.0m




a ... 600 cm
b ... 360 cm
c ... 120 cm
d ... Width of standard catch fan: 310 cm, extra wide: 480 cm

## Arrangement of the Xsafe catch fans



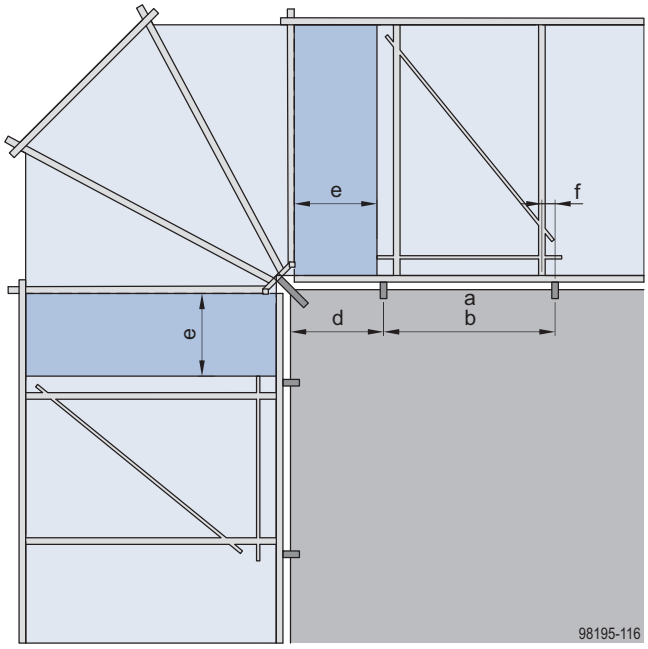

a ... 190 cm if the net is 4 m broad
b ... 390 cm if the net is 6 m broad
c ... max. 115 cm
d ... 105 cm
e ... min. 80 cm overlap of the nets
f ... 15 cm space between floor shoes and vertical profiles

**Note:**

The positioning of the Floor shoes XCF has to be taken into consideration in the planning and arrangement of the catch fans.

The size of the overlap between catch fans is decisive as regards the effective length of a unit in planning.

## Arrangement at the corner



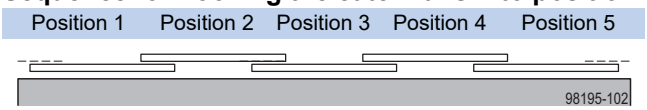

a ... 190 cm if the net is 4 m broad
b ... 390 cm if the net is 4 m broad
d ... 105 cm
e ... min. 80 cm overlap of the nets
f ... 15 cm space between floor shoes and vertical profiles

# Overlap

Adjacent catch fans always have to overlap, in order to ensure that the gaps between the individual fans are fully closed.

An overlap of **at least 80 cm** between adjacent catch fans is required for compliance with the requirements of EN 1263.

**Sequence for hooking the catch fans into position**




**Note:**

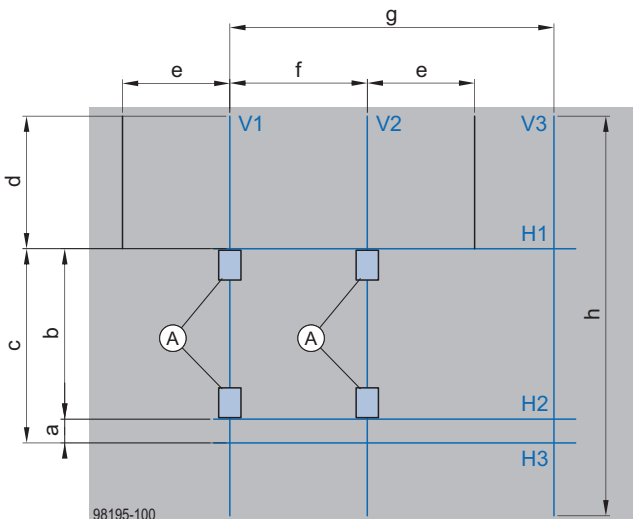
When hooking the catch fans into position, make sure that they overlap correctly!

In accordance with the sketch, install the overlapped units (at positions 1, 3 and 5) before installing the overlapping units (at positions 2 and 4). This method of overlapping permits straightforward opening and closing of the net units.

# Assembly

## Marking out lines on floor

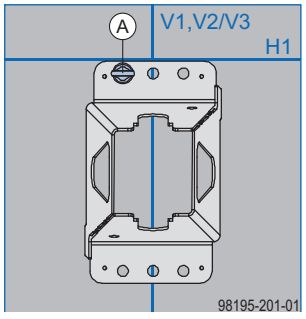
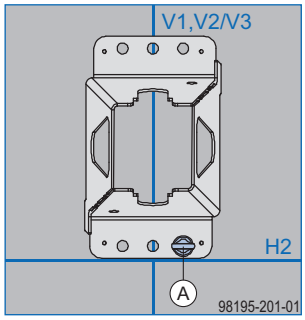
For orientation in the assembly process to ensure speedy assembly of the system, mark out the lines shown below on the floor. These lines make it easier to align and position the individual parts during assembly.




a ... 25 cm
b ... 230 cm
c ... 255 cm
d ... 210 cm
e ... 120 cm, edge of the net
f ... 160 cm, for 4 m broad nets
g ... 360 cm, for 6 m broad nets
h ... min. 580 cm

**A** Assembly shoe XCF

➤ Secure the Assembly shoes XCF to the floor in accordance with the marking lines, using one Doka express anchor 16x125mm per assembly shoe.

| Assembly shoes XCF at line H1 | Assembly shoes XCF at line H2 |
|---|---|
|  |  |

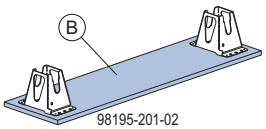
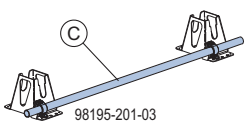




**A** Doka express anchor 16x125mm

Follow the directions in the 'Doka express anchor 16x125mm' User Information booklet!

➤ As alternatives to express anchors, a wooden template or a scaffold tube + screw-on couplers can be used for fixing the assembly shoes in position.

| with wooden template | with scaffold tube |
|---|---|
|  |  |





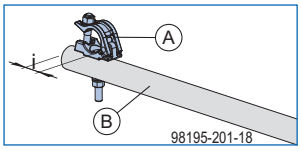
**B** Assembly shoes fixed to wooden template

**C** Assembly shoes connected with scaffold tube and couplers
Scaffold tube min. 2 m long for catch fan breadth 4 m
Scaffold tube min. 4 m long for catch fan breadth 6 m

## Installing diagonal tubes

➤ Install the Screw-on couplers 48mm 95 on the top side of the Diagonal tubes 4.70m XCF.

### Close-up 1




i ... 8 cm

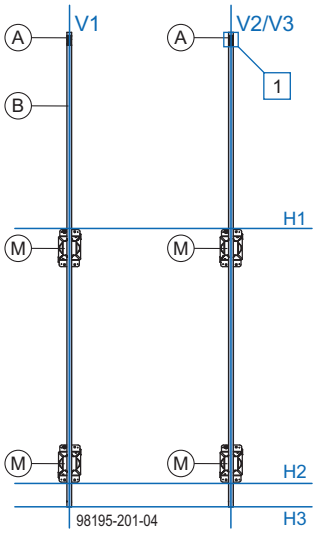
**A** Screw-on coupler 48mm 95
**B** Diagonal tube 4.70m XCF

### Note:

Use only DIN EN 74-2B half couplers!

When installing the screw-on coupler, use the correct hole in the diagonal tube (distance from end 8 cm, diameter 16.5 mm).

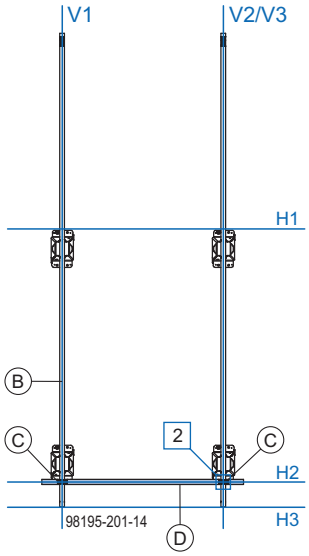
➤ Insert the Diagonal tubes 4.70m XCF into the Assembly shoes XCF. The bottom end of each diagonal tube must be flush with line H3.




**A** Screw-on coupler 48mm 95
**B** Diagonal tube 4.70m XCF
**M** Assembly shoe XCF

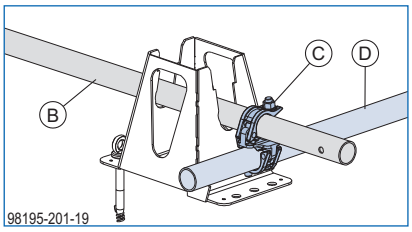
## Attaching scaffold tubes

➤ Position Normal couplers 48mm over line H2 and connect them with a Scaffold tube 2 m (for net 4 m broad) or Scaffold tube 4 m (for net 6 m broad).




**B** Diagonal tube 4.70m XCF
**C** Normal coupler 48mm
**D** Scaffold tube 48.3mm 2.00m or 4.00m

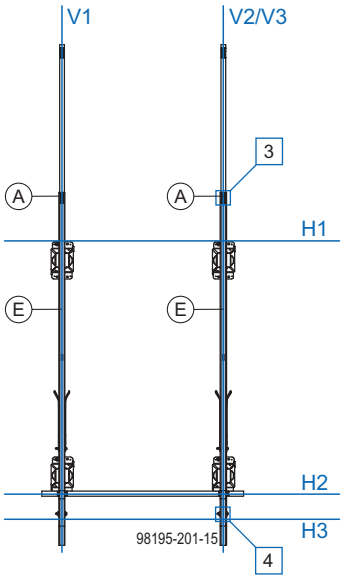
### Close-up 2




**B** Diagonal tube 4.70m XCF
**C** Normal coupler 48mm
**D** Scaffold tube 48.3mm 2.00m or 4.00m

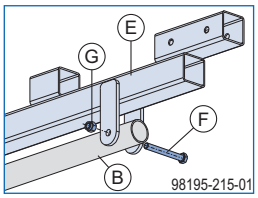
## Mounting the vertical profiles

➤ Position the Vertical profiles 3.50m XCF over the Diagonal tubes 4.70m XCF and connect them with hexagon bolts and hexagon nuts.




**A** Screw-on coupler 48mm 95
**E** Vertical profile 3.50m XCF

### Close-up 4



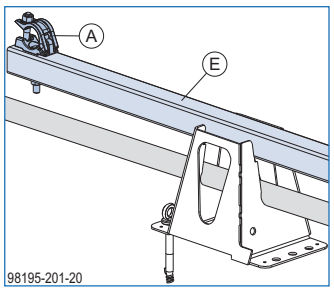

**B** Diagonal tube 4.70m XCF
**E** Vertical profile 3.50m XCF
**F** Hexagon bolt ISO 4014 M12x100
**G** Hexagon nut ISO 7040 M12 self-locking

**Note:**
Use only DIN EN 74-2B half couplers!

➤ Secure the Screw-on couplers 48mm 95 to the Vertical profiles 3.50m XCF.

Tightening torque of couplers: **50 Nm**
(to DIN EN 74-1)

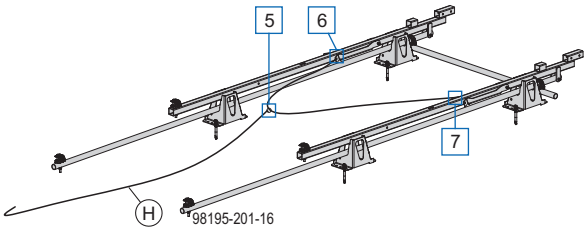
### Close-up 3




**A** Screw-on coupler 48mm 95
**E** Vertical profile 3.50m XCF

## Securing ropes

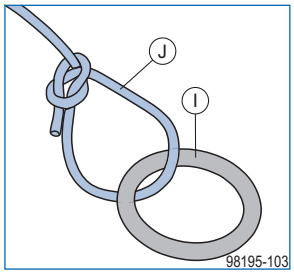
➤ Knot the Folding rope XCF at the 3 points shown in the illustration (2 ropes 6.00m and 1 steel ring are included in the scope of supply).




**H** Folding rope XCF

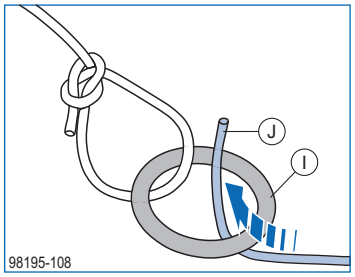
➤ Knot one end of the first rope to the steel ring and lay the rope out between the Diagonal tubes 4.70m XCF.

### Close-up 5



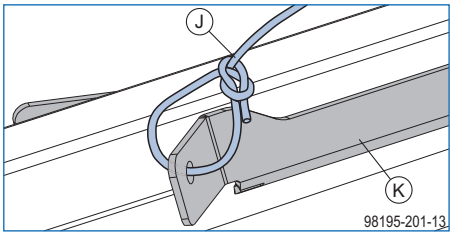

**I** Steel ring
**J** Rope 6.00m

➤ Pass the second rope through the steel ring and knot each end to the wind bracing of a Vertical profile 3.50m XCF.




**I** Steel ring
**J** Rope 6.00m

### Close-ups 6 and 7




**J** Rope 6.00m
**K** Wind bracing of the Vertical profile 3.50m XCF

A bowline knot is the most suitable type of knot for the purpose.

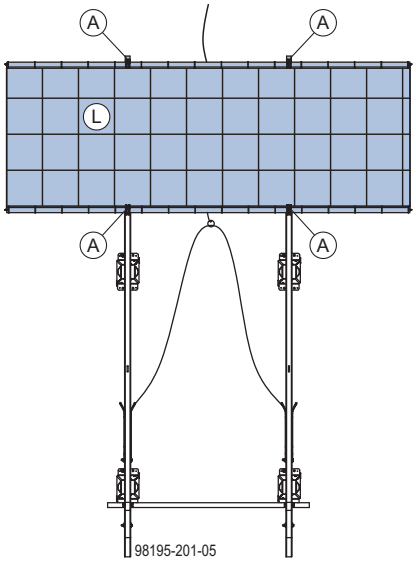
## Installing catch net

➤ Lay the Catch net XCF on the Diagonal tubes 4.70m XCF and Vertical profiles 3.50m XCF and secure it with the Screw-on couplers 48mm 95.
The black 60 x 60 mm mesh net must be on the underside.

When installing the net, make sure that it is not trapped between scaffold tube and screw-on couplers.

Otherwise problems can be encountered in unfolding.

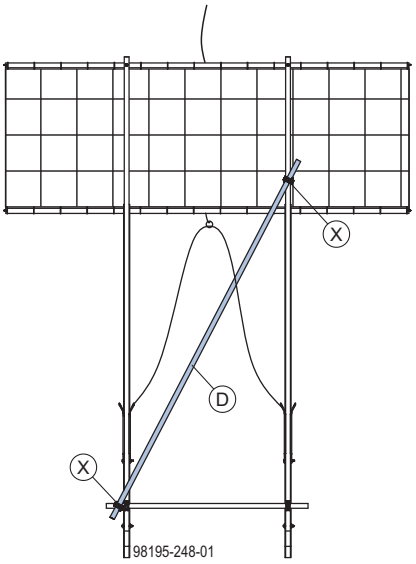
Tightening torque: **50 Nm** to DIN EN 74-1




**A** Screw-on coupler 48mm 95
**L** Catch net XCF

**NOTICE**

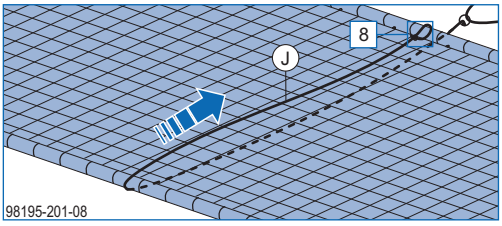
Each catch fan **adjacent to a corner catch fan** must be additionally braced with **a Scaffold tube 48.3mm 4.00m and 2 Swivel couplers 48mm**.




**D** Gerüstrohr 48,3mm 4,00m
**X** Drehkupplung 48mm

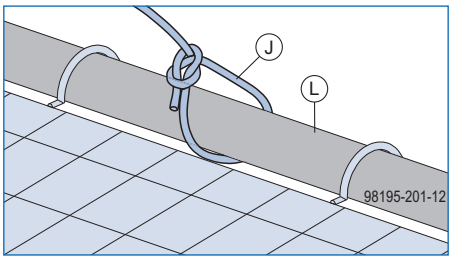
## Knotting rope with catch net

➤ Pass the first rope over the catch net and knot the end of the rope to the horizontal tube.



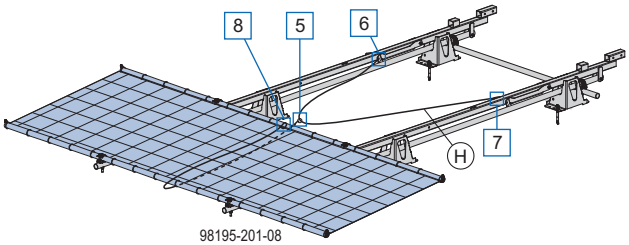

**J** Rope 6.00m

### Close-up 8




**J** Rope 6.00m
**L** Catch net XCF

The Folding rope XCF is knotted at the following 4 points.



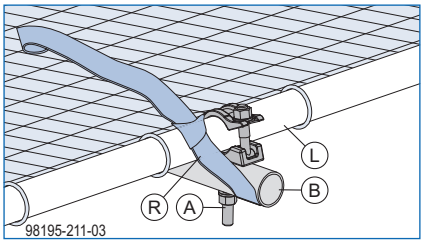

**H** Folding rope XCF

## Installing lifting slings

➤ Loop Lifting sling 0.5t 1.00m round both tubes (Diagonal tube 4.70m XCF and outer scaffold tube of the catch net).
2 Lifting slings 0.5t 1.00m per catch fan are needed for repositioning.
The lifting slings remain attached to the catch fan.

**NOTICE**

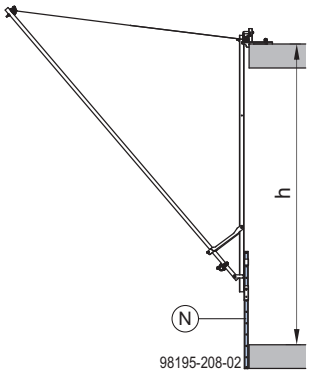
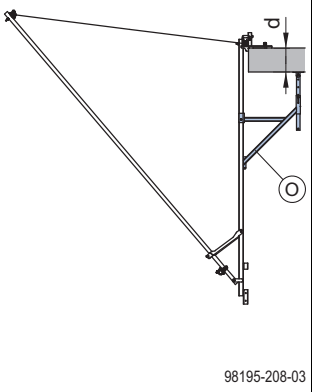
Use only lifting slings to lift the catch fan (do not attempt to lift a catch fan by looping a chain round it).




**A** Screw-on coupler 48mm 95
**B** Diagonal tube 4.70m XCF
**L** Catch net XCF
**R** Lifting sling 0.5t 1.00m

## Installing vertical profile extension or support bracket

Where a Vertical profile extension 1.55m XCF cannot be used for the catch fan (e.g. storey height > 4.20 m or stepped floor), a Support bracket XCF can be used instead.

| Vertical profile extension 1.55m XCF | Support bracket XCF |
|---|---|
|   |   |
| h ... Storey height max. 4,20 m | d ... Slab thickness 15 - 40 cm |

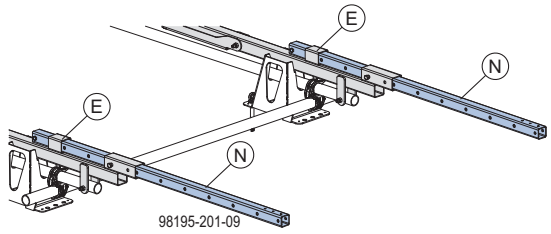
**N** Vertical profile extension 1.55m XCF
**O** Support bracket XCF

**NOTICE**

Use of the Support bracket XCF at downstand beams requires separate verification!

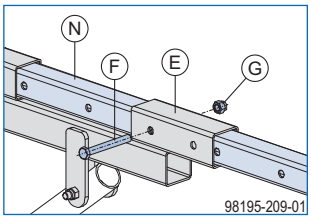
## Installing vertical profile extension

➤ Introduce a Vertical profile extension 1.55m XCF into the bottom end of each Vertical profile 3.50m XCF.




**E** Vertical profile 3.50m XCF
**N** Vertical profile extension 1.55m XCF

➤ Adjust the profile extensions to the correct length and secure with hexagon bolts and hexagon nuts.

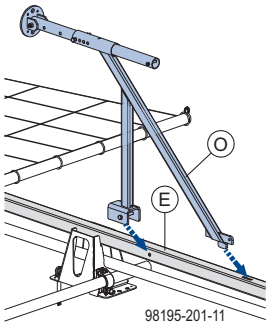



**E** Vertical profile 3.50m XCF
**F** Hexagon bolt ISO 4014 M12x100
**G** Hexagon nut ISO 7040 M12 self-locking
**N** Vertical profile extension 1.55m XCF

**Note:**
The Vertical profile extension 1.55m XCF must make contact over the entire height of the slab end face!

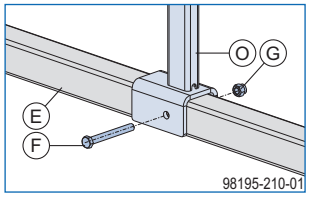
## Installing support bracket

➤ Position the Support bracket XCF on the vertical profile such that the holes are aligned and the pin of the support bracket is seated in the channel of the vertical profile.



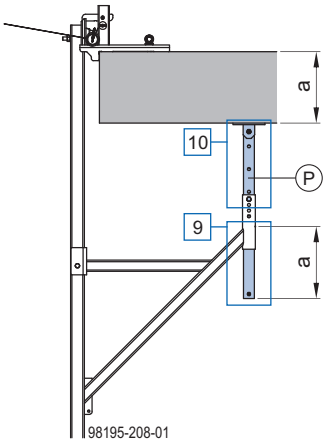

**E** Vertical profile 3.50m XCF
**O** Support bracket XCF

➤ Then secure the support bracket with hexagon bolt and hexagon nut.




**E** Vertical profile 3.50m XCF
**F** Hexagon bolt ISO 4014 M12x100
**G** Hexagon nut ISO 7040 M12 self-locking
**O** Support bracket XCF

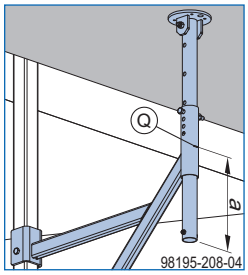
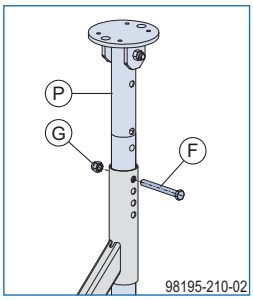
➤ Before lifting the unit, adjust the support bracket to the desired slab thickness and fix it in position with hexagon bolt and hexagon nut.
A mark on the support bracket acts as a guide for correct adjustment.




a ... Slab thickness 15 - 40 cm

**P** Inner tube with support head of the Support bracket XCF

➤ Fix the support bracket with a hexagon bolt and hexagon nut.

| Close-up 9 | Close-up 10 |
|---|---|
|  |  |

a ... Slab thickness 15 - 40 cm

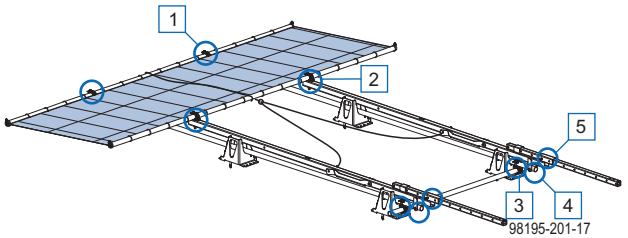
**F** Hexagon bolt ISO 4014 M12x100
**G** Hexagon nut ISO 7040 M12 self-locking
**P** Inner tube with support head of the Support bracket XCF
**Q** Mark for adjustment to slab thickness

# Checking bolted joints

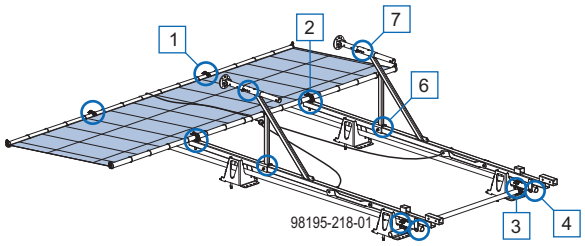
➤ Check the security of every bolted joint.
➤ Tighten every coupler.

Tightening torque of couplers: **50 Nm**
(to DIN EN 74-1)

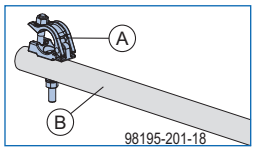
**Xsafe catch fan with vertical profile extension**



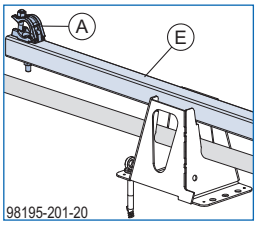

**Xsafe catch fan with support bracket**



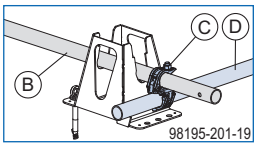

**Close-up 1**



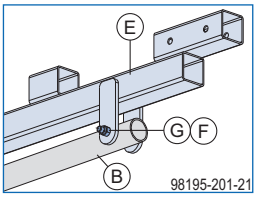

**Close-up 2**



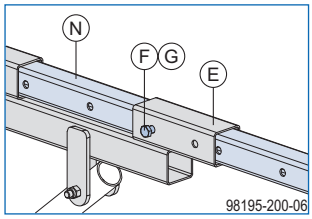

**Close-up 3**



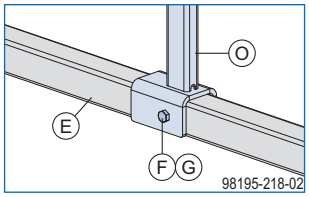

**Close-up 4**



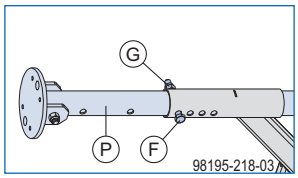

**Close-up 5**




**Close-up 6**




**Close-up 7**




| | |
|---|---|
| **A** | Screw-on coupler 48mm 95 |
| **B** | Diagonal tube 4.70m XCF |
| **C** | Normal coupler 48mm |
| **D** | Scaffold tube 48.3mm 2.00m or 4.00m |
| **E** | Vertical profile 3.50m XCF |
| **F** | Hexagon bolt ISO 4014 M12x100 |
| **G** | Hexagon nut ISO 7040 M12 self-locking |
| **N** | Vertical profile extension 1.55m XCF |
| **O** | Support bracket XCF |
| **P** | Inner tube with support head of the Support bracket XCF |

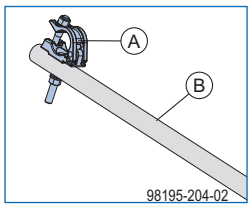
# Assembly with extra-wide catch net

Assembly of the Xsafe catch fan **extra wide** differs from the procedure for the standard version in the following points:

- Installing additional diagonal tube extension
- Installing catch net with additional couplers
- Installing lifting slings
- Checking additional bolted joints

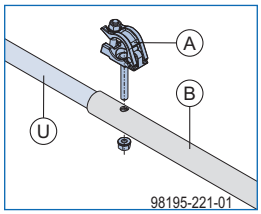
## Installing diagonal tube extension

➤ Remove the Screw-on coupler 48mm 95 from the Diagonal tube 4.70m XCF.




**A** Screw-on coupler 48mm 95
**B** Diagonal tube 4.70m XCF

➤ Push Diagonal tube extension 1.74m XCF on to Diagonal tube 4.70m XCF and connect with Screw-on coupler 48mm 95.




**A** Screw-on coupler 48mm 95
**B** Diagonal tube 4.70m XCF
**U** Diagonal tube extension 1.74m XCF

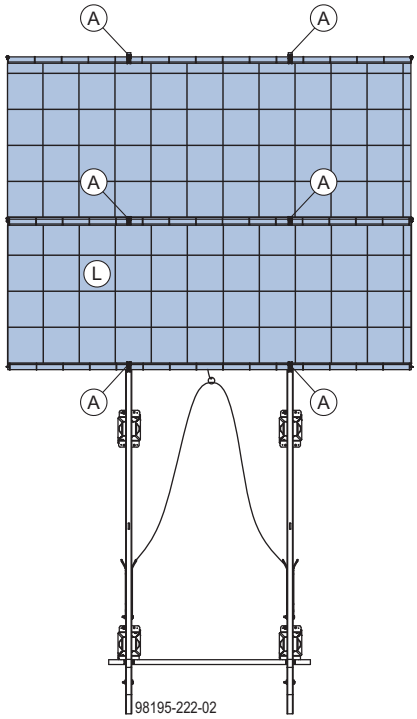
**Note:**
Use only DIN EN 74-2B half couplers!

## Installing catch net

➤ Lay the Catch net XCF extra wide on the Diagonal tubes 4.70m XCF, Diagonal tube extensions 1.74m XCF and Vertical profiles 3.50m XCF and secure it with the Screw-on couplers 48mm 95.
The black 60 x 60 mm mesh net must be on the underside.

When installing the net, make sure that it is not trapped between scaffold tube and screw-on couplers.
Otherwise problems can be encountered in unfolding the net.

Tightening torque: **50 Nm** to DIN EN 74-1

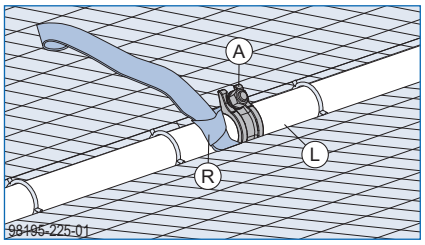



**A** Screw-on coupler 48mm 95
**L** Catch net XCF extra wide

## Installing lifting slings

➤ Loop Lifting sling 0.5t 1.00m round both tubes (Diagonal tube 4.70m XCF and middle scaffold tube of the catch net).
2 Lifting slings 0.5t 1.00m per catch fan are needed for repositioning.
The lifting slings remain attached to the catch fan.

**NOTICE**
Use only lifting slings to lift the catch fan (do not attempt to lift a catch fan by looping a chain round it).



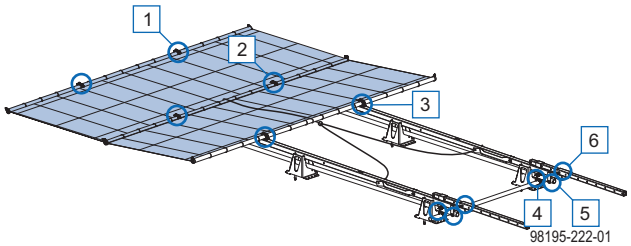

**A** Screw-on coupler 48mm 95
**L** Catch net XCF extra wide
**R** Lifting sling 0.5t 1.00m

# Checking bolted joints

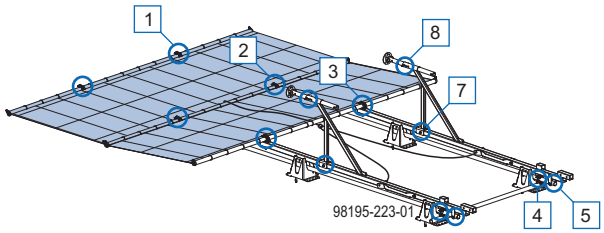
➤ Check the security of every bolted joint.
➤ Tighten every coupler.

Tightening torque of couplers: **50 Nm**
(to DIN EN 74-1)

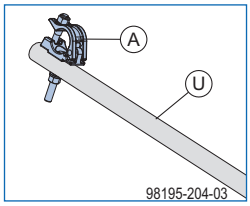
**Xsafe catch fan with vertical profile extension**



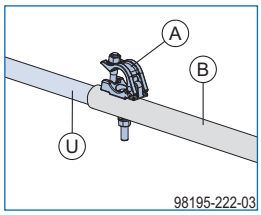

**Xsafe catch fan with support bracket**



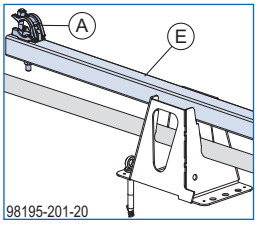

**Close-up 1**



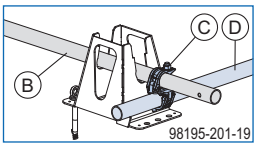

**Close-up 2**



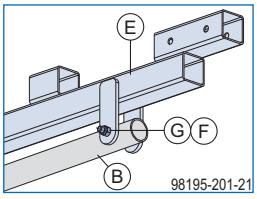

**Close-up 3**



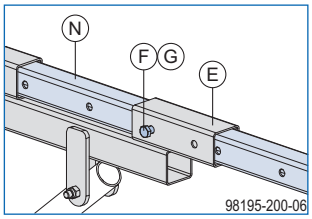

**Close-up 4**



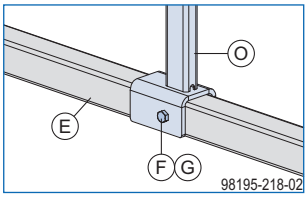

**Close-up 5**



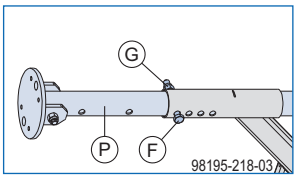

**Close-up 6**




**Close-up 7**



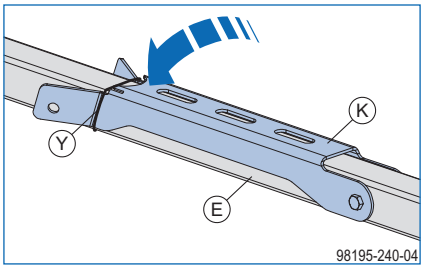

**Close-up 8**




| | |
|---|---|
| **A** | Screw-on coupler 48mm 95 |
| **B** | Diagonal tube 4.70m XCF |
| **C** | Normal coupler 48mm |
| **D** | Scaffold tube 48.3mm 2.00m or 4.00m |
| **E** | Vertical profile 3.50m XCF |
| **F** | Hexagon bolt ISO 4014 M12x100 |
| **G** | Hexagon nut ISO 7040 M12 self-locking |
| **N** | Vertical profile extension 1.55m XCF |
| **O** | Support bracket XCF |
| **P** | Inner tube with support head of the Support bracket XCF |
| **U** | Diagonal tube extension 1.74m XCF |

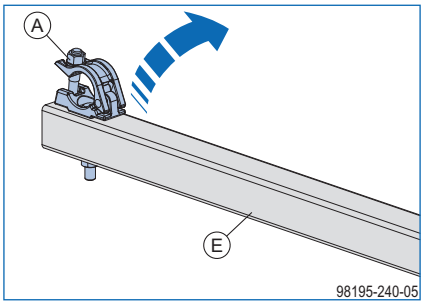
# Installation of corner catch fan

➤ Secure the wind bracings of the Vertical profiles 3.50m XCF with cable ties.



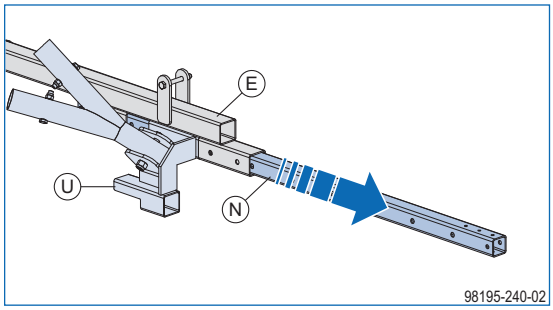

**E** Vertical profile 3.50m XCF
**K** Wind bracing of the Vertical profile 3.50m XCF
**Y** Cable tie

➤ Remove the screw-on coupler from the top end of each Vertical profile 3.50m XCF.



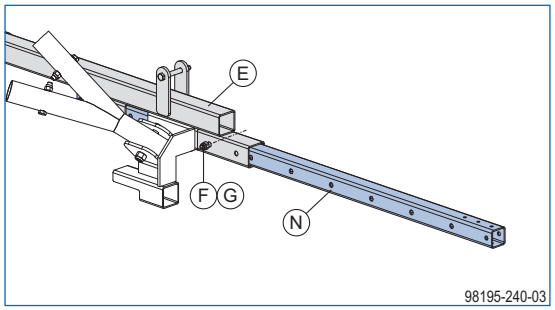

**A** Screw-on coupler 48mm 95
**E** Vertical profile 3.50m XCF

➤ Position the Vertical profile 3.50m XCF on the floor. Push Vertical profile extension 1.55m XCF into the Vertical profile 3.50m XCF and Corner connector XCF.



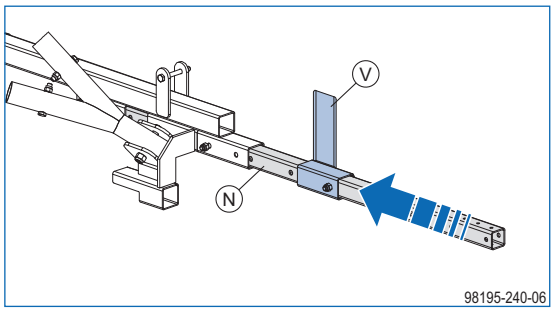

**E** Vertical profile 3.50m XCF
**N** Vertical profile extension 1.55m XCF
**U** Corner connector XCF

➤ Attach Corner connector XCF and Vertical profile extension 1.55m XCF to Vertical profile 3.50m XCF with hexagon bolts and hexagon nuts.




**E** Vertical profile 3.50m XCF
**F** Hexagon bolt ISO 4014 M12x100
**G** Hexagon nut ISO 7040 M12 self-locking
**N** Vertical profile extension 1.55m XCF

➤ Push Corner positioning profile XCF on to the Vertical profile extension 1.55m XCF and attach with hexagon bolt and hexagon nut.

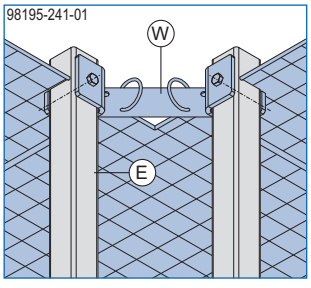



**N** Vertical profile extension 1.55m XCF
**V** Corner positioning profile XCF

Note the actual ceiling height of the slab and install the Corner positioning profiles XCF correctly on the Vertical profile extensions 1.55m XCF.

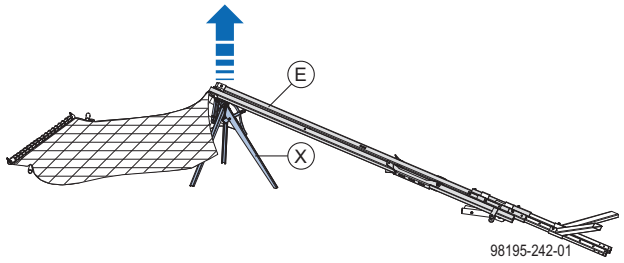
➤ Repeat the procedure with the existing Corner connectors XCF.

➤ Install Corner catch net 4.70x4.70m XCF at the bottom ends of the Vertical profiles 3.50m XCF.



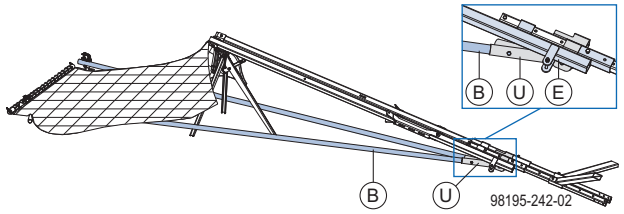

**E** Vertical profile 3.50m XCF
**W** Corner catch net 4.70x4.70m

➤ Raise the Vertical profiles 3.50m XCF and support them in the raised position (e.g. on Removable folding tripods).



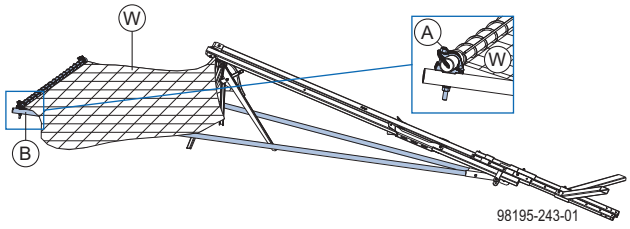

**E** Vertical profile 3.50m XCF
**X** Removable folding tripod

➤ Attach two Diagonal tubes 4.70m XCF to the Corner connector XCF with hexagon bolts and hexagon nuts.



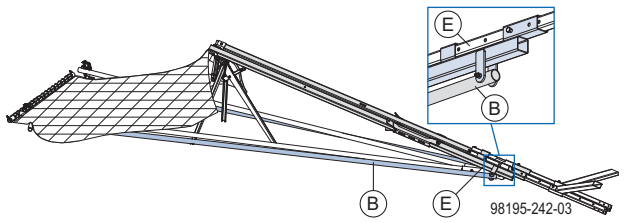

**B** Diagonal tube 4.70m XCF
**E** Vertical profile 3.50m XCF
**U** Corner connector XCF

➤ Use the screw-on couplers to attach the other ends of the Diagonal tubes 4.70m XCF attached to the Corner connector XCF to the horizontal tube of the Corner catch net 4.70x4.70m XCF.



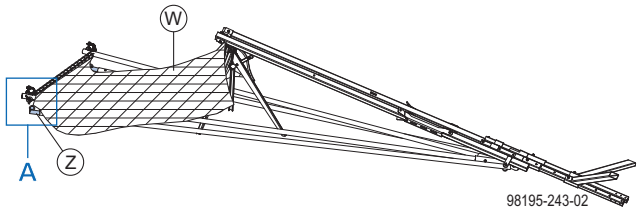

**A** Screw-on coupler 48mm 95
**B** Diagonal tube 4.70m XCF
**W** Corner catch net 4.70x4.70m

➤ Attach one Diagonal tube 4.70m XCF to each of the two Vertical profiles 3.50m XCF with hexagon bolts and hexagon nuts.



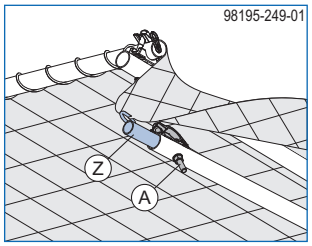

**B** Diagonal tube 4.70m XCF
**E** Vertical profile 3.50m XCF

➤ Remove the Screw-on couplers 48mm 95 from the two Diagonal tubes 4.70m XCF.
Attach the two Diagonal tubes 4.70m XCF that are attached to the Vertical profiles 3.50m XCF to the inner tubes of the Corner catch net 4.70x4.70m XCF and re-install the screw-on couplers.




**W** Corner catch net 4.70x4.70m
**Z** Inner tube of the Corner catch net 4.70x4.70m XCF

### Close-up A

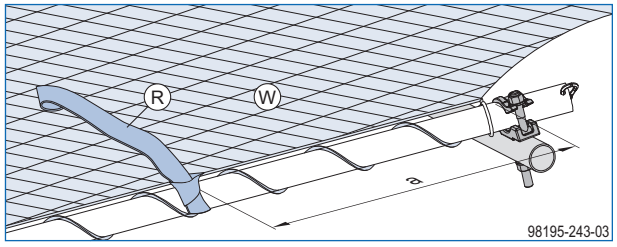



**A** Screw-on coupler 48mm 95
**Z** Inner tube of the Corner catch net 4.70x4.70m XCF

When installing the net, make sure that it is not trapped.
Otherwise problems can be encountered in unfolding the net.

➤ Loop two Lifting slings 0.5t 1.00m round the horizontal tube of the Corner catch net 4.70x4.70m, positioning each lifting sling 0.5 m inward from the coupler.
2 Lifting slings 0.5t 1.00m per catch fan are needed for repositioning.
The lifting slings remain attached to the catch fan.

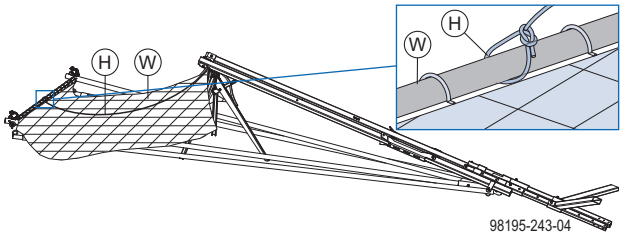
**NOTICE**
Use only lifting slings to lift the catch fan (do not attempt to lift a catch fan by looping a chain round it).




a ... 0.5 m

**R** Lifting sling 0.5t 1.00m
**W** Corner catch net 4.70x4.70m XCF

➤ Secure Folding rope XCF to the middle of the horizontal tube of the Corner catch net 4.70x4.70m XCF and at the front secure it to the corner suspension point.




**H** Folding rope XCF

**W** Corner catch net 4.70x4.70m XCF

**WARNING**

The catch fan opens when it is lifted off the floor.

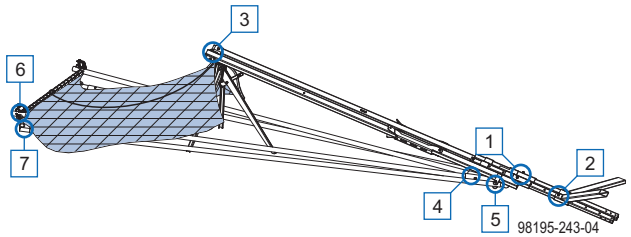
➤ Clear the danger zone before the catch fan is lifted.

# Checking bolted joints

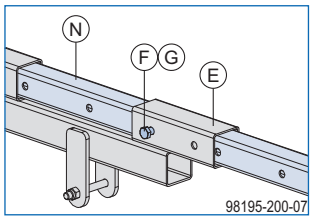
➤ Check the security of every bolted joint.
➤ Tighten every coupler.

Tightening torque of couplers: **50 Nm**
(to DIN EN 74-1)

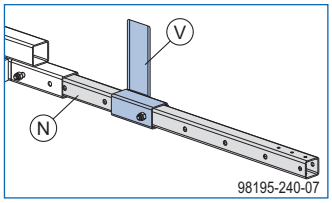
**Xsafe catch fan with vertical profile extension**



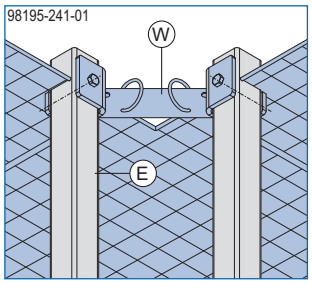

**Close-up 1**



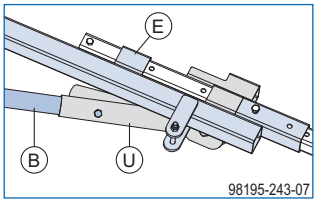

**Close-up 2**



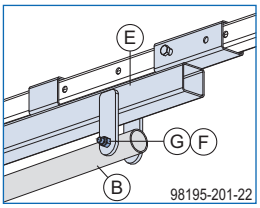

**Close-up 3**



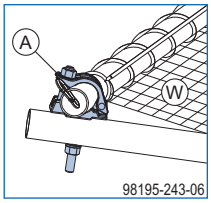

**Close-up 4**



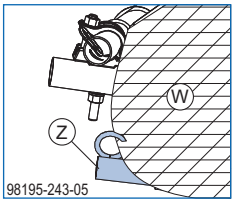

**Close-up 5**




**Close-up 6**




**Close-up 7**




| | |
|---|---|
| **A** | Screw-on coupler 48mm 95 |
| **B** | Diagonal tube 4.70m XCF |
| **D** | Scaffold tube 48.3mm 2.00m or 4.00m |
| **E** | Vertical profile 3.50m XCF |
| **F** | Hexagon bolt ISO 4014 M12x100 |
| **G** | Hexagon nut ISO 7040 M12 self-locking |
| **N** | Vertical profile extension 1.55m XCF |
| **U** | Corner connector XCF |
| **V** | Corner positioning profile XCF |
| **W** | Corner catch net 4.70x4.70m XCF |
| **Z** | Inner tube of the Corner catch net 4.70x4.70m XCF |

# Repositioning

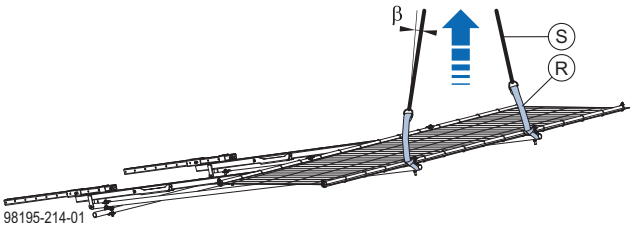
## Notes on safe repositioning

**WARNING**

- ➤ Strong wind can lift the catch fan out of the floor shoes if they are not closed and secured.
- ➤ Use appropriate personal fall-arrest system equipment when working at the slab edge!
- ➤ Detach the 4-part chain from the lifting slings only when the floor shoes are closed.
- ➤ If the edge protection is removed to facilitate installation or removal of the catch fan, appropriate personal fall-arrest system equipment must be worn (e.g. safety harness).

## Lifting catch fan

➤ Lift the catch fan.




**R** Lifting sling 0.5t 1.00m
**S** Multi-part chain

**NOTICE**

Spread angle β of slinging means max. 30°.

**WARNING**

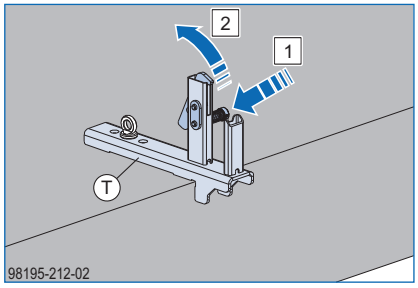
The catch fan opens when it is lifted off the floor.

- ➤ Clear the danger zone before the catch fan is lifted.

## Hooking catch fan into position

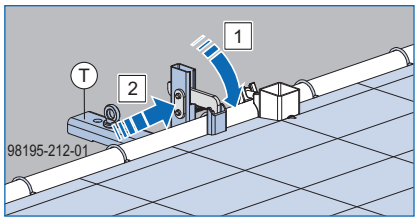
### Hooking catch fan into Floor shoes XCF

➤ Open the safety bows of both Floor shoes XCF.



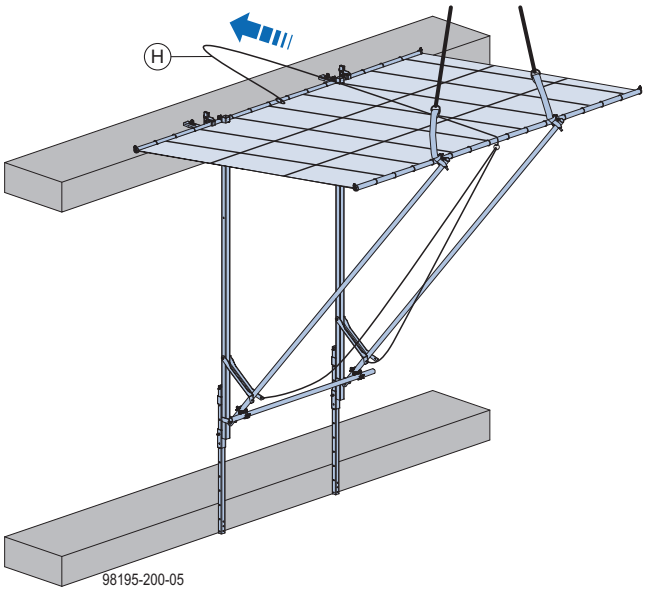

**T** Floor shoe XCF

➤ Lower the Xsafe catch fan into the two securely positioned Floor shoes XCF.
➤ Close the safety bows of both Floor shoes XCF.



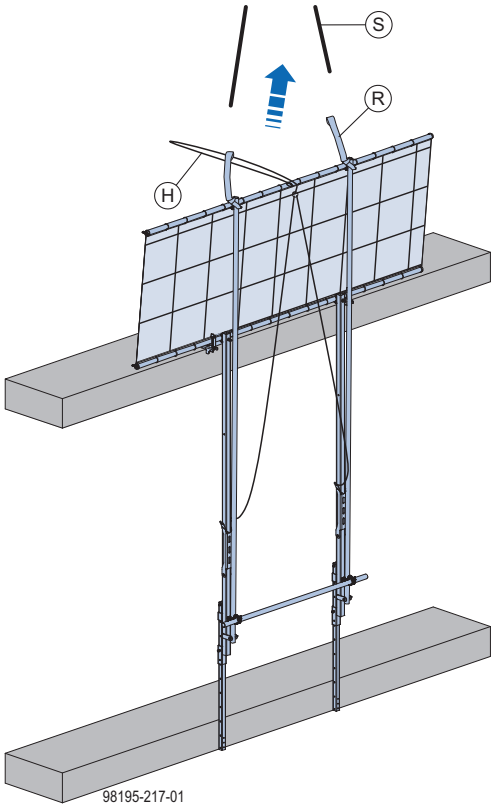

**T** Floor shoe XCF

➤ Use the Folding rope XCF to fold in the Xsafe catch fan.



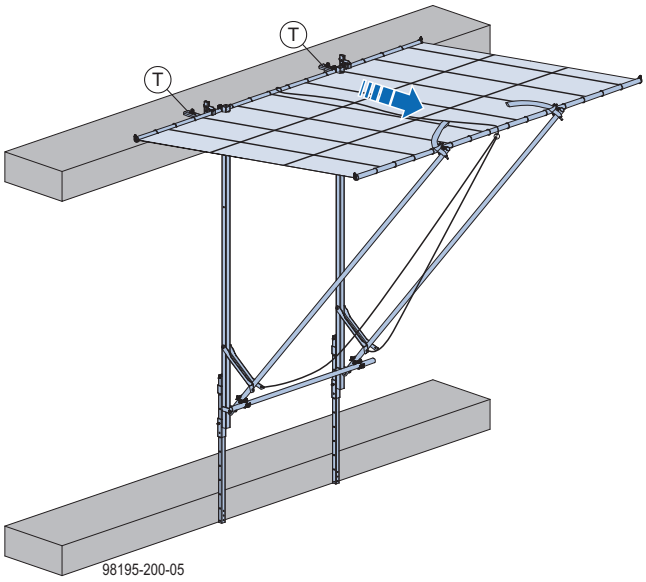

**H** Folding rope XCF

➤ Detach the 4-part chain from the Lifting slings 0.5t 1.00m.




**H** Folding rope XCF
**R** Lifting sling 0.5t 1.00m
**S** 4-part chain

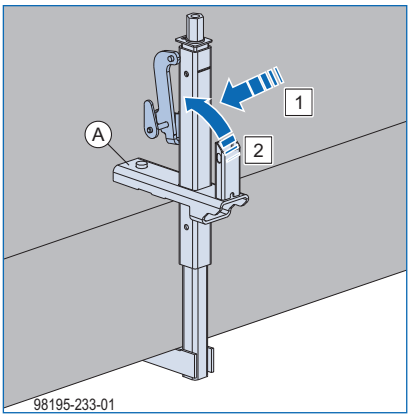
➤ Unfold the catch fan.




**T** Floor shoe XCF

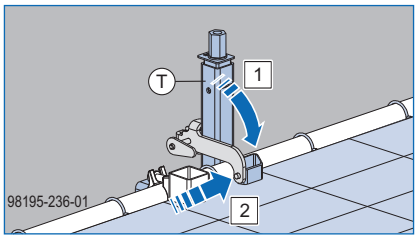
## Hooking catch fan into Floor clamps XCF

➤ Open the safety bows of both Floor clamps XCF.




➤ Lower the Xsafe catch fan into the two securely positioned Floor clamps XCF.

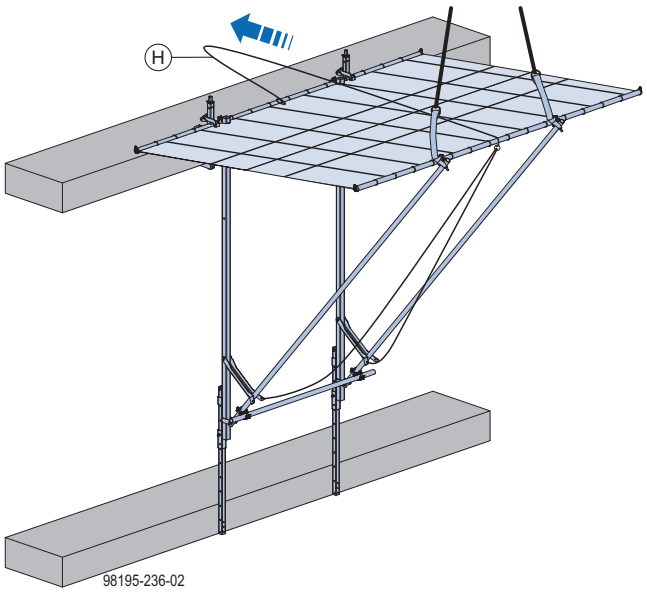
➤ Close the safety bows of both Floor clamps XCF.




**T** Floor clamp XCF

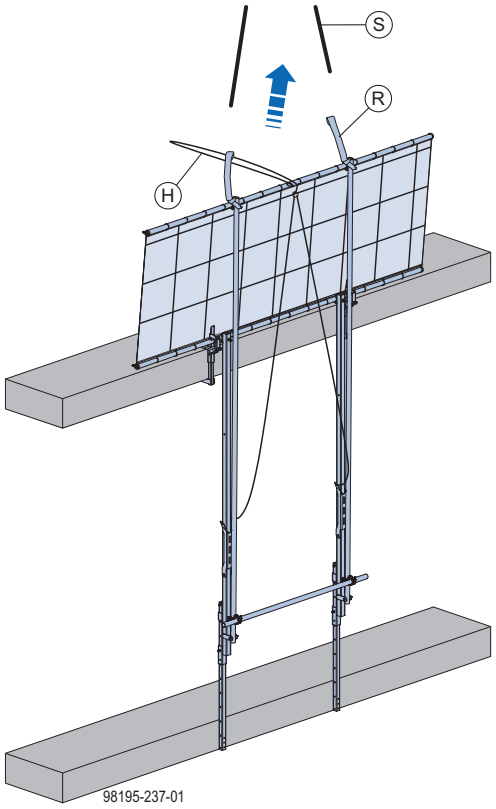
Check that the pin of the safety bow is engaged in the Floor clamp XCF.

➤ Use the Folding rope XCF to fold in the Xsafe catch fan.



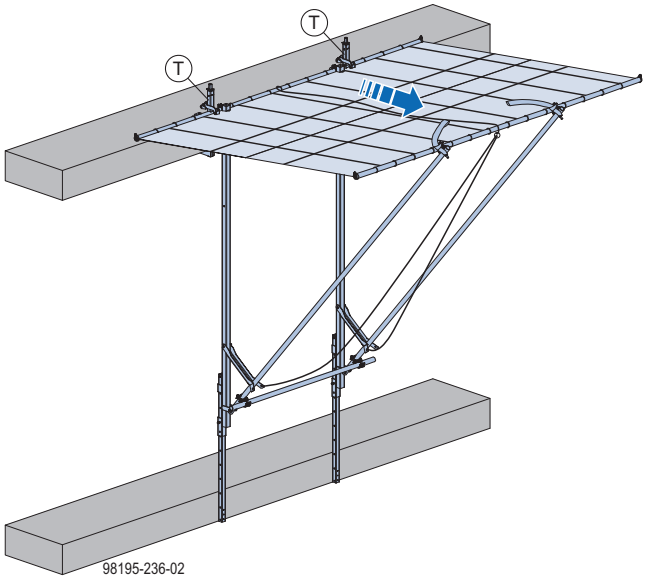

**H** Folding rope XCF

➤ Detach the 4-part chain from the Lifting slings 0.5t 1.00m.




**H** Folding rope XCF
**R** Lifting sling 0.5t 1.00m
**S** 4-part chain

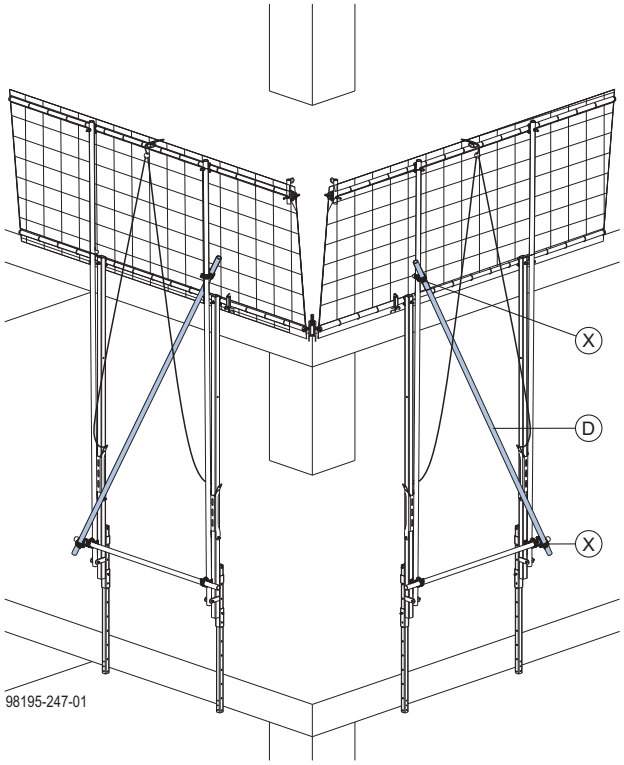
➤ Unfold the catch fan.




**T** Floor clamp XCF

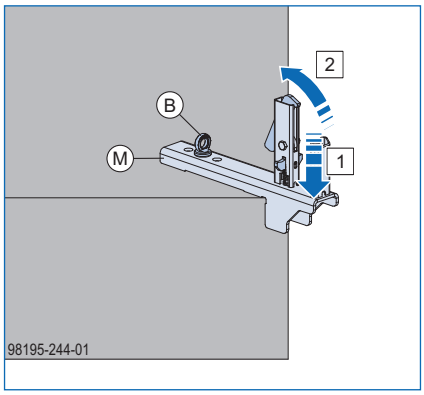
## Hooking corner catch fan into Corner floor shoe XCF

➤ Before lifting, stiffen each adjacent catch fan with a Scaffold tube 4.00m 48.3mm and Swivel couplers 48mm.




**D** Scaffold tube 48.3mm 4.00m
**X** Swivel coupler 48mm

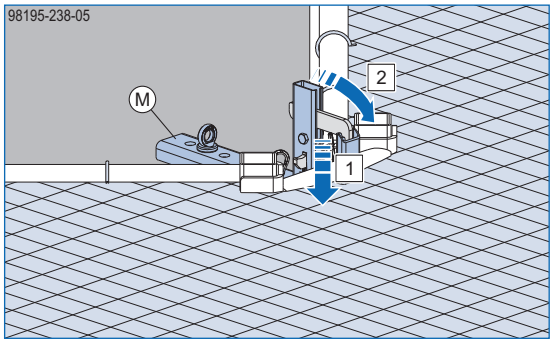
➤ Open the safety bow of the Corner floor shoe XCF.




**B** Doka express anchor 16x125mm
**M** Corner floor shoe XCF

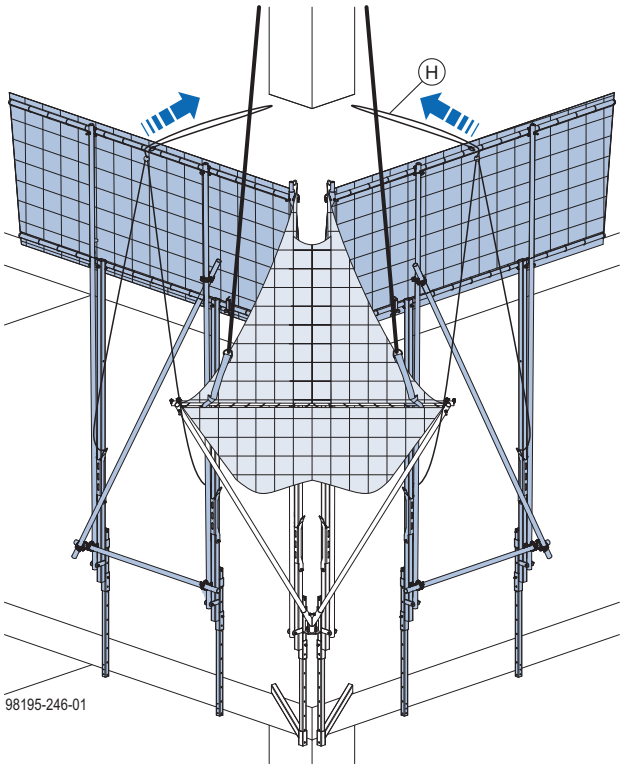
Hook the catch fan into position as described in the section headed ‘Hooking catch fan into Floor shoes XCF’.

➤ Close the Corner floor shoe XCF.



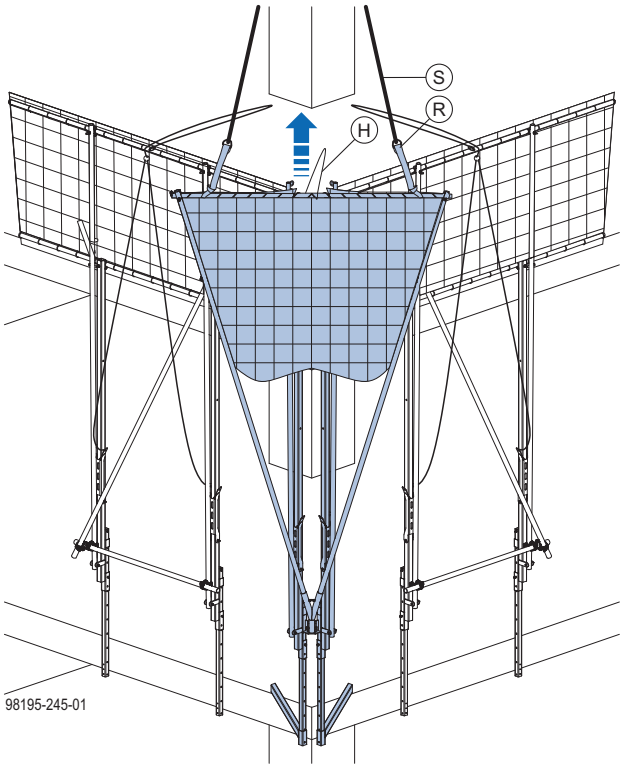

**M** Corner floor shoe XCF

➤ Use the Folding ropes XCF to fold in the adjacent catch fans.



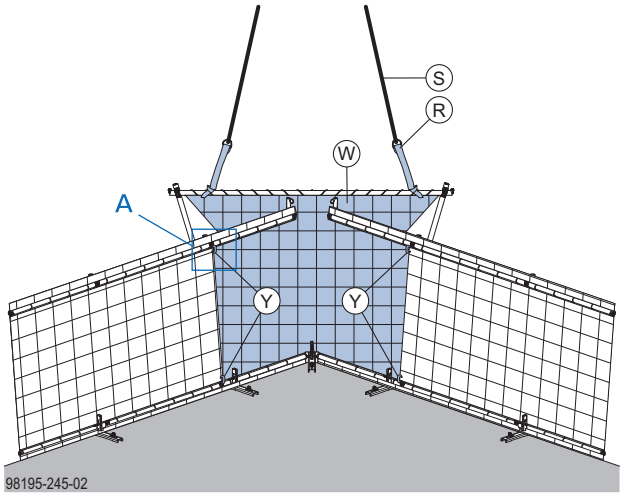

**H** Folding rope XCF

➤ Use the Folding rope XCF to fold in the corner catch fan.



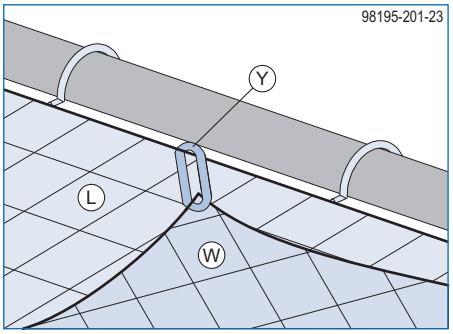

**H** Folding rope XCF
**R** Lifting sling 0.5t 1.00m
**S** 4-part chain

➤ Attach the corner catch net to each of the two adjacent catch fans with 2 screw-lock carabiners per side, clipped on the inside to the reinforced black edge ropes.
Pull the corner catch net taut in this process.




**R** Lifting sling 0.5t 1.00m
**S** 4-part chain
**W** Corner catch net 4.70x4.70m XCF
**Y** Screw-lock carabiner

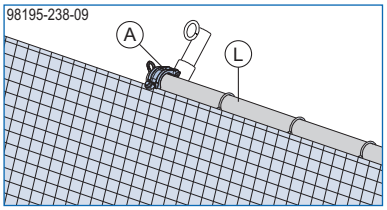
## Close-up A




**L** Catch net XCF
**W** Corner catch net 4.70x4.70m XCF
**Y** Screw-lock carabiner

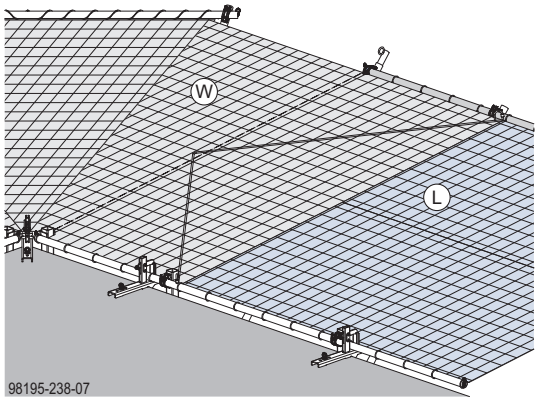
Note the overlap of the catch nets with the corner catch net. See the section headed 'Arrangement at the corner'.

➤ Detach the 4-part chain from the Lifting slings 0.5t 1.00m.
➤ Connect the adjacent catch fans to the screw-on couplers of the outer diagonal tubes.




**A** Screw-on coupler 48mm 95 of the corner catch fan
**L** Catch net XCF

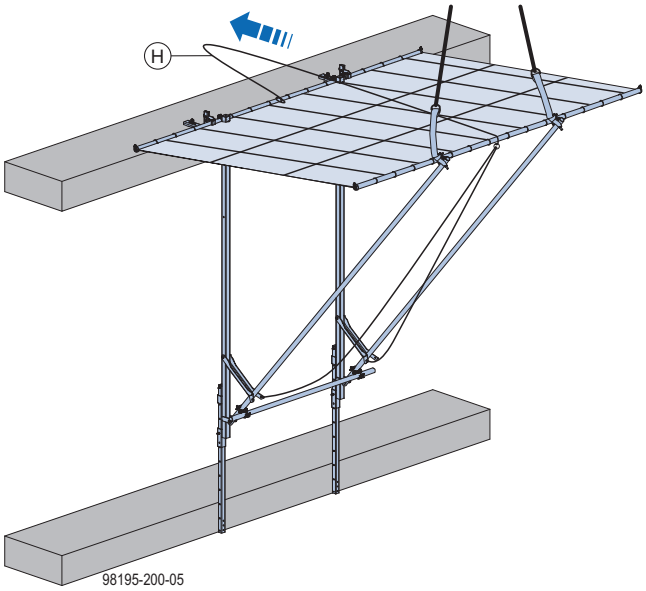
➤ Fold the corner catch fan out again, together with the adjacent catch fans.




**L** Catch net XCF
**W** Corner catch net 4.70x4.70m XCF

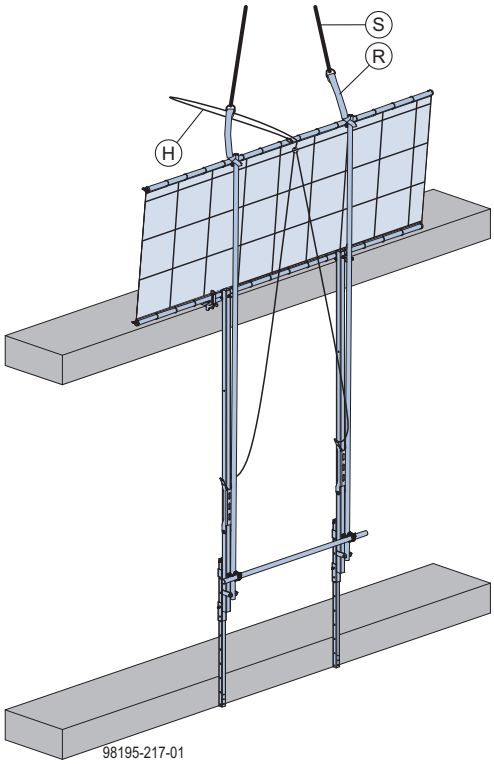
## Lifting catch fan off structure

➤ Use the Folding rope XCF to pull the catch fan up to the structure.



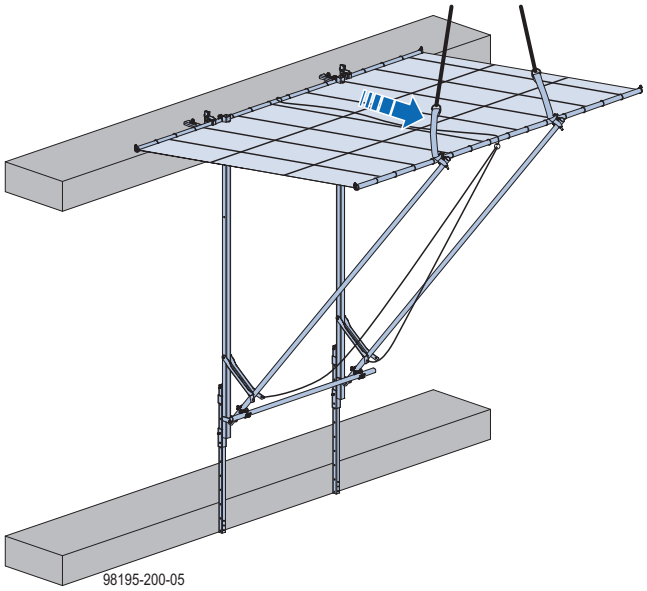

**H** Folding rope XCF

➤ Secure the 4-part chain to the lifting slings.

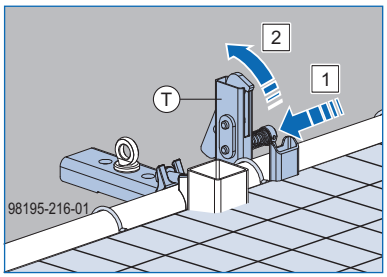



**H** Folding rope XCF
**R** Lifting sling 0.5t 1.00m
**S** 4-part chain

➤ Unfold the catch fan to the fully open position.




➤ Open the safety bows of both Floor shoes XCF.




**T** Floor shoe XCF

➤ Lift the catch fan clear with the crane and lower it to a suitable disassembly area.

### Dismantling

➤ Disassembly of the catch fan is the reverse of the assembly procedure.

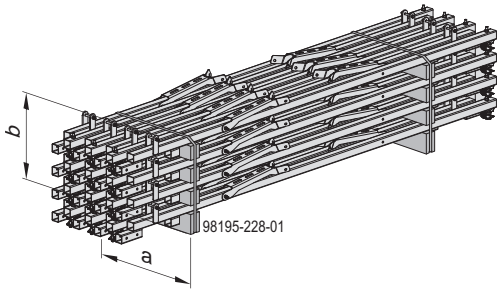
**Note:**

- If a support bracket is installed on the catch fan it has to be removed before the catch fan is laid down on the ground.
- The wind bracings have to be folded in before the catch fan is laid down on the ground.

# General

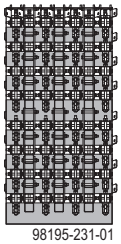
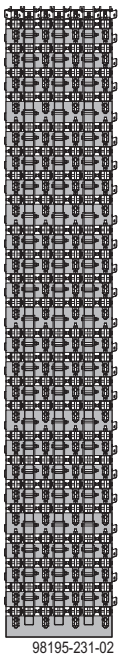
## Transporting, stacking and storing

### Vertical profile 3.50m XCF

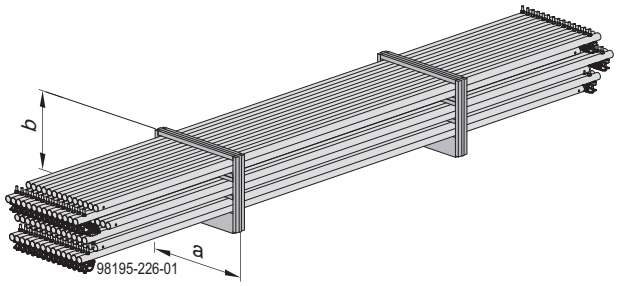



| | one unit |
|---|---|
| Maximum number of vertical profiles 3.50m XCF per stack | 28 |
| Minimum number of timber supports (min. 14 x 8 x 70 cm) | 2 |
| Minimum number of timber spacers (min. 10 x 8 x 70 cm) | 6 |
| Dimension a | 70 cm |
| Dimension b | 76.5 cm |

#### Max. number of units on top of one another

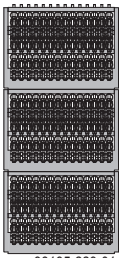
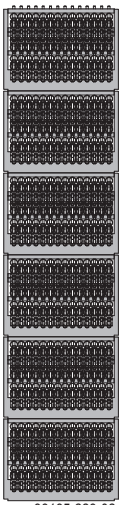
| Number of Vertical profiles 3.50m XCF in one unit | **Outdoors (on the site)** floor gradients of up to 3% | **Stacked in the warehouse** floor gradients of up to 1% |
|---|---|---|
| 28 | 2 | 6 |
| |  98195-231-01 |  98195-231-02 |

### Diagonal tube 4.70m XCF

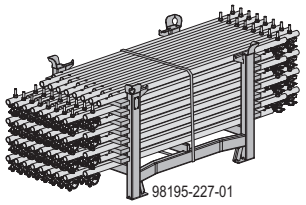



| | one unit |
|---|---|
| Max. number of Diagonal tubes 4.70m XCF per stack | 84 |
| Minimum number of timber supports (min. 14 x 8 x 70 cm) | 2 |
| Minimum number of timber spacers (min. 2.8 x 8 x 70 cm) | 8 |
| Dimension a | 75.6 cm |
| Dimension b | 54.2 cm |

#### Max. number of units on top of one another

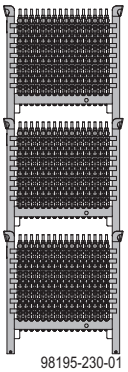
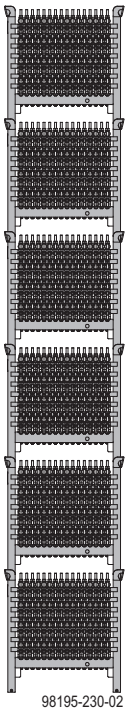
| Number of Diagonal tubes 4.70m XCF in one unit | **Outdoors (on the site)** floor gradients of up to 3% | **Stacked in the warehouse** floor gradients of up to 1% |
|---|---|---|
| 84 | 3 | 6 |
| |  98195-229-01 |  98195-229-02 |

# Diagonal tube extension 1.74m XCF




| | one unit |
|---|---|
| Maximum number of Diagonal tube extensions 1.74m XCF per stack | 128 |
| Minimum number of timber spacers (min. 2.8 x 8 x 70 cm) | 14 |

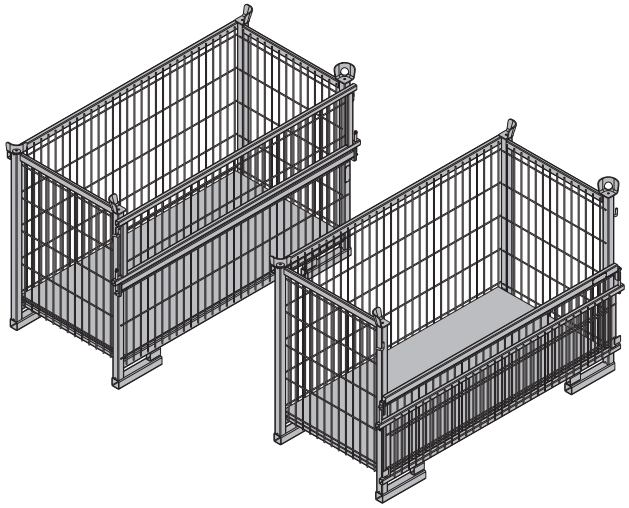
### Max. number of units on top of one another

| Number of Diagonal tube extensions 1.74m XCF in one unit | **Outdoors (on the site)** floor gradients of up to 3% | **Stacked in the warehouse** floor gradients of up to 1% |
|---|---|---|
| 128 | 3 | 6 |
| |  98195-230-01 |  98195-230-02 |

**Utilise the benefits of Doka multi-trip packaging on your site.**
Multi-trip packaging such as containers, stacking pallets and skeleton transport boxes keep everything in place on the site, minimise time wasted searching for parts, and streamline the storage and transport of system components, small items and accessories.

# Doka skeleton transport box 1.70x0.80m

Storage and transport device for small items



Max. load-bearing capacity: 700 kg (1540 lbs)
Permitted imposed load: 3150 kg (6950 lbs)

To make the Doka skeleton transport box easier to load and unload, one of its sidewalls can be opened.

## Using Doka skeleton transport boxes 1.70x0.80m as storage units

### Max. n° of units on top of one another

| Outdoors (on the site)<br>Floor gradients up to 3% | Indoors<br>Floor gradients up to 1% |
|---|---|
| 2 | 5 |
| It is not allowed to stack empty pallets<br>on top of one another! | |

**NOTICE**

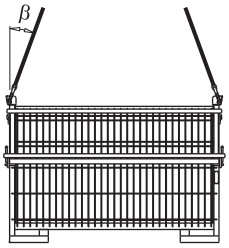
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

## Using Doka skeleton transport boxes 1.70x0.80m as transport devices

### Lifting by crane

**NOTICE**

- Multi-trip packaging items may only be lifted one at a time.
- Only lift the boxes when their sidewalls are closed!
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m).
  Do not exceed the permitted working load limit.
- Sling angle β max. 30°!




9234-203-01

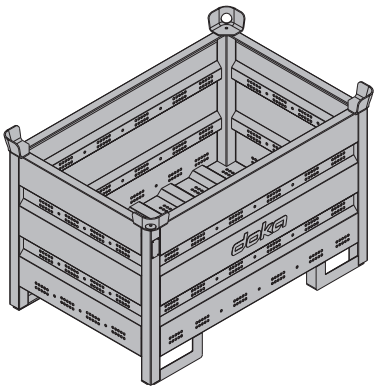
### Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

# Doka multi-trip transport box

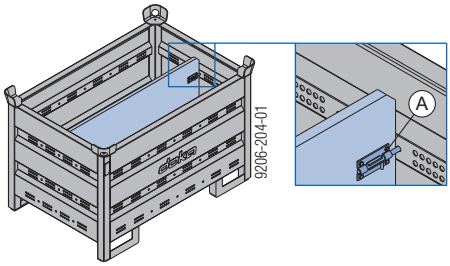
Storage and transport device for small items

## Doka multi-trip transport box 1.20x0.80m



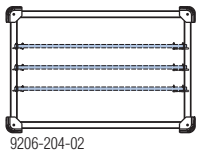
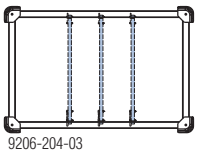
Max. carrying capacity: 1500 kg (3300 lbs)
Permitted imposed load: 7850 kg (17300 lbs)

Different items in the Doka multi-trip transport box can be kept separate with the **Multi-trip transport box partitions 1.20m or 0.80m**.

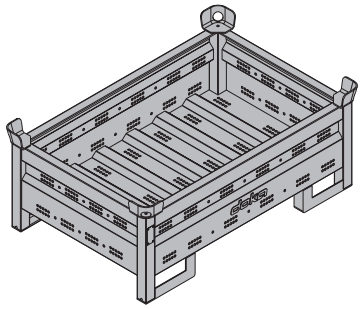



**A** Slide-bolt for fixing the partition

### Possible ways of dividing the box

| Multi-trip transport box partition | in the longitudinal direction | in the transverse direction |
|---|---|---|
| 1.20m | max. 3 partitions | - |
| 0.80m | - | max. 3 partitions |
| |  9206-204-02 |  9206-204-03 |

## Doka multi-trip transport box 1.20x0.80mx0.41m



Max. carrying capacity: 750 kg (1650 lbs)
Permitted imposed load: 7200 kg (15870 lbs)

## Using Doka multi-trip transport boxes as storage units

### Max. n° of units on top of one another

| Outdoors (on the site) Floor gradients up to 3% | | Indoors Floor gradients up to 1% | |
|---|---|---|---|
| Doka multi-trip transport box | | Doka multi-trip transport box | |
| 1.20x0.80m | 1.20x0.80x0.41m | 1.20x0.80m | 1.20x0.80x0.41m |
| 3 | 5 | 6 | 10 |
| It is not allowed to stack empty pallets on top of one another! | | | |

**NOTICE**

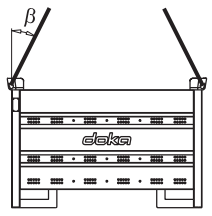
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

## Using Doka multi-trip transport boxes as transport devices

### Lifting by crane

**NOTICE**

- Multi-trip packaging items must be lifted individually.
- Use a suitable crane lifting tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted working load limit.
- Sling angle β max. 30°!



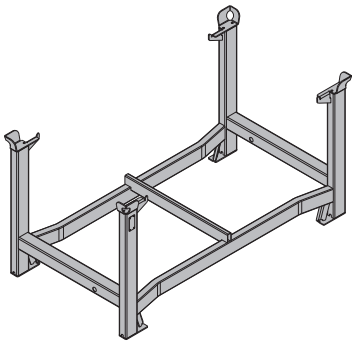

9206-202-01

### Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

# Doka stacking pallet 1.55x0.85m and 1.20x0.80m

Storage and transport devices for long items.



Max. carrying capacity: 1100 kg (2420 lbs)
Permitted imposed load: 5900 kg (12980 lbs)

## Using Doka stacking pallets as storage units

### Max. n° of units on top of one another

| Outdoors (on the site)<br>Floor gradients up to 3% | Indoors<br>Floor gradients up to 1% |
|---|---|
| 2 | 6 |
| It is not allowed to stack empty pallets on top of one another! | |

**NOTICE**

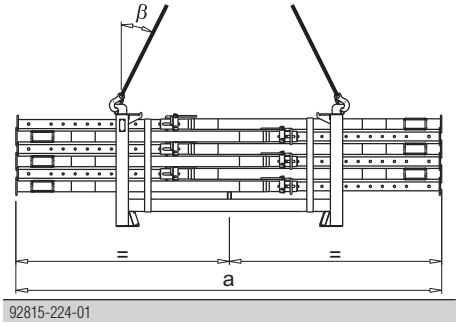
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on castor set mounted to it.

## Using Doka stacking pallets as transport devices

### Lifting by crane

**NOTICE**

- Multi-trip packaging items must be lifted individually.
- Use a suitable crane lifting tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted working load limit.
- Load the items centrically.
- Fasten the load to the stacking pallet (e.g. with strapping tape or lashing strap) so that it cannot slide or tip out.
- Sling angle β max. 30°!




| | a |
|---|---|
| Doka stacking pallet 1.55x0.85m | max. 4.5 m |
| Doka stacking pallet 1.20x0.80m | max. 3.0 m |

### Repositioning by forklift truck or pallet stacking truck

**NOTICE**

- Load the items centrically.
- Fasten the load to the stacking pallet (e.g. with strapping tape or lashing strap) so that it cannot slide or tip out.

# Cleaning

Clear debris, snow and ice from the Catch nets XCF at regular intervals. Remove larger objects immediately.

- ➤ Check and clean the catch nets at regular intervals.
- ➤ Perform risk assessment for the jobsite as necessary.

## Preparation

- ➤ Before cleaning starts, cordon off the area below the catch net so that no-one can be in this area.
- ➤ Everyone involved in cleaning must wear appropriate personal fall-arrest system equipment and must have received training in the use of this equipment and in working at height.
- ➤ If the edge protection has to be removed for cleaning work, the workers must all wear appropriate personal fall-arrest system equipment. Cordon off areas where the edge protection is opened, to prevent unauthorised access.

## Cleaning

- ➤ Fold in the catch net with the Folding rope XCF provided for the purpose, proceeding in such a way that the debris remains in the catch net. Make sure that there is nothing at the edge of the catch net that could fall out as the catch net is being folded in.
- ➤ After folding in the catch net, remove everything that the net has caught. Remove heavy and large objects first. When subsequently removing debris and small objects, make sure that they cannot fall between the slab and the catch net.

**NOTICE**

If fresh concrete makes its way on to a catch net during pouring, the net has to be thoroughly cleaned immediately with water so that no residues remain. If a catch net cannot be cleaned before the concrete sets, the net has to be replaced.

## Inspection

- ➤ After cleaning, inspect the catch net for damage. If the black net (60x60 mm mesh) is damaged, the entire net has to be replaced.
- ➤ If the net is intact, check all the individual connections and the anchorage to the structure after the catch net has been unfolded.
- ➤ When cleaning and inspection have been completed, barriers erected beforehand to cordon off the area can be removed.

# Annual test of the Catch nets XCF

**EN 1263-1** requires every safety net to be subjected to annual testing. This is described in **Annex B, Section B.2**. The test must be carried out every twelve months from the time when a net is first deployed. The test procedure used is in accordance with that set out in **EN ISO 1806**.

## Removal of test samples

Every Catch net XCF has three test strips. Every 12 months from when a net is first deployed, one test strip is removed from each net. The strips can be removed by cutting open the fastenings.

The test strips are marked with the serial number of the net. These numbers have to be recorded and compared with the serial number on the label affixed to the net.

A net from which all the test strips have been removed can no longer be deployed for use compliant with **EN 1263-1**.


## Test rig

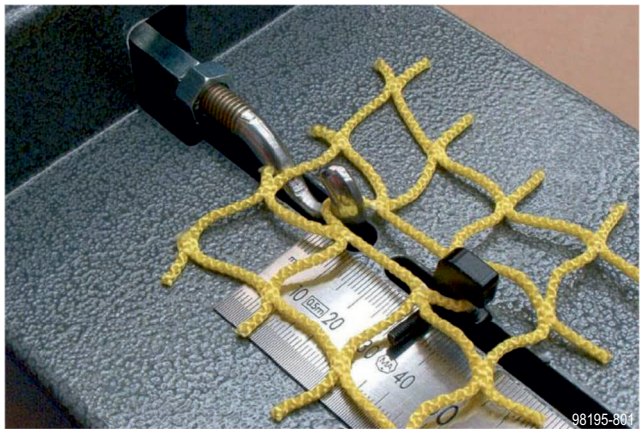
Perform a tension test with a test machine verification-tested in accordance with **EN ISO 7500-1**.

The test machine must have the following capabilities:

- Measurement of elongation to breakage of the mesh
- Measurement of the corresponding tensile force
- Recording of the force/deformation curve

## Test procedure

Perform the test as described in **EN ISO 1806**. The middle mesh of a test strip is tensioned in the machine by a pin (diameter 20 mm). Test speed is 200 mm/min, regardless of test duration.




## Result

After performance of the test, as described in **EN 1263-1 Section 7.7.4.2 a**), the energy absorbed by the tested mesh is calculated. Record the result of each test strip, complete with serial number.

If the energy absorption of a tested mesh is **≥ 42.58 J** (minimum energy of the mesh) or 3054 N (minimum failure load of the mesh), the corresponding test strip has passed the test.

## Remedies

The following measures derive from the test results:

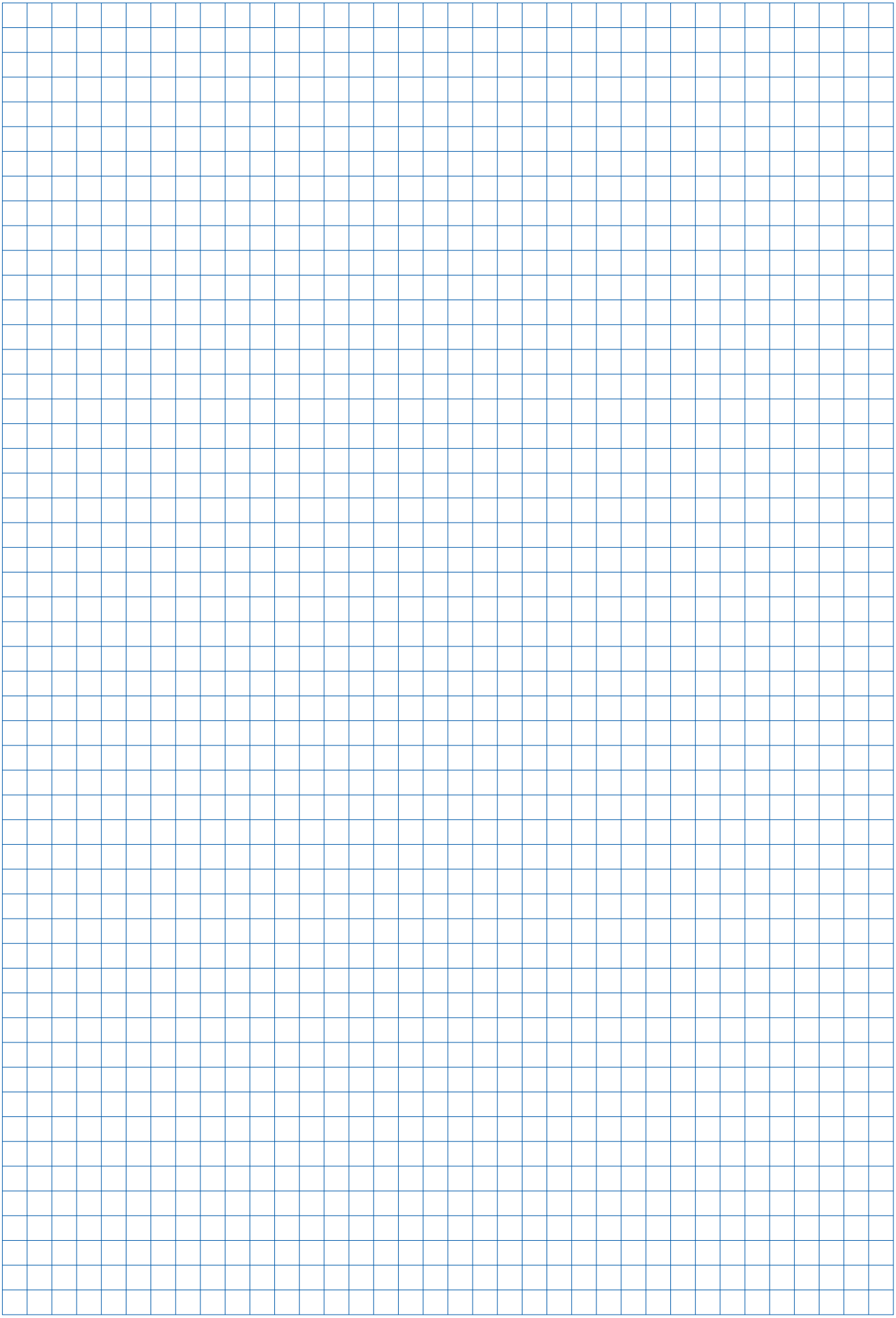
- If a test strip has passed the test, the corresponding net can be deployed for use compliant with **EN 1263-1** for another twelve months.
- If the result of a test strip is less than **5 %** below the specified **42.58 J** (minimum energy of the mesh) or 3054 N (minimum failure load of the mesh), it is permissible for the test to be repeated with another test strip from the same net.
- If the result of a test strip is more than **5 %** below the specified **42.58 J** (minimum energy of the mesh) or 3054 N (minimum failure load of the mesh), the corresponding net can no longer be deployed for use compliant with **EN 1263-1**.

Record all tests with date of test, serial number of the net, result of the test and date when the next test is due.

**NOTICE**

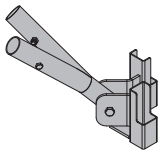
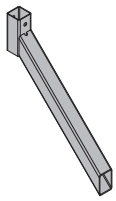
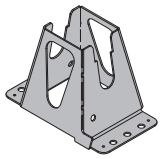
The annual test of the test meshes is an indicative test and is not a substitute for regular inspections of the nets for damage or ageing due to use or storage.

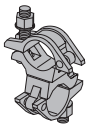
If such deterioration is ascertained in a regular inspection, the net in question can no longer be deployed for use compliant with **EN 1263-1**.



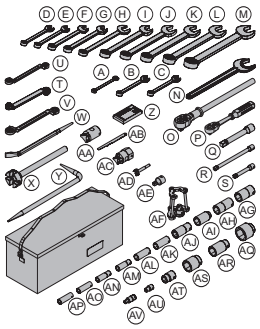
| | [kg] | Article N° |
|---|---|---|
| **Catch net 4.00x3.10m XCF**<br>Fangnetz 4,00x3,10m XCF<br>Yellow | **35.0** | **584801000** |
| **Catch net 6.00x3.10m XCF**<br>Fangnetz 6,00x3,10m XCF<br>Yellow | **52.0** | **584800000** |
| **Catch net 4.00x4.80m extra wide XCF**<br>Fangnetz 4,00x4,80m extrabreit XCF<br>Yellow | **52.0** | **584803000** |
| **Catch net 6.00x4.80m extra wide XCF**<br>Fangnetz 6,00x4,80m extrabreit XCF<br>Yellow | **78.0** | **584802000** |
| **Corner catch net 4.70x4.70m XCF**<br>Eckfangnetz 4,70x4,70m XCF<br>Yellow | **25.0** | **584815000** |
| **Vertical profile 3.50m XCF**<br>Vertikalprofil 3,50m XCF<br>Galvanised | **24.0** | **584804000** |
| **Diagonal tube 4.70m XCF**<br>Diagonalrohr 4,70m XCF<br>Galvanised | **16.0** | **584805000** |
| **Floor shoe XCF**<br>Deckenschuh XCF<br>Galvanised<br>Length: 40.5 cm<br>Width: 7 cm<br>Height: 24.3 cm | **3.3** | **584806000** |

| | [kg] | Article N° |
|---|---|---|
| **Corner floor shoe XCF**<br>Eckdeckenschuh XCF<br>Galvanised<br>Length: 43 cm<br>Width: 7 cm<br>Height: 26.3 cm | **3.7** | **584818000** |
| **Floor clamp XCF**<br>Deckenzwinge XCF<br>Galvanised<br>Length: 30 cm<br>Width: 8 cm | **10.4** | **584813000** |
| **Vertical profile extension 1.55m XCF**<br>Vertikalprofilverlängerung 1,55m XCF<br>Galvanised | **6.8** | **584810000** |
| **Support bracket XCF**<br>Stützkonsole XCF<br>Galvanised<br>Length: 85.4 cm<br>Width: 14 cm<br>Height: 105.1 cm | **12.2** | **584811000** |
| **Diagonal tube extension 1.74m XCF**<br>Diagonalrohrverlängerung 1,74m XCF<br>Galvanised | **4.7** | **584807000** |
| **Folding rope XCF**<br>Klappseil XCF | **0.26** | **584809000** |
| **Lifting sling 0.5t 1.00m**<br>Hebeband 0,5t 1,00m<br>Follow the directions in the "Operating Instructions"!<br>CE | **0.13** | **584808000** |

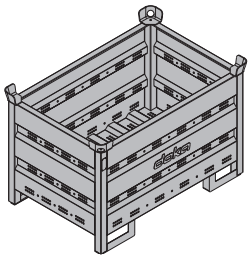
| | [kg] | Article N° |
|---|---|---|
| **Corner connector XCF**<br>Eckverbinder XCF<br>  <br>Galvanised<br>Length: 51.2 cm<br>Height: 18.6 cm | **7.2** | **584816000** |
| **Corner positioning profile XCF**<br>Eckpositionierungsprofil XCF<br>  <br>Galvanised<br>Length: 44.2 cm<br>Width: 6 cm<br>Height: 53.2 cm | **3.6** | **584817000** |
| **Doka 4-part chain 3.20m**<br>Doka-Vierstrangkette 3,20m<br>  <br>Follow the directions in the "Operating Instructions"! | **15.0** | **588620000** |
| **Assembly shoe XCF**<br>Montageschuh XCF<br>  <br>Galvanised<br>Length: 36.6 cm<br>Width: 22.4 cm<br>Height: 25.1 cm | **5.1** | **584812000** |
| **Doka express anchor 16x125mm**<br>Doka-Expressanker 16x125mm<br>  <br>Galvanised<br>Length: 18 cm | **0.31** | **588631000** |
| **Doka coil 16mm**<br>Doka-Coil 16mm<br>  <br>Galvanised<br>Diameter: 1.6 cm | **0.009** | **588633000** |
| **Information plate for express anchor**<br>Plakette Expressanker<br>  <br>PS<br>Width: 8 cm<br>Height: 7.5 cm | **0.1** | **588630000** |

| | [kg] | Article N° |
|---|---|---|
| **Scaffold tube 48.3mm 0.50m** | **1.7** | **682026000** |
| **Scaffold tube 48.3mm 1.00m** | **3.6** | **682014000** |
| **Scaffold tube 48.3mm 1.50m** | **5.4** | **682015000** |
| **Scaffold tube 48.3mm 2.00m** | **7.2** | **682016000** |
| **Scaffold tube 48.3mm 2.50m** | **9.0** | **682017000** |
| **Scaffold tube 48.3mm 3.00m** | **10.8** | **682018000** |
| **Scaffold tube 48.3mm 3.50m** | **12.6** | **682019000** |
| **Scaffold tube 48.3mm 4.00m** | **14.4** | **682021000** |
| **Scaffold tube 48.3mm 4.50m** | **16.2** | **682022000** |
| **Scaffold tube 48.3mm 5.00m** | **18.0** | **682023000** |
| **Scaffold tube 48.3mm 5.50m** | **19.8** | **682024000** |
| **Scaffold tube 48.3mm 6.00m** | **21.6** | **682025000** |
| **Scaffold tube 48.3mm .....m**<br>Gerüstrohr 48,3mm<br>  <br>Galvanised | **3.6** | **682001000** |
| **Normal coupler 48mm**<br>Normalkupplung 48mm<br>  <br>Galvanised<br>Width-across: 22 mm | **1.2** | **682004000** |
| **Swivel coupler 48mm**<br>Drehkupplung 48mm<br>  <br>Galvanised<br>Width-across: 22 mm | **1.5** | **582560000** |
| **Removable folding tripod top**<br>Stützbein top<br>  <br>Galvanised<br>Height: 80 cm<br>Delivery condition: folded closed | **12.0** | **586155500** |

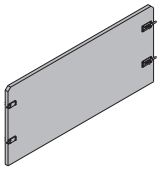
| | [kg] | Article N° |
|---|---|---|
| **Tool box SK**<br>Werkzeugbox SK<br>included in scope of supply: | **28.1** | **581539000** |
| (A) **Combination wrench 13** | **0.06** | **586341000** |
| (B) **Combination wrench 16** | **0.18** | **580645000** |
| (C) **Combination wrench 17** | **0.16** | **586340000** |
| (D) **Combination wrench 18** | **0.17** | **580646000** |
| (E) **Combination wrench 19** | **0.14** | **582837000** |
| (F) **Combination wrench 22** | **0.2** | **582838000** |
| (G) **Combination wrench 24** | **0.25** | **582839000** |
| (H) **Combination wrench 27** | **0.33** | **581548000** |
| (I) **Combination wrench 30** | **0.43** | **582840000** |
| (J) **Combination wrench 32** | **0.75** | **582859000** |
| (K) **Combination wrench 34** | **0.69** | **582936000** |
| (L) **Combination wrench 36** | **0.75** | **582860000** |
| (M) **Combination wrench 41** | **1.5** | **582841000** |
| (N) **Fork wrench 50** | **0.98** | **581549000** |
| (O) **Reversible ratchet 3/4"**<br>Galvanised | **1.5** | **580894000** |
| (P) **Reversible ratchet 1/2"**<br>Galvanised | **0.73** | **580580000** |
| (Q) **Extension 20cm 3/4"** | **0.68** | **580683000** |
| (R) **Extension 22cm 1/2"** | **0.31** | **580582000** |
| (S) **Extension 11cm 1/2"** | **0.2** | **580581000** |
| (T) **Ratchet-ring wrench 16/18** | **0.3** | **580666000** |
| (U) **Ratchet-ring wrench 17/19** | **0.47** | **581546000** |
| (V) **Ratchet-ring wrench 22/24** | **0.59** | **581547000** |
| (W) **Universal pry bar 400/23** | **0.61** | **581550000** |
| (X) **Tie-rod wrench 15.0/20.0**<br>Galvanised | **1.8** | **580594000** |
| (Y) **Angular arbor SL-1** | **1.4** | **582867000** |
| (Z) **Torx bit-set 25/30** | **0.25** | **581540000** |
| (AA) **Universal cone spanner M36**<br>Galvanised | **0.92** | **583274000** |
| (AB) **Safety Ruler SK**<br>Length: 18 cm | **0.02** | **581439000** |
| (AC) **Universal cone spanner 15.0/20.0**<br>Galvanised<br>Width-across: 50 mm | **0.9** | **581448000** |
| (AD) **Centre bit DF 30** | **0.1** | **586081000** |
| (AE) **Transition piece A 1/2"x3/4"** | **0.18** | **580684000** |
| (AF) **Mounting tool for form-ply protector**<br>Galvanised | **0.96** | **580222000** |
| (AG) **Box nut 32 3/4" L** | **0.59** | **581544000** |
| (AH) **Box nut 30 3/4" L** | **0.52** | **582846000** |
| (AI) **Box nut 30 1/2" L** | **0.5** | **581545000** |
| (AJ) **Box nut 24 3/4" L** | **0.25** | **582845000** |
| (AK) **Box nut 24 1/2" L** | **0.3** | **586364000** |
| (AL) **Box nut 22 1/2" L** | **0.25** | **581543000** |
| (AM) **Box nut 19 1/2" L** | **0.16** | **580598000** |
| (AN) **Box nut 18 1/2" L** | **0.15** | **580642000** |
| (AO) **Box nut 17 1/2" L** | **0.24** | **581542000** |
| (AP) **Box nut 16 1/2" L** | **0.12** | **580641000** |
| (AQ) **Box nut 50 3/4"** | **0.81** | **581449000** |
| (AR) **Box nut 36 3/4" L** | **0.67** | **580895000** |
| (AS) **Box nut 41 3/4"** | **0.79** | **581541000** |
| (AT) **Box nut 24 3/4"** | **0.21** | **500679030** |
| (AU) **Box nut 13 1/2"** | **0.06** | **580576000** |
| (AV) **Hexagon bit socket 14mm 1/2"** | **0.13** | **581583000** |



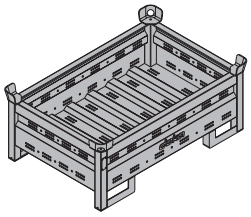
| | [kg] | Article N° |
|---|---|---|
| **Doka multi-trip transport box 1.20x0.80m**<br>Doka-Mehrwegcontainer 1,20x0,80m<br>Galvanised<br>Height: 78 cm | **70.0** | **583011000** |



| | [kg] | Article N° |
|---|---|---|
| **Multi-trip transport box partition 0.80m** | **3.7** | **583018000** |
| **Multi-trip transport box partition 1.20m**<br>Mehrwegcontainer Unterteilung<br>Steel parts galvanised<br>Timber parts varnished yellow | **5.5** | **583017000** |

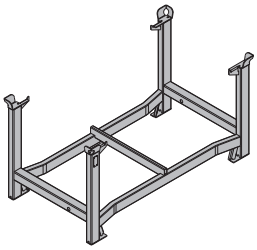


| | [kg] | Article N° |
|---|---|---|
| **Doka multi-trip transport box 1.20x0.80x0.41m**<br>Doka-Mehrwegcontainer 1,20x0,80x0,41m<br>Galvanised | **42.5** | **583009000** |



| | [kg] | Article N° |
|---|---|---|
| **Doka skeleton transport box 1.70x0.80m**<br>Doka-Gitterbox 1,70x0,80m<br>Galvanised<br>Height: 113 cm | **87.0** | **583012000** |

| | [kg] | Article N° |
|---|---|---|
| **Doka stacking pallet 1.55x0.85m**<br>Doka-Stapelpalette 1,55x0,85m<br>Galvanised<br>Height: 77 cm | **41.0** | **586151000** |



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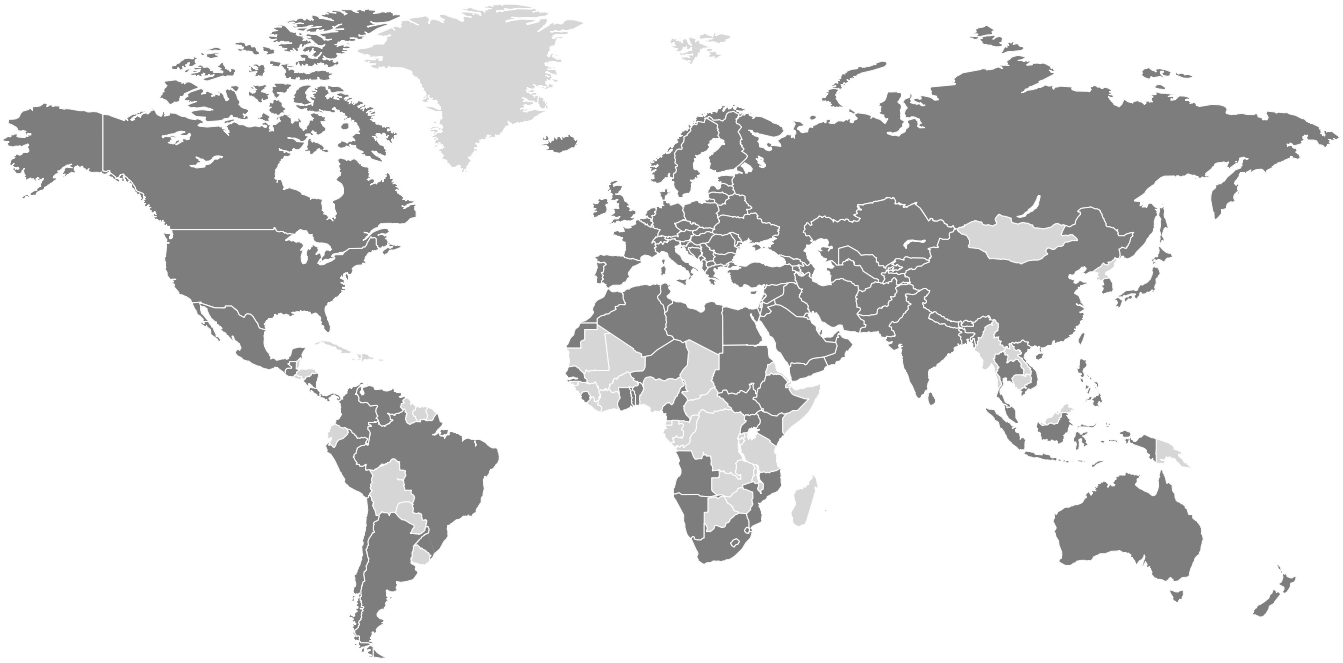

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