

Edge Protection Systems Engineered to protect, designed to adapt

Precast
Concrete



Smarter Edge Protection

COMBISAFE[®]
SAFETY BY SYSTEMS

EDGE PROTECTION SYSTEMS FOR PRECAST CONCRETE CONSTRUCTION

Combisafe is committed to providing edge protection for construction projects of every kind through a wide range of products that help developers and contractors enhance site safety and productivity.

Our edge protection systems have been specifically designed to meet the unique challenges of each construction technique, including precast concrete, with a wide range of 'safety by system' solutions that provide a highly efficient and highly cost effective process for the safe and secure integration of edge protection in precast building components.



Benefits

- **Full layout design service.** Enhances safety, speeds up installation and reduces cost.
- **Reduced work at heights.** Edge protection systems are attached at ground level and lifted into place, driving down exposure of workers to risk
- **Speed and accuracy.** Integrated attachments allow for quicker assembly and millimetre perfect end result.
- **Reduced labour costs.** Installation by suitably competent person rather than qualified scaffolders. Quick to disassemble without specialist skills on-site.
- **Compliance.** Meets all European regulations for edge protection.
- **Time saving.** Many Combisafe systems provide guardrails and efficient shutter support in a single operation, cutting down the time needed to install a complete edge protection system.

Products

The following Combisafe systems are suitable for use in precast concrete construction projects:

Steel Mesh Barrier (SMB) The benchmark for edge protection for over a decade and still a focus for innovation. The latest Combisafe SMB is even stronger, even more durable, even lighter and even more flexible for increased safety and productivity.

SMB Stair A systemised solution offering ease of use and increased containment on stairways – often a problem area on any construction site for safety planning.

SMB Beam A supplementary double guardrail that is designed to provide safety while the barrier is removed. The SMB Beam enables the user to reach through the beam to carry out work at the edge and is particularly useful when fitting cladding brackets and facade panels. SMB Beam is complementary with the C-System only.

Multi-Mesh Barrier (MMB) A combined post and barrier system providing speed and simplicity of installation, MMB utilises a single fixing and overlap method and is secured using a Combistrap. Individual barriers can be opened by removing the Combistrap for access to the edge or for loading through. MMB is attached using precast sockets, clamps, or drilled fixings.

Containment Full height floor to ceiling protection using Steel Mesh, or Soft Net systems to further increase safety and containment, minimising the risk of people, objects, and debris falling or being blown over standard height barriers.

EASY INSTALLATION



Edge protection barriers fixed to precast components on the ground according to layout design.



Precast component and edge protection lifted into position as a single unit.



Edge protection is secured in place with minimum need for work at height.

Attachments

Combisafe has attachments that fit many standard cast-in anchors on the market. Below are three of the most commonly used attachments from the Combisafe range that can work with precast concrete construction. Please see the chart below for further options. If you do not see what you are looking for, contact us directly as we are sure to have a solution that will meet your needs.



Plastic Sleeve / Plastic Plug

Simple pre-planned attachment, cut to required length and fitted with Plastic Plug before being cast-in to the slab. Compatible with Safety Post.



Precast Attachment

For use with precast concrete slabs, permitting SMB or guardrails to be pre-installed at ground level before being lifted into place.



Precast Edge Attachment

Used to provide support for safety posts beyond the slab edge, this attachment is cast into the slab during manufacture.

| Product Name | Reference* |
|-------------------------|------------|
| Balcony Attachment | 2 |
| Bridge Attachment | 3 |
| Facade Bracket | 8 |
| Precast Attachment | 9 |
| Precast Edge Attachment | 10 |
| Flexi Attachment | 12 |
| Front Attachment | 13 |
| Jamb Attachment | 14 |

| Product Name | Reference* |
|-------------------------------|------------|
| Multi Clamp | 15 |
| Multi Foot | 16 |
| Plastic Sleeve / Plastic Plug | 17 |
| Stair Attachment | 19 |
| Verti Clamp | 23 |
| Variable Angle Attachment | 24 |
| Vertical Tube Attachment | 26 |

*See attachments guide for full details

Full Layout Design Service

Intelligent planning is the biggest single contributing factor to site safety. In keeping with this principle, Combisafe provide a full system design service to integrate the most appropriate, safe and cost effective edge protection solution for your project. Designing in safety systems at the earliest possible stage in this way will ensure maximum safety and compliance and smoother project progression.

Legislation and Compliance

All Combisafe edge protection systems are designed to comply with the European Standard for Edge Protection EN 13374. Under these far reaching guidelines, systems are performance categorised from Class A, for protection to flat surfaces and slopes of up to 10 degrees, right through to Class C, for surfaces with a 45 degrees to 60 degrees pitch.

Supporting this, the UK Work at Height Regulations 2005 require those responsible for site safety to minimise the requirement for work at height

wherever possible.

In addition, Combisafe components for precast construction take into account building standards that dictate the final appearance of precast concrete slabs.

Market Sectors

Combisafe edge protection is used in a wide variety of precast construction projects including:

- Steel and hollow core slab
- Commercial buildings
- Shopping malls

CASE STUDIES

Rhône-Alpes Sud HQ



Project: Rhône-Alpes Sud HQ

Client: SOCOGIM

Main contractor: Campenon Bernard Bâtiment Rhône-Alpes

Products: Steel Mesh Barriers and Half Steel Mesh Barriers S-System, Safety Posts, Flexi Safety Posts, Multi Clamps, Plastic Sleeves and Site Stairways.

The new head office for the management department 'Rhône-Alpes Sud', of Vinci Construction France was built in 2009. By using the Combisafe products there was a 100% safety record during the initial stages of construction through to completion of frame.

Testimonial

"I wanted to make the classic guardrails evolve while keeping an impeccable level of safety. The solution came from Combisafe's range of products. The products are easy to use, quick to set-up and robust and allowed our workers to work in full safety and confidence. While working with Combisafe, we were soon made aware of the importance of preliminary planning to integrate safety during all phases of construction."

Julien Garrel Luya, Health and Safety Coordinator, Campenon Bernard Bâtiment Rhône-Alpes, Vinci Construction France

Neubau Parkhaus P3, Airport Nürnberg

Project: Car park P3, Airport Nürnberg, Germany

Client: Flughafen Nürnberg GmbH

Main Contractor: ARGE Neubau Parkhaus, Anton Schick GmbH & Co. KG, Völkel & Heidingsfelder Ingenieurbau GmbH

Products: SMB S-system, Posts, Expanding Anchor Socket, Variable Angle Attachment

Nürnberg airport is the 10th busiest airport in Germany, with around 4 million passengers passing through it each year. Due to the ever-increasing number of passengers new parking facilities were needed. The new car park 'P3' features a 7-storey building with 2,150 parking spaces. The 18 meter high building was mostly built from prefabricated reinforced concrete parts and features a latticework façade of high-grade steel. The main staircase has an open scaled glass façade. The costs of this 53,000m² project are approximately €180 million.



Testimonial

"We were looking for an edge protection system that enabled us to work on the concrete surface right at the edge of the building whilst ensuring total safety for all workers involved. We tested and compared various solutions but decided to use Combisafe as they convinced us of the high quality, user-friendliness and flexibility of their products, as well as the friendly and excellent customer service. By using Combisafe we had a partner that solved all our fall protection and safety problems and concerns."

Holger Hennig (Construction Manager, TeamJürgens)

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Combisafe is part of the Honeywell group

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Edge Protection Systems - Attachments Guide

To address the ever evolving challenges of modern construction, we have developed a broad range of versatile attachments that deliver the highest standards of safety regardless of your building structure type.

Whether using one of our standard attachments, or a selection from the widest range of special order fitments in the market, we offer a seamless edge protection resource that integrates fully with your construction process and work programme.

The following attachments are a small sample of what Combisafe are currently able to supply. **If the solution you require is not shown, please contact our customer service team.**

C-SYSTEM / S-SYSTEM

The unrivalled versatility across the SMB range is complemented by a vast assortment of attachments. This includes the C-System attachments designed for circular posts which integrate with traditional scaffolding couplers, while the S-System uses square posts which are widely used in Europe.

| | | | | |
|--|--|--|---|---|
| <p>1 Aluminium Beam Attachment</p> <p>Used to attach to aluminium soffit beams and proprietary forming systems. Two models available for form beams with top flange thicknesses of 40mm and 60mm.</p>  | <p>2 Balcony Attachment</p> <p>Designed to use cast in channels or the fixings for permanent handrails. Includes fixing slots that accommodate large variations in diameter and spacing.</p>  | <p>3 Bridge Attachment</p> <p>Used as edge protection for bridges, using the bolts for the permanent bridge barrier. Can also be used for other applications.</p>  | <p>4 Bridge Edge Attachment</p> <p>A compact and rapidly deployed attachment, designed primarily for construction joints on bridgeworks, and other starter bar applications.</p>  | <p>5 Bridge Parapet Plate</p> <p>Adjustable steel plate with bolt socket that can be fixed directly outboard of the existing parapet prior to removal.</p>  |
| <p>6 Eaves Attachment Adjustable</p> <p>Adjustable attachment for roof edge protection. The adjustable post holder gives positioning flexibility. Used together with Telescopic Arm or Rear Support. (Not Shown)</p>  | <p>7 Eaves Attachment Adjustable Extended</p> <p>Similar to the Eaves Attachment Adjustable, but featuring a larger Telescopic Arm, allowing more flexibility for post location.</p>  | <p>8 Facade Bracket</p> <p>Provides a post socket on a vertical face. Designed to work with the Filigree Edge Attachment but can be fitted independently.</p>  | <p>9 Precast Attachment</p> <p>For use with precast concrete slabs, permitting SMB or guardrails to be pre-installed at ground level before being lifted into place.</p>  | <p>10 Precast Edge Attachment</p> <p>Cast into precast concrete at factory, delivered with 220mm sleeve to be inserted before topping is poured. Permits safe access for levelling off or other surface work.</p>  |
| <p>11 Flat Sheet Roofing Attachment</p> <p>For mounting to the standing seam of suitably sheeted roofs. Easily clamps to the seam and the angle of Safety Post Attachment is adjusted to the gradient.</p>  | <p>12 Flexi Attachment</p> <p>Provides a post attachment at an adjustable offset up to 360mm on a vertical surface for beam webs, walls, facades and shaft sides of slab edges.</p>  | <p>13 Front Attachment</p> <p>Mounts vertically to provide both edge protection and shuttering support. Can also be mounted horizontally.</p>  | <p>14 Jamb Attachment</p> <p>Provides a clear floor by fitting to vertical surfaces like slab edges, upstands, walls, shaft sides and reveals.</p>  | <p>15 Multi Clamp</p> <p>Versatile attachment covering a wide range of applications. Can be used horizontally or vertically over thicknesses ranging from 20mm to 500mm.</p>  |
| <p>16 Multi Foot</p> <p>Used for horizontal surface applications. Three points of support for accurate installation on uneven surfaces.</p>  | <p>17 Plastic Sleeve / Plastic Plug</p> <p>Simple pre-planned attachment, cut to required length and fitted with Plastic Plug before being cast-in to the slab. Compatible with Safety Posts.</p>  | <p>18 Shuttering Attachment</p> <p>Mounted vertically and used both as an edge protection support and as a shuttering support. Using a single fixing point a wide range of applications can be covered.</p>  | <p>19 Stair Attachment</p> <p>Supports systems on stairs, allowing access to both top surface and soffit. Creates space for finishes and nosings.</p>  | <p>20 Steel Clamp</p> <p>Small, stable clamp attachment for steel. Grips to steel between 10mm and 50mm both horizontally or vertically.</p>  |
| <p>21 Steel Jaw clamp</p> <p>Ensures secure attachment to steel beams and columns. Jaws can be re-positioned to increase the offset or to attach in both the horizontal and vertical plane.</p>  | <p>22 Timber Beam Attachment</p> <p>Used to attach to timber soffit form beams and proprietary forming systems. Two models available for form beams with flange thicknesses of 40mm and 60mm.</p>  | <p>23 Verti Clamp</p> <p>Clamps to narrow members from 0mm to 150mm such as steel sheets. Features reversible jaws and can be mounted both horizontally and vertically.</p>  | <p>24 Variable Angle Attachment</p> <p>Attachment for pitched or flat roofs, slabs, walls etc. Can be set at 5 different angles between 0° and 90° to the base plate.</p>  | <p>25 Variable Flexi Attachment</p> <p>Based on the Variable Angle Attachment frame, can be adjusted up to 970mm. Suitable for assembly on facades with long roof extension.</p>  |
| <p>26 Vertical Tube Attachment</p> <p>Used to fix edge protection on vertical circular tubes. Two models available - 48mm with coupler for scaffold tubes, and a 76mm coupler.</p>  | <p>27 Welded Socket</p> <p>For use in pre-planned edge protection. Socket is welded to beam and can be adjusted to allow work to be carried out on the slab edge.</p>  | <p>* Most attachments work with Precast concrete when used with a cast in anchor. These are also available from Combisafe.</p> | | |

| | Product Name | Steel Frame | Precast Concrete* | Concrete In-situ/ Formwork | Civil Engineering | Modular Containment | Timber Frame |
|----|---------------------------------------|-------------|-------------------|----------------------------|-------------------|---------------------|--------------|
| 1 | Aluminium Beam Attachment | | • | • | • | | |
| 2 | Balcony Attachment | | • | • | • | | • |
| 3 | Bridge Attachment | • | • | • | • | | • |
| 4 | Bridge Edge Attachment | | • | • | • | | |
| 5 | Bridge Parapet Plate | | • | • | • | | |
| 6 | Eaves Attachment Adjustable | | | | | | • |
| 7 | Eaves Attachment Adjustable Extension | | | | | | • |
| 8 | Facade Bracket | | • | • | • | | • |
| 9 | Precast Attachment | | • | • | • | | |
| 10 | Precast Edge Attachment | | • | • | • | | |
| 11 | Flat Sheet Roofing Attachment | | | | • | | |
| 12 | Flexi Attachment | • | • | • | • | • | • |
| 13 | Front Attachment | | • | | • | | |
| 14 | Jamb Attachment | | • | • | • | • | |
| 15 | Multi Clamp | • | • | • | • | • | • |
| 16 | Multi Foot | • | • | • | • | • | |
| 17 | Plastic Sleeve / Plastic Plug | | • | • | • | | |
| 18 | Shuttering Attachment | | | • | • | | |
| 19 | Stair Attachment | • | • | • | • | • | • |
| 20 | Steel Clamp | • | | | | | |
| 21 | Steel Jaw Clamp | • | | | • | | |
| 22 | Timber Beam Attachment | | | • | • | | • |
| 23 | Verti Clamp | • | | • | • | • | • |
| 24 | Variable Angle Attachment | • | • | • | • | • | • |
| 25 | Variable Flexi Attachment | • | • | • | • | | • |
| 26 | Vertical Tube Attachment | • | • | • | • | • | • |
| 27 | Welded socket | • | | | • | • | |