

Edge Protection Systems Engineered to protect, designed to adapt

Civil
Engineering



Smarter Edge Protection

COMBISAFE[®]
SAFETY BY SYSTEMS

EDGE PROTECTION SYSTEMS FOR CIVIL ENGINEERING

One of the key sectors in the construction industry, civil engineering is an important area of investment for governments wishing to stimulate future growth.

That means the instigation of more and more major infrastructure projects over the next few years, each presenting its own unique challenges for safe working at height.

The combisafe range of flexible and innovative collective protection solutions combined with an intimate understanding of the sectors we serve and full engineering support services, allows us to effectively support our clients' work at height challenges offering robust, compliant, and cost effective Edge protection and access solutions, Combisafe products bring with them not just reassurance, reliability and a much higher level of containment than traditional systems, but the added benefit of comprehensive engineering support and on-site training in the safe and successful management of fall protection and prevention.

Benefits

- **Safety and Compliance.** All Combisafe systems offer full compliance with relevant legislation including EN 13374 and the Work at Height Regulations Higher level of containment to EN 13374 Class C and beyond
- **Quality.** Combisafe systems are robust and durable, making them ideal for the timescales and physical demands of large-scale civil engineering work.
- **Reduced need to work at height.** Edge protection systems are attached at ground level and lifted into place, driving down exposure of workers to risk.
- **Reduced installation times.** Faster, easier installation speeds up overall progress of project.
- **Reduced labour costs.** Installation by suitably competent person rather than qualified scaffolders. Quick to disassemble without specialist skills onsite.
- **Flexibility.** Basic component sets can be used in a wide variety of applications.
- **Design and installation support.** Full layout design service and engineering support to ensure complete integration of edge protection into project operations.
- **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 products are all used extensively in civil engineering projects, allowing for a broad range of solutions across every kind of project and building method:

- **Steel Mesh Barrier (SMB)** The benchmark for edge protection for over 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** Optional guardrail solution designed for use with our standard edge protection. Offers the facility to work through the edge protection for cladding operations'.
- **Hanging Platform** The Combisafe Hanging Platform offers a modular, quickly installed, working platform, that can be fixed around the outer perimeter of structures without the need to restrict the area below.
- **Site Stairway** Manufactured in steel with a durable galvanised finish, the stairways come in six lengths and can be joined and supported to offer a single run of up to 7.5m. Suitable for embankments, access into excavations and between floors.

SAFETY AND EASE OF INSTALLATION



All Combisafe systems are designed to minimise risk and drive down the requirement for work at height by allowing as much pre-assembly as possible at ground level.



Extensive range of attachments meets the needs of most Civil Engineering projects.



Bridge beam and edge protection lifted into position as a single unit.



Site Stairway gives quick and safe access on embankments, into excavations, or between floors.

Attachments

Below are the three attachments from the Combisafe range most commonly used in civils 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.



Multi Foot

Secure three point anchor attachment for safety posts. Used to fix edge protection to insitu or precast concrete slabs using mechanical anchors or cast in anchor points for reduced on-site labour costs.



Multi Clamp

Versatile attachment covering a wide range of applications. Can be used horizontally or vertically over thicknesses ranging from 20mm to 500mm. A Maxi version is available for slabs/up-stands up to 1m.



Verti Clamp

Adjustable for different beam sizes and ideal for small beams, up-stands or sheet piling.

| Product Name | *Reference | Product Name | *Reference |
|----------------------|------------|---------------------------|------------|
| Bridge Parapet Plate | 5 | Stair Attachment | 19 |
| Precast Attachment | 9 | Timber Beam Attachment | 22 |
| Flexi Attachment | 11 | Verti Clamp | 23 |
| Multi Clamp | 14 | Variable Angle Attachment | 24 |
| Multi Foot | 15 | Welded Socket | 27 |
| Slab Edge Bracket | 18 | | |

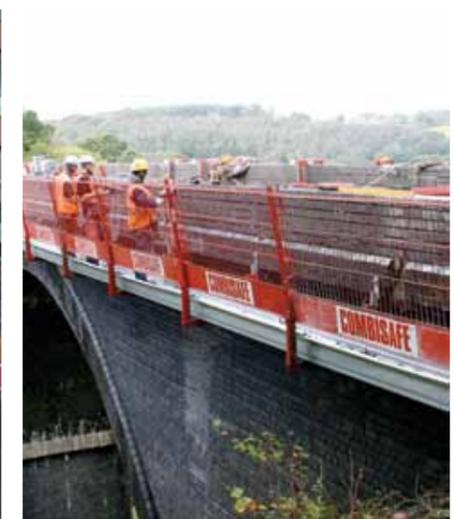
* See attachments guide for full details



Versatility of Multi Clamp demonstrated on temporary dam



Verti Clamp combined with Steel Mesh Barriers to prevent people and debris from falling into open excavations



Hanging Platform offers a modular, quickly installed working platform at height

CASE STUDIES

Pont de la Caille



Project: Pont de la Caille, Allonzier-La-Caille, France

Client: Le conseil Général de Haute Savoie

Contractor: DV Construction and VSL, Bouygues Construction France

Products: Steel Mesh Barriers S-System, Steel Mesh Barrier Make-up, Posts and Site Stairways

The 150m high bridge Pont de la Caille that joins Cruseilles to Allonzier-La-Caille was renovated in 2010. During renovation, a collective fall prevention system was required which was quick and easy to erect and could withstand high wind loads, and contain debris. The contractors DV Construction and VSL used over 200 Steel Mesh Barriers, Steel Mesh Barrier Make-up, Safety Posts and Site Stairways for the edge protection of this project. Completed at the end of 2011.

Testimonial

“With a total height of 150m, a special edge protection was needed for this project. The modular system from Combisafe proved to be the best solution. By using the Steel Mesh Barriers we were able to protect our workers along the edge of the bridge as well as block the visibility of the deep valley underneath, which made them feel much safer; especially in phase 1 while working on the decking of the bridge. “

(José Guimaraes, Site Manager, DV Construction)

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.

Combisafe designers use the very latest system modeling software from leading developers in the field, including the

StruCad 3D structural steel detailing and information management system, state of the art building information modeling products by Tekla and AutoCad.

Legislation and Compliance

All Combisafe edge protection systems are designed to comply with the European Standard for Edge Protection EN 13374, and with the UK Work at Height Regulations 2005, which require those responsible for site safety to minimise the requirement for work at height wherever possible.

Markets

Combisafe edge protection is used in a wide variety of large-scale civil engineering and infrastructure projects in a broad range of sectors including:

- Airports
- Energy
- Road and rail
- Water treatment
- Waste management
- Earthworks