ZIP CLIP EXTREME INNOVATIONS FROM ZIP-CLIP

GOMAC .ie Cable Suspension Systems

FIRE ZC150 SS SYSTEM

The ZC150 SS system is purpose-designed for the construction of wire rope suspensions with proven resistance to fire.

The ZC150 SS locking device is manufactured utilising metal injection moulding (MIM) technology to produce a robust, one-piece stainless steel body to house two opposing sintered steel locking wedges and tool-free adjustment pin mechanisms synonymous with Zip-Clip.

The wedges themselves are manufactured from a specific grade of sintered steel chosen for its enhanced toughness and durability in wide-ranging application areas and conditions.

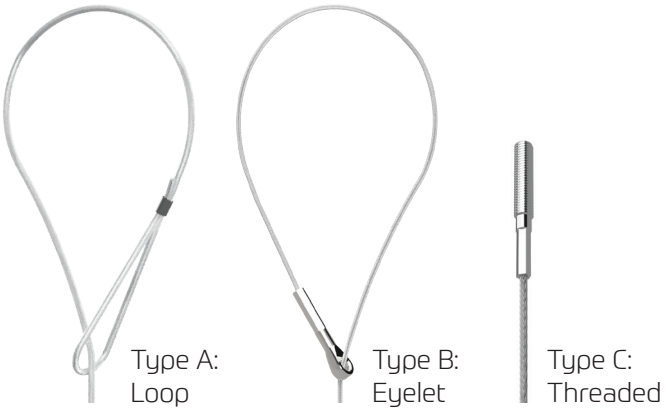
The ZC150 SS system utilises stainless steel wire rope with 1×19 construction for optimum performance in fire environments and can be used to construct trapeze brackets or single-drop suspensions.

Pre-determined drop lengths of 1 m to 10 m are available as standard with three termination options:

- Machine-swaged loop with stainless steel ferrule (Type **ZC150 SS A**)
- Pressed eyelet (Type **ZC150 SS B**)
- Pressed M8 male thread (**Type ZC150 SS C**)

Each drop uses, and is supplied with, a single ZC150 SS locking device.

Alternatively, to produce custom drop lengths, ZC150 SS devices can be used at the top and bottom of a suspension to attach to a suitable anchor point and to attach to the desired fixture or fitting.



Type A: Loop

Type B: Eyelet

Type C: Threaded

The nature of fire has a dramatic effect on all forms of suspension and it is important to understand that the capability of any suspension system decreases when exposed to fire.

FEATURES

- 90 kg safe working load in ambient conditions plus a designed-in safety factor.
- Tested to support loads to 45 kg for up to 60 minutes in fire environments (see load table).
- Tested under BEAMA fire curve – to 650 °C for 1 hour.
- 18th Edition Amendment 2:2022 compliant.
- Suitable for all types of containment compatible with wire rope suspension systems.
- Tool-free release mechanism on each locking device for easy adjustment.
- Only wire rope cutters are required for installation.

APPLICATIONS ... INCLUDE BUT NOT LIMITED TO

- Trapeze brackets.
- Electrical containment.
- Trunking and busbar supports.
- Lighting supports.
- HVAC and mechanical services.
- Signage and display, screens and partitions.
- Acoustic and radiant heat panels.
- Installations above fire escapes.

MATERIALS

ZC150 SS Locking Device:
Metal injection moulded stainless steel body housing internal stainless steel springs and sintered steel locking wedges.

Wire Rope:
316 stainless steel wire rope with 1×19 construction.

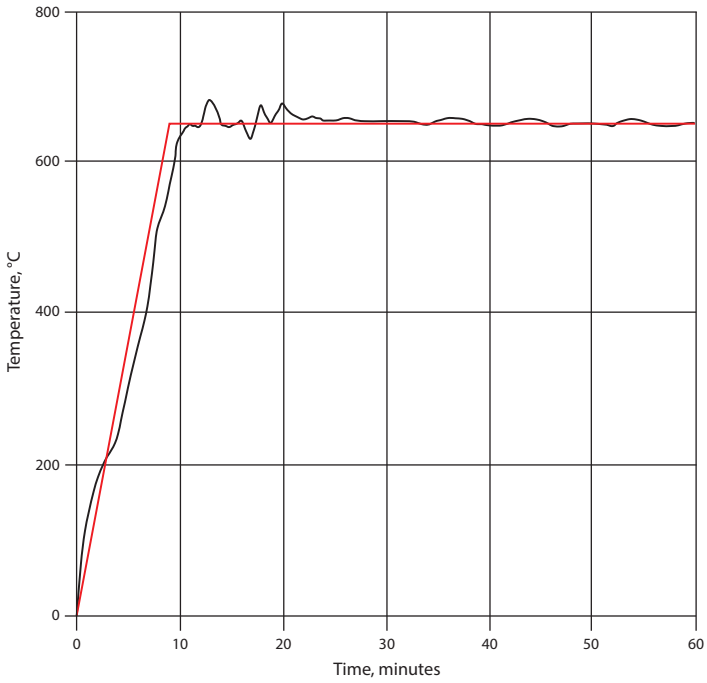
Terminations:

Loop: Formed with a stainless steel ferrule.

Eyelet and Threaded: Manufactured from steel, zinc plated with a clear passivate trivalent finish.

TESTING

The ZC150 SS system has undergone fire capability testing at Warrington Fire Laboratory UK to the BEAMA Fire Test Curve – to 650 °C for 1 hour.



Terminations Tested: Machine-Swaged Loop, Pressed Eyelet, Pressed Male Thread (M8), ZC150 SS Top and Bottom			
LOAD (kg)	**TIME (min)**	**TEMP (°C)**	**TEST RESULT**
20	60	650	Passed
30	60	650	Passed
45	60	650	Passed
650 °C test temperature was reached in 9 minutes as per the BEAMA fire curve and then the temperature was held for 60 minutes. All loads indicated are per wire suspension.			

Further information on the BEAMA testing regime and outcomes of extended testing carried out by Zip-Clip are available by contacting our Technical Team.

Note: Installations built with exact fire performance in mind must utilise the SWL for fire and use the correct amount of support necessary to hold loads safely.

FIRE TESTED VS. FIRE RATED – A CRITICAL DISTINCTION

The terms ***"fire tested"*** and ***"fire rated"*** are often, and incorrectly, used interchangeably. A system that is "fire tested" has been subjected to fire exposure under specific conditions, yet without an agreed-upon standard, the results of such tests cannot assign a true "fire rating" to the product. A fire rating implies that the product meets or exceeds a specific fire resistance standard that can be universally referenced and trusted. At the time of releasing this datasheet (November 2024) no unified standard exists.

Until such a standard is established, BEAMA's 650°C, 1-hour testing regime stands as the most reliable and realistic measure of the fire performance of a building services suspension system and for this reason it was used to evaluate the performance of all Zip-Clip fire solutions.

The regime was developed by BEAMA, and a working group of leading industry suppliers and experts, in close collaboration with the London Fire Brigade – The exposure duration of 1-hour mirrors the average response time for a fire engine to reach an incident in the UK, and the temperature represents the threshold beyond which even specialised emergency services equipment cannot be safely deployed.

When tested the Zip-Clip ZC150 SS system exceeded these provisional standards, providing the construction sector with a proven fire solution that prioritises safety and anticipates the needs of an evolving regulatory landscape.

Current Fire Standards and Their Limitations

The standards currently referenced for fire performance testing in construction, such as BS476:20, BS EN 1363-1:2012, and DIN 4102 Part 2, do not specifically cover suspension systems for building services. Each standard addresses fire resistance requirements for building materials and components but falls short of applying directly to the unique challenges posed by electrical containment suspension, HVAC suspension, and similar systems.

The BS476:20 1987 standard, for instance, outlines fire resistance testing for building materials, and subjects components to temperatures reaching over 1,000°C. While effective for structural elements, this temperature curve is considered excessive and impractical for suspension systems, which are neither designed nor expected to withstand such extreme conditions. The BEAMA fire test protocol, on the other hand, reflects real-life scenarios, prioritising safety while remaining within achievable parameters for suspension system materials.

INSTALLATION

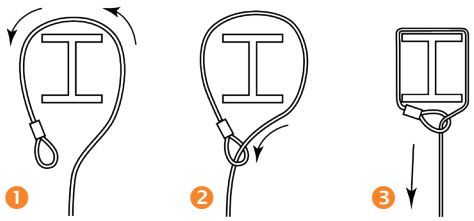
- The first step for the installation process is to attach the wire rope support to a suitable anchor point.
- The second step in the installation process is to fit the Zip-Clip locking device.

LOOP AND PRESSED EYELET INSTALLATION

STEP 1:

Use the loop or eyelet termination to form a choke knot around around the anchor point.

1. Pass the end of the wire rope over the chosen anchor point.
2. Take the loop or eyelet end termination and pass the end of the wire rope through the loop or eyelet.
3. Pull the choke knot tight and position so the wire rope passes vertically down through the loop or eyelet.



Note:
Installers must make sure that the selected anchor points are suitable to take the intended wire rope suspension load, as well as confirming that the anchor point is strong enough to accept a choke knot.

Suitable anchor points include:
Cold rolled steel, e.g. purlins; Hot rolled steel, e.g. I-beams, circular hollow steel, hollow box steel; Concrete pillars or beams; Profile channel bracketry.

Protection can be added to the fixing point to protect the base material from the wire rope and also to protect the wire rope from the base material, e.g. where the wire rope passes over/around edges.

PRESSED M8 MALE THREAD INSTALLATION

Note:
M8 male thread termination supplied to be linked with metric female threads only.

- Always follow the fixing manufacturer's instructions for installation.
- Always ensure fixing is compatible with the M8 threaded termination.
- Always ensure the base material is adequate for the fixing and the intended load.
- Always ensure that M8 threaded termination is correctly coupled to a service.

THREAD FIXING OPTIONS:

Concrete

Couple thread with a BS 8539-approved drop-in anchor.

Profile Channel

Couple with an appropriate channel nut/nut/washer/ square washer.

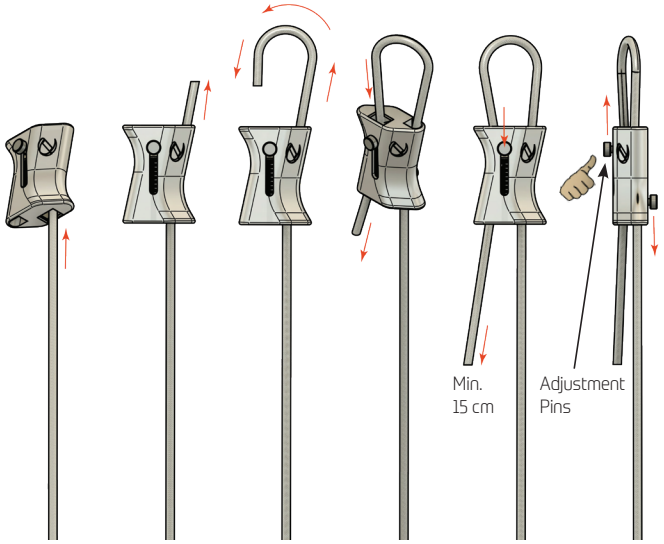
Into a through hole

Clamp in place using the appropriate number of nuts and washers.

Note:
All variants of the ZC150 SS system can be installed inverted, i.e. with loop, eyelet or thread at the top or bottom of the suspension and the Zip-Clip locking device at the top.

LOCKING DEVICE INSTALLATION

- Pass wire rope through the Zip-Clip device entering through one of the rectangular holes.
- Loop wire rope through or around the anchor point.
- Pass the wire rope back through the Zip-Clip device until a minimum of 15 cm of wire rope protrudes (exit tail).
- Apply tension.
- Confirm engagement of the Zip-Clip device on the wire rope by pushing the adjustment pins towards the ends of the device.



Note:
To produce custom drop lengths, ZC150 SS devices can be used at the top and bottom of a suspension to attach to a suitable anchor point and to attach to the desired fixture or fitting.

ADJUSTMENT

Note:
Before any adjustments can be made, it is necessary to take the weight off the Zip-Clip device. It will not be possible to make any adjustments if this is not done.

To shorten the suspension:

1. Push the Zip-Clip device further up the live (load) wire rope – This will make the loop bigger.
2. Pull on the dead wire rope (exit tail) to make the loop smaller – This will shorten the suspension.
3. Trim the dead wire rope tail to a minimum of 15 cm or coil the wire rope neatly to allow for future adjustment.

To lengthen the suspension:

1. Select the channel that holds the dead wire rope.
2. Make sure there is enough spare dead wire rope to allow for adjustment and maintain a minimum 15 cm exit tail.
3. Push the adjustment pin to release the wedge and the dead wire rope (exit tail).
4. Allow the dead wire rope to feed back through the Zip-Clip making the loop bigger.
5. Select the channel that holds the live wire rope (load).
6. Push the adjustment pin to release the wedge and live wire rope.
7. Allow the Zip-Clip to travel down the live wire rope making the loop smaller.

MANUFACTURERS RECOMMENDATIONS

The Zip-Clip system is designed to support STATIC loads only. Dynamic and shock loads must be avoided as they can greatly increase the overall weight of the product being suspended and therefore compromise the Safe Working Load of a suspension. Always take into account the nature of the installation process.

To ensure the integrity and safety of the system only Zip-Clip wire should be used.

- Do not exceed the Safe Working Load (SWL) of the product.
- Do not use locking devices with a coated wire rope.
- Do not paint or apply any other coating.
- Do not lubricate.
- Do not use for lifting applications.
- Remove any frayed cable before inserting it into the locking devices.
- Do not shock load.
- Do not overload.
- Do not use for dynamic loads/ installations.
- Do not mix Zip-Clip systems with other wire suspension manufacturers' products.

Note:
Safe Working Loads indicated are for loads supported vertically. Contact Zip-Clip to discuss the effect on safe working load when a system is installed at an angle from vertical.

It took two decades and two hundred million words to convince people that the Golden Gate suspension bridge was feasible.
Joseph Strauss, Chief Engineer