SUSPENSION
SOLUTION DATASHEET

FIRE STRUT-LOCK

DESIGNED FOR STATIC LOADS THAT ARE SUPPORTED VERTICALLY

THE FIRE STRUT-LOCK is designed to build wire rope suspensions that have resistance to fire.

Fire Strut-Lock utilises stainless steel wire rope which offers optimum performance in fire environments. It can be used to construct single or multi-tiered trapeze bracketry. The male thread of the Fire Strut-Lock can also be coupled with other components such as 90 degree brackets to attach the wire support to other forms of services.

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.
- Supports loads up to 120 minutes (see load table).
- Secure lock-off.
- All metal construction – no plastic parts.
- Identification label.
- Compatible with channel nut or nut and washer (metric).
- Compatible with standard 41×41 and 41×21 profile channels plus other channel types when compatible channel nuts are used.
- 18th Edition Amendment 2 : 2022 compliant.

APPLICATIONS ... INCLUDE BUT NOT LIMITED TO

- Installations to Edition 18 of the electrical wiring regulations.
- Single-tier and multi-tier trapeze brackets.
- Electrical and mechanical containment suspension.
- HVAC installations/ductwork suspension.
- Signage and displays.
- Installations above fire escape routes.

TESTING

FIRE STRUT-LOCK has been subjected to testing for the following:

Tensile strength: Conducted by SATRA Technologies UK using UKAS calibrated instruments.

Fire Capability: Conducted by BRE Global UK to British Standard.

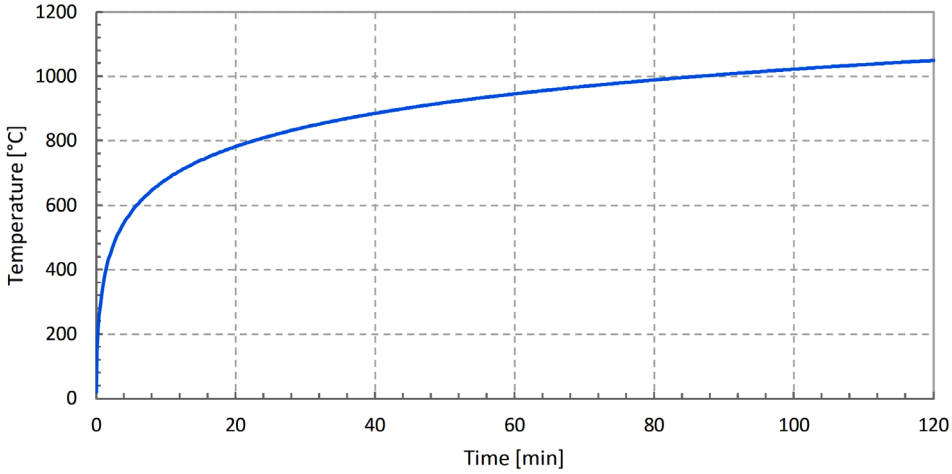
STANDARDS FOR FIRE TESTING

Standard fire exposure in accordance with:

BS476:20 1987 Fire tests on building materials and structures - Part 20: Method for the determination of the fire resistance of elements of construction (general principles), BSI, London, 1987.

BS EN 13631:2012 Fire resistance tests – Part 1: General requirements, BSI, London 2012.

DIN 4102 Part 2 Fire behaviour of Building Materials and Components, Building components, Definitions, Requirements and Tests, Deutsche, Berlin, September 1977.



Standard Fire Curve (BS476:20 1987)

The standard fire curve is described by the following equation:

$$\theta_g = 345 \cdot \log_{10}(8t + 1) + \theta_0$$

Where: θ_g is gas temperature (°C), t is time (minutes).

FIRE PERFORMANCE LOADINGS

Safe Working Load (SWL) per wire suspension is 90 kg in ambient temperatures.

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

EYELET:		
LOAD (kg)	TIME (min)	TEMP (°C)
30	30	842
15	60	945
10	90	1006
10	120	1049
MALE THREAD:		
LOAD (kg)	TIME (min)	TEMP (°C)
40	30	842
18	60	945
10	90	1006
10	120	1049
Note: Loads are per wire suspension.		

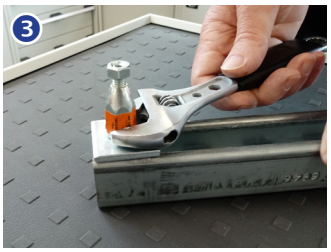
INSTALLATION PROCESS

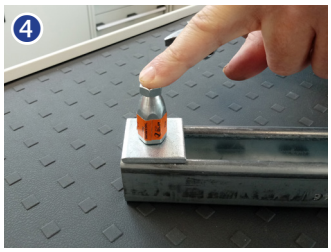
Locating a Strut-Lock Device Into Channel – Building a Single-tier Trapeze Bracket:

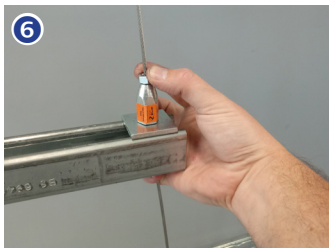
1. Couple with square washer and channel nut.
2. Position assembly into desired channel location.
3. Tighten into position using a 17 mm spanner. Turn clockwise.
4. Back-off the locking collar. Do not undo fully. Depress plunger.
5. Insert wire rope through the plunger at the top of the device.
6. Adjust the position by depressing the plunger and moving along on the wire.
7. Once the trapeze bracket is in position, release the plunger and wind the locking collar up to the shoulder.
8. Lock the trapeze position by turning the locking collar 1.5 turns only using a 13 mm spanner, turning clockwise.

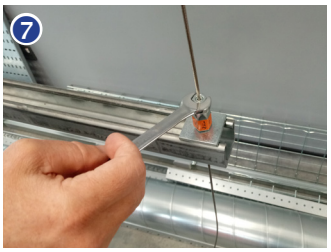
Repeat steps 1 - 8 to build a multi-tier bracket.

PLEASE NOTE:
Always ensure the load is supported before actuating the plunger to perform adjustment.



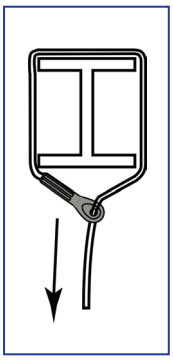




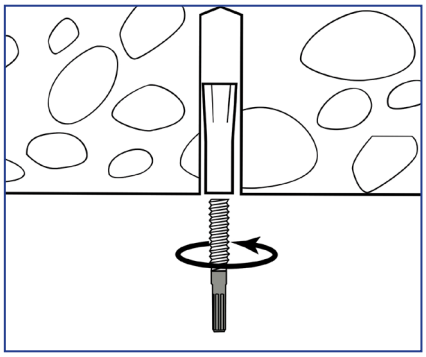


AVAILABLE TERMINATIONS

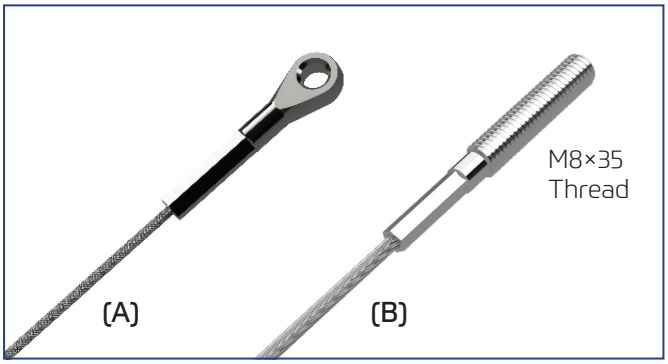
- Pressed eyelet - to form choke knot (A).
- Pressed male thread - M8 (B).



(A)



(B)



MATERIALS

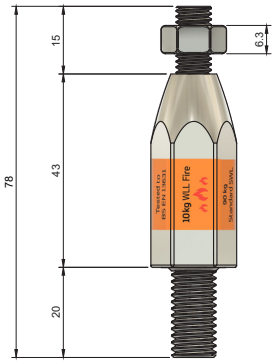
Fire Strut-Lock:

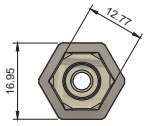
Mild steel with bright zinc plate finish.

Wire Rope:

- Diameter: 3.0 mm.
- Material: 316 stainless steel.
- Construction: 1×19.
- 1 metre to 10 metre standard lengths.

DIMENSIONS OF THE LOCKING DEVICE





- Total device length: 80.0 mm.
- Main body width: 20.0 mm.
- Main body length: 43.0 mm.
- Locking nut: M8 nut requiring 13 mm spanner.
- Plunger length: 15.0 mm.
- Male thread diameter: M10.
- Male thread length: 20.0 mm.

MANUFACTURERS RECOMMENDATIONS

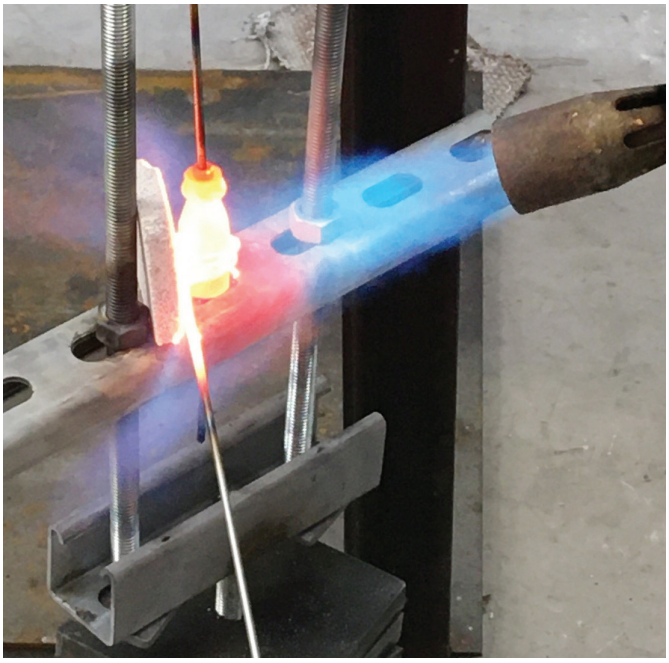
The SUFIX Fire Strut-Lock system is designed to support **STATIC loads only**.

Dynamic and shock loads must be avoided and can greatly increase the overall weight of the product being suspended and therefore compromise the Safe Working Load of the suspension. Always take into account the nature of the install process. Beware of dynamic or shock loading.

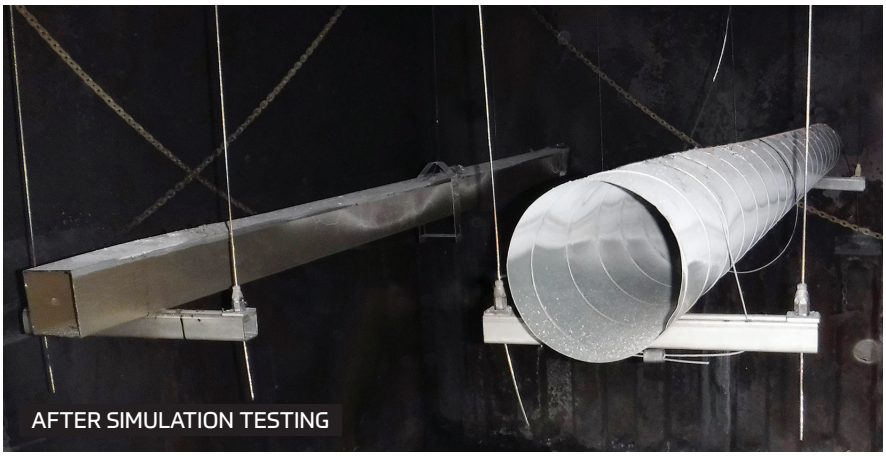
To ensure integrity and safety of the system only SUFIX wire should be used.

- Do not exceed the Safe Working Load (SWL) of the product.
- Do not use for angled wire supports.
- Do not use locking devices with a coated cable.
- Do not paint or apply any other coating.
- Do not lubricate.
- Do not use for lifting applications.
- Remove any frayed cable prior to inserting into the locking devices.
- Do not shock load.
- Do not use for dynamic loads/installations.
- Do not overload.
- Do not mix SUFIX systems with other wire suspension manufacturers products.
- Do not use in corrosive environments, e.g. chlorinated environments.
- Do not use a drill or impact driver to tighten.

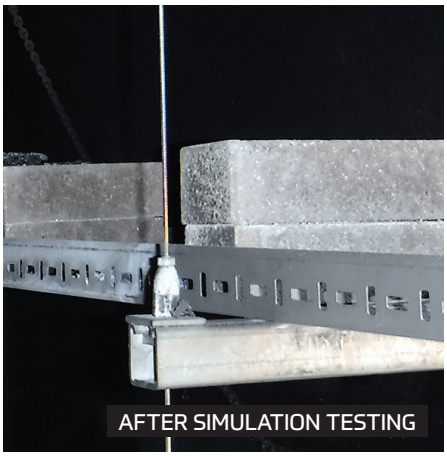
For specialist applications, such as corrosive environments, please contact SUFIX Technical Department.



Images illustrating additional Non-British Standard (BS) in-house and third-party testing of SUFIX solutions.



AFTER SIMULATION TESTING



AFTER SIMULATION TESTING

For further information on SUFIX Tel +44 (0) 1372 370 084

E-mail: leatherhead@masltd.com