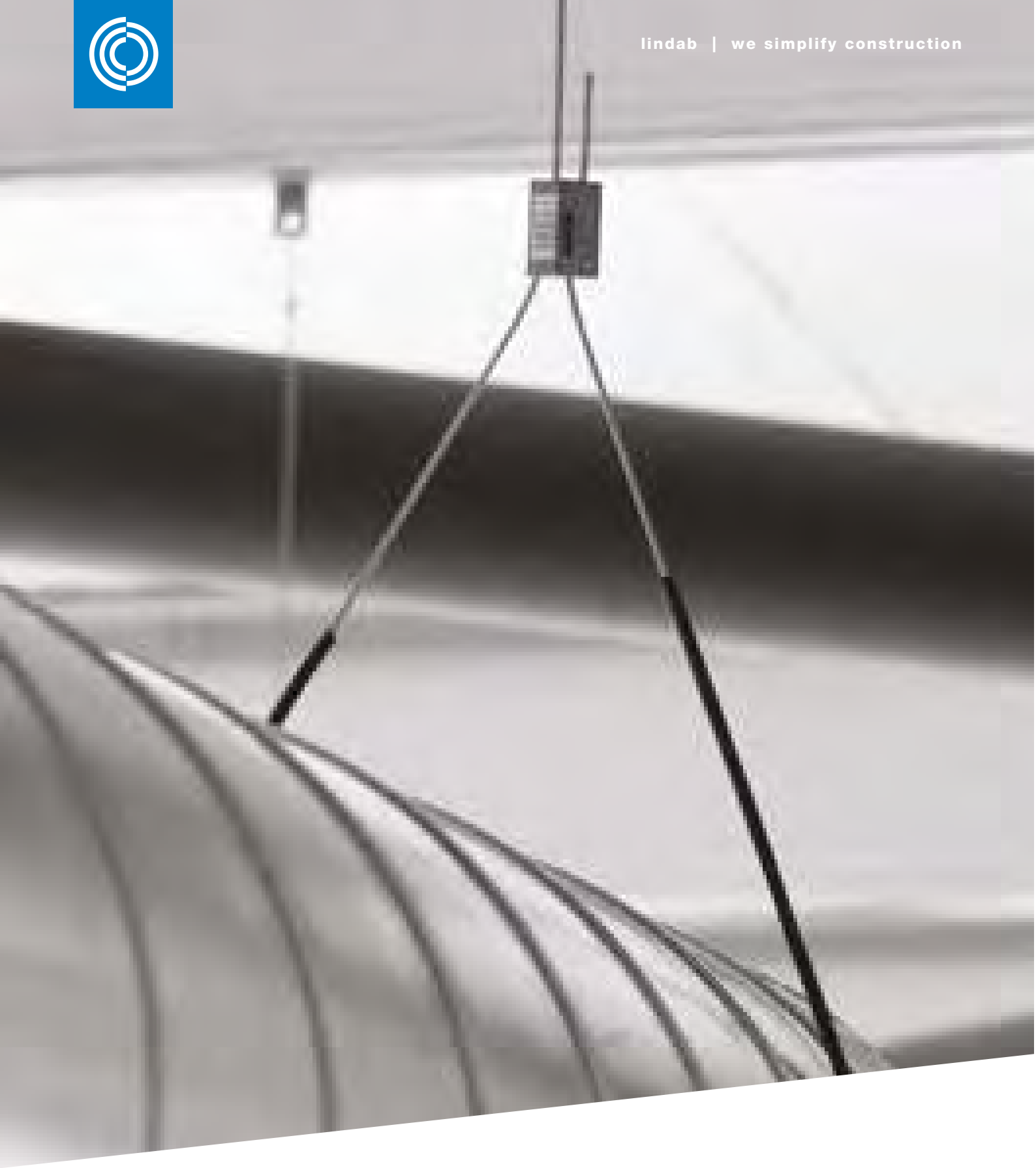


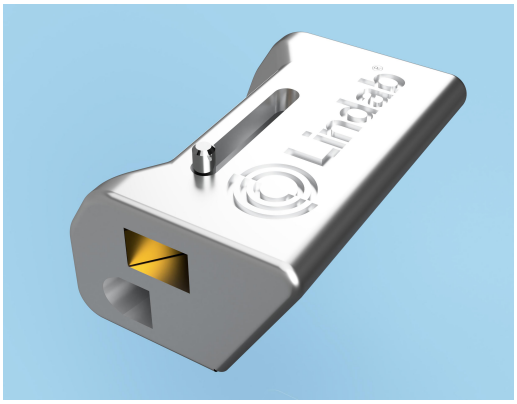
# Lindab **Tecwire**

Wire Suspension System

Lindab®

# About Tecwire

High-spec wire suspension systems for all your HVAC, electrical, and mechanical requirements.



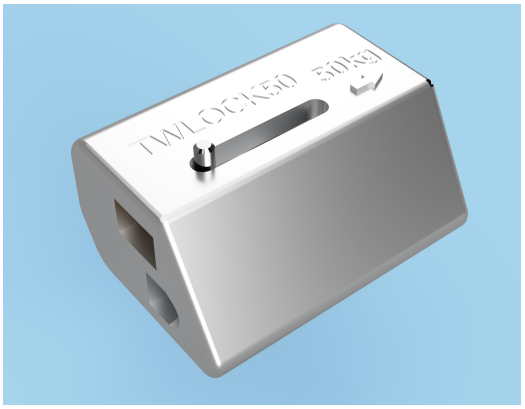

# Tecwire Locks

A Tecwire lock is a device that allows you to join a wire rope to a desired fixing or anchor point. The lock is manufactured from a high quality zinc alloy. The oil impregnated sintered metal wedge is designed to offer the best locking solution. The stainless steel spring ensures the wedge engages first time. The galvanised high tensile wire rope supplied offers you a better SWL than those found on the market. All our engineered suspension products are designed with quality and safety in mind.


# Testing

Tecwire products are independently tested by TUV, MELBTEST, SATRA, Lloyds British, NATA and Apave and all clips are UL certificated.

For copies of our test certificates please contact our offices.




sales@lindab.co.uk

## What are the advantages of using a Tecwire system?

Using a wire rope suspension system provides many advantages:

- Key free release system – No tools required for height adjustment
- Device can be placed directly above the ductwork with no decrease in performance
- Easier to transport
- 100 metre coil is equivalent to 30 x 3 metre lengths of threaded rod
- Easier to handle
- Cold cut, no hot work permit required
- Vibration reduction
- Reduced labour cost
- Reduced risk of injury
- Aesthetics – Low visual impact
- Reduces individual components (i.e. nuts, washers, square plates, rod...)
- Reduces impact on the environment – Less embodied carbon

## Where can I use a wire system?

### HVAC AND MECHANICAL

- Spiral Ducting
- Rectangular Ducting
- Flat Oval Ducting
- Radiant Heat Panels
- Fan Coil Units
- Chilled Beams
- Gas Pipes / Water Pipes
- Bracing
- Pre-Insulated Ductwork
- Spiralite
- Koolduct
- Containment
- Plenum Boxes

## Manufacturers Recommendations

The unique Tecwire system is designed to support static loads only. Dynamic and shock loadings can greatly increase the overall weight of the product being suspended and therefore can compromise the Safe Working Load of the suspension.

- To ensure integrity and safety of the systems only Tecwire cable should be used
- Do not exceed the Safe Working Load of the product
- Do not use coated cable
- Do not paint or apply any other coating
- Do not apply lubricant
- Do not use for lifting
- Remove any frayed cable end prior to inserting into the clip
- Do not shock load
- Do not overload
- Do not use in a corrosive environment *
- Do not use in a chlorinated environment *
- Do not use for dynamic loads/installations

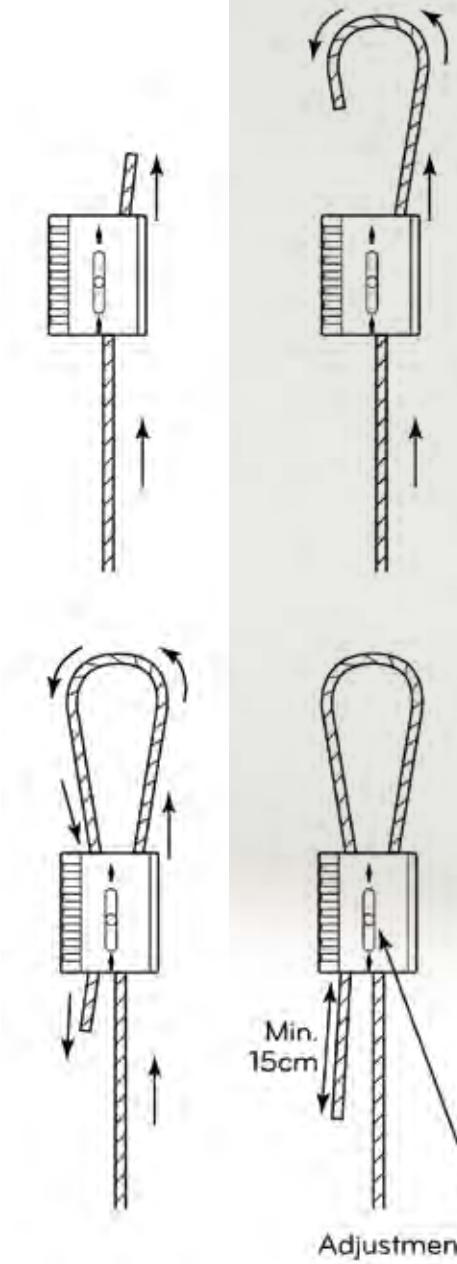
All stated Safe Working Loads and certifications are based on the product being used in conjunction with our high tensile Tecwire.

Lindab are not able to guarantee the Safe Working Load of a product used with a non-compatible wire and cannot support projects where the compatible Tecwire has been used.

*For specialist applications such as corrosive environments, please contact our technical department

# How it works

- Pass the Tecwire through the Tecwire lock
- Loop the wire through or around the anchor point
- Pass the wire back through the lock allowing 15cm of wire protruding
- Apply tension
- Always confirm engagement of the lock on the wire by pushing the pin in the opposite direction of the arrows indicated on the lock.
- To adjust, take the load off the wire support and pull the tail slightly to disengage the wedge, then release using the adjustment pin – no tools required




## In all cases Lindab recommends that installations of supports follow guidelines laid down in DW 144 Specification for Sheet Metal Ductwork

With special reference to sections titled “Arrangement of bearers and hangers” Lindab recommends following industry standards with regards to the regularity of supports, as well as the exact arrangement of the support in relation to the application. In all cases it is the responsibility of the installer to ensure that industry standards are met and followed.

Tecwire supports are used as an alternative means of suspension to traditional threaded rod systems.

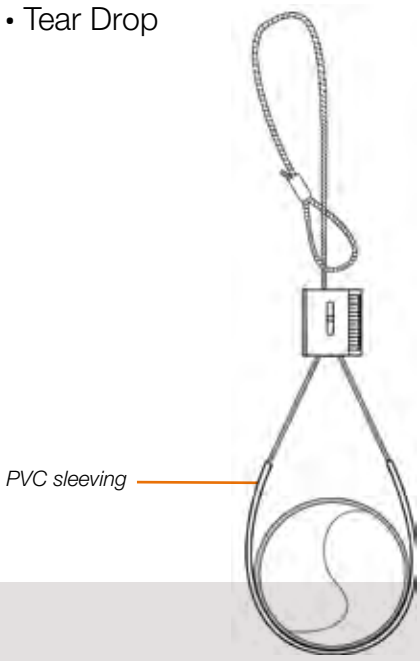
Tecwire suspensions should only be used for static installations. Some HVAC applications will by nature be subjected to dynamic loads.

sales@lindab.co.uk

# Spiral Ductwork Solutions

## Method of Suspension:

• Tear Drop




**To support spiral ductwork up to 315mm diameter:**

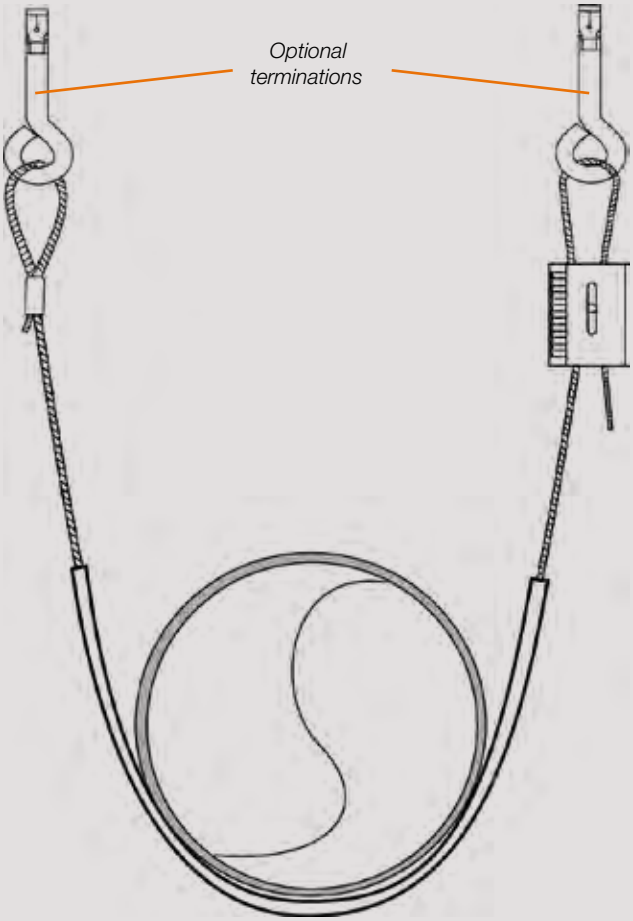
- Optional termination methods, as with rectangular duct options
- Use our systems to select a suspension supporting loads from 45kg – 500kg
- PVC Sleeving, used to create a condensation barrier, protecting both the ductwork and the wire
- Follow DW144 with regard to fixing centres & maximum duct size for support arrangement

## Method of Suspension:

• Cradle

To support larger spiral ductwork, up to 2000mm diameter:

- Optional termination methods, as with rectangular duct options
- Use an additional fixing to assemble the cradle and connect the wire suspension
- Use our systems to select a suspension supporting loads from 45kg – 500kg
- PVC Sleeving, used to create a condensation barrier, protecting both the ductwork and the wire
- Follow DW144 with regard to fixing centres & maximum duct size for support arrangement

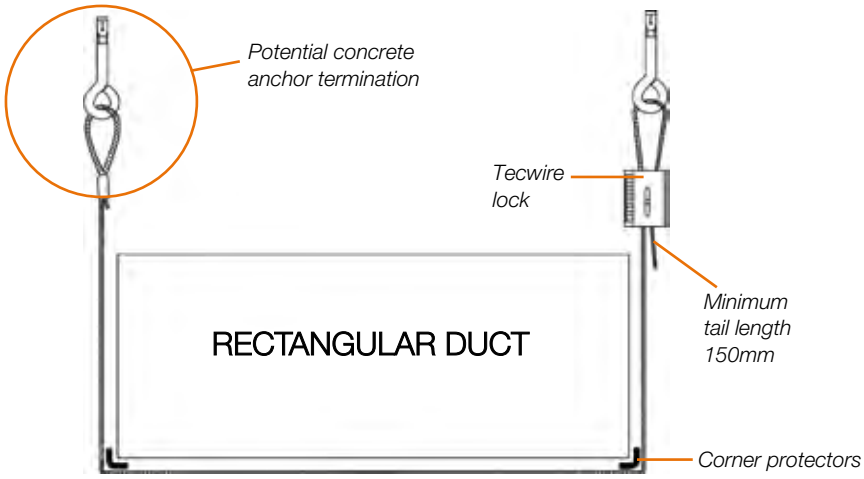


# Rectangular Ductwork Solutions

## Method of Suspension:

- Cradle

1. Anchor wire to ceiling.
2. Drop down wire and run underneath ductwork.
3. Run wire up to the ceiling and install a lock onto wire.
4. Install an additional fixing and connect to this with the zip-clip locking device.
5. Position corner saddles where wire passes over corners of ductwork.
6. Ensure exit tail from the locking device is 150mm minimum.




### In-Line Joint

Due to the unique way in which a Tecwire lock is manufactured, an “In-Line Joint” can also be utilised to create a suspension.

This method involves joining together 2 free ends of wire using a Tecwire lock.

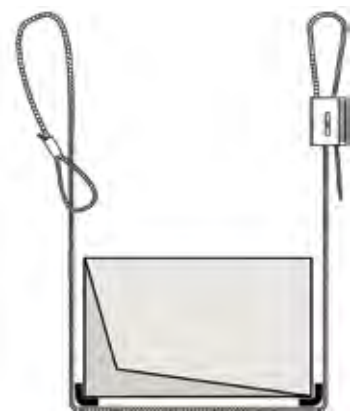
**To support rectangular ductwork using the cradle method, there are a range of termination options to suit various substrates and steelwork:**

### Tecwire Loop System

Designed to produce a choke knot around your chosen anchor position.

### Tecwire Concrete System

Designed to fix a wire suspension to cracked & none cracked concrete ceilings.



sales@lindab.co.uk

# Attaching to Bracketry

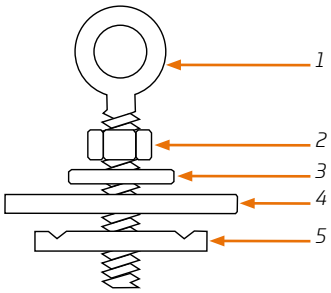
It is recommended that profile channel be used to support the weight of services. Other supporting bracketry is available such as angled steel. Installers must make sure that the supporting steel is fit for purpose.

## Method of Suspension:

• Eyebolt

This method gives a secure & smooth point of attachment for the wire suspension.

1. Eyebolt
2. Hex Nut
3. Washer
4. Square Plate Washer
5. Channel Nut

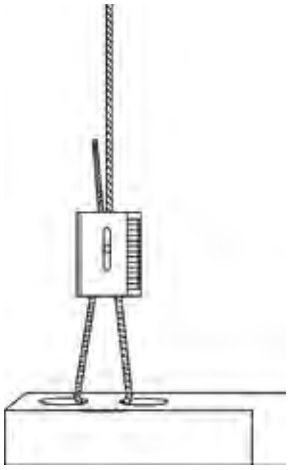


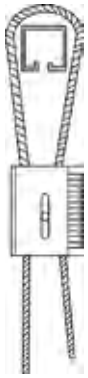

## Method of Suspension:

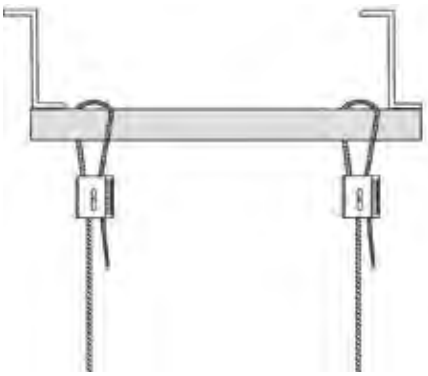
• Looping the bracketry

This method involves using the zip-clip to directly loop through an existing hole in the profile channel or bracket.

Installers must make sure the holes drilled into in the bracketry have been de-burred, and do not cause any abrasion to the wire support. The size of the hole must not affect the strength of the bracket or be too close to any edges.







# Tecwire & Tecwire Lock System



## Specification

The range consists of Tecwire reels and Tecwire locks with a choice of Safe Working Loads:

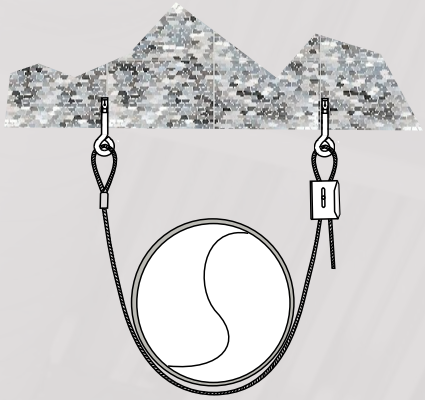
- Type 2  50kg SWL
- Type 3 120kg SWL

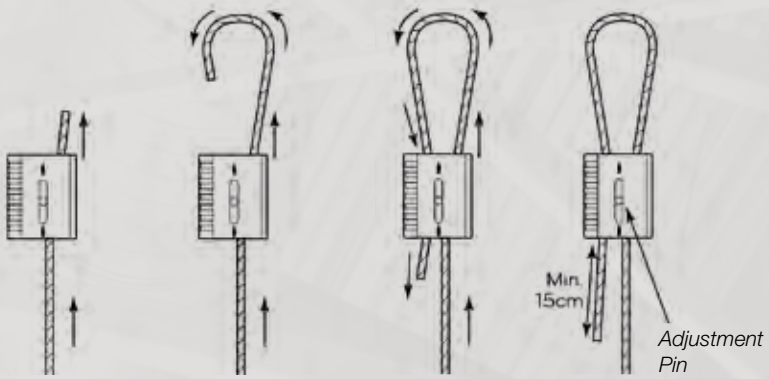
## Applications

- Wrap around applications
- Galvanised ductwork: spiral, rectangular, flat oval
- Pre-insulated ductwork
- Plenum boxes
- Suitable for use with a wide range of fixing brackets
- Trapeze brackets

## Suitable for:

- Tear drop suspensions
- Cradle suspensions
- Trapeze brackets
- Long suspensions
- Roof spaces with varied drop lengths
- Ideal for tight void spaces






## Features & Benefits

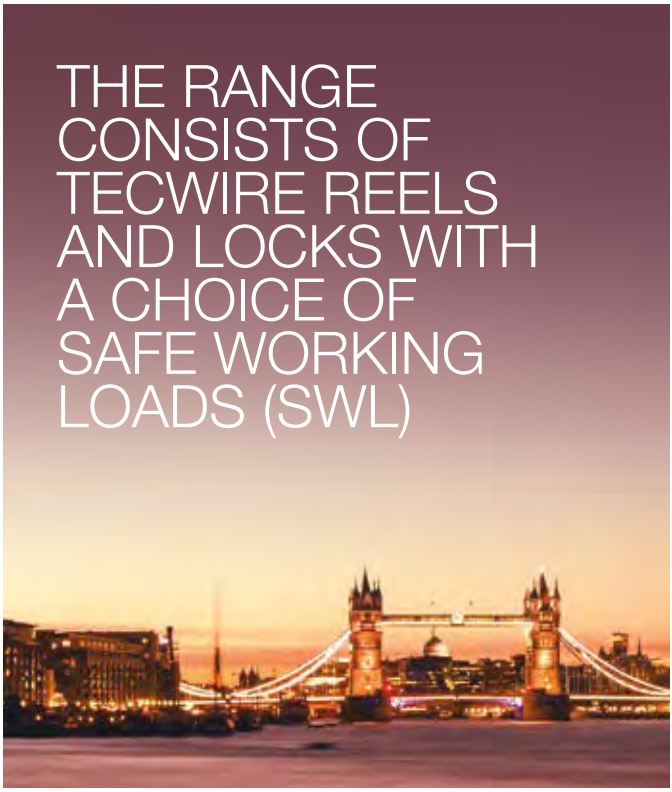
- Key free release system
- No pre-site visits required
- Any spare material can be used on following projects
- Only wire cutter required
- Can be used as a wrap around application and with a wide range of brackets
- Wire supplied in dispensing box – avoiding risk of wire bird nesting

sales@lindab.co.uk

| CODE | DESCRIPTION | SWL | QTY |
|---|---|---|---|
| TWLOCK | Tecwire Locks 2mm Housing | 50kg | 50 |
| TWWIRE | Tecwire 2mm x 100M Wire Spool | 50kg | 1 |
| TWVHS | Tecwire Kit ( 50 x locks, 1 x 100m wire reel) | 50kg | 1 |

## Installation

- Cut wire to desired length for the drop required
- Pass one end of the wire through the lock in the direction of the arrow and draw through enough wire to go around your fixing point
- Pass the wire end back through the lock leaving at least 15cm of free wire protruding
- At the other end again pass the wire through the lock in the direction of the arrow
- Pass the free end of wire around your suspension or through your fixing and back through the lock leaving 15cm of wire protruding
- Always confirm engagement of the lock on the wire by pushing the pin in the opposite direction to the arrows indicated



# Tecwire Loop System

## Suitable for:

- Tear drop suspensions
- Cradle suspensions
- Steel framed buildings

## Specification

The range consists of a pre-determined length of wire from 1 metre to 10 metres with a choice of Safe Working Load:

- Type 2 50kg SWL
- Type 3 90kg SWL

The system consists of wire with a ferruled loop termination and a lock.

## Applications

Suitable for wrap around applications including:

- Beams
- Purlins
- Roof trusses
- All other existing features

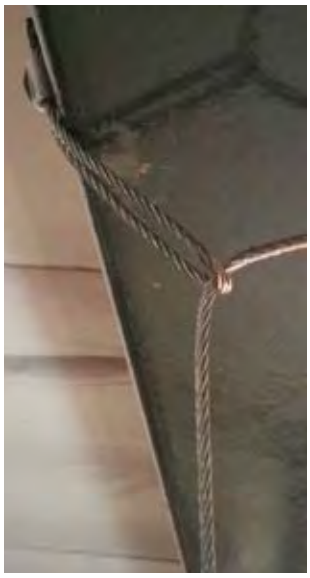
## Features & Benefits

- Key free release system
- Simple to use
- Suspension can be inverted
- High tensile galvanised wire 1960N/mm$^2$ grade 7 x 7 construction
- BSEN 12385 standard

## Installation

- Pass the wire around the purlin or beam
- Pass the free end of the wire through the loop
- Pass the wire through the lock in the direction of the arrow
- Pass through or around the required suspension and back through the lock leaving 15cm of wire protruding
- Always confirm engagement of the lock on the wire by pushing the pin in the opposite direction to the arrows indicated

| CODE | DESCRIPTION | SWL | PACK QTY |
|---|---|---|---|
| TWLOOP21 | 1 Mtr standard loop suspension system | 50kg | 10 |
| TWLOOP22 | 2 Mtr standard loop suspension system | 50kg | 10 |
| TWLOOP23 | 3 Mtr standard loop suspension system | 50kg | 10 |
| TWLOOP24 | 4 Mtr standard loop suspension system | 50kg | 10 |
| TWLOOP25 | 5 Mtr standard loop suspension system | 50kg | 10 |
| TWLOOP210 | 10 Mtr standard loop suspension system | 50kg | 10 |
| TWLOOP31 | 1 Mtr standard loop suspension system | 90kg | 10 |
| TWLOOP32 | 2 Mtr standard loop suspension system | 90kg | 10 |
| TWLOOP33 | 3 Mtr standard loop suspension system | 90kg | 10 |
| TWLOOP34 | 4 Mtr standard loop suspension system | 90kg | 10 |
| TWLOOP35 | 5 Mtr standard loop suspension system | 90kg | 5 |
| TWLOOP310 | 10 Mtr standard loop suspension system | 90kg | 5 |



# Tecwire Concrete System

## BS8539 COMPLIANT

## Specification

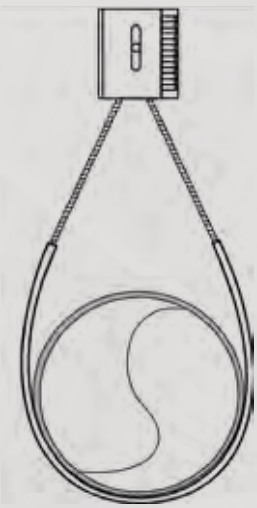
The range consists of a pre-determined length of wire from 1 metre to 10 metres with a choice of Safe Working Load:

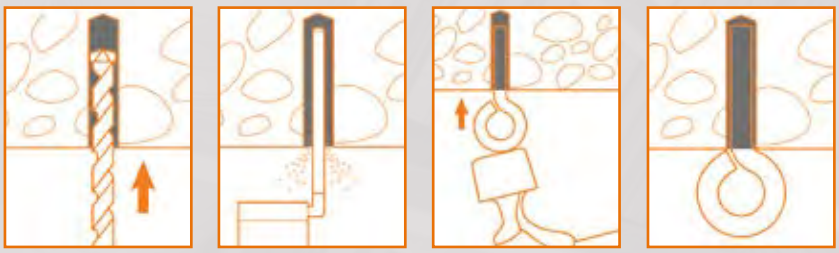
- Type 2 50kg

The system consists of wire and lock with a concrete anchor termination.

## Suitable for:

- Tear drop suspensions
- Cradle suspensions
- Concrete ceilings





## Applications

Suitable for concrete applications including:

- Cracked and non-cracked concrete
- Reinforced concrete
- Slagged concrete
- Hollow pot

## Features & Benefits

- Key free release system
- No claw back required
- Nail anchor for hammer set installation
- The installed nail anchor expands automatically under load, pulls the cone into the expansion sleeve and expands against the wall of the concrete
- Can also be supplied with a double drop
- Shallow embedment
- ETA approved
- BS8539 Compliant
- High tensile galvanised wire 1960 N/mm$^2$ grade 7 x 7 construction
- BSEN 12385 standard

## The Installation

- Drill a 6mm hole to a minimum depth of 30mm
- Blow the hole clean of dust and debris
- Hammer in the fixing
- Anchor is now fixed, no claw back required
- Pass the wire through the lock in the direction of the arrow
- Pass through or around your required suspension and back through the lock leaving 15cm of wire protruding
- Always confirm engagement of the lock on the wire by pushing the pin in the opposite direction to the arrows indicated

| CODE | DESCRIPTION | SWL | QTY |
|---|---|---|---|
| TWCONLK21 | 1 Mtr concrete suspension system | 50kg | 10 |
| TWCONLK22 | 2 Mtr concrete suspension system | 50kg | 10 |
| TWCONLK23 | 3 Mtr concrete suspension system | 50kg | 10 |
| TWCONLK24 | 4 Mtr concrete suspension system | 50kg | 10 |
| TWCONLK25 | 5 Mtr concrete suspension system | 50kg | 10 |

# Tecwire Anchor System

## Specification

The range consists of a pre-determined length of wire from 1 metre to 10 metres with a choice of Safe Working Load:

- Type 2 35kg SWL

The system consists of wire and lock device with a ferruled vibration-resistant concrete anchor termination.

## Applications

Suitable for lightweight concrete applications including:

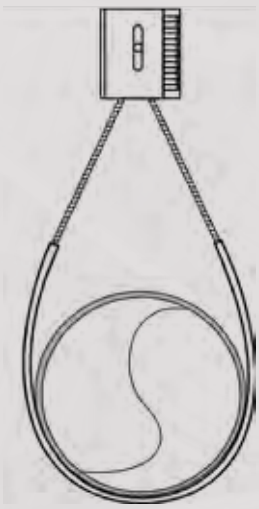
- Radiant heat panels and chilled beams
- Solid brick
- Compressive resistant stone
- Reinforced concrete
- Slagged concrete C15/C35

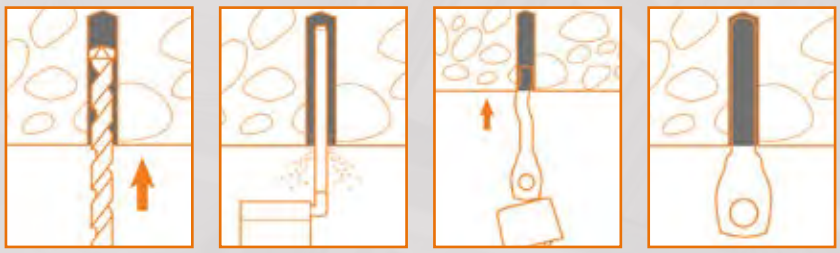
## Features & Benefits

- Key free release system
- Vibration resistant
- Zinc plated pre-expanded through bolt
- 30mm long
- 5mm wide
- 6mm head width
- 30mm embedment depth
- 5mm drill diameter required
- High tensile galvanised wire 1960N/mm$^2$ grade 7 x 7 construction
- BSEN 12385 standard

## Suitable for:

- Tear drop suspensions
- Cradle suspensions
- Concrete ceilings

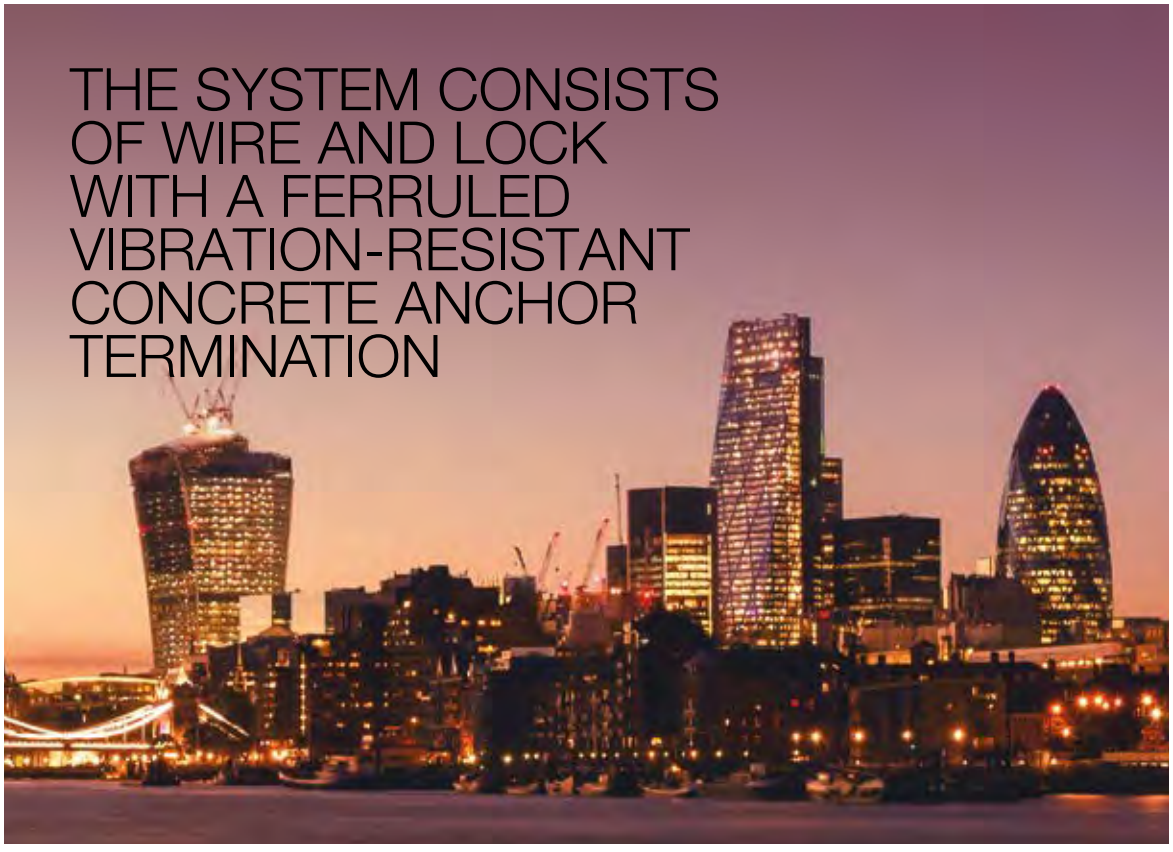




## The Installation

- Drill a 5mm hole to a minimum depth of 30mm
- Blow the hole clean of dust and debris
- Drive the anchor into the hole until the head is firmly seated against the base material. Be sure the anchor is driven to the required embedment depth
- Pass the wire through the lock in the direction of the arrow
- Pass through or around your required suspension and back through the lockleaving 15cm of wire protruding
- Always confirm engagement of the lock on the wire by pushing the pin in the opposite direction to the arrows indicated

| CODE | DESCRIPTION | SWL | PACK QTY |
|---|---|---|---|
| TWA23 | 3 Mtr standard concrete suspension system | 35kg | 10 |




# Accessories

| CODE | DESCRIPTION | PACK QTY |
|---|---|---|
| TWCUT1 | Heavy Duty Wire Cutters | 1 |
| TWCORNER | Corner Protector | 50 |
| TWEYE | M6 x 20mm Universal Eyebolt with Flange Nut | 10 |
| TWPVC | PVC 100M Reel x 3mm O | 1 |

# Specifications

## TECWIRE LOCKS

### PHYSICAL PROPERTIES

| | |
|---|---|
| Density | 6,700kg/m3 at 21°C |
| Solidification Shrinkage | 1.17% |
| Casting Shrinkage | 0.6% (pressure diecasts) |
| Freezing Range | -381 to -387°C |
| Melting Point | 400 to 420°C |
| Specific Heat Capacity | 418.1 J/kg/°C at 20 to 100°C |
| Thermal Expansion | 27 10 (-6) linear per °C at 20 to 100°C |
| Thermal Conductivity | 108.9 W/m/hr/m2/°C at 70 to 140°C |
| Electrical Conductivity | 26% IACS |
| Electrical Resistivity | 6.5359 um ohm cm at 20°C |

### MECHANICAL PROPERTIES

| | As Cast | Aged |
|---|---|---|
| Tensile Strength (MPa) | 328 | 269 |
| Shear Strength (MPa) | 262 | - |
| Elongation (% in 51mm) | 7 | 13 |
| Hardness (Brinell – 500kg) | 91 | 80 |
| Impact Strength (Energy, Joules) | 65.1 | 54.2 |
| Fatigue Strength 5 x 10 cycles (MPa) | 56.5 | - |

### TYPICAL ANALYSIS – ALLOYING ELEMENTS

| | |
|---|---|
| Aluminium | 4% |
| Copper | 1% |
| Magnesium | 0.05% |

### TYPICAL ANALYSIS – IMPURITIES

| | |
|---|---|
| Iron | < 0.01% |
| Lead | < 0.003% |
| Cadmium | 0.003% |
| Tin | < 0.001% |
| Nickel | < 0.001% |
| Silicon | < 0.01% |

# WIRE ROPE

## Galvanised wire

| WIRE CODE | MBL OF WIRE | CONSTRUCTION | TENSILE STRENGTH |
|---|---|---|---|
| Type 2 | 290kg | 7x7 (6/1) RHRL | 1960N/mm² |
| Type 3 | 645kg | 7x7 (6/1) RHRL | 1960N/mm² |

## Angular Performance

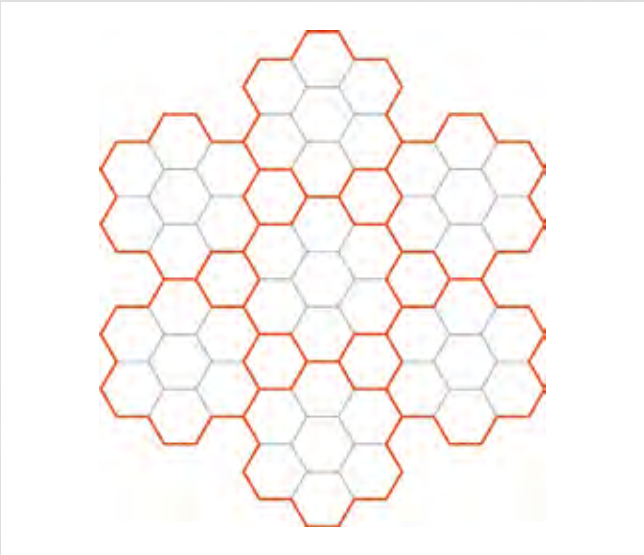
The table below shows the effect on the Safe Working Load when working at an angle from the vertical

| WIRE CODE | VERTICAL | 15° | 30° | 45° | 60° |
|---|---|---|---|---|---|
| Type 2 | 50kg | 48kg | 43kg | 35kg | 25kg |
| Type 3 | 120kg | 115.2kg | 103.2kg | 84kg | 60kg |
| LOAD | 100% | 96% | 86% | 70% | 50% |

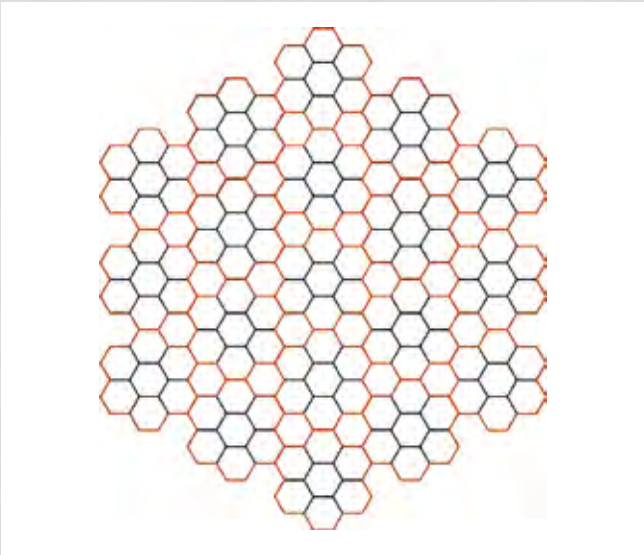
The high tensile wire we supply is galvanised and manufactured to the highest standards incorporating a 7 x 7 and 7 x 19 construction, meeting the BSEN 12385 standard.

BSMA 29/1983 standard also meeting the AISI 3136 requirements

The diagram below shows the construction of the 7x7 wire braids



The diagram below shows the construction of the 7 x 19 wire braids



# Good Thinking

**At Lindab**, good thinking is a philosophy that guides us in everything we do. We have made it our mission to create a healthy indoor climate – and to simplify the construction of sustainable buildings. We do that by designing innovative products and solutions that are easy to use, as well as offering efficient availability and logistics. We are also working on ways to reduce our impact on our environment and climate. We do that by developing methods to produce our solutions using a minimum of energy and natural resources, and by reducing negative effects on the environment. We use steel in our products. It's one of few materials that can be recycled an infinite number of times without losing any of its properties. That means less carbon emissions in nature and less energy wasted.

**We simplify construction**

**Lindab Ltd**
Lindab Ventilation Branches

| | | | | | |
|---|---|---|---|---|---|
| Aberdeen | 01224 708582 | Exeter | 01626 835032 | Manchester | 0161 876 0688 |
| Basildon | 01268 532016 | Gateshead | 0191 482 5995 | Norwich | 01603 747532 |
| Belfast | 02890 781607 | Glasgow | 0141 419 3800 | Nottingham | 0115 985 1923 |
| Birmingham | 0121 552 6100 | High Wycombe | 01494 463490 | Sheffield | 0114 244 5444 |
| Bristol | 0117 977 1345 | Kent | 01474 579800 | Southampton | 02380 262111 |
| Cardiff | 02920 794503 | Leeds | 0113 297 1111 | Stoke-on-Trent | 01782 383460 |
| Croydon | 0208 603 0850 | Leicester | 0116 255 6044 | | |
| Enfield | 0208 805 3656 | Lincoln | 01522 567087 | | |

**Email:** sales@lindab.co.uk
**Web:** lindab.co.uk
**Eshop:** lindab.co.uk/eshop



Lindab®
www.lindab.co.uk