

# Game Changing Solutions for Solar Remedial Works







# Product Led, People Powered

Established in 1989, we are the original innovators and manufacturers of wire joining and tensioning devices, as well as anchoring, bracing and suspension systems that have changed the game for many industries.

With our innovative, engineered solutions, we’re helping customers in industries including solar, civil, utilities, and construction to overcome their toughest daily challenges, achieving their goals faster and easier.

We are no ordinary business. We do almost everything differently.

100% owned by our employees, we’re also committed to changing the game by making a positive impact in our communities around the world. We’re a force for good, as certified by B Corp.

# Change the Game

**1 - 100% employee owned**  
Our empowering employee ownership model means everyone has skin in the game. Success for our global customers means success for us. We are all shareholders, inspired to design, manufacture, and deliver better solutions.

**2 - Game changing innovators**  
Our vision is to engineer game changing products and systems that make a difference for more global customers. To keep us on track, we hold ourselves accountable to deliver a fifth of all sales from new innovations.

**3 - Helping customers do more with less**  
We solve customers’ real-world problems with simplified engineered solutions. Whatever the application, our innovations deliver efficient, sustainable solutions that have a positive impact on global customers’ routine tasks.

**4 - Vertically integrated**  
As an award-winning global manufacturer, we create finished Gripple solutions from components we produce in-house, on machinery we design and build ourselves. We’re a trusted partner for our customers, able to deliver quality, reliability, and value.

**5 - A force for good**  
It’s the Gripple way to do business differently. Not just to deliver profit, but to share the benefits of global sustainable growth with our customers, communities, and employee-owners. As a certified B Corp, we meet the highest standards of social and environmental performance.

# Contents

Vertically Integrated Manufacturing	4
Changing the Game in 85 Countries Worldwide	5
Game Changing Solutions for Solar Remedial Works	6
PV Racking Structural Issues	8
Compromised Foundations	10
Remedial Cable Management	12
Our Products – Solar Bracing and Anchoring Kits	14
Our Products – Direct Fix Solutions	15
Technical Support	16
Gripple Technology	18



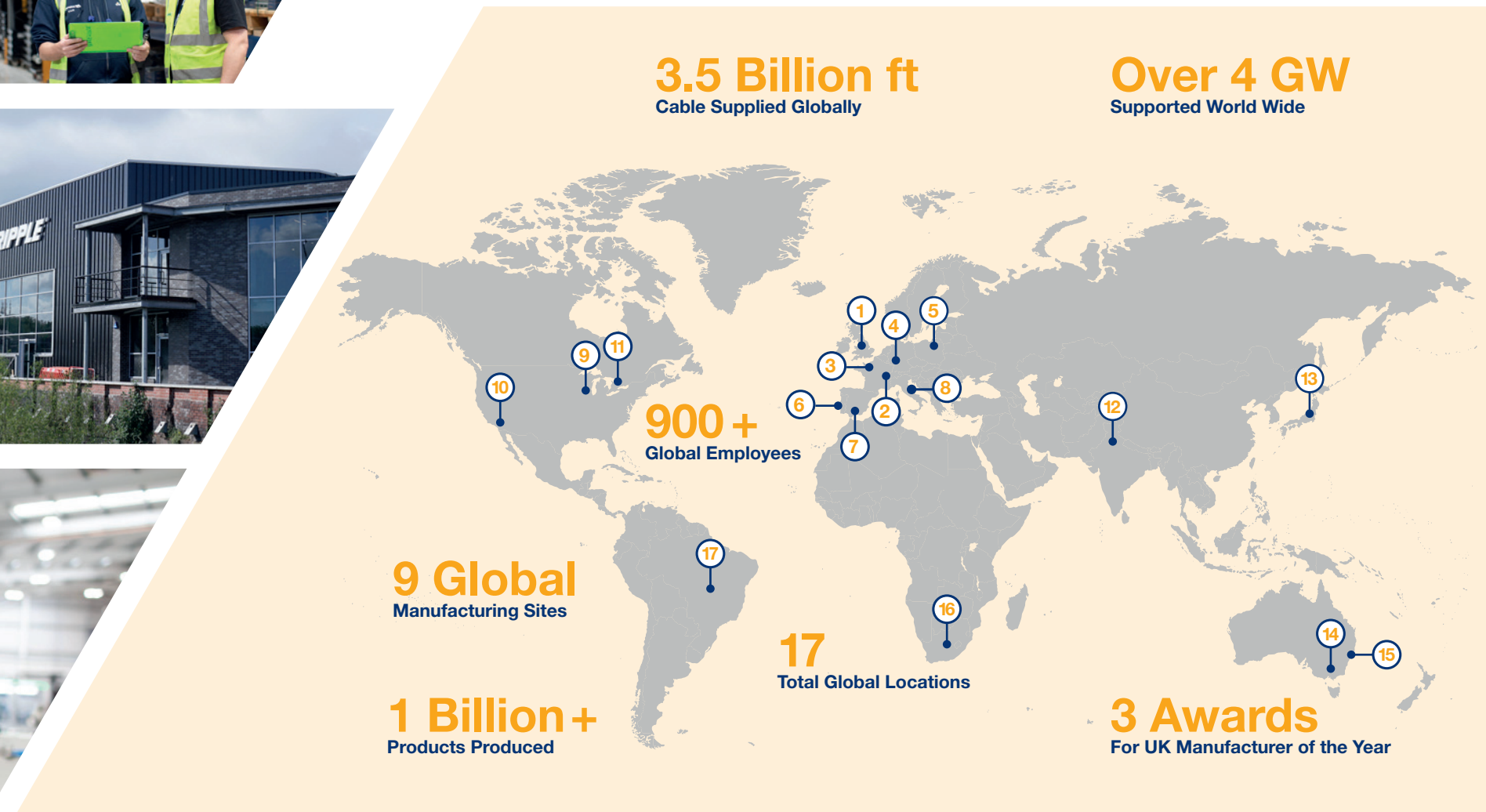


## Vertically Integrated Manufacturing

An award-winning manufacturer, we create finished Gripple solutions from components we also produce in-house. Our vertically integrated operations produce our own die castings, injection moulded components, steel pressings and wire accessories. We even design and build our own automated manufacturing machinery!

Through ways of working including lean manufacturing and just-in time inventory management we ensure streamlined processes and maximum value delivery. Our employee-owners are empowered to identify opportunities for continuous improvement, which result in greater efficiencies, better quality and improved customer satisfaction.

Continual investment in our manufacturing and supply chain means we're a trusted partner for our customers, able to consistently deliver quality, reliability, and value.



## Changing the Game in 85 Countries Worldwide

Our global manufacturing and distribution footprint has been designed to deliver our innovative Gripple solutions, on-time, to over **8,000 customers**, at more than **16,000 drop points** in **85 countries** worldwide. Over **900 employee-owners** around the globe, in every one of our sites is united by this commitment to our customers. Some of our original customers have become partners in Europe, Asia, and Oceania, to strengthen our global supply chain and deliver value for our customers.

**Gripple United Kingdom**  
1 Global Head Office – Sheffield, UK

**Gripple Europe:**  
2 Gripple Europe Head Office – Obernai, France  
3 Paris, France  
4 Aßlar, Germany  
5 Warszawa, Poland

**Europe Partners:**  
6 Gripple, Portugal  
7 Gripple, Spain  
8 Gripple, Italia

**Gripple INC:**  
9 Gripple INC Head Office – Aurora, Illinois  
10 Los Angeles, California

**Gripple Rest of the World:**  
11 Toronto, Canada  
12 New Delhi, India  
13 Kobe, Japan

**Rest of the World Partners:**  
14 Gripple Australia – Victoria  
15 Gripple Australia – Newcastle  
16 Gripple South Africa  
17 Gripple Brazil, Hartbau





## Game Changing Solutions for Solar Remedial Works

Here at Gripple our engineers have developed a range of easy to install, lightweight and robust solutions ideal for overcoming issues developed over time on utility solar sites.

Whether you need to secure foundations, address cable management issues, or add additional stability to frame structures, we have a range of cost effective, simple to use and long-lasting solutions to help.



### Direct Fix Cable Management

Quick to install and long-lasting solutions for PV cable management.



### Solar Bracing Solutions

Reinforce existing frame structures or secure failing structures with our lightweight and easy to install solar bracing kits.

### Solar Anchoring Solutions

Support existing foundations with our fast to install, lightweight and high-performance solar ground anchors.





## PV Racking Structural Issues

PV racking and supporting structures can become misaligned or structurally compromised due to external forces or installation issues.

Using our fast and easy-to-use install kits, on-site maintenance teams can quickly and efficiently overcome common racking and foundation failures.



### Minimal Downtime

Install without disruption to ongoing power generation



### Fast to Install

Reinforce compromised structures in minutes



### Lightweight

Compact for storage and transportation, whenever and wherever required



### Flexible and Versatile

One kit can be used in a range of scenarios



### High Performance

Comparable performance to heavy traditional bracing and foundations



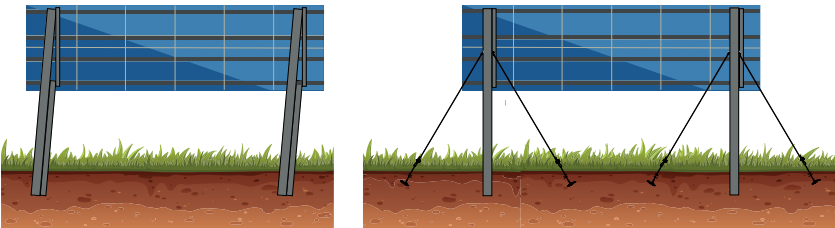
### No Heavy Equipment Needed

Install with just hand tools and minimal training

## Example Structural Scenarios

### Tilting Piles

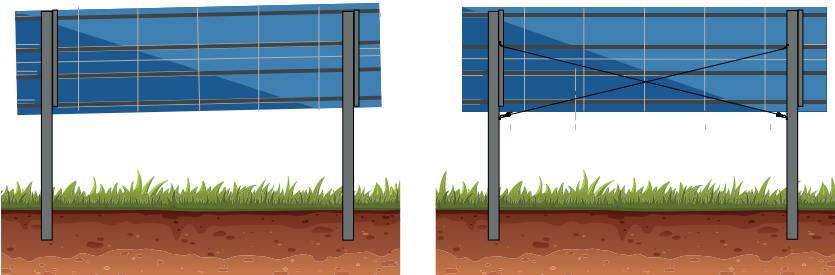
Gripple Solar Anchoring Kits can secure piles which have been realigned after tilting.



### Misaligned Pannels

Secure misaligned panels in their correct position following incorrect installation with our easy to install Solar Bracing Kits.

*Use at the start of a row as an installation guide to ensure correct alignment.*







## Compromised Foundations

Our Solar Anchoring Kits can provide additional support to compromised PV racking foundations.

Lightweight and easy to install our Solar Anchoring Kits can provide up to 2,750 kg | 6,060 lbs of additional pull-out performance to support existing failing foundations.



### Minimal Downtime

Install without disruption to ongoing power generation



### Undisruptive

Reinforce compromised foundations with minimal ground disturbance



### Easy to Handle

Lightweight kits can be carried in stock and used on-site when needed



### Flexible and Versatile

One kit can be used in a range of scenarios



### High Anchoring Performance

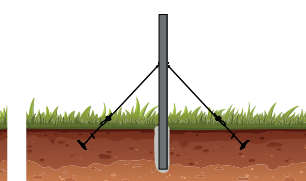
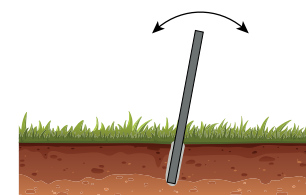
Up to 2,750 kg | 6,060 lbs depending on soil type



### No Heavy Equipment Needed

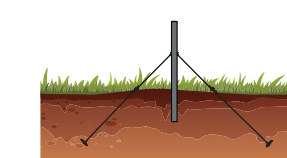
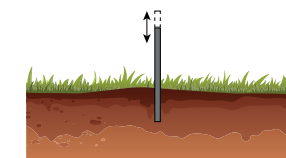
Install with just hand tools and minimal training

## Example Foundation Scenarios



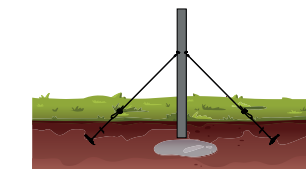
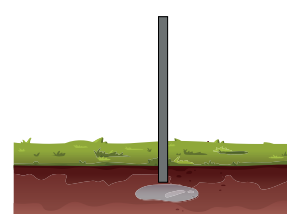
### Unsettled Piles

Ground conditions, ranging from dry and cracked to overly soft and saturated earth can affect pile performance. Our Solar Anchoring Kits can provide additional secondary anchoring, ensuring required structural performance is met.



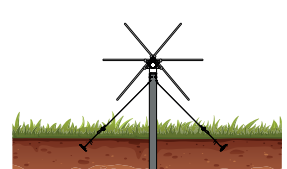
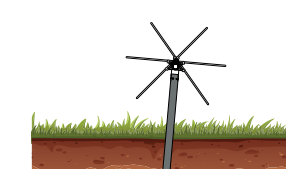
### Ground Expansion

Ground expansion can be caused by saturation or freezing ground, leading to pile uplift. Our Solar Anchoring Kits can provide additional foundation stability, helping to secure the structure in place and prevent further uplift.



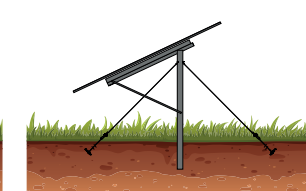
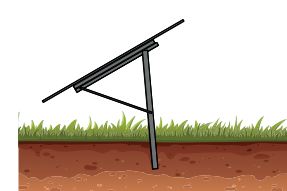
### Pile Refusals

Where pile refusals occur due to rocky or hard ground, our Solar Anchoring Kits can be quickly installed to act as a secondary foundation, helping achieve the desired performance with a shorter pile depth.



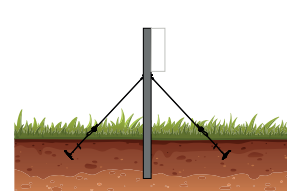
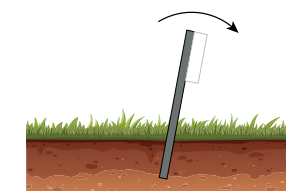
### Leaning Piles (Tracker)

Our Solar Anchoring Kits offer additional foundation support in situations where tracker piles have begun to lean out of position and need to be reinstated correctly.



### Leaning Piles (Fixed Tilt)

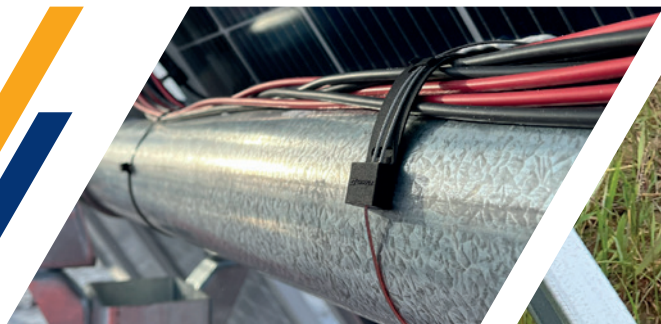
In cases where fixed tilt racking piles require realignment due to leaning, our Solar Anchoring Kits can offer added foundation stability to secure them in their correct position.



### Leaning Inverter Structures

Use our Solar Anchoring Kits to secure and stabilise inverter structures back in their correct position following re-alignment after leaning.





## Remedial Cable Management

Secure. Durable. Simple. Power-Tie changes the game in direct fix solar cable management.

Cable management is an integral part of any PV power plant, however, frequent use of lower-cost direct fix solutions, such as plastic or nylon cable ties, which are prone to failure, can lead to a range of O&M issues for remedial teams.

Exposure to UV and extreme temperatures can cause basic cable ties used on many solar sites to fail in as little as 6 months, leading to increasing replacement and O&M costs.

Our Gripple product engineers have worked with EPC's and contractors on site, to understand their challenges, developing Power-Tie as the best long-term solution for direct fix solar cable management.

Engineered for lasting performance, Power-Tie combines the robust strength of steel bands, the versatility and swift installation capabilities of cable ties, and the protection and easy access of clamps.



### Simple Install

As easy and fast as a traditional cable tie



### Reduced Replacement Costs

Designed to last 20+ years



### Use Anywhere

With 3 size options you can use on any type of structure



### High Strength

Comparable with steel banding and ties, giving you the confidence to use anywhere



### No Waste

3 size options with no need to cut excess wire on site



### Safe To Install

Tool free with no RSI risks

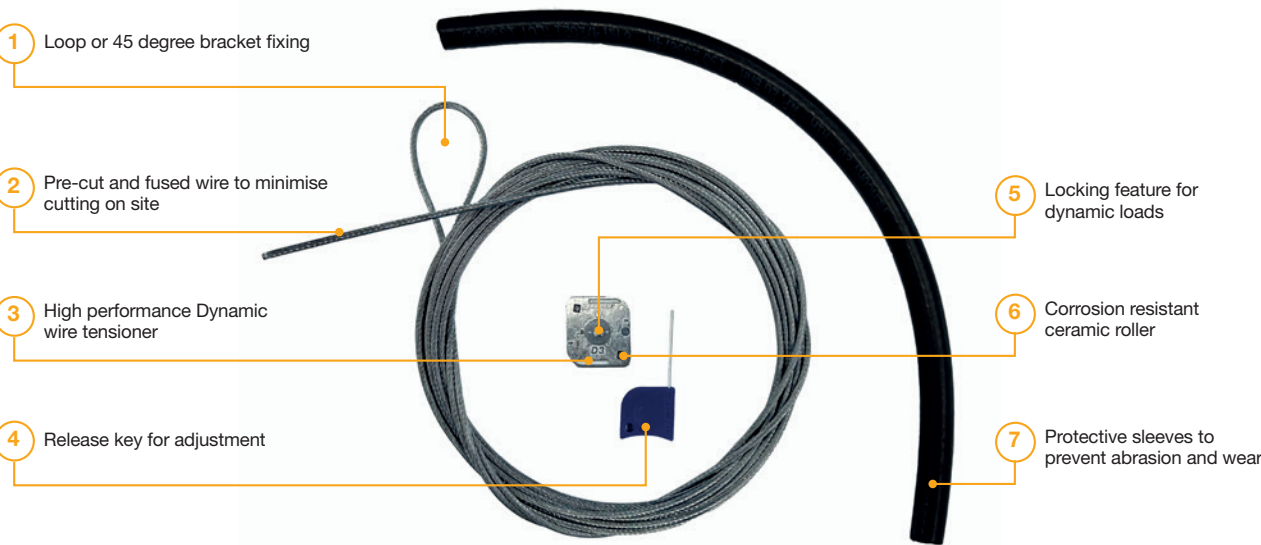


# Our Products Solar Bracing and Anchoring Kits

## Solar Bracing Kits

Our lightweight and fast to install solar frame bracing kits provide comparable structural performance to steel bracing. Wire rope kits are flexible to install in multiple scenarios on multiple frame sizes making them ideal for remedial works.

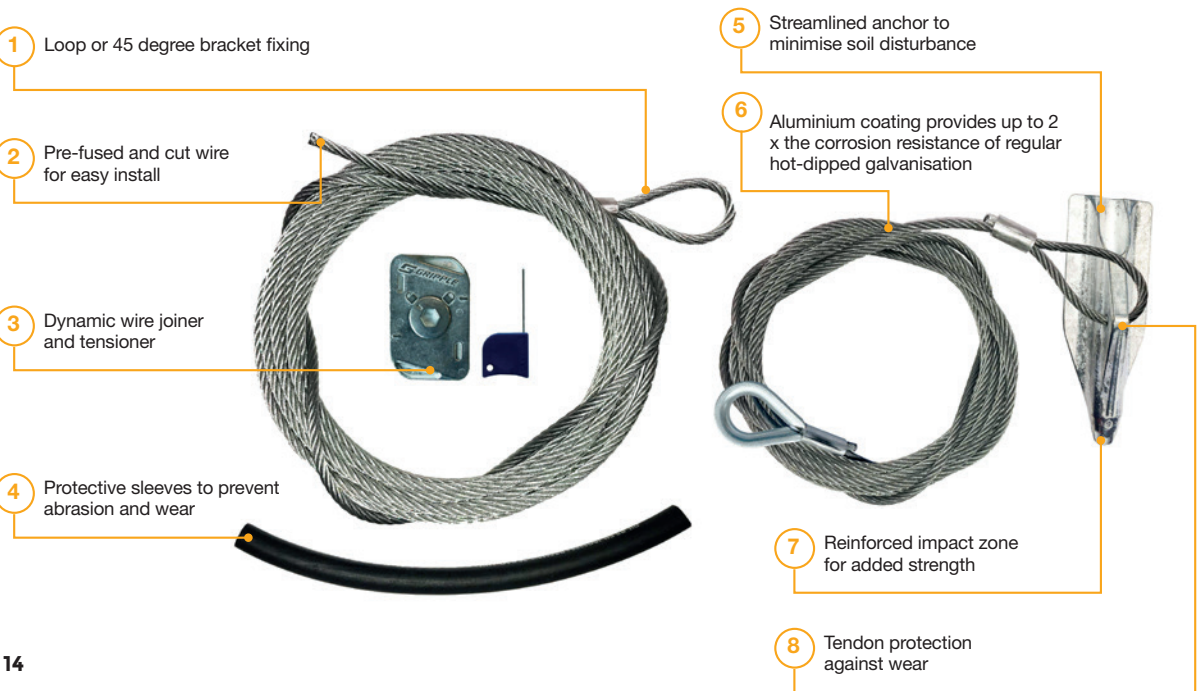
- + **Max Working Load: 1,750 kg | 3,860 lbs**
- + **Design Life: 30 Years +**
- + **Wire Range: 3 mm to 6 mm | 1/8 in to 1/4 in**
- + **Working Temperature: 20 °C to +70 °C | -4 °F to +158 °F**



## Solar Anchoring Kits

Our Solar Anchoring Kits provide up to 2,750 kg | 6,060 lbs pull out performance by locking into the soil. They have been developed based on our tried and tested technology use in demanding slope stabilisation, civil and seismic applications around the world.

- + **Max Anchor Performance (Very Dense Soil): 2,750 kg | 6,060 lbs**
- + **Max Anchor Surface Area: 191.3 cm<sup>2</sup> | 29.6 in<sup>2</sup>**
- + **Wire Tensile Strength: 1,770 N/mm<sup>2</sup> | 1305 lb-ft**



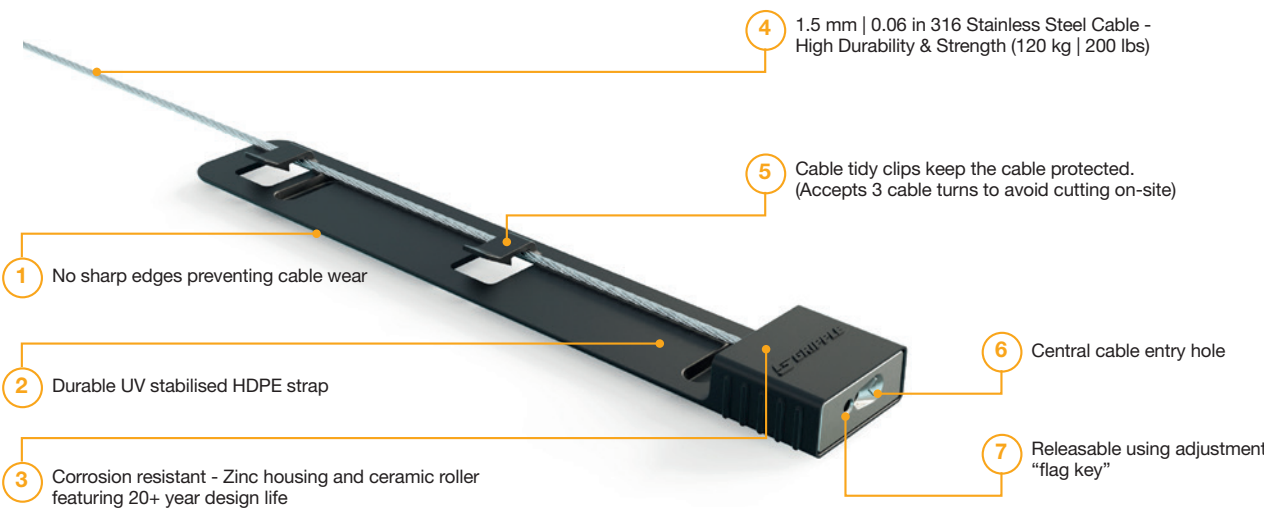
# Direct Fix Solutions

## Power-Tie

Engineered for fool proof installation and designed to last for 20+ years, even in harsh conditions. Power-Tie gives you the confidence you have installed right first time, every time.

- + **Working Load: 120 kg | 260 lbs**
- + **Standard Length Options: 350 mm | 14 in, 550 mm | 22 in & 750 mm | 30 in**
- + **Design Life: 20 Years +**
- + **Working Temperature: -40 to +90°C | -40 to +194°F**

- Approvals:**
- + **UL 62275 / CSA 62275**
  - + **UL 94 V-2**
  - + **IEC 62275**







# Technical Support

## Project Installation & Design Support

Here at Gripple, we pride ourselves on more than just game changing products; our dedicated team of solar experts are on hand to deliver highly customised technical support from initial concept to final delivery.

We can provide comprehensive services including project design drawings, engineering calculations, and product modeling to help you achieve optimal results.

To maximise project efficiencies, involve our team as early as possible. During the proposal phase, we can provide multiple options for consideration, enabling you to maximize savings on both labour and materials by selecting the most efficient solution.

### Engineering Calculations

Comprehensive structural and capacity calculations to support project requirements and product integration, including, catenary design load and sag analysis, foundation calculations, structural modeling analysis and geomembrane securement analysis.

### Design Drawings

Developing detailed structural and site design drawings to support your specific project requirements, ensuring procurement efficiencies, best practice design layout and installation arrangements.

### 3D Library

We can provide a comprehensive library of 2D and 3D product CAD resources.

### 1-1 Project Engineering Support

Our Gripple technical team will be on hand at every stage of your project to provide one on one engineering support and advice.

## On-Site Support

Our dedicated solar technical team are on hand to provide personalised on-site support from inception to completion of your project.

We can provide a range of on-site support services including installation training, product performance tests, and thorough site condition inspections, ensuring optimal performance and efficiency for your solar projects.

### Site Product Tests

Where our product performance can differ based on the soil properties of your site, our engineering team are available to provide on-site real-world testing to validate performance for your specific project.

### Installation Training & Support

Are you or your team new to our systems? The good news is they are designed for safe, simple and easy installation. However, if you still need support, our dedicated solar technical team are available to provide on-site training and best practice guidance as and when needed.

### Site Inspection and Planning

There is sometimes no alternative to actually being on site. Our solar technical team are available to attend site at every stage of your project if needed, helping to aid product selection and provide best practice, guidance, and support.





The *fastest* &  
easiest way to  
**join&tension**  
wire since 1989

Our wire tensioning  
innovations have changed  
the game in applications  
from electrical suspension to  
vineyard trellising.

## GRIPPLE TECHNOLOGY



Corrosion resistant  
ceramics ensure  
performance year  
after year

Roller or wedge  
technology can  
handle loads up to  
2,800 kg | 6,170 lbs

One directional  
wire channel  
allows for easy  
joining and  
tensioning

Twin channels  
allow you to  
create loop fixings  
in seconds



**Gripple Ltd (Headquarters)**

The Old West Gun Works  
Saville Street East  
Sheffield S4 7UQ  
UK

**T** +44 (0) 800 018 4265  
**E** info@gripple.com

**Gripple Europe SARL**

1 Rue de Commerce  
BP 37  
67211 Obernai Cedex  
France

**T** +33 (0)3 88 95 44 95  
**E** frinfo@gripple.com

**Gripple Inc**

1611 Emily Lane  
Aurora  
IL 60502  
USA

**T** +1 866 474 7753  
**E** usinfo@gripple.com

**Gripple India**

C-115 Industrial Area  
Phase 1, Naraina  
New Delhi - 110028  
India

**T** +91 11-40582703  
**E** ininfo@gripple.com

**Gripple Canada Inc**

6665 Tomken Road  
Units 9 -10  
Mississauga  
ON L5T 2C4

**T** +1 905 458 8700  
**E** cainfo@gripple.com

**Gripple Japan K.K**

2-57 Tsukizi-cho  
Hyogo-ku, Kobe-shi  
Hyogo, 652-0845  
Japan

**T** +44 (0) 800 018 4265  
**E** info@gripple.com

**gripple.com**

