



## CMP PRODUCTS

As a market-leading specialist designer and manufacturer of cable glands, cable cleats and accessories, CMP has been providing safe and innovative solutions to the global market for over 60 years; gaining us an international reputation for quality and reliability.

Our products are developed to suit a wide range of customers' industrial applications across market sectors such as infrastructure, renewable energy, power transmission and distribution, rail, tunnels, marine, data centres, automation and robotics, water treatment, desalination, oil and gas, mining and general construction. They have been designed and rigorously tested to cover a variety of international codes, standards and approvals.

Our high-quality products are reinforced with exceptional customer service and innovative solutions; we offer on-hand technical support from our experts across the globe, from 10 different offices spread across 6 continents.

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SECURING CABLES WORLDWIDE



# DATA CENTER APPLICATIONS

ENERGY & POWER  
TRANSPORTATION  
DATA CENTERS  
ROBOTICS & AUTOMATION  
MINING AND MINERALS



# WHAT WE PROMISE FOR YOUR BUSINESS



CMP Products is a leading designer, manufacturer, and supplier of cable glands, cable cleats and cable accessories for customers around the globe.



65+ years experience



3 modern, cost effective, automated factories



Operational excellence & ISO-certified business management



Fast & flexible delivery



Innovative, quality products



Cable Cleats, Cable Glands & Accessories



Specialist installation & technical training experience



Global Distribution network



Exceptional Customer Service



Extensive Project experience & trusted supply chain partner with documented case studies



We are a proud business unit of The British Engines Group

## Reasons to choose CMP

- ✓ Product quality and reliability
- ✓ Global network of facilities throughout the world
- ✓ Recognised market leader with 65+ years' experience
- ✓ Multilingual installation training
- ✓ ISO-Certified QHSE Integrated Management System
- ✓ Significant worldwide project portfolio
- ✓ Specific Industry Sector Knowledge and Experience

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# ENHANCING THE VALUE OF YOUR PROJECTS WITH OUR BESPOKE ENGINEERING SERVICES

Our team of technical experts can provide support to your projects at no additional cost, through a range of engineering services.

## OUR SERVICES INCLUDE:



### INSTALLATION TRIALS

We have a state of the art laboratory and R&D center where we can conduct installation trials with your cables, as well as performing all manner of tests to prove our products are a reliable solution for your project.



### GLOBAL TRAINING

We offer free of charge training globally to installers, engineers and site inspectors on the correct selection and installation of all of our product ranges. All attendees receive a certificate of competence following training.



### FINITE ELEMENT ANALYSIS (FEA)

Specialist software, developed with Continuum Blue, and utilised across hundreds of projects. CMP's FEA software allows engineers to simulate their cable installations under the conditions faced in real life scenarios.



### SHORT CIRCUIT CLEAT SPACING CALCULATIONS

Performing short circuit cleat spacing calculations ensures cables on projects are safely restrained in the event of a short circuit fault. Primarily, these calculations are based around short circuit electromechanical force withstand, to ensure that the best suited cable cleat is proposed for the project.

# MULTIPHYSICS FEA SIMULATION

CMP Products has utilised FEA across hundreds of projects, helping engineers simulate their cable and cable cleat installations under the conditions faced in real-life scenarios.

This technology enables a better understanding of the forces acting on cables, cable management infrastructure and various cable cleat designs, the stresses and deformations observed and the subtle changes in cable cleat design or materials which can result in dramatic changes in performance.

The use of FEA reduces time, costs and ensures the safety of critical installations.

## ABOUT FEA

Finite Element Analysis or FEA is the simulation of a physical phenomenon using a numerical mathematic technique referred to as the Finite Element Method, or FEM. Simplified, FEA is a numerical method used for the prediction of how a part or assembly behaves under given conditions.

Engineers can use FEA to reduce the number of physical prototypes and run virtual experiments to optimise their designs.

# MULTIPHYSICS FEA IN PRACTICE



## At A Glance

A large capacity power transmission tunnel application for a major client in Singapore required a range of custom joint bay cable cleats to be used as anchor points in the transition of the cables; FEA was used to ensure each cable cleat could withstand the considerable forces imposed upon it at each transition point.



- Due to limited space in the tunnel, all cables had to be jointed at the top of the trefoil formation, with all three phases jointed within a 40m distance.
- Each cable in turn had to transition to the top of the formation to be jointed.
- The HV cables measured up to 190mm in diameter and were extremely rigid.
- Multiple different cable cleat arrangements were required as anchor points to allow the cable to be manipulated into position for jointing.

A large range of special 'joint bay' cable cleats were developed and FEA was used to ensure each cleat could withstand the considerable forces imposed upon it at each transition point.

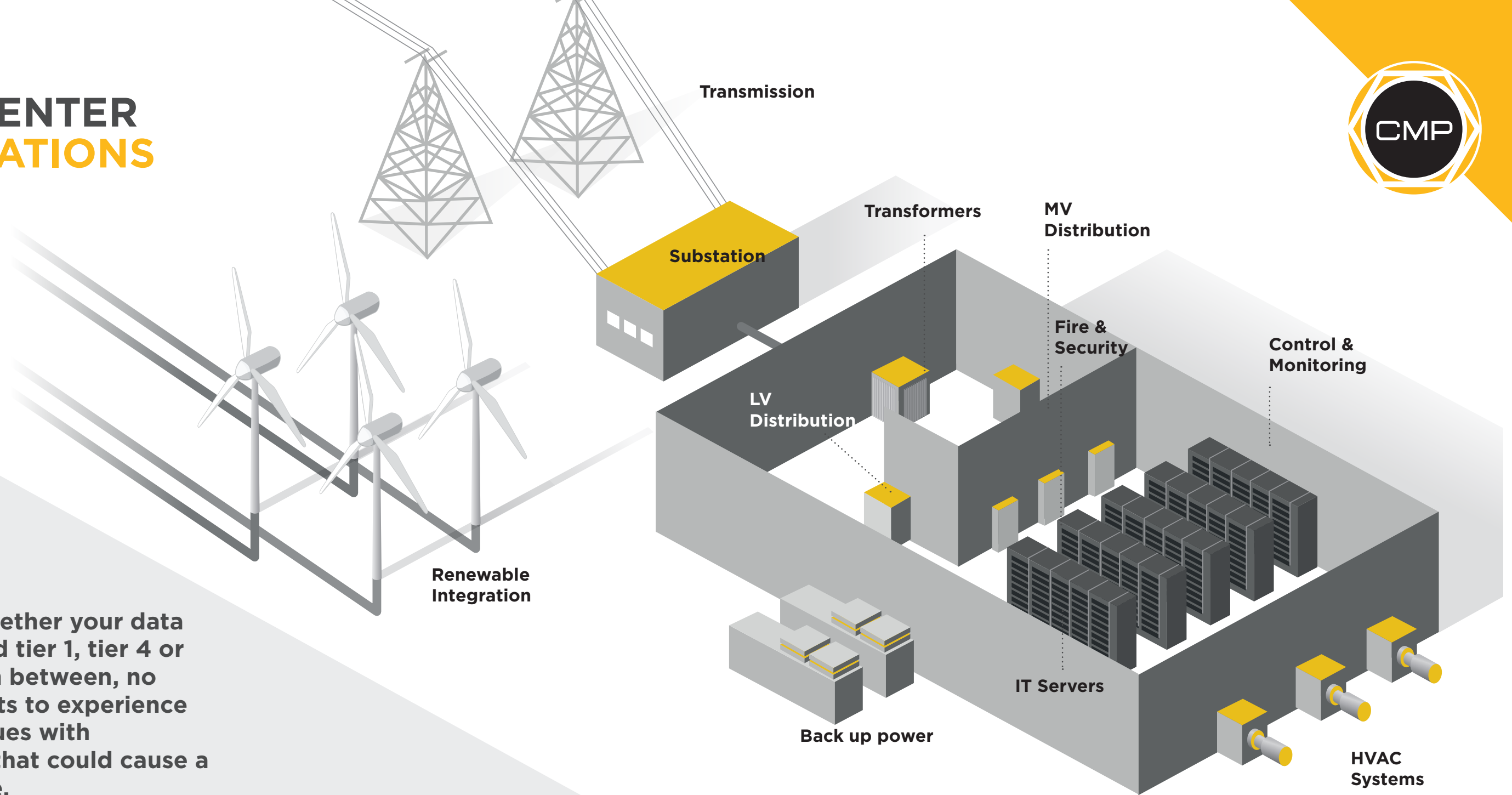
**Reduces costs**  
Multiple FEA studies were performed for each transition point and the results issued to the client, ensuring there would be no installation problems on site.

**Quick Turnaround**  
11 months from design to delivery on-site, including installation trials.

**Enhanced Safety**  
Through the use of FEA analysis, slight changes could be made to the product prior to prototypes and installation, ensuring the safest possible outcome.

Although there will often be a need for bespoke complex studies like the above, identifying requirements for custom product designs, CMP is bringing access to Multi-Physics FEA on our standard range of catalogue products through a basic, easy to use web based simulator program.

# DATA CENTER APPLICATIONS



**No matter whether your data center is rated tier 1, tier 4 or somewhere in between, no operator wants to experience avoidable issues with components that could cause a power outage.**

You're responsible for delivering it all, and in the most secure environment. We've pooled our vast expertise and experience across several disciplines. The result is a comprehensive portfolio of integrated solutions and global service. You need to reach the highest performance, we can help you get there.

# PRODUCT SELECTION



The below information is used to illustrate the key areas for consideration when selecting cable management products. We have composed tables of product, like the typical examples below, which can be found on subsequent pages in this brochure to help identify products recommended for different applications. The below explanations may help you to better correlate the available products with the duties of service and applications.

## CABLE GLANDS

	Cable Type	Entry Thread Type	Material	Features	Certification
	Tray Cable	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel	4X IP68 EMC +230°F -76°F	UL US
	Flexible Cable & Cord	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel, Zinc Plated Mild Steel	4X IP68 EMC +194°F -76°F	cUL US
	MC Armored	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel, Zinc Plated Mild Steel	4X IP66 EMC +230°F -76°F	UL US

**It is important to be clear on what the cable specification is before proceeding in order to select the correct cable gland for each application.**

### Cable Type

Identify the type of cable being used on your installation, e.g. is it armoured (type of armour), unarmoured, screened or braided.

### Material

The specific conditions of any installation will play a major part in the selection of the cable gland material, taking into account the level of environmental exposure along with the nature of the enclosure and cable armour material.

### Features

Consider whether the cable gland needs a certain level of Ingress Protection, alongside the temperature of the environment it is being installed into.

### Certification

Some applications may require certification, such as cULus.

## CABLE CLEATS

	Cable Formation	Cable Ø range take (mm)	Material	Fixing Hole	Features	Short Circuit Tested to IEC 61914
	Single/Multicore	10 - 71mm in 12 sizes	Aluminium	1 x M10	<ul style="list-style-type: none"> <li>Aluminium operating temperature -76°F to 302°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
	Single/Multicore	38 - 135mm in 8 sizes	Nylon	2 x M10/M12	<ul style="list-style-type: none"> <li>Nylon operating temperature -40°F to 140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
	Quad/Quadplex	16.5-61.5mm in 25 sizes	Stainless Steel	1 x M8	<ul style="list-style-type: none"> <li>316L Stainless Steel</li> <li>Low Smoke &amp; Fume (LSF), Zero Halogen (LSOH) and Phosphorus Free.</li> </ul>	✓

**It is important to be clear on what the cable specification is before proceeding in order to select the correct cable cleat.**

### Cable Type

Are the cables single core, multicore or triplex?

### Cable Formation

Identify formation the cables be installed in e.g. single, trefoil or quad.

### Cable Ø Range Take (mm)

What size is the cable diameter you are working with?

### Material

- 316 Stainless Steel is non-magnetic; it also exhibits higher creep resistance as well as excellent tensile strength and rupture resistance at high temperatures.
- 5000 series copper free aluminium is a good choice for its all-round performance characteristics including mechanical strength, durability, corrosion resistance and flame retardancy.

- Nylon is tough, high tensile, and resistant to abrasion and offers a cost effective performance for a lot of applications. This material is typically used for industrial applications where less harsh conditions exist. applications where less harsh conditions exist.

### Features

Consider the temperature rating of your application, whether there are weather factors to consider, if the cleat is being installed vertically or horizontally and if the cable cleats need to be stacked when installing.

### Fixing Hole

Products are supplied with both single and dual fixing bolt locations offering versatility to the installer when fixing to the mounting structure.

### Short Circuit Tested







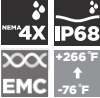




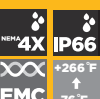




All cable cleats, regardless of the manufacturer, must be short circuit tested to IEC 61914 to ensure the safety of your equipment.

# SUBSTATION



An essential element to ensure continued supply of power to your data center, the choice of robust and safe cable management products will enhance the electrical safety and long term reliability of your facility.

## CABLE GLANDS

	Cable Type	Entry Thread Type	Material	Features	Certification
 <b>TC</b>	Tray Cable	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel	  	
 <b>CG</b>	Flexible Cable & Cord	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel, Zinc Plated Mild Steel	  	
 <b>TMC2</b>	MC Armored	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel, Zinc Plated Mild Steel	  	 



### Need help?

**Need help understanding how these application considerations can impact your project?**

Our technical team are on hand to work through your specification to select the best solution for your project, saving you time and costs.

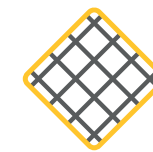
### Key Application Considerations



**INSULATED CONNECTIONS TO PREVENT CIRCULATING CURRENTS**



**LOW SMOKE & FUME ZERO HALOGEN (LSFOH)**



**INGRESS/HUMIDITY PROTECTION**



**EMC**



**THERMAL EFFECTS**







**VIBRATION & SELF-LOOSENING**

# SUBSTATION



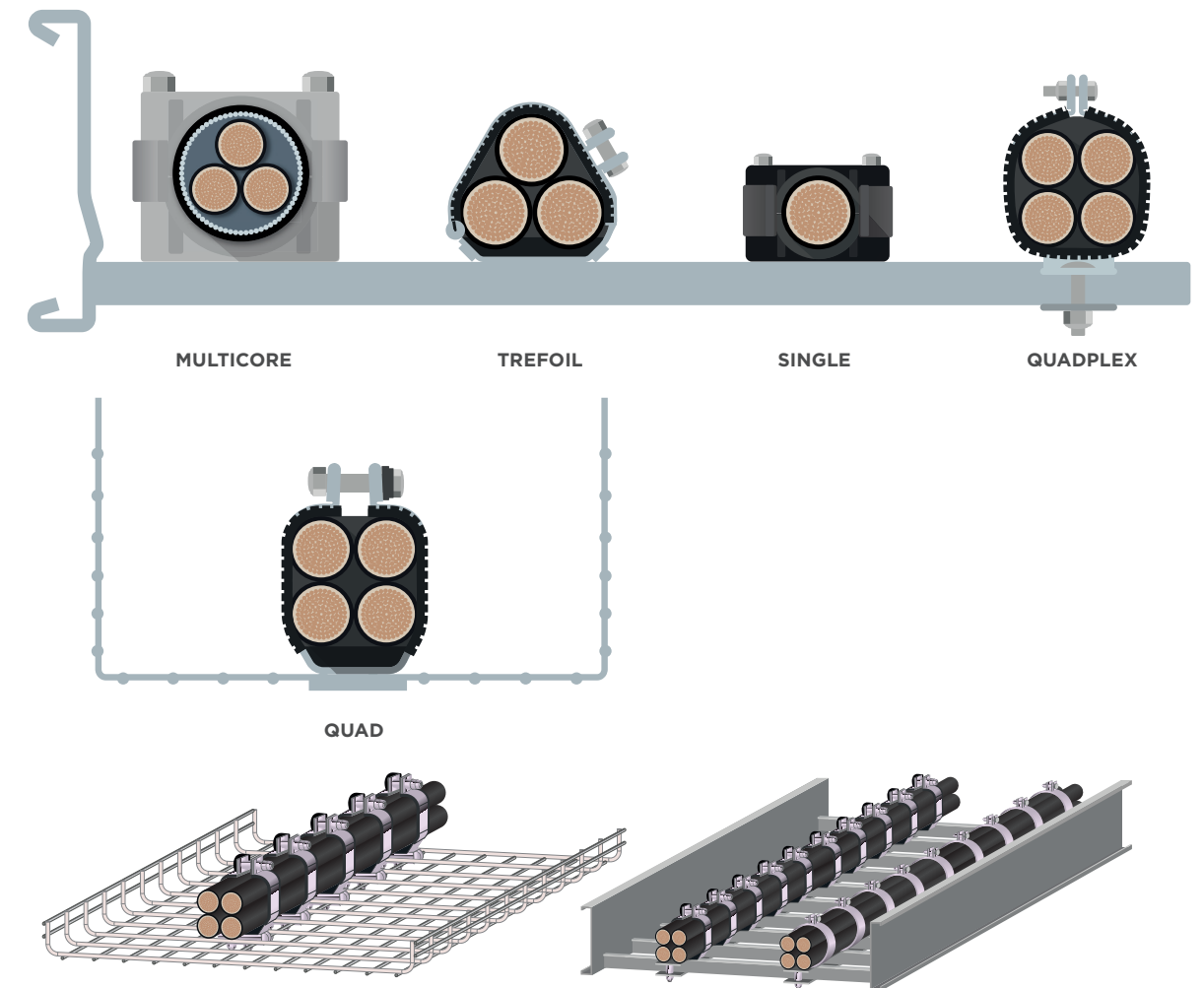
## CABLE CLEATS

	Cable Formation	Cable Ø range take (mm)	Material	Fixing Hole	Features	Short Circuit Tested to IEC 61914
<b>SINGLE/FLAT/PARALLEL</b>						
 <b>QSDSS</b>	Quad	16-71mm in 19 sizes	316L Stainless Steel	2 x M10 or 1 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 152kA peak fault</li> <li>Operating temperature -76°F to +140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
 <b>QPSS</b>	Quad/Quadplex	16.5-61.5mm in 25 sizes	316L Stainless Steel	1 x M8	<ul style="list-style-type: none"> <li>Short circuit rating of 135kA peak fault</li> <li>Operating temperature -76°F to +140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
<b>SINGLE FORMATION</b>						
 <b>1BC</b>	Single/Multicore	10 - 71mm in 12 sizes	Aluminium	1 x M10	<ul style="list-style-type: none"> <li>Short circuit rating of 118kA peak fault</li> <li>Operating temperature -76°F to 302°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
 <b>2BC</b>	Single/Multicore	38 - 151mm in 9 sizes	Nylon	2 x M10 or 2 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 110kA peak fault</li> <li>Operating temperature -40°F to 140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓








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### Key Application Considerations

-  **SPACE RESTRICTIONS FOR PRODUCT INSTALLATION**
-  **AVOIDANCE OF CABLE DAMAGE**
-  **LOW SMOKE & FUME ZERO HALOGEN (LSFOH)**
-  **CABLE SUPPORT IN VERTICAL APPLICATIONS**
-  **AXIAL LOAD REQUIREMENTS**
-  **PRODUCTS LOAD TESTED TO SUIT APPLICATION**
-  **IMPACT RESISTANCE**

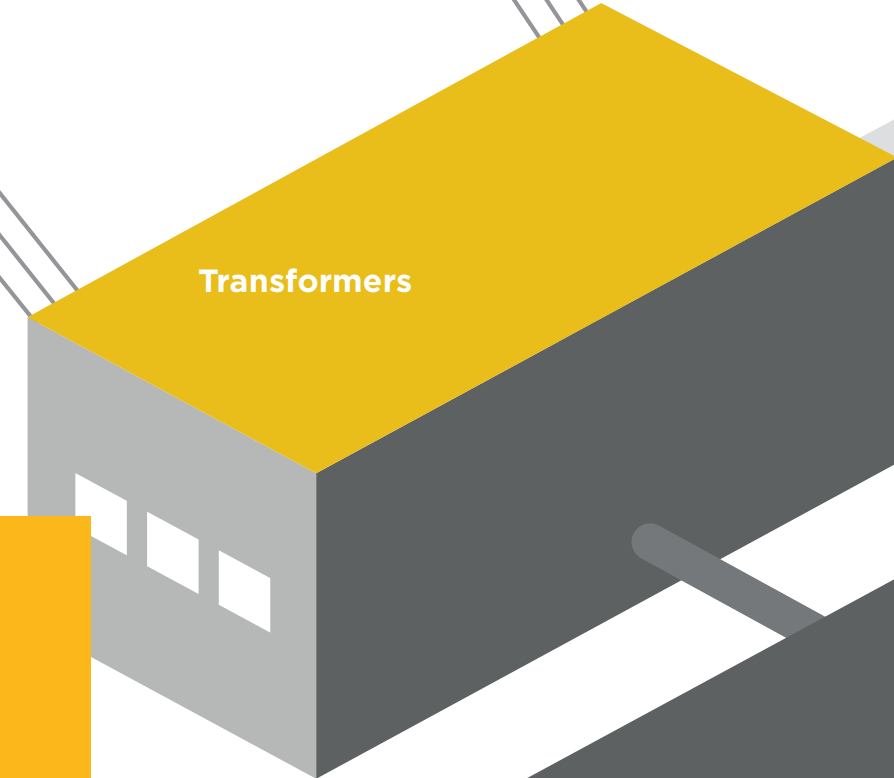


# TRANSFORMERS



Step down transformers are often used to bring high voltage power from the external substation, inside the data center maintaining a regulated output.

Maintaining connections through good quality, reliable and effective cable management solutions is essential. This will ensure no costly downtime resulting from poor quality components, and ensuring protection of equipment, cables and ultimately your data center asset.








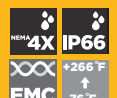




**+**  
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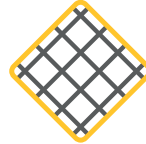
## CABLE GLANDS


	Cable Type	Entry Thread Type	Material	Features	Certification
 <b>TC</b>	Tray Cable	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel		
 <b>CG</b>	Flexible Cable & Cord	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel, Zinc Plated Mild Steel		
 <b>TMC2</b>	MC Armored	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel, Zinc Plated Mild Steel		 


### Key Application Considerations


- 

**INSULATED CONNECTIONS TO PREVENT CIRCULATING CURRENTS**
- 

**LOW SMOKE & FUME ZERO HALOGEN (LSFOH)**
- 

**INGRESS/HUMIDITY PROTECTION**
- 

**EMC**
- 

**THERMAL EFFECTS**
- 

**VIBRATION & SELF-LOOSENING**

# TRANSFORMERS




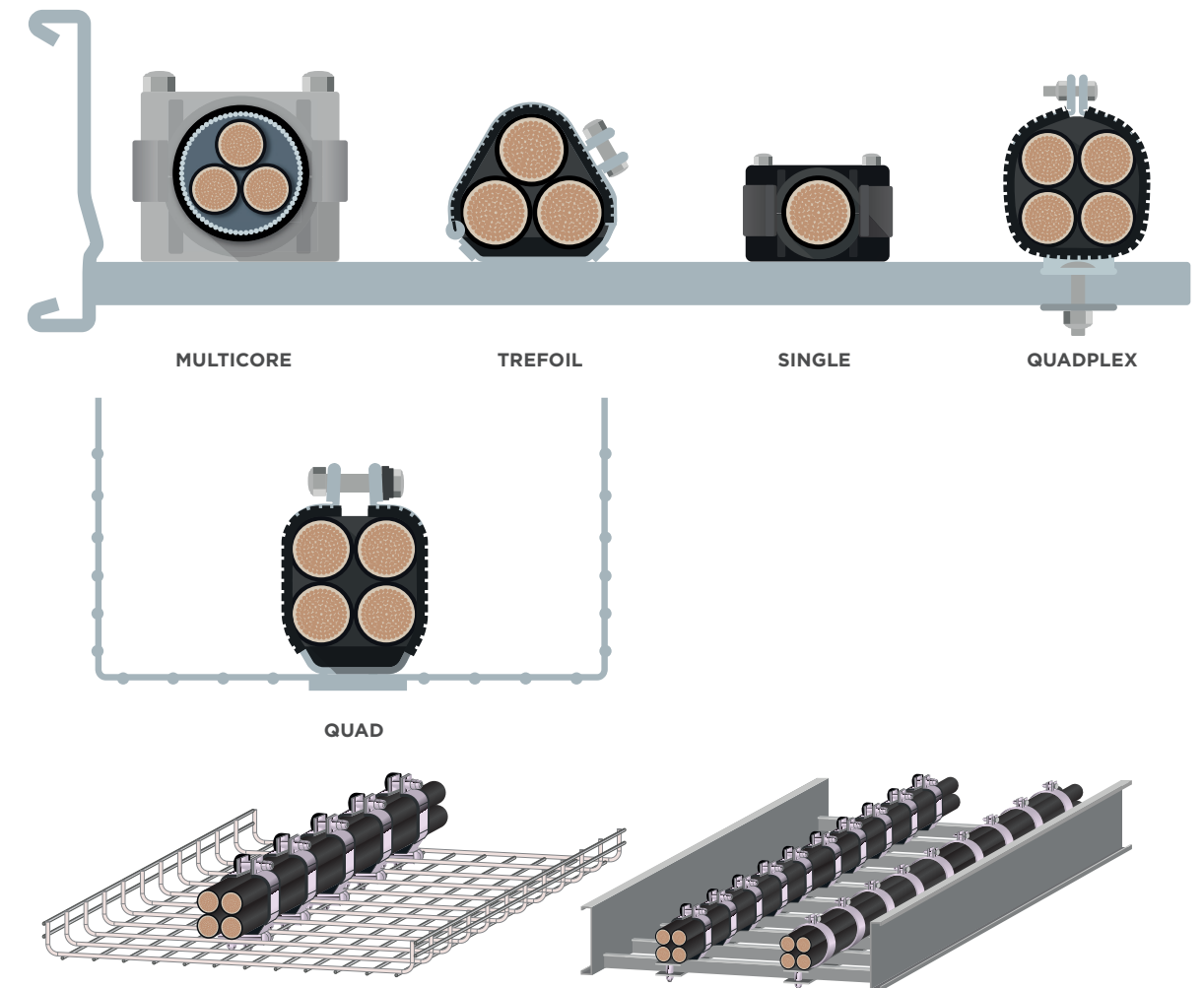
**+ Need help?**

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## CABLE CLEATS

	Cable Formation	Cable Ø range take (mm)	Material	Fixing Hole	Features	Short Circuit Tested to IEC 61914	
<b>SINGLE/FLAT/PARALLEL</b>							
	<b>Sapphire SHDSS</b>	Single/Multicore	19 - 150mm in 13 sizes	316L Stainless Steel	2 x M10 or 1 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 110kA peak parallel</li> <li>Short circuit rating of 105kA peak multicore</li> <li>Operating temperature -76°F to +140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	
<b>TREFOIL</b>							
	<b>Sovereign HDSS</b>	Trefoil	17 - 128mm in 24 sizes	316L Stainless Steel	2 x M10 or 1 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 190kA peak fault</li> <li>Operating temperature -76°F to +140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	
<b>SINGLE FORMATION</b>							
	<b>Valiant 1BCAL</b>	Single/Multicore	10 - 71mm in 12 sizes	Aluminium	1 x M10	<ul style="list-style-type: none"> <li>Short circuit rating of 118kA peak fault</li> <li>Operating temperature -76°F to 302°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	
	<b>Zenith 2BCAL</b>	Single/Multicore	38 - 151mm in 9 sizes	Aluminium	2 x M10 or 2 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 130kA peak fault</li> <li>Operating temperature -76°F to 302°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	



## Key Application Considerations

-  **SPACE RESTRICTIONS FOR PRODUCT INSTALLATION**
-  **AVOIDANCE OF CABLE DAMAGE**
-  **LOW SMOKE & FUME ZERO HALOGEN (LSFOH)**
-  **CABLE SUPPORT IN VERTICAL APPLICATIONS**
-  **AXIAL LOAD REQUIREMENTS**
-  **PRODUCTS LOAD TESTED TO SUIT APPLICATION**
-  **IMPACT RESISTANCE**










# LV/MV DISTRIBUTION



The distribution systems are at the heart of any data center operation and their installation is a critical aspect of the data center performance.

Apart from compliance requirements of the equipment and components, it is vital that the installation workmanship follows the relevant local codes of practice e.g. BS 7671 18th Edition Wiring Rules in the UK.

## CABLE GLANDS

	Cable Type	Entry Thread Type	Material	Features	Certification
 <b>TC</b>	Tray Cable	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel		
 <b>CG</b>	Flexible Cable & Cord	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel, Zinc Plated Mild Steel		
 <b>TMC2</b>	MC Armored	NPT or metric	Nickel Plated Brass, Aluminium, Stainless Steel, Zinc Plated Mild Steel		



### Need help?

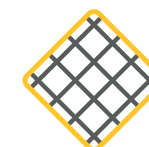
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### Key Application Considerations



LOW SMOKE & FUME ZERO HALOGEN (LSFOH)



INGRESS/HUMIDITY PROTECTION



EMC



THERMAL EFFECTS



VIBRATION & SELF-LOOSENING

# LV/MV CABLES



Whether used on MV or LV circuits, cable cleats are necessary to secure and support cables and protect them from damage.

Failure to select the right products could lead to consequential damage to other equipment, as well as the cables, and loss of power supply in the event of a short circuit.

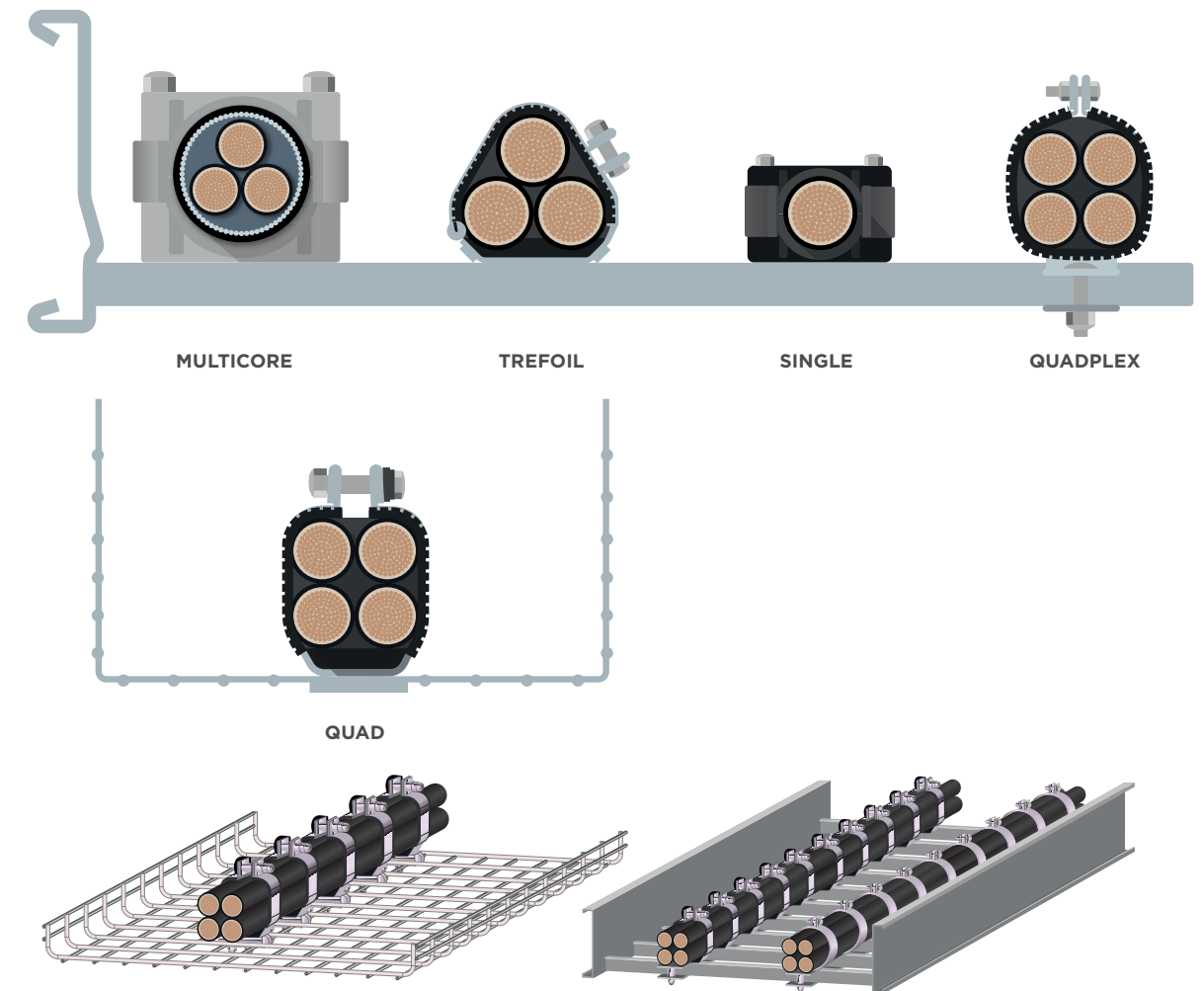
For fire performance circuits, it is advisable that any fixings or cable supports are non-combustible. Building regulations across the world are gradually being updated to mandate this in the wake of premature collapse of cables in fire situations.

Therefore, to compliment fire performance cables, fire rated cable cleats should be used.

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## Key Application Considerations



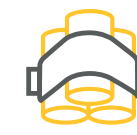
SPACE RESTRICTIONS FOR PRODUCT INSTALLATION



AVOIDANCE OF CABLE DAMAGE



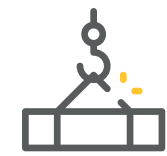
LOW SMOKE & FUME ZERO HALOGEN (LSFOH)



CABLE SUPPORT IN VERTICAL APPLICATIONS



AXIAL LOAD REQUIREMENTS



PRODUCTS LOAD TESTED TO SUIT APPLICATION



IMPACT RESISTANCE

# LV/MV CABLES



## CABLE CLEATS

	Cable Formation	Cable Ø range take (mm)	Material	Fixing Hole	Features	Short Circuit Tested to IEC 61914	
<b>SINGLE FORMATION</b>							
	VALIANT 1BCAL	Single/Multicore	10 - 71mm in 12 sizes	Aluminum Epoxy Coated Aluminum	1 x M10	<ul style="list-style-type: none"> <li>Short circuit rating of 118kA peak fault</li> <li>Operating temperature -76°F to 302°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
	ZENITH 2BCAL	Single/Multicore	38-151mm in 9 sizes	Aluminum Epoxy Coated Aluminum	2 x M10 or 2 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 130kA peak fault</li> <li>Operating temperature -76°F to 302°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
	SABRE 1BC	Single/Multicore	10 - 57mm in 10 sizes	Polymeric	1 x M10	<ul style="list-style-type: none"> <li>Short circuit rating of 113kA peak fault</li> <li>Operating temperature -40°F to 140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
	FALCON 2BC	Single/Multicore	38 - 135mm in 8 sizes	Polymeric	2 x M10 or 2 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 110kA peak fault</li> <li>Operating temperature -40°F to 140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
	EMERALD SSDSS	Single/Multicore	19 to 115mm in 12 sizes	316L Stainless Steel with LSFOH liners	2 x M10 or 1 x M10	<ul style="list-style-type: none"> <li>Short circuit rating of 155kA peak fault</li> <li>Operating temperature -76°F to +140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Opens fully to provide ease of installation</li> </ul>	✓

Cable Formation	Cable Ø range take (mm)	Material	Fixing Hole	Features	Short Circuit Tested to IEC 61914
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## TREFOIL

	PATRIOT SDSS	Trefoil	13 - 128mm in 25 sizes	316L Stainless Steel	2 x M10 or 1 x M10	<ul style="list-style-type: none"> <li>Short circuit rating of 135kA peak fault</li> <li>Operating temperature -76°F to +140°F</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
	SOVEREIGN HDSS	Trefoil	17 - 128mm in 24 sizes	316L Stainless Steel	2 x M10 or 1 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 190kA peak fault</li> <li>Operating temperature -76°F to +140°F</li> <li>Sunlight (UV) &amp; weather resistant</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓

## QUAD

	SATURN QSDSS	Quad	16-71mm in 19 sizes	316L Stainless Steel	2 x M10 or 1 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 152kA peak fault</li> <li>Operating temperature -76°F to +140°F</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
	VENUS QPSS	Quad/Quadplex	'Plexed' bundle diameter 16.5-61.5mm in 25 sizes	316L Stainless Steel	1 x M8	<ul style="list-style-type: none"> <li>Short circuit rating of 135kA peak fault</li> <li>Operating temperature -76°F to +140°F</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓

## HIGH TEMPERATURE

	SOLACE 1BCHT	Single/Multicore	10 - 71mm in 12 sizes	316L Stainless Steel	1 x M10	<ul style="list-style-type: none"> <li>Short circuit rating of 100kA peak fault</li> <li>Operating temperature -76°F to +482°F</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓
	THEMIS 2BCHT	Single/Multicore	38 - 97mm in 5 sizes	316L Stainless Steel	2 x M10 or 2 x M12	<ul style="list-style-type: none"> <li>Short circuit rating of 130kA peak fault</li> <li>Operating temperature -76°F to +482°F</li> <li>Can be double stacked</li> <li>Excellent axial &amp; lateral load retention</li> </ul>	✓

# FIRE & SECURITY EQUIPMENT







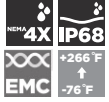











Fire, alarm and security systems and cable circuits naturally require high performance cable glands to maintain their primary functions. This includes reliable sealing against dust and moisture ingress, and also deluge systems where they are installed.

If the cables are screened or armoured with a metallic layer, the effective earthing continuity of these layers is essential.

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## CABLE GLANDS

	Cable Type	Entry Thread Type	Material	Features	Certification
 TC	Tray Cable	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel	  	
 CG	Flexible Cable & Cord	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel, Zinc Plated Mild Steel	  	
 TMC2	MC Armored	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel	  	 


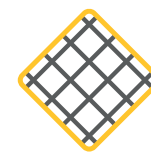



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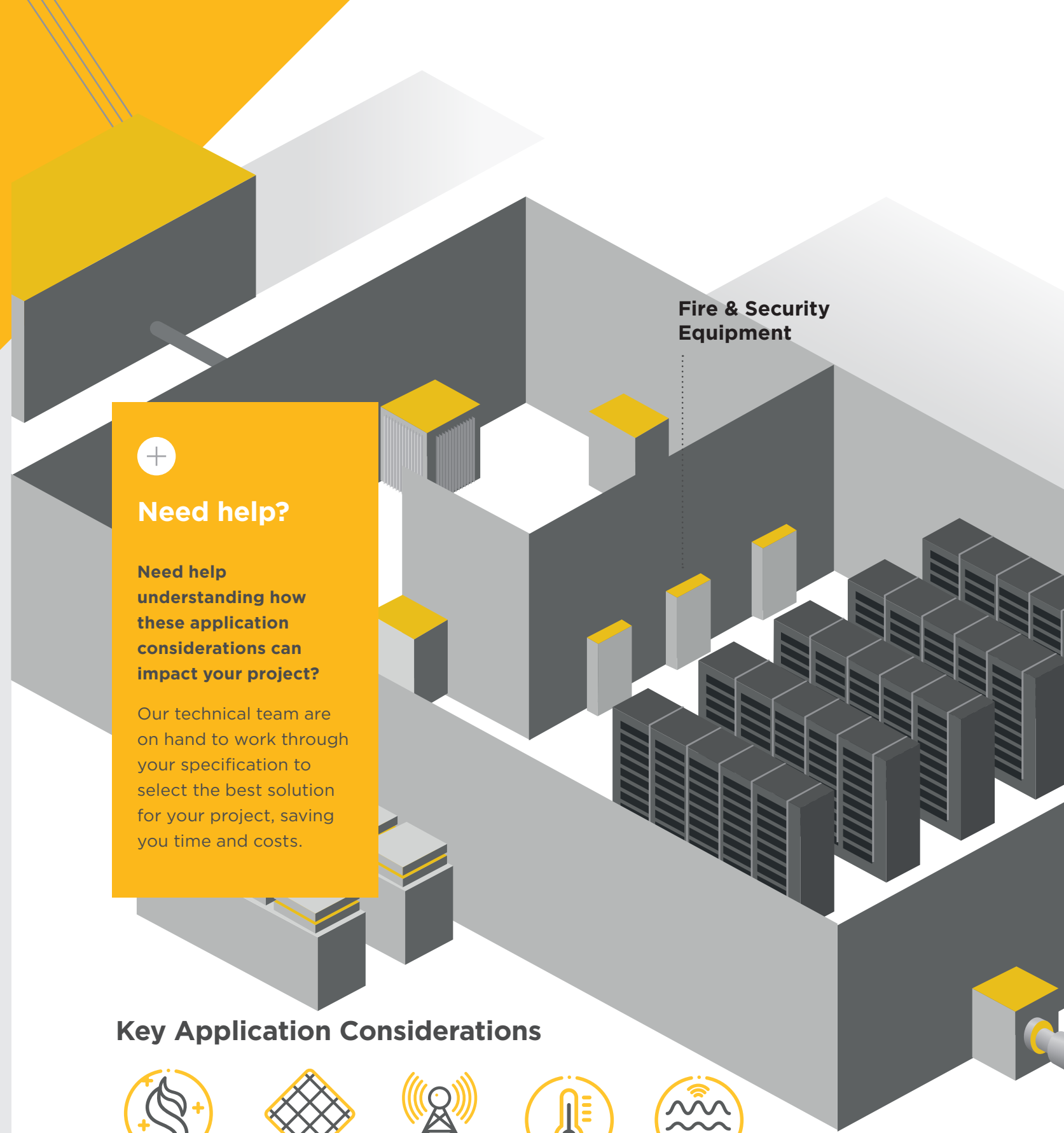
**Need help?**

Need help understanding how these application considerations can impact your project?

Our technical team are on hand to work through your specification to select the best solution for your project, saving you time and costs.

## Key Application Considerations

-  **LOW SMOKE & FUME ZERO HALOGEN (LSFOH)**
-  **INGRESS/HUMIDITY PROTECTION**
-  **EMC**
-  **THERMAL EFFECTS**
-  **VIBRATION & SELF-LOOSENING**












# CONTROL & MONITORING EQUIPMENT, EMERGENCY POWER EQUIPMENT & HVAC/COOLING SYSTEMS



Maintaining the effective running of a data center to prevent any operational issues, these various pieces of equipment and systems must be installed and maintained effectively to a very high standard so there are no system breakdowns.

The cable glands form a critical subset of these systems and therefore high quality, reliable products should be selected to ensure performance.

## CABLE GLANDS

	Cable Type	Entry Thread Type	Material	Features	Certification
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 TMC2	MC Armored	NPT or Metric	Nickel Plated Brass, Aluminium, Stainless Steel		



### Need help?

Need help understanding how these application considerations can impact your project?

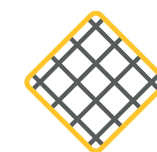
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Control & Monitoring Equipment, Emergency Power Equipment & HVAC Cooling Systems

## Key Application Considerations



LOW SMOKE & FUME ZERO HALOGEN (LSFOH)



INGRESS/HUMIDITY PROTECTION



EMC



THERMAL EFFECTS



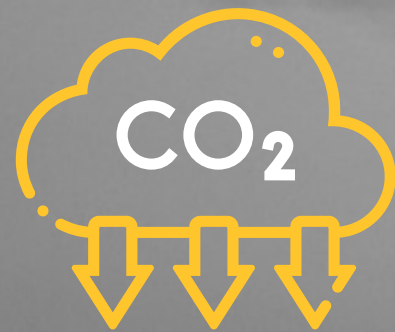
VIBRATION & SELF-LOOSENING

# NET ZERO TARGET



CMP is dedicated to driving environmental improvements in all areas of the business.

We are committed to halving greenhouse gas emissions by 2030, achieve net zero emissions before 2050, and disclose progress towards these commitments on an annual basis.



**Target Emissions Reduction by 2030**  
**50%**



**Target Net Zero by 2050**  
**100%**

# PROUD PARTNERS



BEGINNING ITS NET ZERO JOURNEY IN MAY 2021, THE COMPANY HAS COMMITTED TO THE UNITED NATIONS RACE TO ZERO CAMPAIGN ALONG WITH INDUSTRY LEADER BEAMA, AND SUPPORTS THE UK GOVERNMENT PROPERTY AGENCY (GPA) NET ZERO PROGRAMME. CMP PRODUCTS HAS GONE THE EXTRA MILE, AND ALSO BECAME A SIGNATORY OF THE CLIMATE CHANGE PLEDGE AND SME CLIMATE HUB. BY TAKING A STAND AND PIONEERING A GLOBAL INITIATIVE THAT WILL TAKE THE LEAD IN MAINSTREAMING CLIMATE ACTION, THE COMPANY IS BUILDING BUSINESS RESILIENCE ACROSS THE BOARD.





## WHAT HAVE WE DONE SO FAR

- ✓ Our GHG Carbon Emissions baseline is FY 2019/20. We have already completed the GHG Carbon Emissions Reports for FY 2019/20 and FY 2020/21 including the scopes 1 and 2.
- ✓ A GHG Carbon Emissions Calculation Procedure has been developed and implemented at CMP Products.
- ✓ Carbon Emissions Champions have been trained.
- ✓ Senior Management at CMP have received Climate Reality Overview training.
- ✓ We are currently measuring FY 2021/22 which includes the scopes 1, 2 and 3 of the GHG Carbon Emissions.

Achieved ISO 50001:2018 certification

## OUR AMBITIONS

Increase the use of renewable energy in all our sites worldwide



Drive Net Zero Carbon Emissions within our supply chain



Support global environmental initiatives



Increase employees environmental engagement



# BESPOKE SOLUTIONS

The energy landscape is regularly changing and adapting to become more efficient, greener and cost-saving.

Cable management solutions are required to adapt to suit these ever changing conditions, and at CMP we regularly carry out research to ensure we provide products to suit the demands of the marketplace.

If a product from our standard range does not meet project requirements, we will work with customers to engineer bespoke products based on their specific requirements. This can be due to varying factors including space and weight constraints to product ratings and extreme temperatures.

# BESPOKE SOLUTIONS HV & JOINTING BAYS



CMP engineered bespoke cable cleat solutions for Singapore Tunnel, a project designed to futureproof Singapore's electricity supply for the next 120 years.

The project required cable cleats to suit 230kV and 400kV cables, with diameters of up to 190mm.



At a glance



Challenge



Solution

Housed in cable ducts, cable cleats were required to restrain circuits of 230kV and 400kV cables. It was essential for the cleats to allow cables to thermally expand and contract during normal operation, as well as safely restrain the cables during short circuit conditions.

CMP was presented with a range of challenges which were taken into account when designing the bespoke products for example the cables had to be 'snaked' horizontally within cable ducts, allowing for thermal expansion and contraction, so the cleats had to work as a system with some being rigidly fixed and some allowed to slide as the cable moved.

Other challenges included cable spacing, cable weight, short circuit testing, and product life span and time constraints.

A trefoil 400kV solution was developed from 316L Stainless Steel, with a fibre reinforced plastic (FRP) low smoke & fume insert. This was followed by a similar trefoil design for the 230kV cable.

Single cable cleats and a large range of special 'joint bay' cleats were also developed to restrain the cables in the areas where they are 'transposed' and two lengths are joined together.

CMP carried out finite element analysis (FEA) to simulate short circuit testing, life time analysis and thermal analysis to identify how cables perform when installed.