

**FLEXICON™**  
FLEXIBLE CONDUIT SOLUTIONS

A PART OF **atkore**  
INTERNATIONAL

# Cable Protection Systems for UK Rail Infrastructure

THE POWER IN CABLE PROTECTION



**IRIS™**  
Certification  
ISO/TS 22163:2017

MADE IN THE  
**UK**

[WWW.FLEXICON.UK.COM](http://WWW.FLEXICON.UK.COM)

# Group Intro

We are focused on bringing customers the latest solutions and technologies for Cable Protection. We design, develop and manufacture our products from our headquarters in Birmingham, UK therefore you can be assured of our quality and engineering excellence.

At the forefront of material technologies and industrial design, our Engineering and Manufacturing teams deliver reliable solutions that work for the long term.

We drive innovation, developing tomorrow's solution for today.



Our design, testing and prototyping facility enables us to understand, interpret and respond to customer requirements quickly and easily. We use the latest design software & technology and can create models and 3D prototypes to establish technical solutions.

Now as part of Atkore International our capability has been enhanced. We continue to invest in the development of our range. With onsite manufacturing, we can respond quickly and flexibly to meet our customer requirements.

Our range of non-metallic and metallic Flexible Conduit Systems help to protect cables from end to end, in many diverse markets, from Construction, Rail & Transportation, Utilities, Machinery & Automation / OEM's and Hazardous Areas to Food Processing and Pharmaceutical.

We have over 60 different Cable Protection Systems and our full range can be found in our Product and Solutions Guide and on our website.



# Rail - Infrastructure and Rolling Stock

Passenger safety and operational integrity are vital characteristics of a modern rail network.

We know and appreciate the various challenges involved in achieving compliance to the latest industry legislation, managing and controlling risk, and making procurement more efficient whilst striving for continuous improvement across the entire railway system.

“Flexicon have a proven track record in protecting Safety & Performance Critical Cabling”



## Example applications

### Infrastructure

- Ticketing and Passenger Access
- Station Car Parks
- CCTV / Passenger Information Systems

- Lifts & Escalators
- Lighting
- Platform Edge Screens
- Rail Crossings
- Trackside Points Machines

- Trackside Signalling
- Trackside Power
- Tunnels
- Depot (Berthing and Maintenance)

### Rolling Stock

- High Speed
- Intercity / Urban & Regional Trains
- Metro

- Trams & Trolleybuses
- Monorail
- Locomotives
- Propulsion & Control Systems
- Bogies
- HVAC

- Couplers
- Pantograph
- Brake Systems
- Door Modules
- ETCS

# Benefits of using flexible conduit...

Providing an inherent mechanical barrier for cabling, Flexible Conduit offers more than just protection for Cables and Installations. It allows users and specifiers to do things differently, challenging traditional installation practices and offers unrivalled product performance.

## Realise the Benefits of using Flexible Conduit

### Simplicity

- No need for Specialist Cables
- Standard & Single Core Cables can be grouped and protected in one system
- Less Product Inventory in the Supply Chain



### Speed of Installation

- Combining cables mean less cable entry points / terminations
- Ease of fixing with various securing options
- No special tools required



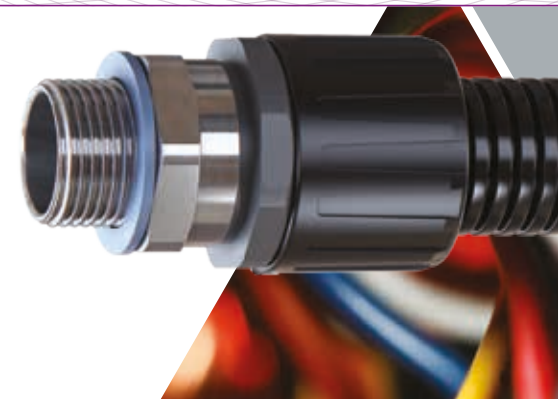
### Lifetime Solution

- Can easily add circuits throughout the life of the installation
- Easily accommodate changes as the installation needs change
- Off the shelf products

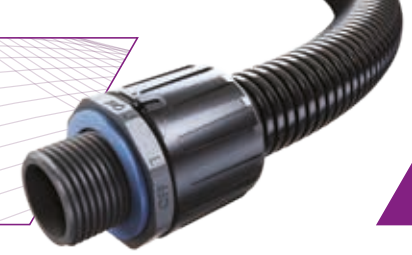


### System Integrity

- Properties of the conduit can be matched to the potential hazards of the installation
- Reliable solution for protection of critical cabling



# Rail Infrastructure - Signalling Power Distribution Systems



## Realise the Benefits of using Flexible Conduit for SIN 119...

Safety and reliability of the Rail Infrastructure network is paramount. Network Rail's ongoing challenge to achieve SIN 119 compliance has created the need for new solutions and techniques to remove potential dangers for the maintenance and management of 650V Signalling Power Distribution Systems in accordance with NR/L2/SIGELP/27410.

Flexible Conduit provides an ideal solution for new and existing equipment identified for upgrade and is fully compliant to NR/L2/SIGELP/27421 and NR/L2/SIGELP/27422 for use in Class II Based Signalling Power Distribution Systems.



### Flexible Conduit Systems

- Flexible Insulating Conduits with a dielectric withstand of 3.5kV in accordance with NR/L2/SIGELP/27421

### Conduit Glands

- Conduit Glands in accordance with NR/L2/SIGELP/27422
- True one piece

### Accessories

- Range of fixing accessories and mounting equipment for Flexible Conduits



Use in new and upgraded Signalling Power Distribution Systems in accordance with NR/L2/SIGELP/27410



# Rail - Fire Performance

“The reaction of products in the event of fire is critical when it comes to effective product specification.”

## Highly Flame Retardant

- To prevent a fire starting or limit its development if one does start

## Low Smoke

- Emission in the event of a fire to enable persons to visibly see to escape

## Low Toxicity

- In the event of a fire to ensure persons are not overcome by fumes or poisonous gases

## Halogen Free

- Does not contain Fluorine, Chlorine, Bromine or Iodine or produce highly toxic fumes and thick smoke

## Fire testing...

Our product development programme involves extensive testing to the latest Rail Industry Standards to ensure the safety of our products.

We have tested our products to EN 45545-2, compliant to HL3 and NFPA 130 and have Transport for London - S1085 APR certificates for a number of products as identified throughout this guide - look out for our easy to spot symbols:



The level of fire performance required will be determined by the location and application, for example Underground applications will have higher fire performance requirements than for overground stations.



Low Fire Hazard systems are required to protect the public, personnel and property in the event of a fire and are demanded by Specifiers, Industry Bodies, Train and Network Operators, Fire Services and even Insurers.



## Assessing Fire performance...



Flame Retardant

To assess how flame retardant a material is, the normal test method is to measure the Limiting Oxygen Index (LOI) according to BS EN ISO 4589-2 which determines the percentage of oxygen that needs to be present to support combustion. The higher the LOI percentage, the greater the flame retardancy of the material. Oxygen present in normal air is approx. 21%.



Smoke

A specified sample of material is burnt under controlled conditions in a given size smoke chamber and the smoke obscuration of a defined beam of light is measured. Although the different tests are similar, the results and the requirements are different. The lower the smoke density, the more efficient evacuation and safety for fire fighting becomes.



Toxicity

A specified sample of material is burnt under controlled conditions in a given size smoke chamber and the fumes are analysed for various gases, the concentration of each gas is then multiplied by its toxic potency to give a toxicity index. If halogens, sulphur or phosphorus are present in a material, it is unlikely to pass the low toxicity tests.



Halogen Free

Halogens give off highly toxic fumes and thick smoke. A material cannot be considered as Low Fire Hazard if it contains halogen. However a halogen free material is not necessarily Low Fire hazard as it may not be low toxicity, low smoke and highly flame retardant. Halogen content is assessed by various chemical tests and analytical techniques.

## Simple classifications of performance from Flexicon...



Inherently Low Fire Hazard - no non metallic materials to burn or create smoke or toxic fumes.



Limiting Oxygen Index of greater than 32% as well as being low smoke and toxicity.



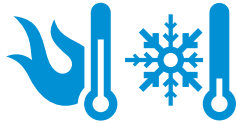
Limiting Oxygen Index of greater than 26% as well as being low smoke and toxicity.

# Rail - Ingress Protection

“Flooding is one of the most extreme forms of hazards for electrical systems. If product is submerged Ingress Protection becomes critical”

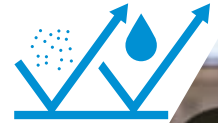
## Ingress Protection

- Penetration of solid objects, dust, liquid or steam



## Condensation

- Water which collects as droplets on a cold surface



Applications demand “over and above” standard IP tests

Ingress protection is normally tested using EN IEC 60529, Degrees of protection provided by enclosures, which gives a 2 digit IP code.

IP **6**

1st digit – protection against solid objects and dust

IP **8**

2nd digit – protection against water

IP tests to EN IEC 60529, give an indication of system performance but they are very short tests on samples that have been assembled under ideal laboratory conditions, at room temperatures and in straight lengths.

### Durations and application of these tests are;

- IPx4, 5 minutes light spray similar to a shower head
- IPx5, 3 minutes medium spray similar to a garden hose
- IPx6, 3 minutes high pressure jet similar to a fire hose
- IPx7, 30 minutes 1 metre immersion under water
- IPx8, immersion at a pressure and time stated by the manufacturer
- IPx9, 2 minutes high pressure hot water similar to a steam cleaner



High levels of Ingress Protection is a critical requirement of installations in the Rail Industry. Whether this is from the weather in the form of rain or flooding, or from brake dust in Underground applications.



Tested to extremes

## Flexicon performance - tested beyond the Standard

Water may be present as rain, condensation, immersion including flooding, spray, jet wash cleaning, ice formation and melting. Suction can be created by rise and fall of temperature although conduit systems are normally vented to atmosphere through at least one end. A vented conduit system has advantages over a sealed enclosure with cable glands as the conduit allows the air inside the enclosure to expand and contract with temperature changes.

In conjunction with some of our major rail customers we have completed more onerous testing than the standard tests required to give the customer confidence that true performance adequately represented real life installations.

- IPx8 carried out at 2 bar for 1 hour at minimum bend radius
- IPx8 carried out at 1 metre under water for 72 hours at minimum bend radius
- IPx8 carried out under water and ice at minimum bend radius for 5 cycles of; 10 hours at -15°C followed by 5 hours at +40°C
- Flexing conduit under water for 5 days (exhibition display)

Flexicon carries out extensive water ingress testing in house. For the Ultra system, over 1,000 IP tests were conducted to ensure that every conduit in every size, weight and material were checked with every type of fitting to ensure the integrity of the system. External test reports were then commissioned to confirm our in-house test results.

## Buyer beware

EN IEC 60529 states that above IPx6, it cannot be assumed that a higher IP code guarantees that the product will meet a lower level, this is because each test is representing a different type of environment.



“Flexicon Ultra™ has been tested to IP68, submerged at a depth of 1 meter for a period of 3 Days”

# Rail - Environmental Considerations

“Flexicon can offer a range of systems depending on the environmental conditions systems will be exposed to.”

## Temperature

- Intensity of heat present - high or low. Rapid changes of temperature



## UV

- Resistance to Ultra Violet Radiation



## Corrosion

- Damage caused to materials based on chemical reaction or exposure to moisture or damp / wet conditions



## Environmental performance...

Material properties can change when subject to different environmental conditions potentially leading to critical failures.

Changing temperatures can lead to shrinkage or expansion, potentially causing Ingress Protection issues. When plastic materials are exposed to low temperatures they can become more brittle which can compromise fatigue life and reduce impact strength. Performance of Polyamide (nylon) conduits and fittings will be affected by humidity and water immersion since Polyamide is hygroscopic. In wet conditions conduit becomes more flexible with better impact strength and fatigue life, but the compression strength is reduced.

Flexicon's knowledge of material properties and processing expertise gives Customers the assurance when it comes to product performance.



Environmental conditions can dramatically impact on the performance and suitability of products thus compromising system Integrity.

Flexicon have independently tested products so you know how they will perform...



## Flexicon warrant resistance to UV degradation...

Ultra Violet rays can cause significant mechanical degradation to plastic materials if continuously exposed. This can result in lower impact strength, less flexibility and lower fatigue life.

Flexicon have engineered material solutions to enhance resistance against UV. Specifiers and Engineers should carefully consider the level of exposure to UV an installation may be subjected to.

Our range of Network Rail PADS approved products have been extensively tested to warrant that the product performance will not suffer from significant mechanical deterioration from ultra violet exposure for a period of 35 years from the purchase date of the product.



**NetworkRail**

PA05/06589



## Corrosion resistance will impact the lifetime performance...

Non-metallic systems offer inherent corrosion resistance against water and moisture. Our NRFPIH and NRFPIHR systems are suitable and have been approved specifically for areas prone to flooding or immersion.

For Metallic conduit systems, Flexicon's galvanised steel conduits are manufactured from hot dipped galvanised steel strip with a zinc coating equating to thickness of 7microns. This offers a degree of protection but is not typically suitable or recommended for continuously wet or damp environments. For this type of environment we would recommend Stainless Steel conduits and fittings manufactured from Grade AISI 316L (EN ref 1.4404) stainless steel, which is commonly known as Marine Grade Stainless Steel.

Xenon Arc  
accelerated  
UV Test Chamber  
- simulated Florida  
Sunshine - Over  
21,000 hours of testing  
without failure



# Rail - Mechanical Protection Considerations

**Flexicon products have been designed and tested for dynamic applications. Whether an installation is fixed or subjected to continuous movement, vibration can be a potential hazard which needs careful consideration.**

With the continuous movement of Rolling Stock vehicles, trackside infrastructure is potentially exposed to vibration, potential impact and other mechanical forces which could compromise system integrity.

## Theft & Vandalism

- Stealing, unauthorised removal or deliberate damage



## Tensile Strength

- Resistance to conduit being pulled from the fitting



## Abrasion

- Process of scraping or wearing something away



## Dangers of Cable theft

Cable theft is a constant concern. Thieves will target signalling cables, overhead power lines and any other metallic materials to sell for scrap. When systems fail, trains and the network are brought to a standstill, subsequently protecting passengers but ultimately causing disruption, frustration and costing money.

Flexible Conduit can help to: • **Avoid Disruption** • **Visual Deterrent** • **Mechanical Barrier**



With a dynamic environment such as Rail, moving vehicles and rolling stock provide inherent vibration hazards which could compromise system Integrity.

## All round Teeth provide anti vibration performance...

The design of Flexicon Ultra incorporates 360° all round teeth to maintain the interface between the conduit and the fitting.

"Flexicon Ultra™ has been tested and approved to EN 61373 Railway Applications, for Rolling Stock Equipment". EN 61373 testing subjects conduit assemblies to vibration and shock testing to determine that system integrity is maintained.



### Vibration and Shock

- Shaking or sudden movement



### Impact

- Sharp or blunt forces which could cause damage



### Grazing animals / Vermin or pests

- Livestock
- Sharpening of teeth and searching for food



# Ultra

FLEXICON

Flexible Conduit provides a mechanical barrier to protect vulnerable cabling.

# Installation Track Record



TRANSPORT  
FOR LONDON  
EVERY JOURNEY MATTERS



“Flexicon have the most LUL approved products of any Flexible Conduit Manufacturer”

## Redevelopment of London's Blackfriars Tube Station

Balfour Beatty used Flexicon's flexible conduit to protect all of the cabling for lighting, power, signalling and communications for the major redevelopment of Blackfriars station.

The project includes the creation of a common entrance at the north end of the rail bridge spanning the River Thames, increasing the length of the platforms to accommodate 50 percent longer trains, the refurbishment of the underground station and the construction of a new station on the South Bank of the Thames.

All of the services have been left visible as part of the design, so Flexicon's LFHUBRD flexible conduit has been specified since its grade 316 stainless steel overbraid provides both protection and aesthetic appeal. The system has high abrasion resistance and high mechanical strength, is highly flexible and has an ingress protection rating of up to IP65.





## Thameslink - Infrastructure Improvements

Linbrooke Services has specified and installed a flexible conduit system from Flexicon to protect power and data cabling for a new passenger signage system as part of the Thameslink high capacity infrastructure improvements. The aim of the new system is to facilitate swift movement of passengers off and onto trains to minimise dwell time. It is vital in ensuring that people are on the right platform, at the right time and are standing in the right position.

The company selected Flexicon's LFHUBRD metallic conduit, which has a galvanised steel core, extra low fire hazard coating and a stainless steel overbraid. It provides EMC screening for data cabling and with its high tensile strength, crush and abrasion resistance will resist any potential vandalism. Its stainless steel overbraid also makes the conduit visually attractive to the viewing public.

## Europe's Largest Infrastructure Project - Crossrail

The £14.8billion Crossrail project is currently Europe's largest infrastructure project and will bring an extra 1.5million people to within 45 minutes of central London. Cable protection from Flexicon will be used for all lighting, small power, CCTV, fire and audio systems in both the general public and back office areas and for the Platform Edge Screen (PES) that prevents access to the track area.

The main requirements for the cable protection system were to protect cabling from vandalism, provide ingress protection of up to IP68 and meet the stringent fire safety standards for subsurface rail installations. For public facing areas the conduit had to also meet the aesthetic requirements of the installation. The back offices used the FSS Stainless Steel corrugated conduit. The Public facing areas used either FSSBRD with a stainless steel overbraid or FSS Black with a specially developed all metallic black stainless steel finish.

# Approvals Matrix

**NEW**

PADS Approved  
Cable Protection

PA05/06589



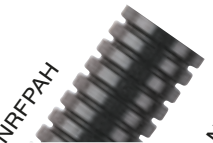
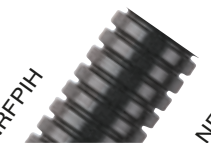
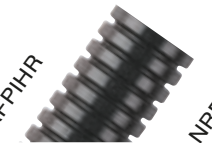
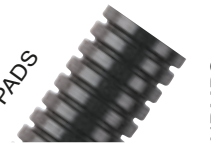


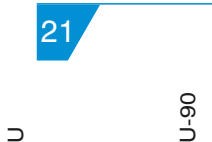
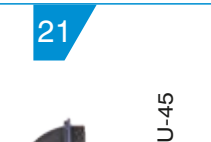









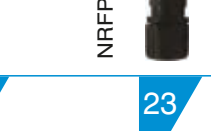






“Flexicon have a range of products and solutions approved for performance to the new stringent Network Rail outdoor requirements”



Network Rail approved conduit solutions...



							
21	21	31	20	20	20	23	23
							
22	22	22	23	23	24	24	24
							
22	22	22	23	23	24	24	24



# Approvals Matrix



“Flexicon have the most LUL approved products of any Flexible Conduit Manufacturer”



TFL S1085 approved conduit solutions...













 FU - APR Cert No. 296	 SSU - APR Cert No. 296	 FB - APR Cert No. 296	 FU5SB - APR Cert No. 296	 LFHU - APR Cert No. 297	 LFHUBRD - APR Cert No. 297	 LFHP - APR Cert No. 297
 28 LTPLFH - APR Cert No. 2020	 28 LTBRDLFH - APR Cert No. 658	 30 FPRTC - APR Cert No. 298	 30 FPRSS - APR Cert No. 298	 32 FPR - APR Cert No. 298	 34 FSS - APR Cert No. 4985	 31 FSSBRD - APR Cert No. 4985
 36	 36	 42	 42	 38	 44 NEW	 44 NEW

# PADS Approved Conduit Selection Chart

## Conduit Systems

	IP40	IP66	IP67	IP68	IP69	Compression Strength (kg / 100mm)			Pull Off Strength (kg) for 21/20mm size			Min Bend Radius (mm) for 21/20mm size			High Fatigue Life		Temp		Category		Low Fire Hazard			Fire Tests		Approvals			UV Resistance (35 years)			Page Number			
<b>NRFPAS</b>	●	●	●	●	●	75	40	45	●	120°C	-40°C	●																							20
<b>NRFPR</b>		●	●	●	●	75	40	45	●	120°C	-40°C	●																							20
<b>NRFPAH</b>		●	●	●	●	120	70	55	●	120°C	-40°C	●																							20
<b>NRFPIH</b>		●	●	●	●	60	50	45	●	110°C	-50°C	●																							21
<b>NRFPIHR</b>		●	●	●	●	60	35	55	●	110°C	-50°C	●																							21
<b>NRFPADS</b>	●					60	15	120		120°C	-40°C	●																						21	

# PADS Approved Fittings & Accessories Chart

Fitting & Accessory Options		NRFPAU	NRFPAU90	NRFPAU45	NRFPAX-FPAX	NRFPAX-CG	NRFPAU EOL	NRLDMPS	NRLDMPS90	NRFLCL	NRFLCLAMP	NRREC	NRCC01
													
IP Rating	IP65							●	●				
	IP66	●	●	●	●	●	●						
	IP67	●	●	●	●	●	●						
	IP68	●	●	●	●	●	●						
	IP69	●	●	●	●	●	●						
Low Fire Hazard	*** Inherent	●	●	●	●	●	●			●	●		
	** Extra	●	●	●	●	●	●			●	●		
	* Standard	●	●	●	●	●	●			●	●		
	Halogen Free	●	●	●	●	●	●	●	●	●	●	●	
	Self Extinguishing	●	●	●	●	●	●	●	●	●	●	●	
Fire Tests	EN 45545-2 HL3	●	●	●	●	●	●	●	●	●	●	●	
	NFPA-130	●	●	●	●	●	●	●	●	●	●	●	
		●	●	●	●	●	●	●	●	●	●	●	
Suitable for areas prone to flood or immersion	●	●	●										
Suitable for Class II installations													
UV Resistance (35 years)	●	●	●										
Approvals	Network Rail NR/L2/SIGELP/27422	●	●	●	●	●	●	●	●	●	●	●	●
	TFL	●	●	●	●	●	●			●	●		
	UL Approved	●	●	●	●	●	●						
	Lloyds	●	●	●	●	●	●						
Page Number	22	22	22	23	23	24	23	23	24	25	24	25	



# NRFPAS, NRFPAH & NRFPFR conduit

## nylon corrugated flexible conduit

In accordance with NR/L2/SIGELP/27421

NetworkRail

PA05/06589

### Conduit

STANDARD  
LOW FIRE  
HAZARD  
★

## NRFPAS

**Construction:** Standard weight, flame retardant nylon (PA6) corrugated flexible conduit.

**Colour:** Black.

**Typical Applications:** Providing mechanical protection and supplementary insulation to existing legacy cabling in accordance with NR/L2/SIGELP/27421.

- Highly flexible and high fatigue life
- High impact strength and recovers if crushed
- Temperature range -40°C to +120°C (-20°C to +100°C for moving applications)
- Lloyd's Register Type Approval
- UL recognised
- UV resistant



STANDARD  
LOW FIRE  
HAZARD  
★

## NRFPAH

**Construction:** Heavy weight, flame retardant, nylon (PA6) corrugated flexible conduit.

**Colour:** Black.

**Typical Applications:** Providing mechanical protection and supplementary insulation to existing legacy cabling in accordance with NR/L2/SIGELP/27421. Conduit offers higher mechanical strength than NRFPAS.

- High mechanical strength
- High impact resistance
- Temperature range -40°C to +120°C
- UL recognised
- UV resistant



EN 45545-2  
M3

NRFPA 130

EXTRA  
LOW FIRE  
HAZARD  
★★

## NRFPFR

**Construction:** Standard weight (highly flame retardant PA6) corrugated flexible conduit.

**Colour:** Black.

**Typical Applications:** Providing mechanical protection and supplementary insulation to existing legacy cabling in accordance with NR/L2/SIGELP/27421. Conduit offers enhanced fire performance properties than NRFPAS.

- Highly flexible and high fatigue life
- High impact strength and recovers if crushed
- Temperature range -40°C to +120°C (-20°C to +100°C for moving applications)
- UL recognised
- Lloyd's Register Type Approval
- Extra Low Fire Hazard (LFH)
- UV resistant



European (NW) sizes	nominal size (mm)	pitch
17	21	F
21	21	C
23	28	F
23	28	C
29	34	C
36	42	C
48	54	C
56	67	C
70	80	C
95	106	C

NRFPAS	part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
	0086/008738	50	21.2	16.7	45
	0086/008739	50	28.5	22.8	50
	0086/008740	25	34.5	28.1	60
	0086/008741	25	42.5	35.5	70
	0086/008742	25	54.5	47.2	80
	0086/008743	10	67.2	56.3	130
	0086/008744	10	80.0	67.0	160
	0086/008745	10	106.0	91.5	210

NRFPAH	part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
	0086/008754	50	21.2	15.5	55
	0086/008755	50	28.5	21.3	60
	0086/008756	25	34.5	27.6	70
	0086/008757	25	42.5	34.6	80
	0086/008758	25	54.5	46.0	90

NRFPFR	part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
	0086/008746	50	21.2	16.7	45
	0086/008747	50	28.5	21.7	50
	0086/008748	50	34.5	28.1	60
	0086/008749	25	42.5	35.5	70
	0086/008750	25	54.5	47.2	80
	0086/008751	10	67.2	56.3	130
	0086/008752	10	80.0	67.0	160
	0086/008753	10	106.0	91.5	210

# NRFPIH, NRFPIHR & NRFPADS conduit

## nylon corrugated flexible conduit

In accordance with **NR/L2/SIGELP/27421**

NetworkRail

PA05/06589



### NRFPIH

STANDARD  
LOW FIRE  
HAZARD  
★

**Construction:** Heavy weight nylon (PA12) corrugated flexible conduit.

**Colour:** Black.

**Typical Applications:** Suitable for flood areas.

- Highly flexible and high fatigue life
- High mechanical strength
- High impact resistance even at very low temperatures
- UV resistant
- Displays self recovery if crushed

### NRFPIHR

EN 45545-2  
ML3  
NFPA 130  
EXTRA  
LOW FIRE  
HAZARD  
★★

**Construction:** Heavy weight, flame retardant nylon (PA12) corrugated flexible conduit.

**Colour:** Black.

**Typical Applications:** Suitable for flood areas and offers enhanced fire performance properties over NRFPIH.

- Highly flexible and high fatigue life
- High mechanical strength
- High impact resistance even at very low temperatures
- UV resistant
- Displays self recovery if crushed
- Extra Low Fire Hazard (LFH)

### NRFPADS

**Construction:** Double slit nylon (PA6) corrugated conduit.

**Colour:** Black.

**Typical Applications:** Suitable for retrofit.

- Made from 2 interlocking slit corrugated conduits
- Temperature range -40°C to +120°C
- Cables can be inserted laterally
- Provides abrasion resistance and routing of cables for static applications

#### NRFPIH

part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
0086/008764	50	21.2	15.0	45
0086/008765	50	28.5	21.3	50
0086/008766	25	34.5	27.6	60
0086/008767	25	42.5	34.6	70
0086/008768	25	54.5	46.0	80
0086/008769	10	67.2	56.0	130

#### NRFPIHR

part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
0086/008770	50	21.2	15.0	45
0086/008771	50	28.5	21.3	50
0086/008772	25	34.5	27.6	60
0086/008773	25	42.5	34.6	70
0086/008774	25	54.5	46.0	80

#### NRFPADS

part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
0086/008759	50	21.2	13.9	120
0086/008760	50	28.5	20.5	170
0086/008761	25	34.5	26.6	180
0086/008762	25	42.5	32.0	200
0086/008763	25	54.5	43.0	240

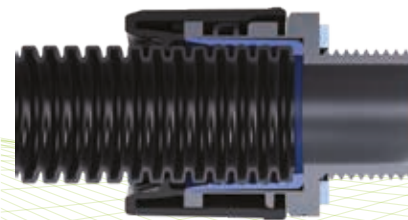
pitch	nominal size (mm)	europaean (NW) sizes
F	21	17
C	21	23
C	28	23
C	28	29
C	34	29
C	42	36
C	54	48
C	67	56
C	80	70
C	106	95

# Connectors & Approved Fittings & Glands

In accordance with NR/L2/SIGELP/27422

NetworkRail

PA05/06589



IP66 IP67 IP68 IP69

## Fittings

### NRFPAU

One piece fast fit, external threaded fitting with integrated conduit seal. Suitable for knockouts or threaded entries. Supplied with locknut.

IP66 IP67 IP68 IP69



### NRFPAU 90

One piece fast fit, external threaded 90 degree elbow fitting with integrated conduit seal. Suitable for knockouts. Supplied with locknut.

IP66 IP67 IP68 IP69



### NRFPAU 45

One piece fast fit, external threaded with 45 degree elbow fitting with integrated conduit seal. Suitable for knockouts. Supplied with locknut.

IP66 IP67 IP68 IP69



nominal size (mm)	European (NW) sizes
21	17
21	
28	23
28	23
34	29
42	36
54	48
67	56
80	70
106	95

Ext Metric	Thread Size
0086/008782	M20
0086/008783	M25
0086/008784	M32
0086/008785	M40
0086/008787	M50
0086/008789*	M63

Ext Metric	Thread Size
0086/008795	M20
0086/008796	M25
0086/008797	M32
0086/008798	M40
0086/008800	M50

Ext Metric	Thread Size
0086/008790	M20
0086/008791	M25
0086/008792	M32
0086/008793	M50
0086/008794	M50

\* FPAX Fitting type

# Ultra properties

- Fast fit - True one piece component
- IP rating: for conduit & fitting  
**IP66 + IP67 + IP68 (2 bar) + IP68 (72hrs @ 1m) + IP69**
- PA66 Nylon moulded fitting
- Nylon threads supplied complete with glass reinforced nylon locknut
- Vibration and shock tested to EN61373 Cat 2
- Tamper resistant

- Low Fire Hazard (LFH) see page 7
- Halogen, sulphur and phosphorus free
- NR/L2/SIGELP/27422

**NetworkRail**

PA05/06589



ML3  
**EN 45545-2**  
**NFPA 130**

## Large Diameter Clamp Fitting

Straight flanged nylon clamp fitting with seals.

IP65



## 90° Large Diameter Clamp Fitting

90° flanged nylon clamp fitting with seals.

IP65



## Coupler

Fast fit coupler to join two corrugated conduits of the same nominal size.

IP66

IP67

IP68

IP69



0086/008802
0086/008803

0086/008804
0086/008805

0086/008775
0086/008776
0086/008777
0086/008778
0086/008779

European (NW) sizes	nominal size (mm)
17	21
23	21
23	28
23	28
29	34
36	42
48	54
56	67
70	80
95	106

# End of Line Connectors and Approved Fittings & Accessories

In accordance with NR/L2/SIGELP/27422

IP66 IP67 IP68 IP69

NetworkRail

PA05/06589

## Fittings

### NRFAU EOL

End of Line

Straight conduit fitting combined with nylon cable gland for integral strain relief. Designed to be used at either end of cables as they pass through the gland plate of the F.S.P or enter troughing. Complete with sealing washer and locknut.

IP66 IP67 IP68  
2 bar



NEW

EXTRA  
LOW FIRE  
HAZARD  
\*\*

### NRREC

Thermoplastic elastomer cap used to seal end of conduit. Can be cut to size depending on size of cable. Can be additionally secured using cable tie (not supplied).



### CLIPS

Nylon conduit fixing clip for corrugated conduit with integral lid for increased security. Incorporates internal ribs to prevent corrugated conduit from pulling through.



EN 45545-2  
MLB  
NFPA 130

nominal size (mm)	European (NW) sizes
21	17
21	
28	23
28	23
34	29
42	36
54	48
67	56
80	70
106	95

Clamp Range (mm)

0086/008832	7-12		0086/008806
0086/008833	13-18	0086/008824	0086/008807
0086/008834	18-25	0086/008825	0086/008808
0086/008835	22-32	0086/008826	0086/008809
0086/008836	30-38	0086/008827	0086/008810
0086/008837	34-44	0086/008828	
		0086/008829	



# properties

- Fast fit - True one piece component
- IP rating: for conduit & fitting  
**IP66 + IP67 + IP68 (2 bar) + IP68 (72hrs @ 1m) + IP69**
- PA66 Nylon moulded fitting
- Nylon threads supplied complete with glass reinforced nylon locknut
- Vibration and shock tested to EN61373 Cat 2

- Low Fire Hazard (LFH) see page 7
- Halogen, sulphur and phosphorus free
- NR/L2/SIGELP/27422

**NetworkRail**

PA05/06589



EN 45545-2  
ML2  
NFPA 130

## NR FCLAMP

Nylon PA66, conduit fixing clamp for corrugated conduit. Suitable for use with with fine or coarse pitch conduits.



EN 45545-2  
ML2  
NFPA 130

## NR FCLAMP KIT

Nylon PA66, conduit fixing clamp for corrugated conduit, complete with two fixing bolts, two ½ zebedees (PNS06) and one plate.



## CONDUIT CUTTER

For any non-metallic flexible and rigid conduits.



0086/008811
0086/008812
0086/008813
0086/008814
0086/008815
0086/008816
0086/008817

NRFLAMP-KIT21
NRFLAMP-KIT28
NRFLAMP-KIT34
NRFLAMP-KIT42
NRFLAMP-KIT54
NRFLAMP-KIT67

0086/008830
0086/008830
0086/008830
0086/008831
0086/008831
0086/008831

European (NW) sizes	Nominal size (mm)
17	21
21	21
23	28
23	28
29	34
36	42
48	54
56	67
70	80
95	106

# TFL Conduit Selection Chart



## Conduit System

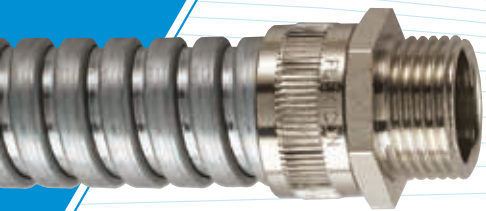
		APR Cert No.	IP40	IP54	IP65	IP66	IP67	IP68	IP69	Compression Strength (kg / 100mm)	Pull Off Strength (kg) for 20mm size	Min Bend Radius (mm) for 20mm size	Colours	Temp	Max	Min	Flexible	Pliable	Category	Low Fire Hazard	Halogen Free	Self Extinguishing	Fire Tests	TFL S1085 Classification	Abrasion Resistance	Resistance to Solvents	UV Resistance	EMC Performance	Approvals	Page Number
<b>FU</b>		296	●							350	350	40	zinc	90°C	300°C	300°C	●		*** Inherent	●	●	●	●	●	●	●	●	●	●	28
<b>SSU</b>		296	●							400	400	45	stainless steel	90°C	600°C	300°C	●		** Extra	●	●	●	●	●	●	●	●	●	●	28
<b>FB</b>		296	●							350	350	45	zinc	90°C	300°C	300°C	●		* Standard	●	●	●	●	●	●	●	●	●	●	30
<b>FUSSB</b>		296	●							350	350	45	stainless steel	90°C	300°C	300°C	●		EN 45545-2 HL3	●	●	●	●	●	●	●	●	●	●	30
<b>LFHP</b>		297				●	●	●	●	570	50	40	black	90°C	-25°C	-100°C	●	●	EN 45545-2	●	●	●	●	●	●	●	●	●	●	31
<b>LFHU</b>		297	●	●						350	120	45	black	90°C	-25°C	-100°C	●	●	MPPA-130	●	●	●	●	●	●	●	●	●	●	32
<b>LFHUBRD</b>		297	●	●						350	120, 300	45	stainless steel	90°C	-25°C	-100°C	●	●	TFL S1085	●	●	●	●	●	●	●	●	●	●	34
<b>LTPLFH</b>		2020				●	●	●	●	400	400	100	black	90°C	-25°C	-100°C	●	●	EMC SCREEN *	●	●	●	●	●	●	●	●	●	●	36
<b>LTBRDLFH</b>		658				●	●	●	●	400	130	100	black	90°C	-25°C	-100°C	●	●	EMC SCREEN *	●	●	●	●	●	●	●	●	●	●	36
<b>FPR</b>		298			●	●	●	●	●	75	40	45	black	120°C	-40°C	-100°C	●	●	EMC SCREEN *	●	●	●	●	●	●	●	●	●	●	38
<b>FPRSS</b>		298					●			75	100	45	stainless steel	120°C	-40°C	-100°C	●	●	EMC SCREEN *	●	●	●	●	●	●	●	●	●	●	42
<b>FPRTC</b>		298					●			75	75	45	tin	120°C	-40°C	-100°C	●	●	EMC SCREEN *	●	●	●	●	●	●	●	●	●	●	42
<b>FSS</b>		4985						●		1000	45	45	stainless steel	120°C	-40°C	-100°C	●	●	EMC SCREEN *	●	●	●	●	●	●	●	●	●	●	44
<b>FSSBRD</b>		4985						●		1000	45	45	black	120°C	-40°C	-100°C	●	●	EMC SCREEN *	●	●	●	●	●	●	●	●	●	●	44

# TFL Fitting Selection Chart



Fitting Options		FU	SSU	FB FUSSB	LFHP	LFHU	LFHUBRD	LTPLFH LTBRDLFH	ULTRA	FPRSS FPRTC	FSS	FSSBRD
IP Rating	IP40	●	●	●								
	IP54					●	●					
	IP65					●	●					
	IP66				●			●	●			
	IP67				●			●	●	●		
	IP68							●	●		●	●
	IP69							●	●			●
Low Fire Hazard	*** Inherent	●	●	●	●	●	●	●	●	●	●	●
	** Extra Standard	●	●	●	●	●	●	●	●	●	●	●
	Halogen Free	●	●	●	●	●	●	●	●	●	●	●
	Self Extinguishing	●	●	●	●	●	●	●	●	●	●	●
Fire Tests	EN 45545-2 HL3	●	●	●	●	●	●	●	●	●	●	●
	NFPA-130	●	●	●	●	●	●	●	●	●	●	●
	TFL S1085	●	●	●	●	●	●	●	●	●	●	●
Approvals	UL Approved							●	●			
	Lloyds				●	●		●	●			
Page Number	28	28	30	31	32	34	36	38	42	44	44	

TFL



# FU & SSU system galvanised steel & stainless steel



IP40

## Conduit

### FU



**Construction:** Galvanised steel, helically wound, flexible conduit.

**Colour:** Zinc, self colour.

APR Cert No.296

### SSU



**Construction:** Stainless steel (grade 316L), helically wound, flexible conduit.

**Colour:** Stainless steel, self colour.

APR Cert No.296

## Fittings

### M - fixed external thread nickel plated brass

Two part fitting comprising shell and body with external thread. This fitting can be inserted into a knockout and secured with a locknut.

IP40



metric thread  
part number

### M - SS fixed external thread stainless steel

Two part fitting comprising shell and body with external thread. This fitting can be inserted into a knockout and secured with a locknut.

IP40



metric thread  
part number

### S - swivel external thread nickel plated brass

Two part fitting comprising shell and body. The external thread swivels about the main body. Can be used with threaded entries, or knockout secured with a locknut.

IP40



metric thread  
part number

nominal size (mm)

nominal size (mm)	FU		SSU		outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
	part number	reel length (m)	part number	reel length (m)			
10	FU10 <sup>+</sup>	25, 50	SSU10 <sup>+</sup>	10, 25, 50	9.0	6.8	25
12	FU12	25, 50	SSU12 <sup>+</sup>	10, 25, 50	13.0	10.2	30 <sup>+</sup>
16	FU16	10, 25, 50	SSU16	10, 25, 50	16.0	13.0	40
20	FU20	10, 25, 50	SSU20	10, 25	20.5	16.9	45
25	FU25	10, 25, 50	SSU25	10, 25	25.0	21.1	55
32	FU32	10, 25	SSU32	10, 25	32.0	28.1	60
40	FU40	10, 25	SSU40	10	42.5	37.6	80
50	FU50	10, 25	SSU50	10	53.0	48.4	90
63	FU63	10	SSU63*	10	62.5	57.5	115
75	FU75	10			77.0	70.0	150

+ Double interlock section

M - fixed external thread nickel plated brass	M - SS fixed external thread stainless steel	S - swivel external thread nickel plated brass
FU10-M12-M	SSU10-M12-M	FU10-M12-S
FU12-M16-M	SSU12-M16-M	FU12-M16-S
FU16-M16-M	SSU16-M16-M	FU16-M16-S
FU16-M20-M		FU16-M20-S
FU20-M20-M	SSU20-M20-M	FU20-M20-S
FU25-M25-M	SSU25-M25-M	FU25-M25-S
FU32-M32-M	SSU32-M32-M	FU32-M32-S
FU40-M40-M	SSU40-M40-M	FU40-M40-S
FU50-M50-M	SSU50-M50-M	FU50-M50-S
FU63-M63-M	SSU63-M63-M*	FU63-M63-S
FU75-M75-M		

\* Indicates parts made to order on request and may be subject to MOQ and lead time

# properties

- High mechanical strength
- Highly flexible
- Inherently Low Fire Hazard (LFH) see page 7
- Fully compliant to LUL Std S1085 (Cert No. 296)
- Temperature range
  - 100°C to +300°C (FU)
  - 100°C to +600°C (SSU + SS fittings)
  - 100°C to +400°C (SSU + NPB fittings)
- IP rating: IP40
- **SSU is highly corrosion resistant**
- **Nickel plated brass fittings**
- **Stainless steel (316L) fittings**
- EN 45545 HL3 and NFPA130 compliant



## swivel external thread stainless steel

Two part fitting comprising shell and body. The external thread swivels about the main body. Can be used with threaded entries, or knockout secured with a locknut.

## plain hole connector nickel plated brass

Two part fitting comprising shell and body without thread. The body is fitted through the opposite side of the entry to the conduit and acts as a locking device also providing a smooth entry bush.

## fixed internal thread nickel plated brass

Two part fitting comprising shell and body with internal thread which can be used to connect with an external thread.

## plated steel P clip with pvc liner and secure stainless steel P clips

P clip to support and secure conduit.

## internal and external threaded nickel plated brass elbow

90° elbow which can be screwed onto external threaded fittings to create a 90° elbow termination.

IP40



metric thread part number

IP40



hole size (mm)

part number

IP40



metric thread part number



plated steel part number



stainless steel part number



part number

nominal size (mm)

metric thread part number	hole size (mm)	part number	metric thread part number	plated steel part number	stainless steel part number	part number	nominal size (mm)
SSU10-M12-S	9	FU10-P		FCC10	FCC10-SS*		10
SSU12-M16-S	12	FU12-P		FCC12	FCC12-SS	BM90-16M	12
SSU16-M16-S	16	FU16-P	FU16-M16-F	FCC16	FCC16-SS	BM90-16M	16
			FU16-M20-F	FCC16	FCC16-SS	BM90-20M	16
SSU20-M20-S	20	FU20-P	FU20-M20-F	FCC20	FCC20-SS	BM90-20M	20
SSU25-M25-S	25	FU25-P	FU25-M25-F	FCC25	FCC25-SS	BM90-25M	25
SSU32-M32-S	32	FU32-P	FU32-M32-F	FCC32	FCC32-SS	BM90-32M	32
	40	FU40-P	FU40-M40-F	FCC40	FCC40-SS	BM90-40M	40
	51	FU50-P	FU50-M50-F	FCC50	FCC50-SS	BM90-50M	50
	61	FU63-P	FU63-M63-F	FCC63	FCC63-SS*		63
	75	FU75-P		FCC75			75



# FB system galvanised steel core galvanised steel overbraid

# FUSSB system galvanised steel core stainless steel overbraid



## Conduit

### FB



**Construction:** Galvanised steel, helically wound conduit with galvanised steel overbraid.

APR Cert No.296

### FUSSB



**Construction:** Galvanised steel, helically wound, flexible conduit with stainless steel (316) overbraid.

APR Cert No.296



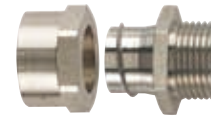
nominal size (mm)	FB						FUSSB					
	part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)		part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)	
16	FB16*	25	17.5	13.0	40	16	FUSSB16*	25	17.5	13.0	40	
20	FB20	25	21.5	16.9	45	20	FUSSB20	25	21.5	16.9	45	
25	FB25	25	26.0	21.1	55	25	FUSSB25	25	26.0	21.1	55	
32	FB32	25	34.0	28.1	70	32	FUSSB32	25	34.0	28.1	70	

## Fittings

### M - fixed external thread nickel plated brass

Two part fitting comprising shell and body with external thread. This fitting can be inserted into a knockout and secured with a locknut.

IP40



### S - swivel external thread nickel plated brass

Two part fitting comprising shell and body. The external thread swivels about the main body. Can be used with threaded entries, or knockout secured with a locknut.

IP40



metric thread part number	metric thread part number
FB16-M16-S	FB16-M16-M
FB16-M20-S	FB16-M20-M
FB20-M20-S	FB20-M20-M
FB25-M25-S	FB25-M25-M
FB32-M32-S	FB32-M32-M

\* Indicates parts made to order on request and may be subject to MOQ and lead time

# LFHP system

## galvanised steel extra LFH coated, pliable



### P - plain hole connector nickel plated brass

Two part fitting comprising shell and body without thread. The body is fitted through the opposite side of the entry to the conduit and acts as a locking device also providing a smooth entry bush.

IP40



### 90° elbow - internal and external threaded nickel plated brass elbow

90° elbow which can be screwed onto external threaded fittings.



### LFHP

**Construction:** Corrugated galvanised steel with kraft paper lining and smooth extra LFH outer cover.

**Colour:** Black.

**Typical Applications:** Any installation where there is no movement and a high IP rating is required.

APR Cert No.297



### external thread nickel plated brass

Multipart compression fitting including serrated elastomeric seal. Can be used for knockout or threaded entries as fitting rotates until tightened.

IP66 IP67



hole size (mm)	part number
16	FB16-P
20	FB20-P
25	FB25-P
32	FB32-P

metric thread part number
BM90-16M
BM90-20M
BM90-20M
BM90-25M
BM90-32M

LFHP part number	reel length (m)	min inside bend radius (mm)	outside dia (mm)	inside dia (mm)
LFHP20B	25	40	20.9	14.6
LFHP25B	25	55	27.3	20.4
LFHP32B	25	65	34.0	26.7

metric thread part number	nominal size (mm)
FLP20-M20-C	16
FLP25-M25-C	16
FLP25-M25-C	20
FLP32-M32-C	25
FLP32-M32-C	32



# LFHU system

## galvanised steel LFH coated



Conduit

### LFHU



**Construction:** Galvanised steel, helically wound, flexible steel conduit with Low Fire Hazard (LFH) coating.

**Colour:** Black.

**APR Cert No.297**



nominal size (mm)

nominal size (mm)	LFHU part number	reel length (m)	outside dia (mm)	inside dia (mm)
12	LFHU12B*	25	14.0	10.2
16	LFHU16B	25, 50	17.0	13.0
16				
20	LFHU20B	10, 25, 50	21.5	16.9
25	LFHU25B	10, 25, 50	26.0	21.1
32	LFHU32B	10, 25	34.0	28.1
40	LFHU40B	10, 25	44.5	37.6
50	LFHU50B	10, 25	55.0	48.4

Fittings

### M - fixed external thread nickel plated brass

Two part fitting comprising shell and body with external thread. This fitting can be inserted into a knockout and secured with a locknut.

IP54



metric thread part number

FSU12-M16-M
FSU16-M16-M
FSU16-M20-M
FSU20-M20-M
FSU25-M25-M
FSU32-M32-M
FSU40-M40-M
FSU50-M50-M

### S - swivel external thread nickel plated brass

Two part fitting comprising shell and body. The external thread swivels about the main body. Can be used with threaded entries, or knockout and secured with a locknut.

IP54



metric thread part number

FSU12-M16-S
FSU16-M16-S
FSU16-M20-S
FSU20-M20-S
FSU25-M25-S
FSU32-M32-S
FSU40-M40-S
FSU50-M50-S

### P - plain hole connector nickel plated brass

Two part fitting comprising shell and body without thread. The body is fitted through the opposite side of the entry to the conduit and acts as a locking device also providing a smooth entry bush.

IP54



hole size (mm)

12	FSU12-P
16	FSU16-P
20	FSU20-P
25	FSU25-P
32	FSU32-P
40	FSU40-P
51	FSU50-P

### F - fixed internal thread nickel plated brass

Two part fitting comprising shell and body with internal thread which can be used to couple two pieces of conduit together when used with a swivel fitting.

IP54



metric thread part number

FSU16-M16-F
FSU16-M20-F
FSU20-M20-F
FSU25-M25-F
FSU32-M32-F
FSU40-M40-F
FSU50-M50-F

\* Indicates parts made to order on request and may be subject to MOQ and lead time

Other sizes available. Contact us for more details.



- High mechanical strength
- Highly flexible
- IP rating: IP54 with standard fittings, IP65 with type C compression fittings
- Extra low Fire Hazard UL94 V0, for LFH see page 7
- Halogen, sulphur and phosphorus free
- Compliant to LUL Std S1085 (LFHU) (Cert No. 297)

- EN45545-2 HL3 for LFHU and NFPA 130
- Temperature range: -25°C to +90°C (LFHU)
- Nickel plated brass fittings
- Vibration and shock tested to EN61373 Cat 2



### C - external thread nickel plated brass

Multipart compression fitting including elastomeric seal. Can be used for knockouts or threaded entries as fitting rotates until tightened.

IP65



metric thread  
part number

FSU12-M16-C  
FSU16-M16-C  
FSU16-M20-C  
FSU20-M20-C  
FSU25-M25-C  
FSU32-M32-C  
FSU40-M40-C  
FSU50-M50-C

### C-S - external thread nickel plated brass

Multipart compression fitting including elastomeric seal. The external thread swivels about the main body even after tightening.

IP65



metric thread  
part number

FSU12-M16-C-S  
FSU16-M16-C-S  
FSU16-M20-C-S  
FSU20-M20-C-S  
FSU25-M25-C-S  
FSU32-M32-C-S

### C90 - external thread elbow nickel plated brass

Multipart 90° compression fitting including elastomeric seal.

IP65



metric thread  
part number

FSU12-M16-C90  
FSU16-M16-C90  
FSU16-M20-C90  
FSU20-M20-C90  
FSU25-M25-C90  
FSU32-M32-C90

### coupler - external thread elbow nickel plated brass

Multipart 90° compression fitting including elastomeric seal.

IP65



part number

FSU16-FSU16  
FSU20-FSU20  
FSU25-FSU25  
FSU32-FSU32

### E - insert nickel plated brass

Single part, machined insert to cap end of conduit.

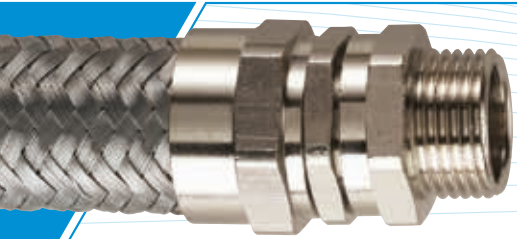


part number

FSU12-E  
FSU16-E  
FSU16-E  
FSU20-E  
FSU25-E  
FSU32-E  
FSU40-E  
FSU50-E

nominal size (mm)

12  
16  
16  
20  
25  
32  
40  
50



# LFHUBRD system

galvanised steel core, extra LFH coated, stainless steel overbraid



Conduit

## LFHUBRD

**Construction:** Galvanised steel, helically wound, flexible steel conduit with Low Fire Hazard (LFH) coating with Stainless Steel (316L) overbraid.

**Colour:** Stainless Steel, self colour.

**APR Cert No.297**

STANDARD EMC SCREEN  
EXTRA LOW FIRE HAZARD



Fittings

### M - fixed external thread nickel plated brass

Two part fitting comprising shell and body with external thread. This fitting can be inserted into a knockout and secured with a locknut.

IP54



### S - swivel external thread nickel plated brass

Two part fitting comprising shell and body. The external thread swivels about the main body. Can be used with threaded entries, or knockout secured with a locknut.

IP54



nominal size (mm)

LFHUBRD	part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
20	LFHUBRD20	25	22.7	16.9	45
25	LFHUBRD25	25	27.2	21.1	55
32	LFHUBRD32	25	35.2	28.1	70
40	LFHUBRD40	10	45.7	37.6	80

metric thread part number

FSB20-M20-M
FSB25-M25-M
FSB32-M32-M
FSB40-M40-M

metric thread part number

FSB20-M20-S
FSB25-M25-S
FSB32-M32-S
FSB40-M40-S

# properties

- High mechanical strength
- Tensile strength with standard fittings 120kg for 20mm size
- Tensile strength with C type fittings 300kg for 20mm size
- Highly flexible
- IP rating: IP54 for standard fittings or IP65 for C type fittings
- High abrasion resistance
- Resists hot metal swarf and splashes
- Provides EMC screening
- Temperature range -20°C to +90°C (LFHUBRD)
- LFHUBRD is extra low fire hazard
- Compliant to LUL Std S1085 (LFHUBRD) (Cert No. 297)
- Nickel plated brass fittings
- Vibration and shock tested to EN61373 Cat 2
- LFHUBRD is EN45545-2 to HL3 and NFPA130



## P - plain hole connector nickel plated brass

Two part fitting comprising shell and body without thread. The body is fitted through the opposite side of the entry to the conduit and acts as a locking device also providing a smooth entry bush.

IP54



hole size (mm)  
part number

20	FSB20-P
25	FSB25-P
32	FSB32-P
40	FSB40-P

## C - fixed external thread nickel plated brass

Multipart compression fitting including elastomeric seal. Can be used for knockouts. Braid is locked between inner and outer compression nuts.

IP65



metric thread part number

FSB20-M20-C
FSB25-M25-C
FSB32-M32-C

## CS - swivel external thread nickel plated brass

Multipart compression fitting including elastomeric seal can be used for knockouts or threaded entries. Braid is locked between inner and outer compression nuts.

IP65



metric thread part number

FSB20-M20-C-S
FSB25-M25-C-S
FSB32-M32-C-S

## C90 - external thread elbow nickel plated brass

Multipart 90° compression fitting including elastomeric seal. Braid is locked between inner and outer compression nuts.

IP65



metric thread part number

FSB20-M20-C90
FSB25-M25-C90
FSB32-M32-C90

nominal size (mm)  
20  
25  
32  
40

# LTPLFH & LTBRDLFH system

## liquid tight conduits and fittings



- IP66
- IP67
- IP68
- IP69

### Conduit

**LTPLFH**




**Construction:** Galvanised steel, helically wound, liquid tight, flexible conduit with oil resistant Low Fire Hazard (LFH) cover.

**Colour:** Black.

**APR Cert No.2020**

**LTBRDLFH**



**NEW** **ENHANCED EMC SCREEN** **EXTRA LOW FIRE HAZARD**

**Construction:** Galvanised steel, helically wound, flexible conduit with galvanised steel braid, with smooth oil resistant Low Fire Hazard (LFH) cover.

**Colour:** Black.

**APR Cert No.658**



### Fittings

**C - external thread nickel plated brass**

Multipart compression fitting including elastomeric seal. Can be used for knockout or threaded entries as fitting rotates until tightened.

**C-S - swivel external thread nickel plated brass**

Compression fitting for knockout or threaded entries. Multipart compression fitting including elastomeric seal. The external thread swivels about the main body even after tightening.

**C-F - internal thread nickel plated brass**

Multi part compression fitting including elastomeric seal to connect with an external thread.

- IP66
- IP67
- IP68
- IP69

- IP66
- IP67
- IP68
- IP69

- IP66
- IP67
- IP68
- IP69



nominal size (mm)	outside dia (mm)	inside dia (mm)	LTPLFH			LTBRDLFH		
			part number	reel length (m)	min inside bend radius (mm)	part number	reel length (m)	min inside bend radius (mm)
16	17.8	12.6	LTPLFH16B	25	60			
16								
20	21.1	16.0	LTPLFH20B	25	100	LTBRDLFH20B	25	130
25	26.4	21.0	LTPLFH25B	25	130	LTBRDLFH25B	25	200
32	33.1	26.5	LTPLFH32B	10	180	LTBRDLFH32B*	25	270

metric thread part number	metric thread part number	metric thread part number
LTP16-M16-C	LTP16-M16-S	
LTP16-M20-C	LTP16-M20-S	
LTP20-M20-C	LTP20-M20-S	LTP20-M20-F
LTP25-M25-C	LTP25-M25-S	LTP25-M25-F
LTP32-M32-C	LTP32-M32-S	LTP32-M32-F

\* Other sizes also available visit [www.flexicon.uk.com](http://www.flexicon.uk.com)

# properties

- High mechanical strength
- IP rating: IP66 + IP67 + IP68 (5 bar) + IP69
- Temperature range (-50°C to +135°C) (-60°C to +85°C EXD)
- Oil resistant
- UV resistant
- Nickel Plated Brass Fittings
- Earthing ferrule is manufactured in machined Nickel Plated Brass to facilitate easy assembly and re-use
- Stainless steel fittings also available contact us
- Metric threads supplied with Insulated Throats
- Swivel fittings allows the thread to swivel about the main body even after tightening
- Vibration and shock tested to EN61373 Cat 2
- Conforms to EN 61386
- Interchangeable with all Liquid tight conduits made to American (UL360) sizes
- For other Liquid tight conduits please refer to [www.flexicon.uk.com](http://www.flexicon.uk.com)
- For more details on LTP EXD fitting refer to [www.flexicon.uk.com](http://www.flexicon.uk.com)

NEW

## C-SF - swivel internal thread nickel plated brass

Multi part compression fitting including elastomeric seal. Swivel internal thread makes it suitable for connection to male threads. Internal thread swivels about the main body even after tightening.

IP66 IP67 IP68 IP69



metric thread part number

LTP16-M20-SF  
LTP20-M20-SF  
LTP25-M25-SF

## C90 - external thread nickel plated brass

90° multipart compression fitting including elastomeric seal. Can be used for knockouts.

IP66 IP67 IP68 IP69



metric thread part number

LTP16-M16-C90  
LTP16-M20-C90  
LTP20-M20-C90  
LTP25-M25-C90  
LTP32-M32-C90

## C45 - external thread nickel plated brass

45° multipart compression fitting including elastomeric seal. Can be used for knockouts.

IP66 IP67 IP68 IP69



metric thread part number

LTP16-M20-C45  
LTP20-M20-C45  
LTP25-M25-C45  
LTP32-M32-C45

## Coupler - nickel plated brass

Multi part compression coupler including elastomeric seals to connect with an external thread.

IP66 IP67 IP68 IP69



part number

LTP16-LTP16  
LTP20-LTP20  
LTP25-LTP25  
LTP32-LTP32

## FW - fibre, retained face sealing washers

Retained sealing washer to maintain IP rating of fitting to adjacent equipment.



metric thread part number

FW16  
FW20  
FW25  
FW32

## LTP-EXD

Nickel Plated Brass gland with a nylon and elastomeric seal and two part epoxy resin pack. Supplied in boxes of one, complete with instructions and gloves. **Visit website for more details.**

**APR Cert No.2624**

IP66 IP67 IP68 IP69



metric thread part number

LTP16-M20-EXD  
LTP20-M20-EXD  
LTP25-M25-EXD  
LTP32-M32-EXD



# FPR & ULTRA system non-metallic conduit and fittings



**TRANSPORT FOR LONDON**  
EVERY JOURNEY MATTERS



IP66

IP67

IP68

IP69

## Conduit

### FPR

**Construction:** Standard weight nylon (highly flame retardant PA6) corrugated flexible conduit.

**Colour:** Black.

**APR Cert No.298**



nominal size (mm)

	FPR				
	part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
13	FPR13	50	13.0	9.8	25
16	FPR16	50	15.8	11.8	35
21	FPR21	50	21.2	16.7	45
28	FPR28	50	28.5	21.7	50
34	FPR34	50	34.5	28.1	60
42	FPR42	25	42.5	35.5	70
54	FPR54	25	54.5	47.2	80

## Fittings

### FPAU - straight external thread

One piece fast fit, external threaded fitting with integrated conduit seal. Suitable for knockouts or threaded entries.

IP66 IP67 IP68 IP69



### FPAU - straight UNEF swivel internal thread

One piece fast fit fitting with nickel plated brass swivel UNEF internal thread for attachment to circular connectors with integrated conduit seal.

IP66 IP67 IP68 IP69



### FPAU - straight swivel brass external thread

One piece fast fit, swivel, nickel plated brass external threaded fitting with integrated conduit seal. Suitable for knockouts or threaded entries.

IP66 IP67 IP68 IP69



### FPAU - straight swivel brass internal thread

One piece fast fit, swivel, nickel plated brass internal threaded fitting with integrated conduit seal.

IP66 IP67 IP68 IP69



	Ext Metric	Int UNEF	Thread	NPB Ext Metric	NPB Int Metric
	FPAU13-M16			FPAU13-BM16	FPAU13-BFM16
	FPAU16-M16	FPAU16-BU075	(3/4")	FPAU16-BM16	FPAU16-BFM16
	FPAU21-M20	FPAU21-BU100	(1")	FPAU21-BM20	FPAU21-BFM20
	FPAU28-M25	FPAU28-BU138	(1 3/8")	FPAU28-BM25	FPAU28-BFM25
	FPAU34-M32	FPAU34-BU144	(1 7/16")	FPAU34-BM32	FPAU34-BFM32
	FPAU42-M40	FPAU42-BU200	(2")	FPAU42-BM40	FPAU42-BFM40
	FPAU54-M50	FPAU54-BU200	(2")	FPAU54-BM50	FPAU54-BFM50

Note: FPR Conduit also available in 10mm, 67mm, 80mm and 106mm visit [www.flexicon.uk.com](http://www.flexicon.uk.com)

- Fast fit - True one piece component
- IP rating: for conduit & fitting **IP66 + IP67 + IP68 (2 bar) + IP68 (72hrs @ 1m) + IP69**
- PA66 Nylon moulded fitting
- Metallic threads made from Nickel Plated Brass
- Nylon threads supplied complete with glass reinforced nylon locknut
- Face seal details:
  - **Metric Nylon threads supplied with retained Polyester Elastomer Washer**
  - **Metric Brass threads supplied with retained Fibre Washer**
  - **UNEF, Flange and Cable Glands supplied with O-ring**
- Vibration and shock tested to EN61373 Cat 2
- Tamper resistant
- Both 90° and 45° elbows incorporate swept bore to facilitate cable installation and protect cables when installed
- Can be removed using a screwdriver
- All round teeth give high pull off strength 70kg with FPAH21
- Suitable for fine and coarse pitch conduits
- UV resistant
- Temperature range:
  - conduit fitting: -50°C to +135°C**
  - Low Fire Hazard (LFH) see page 7
  - Halogen, sulphur and phosphorus free
  - Swivel threads allow assembly without twisting of cables
  - EN 45545 HL3 and NFPA130 compliant

### FPAU - flange

One piece fast fit fitting with nylon swivel flange with integrated conduit seal and with 'O' ring face seal.



Flange

### FPAU - FPAU - coupler

One piece fast fit coupler to join two corrugated conduits of the same nominal size.



Coupler

### FPAU90 - 90° external thread

One piece fast fit, external threaded 90 degree elbow fitting with integrated conduit seal. Suitable for knockouts.



Ext Metric

### FPAU90 - 90° UNEF swivel internal thread

One piece fast fit, 90 degree elbow fitting with nickel plated brass swivel UNEF internal thread for attachment to circular connectors with integrated conduit seal.



Int UNEF

### FPAU90 - 90° swivel brass external thread

One piece fast fit, swivel, 90 degree elbow, nickel plated brass external threaded fitting with integrated conduit seal. Suitable for knockouts or threaded entries.



NPB Ext Metric

Flange	Coupler	Ext Metric	Int UNEF	Thread	NPB Ext Metric	nominal size (mm)
FPAU16-FL	FPAU16-FPAU16	FPAU13-M16-90	FPAU16-BU075-90	(¾")	FPAU13-BM16-90	13
FPAU21-FL	FPAU21-FPAU21	FPAU16-M16-90	FPAU21-BU100-90	(1")	FPAU16-BM16-90	16
FPAU28-FL	FPAU28-FPAU28	FPAU21-M20-90	FPAU28-BU138-90	(1 ⅜")	FPAU21-BM20-90	21
FPAU34-FL	FPAU34-FPAU34	FPAU28-M25-90	FPAU34-BU144-90	(1 ⅞")	FPAU28-BM25-90	28
FPAU42-FL		FPAU34-M32-90	FPAU42-BU200-90	(2")	FPAU34-BM32-90	34
		FPAU42-M40-90	FPAU54-BU200-90	(2")	FPAU42-BM40-90	42
		FPAU54-M50-90			FPAU54-BM50-90	54

Note: FPR Conduit also available in 10mm, 67mm, 80mm and 106mm visit [www.flexicon.uk.com](http://www.flexicon.uk.com)



# FPR & ULTRA system non-metallic conduit and fittings



- IP66
- IP67
- IP68
- IP69



## Fittings

### FPAU 90 - 90° swivel brass internal thread

One piece fast fit, swivel, 90 degree elbow, nickel plated brass internal threaded fitting with integrated conduit seal.

- IP66
- IP67
- IP68
- IP69



NPB Int Metric

### FPAU 90 - 90° flange

One piece fast fit 90 degree elbow fitting with nylon swivel flange with integrated conduit seal and 'O' ring face seal.

- IP66
- IP67
- IP68
- IP69



Flange

### FPAU 45 - 45° flange

One piece fast fit, 45 degree elbow fitting with nylon swivel flange with integrated conduit seal and with 'O' ring face seal.

- IP66
- IP67
- IP68
- IP69



Flange

### FPAU 45 - 45° UNEF swivel internal thread

One piece fast fit, 45 degree elbow fitting with nickel plated brass swivel UNEF internal thread for attachment to circular connectors with integrated conduit seal.

- IP66
- IP67
- IP68
- IP69



Int UNEF

### FPAU 45 - 45° external thread

One piece fast fit, external threaded 45 degree elbow fitting with integrated conduit seal. Suitable for knockouts.

- IP66
- IP67
- IP68
- IP69



Ext Metric

nominal size (mm)

nominal size (mm)	FPAU13-BFM16-90	FPAU16-FL-90	FPAU16-FL-45	FPAU16-BU075-45	(3/4")	FPAU16-M20-45
13	FPAU13-BFM16-90	FPAU16-FL-90	FPAU16-FL-45	FPAU16-BU075-45	(3/4")	FPAU16-M20-45
16	FPAU16-BFM16-90	FPAU21-FL-90	FPAU21-FL-45	FPAU21-BU100-45	(1")	FPAU21-M20-45
21	FPAU21-BFM20-90	FPAU28-FL-90	FPAU28-FL-45	FPAU28-BU138-45	(1 3/8")	FPAU28-M25-45
28	FPAU28-BFM25-90	FPAU34-FL-90	FPAU34-FL-45	FPAU34-BU144-45	(1 7/16")	FPAU34-M32-45
34	FPAU34-BFM32-90	FPAU42-FL-90	FPAU42-FL-45	FPAU42-BU200-45	(2")	FPAU42-M50-45
42	FPAU42-BFM50-90	FPAU54-FL-90	FPAU54-FL-45	FPAU54-BU200-45	(2")	FPAU54-M50-45
54	FPAU54-BFM50-90					

Note: FPR Conduit also available in 10mm, 67mm, 80mm and 106mm visit [www.flexicon.uk.com](http://www.flexicon.uk.com)



# properties

- Fast fit - True one piece component
- IP rating: for conduit & fitting **IP66 + IP67 + IP68 (2 bar) + IP69**
- PA66 Nylon moulded fitting
- Metallic threads made from Nickel Plated Brass
- Nylon threads supplied complete with glass reinforced nylon locknut
- Face seal details:
  - **Metric Nylon threads supplied with retained Polyester Elastomer Washer**
  - **Metric Brass threads supplied with retained Fibre Washer**
  - **UNEF, Flange and Cable Glands supplied with O-ring**
- Vibration and shock tested to EN61373 Cat 2
- Tamper resistant
- Both 90° and 45° elbows incorporate swept bore to facilitate cable installation and protect cables when installed
- Can be removed using a screwdriver
- All round teeth give high pull off strength 70kg with FPAH21
- Suitable for fine and coarse pitch conduits
- UV resistant
- Temperature range:
  - conduit fitting: -50°C to +135°C**
  - Low Fire Hazard (LFH) see page 7
  - Halogen, sulphur and phosphorus free
  - Swivel threads allow assembly without twisting of cables
  - EN 45545 HL3 and NFPA130 compliant

## FPAU 45 - 45° swivel brass external thread

One piece fast fit, swivel, 45 degree elbow, nickel plated brass external threaded fitting with integrated conduit seal. Suitable for knockouts or threaded entries.



NPB Ext Metric

## FPAU 45 - 45° swivel brass internal thread

One piece fast fit, swivel, 45 degree elbow fitting, nickel plated brass internal threaded fitting with integrated conduit seal.



NPB Int Metric

## FPAU straight - cable gland

One piece fast fit, swivel, nickel plated brass external threaded cable gland fitting with integrated conduit seal. Suitable for knockouts or threaded entries.



NPB metric

Cable Range (mm)

## FPAU 90° elbow - cable gland

One piece fast fit, swivel, 90 degree elbow, nickel plated brass external threaded cable gland fitting with integrated conduit seal. Suitable for knockouts or threaded entries.



NPB metric

Cable Range (mm)

## FPAU 45° elbow - cable gland

One piece fast fit, swivel, 45 degree elbow, nickel plated brass external threaded cable gland fitting with integrated conduit seal. Suitable for knockouts or threaded entries.



NPB metric

Cable Range (mm)

nominal size (mm)

FPAU 45 - 45° swivel brass external thread		FPAU 45 - 45° swivel brass internal thread		FPAU straight - cable gland		FPAU 90° elbow - cable gland		FPAU 45° elbow - cable gland		nominal size (mm)
Part No.	Cable Range (mm)	Part No.	Cable Range (mm)	Part No.	Cable Range (mm)	Part No.	Cable Range (mm)	Part No.	Cable Range (mm)	
FPAU16-BM16-45	4.0 - 6.5	FPAU16-BFM20-45	4.0 - 6.5	FPAU13-BM16-CG-R1	4.0 - 6.5	FPAU13-BM16-CG-R1-90	4.0 - 6.5	FPAU16-BM20-CG-R1-45	4.0 - 6.5	13
FPAU21-BM20-45	4.0 - 6.5	FPAU21-BFM20-45	4.0 - 6.5	FPAU16-BM16-CG-R1	4.0 - 6.5	FPAU16-BM16-CG-R1-90	4.0 - 6.5	FPAU21-BM20-CG-R1-45	4.0 - 6.5	16
FPAU28-BM25-45	9.0 - 13.0	FPAU28-BFM25-45	9.0 - 13.0	FPAU21-BM20-CG-R1	4.0 - 6.5	FPAU21-BM20-CG-R1-90	4.0 - 6.5	FPAU28-BM25-CG-R1-45	9.0 - 13.0	21
FPAU34-BM32-45	14.0 - 18.0	FPAU34-BFM32-45	14.0 - 18.0	FPAU28-BM25-CG-R1	9.0 - 13.0	FPAU28-BM25-CG-R1-90	9.0 - 13.0	FPAU34-BM32-CG-R1-45	14.0 - 18.0	28
FPAU42-BM40-45	17.0 - 20.5	FPAU42-BFM50-45	17.0 - 20.5	FPAU34-BM32-CG-R1	14.0 - 18.0	FPAU34-BM32-CG-R1-90	14.0 - 18.0	FPAU42-BM40-CG-R1-45	17.0 - 20.5	34
FPAU54-BM50-45	32.0 - 36.0	FPAU54-BFM50-45	32.0 - 36.0	FPAU42-BM40-CG-R1	17.0 - 20.5	FPAU42-BM40-CG-R1-90	17.0 - 20.5	FPAU54-BM50-CG-R1-45	32.0 - 36.0	42
				FPAU54-BM50-CG-R1	32.0 - 36.0	FPAU54-BM50-CG-R1-90	32.0 - 36.0			54

Note: FPR Conduit also available in 10mm, 67mm, 80mm and 106mm visit [www.flexicon.uk.com](http://www.flexicon.uk.com)

Additional cable ranges available - see main catalogue



# FPRSS system corrugated nylon, (PA6) stainless steel overbraid

# FPRTC system corrugated nylon, (PA6) tinned copper overbraid



## Conduit

### FPRSS



**Construction:** Standard weight, extra low fire hazard, corrugated nylon (PA6), with stainless steel (316L) overbraid.

APR Cert No.298



### FPRTC



**Construction:** Standard weight, extra low fire hazard, corrugated nylon (PA6), with tinned copper overbraid.

APR Cert No.298



## Fittings

### C - fixed external thread nickel plated brass

Multipart compression fitting including conduit retention clip and elastomeric seal. Can be used with knockouts. Braid is locked between inner and outer compression nuts.

IP67



metric thread part number

### CS - swivel external thread nickel plated brass

Multipart compression fitting including conduit retention clip and elastomeric seal. Can be used for knockouts and threaded entries. Braid is locked between inner and outer compression nuts.

IP67



metric thread part number

### C90 - external thread elbow nickel plated brass

Multipart 90° compression fitting including conduit retention clip and elastomeric seal. Can be used with knockouts. Braid is locked between inner and outer compression nuts.

IP67



metric thread part number

nominal size (mm)	FPRSS				FPRTC			
	part number	outside dia (mm)	min inside dia (mm)	min inside bend radius (mm)	part number	outside dia (mm)	min inside dia (mm)	min inside bend radius (mm)
16	FPRSS16-50M	17.3	11.5	35	FPRTC16-50M*	17.3	11.5	35
21	FPRSS21-50M	22.7	15.0	45	FPRTC21-50M*	22.7	15.0	45
28	FPRSS28-50M	30.0	21.3	50	FPRTC28-50M*	30.0	21.3	50
34	FPRSS34-50M	36.0	27.6	60	FPRTC34-50M*	36.0	27.6	60
42	FPRSS42-25M*	44.0	35.5	70	FPRTC42-25M*	44.0	35.5	70
54	FPRSS54-25M*	56.0	47.2	80	FPRTC54-25M*	56.0	47.2	80

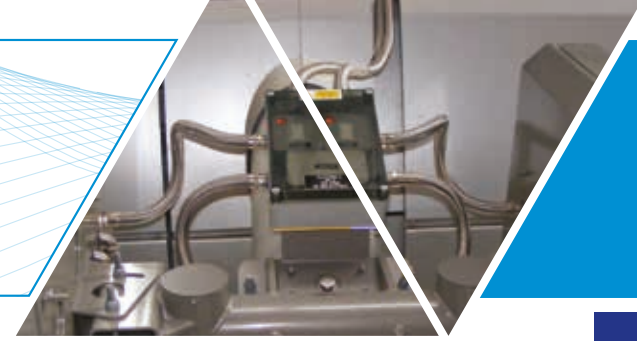
BC16-M16-C	BC16-M16-S	
BC21-M20-C	BC21-M20-S	BC21-M20-C90
BC28-M25-C	BC28-M25-S	
BC34-M32-C	BC34-M32-S	
BC42-M40-C	BC42-M40-S	
BC54-M50-C*	BC54-M50-S*	

\* Indicates parts made to order on request and may be subject to MOQ and lead time

**FPRSS & FPRTC**

- Highly flexible and high fatigue life
- High impact strength
- Temperature range -40°C to +120°C
- Extra low fire hazard see page 7
- Provides EMC screening  
**49dB@1MHz (FPRSS)**  
**67dB@1MHz (FPRTC)**

- **FPRSS provides high tensile strength and resistance to abrasion, corrosion and vandals**
- Vibration and shock tested to EN61373 Cat 2
- **LUL Std S1085 Cert No. 298**



**90° elbow - internal and external threaded nickel plated brass elbow**

90° elbow which can be screwed onto external threaded fittings.

**FW - fibre retained face sealing washers**

Retained sealing washer to maintain IP rating of fitting to adjacent equipment.

**Locknuts - galvanised steel and nickel plated brass locknuts**

Hexagonal locknut to secure fitting. EMC locknuts have raised corners to ensure good connectivity in applications of EMC or earth continuity where there are high levels of surface dirt, corrosion or powder coating.

**FCC - plated steel P clip with pvc liner, stainless steel P clips**

P clip to support conduit.



metric thread  
part number

metric thread  
part number

metric thread  
steel  
part number

metric thread  
EMC  
part number

metric thread  
brass  
part number

plated steel  
part number

stainless steel  
part number

nominal size (mm)

BM90-16M	FW16	S-M16		B-M16	FCC16	FCC16-SS	16
BM90-20M	FW20	S-M20	B-M20-EMC	B-M20	FCC20	FCC20-SS	21
BM90-25M	FW25	S-M25	B-M25-EMC	B-M25	FCC25	FCC25-SS	28
BM90-32M	FW32	S-M32	B-M32-EMC	B-M32	FCC32	FCC32-SS	34
BM90-40M	FW40	S-M40	B-M40-EMC	B-M40	FCC40	FCC40-SS	40
BM90-50M	FW50	S-M50		B-M50	FCC50	FCC50-SS	50



# FSS system stainless steel corrugated conduit

# FSSBRD system stainless steel corrugated conduit with overbraid



## Conduit



### FSS

**Construction:** Stainless steel (316L) annularly corrugated conduit. Inherent Low Fire hazard performance with superior Ingress Protection (IP68) and excellent corrosion resistance.

**APR Cert No.4985**



### FSSBRD

**Construction:** Stainless steel (316L) annularly corrugated conduit with stainless steel (316L) overbraid.

**APR Cert No.4985**



## Fittings

### C - fixed external thread nickel plated brass

Multipart compression fitting including conduit retention clip and polyester seal. Can be used with knockouts. For BRD version, Braid is locked between inner and outer compression nuts.

**Colour:** Self colour or also available in Black for FSS version.

### SF - swivel internal thread nickel plated brass

Multipart compression fitting including conduit retention clip and polyester seal. Swivel internal thread allows connection to external thread.

**Colour:** Self colour or also available in Black for FSS version.

IP68

IP68



for use with FSS

for use with FSSBRD



for use with FSS

nominal size (mm)	FSS					FSSBRD				
	part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)	part number	reel length (m)	outside dia (mm)	inside dia (mm)	min inside bend radius (mm)
20	FSS20	25	21.6	16.2	45	FSSBRD20	25	21.6	16.2	60
25	FSS25	25	26.8	20.2	55	FSSBRD25	25	28.3	20.2	70
32	FSS32	25	32.5	25.4	65	FSSBRD32	25	33.8	25.4	80
40	FSS40*	10	41.3	34.1	105	FSSBRD40*	10	43.0	34.1	120
50	FSS50	10	50.0	40.0	130	FSSBRD50	10	51.2	40.0	145

for use with FSS	for use with FSSBRD	for use with FSS
FSS20-M20-C	FSSBRD20-M20-C	FSS20-FM20-S
FSS25-M25-C	FSSBRD25-M25-C	FSS25-FM25-S
FSS32-M32-C	FSSBRD32-M32-C	FSS32-FM32-S
FSS40-M40-C*	FSSBRD40-M40-C*	FSS40-FM40-S*
FSS50-M50-C*	FSSBRD50-M50-C	FSS50-FM50-S

\* Indicates parts made to order on request and may be subject to MOQ and leadtime.

# properties

- IP rating: IP68
- Temperature range -50°C to +135°C
- Inherently Low Fire Hazard
- Suitable for knockout or threaded entries
- Nickel Plated Brass Fittings
- Conduit throat supplied with fitting to protect cables from cut end of conduit
- High mechanical strength
- Tensile strength with standard fittings 100kg for 20mm size
- Tensile strength with BRD C type fittings 150kg for 20mm size
- BRD type fittings: Braid is locked between inner and outer compression nuts
- Also available in chemically blackened version for FSS



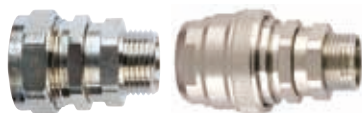
## C-S - swivel external thread nickel plated brass

Multipart compression fitting including conduit retention clip and polyester seal. Swivel external thread means it can be used for knockouts and / or threaded entries.

For BRD version, Braid is locked between inner and outer compression nuts.

**Colour:** Self colour or also available in Black for FSS version.

IP68



for use with FSS

for use with FSSBRD

FSS20-M20-S	FSSBRD20-M20-S
FSS25-M25-S	FSSBRD25-M25-S
FSS32-M32-S	FSSBRD32-M32-S
FSS40-M40-S*	FSSBRD40-M40-S*
FSS50-M50-S	FSSBRD50-M50-S

## C90 - external thread nickel plated brass

90° multipart compression fitting including elastomeric seal. Can be used for knockouts.

IP68



for use with FSS

FSS20-M20-C90
FSS25-M25-C90
FSS32-M32-C90
FSS40-M40-C90*
FSS50-M50-C90

## C45 - external thread nickel plated brass

45° multipart compression fitting including elastomeric seal. Can be used for knockouts.

IP68



for use with FSS

FSS20-M20-C45
FSS25-M25-C45
FSS32-M32-C45
FSS40-M40-C45*
FSS50-M50-C45

## FCC-SS CLIPS stainless steel (316L) P clips

Stainless Steel P clip to support conduit.



nominal size (mm)

FCC20-SS	20
FCC25-SS	25
FCC32-SS	32
FCC40-SS	40
FCC50-SS	50



**NEW**

# Round Connection boxes

## stainless steel and nickel plated brass

IP66 IP67 IP68 IP69



- Temperature range -50 °C to +135 °C
- Hygienic Box designed using principles given in EN1672-2 and EN ISO 14159
- Blue high visibility polyester elastomer lid and base seals
- 3 Way, 2 Way 90° and 1 Way available on request
- Other diameters and heights available on request
- ST fittings are short threaded fittings designed for use with Round Box

## Connection Boxes

### ROUND BOX - HYGIENIC STAINLESS STEEL

**NEW** HG HYGIENIC RANGE



4 Way Box shown  
2 mounting holes on base  
M20 Thread Entries

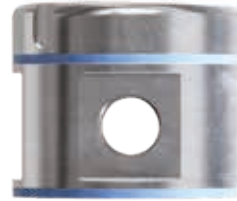
IP66 IP67 IP68 IP69

**Construction:** Stainless Steel (Grade 316) Round box consisting of a base and lid. Designed using the principles of EN 1672-2 and EN ISO 14159 supplied with blue high visibility polyester elastomer lid and base seals. Available with either 2 or 4 holes, other versions available on request. 2 Fixing holes are provided, together with component Mounting holes to help with installation. Slots in the lid allow for secure tightening of the lid and aids opening for maintenance or upgrade. Design offers high Ingress Protection combined with high corrosion resistance.

**Typical Applications:** Ideal use as a Junction Box for the interconnection of circuits for Hygienic Applications. The lid and base construction provides access to cabling routed through connecting conduits. Fixing holes are provided in the base and pre drilled Mounting holes provide easy option to fix terminals or DIN rail within the box. Ideal for extending or modifying circuits whilst maintaining system integrity. When used with Flexicon Short Thread fittings the box provides a reliable interface with Flexible conduit whilst maximising the available wiring space within the box. Blanking Plugs can be used to seal off any unused ways. The Box offers the possibility to connect and interface with Cable Glands or different types of cabling installations.

### ROUND BOX - NICKEL PLATED BRASS

**NEW**



2 Way Box shown  
2 mounting holes on base  
M20 Thread Entries

IP66 IP67 IP68 IP69

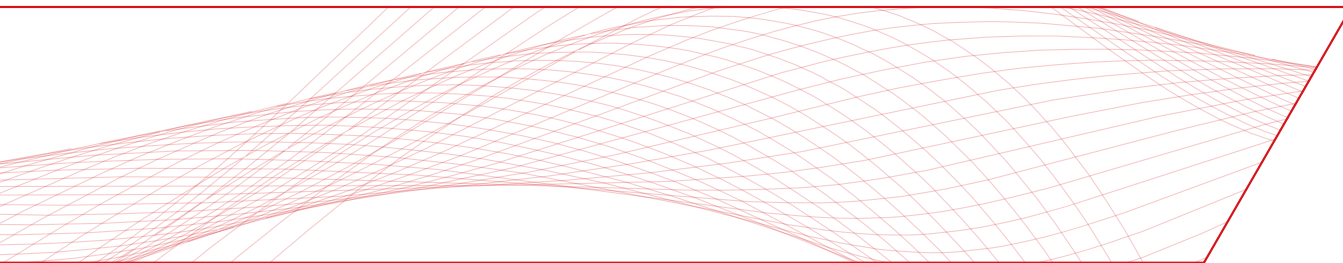
**Construction:** Nickel Plated Brass Round box consisting of a base and lid. Supplied with blue high visibility polyester elastomer lid and base seals. Available with either 2 or 4 holes, other versions available on request. 2 Fixing holes are provided, together with component Mounting holes to help with installation. Slots in the lid allow for secure tightening of the lid and aids opening for maintenance or upgrade. Design offers high Ingress Protection.

**Typical Applications:** Ideal use as a Junction Box for the interconnection of circuits for general purpose Applications. The lid and base construction provides access to cabling routed through connecting conduits. Fixing holes are provided in the base and pre drilled Mounting holes provide easy option to fix terminals or DIN rail within the box. Ideal for extending or modifying circuits whilst maintaining system integrity. When used with Flexicon Short Thread fittings the box provides a reliable interface with Flexible conduit whilst maximising the available wiring space within the box. Blanking Plugs can be used to seal off any unused ways. The Box offers the possibility to connect and interface with Cable Glands or different types of cabling installations.

	Part Number	Height (mm)	Diameter (mm)
2 Way	FBOX75X60-M20X2-SS	65	75
4 Way	FBOX75X60-M20X4-SS	65	75

	Part Number	Height (mm)	Diameter (mm)
2 Way	FBOX75X60-M20X2-NPB	65	75
4 Way	FBOX75X60-M20X4-NPB	65	75

For non-metallic Round Connection Boxes visit our website



## Clips & Clamps

### FCL Clip

Nylon conduit clip with integral lid - black or grey.



FCL clip  
for corrugated conduit

### FCLAMP

Heavy duty conduit clamp for fixing corrugated conduits.



FCLAMP

### FCLAMP KIT

Heavy duty conduit clamp with two plates, two bolts, two channel nuts and two nuts.



FCLAMP

### REC

#### rubber end cap

Thermoplastic elastomer cap used to seal end of conduit. Can be cut to size depending on size of cable. Can be additionally secured using cable tie (not supplied).



part number

### EC

#### end cap

Nylon PA66 end cap to snap over end of conduit and provide a smooth entry bush to prevent snagging and sharp edges, and provide a neat finish when no connectors are used.



end cap

FCL16	FCLAMP-3-16	FCLAMP-KIT16	REC16	EC16B	NW Size	Conduit Size (OD) mm
FCL21	FCLAMP-3-21	FCLAMP-KIT21	REC21	EC21B	12	16
FCL28	FCLAMP-4-28	FCLAMP-KIT28	REC28	EC28B	17	21
FCL34	FCLAMP-5-34	FCLAMP-KIT34	REC34	EC34B	23	28
FCL42	FCLAMP-6-42	FCLAMP-KIT42	REC42	EC42B	29	34
FCL54	FCLAMP-7-54	FCLAMP-KIT54	REC54	EC54B	36	42
	FCLAMP-7-67	FCLAMP-KIT67	REC67		48	54
	FCLAMP-8-80	FCLAMP-KIT80	REC80		56	67
						80

# Installation Instructions

## Cutting Conduit

### Non-Metallic



Non-metallic conduits to 34mm can be easily cut with Flexicon Conduit Cutters, part no. CC01. Use CC02 for sizes up to 67mm. Drop the blade into a corrugation and squeeze and twist until conduit is cut 50% through. Cut the remaining 50% without twisting to achieve a square cut.

**Note:** Conduit length is measured under light tension. When cutting an exact number of lengths from a reel (e.g. 5 x 5m from 25m) please take into account the length tolerance of the reel and each cut length.

### Metallic



Metallic conduits should be cut with a fine tooth (32 TPI) hacksaw or bandsaw. Ensure you make a straight vertical cut. Our clamping vice, part no. BSB makes the use of a hacksaw much easier.

### Overbraided



Cutting of overbraided conduit is made much easier by tightly wrapping self adhesive tape around the conduit and sawing through the middle of the tape. The tape should be removed after cutting if EMC screening is required. Ensure you make a straight vertical cut.

## Non-Metallic Fittings

### FPA & Ultra™ Fitting



Our range of non-metallic conduit fittings, Flexicon Ultra™, FPA and FPAX are all push fit fittings which are quick to assemble once you have cut the conduit to length.

### FPA & Ultra™



For Ultra™ and FPA fittings simply push the conduit into the end of the fitting with a slight twist until it will go no further. Pull back slightly to ensure the locking teeth mechanism has engaged with the corrugations.

### FPAX



The FPAX fitting features a conduit seal to provide an IP rating up to IP69. This simply fits onto the end of the conduit before the fitting is connected to the conduit. To aid assembly moisten this seal. For a one piece fitting with an IP69 rating use Ultra™ (An FPA fitting cannot be upgraded to IP69 with the addition of a seal). Pull back slightly to ensure the locking teeth mechanism has engaged with the corrugations.



# Installation Instructions

## Metallic Fittings

LFHU Conduit



Our fitting's components are supplied part assembled to illustrate how they go together. Our C type fittings consist of a compression nut, an elastomeric seal, an insert and a body.

Insert being fitted



Firstly place the back nut on the conduit followed by the seal (note the orientation). Next, screw the insert into the end of the conduit until this gives a secure fit.

Attaching the body



Bring the body to mate with the back nut. Metal fittings should be tightened with grips or spanner to ensure security and IP rating.

## Braided Fittings - Installation - Type C Braided Fitting



Our type-C braided fittings consist of an outer compression nut, an inner compression nut, an elastomeric seal, an insert and a body. Firstly place the outer compression nut on the conduit as per 1. Remove the tape securing the braid and pull back to allow the inner compression nut to be fitted as per 2. Next, fit the elastomeric seal (note the orientation) and screw the insert into the end of the conduit until this gives a secure fit as per 3.



Bring the body to mate with the inner compression nut and secure. Next, bring the back shell to mate with the inner compression nut to secure the braid as per 4. Metal fittings should be tightened with grips or spanner to ensure securing and IP rating as per 5.



## EMC Screening Using Pliable Conduit



LFHP conduit with sheath trimmed back

To obtain EMC screening on pliable LFHP conduit, the outer plastic sheath must be trimmed back prior to assembly of the fitting to ensure good electrical contact with the tapered bore of the fitting body as shown.

# Tailored Solutions

Flexicon can offer true engineering support when it comes to your Cable Protection requirements. When you talk to us, you know you are talking to the people that design, engineer and manufacture the products you are buying.

Working closely with our customers, we understand their protection challenges and have provided numerous customised solutions. Some examples of specials and tailored solutions are listed below:

## Non standard lengths



- **Long lengths** – Typically when 50m is not long enough we have provided extended lengths such as in special containers and cages up to 1,700m.
- **Short lengths** – 10m is our smallest standard coil length but we can offer shorter lengths if necessary.
- **Pre cut lengths** – Pre-cut to defined dimensions we can offer conduit pre-cut to your requirements ready to use saving you time.

## Metal finishes



- We can offer different material finishes for metal systems. Often the self colour of Galvanised Steel, Stainless Steel or Aluminium does not match their required aesthetics. We can chemically blacken Stainless Steel conduits and fittings so they are not visible. We can also offer anodising of aluminium components to suit required aesthetics.

## Assemblies



- Ideal for use for wiring harnesses or for OEM's who are integrating products into their finished equipment. Consisting of pre-cut lengths of conduit, with fittings pre-terminated ready for assembly and wiring.

## Polymer formulations



- We offer a range of different Polymer formulations to change the performance characteristics and properties of our Flexible Conduits. This could be to modify any of the following:
  - Colours
  - UV resistance
  - Flame retardancy
  - Fire performance properties
  - Anti-static

## Bespoke thread sizes



- We can offer various thread sizes and types. Our Non metallic fittings utilise barb design allowing us to create a variety of thread sizes across our FPA, FPAX and FPAU conduit fittings with metallic threads. Our manufacturing capability enables us to create various thread types, lengths, size and form.

## Bespoke thread types



- We can offer various termination options to interface with our Conduits. We have developed time and labour saving solutions to interface with equipment such as:
  - Push Fit termination - no thread
  - Pulling eye - assist with product handling
  - Integrated Cable Strain Relief

# Flexicon make it simple

Flexicon are all about innovation, not only in our products, but also in the ways that we deliver product information to our customers.

60 different conduits - snapshot of range consult PG12 for full offer



NEW



## flexiapp – find-a-conduit

Try our new smart phone app and find the perfect conduit for your requirements!



[www.flexicon.uk.com](http://www.flexicon.uk.com)

## Flexicon 3D CAD Models



Powered by Cadenas, our Parts Community provides technical information on all of our conduits, fittings and accessories. From CAD models, dimensional diagrams and 3D PDFs to part numbers, sizes and downloadable datasheets - all available in one place. Visit <http://flexicon.partcommunity.com> for further information, or follow the link on the Flexicon website.

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Flexicon are part of Atkore International, delivering solutions through well known brands including:



# FLEXICON™

FLEXIBLE CONDUIT SOLUTIONS

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