

DUCT SYSTEMS CATALOGUE



THORNE &
DERRICK
INTERNATIONAL

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Introduction

Company Background

Ementelle UK Limited is a market leading producer of Telecommunication and Power Duct Systems.

Ementelle has continued to be the leading innovator in these fields since extrusion started at their factory in Jedburgh (PVC-U) in 1980 and was complemented by the Hawick (PE) manufacturing facility in 1992.

- Ementelle manufacturing capability is 35,000 Tonnes of PVC-U Duct and 25,000 Tonnes of PE Duct per year.
- Ementelle's duct systems include a comprehensive range of accessories and ancillary items such as; bends, connectors, adaptors, access fittings, chambers and building termination & entry fittings etc. Providing customers with complete system solutions from a single reputable source.
- In addition to Power and Telecommunication systems, Ementelle produce a range of products used within the building industry, including EN1401 Underground Drainage Pipe and General Purpose Duct.

Specifications

Ementelle's Duct systems are manufactured to industry standards such as ENATS 12-24 (Power), BSEN 61386 (Telecommunications) and EN1401 (Underground Drainage). Specifications and data sheets for products can be located on www.ementelle.com. Alternatively these can be obtained by contacting the customer service team.

Standards

First awarded ISO accreditation in January 1992, Ementelle has evolved its quality systems and is currently an ISO 9001, ISO 14001, OHSAS 18001 and PAS 99 accredited company.

Quality Management System



ISO 9001
GB13/88863

Environmental Management System



ISO 14001
GB13/88864

Operational Health and Safety Management System



OHSAS 18001
GB13/88865



BBA Approved

The BBA has awarded Agrément certification to Ementelle UK Ltd for their Opticom Duct and Ø110mm Ring Seal Duct range of products, certifying it as fit for its intended use. The BBA is a UKAS accredited certification body recognised throughout the construction industry.



Achilles UVDB Verify

The UVDB Verify Scheme is a mechanism for supplier pre-verification and assessment for organisations. Ementelle's award provides assurances to potential and existing customers that we have effective systems in place for our Safety, Quality & Environmental Management, and we apply these systems to our full range of products.



Clients

Ementelle's policy of listening carefully to our customers – and designing systems to meet their requirements has led to an impressive list of clients:



Orders

Customer Service:

- Dedicated Customer Sales Support Agent by Application Area/ Customer
- Orders can be placed by email, fax or post
- All orders acknowledged within 48hrs of receipt

Account Facilities:

- Net monthly account, subject to credit check, where this can be obtained
- Payment also acceptable via BACS, CHAPS, Debit/Credit card, Cheque and Cash

Contact details:

- UK Power orders: 01450 364021
- UK Telecoms, Building & Distribution orders: 01450 364011
- UK BT Orders & Ireland Building & Distribution orders: 01450 364017
- UK fibreflow orders: 01450 364008
- email address: sales@emtelle.com
- Postal address: Emtelle UK Limited, Haughhead, Hawick TD9 8LF
- Fax number: 01450 364001

Delivery

- Delivery time for orders approx. 3-5 working days dependent on product availability
- Orders received by noon for small deliveries of accessories can be sent on overnight carrier
- Majority of vehicles used are curtain-sided, 45 foot articulated trailers. Customer to arrange off-loading on site
- Several Moffett Mounty fork-lift vehicles available for those customers without off-loading on site – these will be charged for (see above) and may be subject to longer lead time
- Waiting time – chargeable after one hour standing on site at £50 or part thereof

Collections:

- Goods may be collected from our Jedburgh and Hawick facilities, subject to 24hrs notice
- Agreed timeslots for collection must be adhered to and correct paperwork presented at point of collection

Carriage charges: (Subject to Change)

Order Value (net)	Standard Delivery Charge	Self Off-loading Vehicle Delivery Charge
£4000 & above	Carriage paid	£200.00
£3000.00 to £3999.99	£50.00	£250.00
£2000.00 to £2999.99	£75.00	£275.00
£1000.00 to £1999.99	£100.00	£300.00
£999.99 or less	£200.00	£400.00
12 bags of fittings or less	*Courier Charge equivalent to no. bags	N/A

Returns:

- Emtelle operates a Nil Return Policy

Packaging

- PVC-u ducts supplied on non-returnable wooden u-frames
- Duct pallets designed to be stored on even, stable ground, no more than 3 pallets high
- Accessories supplied in non-returnable woven polypropylene sacks, which are bio-degradable. Not to be stacked upon.
- Large diameter bends may be shipped on non-returnable wooden-framed stillages. Not to be stacked upon
- Small diameter coils supplied shrink-wrapped in multiples of 4

Drum Management/Handling:

- To reduce our carbon footprint, Emtelle UK recycles the drums used for sub-duct production, by collecting them from your site. A charge of £35 per drum is applied at point of order.
- Drums must be available for collection 3 months after issue, otherwise rental charges per drum/per month will be applied. (Refer to table for details of rental charges)

Drum Type	Environmental Responsibility Charge applicable at ordering stage (will appear on your paperwork as a drum handling fee).	Monthly Rental charge applicable after 3 months (per drum outstanding)
One Way Drum	£35.00 per drum	£25.00 per drum
Two Way Drum	£35.00 per drum	£40.00 per drum
Three Way Drum	£35.00 per drum	£50.00 per drum
Four Way Drum	£35.00 per drum	£60.00 per drum
Five Way Drum	£35.00 per drum	£70.00 per drum

Telecoms

System Overview

Emtelle have supplied the UK Telecoms Industry with a comprehensive range of products since 1980 including:

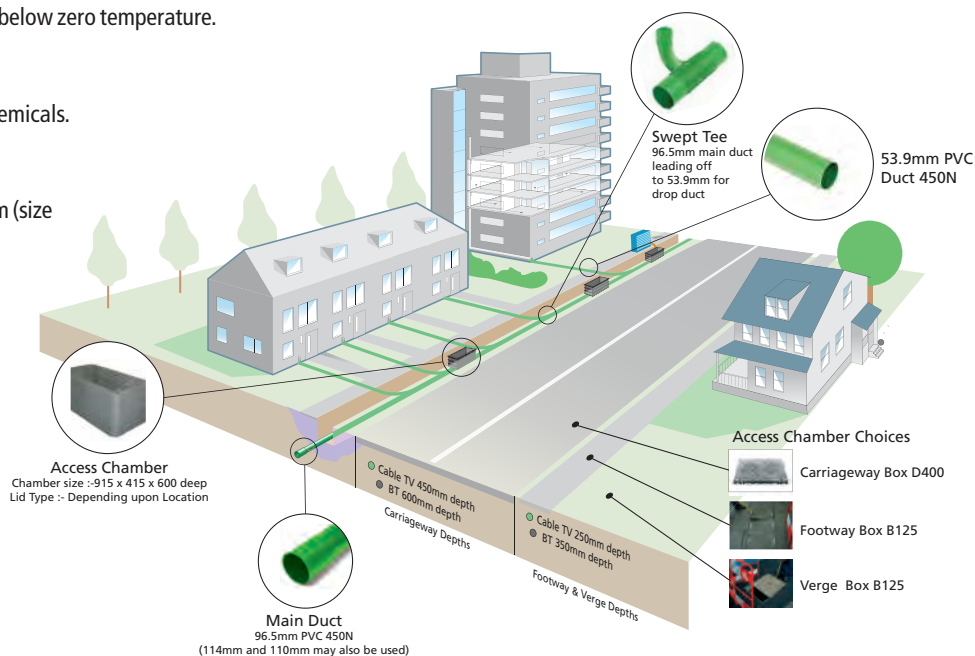
- PVC-U Primary Duct systems
- Cable In Duct
- PE Duct Systems
- Multi Duct
- Blown Fibre Tubing (FibreFlow™)
- Ancillary Items

PVC-U Primary Duct Systems

- Manufactured from virgin PVC-U polymer = 100% reliable performance.
- Duct Systems are manufactured to Industry Standard BSEN 61386.
- Solid wall construction, capable of being back-filled with "As Dug" materials where appropriate and not affected by sharp stone impingement.
- Smooth bore ensuring easier and safer installation of sub-ducts and cables owing to lower internal friction.
- Comprehensive range of sizes : 38mm – 250mm OD, to meet standard and bespoke requirements.
- Range of wall thickness choices to meet variety of compression strength specified.
- Bespoke print detail to meet client needs.
- Standard Interference Fit / Push fit socket systems & Ring Seal Socket systems.

Polyethylene Duct & Sub Duct Systems

- Strong, flexible and impact resistant yet lightweight.
- A full range of sizes available with OD's from 3mm up to 250mm with a variety of SDR's to suit customer requirements.
- Duct can be supplied pre-cabled or pre-roped, depending on customer requirements.
- Bespoke print detail to meet client needs.
- Flexible & easy to work with, even at well below zero temperature.
- Easy placement in Primary Duct systems.
- Long life resistance to fatigue.
- Resistant to many common liquids and chemicals.
- Immune to most corrosion or fungal contamination.
- Supplied in continuous lengths up to 4000m (size dependant).
- Packaged on single or multi way, metal skeletal or wooden drums, or alternatively coils.
- Extensive range of colours for individual duct identification for multi way products.
- Full range of connectors, termination and cable placement ancillary products.



PVC Primary Duct Systems - Green Product Range

Green 53.9mm Product Range			
Product Code	Description	Radius (mm)	Quantity
163L	3 m Length Duct	-	1110m
3240	11.25° Bend	350	120
2564	22.5° Bend	350	120
1904	45° Bend	150	60
571	90° Bend	200	60
1258S	Connector Sleeve	-	75
1902	Yellow End Cap	-	250
2211	Y Branch (53.9mm – 53.9mm)	-	50

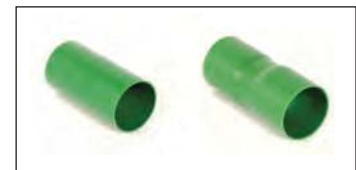


Duct Spigot end



Bend

Green 96.5mm Product Range			
Product Code	Description	Radius (mm)	Quantity
1879L	6 m Length Duct	-	690m
314L	4 m Length Duct	-	460m
2625	11.25° Bend	700	20
2623	22.5° Bend	700	20
2777	45° Bend	350	20
1900	90° Bend	427	10
1250S	Connector Sleeve	-	75
166	Double Socket Connector	-	50
1552	Swept Tee (96.5mm -53.9mm)	-	20
1880	Split Swept Tee (96.5mm -53.9mm)	-	25
2066	Y Branch (96.5mm - 96.5mm)	-	20
1875	Red End Cap*	-	250
550	96.5mm-53.9 mm Reducer	-	25

Connector
Sleeve

Double Socket



Split Swept Tee

Swept Tee

* Please note the end caps are intended to fit over the end of the spigot socket.

Green 110mm Product Range			
Product Code	Description	Radius (mm)	Quantity
3806	6.6 m Length Duct	-	594m
3818	11.25° Bend	700	20
3817	22.5° Bend	700	20
3839	45° Bend	700	15
3840	90° Bend	450	10
3823	Connector Sleeve	-	50
4583	Swept Tee (110mm – 53.9mm)	-	18
4507	Split Duct 3 m Length	-	3
4508	Duct inserts for Repair Kit	-	20
3850	End Cap Red 110mm	-	175



Y Branch



Reducer

PVC Primary Duct Systems - Grey Product Range



Duct Spigot end



Reducer



Swept T



Bend



Connector Sleeve

Grey 53.9mm Product Range

Product Code	Description	Radius (mm)	Quantity
1562	3 m Length Duct	-	1110m
3014	22.5° Bend	350	60
3292	45° Bend	350	75
2658	90° Bend Double Socket	320	25
2848	90° Bend	592	15
804	Connector Sleeve	-	60
1902	Yellow End Cap	-	250

Grey 96.5mm Product Range

Product Code	Description	Radius (mm)	Quantity
857L	6 m Length Duct	-	690m
3229	9° Bend	5180	15
2629	18° Bend	2685	15
4494	22.5° Bend	700	20
5032	45° Bend	350	20
3230	90° Bend	427	10
519	Connector Sleeve	-	60
1875	Red End Cap	-	250
4479	Swept Tee (96.5mm – 53.9mm)	-	20
72044	Split Swept Tee (96.5mm – 53.9mm)	-	25
3683	Y Branch (96.5mm – 96.5mm)	-	25
3189	96.5mm - 53.9mm Reducer	-	25

Grey 110mm Product Range

Product Code	Description	Radius (mm)	Quantity
5701	6m length duct	-	540m
4536	110mm x 22.5° Bend	700	20
4537	110mm x 45° Bend	560	15
4538	110mm x 90° Bend	450	10

For additional information on these products refer to documents:

EF450-017 Generic Specification – PVC Duct (Telecommunications)

EF450-011 Generic Specification – PVC Duct Bends (Telecommunications)

EF450-003 Generic Specification – PVC Duct Y Branch (Telecommunications)

EF450-004 Generic Specification – PVC Duct Swept Tee (Telecommunications)

EF450-007 Generic Specification – PVC Duct Reducers - Adapters (Telecommunications)

EF450-008 Generic Specification – PVC Duct Split Swept Tee (Telecommunications)

EF450-009 Generic Specification – PVC Duct Connector Sleeve (Telecommunications)

PVC Primary Duct Systems - Split Duct and Repair Kits

Split Duct and Duct Repair Kits consist of the parts required to allow repair of damaged or jointed duct in the field.

Repair Kit

Enables the split duct to be connected to the in-situ duct at both ends of the repair.

One kit consists of:

2 No. – Split collar inserts

6 No. – duct liners

4 No. – Cable ties

Repair Kits (incl. Inserts)			
Product Code	Size (mm)	Colour	No. of Kits Per Bag
2226	96.5	Green	20
3285	96.5	Grey	20
3435	96.5	White	20
4000	96.5	Orange	20
4508	110	Green	20
4427	110	Grey	20



Split Duct (supplied in 3m lengths)			
Product Code	Size (mm)	Colour	Length
70978	53.9	Green	1m
2393	96.5	Green	3m
3286	96.5	Grey	3m
3436	96.5	White	3m
4507T	110	Green	3m
4426	110	Grey	3m

For additional information on Repair Kits refer to document EF450-002 Generic Specification – PVC Duct Repair Kits & Split Ducts (Telecommunications)

Multi Duct Systems

A useful alternative to traditional duct and sub duct systems allowing a one-pass installation capable of taking multiple of cables. Opticom and Quadcom offer differing features and benefits for a range of applications.

Opticom

Single pass cable management systems eliminating the need to winch in sub duct. Socket coupling with outer seal ring acting against the mating pipe. Sub duct sockets ring sealed onto the sub ducts. Pre-lubricated and extruded to close tolerances to five easy on-site push-fit jointing. Bespoke products are available. Contact your local Emtelle representative for further details.



Opticom Duct



Bend



Flexible Bend

Green Opticom 4-Way				
Product Code	Description	Inner Duct Colours	Radius (mm)	Quantity
5939	Opticom 6.6m Length	Red / Blue / Yellow / Grey	-	594m
4330	Opticom 6.6m Length	4 x Black	-	594m
2147	11¼° Bend	4 x Black	3,500	5
2145	22½° Bend	4 x Black	1,750	5
3340	Flexible bend	4 x Black	-	5
3613	Repair Kit*	4 x Natural	-	10

* If different inner duct colours are required specify at point of enquiry.

Green Opticom Accessories		
Product Code	Description	Quantity
2152	Standard Coupler	10
2154	Slip Coupling	20
2157	Terminator Type A	50
3218	Terminator Type B	50
2609	Blowing Gun	1
4563	5kN Blue Polyprop Rope (6mm)	500m
9836	Opticom Foam Pig for inner duct	10
71376	Opticom mandrel 26.5mm for inner duct	10
71366	Opti-com Bellmouth End	1

For additional information on Opti-com refer to document EF450-031 Generic Specification – Opti-com Cable Management (Telecommunications).

Quadcom

A sturdy and rugged trunk route cable management system, ideal for congested urban and inner city areas and routes with shallow depth burial. 4 x 42mm PVC-U ducts with formed sockets, clipped together at 800mm centres.

Can also be laid in flat configuration or as singles or un-clipped at intervals to allow the run to pass either side of an obstruction.



Quadcom



Quadcom Bends

Product Code	Description	Quantity
4626	4 Green 6 m Lengths Duct	528m
3427	Green 11.25° Bend	15
3428	Green 22.5° Bend	15
3429*	Green 45° Bend	10
3410	Green Connector Sleeve	150
3441	Spacer	200
3102	Expanding plugs	200

Duct Ancillary Products

Product Code	Description	Quantity
7999	110mm 8-Way Duct Spacer (25mm Spacing)	280
71300	110mm 4-Way Duct Spacer (50mm Spacing)	500
3982	110mm trefoil 3-Way Duct Spacer (50mm Spacing)	200
15788	110mm Duct Replacement Ring Seal Packs	25
70442	Ambersil Aerosol Silicone Lubricant 500ml	12
4563	5KN Blue Polyprop (6mm)	500m
13375B	8KN Orange Rope	4250m
9836	Foam Pig 29mm OD for use with Opti-Com Duct	10
71410	Foam Pig 110mm OD for use with Ringseal Duct	10

Simplex/Triplex and Quadplex duct and cable plugs can be supplied after cable dimensions have been confirmed



Foam pig



Duct Compression Plug

Blank Duct Plugs

Product Code	Description	Duct id Size (mm)	Quantity
9351	60D637U	148.0 – 162.0	8
5256	50D535U	127.0 – 135.9	8
71088	50D500U	116.3 – 127.5	8
4410	40D402U	100.1 – 105.9	8
4410A	10D104U	24.4 – 29.5	12
4410B	35D400U	86.9 – 96.5	12
4410C	30D346U	75.9 – 87.9	12
4410D	12D148U	29.0 – 37.6	12
4410E	20D236U	46.5 – 59.9	12



Duct Plug

Large Bore Simplex Plugs

Product Code	Description	Duct id Size (mm)	Cable OD (mm)	Quantity
70716	35S196SB	89.0 - 93.0	35 – 50	24
70927	40S196SB	100 - 106	35 – 50	24



Simplex Plug

Quadplex Plugs

Product Code	Description	Duct id Size (mm)	Quantity
*9349	35Q126SG	89.0 - 92.0	24
*4345B	40Q136A	106 - 110	24
*9645	40Q136SG	101 - 105	24
*70733	36Q126S	94.0 - 97.0	24

*Bushing sleeves and hole plugs available on request.



Quadplex Plug

Duct Ancillary Products

Duct Protection and Marking Products

Marker tapes to alert following utility services of the general location of fibre ductwork and HDPE trench tiles to offer token protection from damage from trenching tools.



Marker Tape



Green Marker Tapes

Green being the N.J.U.G colour code for CATV and Telecomm ductworks, these come with standard print of "Caution - Fibre Optic Cables Below" or "Caution – Telephone Cable Below".

These can be supplied with bespoke Colour/Printline giving company name and Emergency Free phone Number.

Product Code	Description	Print Details	Length Per Roll	Quantity
4785	Marker Tape	CAUTION – FIBRE OPTIC CABLE BELOW	365m	5
4785W	Marker tape + Tracer Wire	CAUTION – FIBRE OPTIC CABLE BELOW	365m	5
4857	Marker Tape	CAUTION – TELEPHONE CABLE BELOW	365m	5
4171	Marker Tape	COLT Telecom	365m	5
5458	Marker Tape	Metromedia	365m	5
5607	Marker Tape	FOIS	365m	5
9196	Marker Tape	GEO Telecommunication	365m	5
9659	Marker Tape	VERIZON	365m	5
9696	Marker Tape	Surf Telecom	365m	5



Marker Tile

Trench Marker Tiles

- Cable tiles are a heavy protection product manufactured from high impact recycled polyethylene sheet and are suitable to withstand damage from plant and hand tools.
- They are also suitable for fibre optic cables.
- Cable tiles are fully jointed, laid overlapped and held firm with plastic jointing pegs.
- They are a suitable direct replacement for concrete covers and steel plate.
- These are generally supplied with standard print of "Caution - Fibre Optic Cables Below" or "Caution Telecoms Cable Below".
- Bespoke Colour/Printline giving company name and their Emergency free phone number can also be supplied.

Product Code	Description	Print Details	Quantity
5606	Cable Tile 1000mm x 150mm x 11mm	CAUTION – FIBRE OPTIC CABLE	500
4059	Cable Tile 1000mm x 150mm x 11mm	CAUTION - FIBRE OPTIC CABLE BELOW	690
4176	Cable Tile 1000mm x 200mm x 15mm	Colt Telecom	352
9649	Cable Tile 1000mm x 152mm x 12mm	Metromedia	500
3855	Cable Tile 1000mm x 200mm x 11mm	Verizon	500
5348	Cable Tile 1000mm x 150mm x 11mm	Verizon	690

Duct Ancillary Products

Termination boxes

Product Code	Description	Quantity
4531	D Shaped Swivel Termination Box	50
4579	Triangular Termination Box	50
4604	Square SID Termination Box	50



Termination boxes

Deburring tool

Fast deburrer with replaceable HSS universal blade.
For deburring edges on all conventional plastic pipes and plastic plates.

- Enables re-use of duct on site
- Reduces waste
- Cost saving

Product Code	Description	Quantity
16441	Handle	1
16469	Blade	1



Deburring tool

Chamfer Tool

Product Code	Description	Quantity
70973	32-160mm	1
70974	Blade	1
7925	20-63mm	1



Chamfer Tool

Lubricant

Cable lube 20LT + Microspheres (Product Code 4400)

Water based thixotropic lubricant which reduces friction during installation of cable and sub-duct. Containing high viscosity silicone polymers and perfectly spherical microspheres, it is the market – leading lubricant and the only product which conforms to British Telecom specification MAT 138A. To date no other competitor product has met this demanding specification. It is non-toxic, non-flammable and has no physical or chemical effects on cable sheath or sub-duct.



Lubricant

Silicone Lubricant (Product Code 70442)

A general purpose, medium duty silicone lubricant used for lubricating ducts when pushing them together. 500ml Aerosol can



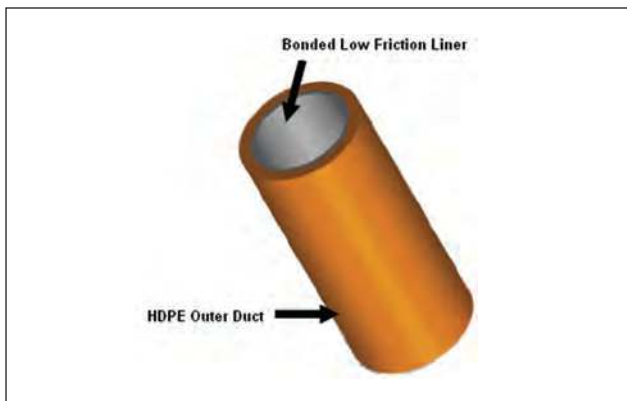
Silicone Lubricant

HDPE Duct and Sub Duct Systems

These systems provide a flexible duct in continuous lengths up to 3000m to allow easy, safe and rapid placement of fibre optic cable in main trunks and customer drop applications alike.

- Duct is made from high quality HDPE and features a bonded low friction dry liner, to enable easy cable placement.
- HDPE ducts are supplied in coils or on returnable drums (wood or metal).
- Finished product is supplied capped ensuring the ends are watertight to prevent ingress of contamination or foreign bodies likely to cause problems when cabling.
- Ducts are available with a standard 8kN pull-rope pre-installed.
- Duct is marked as standard at one metre intervals as follows:
 - Incremental Metre-Mark
 - Manufacturers product code
 - Production Date
 - Size of duct
 - Customer name and / or other special designations
- Colours variations / colours and stripes are also available on request
- For multiple sub duct requirements one to five way drums are available

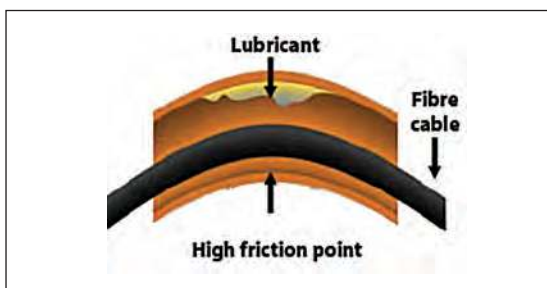
A full range of connectors, termination and cable placement ancillary products are available.



Features:

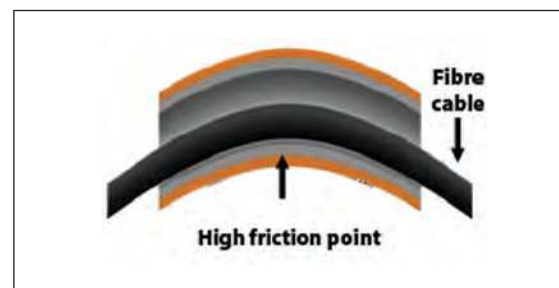
- Rapid Deployment technique
- Reduces overall network construction and activation costs
- Bespoke requirements can be accommodated
- Cable blowable
- Cable installation utilising the pre-installed pulling rope
- Provides a dedicated cable path
- Reduces the risk of damage to fibre optic cables

How the Emtelle Bonded Low Friction Liner Works.



Traditional Duct

When heat is generated, the lubricant spreads out – which can result in direct contact between the Cable and the HDPE duct. The friction caused by this contact increase the risk of damage to the cable during installation. Moreover, the lubricant gradually accumulates in place where there is no load.



Emtelle Low Friction Liner

In this system, the cable is only ever in contact with the low friction liner, which thus reduces the risk of melting. The associated low friction co-efficient also make it easier to blow or pull cables over long distances.

Sub-Duct

Subduct OD mm nominal	Coil length						Drum Length								Minimum Order Quantity
	50m	100m	200m	250m	500m	1000m	750m	1000m	2000m	2500m	3000m	4000m	5000m	6000m	
16				✓	✓		up to 6000m								12000m
18				✓	✓		up to 6000m								12000m
20				✓	✓		up to 5000m								10000m
25		✓	✓	✓			up to 4000m								8000m
32	✓	✓	✓	✓			up to 3000m								6000m
35	✓	✓	✓	✓			up to 2500m								4000m
40	✓	✓	✓				up to 2000m								4000m
50	✓	✓					up to 1000m								4000m
63	✓	✓					up to 750m								3000m

TECHNICAL DATA Premium Grade (nominal unless otherwise stated)

SIZE		SDR	Mean outside Diam NOM	I.D. nom	Wall Thick- ness Nom	Mass nom g/m	Max Pull		Generic Specification
OD	ID						kg	kN	
16	12	8.0	16	12	2.0	85	85	0.85	MHT582
18	14	9.0	18	14	2.0	96	90	0.90	MHT582
25	20	10.0	25	20	2.5	168	170	1.7	MHT582
25	21	12.5	25	21	2.0	139	140	1.4	MHT582
28	24	14.0	28	24	2.0	162	160	1.6	MHT582
31	25	10.3	31	25	3.0	251	260	2.6	MHT582
32	26	10.7	32	26	3.0	260	260	2.6	MHT582
32	27	12.8	32	27	2.5	220	220	2.2	MHT582
32	28	16.0	32	28	2.0	179	180	1.8	MHT582
34	28	11.3	34	28	3.0	278	270	2.7	MHT582
35	28	10.0	35	28	3.5	329	330	3.3	MHT582
35	30	14.0	35	30	2.5	242	250	2.5	MHT582
37	32	14.8	37	32	2.5	257	250	2.5	MHT582
38	32	12.7	38	32	3.0	323	320	3.2	MHT582
40	32	10.0	40	32	4.0	425	430	4.3	MHT582
40	33	11.4	40	33	3.5	381	370	3.7	MHT582
50	41	10.9	50	40.8	4.6	612	610	6.1	MHT582
50	42	13.5	50	42.6	3.7	544	540	5.4	MHT582
63	50	9.7	63	50	6.5	1096	1100	11	MHT582

SDR' is the standard dimension ratio (OD / wall). Lower SDRs indicate heavy-duty sizes.

Sub-Duct

TECHNICAL DATA Aerial (nominal unless otherwise stated)

SIZE		SDR	Profile Height	Mean outside diam. Nom	I.D. nom	Wall Thickness Nom	Mass nom g/m	Generic Specification
OD	ID							
16	12	8	28	16	12	2	242	CP1059
20	16	10	32	20	16	2	266	CP1058
25	20	10	40.8	25	20	2.5	481	CP1117
32	26	10.7	44	32	26	3	418	CP1056

TECHNICAL DATA LFH (nominal unless otherwise stated)

SIZE		SDR	Mean outside Diam NOM	I.D. nom	Wall Thick- ness Nom	Mass nom g/m	Max Pull		Generic Specification
OD	ID						kg	kN	
20	16	10	20	16	2.0	172	45	450	MHT2367
25	20	10	25	20	2.5	269	70	700	MHT2367
32	26	10.7	32	26	3.0	415	100	1000	MHT2367
40	33	11.4	40	33	3.5	610	160	1600	MHT2367
50	41	11.1	50	41	4.5	977	250	2500	MHT2367
63	50	9.7	63	50	6.5	1750	450	4500	MHT2367

Cable in Duct

Designed for use by the power and telecommunications markets, Emtelle's Cable In Duct (CID) products are suitable for a wide range of applications. These products are ideal for use in applications where remote monitoring is required.

With Emtelle's CID products fibre optic cables are pre-installed into the sub-ducts and transported to site on standard sub-duct drums.

Deploying Emtelle's CID offers several key advantages including, but not limited to, shorter installation time, reduced logistics and improved quality due to the elimination of cable pulling. Due to the use of high quality Emtelle sub duct the CID solution is ideally suited to installation via mole plough.



The size and type of cables used vary depending on customer requirements, the table below lists some of the typical configurations used.

FIBRE CABLE			DUCT OD & ID				
	count	Typ diamt	31/25	32/26	40/33	50/42	63/50
Traditional fibre cable	12f	10.1	✓	✓	✓	✓	✓
	24f	10.9	✓	✓	✓	✓	✓
	48f	13.1	✓	✓	✓	✓	✓
	72f	13.1	✓	✓	✓	✓	✓
	96f	12.5	✓	✓	✓	✓	✓
	144f	14.5	✓	✓	✓	✓	✓
	192f	15.3	✓	✓	✓	✓	✓
	288f	18.5	x	✓	✓	✓	✓
	576f	22.8	x	x	✓	✓	✓

Emtelle can also supply sub-duct with pre-installed Mini-Cable. This type of cable with up to 96 fibres has a smaller ID and can therefore be supplied in smaller duct sizes.

The supply length of the cable in duct is dependent on the cable and duct sizes, but can potentially be up to 4km.

HDPE Sub Duct Ancillary Products

Aluminum Connectors

A range of threaded connectors for connecting two pieces of HDPE duct. Both ends are threaded to within 5mm of the centre point. The two threads are asymmetrical, to aid duct grip in use. The threads at each end are opposite handed so a single turning action screws onto both ducts at one time. The threads are slightly tapered to accommodate duct diameters across the OD tolerance range. Connectors are marked with tightening directional arrow and duct OD size.



Aluminium Connector



Compression Connector



Lubricant



Expanding Plug

Product code	Duct Size	Body OD	Body Length	Quantity
5037	21mm	26mm	90mm	10
4448	25mm	30mm	90mm	10
3771C	31mm	36mm	90mm	10
3650M	32mm	37mm	90mm	10
70014*	32mm	37mm	90mm	45
3900	34mm	39mm	90mm	10
4232	35mm	40mm	90mm	10
4067	37mm	42mm	90mm	10
3974**	38mm	42mm	90mm	1000
4424	40mm	45mm	90mm	10
5412	44mm	49mm	90mm	10
9317	48mm	58mm	90mm	10
9318	50mm	61mm	90mm	10

* Ring Sealed version ** Double threaded

Straight Compression Connectors

Compression connectors are designed to provide a suitable joint and seal between lengths of polyethylene duct, for cable blowing purposes.

Product code	Duct Size	Nut OD	Fitting Length	Quantity
7891	16mm	39mm	105mm	10
4859	20mm	48mm	121mm	10
4286	25mm	54mm	125mm	10
3917P	32mm	64mm	145mm	10
4390	35mm	64mm	145mm	10
7895	40mm	82mm	177mm	10
4065	50mm	96mm	201mm	10
5361	63mm	113mm	230mm	10

Lubricant

Cable lube 20LT + Microspheres (product Code 4400)

Water based thixotropic lubricant which reduces friction during installation of cable and sub-duct. Containing high viscosity silicone polymers and perfectly spherical microspheres, it is the market – leading lubricant and the only product which conforms to British Telecom specification MAT 138A. To date no other competitor product has met this demanding specification.

It is non-toxic, non-flammable and has no physical or chemical effects on cable sheath or sub-duct.

Expanding Plugs

To keep main duct free of water, dirt and grit between duct-laying and sub-duct/cable placement. A rope eye at the spigot end of the plug keeps ropes secure and reduces box congestion.

- All plastic construction ■ Corrosion proof ■ Water-tight
- Reusable ■ Easy installation and removal

Product Code	Description / product type	Duct id Size (mm)	Quantity
4410A	10D104U	24.4 – 29.5	12
4410D	12D148U	29.0 – 37.6	12
4410E	20D236U	46.5 – 59.9	12

HDPE Sub Duct Ancillary Products

Small bore Simplex Plugs

Product Code	Description / product type	Duct id Size (mm)	Cable OD (mm)	Quantity
4406	10S057SB	25.5 - 29.0	9 - 14	50
4406A	15S090AB	40.0 - 44.0	18 - 23	50
4406B	10S070SB	25.5 - 27.0	13 - 18	50
4406C	09S050SB	23.5 - 26.0	9 - 12.7	50
9837	11S078S	28.5 - 32.0	18 - 19.8	50



Simplex Plug

Sealing Plug

Product Code	Description	Quantity
71015	32mm (Cable 6 – 16mm)	40



Sealing Plug

End Plugs

Tapered mechanical end plug for sub-ducts.

Product Code	Duct ID Range	Quantity
7205	19-22mm	100
3884	25-28mm	100
4094	28-34mm	100



End Plug

Pulling Eye

Product Code	Description	Quantity
4528	18/23mm	1
3947	23/30mm	1
4085	29/36mm	1
71717	27-32mm Towing Carrot Steel	1
71718	3 tonne Slip Lining Swivel	1



Pulling Eye

Rope Products

Rope products which can be used for cable pulling

Product Code	Description	Quantity
4563	BLUE POLYPROP 6mm x 500m ROPE	500m
13375B	8KN ROPE ORANGE (4150MTS)	4250m



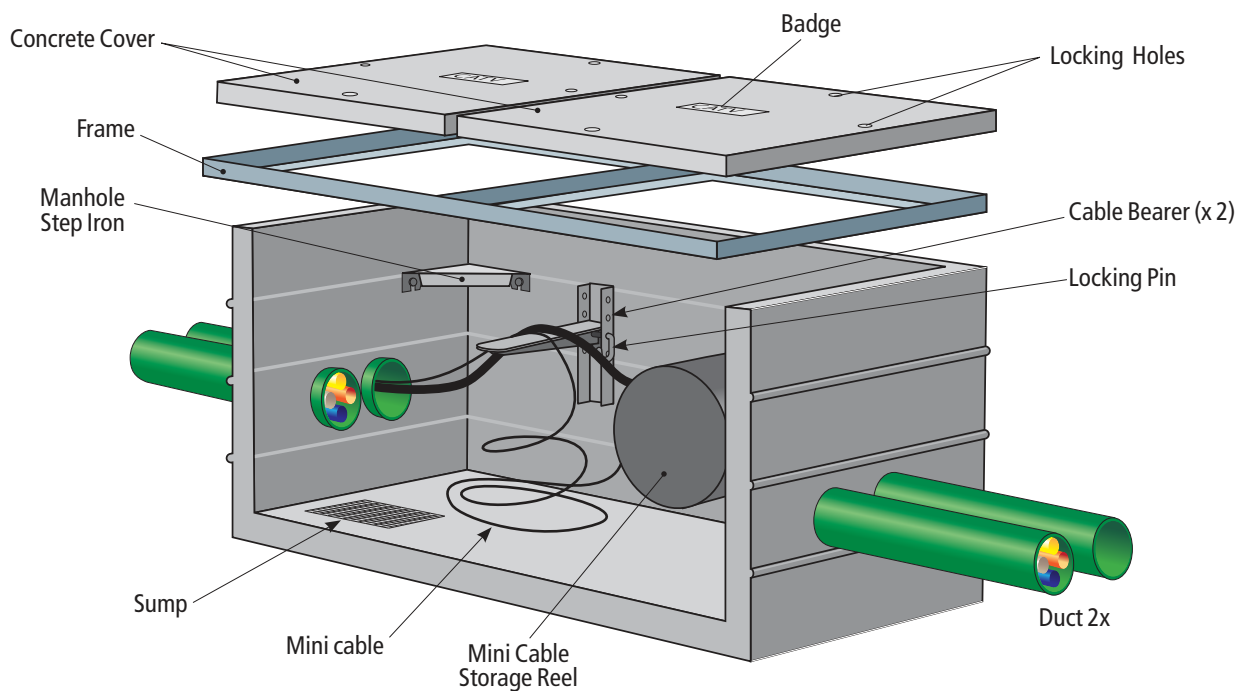
6mm Blue Rope



8KN Orange Rope

Access Chambers

Preformed access chambers offer users de-skilled, fast track construction method with a single site visit without the need for concrete backfill. Installation carried out for BT, complete chambers were constructed from excavation to reinstatement in just over one hour. Chambers have been independently tested to meet the requirements of BS EN124 making them suitable for Carriageway (D400) and non-carriageway (C250) applications.



STAKKAbOX™ QUAD is available in standard 150mm deep structural twinwall ring section providing maximum depth flexibility and strength. BT and Virgin Media have approved the STAKKAbOX™ QUAD system (sizes 2, 4 and 6) for use within their network. Duct entries are also simple to achieve using a standard hole saw mounted on a cordless drill.

Advantages of the STAKKAbOX™ QUAD

- Excellent side wall stiffness
- No requirement for concrete surround – 'as dug' or type 1 backfill will be suitable
- Perfect for overbuilding on an existing site
- No second visit to site required
- Deskilled installation process
- Ease of cutting duct entries
- No site material waste



STAKKAbOX™ QUAD

Access Chambers

* Note: Carriage fee applicable on orders below M.O.Q.

Product code	STAKKAbox™ QUAD		Minimum order Quantity* (Rings per Pallet)
9947	FW1/EN1	600 x 450 x 150mm	40
9948	FW2/EN2	725 x 255 x 150mm	40
9766	FW4 /EN4	915 x 445 x 150mm	32
9949	FW6/EN6	1310 x 610 x 150mm	30

STAKKAbox™ QUAD all B125 rated.



STAKKAbox™ QUAD

Product code	STAKKAbox™ ULTIMA		Minimum order Quantity* (Rings per Pallet)
9117	FW4 /EN4	915 x 445 x 150mm	32
5397	FW6/EN6	1310 x 610 x 150mm	30
70476	FW10/EN10	2885 x 710 x 150mm	15
70475	FW11/EN11	1705 x 710 x 150mm	15
9124	CW2	1220 x 675 x 150mm	24
70474	CW3	1800 x 675 x 150mm	24
70473	EN96	900 x 600 x 150mm	24
70472	EN99	900 x 900 x 150mm	24

STAKKAbox™ ULTIMA all D400 rated



STAKKAbox™ ULTIMA

Product code	STAKKAbox™ MODULA		Minimum order Quantity* (Rings per Pallet)
70477	FW1	300 x 450 x 150mm	40
70478	FW1/EN1	600 x 450 x 150mm	40
70480	FW3/EN3	750 x 600 x 150mm	24
70482	FW4 /EN4	915 x 445 x 150mm	32
70481	EN96	900 x 600 x 150mm	24
70479	***CW1	600 x 600 x 150mm	24

STAKKAbox™ MODULA all B125 rated.

*** CW1 MODULA is D400 rated.



STAKKAbox™ MODULA

Product code	Wedge Boxes		Minimum order Quantity (Rings per Pallet)
41912	Wedge 1	380 x 230mm	26
32415	Wedge 2	550 x 315mm	26
73018	Wedge 3	730 x 460mm	20

Wedge Boxes are B125 rated.

Separate bolt on steps are required, code 9072



Wedge Box

Product code	STAKKAbox™ FORTRESS		Minimum order Quantity* (Rings per Pallet)
71889	FW1/EN1	600 x 450 x 150mm	40
71890	FW2/EN2	725 x 255 x 150mm	40
71730	FW4 /EN4	915 x 445 x 150mm	32
71891	FW6/EN6	1310 x 610 x 150mm	30



Chamber + Cover & Frame

Access Chambers

Access Chamber Furniture - Bolt on

Product Code	Wall Bearers	Minimum order Quantity (Pack)	Length (mm/ inches)
70616	Wall Bearer No.1 - Hole Positions 1	25	178mm / 7"
4966	Wall Bearer No.2 - Hole Positions 2	10	278mm / 11"
4499	Wall Bearer No.3 - Hole Positions 5	10	508mm / 20"
9460	Wall Bearer No.5 - Hole Positions 9	8	813mm / 32"
9988	Wall Bearer No.8 - Hole Positions 15	6	1270mm / 50"
9989	Wall Bearer No.10 - Hole Positions 19	4	1575mm / 62"
9990	Wall Bearer No.12 - Hole Positions 23	4	1880mm / 74"



Assembly

Product Code	Cable Bearers	Minimum order Quantity (Pack)	Length (mm/ inches)
9991	Cable Bearer No.3	40	115mm / 4.5"
4557	Cable Bearer No.5	30	165mm / 6.5"
9071	Cable Bearer No.8	25	242mm / 9.5"
4498	Cable Bearer No.12	10	343mm / 13.5"
9992	Cable Bearer No.18	6	495mm / 19.5"
9993	Cable Bearer No.24	6	648mm / 25.5"



Anchor Iron

Product Code	Ancillary	Minimum order Quantity (Pack)
4500	Locking Pins	200
4496	Manhole Step Insitu	10
9072	Manhole Step Bolt On	10
4839	Plastic Sump	25
9499	Foundation Bolts	100
9498	Anchor Irons	5



Locking Pin

Access Chamber Furniture – Drop in STAKKAbOX™ QUAD & FORTRESS

One of the novel features of STAKKAbOX™ QUAD is that box furniture items drop into ready-made pockets within the chamber.

Product Code	Furniture Kit	Minimum order Quantity (Pack)*
70507	Drop on Furniture Kit FW2	10
70755	Drop on Furniture Kit FW4	10
70756	Drop on Furniture Kit FW6	10

Furniture Kits consist of 2 x bearers, 2 x brackets, 2 x pins and 1 step

Product Code	Ancillary	Minimum order Quantity (Pack)*
4496D	Manhole Step - Drop In STAKKAbOX™ QUAD	10
5418D	Drop In Wall Bearer 2 – Hole Positions 2	10
4499D	Drop In Wall Bearer 3 – Hole Positions 5	10

*Note : Breakage/Carriage fee per pallet applicable on orders below M.O.Q.

Covers & Frames

Concrete Cover and Galvanised Steel Frame

Suitable for use in footpaths, car parks, grass verges, and areas with slow moving traffic including HGV's. Cover and frames are certified to the European Standard Class B125 of BS-EN124 and kite marked. Bespoke badging available on request.



Badging Options			Footway Cover Sizes (Concrete)		Minimum order Quantity (Pallet)*	Covers per Set
Unbadged	Virgin Media	Vodafone				
70352	70386	70350	FW1/EN1	300 x 450mm	30	1
70358	TW2R	70356	FW1/EN1	600 x 450mm (rising frame)	22	1
4843	70354	70353	FW1/EN1	600 x 450mm	20	1
9235	70360	70359	FW2/EN2	725 x 255mm	24	1
4844	70338	70361	FW3/EN3	750 x 600mm	16	1
9053	4816	4678	FW4 /EN4	915 x 445mm	16	1
70365	70364	70363	FW5/EN55	550 x 315mm	16	1
5090	4582	9563	FW6/EN6	1310 x 610mm	10	2
4776	4776A	70368	FW10/EN10	2320 x 740mm	5	3
70372	70179	9562	FW11/EN11	1705 x 710mm	5	3
70349	N/A	N/A	EN96	900 x 600mm	12	1
70292	N/A	N/A	EN99	900 x 900mm	5	1
N/A	TW1R	70373	TW1	560 x 260mm (rising frame)	35	1
N/A	TW4R	N/A	TW4/5	750 x 600mm (rising frame)	12	1
N/A	1419S	70347	1419	380 x 230mm (rising frame)	30	1
N/A	1324S	70346	1324	550 x 315mm (rising frame)	24	1
N/A	1730S	70348	1730	730 x 460mm (rising frame)	16	1

*Note : Breakage/Carriage fee per pallet applicable on orders below M.O.Q.
Other badging options and Bespoke badging available.

Ductile Iron Cover and Frames

Ductile Iron D400 Covers and Frames are Kitemarked certified to European standard class D400 and E600 according to BS EN124.



Product Code	Unbadged	Load Rating	Minimum order Quantity (Pallet)*	Covers per Set
5111	CW1 600 x 600mm 100mm depth	D400	10	2
4707	CW1 600 x 600mm 150mm depth	D400	10	2
9718	CW2 1220 x 675mm 100mm depth	D400	6	4
4716U	CW2 1220 x 675mm 150mm depth	D400	6	4
70483	CW3 1800 x 675mm 150mm depth	D400	4	6
70502	EN96 900 x 600 x 150mm depth	D400	8	2
70503	EN99 900 x 900 x 150mm depth	D400	6	2
70504	EN99 900 x 900 x 100mm depth	D400	6	2
70505	CW1 600 x 600mm 150mm depth	E600	6	2
70506	CW2 1220 x 675mm 150mm depth	E600	6	4

*Note : Breakage/Carriage fee per pallet applicable on orders below M.O.Q.

Covers & Frames

Ductile Iron Cover and Frames

Ductile Iron D400 Covers and Frames are Kitemarked certified to European standard class D400 and E600 according to BS EN124.

Badging Options			Embossed Badge	Load Rating	Minimum order Quantity (Pallet)*	Covers per Set
Virgin Media	Vodafone	BSKYB				
70492	70493	N/A	CW1 600 x 600mm 100mm depth	D400	10	2
70495	70494	N/A	CW1 600 x 600mm 150mm depth	D400	10	2
70497	70496	N/A	CW2 1220 x 675mm 100mm depth	D400	6	4
70498	70499	71260	CW2 1220 x 675mm 150mm depth	D400	6	4
70500	70501	N/A	CW3 1800 x 675mm 150mm depth	D400	4	6

Bespoke badges are available upon request.

*Note : Breakage/Carriage fee per pallet applicable on orders below M.O.Q.

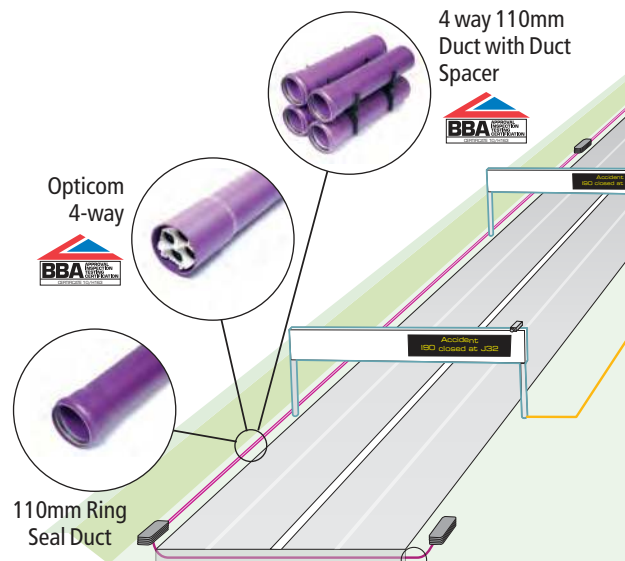
ITS Duct – Highway and Motorway Communications

PVC-U Primary Duct Systems

- 110mm Ring Seal duct is BBA certified. Certificate No. 10/H163
- 110mm Duct can be supplied with an Interference Ring Seal, providing an IP-57 rated connection
- 110mm Opticom Duct system is BBA certified. Certificate No. 10/H163
- Solid wall construction, capable of being back-filled with "graded As-Dug" materials where appropriate and not affected by sharp stone impingement.
- Sizes are 53.9mm & 110mm, to meet standard requirements. Additional bespoke sizes are available.
- Range of wall thickness choices to meet variety of compression strength specified.
- Bespoke print detail to meet client needs.
- Standard Interference fit, Standard Ring Seal & Interference Ring Seal socket systems available.
- Tested to BS-EN 61386

HDPE Horizontal Directional Drill (HDD) Duct

- Strong, flexible and impact resistant yet lightweight
- Standard sizes for HDD duct are OD 110mm & 125mm, SDR 11 & 17. Additional sizes ranging from 75mm up to 250mm are available.
- Flexible and easy to install.
- Long life resistance to fatigue
- Resistant to many common liquids and chemicals
- Immune to most corrosion or fungal contamination
- Available in sticks or coils.



Key Benefits:

- Quicker installation time
- Reduced open trench
- Reduced traffic management
- Reduced logistics
- Reduced landfill
- Reduced carbon footprint
- Reduced cost



125mm SDR11 Directional Drill Duct



110mm Coil

ITS Duct Products



Purple Ring Seal Duct



Black Ring Seal Duct



Black Ring Seal Bend



Purple Opticom Spigot End



Black Opticom Socket End



Black Opticom Bend

Main Duct

Product Code	Description	Quantity
5954	Purple 110mm 6mt Interference Ring Seal Duct	540m
20177	Black 110mm 6mt Interference Ring Seal Duct	540m
20173	Purple 54mm 3mt Standard Interference fit Duct	1110m
20172	Black 54mm 3mt Standard Interference fit Duct	1110m

Bends

Product Code	Description	Radius (mm)	Quantity
20078	Purple 110mm 11¼° Bend	3500	10
20079	Purple 110mm 22½° Bend	1750	10
20174	Purple 54mm 45° Bend	150	60
571P	Purple 54mm 90° Bend	200	60
3536	Black 54mm 45° Bend	150	60
3535	Black 54mm 90° Bend	200	60

Opticom

Product Code	Description	Inner Duct Colour	Radius (mm)	Quantity
4156P	Purple Opticom 4way 6.6m Length	Blue / Natural / Green / Red	-	594m
20336	Black Opticom 4way 6.6m Length	Blue / Natural / Green / Red	-	594m
20202	Purple 110mm Left Hand 11¼° Bend	Blue / Natural / Green / Red	3500	5
20200	Purple 110mm Right Hand 11¼° Bend	Blue / Natural / Green / Red	3500	5
20203	Purple 110mm Left Hand 22½° Bend	Blue / Natural / Green / Red	1750	5
20201	Purple 110mm Right Hand 22½° Bend	Blue / Natural / Green / Red	1750	5
20071	Purple 110mm Flexible Bends	Blue / Natural / Green / Red	-	5

For additional information on Opti-com refer to document EF450-031 Generic Specification – Opti-Com Cable Management



ITS Duct Products

Large Diameter Solid Wall PE Duct

Entelle Solid Wall PE duct offers a light, durable yet flexible cable protection system. The duct can be joined using connection methods such as; Butt Fusion Welding, Electrofusion Couplers and Mechanical Fittings / Connectors.

The duct is available in sizes from 75mm up to 250mm Outside Diameter, in SDR11 or SDR17 versions. The duct is suitable for various industry standard installation techniques such as:

- Horizontal Directional Drilling (HDD)
- Trenchless / Moleplough
- Shallow Depth Burial

Standard Sizes & Supply Lengths

Outside Diameter	SDR	Standard Colours	Straight Lengths (Sticks)	Coiled Lengths
110mm	11 & 17	Purple & Black	6m & 12m	50m, 100m, 125m & 150m
125mm	11 & 17	Purple & Black	6m & 12m	50m, 100m, 125m & 150m

Longer lengths of coils are possible, as are bespoke wall thickness to suit specific installations.
For additional information on PE Duct refer to document EF450-018 Generic Specification – PE Duct.



Straight Lengths (Sticks)



Coiled Length

PE Double Socket Transition Couplers / Adaptors

Entelle Double Socket Transition Couplers are manufactured from solid wall Polyethylene, and provide the means to connect the plain ends of ducts. The connectors can be used to connect:

- PVC Ducts to PVC Ducts
- PVC Ducts to PE Ducts
- PE Ducts to PE Ducts

The couplers can be designed to connect ducts with the same dimensions (Straight Coupler), or ducts with different dimensions (Transition Coupler). All couplers are designed to provide a smooth transition from one size of duct to the next, ensuring safe cable placement. Both ends of the coupler contain a ring seal providing an airtight connection.

Standard colours are Red or Black.

For additional information on these products refer to document EF450-037 Generic Specification – HDPE – PVC Transition DS Couplers (Power).



Transition Coupler / Adapter

CCTV, Traffic Signalling & Street Lighting

CCTV, Traffic Signalling & Street Lighting duct is manufactured to industry standard BS61386 with a compression class of 450N. Other classes of duct suitable for this application can be manufactured upon request.



Orange PVC Duct

Orange PVC-U Product Range		
Product Code	Description	Quantity
4547	96.5mm PVC Duct with interference fit socket, Length 6m	690m
4462	110mm PVC Duct with interference fit socket, Length 6m	540m
20204	110mm PVC Duct with interference ring seal socket, Length 6m	540m

A full range of bends are available upon request.



Coiled Duct

Orange PE Coils		
Product Code	Description	Quantity
5837	44/38 PE Duct (100m Coils)	400m
5802	60/50 PE Duct (50m Coils)	200m

Other bespoke sizes are available upon request.

Orange PE on a Drum		
Product Code	Description	Quantity
30439	20/16mm PE Duct	350m

Twinwall

Emtelle manufacture Ø110mm twinwall which is suitable for this application, for further details refer to page 36.

ITS, CCTV, Traffic Signalling & Street Lighting Ancillary Products

Product Code	Description	Quantity
7999	110mm 8-Way Duct Spacer (25mm Spacing)	280
71300	110mm 4-Way Duct Spacer (50mm Spacing)	500
3982	50mm Trefoil spacer 110mm Duct	200
9963W	Marker Tape + Tracer Wire Yellow	1 roll
15788	110mm Duct – Replacement Ring Seal pack	25
70442	Ambersil Aerosol Silicone Lubricant 500ml	12
9836	Foam Pig 29mm OD for use with Opti-Com Duct	10
71410	Foam Pig 110mm OD for use with Ringseal Duct	10
71366	Opti-Com bellmouth end	1
71376	Opticom Mandrel 26.5mm	10
4410D	Blank Duct Compression Plug for Opti-Com Inner Duct	50
4410	Blank Duct Compression Plug for Ringseal Duct	8

Simplex/Triplex & Quadplex cable and duct sealing plugs can be supplied after cable dimensions have been confirmed

Rope Blowing Guns

For 6mm ropes 4.5kN and 8kN

Capable of blowing rope over 1km distances. Can be adapted to fit any size of duct and will fit all standard compressor hose fittings. **When ordering state duct size to be blown into.**

Rope

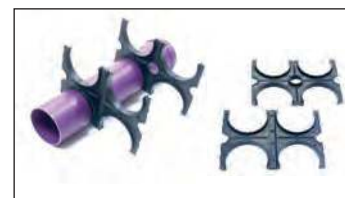
Product Code	Description	Quantity
4563	5KN Blue Polyprop (6mm)	500m
13375B	8KN Orange Rope	4250m

4-Way Integrated Motorway Duct Seal (71923)

Entelle's new and innovative 4-Way Integrated Duct seal has been designed to comply with the requirements of Series 1530 of the Highways Agency Specification for Highways Works.

Suitable for 110mm PVC Duct and 110mm/94mm Twinwall Duct systems.

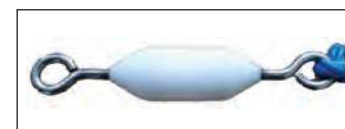
For additional information on the product refer to document EF450-023 Generic Specification – 4way Duct Seal (Motorway Comms)



110mm 4-Way Duct Spacer



Opticom Bellmouth End



Opticom Mandrel 26.5mm



Rope Blowing Gun



Blue rope



Orange rope



Integrated Seal

Power Duct System - PowerProtect+

Product overview

Emtelle UK have developed a comprehensive range of Power Duct Systems and accessories designed to meet performance requirement for underground power cables. Our duct meets industry standard ENATS 12-24. Our systems include:

- Class 1 Solid Wall PVC-U Duct System guaranteeing 450N compression performance at operating temperatures up to 75° C
- Class 2 Solid Wall PVC-U Duct System guaranteeing 450N compression performance at operating temperatures up to 50° C
- Class 3 coiled Solid Wall HDPE duct systems for service cables and specialist applications
- Class 2 PE Twinwall Duct System guaranteeing 450N compression performance at operating temperatures up to 50° C.
- Large Diameter PE Duct systems suitable for various applications such as Horizontal Directional Drill (HDD), Shallow Depth Burial and Moleplough applications.
- PE Sub-duct with Pre-installed rope in multi-way configurations for sub-dividing an existing duct.
- PE Cable-in-Duct which can be pre-installed with various cable types such as: Fibre optic cable, G78 electricity cable, Telemetry cable and Small pilot copper cable.
- Emtelle Power Duct Systems are now specified and used by all major Distribution Network Operators:

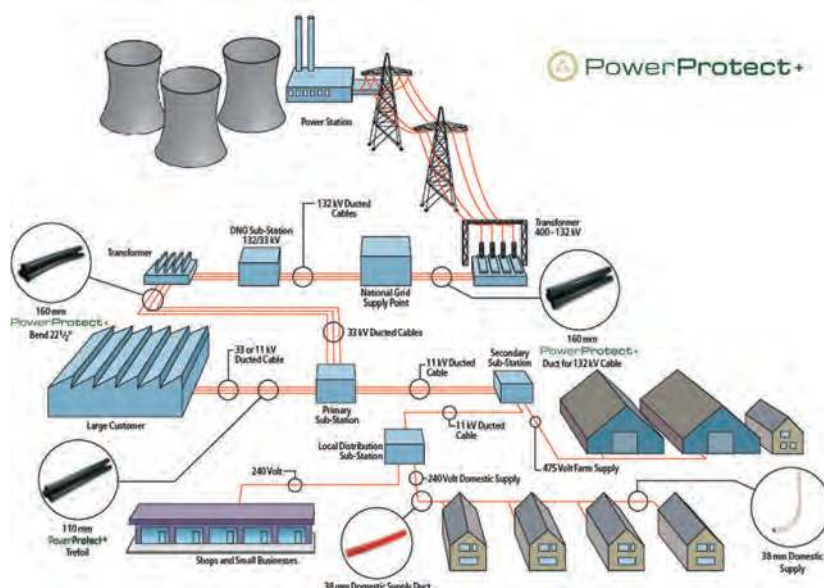


Features and Benefits

- The ability to withstand compression forces from carriageway loading at elevated temperatures.
- Ease of installation with integral jointing system, making the product simple to install, therefore ensuring system is installed correctly without fail.
- Ease of cable placement, with low friction inner surface bespoke long radii bends to meet the requirements of the latest generation cables. This reduces whole system costs as longer cabling distances can be achieved, resulting in reduction in expensive joints. Internal chamfer on all spigot ends of ducts ensures no damage during cable placement, which in turn improves cable lifespan.
- Enhanced cable performance through efficient heat dissipation offered by PVC-U duct systems, due to the high compression to wall thickness ratio, compared with alternate systems.
- Comprehensive product range, covering all possible cable requirements and construction techniques.
- Systems are re-useable when cables are replaced or repaired, therefore maximising asset life and reducing further disruptions to the roadways and footways.

Full support from design through to operation and maintenance

Emtelle has a well-earned reputation for offering excellent specification, and site support. This commitment to service without compromise includes full discussion and cooperation from the design stage to cable placement. Our experts will walk the entire route with engineers, carefully quantifying product requirements, checking for areas of technical difficulty. We also provide product training and a step-by-step installation guide for ducts.



PowerProtect + PVC-U Interference Fit Socket (IP4X) Duct System

Emtelle PVC Duct Systems for the Power industry consists of a comprehensive range of duct sizes, bends, and accessories. These ducts can be supplied with either an Interference Fit Socket (IP4X) or Emtelle's innovative Interference Ring Seal Socket (IP-57).

The tables listed below provide standard sizes, additional duct diameters are available, as well as a wide range of customised bends and accessories. Contact Customer Service for further details (Page 50).

53.9mm OD Duct					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
5078	2	Black	6m length Duct	-	2220m
20189	2	Red	6m length Duct	-	2220m



Black Duct

63mm OD Duct					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
20301	1	Black	6m length Duct	-	1800m

Available in Red



Red Duct

88.9mm OD Duct & Fittings					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
5079T	1	Black	6m length Duct	-	828m
5079	2	Black	6m length Duct	-	828m
5492	1	Black	11¼° Bend	1500	10
5537	1	Black	11¼° Bend	3900	5
5118	1	Black	22½° Bend	1500	10
5536	1	Black	22½° Bend	3900	5
5306	1	Black	Connector Sleeve	-	75

Available in Red



Black Bend

96.5mm OD Duct & Fittings					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
20159	1	Black	6m length Duct	-	690m
3772S	2	Black	6m length Duct	-	690m
5463	1	Black	11¼° Bend	3800	15
5267	1	Black	22½° Bend	2585	15
169	1	Black	90° Bend	427	10
103S	1	Black	Connector Sleeve	-	75

Available in Red



Red Bend



Black Connector Sleeve

PowerProtect+ PVC-U Interference Fit Socket (IP4X) Duct System



Black Duct



Red Duct



Black Bend



Red Bend



Black Connector Sleeve

110mm OD Duct & Fittings

Product Code	Class	Colour	Description	Radius (mm)	Quantity
3978S	1	Black	6m length Duct	-	540m
4748S	2	Black	6m length Duct	-	540m
5302	1	Red	6m length Duct	-	540m
20275	2	Red	6m length Duct	-	540m
5884	2	Black	3m length Duct	-	270m
5854	1	Black	11¼° Bend	700	20
3986	1	Black	11¼° Bend	3500	10
20049	1	Red	11¼° Bend	1200	10
5855	1	Black	22½° Bend	700	20
3987	1	Black	22½° Bend	1750	10
20050	1	Red	22½° Bend	1200	50
5856	1	Black	45° Bend	560	15
20051	1	Red	45° Bend	1200	50
5886	1	Black	90° Bend	450	10
20124	1	Red	90° Bend	450	10
20273	1	Black	90° Bend	1200	50
20052	1	Red	90° Bend	1200	50
4044	1	Black	Connector Sleeve	-	50
5236	1	Red	Connector Sleeve	-	25

125mm OD Duct & Fittings

Product Code	Class	Colour	Description	Radius (mm)	Quantity
5080T	1	Black	6m length Duct	-	408m
5080	2	Black	6m length Duct	-	408m
5909	1	Black	3m length Duct	-	204m
5333NP	1	Red	6m length Duct	-	408m
20153	1	Red	6.6m length Duct	-	448m
5890	1	Red	3m length Duct	-	204m
4736B	1	Black	11¼° Bend	1200	5
5337	1	Black	11¼° Bend	3900	10
4736U	1	Red	11¼° Bend	1200	5
5427	1	Black	22½° Bend	1200	5
4614U	1	Red	22½° Bend	1200	5
5426	1	Black	45° Bend	1200	5
4624U	1	Red	45° Bend	1200	5
20107	1	Black	90° Bend	1200	50
4615U	1	Red	90° Bend	1200	50
5621	1	Black	Connector Sleeve	-	25
5570	1	Red	Connector Sleeve	-	25

PowerProtect + PVC-U Interference Fit Socket (IP4X) Duct System

160mm OD Duct & Fittings					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
3769S	1	Black	6m length Duct	-	234m
4749	2	Black	6m length Duct	-	234m
5849	1	Black	3m length Duct	-	117m
5885	2	Black	3m length Duct	-	117m
20085	2	Red	6m length Duct	-	234m
5750	1	Red	6m length Duct	-	234m
20322	1	Red	3m length Duct	-	117m
20251	2	Red	6.6m length Duct	-	257m
20048	2	Red	3m length Duct	-	117m
5858	1	Black	11¼° Bend	1200	39
5482	1	Black	11¼° Bend	3900	39
5452U	1	Red	11¼° Bend	1200	25
5482R	1	Red	11¼° Bend	3900	39
5859	1	Black	22½° Bend	1200	39
5479	1	Black	22½° Bend	3900	39
5568U	1	Red	22½° Bend	560	5
5453U	1	Red	22½° Bend	1200	25
5479R	1	Red	22½° Bend	3900	39
5860	1	Black	45° Bend	560	5
5454U	1	Red	45° Bend	1200	25
20285	1	Black	90° Bend	1200	25
5861	1	Black	90° Bend	560	5
20125	1	Red	90° Bend	560	5
5455U	1	Red	90° Bend	1200	25
3748	1	Black	Connector Sleeve	-	15
5235	1	Red	Connector Sleeve	-	15



Black Duct



Red Duct



Black Bend



Red Bend



Black Connector Sleeve

180mm OD Duct & Fittings					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
20300	1	Black	6m length Duct	-	168m
71665	1	Black	22½° Bend	3900	5
20311	1	Black	Connector Sleeve	-	5

Available in Red

PowerProtect+ PVC-U Interference Fit Socket (IP4X) Duct System



Black Duct



Red Duct



Black Bend



Red Bend



Black Connector Sleeve

200mm OD Duct & Fittings

Product Code	Class	Colour	Description	Radius (mm)	Quantity
5888	1	Black	6m length Duct	-	150m
20315	1	Black	3m length Duct	-	75m
20042	1	Black	11¼° Bend	3900	25
5900	1	Black	22½° Bend	3900	25
20312	1	Black	Connector Sleeve	-	5
5893	1	Red	6m length Duct	-	150m
5894	1	Red	11¼° Bend	3900	25
5899	1	Red	22½° Bend	3900	25

225mm OD Duct & Fittings

Product Code	Class	Colour	Description	Radius (mm)	Quantity
20305	1	Black	6m length Duct	-	108m
20313	1	Black	Connector Sleeve	-	5
71663	1	Black	11¼° Bend	3900	5
71664	1	Black	22½° Bend	3900	5

Available in Red
Bends are available

250mm OD Duct & Fittings

Product Code	Class	Colour	Description	Radius (mm)	Quantity
20284	1	Black	6m length Duct	-	96m
71599	1	Black	Double Connector	-	20
71570	1	Black	11¼° Bend	3900	5

Available in Red
Bends are available

PowerProtect + PVC-U Interference Ring Seal Socket (IP-57) Duct System

Entelle has enhanced the overall performance of its PVC Power Duct systems by introducing a unique and innovative Interference Ring Seal (IRS) socket which has been purposely designed for power cable placement applications.

This new longer socket provides an IP-57 rated joint in addition to other benefits for cable placement applications. Specification EF450-019 provides further information on the benefits of this socket type.

110mm OD Duct & Fittings					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
5795	1	Red	6m length Duct	-	540m
5331	1	Black	6m length Duct	-	540m
20281	2	Black	6m length Duct	-	540m
5336	1	Black	11¼° Bend	3500	10
5180	1	Black	22½° Bend	1750	10
20112	1	Red	11¼° Bend	3500	10
20113	1	Red	22½° Bend	1750	10
5334	1	Black	Double Ring Seal Coupler	-	50



IRS Socket

160mm OD Duct & Fittings					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
20211	1	Red	6m length Duct	-	234m
5338	1	Black	6m length Duct	-	234m
5493	1	Black	11¼° Bend	3900	39
5420	1	Black	22½° Bend	3900	39
20309	1	Black	45° Bend	560	39
5493R	1	Red	11¼° Bend	3900	39
5420R	1	Red	22½° Bend	3900	39
5339	1	Black	Double Ring Seal Coupler	-	10



Ring Seals

PowerProtect+ PVC-U Interference Ring Seal Socket (IP-57) Duct System



IRS Socket



Ring Seals

200mm OD Duct & Fittings					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
20339	1	Red	6m length Duct	-	150m
5305T	1	Black	6m length Duct	-	150m
5305	2	Black	6m length Duct	-	150m
5311	1	Black	3m length Duct	-	75m
5694	1	Black	11¼° Bend	3900	25
9497	1	Black	22½° Bend	3900	25
20110	1	Red	11¼° Bend	3900	25
20111	1	Red	22½° Bend	3900	25
5310	1	Grey	Double Ring Seal Coupler	-	45

250mm OD Duct & Fittings					
Product Code	Class	Colour	Description	Radius (mm)	Quantity
20338	1	Red	6m length Duct	-	96m
20394	1	Black	6m length Duct	-	96m
70612	1	Black	11¼° Bend	3900	25
70613	1	Black	22½° Bend	3900	25
70917	1	Black	Double Ring Seal Coupler	-	24

Product Details & Sizes

For a comprehensive list of Duct OD's and standard Bends sizes available within Emtelle's Power Duct range please refer to the following documents:

EF450-014 Generic Specification – PVC Duct (Power)

EF450-012 Generic Specification – PVC Duct Bends (Power)

Please note all products are available in either red or black, if you cannot find the relevant product code please contact Customer Service (Page 50).

Bespoke Bends

If our standard range of bends does not suit your installation route, Emtelle can arrange purpose manufactured bends to suit any route, for all sizes and types of duct we produce. For more information on these bespoke products contact Emtelle Customer Service (Page 50).

Con-Duct: for placement of HV Cables and enabling rapid fault detection

Traditionally, if a fault was detected on a length of cable, engineers would typically have to dig down to the cable at the halfway mark and use a tester to determine which half was defective. The process was repeated until a short enough section of cable was reached to repair the fault.

Con-Duct connectors are short PVC Duct spigot and socket sections which are encapsulated with a specifically developed "electro conductive" coating. The system allows the connectors to act as an earthing point from the fault to ground, as the current is conducted from inside to outside of the duct via the **Con-Duct** connector. The conductive coating enables the location of the cable sheath fault through use of industry standard cable tracing / fault detection equipment.

When utilised with every 6m length of duct, **Con-Duct** connectors will enable the location of the fault to within 3m - a substantial improvement over the traditional method. The **Con-Duct** connector is available with either a standard Interference Fit Socket (IP4X), or an Interference Ring Seal Socket (IP-57).

Con-Duct connectors are installed using the same procedures to install **PowerProtect+** duct systems.

In addition to individual connectors, the same fault finding ability can be achieved by coating the spigot end of any PVC duct with the same "electro conductive" coating.

Benefits of Entelle's **Con-Duct** system

- Considerably less digging
- Safer procedures
- Fewer man-hours
- Quicker detection
- Speedier repair
- Shorter downtimes

A range of **Con-Duct** conductive connectors has been developed to be used specifically with **PowerProtect+** Class 1 Duct systems, for both standard Push-Fit socket system (IP4X) and Ring-Seal socket system (IP57). These are available for all standard sizes, as detailed in the table below.

Duct Size OD (mm)	Push-Fit Socket System IP4X	Interference Ring Seal Socket IP-57
110	Y	Y
125	Y	-
140	Y	-
160	Y	Y
200	Y	Y
250	Y	Y

For further information on this product and the range of sizes available refer to the following document EF450-022 Generic Specification – Con-duct (Power)



Interference Fit (IP4X) Coupler



Coated Spigot End



Interference Ring Seal (IP-57) Coupler



PowerProtect+ PE Twinwall Duct System

Twinwall duct systems are designed to provide a stiff, yet flexible and lightweight alternative to conventional Electrical Cable Duct systems. The duct is manufactured to industry standard ENATS 12-24 Class 2, guaranteeing 450N compression performance at operating temperatures up to 50°C.



Twinwall Duct

Product Code	Description	Pipes / Pallet	Quantity
37001	Black 175mm / 150mm, 6m Length	36	216m
37032	Black 175mm / 150mm, 3m Length	36	108m
37002	Black 150mm / 125mm, 6m Length	49	294m
37033	Black 150mm / 125mm, 3m Length	49	147m
37003	Black 120mm / 100mm, 6m Length	81	486m
37034	Black 120mm / 100mm, 3m Length	81	243m

Each individual duct lengths comes with a single coupler as standard.
If the system is required to be watertight a sealed system is available.
Also available in red.

Bends

Product Code	Description	Quantity
37004	Black 175mm / 150mm 11¼° Bend	5
37005	Black 175mm / 150mm 22½° Bend	5
37006	Black 175mm / 150mm 45° Bend	5
37007	Black 175mm / 150mm 90° Bend	5
37008	Black 150mm / 125mm 11¼° Bend	5
37009	Black 150mm / 125mm 22½° Bend	5
37010	Black 150mm / 125mm 45° Bend	5
37011	Black 150mm / 125mm 90° Bend	5
37012	Black 120mm / 100mm 11¼° Bend	5
37013	Black 120mm / 100mm 22½° Bend	5
37014	Black 120mm / 100mm 45° Bend	5
37015	Black 120mm / 100mm 90° Bend	5

Bespoke bends can be made available upon request.



Accessories

Product Code	Description	Quantity
37016	Black 175mm Coupler	10
37017	Black 150mm Coupler	10
37018	Black 120mm Coupler	10
37019	175mm Ring Seal	10
37020	150mm Ring Seal	10
37021	120mm Ring Seal	10

If Ordering couplers for a sealed version of the system, then a separate Ring Seal is required.

For additional information on these products refer to document: EF450-035 Generic Specification – PE Twinwall Duct System (Power)

PowerProtect+ PE Solid Wall Duct Systems

Coiled PE Service Duct

Coiled PE Service Ducts are used within the power market for service cables and specialist applications. The ducts are manufactured to Industry standard ENATS 12-24. Standard colours are Black and Red.

- Strong, flexible and impact resistant yet lightweight
- Easy to work with
- Flexible, even at well below zero temperature
- Long life resistance to fatigue
- Resistant to many common liquids and chemicals
- Immune to most corrosion or fungal contamination
- 25mm, 32mm, 37mm, 38mm, 44mm, 50mm, 54mm, 60mm and 63mm OD duct sizes to meet optimum size requirements for cable placement.
- Coil lengths to suit client requirements (typically 50m, 100m and 150m.)
- Banded and film wrapped for ease of handling.

Product Code	Description	Coil Length	Quantity
5074S	Black 32/32mm	50m	200m
5074	Black 37/32mm	100m	400m
5846	Red 38/32mm	100m	400m
30333	Black 38/32mm	100m	400m
5075S	Black 44/38mm	50m	200m
5075	Black 44/38mm	100m	400m
5073	Black 54/46mm	50m	200m
5847	Red 58/50mm	50m	200m
5847L	Red 58/50mm	100m	400m
30383	Black 60/50mm	50m	200m

Bespoke sizes and lengths may be available upon request.

For additional information on these products refer to documents:

EF450-030 Generic Specification – Small Bore PE Coiled Duct (Power).

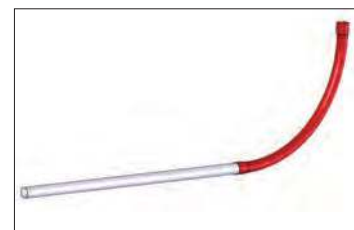


Hockey Sticks

This is the industry name commonly used to describe the duct that connects electric meters with underground service ducting. It is a 2 piece product with a coloured 90° bend attached to a white straight section. It provides extra mechanical protection for the electrical cable.

Product Code	Description	Quantity
5077	Red 38mm 2 piece Hockey Stick	25
20374	Black 38mm 2 piece Hockey Stick	25

Other sizes of Hockey Sticks available upon request.



Hockey Stick

HDPE Sub-Duct

Emtelle manufacture a range of sub-ducts from 20mm to 63mm available c/w low friction liner & optional 8kn pulling rope, for placement of fibre optic communication and telemetry cables. Delivered to site on single-way and multi-way metal skeletal drums, containing up to 4km of product.

For additional information on Emtelle's range of sub-duct products refer to page 12



HDPE Cable in Duct

Emtelle manufacture a range of sub-ducts from 20mm to 63mm available c/w low friction liner. Cable placed in duct at point of manufacture (or post manufacture dependent upon size). Delivered to site on single-way and multi-way metal skeletal drums, containing up to 4km of product. Product is ideal for wind farm and G78 applications, reducing the build time.

For additional information on Emtelle's range of Cable in Duct products refer to page 15.



Large Diameter Solid Wall PE Duct



Emtelle Solid Wall PE duct offers a light, durable yet flexible cable protection system. The duct can be joined using connection methods such as; Butt Fusion Welding, Electrofusion Couplers and Mechanical Fittings / Connectors.

The duct is available in sizes from 75mm up to 250mm Outside Diameter, in SDR11 or SDR17 versions. The duct is suitable for various industry standard installation techniques such as:

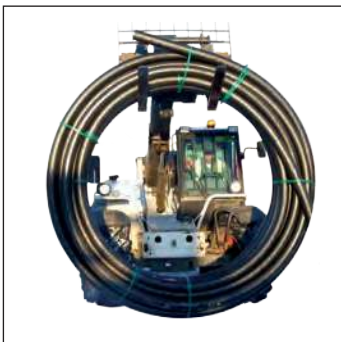
- Horizontal Directional Drilling (HDD)
- Trenchless / Moleplough
- Shallow Depth Burial

Standard Sizes & Supply Lengths

Outside Diameter	SDR	Standard Colours	Straight Lengths (Sticks)	Coiled Lengths
75mm	11 & 17	Red & Black	6m & 12m	50m, 100m, 125m & 150m
90mm	11 & 17	Red & Black	6m & 12m	50m, 100m, 125m & 150m
110mm	11 & 17	Red & Black	6m & 12m	50m, 100m, 125m & 150m
125mm	11 & 17	Red & Black	6m & 12m	50m, 100m, 125m & 150m
140mm	11 & 17	Red & Black	6m & 12m	50m, 100m & 125m
160mm	11 & 17	Red & Black	6m & 12m	50m, 100m & 125m
180mm	11 & 17	Red & Black	6m & 12m	50m & 100m
200mm	11 & 17	Red & Black	6m & 12m	N/A
225mm	11 & 17	Red & Black	6m & 12m	N/A
250mm	11 & 17	Red & Black	6m & 12m	N/A

Longer lengths of coils are possible, as are bespoke wall thickness to suit specific installations.

For additional information on these products refer to document EF450-018 Generic Specification – PE Duct (Power)



PE Bends

Emtelle can provide bespoke PE Duct bends to suit any installation route. All sizes of duct can be formed at various angles and radii. For full information on this service contact Customer Services (Page 50).

PowerProtect+ Ancillary Products

Electrical Marker Tapes

Can be supplied with bespoke Colour/Printline giving company name and Emergency Freephone Number.

Product Code	Description	Quantity
4878	Green Marker Tape "CAUTION – ELECTRICAL CABLE BELOW"	1
9963W	Yellow Marker Tape + Tracer Wire "CAUTION – COMMUNICATIONS/POWER CABLE BELOW"	1



HDPE Trench Tiles

- Cable tiles are a heavy protection product manufactured from high impact recycled polyethylene sheet and are suitable to withstand damage from plant and hand tools.
- They are also suitable for fibre optic and HV electric cables.
- Cable tiles are fully jointed, laid overlapped and held firm with plastic jointing pegs.
- They are a suitable direct replacement for concrete covers and steel plate.
- These are generally supplied with bespoke Colour/Printline giving company name and their Emergency freephone number.



Tile Tape

Thick plastic tape which will help to mark and protect buried duct



Lubricant

CABLE LUBE 20LT (Product Code 3647)

Techlube HD Heavy Duty, High Performance, Cable Lubricant, is a clean, bright blue, slow-drying, water-based gel lubricant especially formulated to provide the greatest friction reduction possible in high shear, difficult electrical utility and communication cable placing operations. It will dry slowly to form a thin friction reducing film which retains its slip.

Techlube HD Heavy Duty, High Performance Cable Lubricant presents no threat to users. It is non-irritating to skin during normal use and is biodegradable, presenting no threat to the environment.

Techlube HD is compatible with all forms of cable jacket materials and is very easy to use.



Duct Proving Accessories

Entelle provide a range of proving equipment to "prove" the integrity of duct bores for existing and newly laid ducts, for damage or misalignment. They are available in a comprehensive range of sizes to cover all duct dimensions. When ordering state the duct ID to be used with.



Metal Sizing Mandrel, also available in nylon



Foam Pigs with or without tails



Metal Proving Pig



Duct Brush

PowerProtect+ Ancillary Products



Trefoil Spacer

Trefoil spacers

Trefoil spacers keep the ducts in their trefoil arrangement with a constant spacing of 50mm to allow adequate sand backfill and where HV cables are being used at maximum duty, to avoid ducts pressing onto the ducts below.

Product Code	Description	Quantity
3982	110mm	200
3792	160mm	125



Endcaps

End Caps

End caps are used to keep grit from entering the duct system during installation and prior to cabling.

Product Code	Description	Quantity
1740	Black 88.9mm	250
1875	Red 96.5mm	250
3850	Red 110mm	100
9232	Grey 125mm	100
9352	Grey 140mm	60
5029	Grey/Yellow 160mm	60
9191	Grey/Yellow 168mm	35
9233	Grey/Yellow 200mm	35
70946	Grey 250mm	25

Split Duct Repair Kits

Emtelle Split duct repair kits are a means of repairing damaged PVC Power duct systems with cables already installed in the ducted network.



Split Duct

Split Duct

Comprises two split halves with connecting H strips plus 2 x cable ties. These are used in conjunction with PVC Split connectors. Standard Sizes detailed below.

Product Code	Colour	OD	Length	Lengths / pallet	Metres / pallet	Quantity
71799	Black	Ø110mm	3m	99	297m	1 Pallet
71790	Black	Ø125mm	3m	72	216m	1 Pallet
71792	Black	Ø140mm	3m	46	138m	1 Pallet
71794	Black	Ø160mm	3m	42	126m	1 Pallet
71801	Black	Ø200mm	3m	25	75m	1 Pallet
71877	Black	Ø225mm	3m	18	54m	1 Pallet
71935	Black	Ø250mm	3m	16	48m	1 Pallet
71893	Red	Ø110mm	3m	99	297m	1 Pallet
71894	Red	Ø125mm	3m	72	216m	1 Pallet
71895	Red	Ø140mm	3m	46	138m	1 Pallet
71896	Red	Ø160mm	3m	42	126m	1 Pallet
71897	Red	Ø200mm	3m	25	75m	1 Pallet
71934	Red	Ø225mm	3m	18	54m	1 Pallet
71936	Red	Ø250mm	3m	16	48m	1 Pallet

PowerProtect+ Ancillary Products

Split Coupler

Used to connect PVC Split Duct to PVC Duct, or adjoining lengths of split duct.

Supplied with 2 x cable ties.

Product Code	Colour	ID	Length	Quantity
71793	Black	Ø110mm	200mm	20
71795	Black	Ø125mm	250mm	20
71797	Black	Ø140mm	300mm	20
71780	Black	Ø160mm	300mm	20
71902	Black	Ø200mm	300mm	20
71937	Black	Ø225mm	450mm	20
71939	Black	Ø250mm	500mm	20
71898	Red	Ø110mm	200mm	20
71899	Red	Ø125mm	250mm	20
71900	Red	Ø140mm	300mm	20
71901	Red	Ø160mm	300mm	20
71903	Red	Ø200mm	300mm	20
71938	Red	Ø225mm	450mm	20
71940	Red	Ø250mm	500mm	20



Split Coupler

For additional information on these products refer to document EF450-020 Generic Specification – PVC Split Duct Repair Kit (Power).

PE Double Socket Transition Couplers / Adaptors

Entelle Double Socket Transition Couplers are manufactured from solid wall Polyethylene, and provide the means to connect the plain ends of ducts. The connectors can be used to connect:

- PVC Ducts to PVC Ducts
- PVC Ducts to PE Ducts
- PE Ducts to PE Ducts

The couplers can be designed to connect ducts with the same dimensions (Straight Coupler), or ducts with different dimensions (Transition Coupler). All couplers are designed to provide a smooth transition from one size of duct to the next, ensuring safe cable placement. Both ends of the coupler contain a ring seal providing an airtight connection.

Standard colours are Red or Black.

For additional information on these products refer to document EF450-037 Generic Specification – HDPE – PVC Transition DS Couplers (Power).



Tee Piece

Product Code	Description	Quantity
70732	Black 200mm x 96.5mm	1
70735	Red 200mm x 96.5mm	1

PowerProtect+ Ancillary Products



Expansion Coupler

PE Expansion Couplers

Emtelle provide a full range of these Couplers which are used to connect PVC ducts of the same size which are exposed to the environment (e.g. Bridge Crossings) and subject to movement due to changes in temperature. They can be manufactured to suit any size of PVC duct.



Cable Guard

Cable Guard

This is a plastic cable protection capping profile to protect cables on telegraph poles, fences and walls. It is highly impact resistant and very easy to install.

Product Code	Description	Length	Quantity
9493	Black Cable Guard for cables up to Ø20mm	3m	10
9682	Black Cable Guard for cables up to Ø25mm	3m	10
9494	Black Cable Guard for cables up to Ø40mm	3m	10
9495	Black Cable Guard for cables up to Ø55mm	3m	10
9496	Black Cable Guard for cables up to Ø80mm	3m	5



Access Chamber

Access Chambers / Covers & Frames

Emtelle provide a comprehensive range of Access chambers and Covers and frames used within Power Ducted networks. For full details of these, see pages 18 – 22 of this catalogue.

PowerProtect+ Ancillary Products

Mechanical Cable & Duct Seals



Cable and Duct Seals

Emtelle supply a range of cable and duct seals (also suitable for Telecommunication applications) to be used when terminating a power cable or duct. These products can provide a water and gas tight seal.

The product range is comprehensive and varied ensuring that whatever the sealing requirements, Emtelle will have a Seal suitable to cover your needs. The products below are typical seals used:

Duct Seal

Standard type used to seal the outside of ducts when terminated at a wall or building. Supplied in a range of standard sizes.

Bespoke Cable Seal

Used to seal cables inside a duct, a wall sleeve or a core drilling. They can be designed to fit any size of duct or any size of cable and can cover multiple cables, for example a trefoil configuration as shown in the picture.

A closed version as well as a split (retrofit for pre-installed cables) version is available.

Universal Cable Seal

Used to seal cables inside a duct, a wall sleeve or a core drilling. Supplied in a range of standard sizes and includes an innovative segmented ring technology, enabling the seal to cover a range of cable diameters.

For more detailed information on these and other cable and duct seals, please contact Customer Service (Page 50).



Trefoil cable seal



Cable Entry Systems

In addition to the cable seals, Emtelle can supply a comprehensive range of cable entry systems when terminating ducts or cable at buildings, these include:



Earthing Seals



Fire Resistant Seal



Modular Entry Systems



Wall Sleeves

For more detailed information on these and other cable entry systems, please contact Customer Service (Page 50).



Licence No. KM 72683
BS EN 1401-1 : 2009

Underground Drainage

EN1401 Ring Seal Pipe

- Emtelle Underground Drainage pipe is Kitemarked to EN1401.
- The pipe comes in two standard Sizes, Ø110mm & Ø160mm with the option of a Ring Seal Socket or Plain Ended.
- "In – line" socketing enables the manufacture of integral interference fit, or ring seal joints, enabling easy to install and secure jointing for a range of applications to give system security of choice.
- PVC-U bends are manufactured from a solid wall pipe and provide the means to change direction on a drainage system.
- Long radius bends are designed to be used in application of underground drainage where the use of moulded shorter radius bends could result in blockages of the drainage system occurring.
- The spigot end of the bends are chamfered to enable ease of insertion.



Ring Seal Pipe



Plain Ended Pipe



Ring Seal Long Radius Bend

EN1401 Ring Seal Pipe		
Product Code	Description	Quantity
5316	110mm x 3m length	258m
5318	110mm x 6m length	540m
5319	160mm x 3m length	117m
5320	160mm x 6m length	234m
20106	200mm x 6m length	150m

EN1401 Plain Ended Pipe		
Product Code	Description	Quantity
5315	110mm x 3m length	270m
5317	110mm x 6m length	540m
5131	160mm x 3m length	117m
5132	160mm x 6m length	234m

EN1401 Ring Seal Long Radius Bends			
Product Code	Description	Radius (mm)	Quantity
4971	110mm 11.25° Bend	3500	10
4970	110mm 22.5° Bend	1750	10
4969	110mm 45° Bend	560	10
4968	110mm 90° Bend	450	8
4975	160mm 11.25° Bend	1200	5
4974	160mm 22.5° Bend	1200	5
4973	160mm 45° Bend	560	5
4972	160mm 90° Bend	560	5

For additional information on these products refer to documents:

EF450-015 Generic Specification – PVC Pipe (Underground Drainage)

EF450-010 Generic Specification – PVC Pipe Long Radius Bends (Underground Drainage)

General Purpose Duct

General Purpose Ducts are manufactured as there is still a residual requirement for these products via distributors and end users. Unlike our Telecoms and Power products, these systems are not manufactured in accordance with recognised performance specifications and as such care should be taken as to where these products are used and how they are installed. We recommend these products are not used in the public domain, and if they are to be used in such areas then the ducts should be surrounded with concrete.

Black Imperial GP Duct		
Product Code	Description	Quantity
3534	54mm (2") x 6m length	2220m
3497	88.9mm (3") x 6m length	828m
2732	114mm (4") x 6m length	456m
3518	168mm (6") x 6m length	234m
5516	200mm (8") x 6m length	150m

Black Imperial GP Bends			
Product Code	Description	Radius (mm)	Quantity
3536	54mm (2") 45° Bend	150	60
3535	54mm (2") 90° Bend	200	60
3512	89mm (3") 45° Bend	350	20
3513	89mm (3") 90° Bend	250	20
3546	114mm (4") 11.25° Bend	1000	20
3545	114mm (4") 22.5° Bend	1000	15
3486	114mm (4") 45° Bend	500	15
3487	114mm (4") 90° Bend	500	10
3488	168mm (6") 45° Bend	700	5
3489	168mm (6") 90° Bend	700	5

Black Imperial GP Connectors		
Product Code	Description	Quantity
71280	54mm (2") Double Socket Connector	50
71281	89mm (3") Double Socket Connector	50
71282	114mm (4") Double Socket Connector	50
71283	168mm (6") Double Socket Connector	20
5150	54mm (2") Slip collar	150
5306	89mm (3") Slip collar	75
4464	114mm (4") Slip collar (Light Grey)	25

Black Metric GP Duct		
Product Code	Description	Quantity
4442	110mm x 6m length	540
4443	160mm x 6m Length	234
5516	200mm x 6m Length	150

Black Metric GP Accessories			
Product Code	Description	Radius (mm)	Quantity
5232	110mm 11.25° Bend	3500	10
5231	110mm 22.5° Bend	1750	10
3514	110mm 45° Bend	380	10
3515	110mm 90° Bend	450	10
4044	110mm Slip Collar (Dk Grey)	-	50
4428	160mm 22.5° Bend	560	5
4275	160mm 45° Bend	560	5
4274	160mm 90° Bend	560	5
3748	160mm Slip Collar	-	15
5310	200mm Double Socket Slip Collar (Grey)	-	12



Duct



Bend



Double Socket Connector



Slip collar

For additional information on these products refer to documents:
 EF450-016 Generic Specification – PVC Duct (General Purpose)
 EF450-013 Generic Specification – PVC Duct Bends (General Purpose)

General Purpose Ring Seal Duct (BS4660)



Ring Seal Duct

General Purpose Black Ring Seal Duct (BS4660)		
Product Code	Description	Quantity
4985	110mm x 6m length	540
5003	160mm x 6m length	234



Ring Seal Bend

General Purpose Black Ring Seal Bends (BS4660)			
Product Code	Description	Radius (mm)	Quantity
5189	110mm 45° Bend	560	10
5188	110mm 90° Bend	450	8
5191	160mm 45° Bend	560	5
5190	160mm 90° Bend	560	5



Ring Seal Coupler

General Purpose Black Ring Seal Couplers		
Product Code	Description	Quantity
5334	110mm Ring Seal Coupler	50
5339	160mm Ring Seal Coupler	10

For additional information on these products refer to documents:

EF450-027 Generic Specification – PVC Duct (General Purpose Ring Seal Type)

EF450-028 Generic Specification – PVC Duct Bends (General Purpose Ring Seal Type)

PE Ø110mm Twinwall Duct System

Entelle PE Ø110 Twinwall duct system is designed to provide a stiff yet flexible and lightweight alternative to conventional cable protection. The duct is manufactured to BSEN 61386, 450N compression class.

The duct is suitable for a variety of applications such as: Telecommunication cables, Data Transfer cables, Pilot Cables, Intelligent Transport Systems (ITS), Digital termination Systems (DTS), Motorway Communications, Street Lighting & Traffic Signal cables.

Standard colour is black, but can be any colour to suit the application, such as:

Telecommunication: Grey or Green

Motorway communication: Purple

Scottish Street Lighting: Purple

Street Lighting and Traffic Signal: Orange

Twinwall Duct

Product Code	Description	Pipes / Pallet	Quantity
37000	Black 110mm / 94mm, 6m Length	90	540m
37023	Orange 110mm / 94mm, 6m Length	90	540m
37024	Purple 110mm / 94mm, 6m Length	90	540m
37031	Black 110mm / 94mm, 3m Length	90	270m

Each individual duct length comes with a single black coupler as standard.

If the system is required to be watertight a sealed system is available.



Duct

Bends

Product Code	Description	Quantity
37025	Black 110mm / 94mm 11¼° Bend	5
37026	Black 110mm / 94mm 22½° Bend	5
37027	Black 110mm / 94mm 45° Bend	5
37028	Black 110mm / 94mm 90° Bend	5

Bespoke bends can be made available upon request.

Bends are available in all colours.



Duct

Accessories

Product Code	Description	Quantity
37029	Black 110mm Coupler	10
37030	110mm Ring Seal	10

If ordering couplers for a sealed version of the system, then a separate Ring Seal is required.

Couplers and Ring Seals are only available in black.



Coupler

For additional information refer to document EF450-034 Generic Specification – PE Twinwall Duct Systems (Telecommunications)

Terms and conditions

Emtelle UK Limited

Conditions Of Sale Of Goods

1. INTERPRETATION

- 1.1 In these terms and conditions the following words have the following meanings:

"Buyer"	the person(s) or company whose order for the Goods is accepted by the Company;
"Company"	Emtelle UK Limited of Haughhead, Hawick, Scotland, TD9 8LF;
"Contract"	any contract between the Company and the Buyer for the sale and purchase of the Goods;
"Goods"	any goods which the Company is to supply to the Buyer (including any of them or any part of them);
"Force Majeure"	means all causes beyond the reasonable control of a party to this Agreement including, without limitation, acts of god, war, fire, industrial disputes, flood, tempest, national emergencies and the difficulty in obtaining materials except at unreasonably enhanced prices due to any of the foregoing reasons;
"Intellectual Property Rights"	means patents, trademarks, service marks, copyright, design rights and moral rights together with any or all goodwill relating or attached thereto;

- 1.2 The headings in these terms and conditions are for convenience only and shall not affect their interpretation.

2. FORMATION AND INCORPORATION

- 2.1 Subject to any variation under conditions 2.4, the Contract will be on these terms and conditions set out below to the exclusion of all other terms and conditions (including any terms or conditions which the Buyer purports to apply under any purchase order, confirmation of order or similar document.)
- 2.2 Each order for Goods by the Buyer from the Company shall be deemed to be an offer by the Buyer to purchase Goods subject to these terms and conditions.
- 2.3 No terms or conditions endorsed upon, delivered with or contained in the Buyer's purchase order,

specification or similar document will form part of this Contract simply as a result of a reference to such document being referred to in this Contract.

- 2.4 Any variation to these terms and conditions and any representations about the Goods shall have no effect unless expressly agreed in writing and signed by an authorised signatory of the Company.
- 2.5 Acceptance of delivery of the Goods shall be deemed to be conclusive evidence of the Buyer's acceptance of these terms and conditions.
- 2.6 The Buyer must ensure that the terms of its order and any applicable specification are complete and accurate.
- 2.7 Any quotation is given on the basis that no contract will come into existence until the Company despatches an acknowledgment of order to the Buyer. Any quotation is valid for a period of 30 days from its date provided the Company has not previously withdrawn it.
- 2.8 The Company accepts orders subject to the absolute right to cancel and rescind contracts in cases where the Buyer or the terms stated are not acceptable to the Company's insurers or, where applicable, to the Export Credit Guarantee Department or to any other Governmental or other body guaranteeing overseas contracts.

3. DESCRIPTION

- 3.1 The description of the Goods shall be as set out in the Company's quotation.
- 3.2 All drawings, descriptive matter, specifications and advertising issued by the Company or the manufacturer of the Goods and any descriptions or illustrations contained in the Company's or manufacturer's catalogues or brochures are issued or published for the sole purpose of giving an approximate idea of the Goods described in them. They will not form part of the Contract.
- 3.3 The Company may make any changes to the specification, design, materials or finishes of the Goods which are required to conform with any applicable safety or other statutory requirements.

4. DELIVERY

- 4.1 If the quoted price does not include carriage, delivery will take place at the Company's place of business.
- 4.2 The Buyer will take delivery of the Goods within

7 days of the Company giving it notice that the Goods are ready for delivery.

- 4.3 If the quoted price includes carriage, delivery will be deemed to take place at the point of entry to the Buyer's works or site specified in the Contract and the Goods shall be delivered by such means as the Company thinks fit unless the Buyer has specified in its order the details of the contract with a carrier which it reasonably requires, having regard to the nature of the Goods and the other circumstances of the case.
- 4.4 The carrier shall be deemed to be the Buyer's agent except for the purposes of sections 44, 45 and 46 of the Sale of Goods Act 1979.
- 4.5 Delivery of the Goods shall be accepted at any time of day.
- 4.6 Any dates specified by the Company for delivery of the Goods are approximate only and may not be made of the essence by notice. If no dates are so specified, delivery will be within a reasonable time.
- 4.7 Subject to the other provisions of these terms and conditions the Company will not be liable for any loss (including loss of profit), costs, damages, charges or expenses arising directly or indirectly out of delay or failure to deliver the Goods (even if caused by the Company's negligence).
- 4.8 The Buyer must accept delivery of the Goods and pay for them in full unless the Buyer shall have served notice on the Company requesting delivery and shall not have received the Goods within four weeks thereafter in which event the Buyer may cancel this Agreement to the extent it relates to the Goods which were subject to such delivery without further liability for the Goods.
- 4.9 For orders of less than £1000 (ex VAT) the Company reserves the right to charge carriage at the rate charged by the haulier to the Company.
- 4.10 The Buyer will be responsible for loading and offloading and will, unless otherwise agreed, provide at its expense at the delivery point adequate and appropriate equipment and manual labour for off-loading or loading the Goods.
- 4.11 The Buyer will indemnify the Company against any liability and expense (whether arising under statute or common law) caused by the Buyer's failure to provide appropriate equipment and manual labour for off-loading or loading (whether or not the off-loading or loading is supervised by or on behalf of the Buyer) for:

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4.11.1 any personal injury to or death of any of the Company's employees, agents or sub-contractors or any third party; and

4.11.2 any damage to or loss of any property of the Company, its employees, agents or sub-contractors or any third party.

4.12 The Company may deliver to the Buyer Goods up to 5% more or 5% less than the quantity ordered. The Buyer shall accept delivery of Goods within such limits without objection but invoices shall be adjusted to actual quantities.

4.13 Where the quoted price includes carriage the Company will not be liable for loss or damage in transit unless notice of such loss or damage is given to the carriers and to the Company:-

4.13.1 in the case of extrusions at the time of delivery, by endorsement on the delivery documentation;

4.13.2 in all other cases by written notification to the Company within 3 days of delivery and by endorsement on the delivery documentation.

5. NON-DELIVERY

5.1 The quantity of any consignment of Goods as recorded by the Company upon despatch from the Company's place of business shall be conclusive evidence of the quantity received by the Buyer on delivery unless the Buyer can provide conclusive evidence proving the contrary.

5.2 The Company shall not be liable for any non-delivery of Goods (even if caused by the Company's negligence) unless written notice is given to the carrier and the Company within 3 days of the date when the Goods would in the ordinary course of events have been received.

5.3 Any liability of the Company for the non-delivery of any one order of Goods shall be limited to replacing the Goods for that order within a reasonable time or issuing a credit note at the pro rata contract rate against any invoice raised for such Goods.

6. PACKING

All pallets and returnable packaging and containers will remain the property of the Company at all times. It is the Buyer's responsibility to return all packing and containers to the Company and should such packing and containers not be returned within the period specified in the Company's quotation, in good condition and carriage paid, a charge shall be made in full for the loss of such packing and containers.

7. STORAGE

7.1 If the Buyer fails to take delivery of any of the Goods when they are ready for delivery or to provide any instructions, documents, licences or authorisations required to enable the Goods to be delivered on time (except because of the Company's fault) risk in the Goods will pass to the Buyer (including, without limitation, for loss or damage caused by the Company's negligence), the Goods will be deemed to have been delivered and (without prejudice to its other rights) the Company may:

7.1.1 store or arrange for the storage of the Goods until actual delivery or sale and charge the Buyer for all related costs and expenses (including, without limitation, storage and insurance); and/or

7.1.2 following reasonable notice to the Buyer sell any of the Goods at the best price reasonably obtainable in the circumstances and charge the Buyer for any shortfall below the price under the Contract.

7.2 The Company is not responsible for demurrage charges or additional costs resulting from delay in unloading.

8. RISK/OWNERSHIP

8.1 Risk of damage to or loss of Goods shall pass to the Buyer upon delivery.

8.2 Notwithstanding delivery and the passing of risk, and solely for the purposes of securing payment of all monies due or to become due to the Company by the Buyer on any account, ownership of the Goods shall not pass to the Buyer until the Company has received in full (in cash or cleared funds) all sums due to it in respect of:

8.2.1 the Goods; and

8.2.2 all other sums which are or which become due to the Company from the Buyer on any account.

8.3 Until ownership of the Goods has passed to the Buyer, the Buyer must:

8.3.1 hold the Goods on a fiduciary basis as the Company's bailee;

8.3.2 store the Goods (at no cost to the Company) separately from all other goods of the Buyer or any third party in such a way that they remain readily identifiable as the Company's property;

8.4 The Company shall be entitled to retake possession of any Goods for which the price shall not have been paid in full when due and

for that purpose the Company is authorised to enter into any premises of the Buyer or any third party where the Goods are or may be stored and repossess the Goods.

8.5 The Company may in respect of all unpaid debts due from the Buyer under this or any other contract have a general lien on all Goods and property of the Buyer in the Company's possession (although such Goods or some of them may have been paid for) and shall after the expiration of twenty eight days written notice to the Buyer be entitled to dispose of such Goods and property as it deems fit and apply the proceeds towards such debts, and remaining sums shall be held on trust.

9. PRICE AND PAYMENT

9.1 The price for the Goods shall be the Company's quoted price which shall be binding upon the Company only if the Buyer accepts the Company's quotation within 30 days after which time it may be altered by the Company without notice.

9.2 The Company may increase the price of the Goods to reflect any increase in the cost of manufacture or distribution of the Goods which is due to any factor beyond the reasonable control of the Company; this includes (without limitation) foreign exchange fluctuation, currency regulation, alteration of duties and taxes, increase in cost of labour, materials and other manufacturing costs and transport costs, changes in rates of insurance, alterations in duties or import variations, or by reason of any cause beyond the control of the Company

9.3 The price for the Goods is exclusive of any value added tax or any other applicable tax which the Buyer shall pay in addition when it is due to pay for the Goods unless this is specifically shown.

9.4 All payments shall be made to the Company in the United Kingdom in the currency stipulated in the Company's quotation to the Buyer.

9.5 Unless otherwise stated, payment terms are "net monthly account", which is to be interpreted as "payment to be made before the end of the calendar month following the calendar month during which the Goods were invoiced". Time of payment shall be of the essence. No payment shall be deemed to have been received until the Company has received cleared funds.

Terms and conditions

- 9.6 If the Buyer's account is overdue for payment, the Company reserves the right to withhold or suspend deliveries under this Contract or any other Contract with the same Buyer. Any such withholding or suspension shall not give rise to any claim whatsoever by the Buyer and shall be without prejudice to the Company's right to recover any amount due from the Buyer and to the exercise of any of its rights by the Company.
- 9.7 If the Buyer's account is overdue for payment, the Company reserves the right to charge interest at 4% per annum over the UK Base Rate of HSBC plc for the time being in force on the amount overdue.
- 9.8 The right of the Buyer to set off the value of any shortage, defective Goods or Goods not otherwise conforming to the Contract shall be restricted to the specific invoice for the Goods in question and shall not apply to previous or future accounts.

10. WARRANTY

- 10.1 In the event of any Goods supplied by the Company and not being of its own manufacture being proved to be defective or failing in service, the Buyer shall be entitled only to, and limited to, such restitution as the Company actually receives from the manufacturer and/or supplier to the Company.
- 10.2 The Company warrants that (subject to the other provisions of these terms and conditions) upon delivery the Goods are, and for a period of 12 months from the date of delivery will be, of satisfactory quality under the Sale of Goods Act 1994 and are fit for the normal purpose for which they have been designed and, where applicable conform to the relevant British Standard.
- 10.3 The Company shall not be liable for a breach of the warranty in condition 10.2 unless:
- 10.3.1 the Buyer gives written notice of the defect to the Company and, if the defect is as a result of damage in transit, to the carrier within 14 days of:
- 10.3.1.1 the date of delivery (where the defect would be apparent to the Buyer upon a reasonable inspection); or
- 10.3.1.2 the date when the Buyer knew or ought reasonably to have known of the defect (where the defect would not be apparent to the Buyer upon a reasonable inspection); and

10.3.2 the Company is given a reasonable opportunity after receiving the notice of examining such Goods and the Buyer (if asked to do so by the Company) returns such Goods to the Company for the examination to take place there.

10.4 The Company shall not be liable for a breach of the warranty in condition 10.2 if:

10.4.1 the defect arises because the Buyer failed to follow the Company's oral or written instructions as to the storage, installation, commissioning, use or maintenance of the Goods or (if there are none) good trade practice. The Buyer should carry out any and all tests specified in the Emtelle UK installation instructions for the Goods before and after installation as detailed in MHT2570. The latest version of these installation instructions can be found at www.emtelle.com/testprocedure or can be requested by e-mail from info@emtelle.com; or

10.4.2 the Buyer alters or repairs such Goods without the written consent of the Company; or

10.4.3 the defect in such Goods arises from any design defect in any drawing, design or specification supplied or approved by the Buyer.

10.5 If the Buyer makes a valid claim against the Company based on a defect in the quality of the Goods, the Company shall at its option repair or supply replacement Goods (or the defective part) or refund the price of such Goods at the pro-rata contract rate.

10.6 If the Company complies with condition 10.5 it shall have no further liability for breach of the warranty in condition 10.2 in respect of the quality of such Goods.

10.7 Any defective Goods will belong to the Company and any Goods which are repaired or which are re-supplied will be warranted on these terms and conditions for the unexpired portion of the 12 month period.

11. LIMITATION OF LIABILITY

11.1 The following provisions set out the entire liability of the Company (including any liability for the acts or omissions of its employees, agents and sub-contractors) to the Buyer in respect of:

11.1.1 any breach of these terms and conditions; and

11.1.2 any representation, statement or tortious act or omission including negligence arising under or in connection with the Contract;

11.2 All warranties, conditions and other terms implied by statute or common law (save for the conditions implied by section 12 of the Sale of Goods Act 1979) are excluded from the Contract.

11.3 Nothing in these terms and conditions excludes or limits the liability of the Company for death or personal injury caused by the Company's negligence or fraudulent misrepresentation.

THE BUYER'S ATTENTION IS PARTICULARLY DRAWN TO THE PROVISIONS OF CONDITIONS 11.4 AND 11.5

11.4 Subject to conditions 11.2 and 11.3:

11.4.1 notwithstanding the provisions of any other terms and conditions herein, the Company's total liability in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with the performance or contemplated performance of this contract shall be limited in amount to the amount of the price of the Goods; and the parties agree that this condition is reasonable and that the contract price is based on the level, exclusions and limits of liability in this condition 11.

11.4.2 the Company shall not be liable to the Buyer for:

- (I) loss of profit; or
- (II) loss of business; or
- (III) business interruption; or
- (IV) depletion of goodwill and/or similar losses; or
- (V) loss of anticipated savings;

in each case whether direct, indirect or consequential, or for any claims for consequential compensation whatsoever (howsoever caused) which arise out of or in connection with this Contract, in each of the above cases whether or not caused by the negligence of the Company, its employees, agents or sub-contractors.

11.5 The Buyer shall indemnify the Company against all liability, actions, proceedings, costs, claims, damages or demands in any way connected with this contract brought or threatened to be brought against the Company by any third party except to the extent the Company is liable

Terms and conditions

to the Buyer in accordance with these terms and conditions.

- 11.6 The Buyer shall indemnify the Company against all damages, penalties, costs and expenses to which the Company may become liable through any work done in accordance with specifications, drawings or special requirements of the Buyer which may involve an infringement or alleged infringement of any Intellectual Property Rights of a third party or may cause any actionable damage or loss to any third party.

12. PERFORMANCE OF CONTRACT

- 12.1 The Company may deliver the Goods by installments and each installment shall be deemed to be sold under a separate contract, and no failure of or delay in delivery of any installment nor any defect in the contents thereof shall entitle the Buyer to treat the contract as repudiated with regard to any remaining installments.
- 12.2 If subsequent to any contract of sale which is subject to these conditions a contract of sale is made with the same Buyer without express reference to these conditions, such contract, howsoever made, shall be deemed to be subject to these conditions.

13. TECHNICAL ADVICE AND INFORMATION

- 13.1 The Company may at the request of the Buyer, without being under any obligation to do so, furnish technical advice concerning the use of the Goods and such assistance will be given to the best of the Company's ability but this shall be on the express understanding that any such advice or assistance is given and accepted at the Buyer's risk and the Company shall not be liable for any loss, damage or claims arising therefrom.
- 13.2 No liability will be accepted for work carried out or material supplied to the Buyer's own drawings, design or specification.
- 13.3 The submission of a quotation or acceptance of an order by the Company in no way implies any responsibility on its part for any bye law, planning or other approval, which may be required by the Buyer.

14. FORCE MAJEURE

Deliveries may be partially or totally suspended by either party during any period in which it is prevented from manufacturing, delivering or taking delivery of the

Goods through any event of Force Majeure and if such party notifies the existence of such Force Majeure to the other party in writing. If, because of such Force Majeure, the Company is unable to supply the total requirement of the Goods the Company may allocate its available supply among all of its customers, including those not under contract, as the Company thinks fit. Deliveries so suspended for three months may thereafter during such suspension be cancelled without liability but the Contract between the parties shall otherwise remain unaffected.

15. PATENTS AND TRADEMARKS

No representation warranty or indemnity is given by the Company that the Goods do not infringe any Intellectual Property Rights of a third party.

16. TERMINATION

- 16.1 The Contract will terminate immediately upon service of a written notice of termination by the Company on the Buyer on the happening of any one or more of the following events; the Buyer has a bankruptcy order made against him or makes an arrangement or composition with his creditors or otherwise takes the benefit of any Act for the time being in force for the relief of insolvent debtors, or (being a body corporate) convenes a meeting of creditors (whether formal or informal) or enters into liquidation (whether voluntary or compulsory), except a solvent voluntary liquidation for the purpose only of reconstruction or amalgamation, or has a receiver, manager, administrator or administrative receiver appointed of its undertaking or any part thereof, or a resolution is passed or a petition presented to any court for the winding-up of the Buyer or for the granting of an administration order in respect of the Buyer or any proceedings are commenced relating to the insolvency or possible insolvency of the Buyer or the Buyer suffers or allows any execution whether legal or equitable to be levied on his/its property or obtained against him/it, or fails to observe or perform any of his/its obligations or duties under the Contract or any other contract between the Company and the Buyer or is unable to pay its debts within the meaning of section 123 of the Insolvency Act 1986 or the Buyer ceases to trade.
- 16.2 The Company's rights contained in condition 8 (but not the Buyer's rights) shall continue

beyond the discharge of the Buyer's and the Company's primary obligations under the Contract consequent upon its termination.

- 16.3 The termination of the Contract howsoever arising shall be without prejudice to the rights and duties of either the Buyer or the Company accrued prior to termination.

17. GENERAL

- 17.1 Time for performance of all obligations of the Buyer is of the essence.
- 17.2 Each right or remedy of the Company under this Contract is without prejudice to any other right or remedy of the Company whether under this Contract or not.
- 17.3 Any provision of this Contract which is held by a competent authority to be invalid, void, voidable, unenforceable or unreasonable (in whole or in part) shall to the extent of such invalidity, voidness, voidability, unenforceability or unreasonableness be deemed severable and the other provisions of this Contract and the remainder of such provision shall not be affected.
- 17.4 Failure by the Company to enforce or partially enforce any provision of this contract will not be construed as a waiver of any of its rights under this Contract.
- 17.5 The Company may assign, license or sub-contract all or any part of its rights or obligations under this contract without the Buyer's consent.
- 17.6 This Contract is personal to the Buyer who may not assign, license or sub-contract all or any of its rights or obligations under this Contract without the Company's prior written consent.
- 17.7 The parties to this Agreement do not intend that any of its terms will be enforceable by virtue of the Contracts (Rights of Third Parties) Act 1999 by any person not a party to it.
- 17.8 Any notice required or permitted to be given by either party to the other under these conditions shall be in writing addressed to that other party at its registered office or principal place of business or such other address as may at the relevant time have been notified pursuant to this provision to the party giving the notice.
- 17.9 The formation, construction, performance, validity and all aspects of this Contract are governed by English Law and the parties submit to the exclusive jurisdiction of the English Courts.

Sales

Power

Andy Martin Sales Manager	07979 538967
Greig McIlwraith (Scotland)	07912 771040
Siobhan Butterfield Account Manager	01450 364075

Telecoms

Richard Hickman Sales Manager	07525 990137
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Highways

Scott Modha Sales Manager	07896 499332
Greig McIlwraith (Scotland)	07912 771040

Rail / FTTH

Simon Wade Sales Manager	07811 377723
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Sales Director – UK & Ireland

David Parsons	07836 573301
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Sales Office / Customer Service

Distributors / BT

William Monteith	01450 364017
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Power

Denise Renilson	01450 364021
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Telecoms

Anne Teague	01450 364008
Jamie Chambers	01450 364011

Highways

Jamie Chambers	01450 364011
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Rail

Anne Teague	01450 364008
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Customer Service Manager

Tracy Hurley	01450 364016
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Technical Support

Highways / Rail / Telecoms

Mark Graham	07920 078179
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Power

David Pawson	07774 226952
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