

Fan motor supplies  
Lighting  
Compressor supplies  
Air conditioning  
Ventilation Systems  
Outside lighting systems  
Computerised checkouts  
Signage supplies  
Ring main power

Schools  
Hospitals  
Office blocks  
Carparks  
Retail shops

**BASEC approved to  
BS8436 (300/500V)  
and IS273 (600/1000V)**



**FLEXISHIELD<sup>®</sup>**

THE ORIGINAL  
BS8436 CABLE

# FLEXISHIELD<sup>®</sup>

## BASEC approved cables

Launched in 2004 Flexishield has become the leading cable to be specifically developed and manufactured in the UK for the application of concealed cables in the electrical construction industry.

FLEXISHIELD BASEC BS8436 XLPE 2.5mm 2c+E ELECTRIC CABLE 300/500V 2012.H.

Flexishield's main feature is its ability to fail safe when used as part of an electrical circuit that is penetrated by a sharp metallic object, it will operate a 32A type B circuit breaker. A fully compliant cable, Flexishield is a cost effective solution to meet the 17th Edition of The Wiring Regulations BS 7671:2008 (2011) for concealed cables at a depth of less than 50mm, Regulations 522.6.100 to 522.6.103. Flexishield is a protected fixed wiring cable, it uses a bonded aluminium tape which gives excellent mechanical resistance and acts as an effective screen to help reduce electrical interference. Flexishield has been independently tested to the latest BS8436:2011 (300/500V) and IS 273 (600/1000V) standards.

### The Pre-Wired Conduit Company Ltd

is the leading manufacturer and supplier of fully tested and approved cables, meeting BS 8436 and IS 273, to the UK Electrical contracting industry.

Flexishield cables are manufactured in the Midlands under a BASEC ISO 9001:2008 management quality system. The company aims to continue to supply high quality cables synonymous with Flexishield as proven over the years.

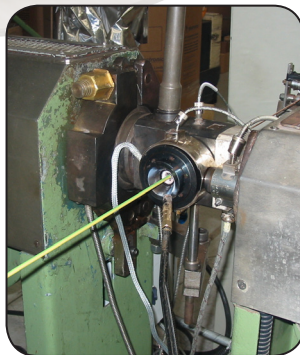


Quality Management  
Systems



Product Certification

“Manufacturer of  
fully tested and  
approved cables to  
BS 8436”



## Applications & Installations

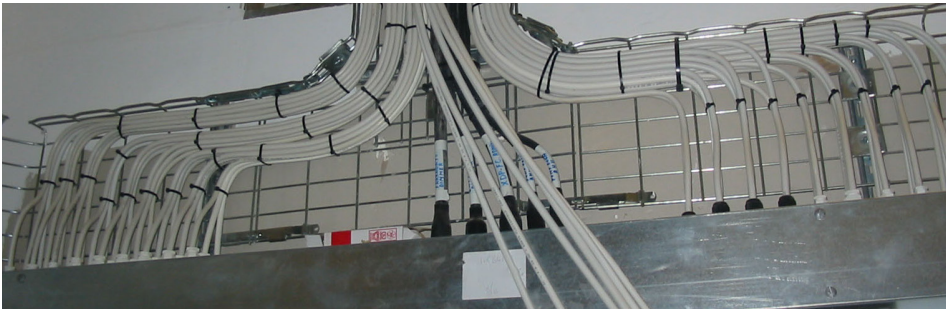
Compared to SWA and singles in conduit Flexishield is very easy to install, it is lightweight and dresses extremely well, it makes an excellent alternative as a multi-purpose cable for many fixed wiring applications including:

- Ring main power
- Lighting
- Fan motor and compressor supplies
- Air conditioning and ventilation systems
- Outside lighting circuits
- Signage supplies
- Bus-bar feeds

Not only can it be used within partitioned walls, it can also be installed\*:

- In cable trays and baskets
- In roof spaces
- In duct work
- Directly on brick, stone and other materials.
- Behind plaster
- As part of modular wiring systems
- Indoors or outside materials.

\* Provided the design and installation is carried out in accordance with BS7671.



## The Range

Flexishield as standard comes in the range of 1.0 to 4.0mm<sup>2</sup> to BS 8436 300/500v and the 6.0mm<sup>2</sup> to IS 273 600/1000v. All available with stranded conductors of 2, 3 and 4 cores and a CPC of equal cross sectional area. Standard sheath colour is white, core colours as per the harmonised wiring codes and supplied on 100m drums. Options by request are available with sheath and core colours, drum lengths and 600/1000v ratings on the 1.5 to 4.0mm<sup>2</sup> sizes.



# Tried, Tested And Comes With Benefits



## Tried: Projects & Users:

During the past seven years Flexishield cables have been specified and installed on many building projects ranging from the small, Domestic housing, to the large, a Procure 21 Hospital and many project types in between, some notable ones:

Waitrose Stores  
T.Clarke

Matthew Boulton College  
Interserve/ Flex Connectors

BBC  
EME Electrical

Tilbury Docks  
Sinclair Scott

University of Central England  
Rosser & Russel

Fife Hospital  
Balfour Beatty Engineering  
Services

Sunderland Hospital  
EMCOR

A V Hill Bioscience Building  
University of Manchester –  
EMCOR

Greenolysis Bio-Deisel Plant  
Comelec

Islington Arts & Media Centre  
Balfour Beatty Engineering  
Services

NCP • Car Park  
Lorne Stewart

Enniskillen Hospital  
Mercury Engineering

Royal Chelsea Hospital  
EMCOR

Barlinne Prison  
Crown House

Refurbished Council Homes  
Wakefield Council

M&S Simple Foods  
M&W (Woolston) Electrics

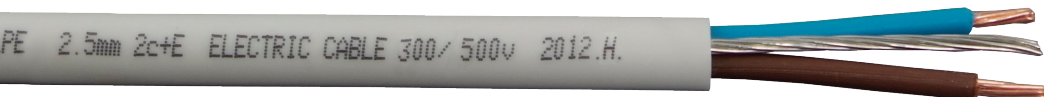
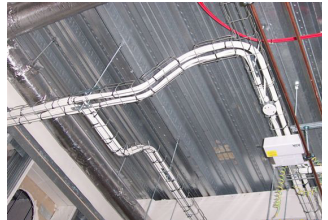
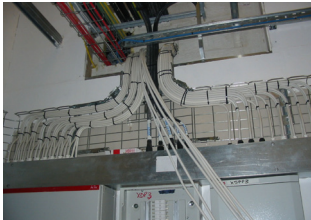
Seven Oaks School  
T.J. Lowe

Stockland Green Tech College  
EMCOR

Ashburton Court  
Hampshire CC HQ  
Building Technology Systems

ASDA Store  
City Projects

Broadgreen Hospital  
EMCOR



## ✓ Tested:

As a safety cable Flexishield, has been independently Type tested by ERA Technology Ltd, Warrington Fire Research Centre Ltd and BRE to all relevant standards. Flexishield has now been fully product approved by BASEC to BS8436:2011 and the IS 273 standards, it is manufactured under a BASEC ISO 9001 quality assurance system.



## ✓ Comes With Benefits: Flexishield ticks all the boxes



**FAST**



Ease and speed of Installation.

Up to 40% reduction in installation times can be seen when compared to traditional cabling systems.



**FAIL SAFE**



Can withstand fault currents of up to 170A.

Will operate a 32A Type B MCB and so will fail safe when penetrated by a nail or similar metallic object.



**LIGHT WEIGHT**



Up to 60% less weight and 20% less space required than traditional small armoured multi-layered cables.

Easy to handle and install, lighter cable tray could be used for multiple layers of cables.



**FLEXIBLE**



Pliable yet robust.

Offers impact resistance, retains its shape when bent and dressed.



**MULTI USE**



Can be installed on many surfaces or chased behind plaster and within different building structures.

Flexible in the applications it can be used for as a multi purpose cable.



**BS7671**



Full sized CPC.

Compliance with BS7671 earthing.



**SHIELDED**



Bonded aluminium tube.

Effective screen to electrical interference, Very easy to strip sheath to expose cores for termination.



**UV STABLE**



UV stable sheath

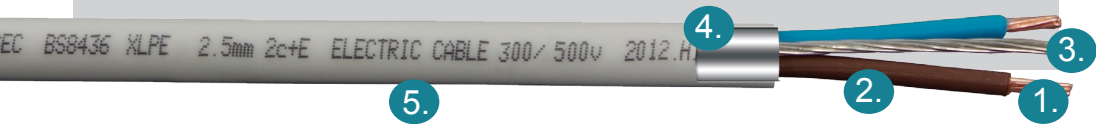
Can be used outside.



# Technical

## Construction:

- 1. Conductors** Plain annealed stranded copper to BS EN60228:2005
- 2. Insulation** XLPE complying to BS7655-1.3 Type GP8
- 3. CPC** Tinned annealed stranded copper to BS EN13603:2002
- 4. Screen** Bonded aluminium tube
- 5. Sheath** Low smoke halogen free to BS 7655-6.1 Type LTS 3 UV Stable



## Standards:

Flexishield is BASEC approved to BS8436:2011 at 300/500v rating and also to IS 273 600/1000v.

**BS 8436:2011:** Range 1.0 sqmm to 4.0 sqmm, 300/500v rated. Originally released in August 2004, has a role as a safety cable for concealed cables as called up in the 17th Edition of the Wiring Regulations 522.6.100 to 522.6.103.

**IS273:** Range 1.0 sqmm to 6.0 sqmm. An Irish standard that was modified to include cable failing safe under nail penetration, this standard is based on BS 8436 but rated at 600/1000v.

BRITISH STANDARD BS 7671:2008  
**17th Edition of BS7671:2008 Amd 1 (2011) – Regulation 522.6.100 to 522.6.103 - Concealed cables**

*Implemented in July 2008 the 17th Edition of the Wiring regulations include many changes from the previous 16th Edition, one of the most significant new requirements is for the use of RCDs, RCBOs and/or Shielded cables, in walls or partitions that are constructed internally with metallic components, also where the installation is not intended for use under the supervision of skilled or instructed persons, such as domestic and small commercial premises.*

*Cables that meet BS 8436 are a satisfactory solution to the relevant Regulations for these applications.*

BSI, British Standards Institution, 189, Tottenham Court Road, London W1P 0LP. Tel: 020 8996 9001. Fax: 020 8996 7001. www.bsi.org.uk

## General Data:

<b>Voltage Rating</b>	1.0 to 4.0 mm 300/500V 6.0 mm 600/1000v	<b>Blending radius</b>	6 x Outside Diameter
<b>Standard Core colors</b>	2 core: Blue and brown 3 core: Brown, black and grey 4 core: Blue, brown, black and grey 5 core: Black, brown, grey, blue (green/yellow or white with black numbers)	<b>Maximum continous conductors operating temperature</b>	+90°C
		<b>Minimum installation temperature</b>	-30°C
		<b>Flame retardant</b>	BS EN 60332-1-2
		<b>Smoke emissions</b>	BS EN 61034-2
		<b>Acid gas emissions</b>	BS EN 50267-2-1

### Physical data - Flexishield 600/1000v

Nominal Area* mm <sup>2</sup>	Conductor no. of strands/mm	CPC no. of strands/mm	Nominal insulation thickness mm	Nominal cable diameter mm				Approx. weight of cable kg/1000m			
				2 core	3 core	4 core	5 core	2 core	3 core	4 core	5 core
1.0	7/0.44	7/0.44	0.70	8.3	8.7	9.5	-	85	105	132	-
1.5	7/0.53	7/0.53	0.70	8.7	9.6	10.2	11.1	98	135	201	241
2.5	7/0.67	7/0.67	0.70	9.6	11.2	12.1	12.8	143	199	221	250
4.0	7/0.85	7/0.85	0.80	11.2	12.2	13.5	14.9	193	244	304	375
6.0	7/1.04	7/1.04	1.00	13.0	13.9	15.9	16.6	284	355	428	485

\* 10.0 mm available on request.

### Electrical data

Nominal Area* mm <sup>2</sup>	Maximum DC resistance ohms/Km @20°C	Nominal AC resistance ohms/Km @90°C, at 50Hz	Inductive reactance ohms/Km, at 50Hz	Maximum continuous conductor operating temp. °C	Short circuit rating in kA for 1 sec.**
1.0	18.1	23.16	0.103	90	0.14
1.5	12.1	15.30	0.100	90	0.21
2.5	7.41	9.43	0.097	90	0.35
4.0	4.61	5.86	0.092	90	0.57
6.0	3.08	3.93	0.088	90	0.85

\*\* Based upon a k value of 143, BS7671:2008 table 43A

### Temperature Correcting Factors for Cables in free air other than 30°C

Ambient Temp °C	25	35	40	45	50	55	60	65	70	75	80
	1.02	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	0.50	0.41
<i>Correction rating for grouping</i>											
No of cables		2	3	4	5	6	8	9	12		
Clipped direct		0.8	0.7	0.65	0.6	0.57	0.52	0.50	0.45		
On cable tray		0.88	0.82	0.77	0.75	0.73	0.72	0.72	0.72		

# Current Ratings

Ambient temperature at 30°C, conductor operating temperature 70°C as BS7671

## Clipped direct - ref method C

Nominal Area mm <sup>2</sup>	Two core cable, single phase AC or DC		Three or four core cable, three phase AC	
	Current rating amps	Volt drop mV per amp per M	Current rating amps	Volt drop mV per amp per M
1.0	15	44	13.5	38
1.5	19.5	29	17.5	25
2.5	27	18	24	15
4.0	36	11	32	9.5
6.0	46	7.3	41	6.4

## On Cable Tray - ref method E

Nominal Area mm <sup>2</sup>	Two core cable, single phase AC or DC		Three or four core cable, three phase AC	
	Current rating amps	Volt drop mV per amp per M	Current rating amps	Volt drop mV per amp per M
1.0	17	44	14.5	38
1.5	22	29	18.5	25
2.5	30	18	25	15
4.0	40	11	34	9.5
6.0	51	7.3	43	6.4

Current ratings are based on a 'single circuit' in accordance with the IEE Wiring Regulations BS7671, Table 4D2A. Where a conductor operates at a temperature exceeding 70°C it shall be ascertained that the equipment connected to the conductors is suitable for the conductor operating temperature. (BS7671 reg 512.1.5).

## Installation:

BS 7671:2008 Amd.1. (2011) and wiring regulations should be followed in all instances and in particular clauses 522.6.100 to 522.6.103 for walls and partition applications. It is recommended that standard low smoke halogen free or brass stuffing glands and clips be used and sized against relevant cable nominal ODs.

## How to terminate and gland Flexishield

Termination of Flexishield could not be easier, two simple steps are required:

1. Make a circumferential nick around the sheath, using a simple ringing tool.
2. Bend back and forth at the point of the nick, the sheath/aluminium slug should just pull away to expose the cores. It is suggested for ease of a long slug removal of the sheath, eg for the termination at a Distribution board, that several slugs on each cable leg be made.
3. Standard stuffing glands can be used in most applications. If the application is with in a dust and moisture free environment, then grommets could be used for cable going into back boxes.



**WOULD YOU LIKE TO FIND OUT MORE or where to buy? Please contact us at:**

Email: [enquiries@flexishield.co.uk](mailto:enquiries@flexishield.co.uk)

Tel: +44 (0)1623 645007 Fax: +44 (0)1623 645037

The Pre-Wired Conduit Company Ltd.  
Units A1-A3 Ratcher Court, Ratcher Way, Crown Farm Industrial Park, Mansfield, Notts. NG19 0FS

Important: All information is believed to be correct at time of issue. The company reserve the right to alter dimensions, specifications and materials at any time under its development programme. Visit our web site for latest information.