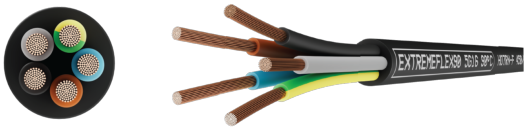
# ExtremeFlex90 Flexible Mains & Control Cable - 1mm² to 630mm²



## Description

Flexible 90°C EPR cable with high resistance to mechanical stress. Able to withstand water and weather. For use in fixed and temporary installation works on Work sites, mobile power supplies, ports and harbours, water treatment plants, sewage and drains, hot and cold areas and harsh industrial environments. UV Resistant Sheath. Extremeflex90 is suitable for burial in ducts.

For use in portable power supplies, site equipment, industrial machinery, and audio visual equipment. Can be cut to size for temporary power leads with a wide choice of terminals and connections.

**Available sizes:** From 1mm² to 630mm², in various core configurations and lengths.
It can be cut to standard 5m, 10m, 15m, 25m patch leads or any bespoke length fitted with a wide range of terminals.

## Key Features

**Voltage Rating**
Fixed: 0.6kV - 1kV
Flexing: 450/750 Volts

**Minimum Bending Radius**
(Less than 12mm²): 3 X Overall Diameter
(More than 12mm²): 4 X Overall Diameter

**Flame Retardancy**
BS EN 60332-1-2

**Temperature Limits**
Temperature Range: -40 to 90°C

## Core Colours

Single Core: White bonded to Black sheath

2 Core: Brown Blue

3 Core: Brown Blue Green Yellow

4 Core: Brown Black Grey Green Yellow or

4 Core: Brown Black Grey Blue

5 Core: Brown Black Grey Blue Green Yellow

7+ Core: Black with White Numbers plus Green Yellow

## Standards

- BS EN 60811-2-1
- BS EN 60228
- BS EN/IEC 60332-1-2
- UV Resistant Sheath
- BS EN 50363
- AD8 water resistance
- Conforms to H07RN-F

## Construction

- **Conductor**: Class 5 flexible, stranded copper
- **Insulation**: Ethylene Propylene Rubber (EPR)
- **Outer Sheath**: UV Resistant Chlorinated Polyethylene (CPE)

## QA Lab

**Cleveland Cable Test & Training Lab**
Our state-of-the-art cable testing facility ensures that every cable meets the highest standards of quality and compliance through continuous, rigorous testing. Where applicable, cables are independently tested and certified by BASEC to ensure full compliance.

**CPR**
Cleveland Cable Company is committed to compliance with the Construction Products Regulation (CPR). Where applicable, all cables manufactured after 1st July 2017 have been assessed in accordance with CPR requirements, with full supporting documentation available.

## Our Sustainability Commitment

We are committed to the journey to Net Zero as a business partner, an employer and a community member.

By thinking and acting sustainably, we deliver excellent customer service while reducing carbon emissions in collaboration with our customers and suppliers.

**ecovadis**
Cleveland Cable Company has been independently assessed by EcoVadis, a globally recognised provider of business sustainability ratings. Our score places us among the top 35% of companies evaluated worldwide, reflecting our strong commitment to environmental, social, and ethical performance

## ExtremeFlex90 Flexible Mains & Control Cable - 1mm² to 630mm² - Dimensions

| Reference | Conductor Size (mm2) | No Of Cores | Stranding(mm) | Insulation Thickness (mm) | Sheath Thickness (mm) | Overall Diameter(Lower) | Overall Diameter(Upper) | Weight(Kg/Km) |
|---|---|---|---|---|---|---|---|---|
| 3182EF1 | 1 | 2 | 32/0.20 | 0.8 | 1.3 | 7.9 | 8.9 | 99 |
| 3183EF1 | 1 | 3 | 32/0.20 | 0.8 | 1.4 | 8.5 | 9.5 | 118 |
| 3184EF1 | 1 | 4 | 32/0.20 | 0.8 | 1.5 | 9.5 | 10.5 | 144 |
| 3181EF1/5 | 1.5 | 1 | 30/0.25 | 0.8 | 1.6 | 5.5 | 6.6 | 55 |
| 3182EF1/5 | 1.5 | 2 | 30/0.25 | 0.8 | 1.4 | 9.0 | 10.0 | 127 |
| 3183EF1/5 | 1.5 | 3 | 30/0.25 | 0.8 | 1.5 | 9.6 | 10.6 | 150 |
| 3184EF1/5 | 1.5 | 4 | 30/0.25 | 0.8 | 1.6 | 10.8 | 11.8 | 185 |
| 3185EF1/5 | 1.5 | 5 | 30/0.25 | 0.8 | 1.7 | 13.8 | 15.2 | 220 |
| 3187EF1/5 | 1.5 | 7 | 30/0.25 | 0.8 | 1.8 | 15 | 16.6 | 365 |
| 3180/12EF1/5 | 1.5 | 12 | 30/0.25 | 0.8 | 1.9 | 17.8 | 19.8 | 485 |
| 3180/19EF1/5 | 1.5 | 19 | 30/0.25 | 0.8 | 2.0 | 20.7 | 23.0 | 715 |
| 3180/27EF1/5 | 1.5 | 27 | 30/0.25 | 0.8 | 2.9 | 27.7 | 29.9 | 920 |
| 3180/37EF1/5 | 1.5 | 37 | 30/0.25 | 0.8 | 3.8 | 29.5 | 31.8 | 1260 |
| 3182EF2/5 | 2.5 | 2 | 50/0.25 | 0.9 | 1.4 | 10.8 | 11.8 | 193 |
| 3183EF2/5 | 2.5 | 3 | 50/0.25 | 0.9 | 1.7 | 11.4 | 12.6 | 235 |
| 3184EF2/5 | 2.5 | 4 | 50/0.25 | 0.9 | 1.8 | 12.4 | 13.9 | 290 |
| 3185EF2/5 | 2.5 | 5 | 50/0.25 | 0.9 | 1.9 | 13.3 | 14.5 | 345 |
| 3187EF2/5 | 2.5 | 7 | 50/0.25 | 0.9 | 2 | 20.6 | 22.0 | 695 |
| 3180/12EF2/5 | 2.5 | 12 | 49/0.24 | 0.9 | 2.2 | 25.5 | 24.0 | 695 |
| 3180/19EF2/5 | 2.5 | 19 | 49/0.24 | 0.9 | 2.88 | 23.9 | 25.4 | 1030 |
| 3181EF4 | 4 | 1 | 50/0.25 | 1 | 1.5 | 7.2 | 8.4 | 99 |
| 3182EF4 | 4 | 2 | 56/0.30 | 1 | 1.8 | 12.3 | 13.6 | 257 |
| 3183EF4 | 4 | 3 | 56/0.30 | 1 | 1.9 | 13.2 | 14.5 | 310 |
| 3184EF4 | 4 | 4 | 56/0.30 | 1 | 2 | 14.4 | 16.0 | 395 |
| 3185EF4 | 4 | 5 | 56/0.30 | 1 | 2.2 | 16.1 | 18.0 | 485 |
| 3187EF4 | 4 | 7 | 56/0.30 | 1 | 2.4 | 19.8 | 21.2 | 773 |
| 6381EF6 | 6 | 1 | 84/0.30 | 1 | 1.6 | 7.9 | 9.1 | 130 |
| 6382EF6 | 6 | 2 | 84/0.30 | 1 | 2 | 13.8 | 15.3 | 350 |
| 6383EF6 | 6 | 3 | 84/0.30 | 1 | 2.1 | 14.7 | 16.4 | 495 |
| 6384EF6 | 6 | 4 | 84/0.30 | 1 | 2.3 | 16.4 | 18.3 | 610 |
| 6385EF6 | 6 | 5 | 84/0.30 | 1 | 2.5 | 17.5 | 20.2 | 760 |
| 6387EF6 | 6 | 7 | 84/0.30 | 1 | 2.8 | 21.6 | 23.9 | 904 |
| 6381EF10 | 10 | 1 | 80/0.40 | 1.2 | 1.8 | 9.5 | 10.9 | 230 |
| 6382EF10 | 10 | 2 | 80/0.40 | 1.2 | 3.1 | 19.1 | 21.1 | 598 |
| 6383EF10 | 10 | 3 | 80/0.40 | 1.2 | 3.3 | 20.6 | 21.6 | 880 |
| 6384EF10 | 10 | 4 | 80/0.40 | 1.2 | 3.4 | 22.8 | 24.8 | 1060 |
| 6385EF10 | 10 | 5 | 80/0.40 | 1.2 | 3.6 | 24.5 | 26.4 | 1300 |

| Reference | Conductor Size (mm2) | No Of Cores | Stranding(mm) | Insulation Thickness (mm) | Sheath Thickness (mm) | Overall Diameter(Lower) | Overall Diameter(Upper) | Weight(Kg/Km) |
|---|---|---|---|---|---|---|---|---|
| 6381EF16 | 16 | 1 | 126/0.40 | 1.2 | 1.9 | 10.8 | 12.2 | 320 |
| 6382EF16 | 16 | 2 | 126/0.40 | 1.2 | 3.3 | 21.3 | 23.8 | 850 |
| 6383EF16 | 16 | 3 | 126/0.40 | 1.2 | 3.5 | 22.8 | 25.3 | 1090 |
| 6384EF16 | 16 | 4 | 126/0.40 | 1.2 | 3.6 | 25.2 | 27.9 | 1345 |
| 6385EF16 | 16 | 5 | 126/0.40 | 1.2 | 3.9 | 27.7 | 30.6 | 1680 |
| 6381EF25 | 25 | 1 | 196/0.40 | 1.4 | 2 | 12.8 | 14.4 | 450 |
| 6382EF25 | 25 | 2 | 196/0.40 | 1.4 | 2.2 | 25.3 | 28.2 | 1147 |
| 6383EF25 | 25 | 3 | 196/0.40 | 1.4 | 3.8 | 27.3 | 30.2 | 1439 |
| 6384EF25 | 25 | 4 | 196/0.40 | 1.4 | 4.1 | 29.6 | 33.5 | 1773 |
| 6385EF25 | 25 | 5 | 196/0.40 | 1.4 | 4.5 | 33.4 | 37.0 | 2470 |
| 6381EF35 | 35 | 1 | 276/0.40 | 1.4 | 2.2 | 14.6 | 16.1 | 605 |
| 6382EF35 | 35 | 2 | 276/0.40 | 1.4 | 3.5 | 27.7 | 31.7 | 1550 |
| 6383EF35 | 35 | 3 | 276/0.40 | 1.4 | 3.8 | 29.3 | 33.5 | 1850 |
| 6384EF35 | 35 | 4 | 276/0.40 | 1.4 | 4.1 | 33.4 | 37.0 | 2645 |
| 6385EF35 | 35 | 5 | 276/0.40 | 1.4 | 4.6 | 36.9 | 40.7 | 2930 |
| 6381EF50 | 50 | 1 | 396/0.40 | 1.6 | 2.4 | 16.7 | 18.5 | 825 |
| 6382EF50 | 50 | 2 | 396/0.40 | 1.6 | 4.2 | 32.4 | 36.4 | 1999 |
| 6383EF50 | 50 | 3 | 396/0.40 | 1.6 | 4.5 | 35.0 | 38.7 | 2890 |
| 6384EF50 | 50 | 4 | 396/0.40 | 1.6 | 4.8 | 38.8 | 42.8 | 3635 |
| 6385EF50 | 50 | 5 | 396/0.40 | 1.6 | 5.2 | 43.3 | 47.2 | 3925 |
| 6381EF70 | 70 | 1 | 360/0.50 | 1.6 | 2.6 | 18.6 | 20.7 | 1090 |
| 6383EF70 | 70 | 3 | 360/0.50 | 1.6 | 4.8 | 39.4 | 43.9 | 3850 |
| 6384EF70 | 70 | 4 | 360/0.50 | 1.6 | 5.2 | 43.7 | 48.7 | 4830 |
| 6385EF70 | 70 | 5 | 360/0.50 | 1.6 | 5.7 | 48.5 | 54.0 | 5938 |
| 6381EF95 | 95 | 1 | 475/0.50 | 1.8 | 2.8 | 20.8 | 23.2 | 1405 |
| 6383EF95 | 95 | 3 | 475/0.50 | 1.8 | 5.3 | 44.7 | 48.8 | 4185 |
| 6384EF95 | 95 | 4 | 475/0.50 | 1.8 | 5.9 | 49.3 | 55.3 | 6320 |
| 6385EF95 | 95 | 5 | 475/0.50 | 1.8 | 6.3 | 54 | 61.5 | 6695 |
| 6381EF120 | 120 | 1 | 608/0.50 | 1.8 | 3 | 23.0 | 25.7 | 1745 |
| 6383EF120 | 120 | 3 | 608/0.50 | 1.8 | 5.6 | 48.7 | 54.7 | 5080 |
| 6384EF120 | 120 | 4 | 608/0.50 | 1.8 | 6 | 53 | 60.9 | 6500 |
| 6385EF120 | 120 | 5 | 608/0.50 | 1.8 | 6.5 | 58 | 66.0 | 7542 |
| 6381EF150 | 150 | 1 | 756/0.50 | 2 | 3.2 | 25.2 | 28.2 | 1824 |
| 6383EF150 | 150 | 3 | 756/0.50 | 2 | 6 | 51.7 | 59.6 | 6267 |
| 6384EF150 | 150 | 4 | 756/0.50 | 2 | 6.5 | 58 | 65.5 | 8031 |
| 6381EF185 | 185 | 1 | 925/0.50 | 2.2 | 3.4 | 27.6 | 30.6 | 2202 |
| 6383EF185 | 185 | 3 | 925/0.50 | 2.2 | 6.4 | 58.0 | 65.5 | 7661 |
| 6384EF185 | 185 | 4 | 925/0.50 | 2.2 | 7 | 64.3 | 71.4 | 9830 |
| 6381EF240 | 240 | 1 | 1221/0.50 | 2.4 | 3.5 | 30.6 | 33.8 | 2847 |

| Reference | Conductor Size (mm2) | No Of Cores | Stranding(mm) | Insulation Thickness (mm) | Sheath Thickness (mm) | Overall Diameter(Lower) | Overall Diameter(Upper) | Weight(Kg/Km) |
|---|---|---|---|---|---|---|---|---|
| 6383EF240 | 240 | 3 | 1221/0.50 | 2.4 | 7.1 | 65 | 73.8 | 9692 |
| 6384EF240 | 240 | 4 | 1221/0.50 | 2.4 | 7.7 | 72.8 | 82.5 | 12444 |
| 6381EF300 | 300 | 1 | 1525/0.50 | 2.6 | 3.6 | 33.7 | 37.3 | 3495 |
| 6381EF400 | 400 | 1 | 2257/0.50 | 2.6 | 3.9 | 37.4 | 42.4 | 4880 |
| 6381EF500 | 500 | 1 | 1769/0.60 | 2.8 | 4.2 | 41.3 | 46.5 | 5301 |
| 6381EF630 | 630 | 1 | 2257/0.60 | 2.8 | 4.5 | 47.5 | 52.5 | 7460 |

## EXTREMEFLEX90 FLEXIBLE CABLE - CURRENT CARRYING CAPACITY (AMPS)

| CONDUCTOR CROSS SECTIONAL AREA | SINGLE CORE CABLES | 2 CORE CABLE WITH OR WITHOUT PROTECTIVE CONDUCTOR | 3 CORE CABLE | 4 OR 5 CORE CABLE |
|---|---|---|---|---|
| ($MM^2$) | (AMPS) | (AMPS) | (AMPS) | (AMPS) |
| 1* | 16 | 16 | 21 | 17 |
| 1.5* | 27 | 23 | 26 | 23 |
| 2.5* | 35 | 30 | 36 | 32 |
| 4 | 49 | 39 | 49 | 42 |
| 6 | 60 | 51 | 63 | 54 |
| 10 | 83 | 70 | 86 | 75 |
| 16 | 111 | 95 | 115 | 100 |
| 25 | 147 | 125 | 149 | 127 |
| 35 | 181 | 154 | 185 | 158 |
| 50 | 226 | 193 | 225 | 192 |
| 70 | 279 | 238 | 289 | 246 |
| 95 | 338 | 288 | 352 | 298 |
| 120 | 391 | - | 410 | 346 |
| 150 | 449 | - | 473 | 399 |
| 185 | 513 | - | 421 | 456 |
| 240 | 603 | - | 542 | 538 |
| 300 | 694 | - | 641 | - |
| 400 | 825 | - | - | - |
| 500 | 946 | - | - | - |
| 630 | 1044 | - | - | - |

## EXTREMEFLEX90 FLEXIBLE CABLE - VOLTAGE DROP

| NOMINAL CROSS SECTIONAL AREA MM² | 2 CORE CABLE DC mV/A/m | TWO CORE CABLE SINGLE-PHASE AC mV/A/m | | | 1 X THREE CORE, FOUR CORE OR FIVE CORE CABLE, THREE PHASE AC | | | 2 X SINGLE CORE CABLES TOUCHING | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | DC mV/A/m | SINGLE PHASE AC * mV/A/m | | |
| 1 | 46 | 46 | | | 34,0 | | | - | 27,0 | | |
| 1,5 | 32 | 32 | | | 23,3 | | | - | 23,3 | | |
| 2,5 | 19 | 19 | | | 14 | | | - | 14 | | |
| 4 | 12 | 12 | | | 8,7 | | | - | 8,7 | | |
| 6 | 7,8 | 7,8 | | | 5,8 | | | - | 5,90 | | |
| 10 | 4,6 | 4,6 | | | 3,4 | | | - | 3,40 | | |
| 16 | 2,9 | 2,9 | | | 2,2 | | | - | 2,20 | | |
| | | R | X | Z | R | X | Z | | R | X | Z |
| 25 | 1,8 | 1,8 | 0,175 | 1,85 | 1,44 | 0,15 | 1,44 | - | 1,40 | 0,25 | 1,40 |
| 35 | - | - | - | - | 1,05 | 0,15 | 1,04 | 1,31 | 1,31 | 0,21 | 1,32 |
| 50 | - | - | - | - | 0,78 | 0,145 | 0,75 | 0,91 | 0,91 | 0,21 | 0,93 |
| 70 | - | - | - | - | 0,57 | 0,14 | 0,56 | 0,64 | 0,64 | 0,2 | 0,67 |
| 95 | - | - | - | - | 0,42 | 0,135 | 0,44 | 0,49 | 0,49 | 0,195 | 0,53 |
| 120 | - | - | - | - | 0,33 | 0,135 | 0,36 | 0,38 | 0,38 | 0,19 | 0,43 |
| 150 | - | - | - | - | 0,27 | 0,13 | 0,3 | 0,31 | 0,31 | 0,19 | 0,36 |
| 185 | - | - | - | - | 0,22 | 0,13 | 0,26 | 0,25 | 0,25 | 0,19 | 0,32 |
| 240 | - | - | - | - | 0,17 | 0,13 | 0,21 | 0,19 | 0,195 | 0,185 | 0,27 |
| 300 | - | - | - | - | 0,135 | 0,125 | 0,185 | 0,15 | 0,155 | 0,18 | 0,24 |
| 400 | - | - | - | - | - | - | - | 0,115 | 0,12 | 0,175 | 0,21 |
| 500 | - | - | - | - | - | - | - | 0,09 | 0,099 | 0,17 | 0,20 |
| 630 | - | - | - | - | - | - | - | 0,068 | 0,079 | 0,17 | 0,185 |

R = RESISTIVE COMPONENT X = REACTIVE COMPONENT Z = IMPEDANCE VALUE

* A LARGER VOLTAGE DROP WILL RESULT IF THE CABLES ARE SPACED APART

| | |
|---|---|
| AMBIENT TEMPERATURE: | 30 °C |
| CONDUCTOR OPERATING TEMPERATURE: | 90°C |
| GROUND TEMPERATURE: | 20°C |
| BURIAL DEPTH: | 0.8M |
| THERMAL RESISTIVITY: | 1.5KMV |

FOR OTHER VARIABLES - REFER TO TABLES BELOW

### FOR AMBIENT GROUND TEMPERATURES OTHER THAN 20°C

| AMBIENT TEMPERATURE (°C) | 10 | 15 | 25 | 30 |
|---|---|---|---|---|
| DERATING FACTOR | 1,07 | 1,04 | 0,96 | 0,89 |

### FOR SOIL THERMAL RESISTIVITY OTHER THAN 1.5 Km/W

| THERMAL RESISTIVITY (Km/W) | 1 | 1,2 | 2,0 | 2,5 |
|---|---|---|---|---|
| DERATING FACTOR | 1,06 | 1,04 | 0,98 | 0,8 |

### FOR DEPTHS OTHER THAN 0.8M

| DEPTH (METRES) | 0,5 | 0,8 | 1,00 | 1,2 |
|---|---|---|---|---|
| DERATING FACTOR | 1,02 | 1,00 | 0,98 | 0,8 |

ALL ELECTRICAL CALCULATIONS REGARDING THE ABOVE DERATING VARIABLES MUST BE CARRIED OUT BY A CERTIFIED ELECTRICAL ENGINEER IN CONJUNCTION WITH THE CORRECT APPENDICES WITHIN THE 18TH EDITION WIRING REGULATIONS, OFFICIALLY KNOWN AS BS 7671:2018