



# A2XS(FL)2Y HDPE High Voltage 36/60 (72.5) kV Cable



Eland Product Group: H9D

## APPLICATION

High Voltage cables for distribution networks; also for connection to generation units and plant and process connection. For installation in ground, in water outdoors, indoors and in cable ducts for power stations, industry and distribution networks. The water blocking tape avoids water propagation inside the cable.

## CHARACTERISTICS

**Voltage Rating** U<sub>0</sub>/U  
36/60 (72.5) kV

## CONSTRUCTION

### Conductor

Aluminium conductor (optional watertightness – WTC)

### Conductor Screen

Semi-conductive screen extruded on the phase conductor

### Insulation

XLPE (Cross-linked Polyethylene)

### Insulation Screen

Semi-conductive screen extruded on insulation

### Wrapping

Semi-conductive water swelling tape

### Metallic Screen

Copper wires and equalising tape

### Wrapping

Semi-conductive water swelling tape

### Tape

Longitudinally applied aluminium tape coated with PE copolymer

### Sheath

HDPE (High Density Polyethylene)

Optional – semi-conductive layer

### Sheath Colour

● Black

## STANDARDS

IEC 60840

## THE CABLE LAB®

AN ISO/IEC 17025 AND IECCE CBTL ACCREDITED FACILITY

Our world-class testing facility assures the quality and compliance of this cable through a continuous and rigorous testing regime.



## SUSTAINABILITY COMMITMENT

We are on a journey to Net Zero.

We've committed to near-term emissions reductions and a net-zero target with the Science Based Targets initiative and we're a signatory to the United Nations Global Compact Sustainable Development Goals.

Learn more about embodied carbon and our carbon emissions reduction actions, our comprehensive recycling services, and wider ESG activities for sustainable operations at: [www.elandcables.com/company/about-us/esg-sustainability](http://www.elandcables.com/company/about-us/esg-sustainability)



## REGULATORY COMPLIANCE

This cable meets the requirements of the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab®.





## DIMENSIONS

| ELAND PART NO. | NO. OF CORES | NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup> | NOMINAL DIAMETER OF CONDUCTOR mm | INSULATION mm     |                       | METALLIC SCREEN                       |                          | NOMINAL OUTER DIAMETER OF CABLE mm | NOMINAL WEIGHT kg/km | MAXIMUM PULLING FORCE kN | MINIMUM BENDING RADIUS m |
|----------------|--------------|----------------------------------------------|----------------------------------|-------------------|-----------------------|---------------------------------------|--------------------------|------------------------------------|----------------------|--------------------------|--------------------------|
|                |              |                                              |                                  | Nominal thickness | Nominal diameter over | Nominal cross section mm <sup>2</sup> | Nominal diameter over mm |                                    |                      |                          |                          |
| H9D60KV010120  | 1            | 120RM                                        | 12.5                             | 10.0              | 33.7                  | 35                                    | 37.5                     | 44                                 | 1920                 | 4.2                      | 1.1                      |
| H9D60KV010150  | 1            | 150RM                                        | 14.1                             | 10.0              | 35.3                  | 35                                    | 39.1                     | 45                                 | 2070                 | 5.3                      | 1.1                      |
| H9D60KV010185  | 1            | 185RM                                        | 15.8                             | 10.0              | 37.0                  | 35                                    | 40.8                     | 47                                 | 2240                 | 6.5                      | 1.2                      |
| H9D60KV010240  | 1            | 240RM                                        | 17.9                             | 10.0              | 39.1                  | 35                                    | 42.9                     | 49                                 | 2480                 | 8.4                      | 1.2                      |
| H9D60KV010300  | 1            | 300RM                                        | 20.0                             | 10.0              | 41.2                  | 35                                    | 45.0                     | 52                                 | 2750                 | 10.5                     | 1.3                      |
| H9D60KV010400  | 1            | 400RM                                        | 22.9                             | 10.0              | 44.5                  | 35                                    | 48.7                     | 55                                 | 3190                 | 14.0                     | 1.4                      |
| H9D60KV010500  | 1            | 500RM                                        | 25.7                             | 10.0              | 47.3                  | 35                                    | 51.5                     | 58                                 | 3630                 | 17.5                     | 1.5                      |
| H9D60KV010630  | 1            | 630RM                                        | 29.3                             | 10.0              | 51.1                  | 35                                    | 55.3                     | 63                                 | 4220                 | 22.1                     | 1.6                      |
| H9D60KV010800  | 1            | 800RM                                        | 33.0                             | 10.0              | 54.8                  | 35                                    | 59.0                     | 67                                 | 4860                 | 28.0                     | 1.7                      |
| H9D60KV011000  | 1            | 1000RM                                       | 38.0                             | 10.0              | 60.2                  | 35                                    | 64.8                     | 73                                 | 5800                 | 35.0                     | 1.8                      |
| H9D60KV011200  | 1            | 1200RM                                       | 42.5                             | 10.0              | 64.7                  | 50                                    | 69.3                     | 78                                 | 6800                 | 42.0                     | 1.9                      |
| H9D60KV011200R | 1            | 1200RMS                                      | 43.0                             | 10.0              | 67.2                  | 50                                    | 71.8                     | 80                                 | 7070                 | 42.0                     | 2.0                      |
| H9D60KV011400  | 1            | 1400RMS                                      | 45.1                             | 10.0              | 69.3                  | 50                                    | 73.9                     | 82                                 | 7750                 | 49.0                     | 2.1                      |
| H9D60KV011600  | 1            | 1600RMS                                      | 48.5                             | 10.0              | 72.7                  | 50                                    | 77.3                     | 86                                 | 8520                 | 56.0                     | 2.2                      |
| H9D60KV011800  | 1            | 1800RMS                                      | 52.7                             | 10.0              | 76.9                  | 50                                    | 81.5                     | 91                                 | 9450                 | 63.0                     | 2.3                      |
| H9D60KV012000  | 1            | 2000RMS                                      | 54.5                             | 10.0              | 78.7                  | 50                                    | 83.3                     | 92                                 | 10020                | 70.0                     | 2.3                      |
| H9D60KV012500  | 1            | 2500RMS                                      | 59.0                             | 10.0              | 84.2                  | 50                                    | 89.2                     | 99                                 | 11580                | 87.5                     | 2.5                      |
| H9D60KV013000  | 1            | 3000RMS                                      | 67.0                             | 10.0              | 92.2                  | 50                                    | 97.2                     | 107                                | 13990                | 100.0                    | 2.7                      |

## ELECTRICAL DATA

De – Cable diameter

Cables in flat formation, the distance between the cable axes =  $2 \times De$



Cables in trefoil formation, the distance between the cable axes = De



## ELECTRICAL CHARACTERISTICS

| NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup> | NOMINAL RESISTANCE OF CONDUCTOR 90 °C Ω/km | ELECTRICAL FIELD STRESS kV/mm |            | CAPACITANCE μF/km | ZERO REACTANCE Ω/km | INDUCTANCE Ω/km |                   |
|----------------------------------------------|--------------------------------------------|-------------------------------|------------|-------------------|---------------------|-----------------|-------------------|
|                                              |                                            | Conductor screen              | Insulation |                   |                     | Flat formation  | Trefoil formation |
| 120RM                                        | 0.3247                                     | 5.85                          | 2.40       | 0.150             | 0.086               | 0.200           | 0.140             |
| 150RM                                        | 0.2645                                     | 5.65                          | 2.45       | 0.160             | 0.081               | 0.195           | 0.135             |
| 185RM                                        | 0.2108                                     | 5.45                          | 2.50       | 0.175             | 0.077               | 0.190           | 0.130             |
| 240RM                                        | 0.1610                                     | 5.30                          | 2.60       | 0.190             | 0.072               | 0.185           | 0.125             |
| 300RM                                        | 0.1291                                     | 5.15                          | 2.65       | 0.200             | 0.068               | 0.180           | 0.120             |
| 400RM                                        | 0.1009                                     | 4.95                          | 2.75       | 0.225             | 0.065               | 0.175           | 0.115             |
| 500RM                                        | 0.0792                                     | 4.80                          | 2.80       | 0.245             | 0.061               | 0.170           | 0.115             |
| 630RM                                        | 0.0622                                     | 4.70                          | 2.85       | 0.270             | 0.057               | 0.165           | 0.110             |
| 800RM                                        | 0.0498                                     | 4.60                          | 2.90       | 0.295             | 0.054               | 0.165           | 0.105             |
| 1000RM                                       | 0.0408                                     | 4.45                          | 3.00       | 0.330             | 0.051               | 0.160           | 0.100             |

## ELECTRICAL CHARACTERISTICS

| NOMINAL CROSS<br>SECTIONAL AREA<br>mm <sup>2</sup> | NOMINAL<br>RESISTANCE OF<br>CONDUCTOR 90 °C<br>Ω/km | ELECTRICAL FIELD STRESS<br>kV/mm |            | CAPACITANCE<br>μF/km | ZERO REACTANCE<br>Ω/km | INDUCTANCE<br>Ω/km                                                                                    |                                                                                                          |
|----------------------------------------------------|-----------------------------------------------------|----------------------------------|------------|----------------------|------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                                                    |                                                     | Conductor screen                 | Insulation |                      |                        | Flat formation<br> | Trefoil formation<br> |
| 1200RM                                             | 0.0359                                              | 4.40                             | 3.05       | 0.365                | 0.048                  | 0.155                                                                                                 | 0.100                                                                                                    |
| 1200RMS                                            | 0.0319                                              | 4.35                             | 3.05       | 0.380                | 0.049                  | 0.160                                                                                                 | 0.100                                                                                                    |
| 1400RMS                                            | 0.0275                                              | 4.30                             | 3.10       | 0.395                | 0.048                  | 0.160                                                                                                 | 0.100                                                                                                    |
| 1600RMS                                            | 0.0242                                              | 4.25                             | 3.10       | 0.415                | 0.047                  | 0.155                                                                                                 | 0.100                                                                                                    |
| 1800RMS                                            | 0.0216                                              | 4.25                             | 3.15       | 0.445                | 0.045                  | 0.155                                                                                                 | 0.095                                                                                                    |
| 2000RMS                                            | 0.0195                                              | 4.20                             | 3.15       | 0.455                | 0.044                  | 0.150                                                                                                 | 0.095                                                                                                    |
| 2500RMS                                            | 0.0168                                              | 4.15                             | 3.20       | 0.495                | 0.043                  | 0.150                                                                                                 | 0.095                                                                                                    |
| 3000RMS                                            | 0.0130                                              | 4.10                             | 3.20       | 0.545                | 0.041                  | 0.150                                                                                                 | 0.090                                                                                                    |

## CURRENT RATING FOR SINGLE-CORE CABLES – AMPERES

| NOMINAL CROSS<br>SECTIONAL<br>AREA<br>mm <sup>2</sup> | FLAT FORMATION                                                                     |      |           |      | TREFOIL FORMATION                                                                  |      |           |      | FLAT FORMATION                                                                      |      |           |      | TREFOIL FORMATION                                                                    |      |           |      |
|-------------------------------------------------------|------------------------------------------------------------------------------------|------|-----------|------|------------------------------------------------------------------------------------|------|-----------|------|-------------------------------------------------------------------------------------|------|-----------|------|--------------------------------------------------------------------------------------|------|-----------|------|
|                                                       |  |      |           |      |  |      |           |      |  |      |           |      |  |      |           |      |
|                                                       | CONFIGURATIONS                                                                     |      |           |      |                                                                                    |      |           |      |                                                                                     |      |           |      |                                                                                      |      |           |      |
|                                                       | SPP; CB                                                                            |      | BOTH-ENDS |      | SPP; CB                                                                            |      | BOTH-ENDS |      | SPP; CB                                                                             |      | BOTH-ENDS |      | SPP; CB                                                                              |      | BOTH-ENDS |      |
|                                                       | CABLES IN EARTH                                                                    |      |           |      |                                                                                    |      |           |      | CABLES IN AIR                                                                       |      |           |      |                                                                                      |      |           |      |
|                                                       | 65°C                                                                               | 90°C | 65°C      | 90°C | 65°C                                                                               | 90°C | 65°C      | 90°C | 65°C                                                                                | 90°C | 65°C      | 90°C | 65°C                                                                                 | 90°C | 65°C      | 90°C |
| 95RM                                                  | 220                                                                                | 265  | 215       | 260  | 210                                                                                | 255  | 210       | 250  | 235                                                                                 | 320  | 230       | 315  | 205                                                                                  | 280  | 205       | 275  |
| 120RM                                                 | 250                                                                                | 300  | 245       | 290  | 240                                                                                | 285  | 235       | 285  | 275                                                                                 | 370  | 265       | 360  | 235                                                                                  | 320  | 235       | 320  |
| 150RM                                                 | 280                                                                                | 340  | 270       | 325  | 270                                                                                | 320  | 265       | 320  | 310                                                                                 | 420  | 300       | 405  | 265                                                                                  | 365  | 265       | 360  |
| 185RM                                                 | 320                                                                                | 385  | 305       | 365  | 305                                                                                | 365  | 300       | 360  | 360                                                                                 | 485  | 340       | 460  | 305                                                                                  | 415  | 305       | 415  |
| 240RM                                                 | 370                                                                                | 445  | 345       | 420  | 355                                                                                | 425  | 345       | 420  | 420                                                                                 | 570  | 395       | 540  | 360                                                                                  | 490  | 355       | 485  |
| 300RM                                                 | 420                                                                                | 505  | 385       | 465  | 400                                                                                | 480  | 390       | 470  | 485                                                                                 | 655  | 445       | 610  | 415                                                                                  | 565  | 405       | 555  |
| 400RM                                                 | 485                                                                                | 580  | 430       | 525  | 455                                                                                | 550  | 445       | 535  | 565                                                                                 | 765  | 505       | 695  | 480                                                                                  | 660  | 470       | 645  |
| 500RM                                                 | 555                                                                                | 665  | 455       | 580  | 520                                                                                | 625  | 505       | 610  | 660                                                                                 | 890  | 575       | 790  | 560                                                                                  | 765  | 545       | 745  |
| 630RM                                                 | 635                                                                                | 765  | 520       | 640  | 595                                                                                | 715  | 570       | 690  | 770                                                                                 | 1045 | 645       | 895  | 650                                                                                  | 890  | 625       | 865  |
| 800RM                                                 | 725                                                                                | 870  | 560       | 695  | 670                                                                                | 810  | 635       | 770  | 890                                                                                 | 1210 | 715       | 1000 | 745                                                                                  | 1025 | 715       | 985  |
| 1000RM                                                | 815                                                                                | 980  | 600       | 745  | 750                                                                                | 905  | 700       | 850  | 1025                                                                                | 1395 | 790       | 1110 | 850                                                                                  | 1175 | 805       | 1115 |
| 1200RM                                                | 885                                                                                | 1070 | 595       | 745  | 805                                                                                | 975  | 730       | 895  | 1135                                                                                | 1545 | 810       | 1145 | 935                                                                                  | 1290 | 865       | 1205 |
| 1200RMS                                               | 930                                                                                | 1115 | 610       | 760  | 870                                                                                | 1040 | 780       | 950  | 1185                                                                                | 1605 | 830       | 1170 | 1010                                                                                 | 1375 | 925       | 1275 |
| 1400RMS                                               | 1005                                                                               | 1210 | 630       | 790  | 940                                                                                | 1130 | 830       | 1015 | 1300                                                                                | 1755 | 870       | 1235 | 1100                                                                                 | 1505 | 995       | 1380 |
| 1600RMS                                               | 1085                                                                               | 1300 | 650       | 815  | 1005                                                                               | 1210 | 875       | 1070 | 1415                                                                                | 1910 | 910       | 1290 | 1195                                                                                 | 1635 | 1065      | 1480 |
| 1800RMS                                               | 1160                                                                               | 1395 | 665       | 835  | 1075                                                                               | 1295 | 920       | 1130 | 1535                                                                                | 2080 | 950       | 1350 | 1295                                                                                 | 1775 | 1140      | 1590 |
| 2000RMS                                               | 1225                                                                               | 1470 | 675       | 850  | 1130                                                                               | 1360 | 955       | 1175 | 1630                                                                                | 2205 | 975       | 1390 | 1370                                                                                 | 1880 | 1190      | 1665 |
| 2500RMS                                               | 1335                                                                               | 1605 | 695       | 875  | 1225                                                                               | 1475 | 1015      | 1245 | 1790                                                                                | 2425 | 1020      | 1460 | 1505                                                                                 | 2065 | 1285      | 1800 |
| 3000RMS                                               | 1540                                                                               | 1855 | 720       | 910  | 1400                                                                               | 1690 | 1105      | 1370 | 2120                                                                                | 2875 | 1085      | 1565 | 1765                                                                                 | 2425 | 1445      | 2040 |

SPB – Single Point Bonding; CB – Cross-bonding Both-ends; BE – Both-ends bonding