

## Harmonised Codes

### Part 1 of the designation

Table 1a: Relationship to standards

| Symbol | Relationship of cable to standards  |
|--------|---|
| H      | Cable conforming with harmonised standards  |
| A      | Recognised National Type of cable listed in the relevant Supplement to harmonised standards |

Table 1b: Rated voltage

| Symbol | Value, U <sub>0</sub> /U <sub>n</sub> * |
|--------|---|
| 01     | =100/100V; (<300/300V)                  |
| 03     | 300/300V                                |
| 05     | 300/500V                                |
| 07     | 450/750V                                |

\*The rated voltages not yet harmonised are given in brackets.

### Part 2 of the designation

Table 2a : Insulating and non-metallic sheathing materials

NOTE: The descriptions given for the symbols are used in certain instances to cover a group of materials which have similar performance requirements to the reference material. Full details of the specified material requirements for a given cable type will be found in the appropriate cable standard.

| Symbol | Material   |
|--------|--|
| B      | Ethylene-propylene rubber  |
| G      | Ethylene-vinyl-acetate   |
| J      | Glass-fibre braid  |
| M      | Mineral  |
| N      | Polychloroprene (or equivalent material)   |
| N2     | Special polychloroprene compound for covering of welding cables according to HD 22.6   |
| N4     | Chlorosulfonated polyethylene or chlorinated polyethylene  |
| N8     | Special water resistant polychloroprene compound   |
| Q      | Polyurethane   |
| Q4     | Polyamide  |
| R      | Ordinary ethylene propylene rubber or equivalent synthetic elastomer for a continuous operating temperature of 60°C  |
| S      | Silicone rubber  |
| T      | Textile braid, impregnated or not, on assembled cores  |
| T6     | Textile braid, impregnated or not, on individual cores of a multi-core cable   |
| V      | Ordinary PVC   |
| V2     | PVC compound for a continuous operating temperature of 90°C  |
| V3     | PVC compound for cables installed at low temperature   |
| V4     | Cross-linked PVC   |
| V5     | Special oil resistant PVC compound   |
| Z      | Polyolefin-based cross-linked compound having low level of emission of corrosive gases and which is suitable for use in cables which, when burned, have low emission of smoke  |
| Z1     | Polyolefin-based thermoplastic compound having low level of emission of corrosive gases and which is suitable for use in cables which, when burned, have low emission of smoke |

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### Part 2 of the designation(cont)

Table 2b : Metallic coverings

| Symbol | Sheath, concentric conductors and screens       |
|--------|---|
| C      | Concentric copper conductor                     |
| C4     | Copper screen as braid over the assembled cores |

Table 2c : Special contrucional components of a cable

**NOTE:** These symbols, when required, are to follow the symbols Selected from any of the previous Tables 2a and 2b

| Symbol | Constructional components  |
|--------|--|
| D3     | Strain-bearing element consisting of one or more textile components, placed at the centre of a round cable or distributed inside a flat cable  |
| D5     | Central heart (non strain-bearing for lift cables only)  |
| D9     | Strain-bearing element consisting of one or more metallic components, placed at the centre of a round cable or distributed inside a flat cable |

Table 2d : Special construction of cable

**NOTE:** These symbols, when required, are to follow the symbols Selected from any of the previous Tables 2a to 2c

| Symbol    | Special construction   |
|-----------|--|
| No Symbol | Circular construction of cable   |
| H         | Flat construction of "divisible" cables and cores, either sheathed or non-sheathed |
| H2        | Flat construction of "non-divisible" cables and cores                              |
| H6        | Flat cable having three or more cores, according to DH 359 or EN 50214             |
| H7        | Cable having a double layer insulation applied by extrusion                        |
| H8        | Extensible lead  |

Table 2e : Conductor material

**NOTE:** These symbol, when required, are to follow, after a dash, the symbols selected from any previous Tables 2a to 2d

| Symbol    | Conductor material |
|-----------|--------------------|
| No Symbol | Copper             |
| -A        | Aluminium          |

Table 2f : Conductor form

**NOTES:** These symbols are to follow, after a dash (already included in the symbol -A, in the case of aluminium conductors) the symbols selected from any of the previous Tables 2a to 2e. -For cables containing two forms of conductors, the symbol shall designate the form of the phase conductor only.

| Symbol | Conductor form   |
|--------|--|
| -D     | Flexible conductor for use in arc welding cables to HD 22Part 6 (flexibility different from Class 5 of HD 383)                 |
| -E     | Highly flexible conductor for use in arc welding cables to HD22 Part 6 (flexibility different from Class 6 of HD 383)          |
| -F     | Flexible conductor of a flexible cable or cord (flexibility according to Class 5 of HD 383)                                    |
| -H     | Highly flexible conductor of a flexible cable or cord (flexibility according to Class 6 of HD 383)                             |
| -K     | Flexible conductor of a cable for fixed installations (unless otherwise specified, flexibility according to Class 5 of HD 383) |
| -R     | Rigid, round conductor, stranded   |
| -U     | Rigid round conductor, solid   |
| -Y     | Tinsel conductor   |

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## Harmonised Codes

### Part 3 of the designation

Table 3 : Number(s) of cores and nominal cross-section(s) of conductors

| Symbol    | Number and size of conductors                                   |
|-----------|---|
| (number)  | Number, n of cores  |
| X         | Times, where a green/yellow core is not included                |
| G         | Times, when a green/yellow core is included                     |
| (number)* | Nominal cross-section, s, of conductor in mm <sup>2</sup>       |
| Y         | For a tinsel conductor where the cross-section is not specified |

Countries are free to assign the symbol "N" (placed after the conductor cross-section) to indicate that the cored are identified by numbers.

#### General examples

|   |  |
|---|--|
| nXs or nGs<br>nXs+n-Xs-<br>nXs/s-<br>nXs + n-Xs-/s® | n cores of s mm <sup>2</sup> conductor cross-section<br>n cores of s mm <sup>2</sup> and n- cores of s- mm <sup>2</sup> conductor cross-section<br>n cores of s mm <sup>2</sup> conductor cross-section and concentric conductor of s- mm <sup>2</sup> cross-section<br>n cores of s mm <sup>2</sup> + n- cores of s- mm <sup>2</sup> conductor cross-section + concentric conductor of s® mm <sup>2</sup> cross-section |
|---|--|

#### Particular examples

|   |  |
|---|--|
| 4 G 50<br>4 X 50<br>3X50 + 1G25<br>3X70/35<br>2 X Y | A cable with four cores having 50mm <sup>2</sup> conductor cross-section, one of the cored being green/yellow<br>A4-core cable without green/yellow core, all the cores having 50mm <sup>2</sup> conductor cross-section<br>A cable with four cores, three of which have 50mm <sup>2</sup> conductor cross-section, while the green/yellow core has a reduced conductor cross-section of 25mm <sup>2</sup><br>A cable with three cores having 70mm <sup>2</sup> conductor cross-section and a concentric conductor of 35mm <sup>2</sup> cross-section<br>A2-core cord with tinsel conductors |
|---|--|

Table 4 : Survey of symbols and their sequence in cable designations (1)

| 1                             | 2                | 3                      | 4                            | 5                              | 6   | 7                     | 8                  | 9                  | 10              | 11                               |  |
|-------------------------------|------------------|------------------------|------------------------------|--------------------------------|---|-----------------------|--------------------|--------------------|-----------------|----------------------------------|--|
| Part 1<br>Related<br>standard | Rated<br>voltage | Insulating<br>material | Metallic<br>coverings<br>(2) | Non-<br>metallic<br>sheath (2) | Part 2<br>Constructional<br>components &<br>special<br>instructions | Conductor<br>material | Conductor<br>forms | Number<br>of cores | Part 3<br>Times | Conductor<br>Sizemm <sup>2</sup> |  |
|                               |                  |                        |                              |                                | Symbols according to tables (s)                                     |                       |                    |                    |                 |                                  |  |
| 1a                            | 1b               | 2a                     | 2b                           | 2a                             | 2c and 2d   | 2e                    | 2f                 | 3                  |                 |                                  |  |
| H                             | 01               | B                      | C                            | B                              | D3  | No                    | -D                 | 1                  | X               | Y                                |  |
| A                             | 03               | G                      | C4                           | G                              | D5<br>D9  | Symbol:<br>Copper     | -E<br>-F           | 2<br>3             | G               | 0.5                              |  |
|                               | 05               | J                      |                              | J                              | -----<br>No symbol:<br>circular                                     | -H                    | -K<br>-R           | 4<br>5             | 0.75            |                                  |  |
|                               | 07               | M                      |                              |                                | construction<br>of cable  |                       | -U<br>-Y           | etc                |                 | 1                                |  |
|                               |                  | N,N4                   |                              | N,N2,4,8                       |   |                       |                    |                    |                 | 1.5                              |  |
|                               |                  | R                      |                              | Q,Q4                           | H   |                       |                    |                    |                 | 2.5                              |  |
|                               |                  | S                      |                              | R                              | H2<br>H6<br>H7<br>H8  |                       |                    |                    |                 | 4                                |  |
|                               |                  | V,V2<br>V3,V4          |                              | T,T6                           |   |                       |                    |                    |                 | 6                                |  |
|                               |                  | Z,Z1                   |                              | V, V2, V3<br>V4, V5<br>Z, Z1   |   |                       |                    |                    |                 | 10                               |  |
|                               |                  |                        |                              |                                |   |                       |                    |                    |                 | 16                               |  |
|                               |                  |                        |                              |                                |   |                       |                    |                    |                 | 25                               |  |
|                               |                  |                        |                              |                                |   |                       |                    |                    |                 | etc                              |  |

- (1) If two or more symbols listed in the same column need to be used in a given designation, they shall follow each other in their radial sequence starting from the core axis or cable axis.
- (2) The symbols might change their position in the designation with respect to the construction of the cable

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