



***PVC insulated power cables according to CENELEC HD 21 harmonised Standards, marked with IMQ <HAR> quality mark which guarantees equivalence with the corresponding Standards in use in the following countries: Italy • Austria • Belgium • Czech Republic • Finland • France • Germany • Great Britain • Greece • Holland • Hungary • Norway • Poland • Portugal • Spain • Sweden • Switzerland • Turkey.***

The mark IMQ <HAR>” guarantees that ICEL has been evaluated and that production is submitted to continuous control from the Italian Quality Mark Institute (IMQ), in conformity with the technical procedures contained in the harmonised documents.

<b>H05V-K</b>	Single-core flexible conductor up to 1 mm <sup>2</sup>
<b>H07V-K</b>	Single-core flexible conductor over 1 mm <sup>2</sup>
<b>H05V-U</b>	Single-core solid conductor up to 1 mm <sup>2</sup>
<b>H07V-U</b>	Single-core solid conductor from 1,5 up to 6 mm <sup>2</sup>
<b>H07V-R</b>	Single-core stranded conductor over 6 mm <sup>2</sup>

**Rated voltage:**

U<sub>0</sub>/U = 300/500 V for H05V-K and H05V-U cables;  
 U<sub>0</sub>/U = 450/750 V for H07V-K, H07V-U and H07V-R cables.

**Standards:** CENELEC HD 21, CEI 20-20.

**European directives:** L.V.D. 2006/95/EC - 2002/95/CEE (RoHS).

**Conductor:** annealed plain copper, solid or stranded or flexible.

**Insulation:** PVC of type TI1.

**Insulation Colour:**

H05V-K and H05V-U cables: blue, dark blue, light blue, black, brown, grey, green/yellow, red, white, turquoise, violet, orange, pink, green, yellow and all the bicolour combinations of these colours;  
 H07V-K, H07V-U and H07V-R cables: blue, dark blue, light blue, black, brown, grey, green/yellow, red, white, turquoise, violet, orange, pink.

\* **Marking:** continuous marking on the insulation: on one side «ICEL (cable designation) IEMMEQU <HAR> ECOGAMMA», on the opposed side «the nominal section and the production date».

**Maximum operating temperature:** 70°C on the conductor.

**Maximum short circuit temperature:** 160°C on the conductor (for maximum 5 seconds).

**Minimum internal bending radii:** 4 times the overall diameter if the cable diameter is lower than 8 mm; 5 times if between 8 and 12 mm; 6 times if over 12 mm.

**Maximum tensile stress:** 1,5 kg/mm<sup>2</sup> of the conductor cross section for flexible conductor; 5 kg/mm<sup>2</sup> for solid and stranded conductor.

**Current carrying capacity:** see CENELEC HD 516 and CEI UNEL 35024.

For cross-sections up to 1 mm<sup>2</sup>:

cross-section (mm <sup>2</sup> )	0,5	0,75	1
current (A)	3	6	10

**Guidance for Use:**

H05V-K and H05V-U cables: fixed protected installation inside appliances and in, or on, lighting fittings; suitable for installation in surface mounted or embedded conduits, only for signalling or control circuits;

H07V-K, H07V-U and H07V-R cables: installation in surface mounted or embedded conduits, or similar closed systems; suitable for fixed protected installation in, or on, lighting or control gear for voltages up to 1000 V a.c. or, up to 750 V d.c. to earth.

Not suitable for: direct or indirect burial, laying outdoors or in wet environments,, unprotected laying, or laying under plaster.

Cables to be used only for electrical power transmission and to be installed only by skilled personal. Further guidance and warnings for the use of these cables are given in the standards guide to use CENELEC HD 516 or CEI 20-40.

\* For present agreements it is not allowed to mark the Harmonised cables and their labels with the marking of special national Standards.

The mark ECOGAMMA indicates the use of lead free compounds.



## H05V-K



◁HAR▷



Single-core non-sheathed power cable with **flexible** conductor for internal wiring.

Nominal cross-sectional area of conductor mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductor at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm·km
			MIN mm	MAX mm			
0,5	0,21	0,6	2,1	2,5	10	39,0	0,013
0,75	0,21	0,6	2,2	2,7	12	26,0	0,011
1	0,21	0,6	2,4	2,8	15	19,5	0,010

## H07V-K



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Single-core non-sheathed power cable with **flexible** conductor for general purposes.

Nominal cross-sectional area of conductor mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductor at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm·km
			MIN mm	MAX mm			
1,5	0,26	0,7	2,8	3,4	21	13,3	0,010
2,5	0,26	0,8	3,4	4,1	32	7,98	0,0095
4	0,31	0,8	3,9	4,8	47	4,95	0,0078
6	0,31	0,8	4,4	5,3	65	3,30	0,0068
10	0,41	1,0	5,7	6,8	110	1,91	0,0065
16	0,41	1,0	6,7	8,1	170	1,21	0,0053
25	0,41	1,2	8,4	10,2	255	0,780	0,0050
35	0,41	1,2	9,7	11,7	345	0,554	0,0043
50	0,41	1,4	11,5	13,9	495	0,386	0,0042
70	0,51	1,4	13,2	16,0	680	0,272	0,0036
95	0,51	1,6	15,1	18,2	900	0,206	0,0036
120	0,51	1,6	16,7	20,2	1135	0,161	0,0032
150	0,51	1,8	18,6	22,5	1410	0,129	0,0032
185	0,51	2,0	20,6	24,9	1920	0,106	0,0032
240	0,51	2,2	23,5	28,4	2260	0,0801	0,0031

## H05V-U



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Single-core non-sheathed power cable with **solid** conductor for internal wiring.

Nominal cross-sectional area of conductor mm <sup>2</sup>	Minimum number of conductor wires n	Thickness of insulation specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductor at 20°C Ohm/km	Minimum insulation resistance at 70°C Mohm·km
			MIN mm	MAX mm			
0,5	1	0,6	1,9	2,3	9	36,0	0,014
0,75	1	0,6	2,1	2,5	12	24,5	0,013
1	1	0,6	2,2	2,7	15	18,1	0,011

## H07V-U



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## H07V-R

Single-core non-sheathed power cable with **solid** or **stranded** conductor for fixed wiring.

Nominal cross-sectional area of conductor mm <sup>2</sup>	Minimum number of conductor wires n	Thickness of insulation specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductor at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm·km
			MIN mm	MAX mm			
<b>H07V-U</b>							
1,5	1	0,7	2,6	3,2	19	12,1	0,011
2,5	1	0,8	3,2	3,9	32	7,41	0,010
4	1	0,8	3,6	4,4	47	4,61	0,0087
6	1	0,8	4,1	5,0	65	3,08	0,0074
<b>H07V-R</b>							
6	6	1,0	4,3	5,2	69	3,08	0,0070
10	6	1,0	5,6	6,7	112	1,83	0,0067
16	6	1,0	6,4	7,8	168	1,15	0,0056
25	6	1,2	8,1	9,7	265	0,727	0,0053
35	6	1,2	9,0	10,9	355	0,524	0,0046
50	6	1,4	10,6	12,8	485	0,387	0,0046
70	12	1,4	12,1	14,6	675	0,268	0,0040
95	15	1,6	14,1	17,1	940	0,193	0,0039
120	18	1,6	15,6	18,8	1170	0,153	0,0035
150	18	1,8	17,3	20,9	1440	0,124	0,0035
185	30	2,0	19,3	23,3	1820	0,0991	0,0035
240	34	2,2	22,0	26,6	2340	0,0754	0,0034
300	34	2,4	24,5	29,6	2940	0,0601	0,0033
400	53	2,6	27,5	33,2	3740	0,0470	0,0031

## H03VV-F



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Light polyvinyl chloride sheathed cord with **flexible** conductor.

Number and nominal cross-sectional area of conductors n x mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Thickness of sheath specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductors at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm•km
				MIN mm	MAX mm			
2 x 0,5	0,21	0,5	0,6	4,6	5,9	41	39,0	0,011
2 x 0,75	0,21	0,5	0,6	4,9	6,3	48	26,0	0,010
3 G 0,5	0,21	0,5	0,6	4,9	6,3	48	39,0	0,011
3 G 0,75	0,21	0,5	0,6	5,2	6,7	57	26,0	0,010
4 G 0,5	0,21	0,5	0,6	5,4	6,9	58	39,0	0,011
4 G 0,75	0,21	0,5	0,6	5,7	7,3	70	26,0	0,010

If specifically requested, and for agreed quantities, a version of the cables without the protective conductor (green/yellow) can be supplied.

## H05VV-F



◁HAR▷



Ordinary polyvinyl chloride sheathed cord with **flexible** conductor.

Number and nominal cross-sectional area of conductors n x mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Thickness of sheath specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductors at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm•km
				MIN mm	MAX mm			
2 x 0,75	0,21	0,6	0,8	5,7	7,2	61	26,0	0,011
2 x 1	0,21	0,6	0,8	5,9	7,5	70	19,5	0,010
2 x 1,5	0,26	0,7	0,8	6,8	8,6	92	13,3	0,010
2 x 2,5	0,26	0,8	1,0	8,4	10,6	140	7,98	0,0095
2 x 4	0,31	0,8	1,1	9,7	12,1	190	4,95	0,0078
3 G 0,75	0,21	0,6	0,8	6,0	7,6	72	26,0	0,011
3 G 1	0,21	0,6	0,8	6,3	8,0	83	19,5	0,010
3 G 1,5	0,26	0,7	0,9	7,4	9,4	115	13,3	0,010
3 G 2,5	0,26	0,8	1,1	9,2	11,4	130	7,98	0,0095
3 G 4	0,31	0,8	1,2	10,5	13,1	240	4,95	0,0078
4 G 0,75	0,21	0,6	0,8	6,6	8,3	88	26,0	0,011
4 G 1	0,21	0,6	0,9	7,1	9,0	105	19,5	0,010
4 G 1,5	0,26	0,7	1,0	8,4	10,5	145	13,3	0,010
4 G 2,5	0,26	0,8	1,1	10,1	12,5	210	7,98	0,0095
4 G 4	0,31	0,8	1,2	11,5	14,3	290	4,95	0,0078
5 G 0,75	0,21	0,6	0,9	7,4	9,3	110	26,0	0,011
5 G 1	0,21	0,6	0,9	7,8	9,8	130	19,5	0,010
5 G 1,5	0,26	0,7	1,1	9,3	11,6	180	13,3	0,010
5 G 2,5	0,26	0,8	1,2	11,2	13,9	265	7,98	0,0095
5 G 4	0,31	0,8	1,4	13,0	16,1	320	4,95	0,0078

If specifically requested, and for agreed quantities a version of the cable without the protective conductor (green/yellow) can be supplied.

## H03VVH2-F



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Light polyvinyl chloride sheathed **flexible flat cord**.

Number and nominal cross-sectional area of conductors n x mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Thickness of sheath specified value mm	Mean overall Dimensions		Indicative cable weight g/m	Maximum resistance of conductors at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm•km
				MIN mm	MAX mm			
2 x 0,5	0,21	0,5	0,6	3,0x4,9	3,7x5,9	30	39,0	0,011
2 x 0,75	0,21	0,5	0,6	3,2x5,2	3,8x6,3	35	26,0	0,010

## H05VVH2-F



◁HAR▷



Ordinary polyvinyl chloride sheathed **flexible flat cord**.

Number and nominal cross-sectional area of conductors n x mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Thickness of sheath specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductors at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm•km
				MIN mm	MAX mm			
2 x 0,75	0,21	0,6	0,8	3,7x6,0	4,5x7,2	61	26,0	0,011
2 x 1	0,21	0,6	0,8	3,9x6,2	4,7x7,5	70	19,5	0,010

## H05VV5-F



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Oil resistant polyvinyl chloride sheathed **flexible cord**.

Number and nominal cross-sectional area of conductors n x mm <sup>2</sup>	Maximum diameter of conductor wires mm	Thickness of insulation specified value mm	Thickness of sheath specified value mm	Mean overall dimensions		Indicative cable weight g/m	Maximum resistance of conductors at 20°C ohm/km	Minimum insulation resistance at 70°C Mohm•km
				MIN mm	MAX mm			
2 x 0,5	0,21	0,6	0,7	5,2	6,6	52	39,0	0,013
2 x 0,75	0,21	0,6	0,8	5,7	7,2	61	26,0	0,011
2 x 1	0,21	0,6	0,8	5,9	7,5	70	19,5	0,010
2 x 1,5	0,26	0,7	0,8	6,8	8,6	92	13,3	0,010
2 x 2,5	0,26	0,8	1,0	8,4	10,6	140	7,98	0,0095
3 x 0,5	0,21	0,6	0,7	5,5	7,0	63	39,0	0,013
3 x 0,75	0,21	0,6	0,8	6,0	7,6	72	26,0	0,011
3 x 1	0,21	0,6	0,8	6,3	8,0	83	19,5	0,010
3 x 1,5	0,26	0,7	0,9	7,4	9,4	115	13,3	0,010
3 x 2,5	0,26	0,8	1,1	9,2	11,4	130	7,98	0,0095
4 x 0,5	0,21	0,6	0,8	6,2	7,9	79	39,0	0,013
4 x 0,75	0,21	0,6	0,8	6,6	8,3	88	26,0	0,011
4 x 1	0,21	0,6	0,8	6,9	8,7	105	19,5	0,010
4 x 1,5	0,26	0,7	0,9	8,2	10,2	145	13,3	0,010
4 x 2,5	0,26	0,8	1,1	10,1	12,5	210	7,98	0,0095
5 x 0,5	0,21	0,6	0,8	6,8	8,6	100	39,0	0,013
5 x 0,75	0,21	0,6	0,9	7,4	9,3	110	26,0	0,011
5 x 1	0,21	0,6	0,9	7,8	9,8	130	19,5	0,010
5 x 1,5	0,26	0,7	1,0	9,1	11,4	180	13,3	0,010
5 x 2,5	0,26	0,8	1,2	11,2	13,9	265	7,98	0,0095

If specifically requested, and for agreed quantities, a version of the cables without the protective conductor (green/yellow) can be supplied.

<b>H03VV-F</b>	Multi-core sheathed round flexible cable
<b>H05VV-F</b>	Multi-core sheathed round flexible cable
<b>H05VV5-F</b>	Multi-core sheathed round flexible cable
<b>H03VVH2-F</b>	Multi-core sheathed flat flexible cable
<b>H05VVH2-F</b>	Multi-core sheathed flat flexible cable

**Rated voltage:**

$U_0/U = 300/300$  V for H03VV-F, H03VVH2-F cables;

$U_0/U = 300/500$  V for H05VV-F, H05VVH2-F, H05VV5-F cables.

**Standards:** CENELEC HD 21, CEI 20-20.

**European directives:** L.V.D. 2006/95/EC - 2002/95/CEE (RoHS).

**Conductor:** flexible annealed plain copper.

**Insulation:** PVC of type TI2.

**Colours of the cores:**

Two-core : blue-brown;

Three-core : green/yellow-blue-brown or brown-black-grey;

Four-core : green/yellow-brown-black-grey or blue-brown-black-grey;

Five-core : green/yellow-blue-brown-black-grey or blue-brown-black-grey-black;

For the cables H05VV5-F black cores with white progressive numbering inscription are possible.

**Sheath:** PVC of type TM2 for H03VV-F, H05VV-F, H03VVH2-F, H05VVH2-F cables.

PVC of type TM5 for H05VV5-F cables.

**Colour of the sheath:** black or white or grey; if specifically requested, and for agreed quantities, the cables can be supplied in other single colours.

\* **Marking:** continuous marking on the sheath: on one side «ICEL (cable designation) IEMMEQU <HAR> ECOGAMMA BS 6500» (for H05VV5-F cables «ICEL H05VV5-F IEMMEQU <HAR>»); on the opposite side «the nominal section and the production date».

**Maximum operating temperature:** 60°C on the conductor.

**Maximum short circuit temperature:** 150°C on the conductor (for maximum 5 seconds).

**Minimum internal bending radius:**

For free movements: 5 times the overall diameter or the smaller dimension of flat cable if diameter is less than 12 mm; 6 times if greater.

For fixed installations 3 times the greatest overall dimension if smaller than 12 mm; 4 times if greater.

For repeated wrappings 7 times the greatest overall dimension if smaller than 12 mm; 8 times if greater.

**Maximum tensile stress:** 1,5 kg/mm<sup>2</sup> of the conductor cross section.

**Current carrying capacity:** see CENELEC HD 516 and CEI UNEL 35024.

For cross-sections up to 1 mm<sup>2</sup>:

cross-section (mm <sup>2</sup> )	0,5	0,75	1
current (A)	3	6	10

**Guidance for Use:** for installation in domestic premises, kitchens, offices; for household appliances, including in damp premises.

Unsuitable for outdoor use, in industrial or agricultural buildings and for non domestic portable tools.

H05VV-F cables are suitable for household appliances, including in damp premises and for cooking and heating appliances provided that they are not in contact with hot or thermal radiating parts.

H05VV5-F: the cables are resistant to general purpose mineral oil.

Suitable for installations for manufacturing purposes including machines tools.

Not suitable for continuous immersion in oil.

Cables to be used only for electrical power transmission and to be installed only by skilled personal.

Further instructions and guidance for use are given in the CENELEC HD 516 standard.

\* For present agreements it is not allowed to mark the Harmonised cables and their labels with the marking of special national Standards.

The marking "ECOGAMMA" indicates the use of lead free compounds.



All the PVC cables contained in this brochure are "**flame retardant on a single vertical cable test**" according to the test CEI 20-35 (EN and IEC 60332-1) as indicated in the CEI 20-20 and CENELEC HD 21 standards.

They also belong to the ecological line "ECOGAMMA", and are marked on the documentation and on the packaging by the Wind Mill symbol. In these new ecological cables **lead** and its' compounds have been eliminated. Lead is a heavy metal that can be dangerous, for the environment and to humans if present in high quantities.



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