



INNOVCABLE CONTROL CABLE BTC ATOX HEPR/SHF1 - NBR 16442



- 1) Stranded conductor formed by electrolytic bare copper wires, soft temper, class 5 NBR NM 280 stranding.
- 2) Composite insulation (HEPR - ethylene-propylene rubber) 90°C.
- 3) Separator in polyester tape.
- 4) Intermediate layer in thermoplastic compound, halogen free and flame retardant (SHF1).
- 5) Shielding in bare copper braid.
- 6) Non-hygroscopic tape.
- 7) Cover in halogen free, flame retardant thermoplastic compound (SHF1) in black colour.

-Isolation voltage:

Up to 1,0mm² - 500V

From 1,50mm² to 10,00mm² - 1000V

-Routine tests:

Electrical resistance of the conductor at 20°C

Electric tension in alternate current

Insulation resistance.

Identification

Black or white veins numbered sequentially, can be manufactured on customer request with a green track (protective conductor). It can also be built with coloured veins.



Applicable Specifications

ABNT/MERCOSUR: NM-280 and NM-IEC

NBR NM IEC 60332-3-23 (Category B)

ABNT: NBR 16442 - Non-halogenated control cables with low smoke emission for voltages up to 1 kV - Performance requirements

ABNT: NBR 6251

Applications

They are used in fixed installations in control, command and signalling circuits of electrical equipment, structured cabling, machine connections, push buttons, power supply, microprocessor systems, in the automation of substations, power plants, industrial and chemical areas, among others.

They are applied in fixed systems of conduits (embedded or exposed), ducts, duct banks, cable trays, electrical panels, among other applications. Due to their low smoke and toxic gas emission and flame retardant properties, they are recommended for installation in power supply and distribution circuits in places where there is a high concentration of people, as prescribed by NBR 5410 and NBR 13570 standards. They do not emit corrosive gases when burning, recommended for installations in places with critical systems and equipment where greater reliability and less risk are required. It has EMV electromagnetic interference protection. This cable has good flexibility, resistance to UV, weather, humidity and certain chemicals.

Maximum Conductor Temperature

In steady state: +90°C

Maximum short circuit temperature: +250°C (5s)

Notes



The BTC ATOX HEPR/SHF1 - NBR 16442 control cables can be manufactured in other sections, dimensions or materials, at the customer's request.

Innovcable reserves the right to modify this catalogue without prior notice.

CONSTRUCTION OPTIONS

We can manufacture other configurations on request.

1- Tinned Copper Conductor.

Class 2 stranding.

2- Different sections and number of veins, maximum up to

- 71 x 0,50mm² / 71 x 2,50mm²

- 52 x 4,00mm² / 52 x 4,00mm².

- 42 x 6,00mm²

- 20 x 10,0mm²

3- Vein insulation material / other temperatures:

PVC/E -105°C

PVC/A - 70 °C

PE - 80 °C

4- Cover material:

PE

PVC/E

PVC/ST2

Special PVC resistant to oils, grease and other chemicals.

5- Cover perfectly cylindrical for applications with cable glands in classified areas (Ex).



DADOS DIMENSIONAIS				DADOS DIMENSIONAIS			
SEÇÃO NOMINAL - 0,50 mm ²				SEÇÃO NOMINAL - 0,75 mm ²			
Número de Condutores		Diâmetro Externo mm	Peso Nominal (kg/km)	Número de Condutores		Diâmetro Externo mm	Peso Nominal (kg/km)
2		8,53	113,72	2		8,95	126,04
3		8,80	129,09	3		9,25	145,17
4		9,61	165,49	4		10,16	187,87
5		9,76	181,41	5		10,33	207,08
6		10,29	196,39	6		10,92	225,77
7		10,29	205,40	7		10,92	238,31
8		10,84	222,58	8		11,53	259,46
9		12,33	262,76	9		13,16	305,17
10		12,74	283,19	10		13,61	329,43
11		12,74	290,86	11		13,61	340,48
12		12,95	306,54	12		13,82	360,12
13		13,41	326,83	13		14,33	384,23
14		13,41	334,18	14		14,33	394,91
15		13,92	359,04	15		14,91	423,60
16		13,92	366,11	16		14,91	433,97
17		14,45	386,56	17		15,50	458,25
18		14,45	393,18	18		15,50	468,11
19		14,45	399,93	19		15,50	478,12
20		15,20	429,75	20		16,32	512,53
21		15,73	445,60	21		16,91	532,18
22		15,73	456,42	22		16,91	546,22
23		15,73	471,64	23		16,91	564,65
24		15,73	477,91	24		16,91	574,11
25		15,73	492,97	25		16,91	592,37



DADOS DIMENSIONAIS			
SEÇÃO NOMINAL - 1,00 mm ²			
Número de Condutores		Diâmetro Externo mm	Peso Nominal (kg/km)
2		9,31	137,25
3		9,64	159,95
4		10,63	208,37
5		10,81	230,76
6		11,46	252,97
7		11,46	268,88
8		12,12	293,78
9		13,86	344,57
10		14,35	372,47
11		14,35	386,75
12		14,56	410,14
13		15,12	437,86
14		15,12	451,75
15		15,74	484,08
16		15,74	497,61
17		16,39	525,53
18		16,39	538,51
19		16,39	551,66
20		17,26	590,34
21		17,91	613,62
22		17,91	630,75
23		17,91	652,29
24		17,91	664,84
25		17,91	686,19

DADOS DIMENSIONAIS			
SEÇÃO NOMINAL - 1,50 mm ²			
Número de Condutores		Diâmetro Externo mm	Peso Nominal (kg/km)
2		9,87	156,27
3		10,24	185,28
4		11,36	243,41
5		11,57	271,48
6		12,30	299,94
7		12,30	321,85
8		13,05	353,35
9		14,95	412,82
10		15,51	447,13
11		15,51	467,19
12		15,72	497,18
13		16,35	531,29
14		16,35	550,91
15		17,06	589,65
16		17,06	608,88
17		17,79	643,21
18		17,79	661,81
19		17,79	680,59
20		18,75	726,70
21		19,48	756,35
22		19,48	779,07
23		19,48	806,19
24		19,48	824,30
25		19,48	851,20



DADOS DIMENSIONAIS			
SEÇÃO NOMINAL - 2,50 mm ²			
Número de Condutores		Diâmetro Externo mm	Peso Nominal (kg/km)
2		11,60	209,58
3		12,11	255,43
4		13,62	340,71
5		13,90	383,72
6		14,89	428,83
7		14,89	466,63
8		15,91	515,85
9		18,34	599,43
10		19,10	650,90
11		19,10	686,18
12		19,31	733,88
13		20,17	785,07
14		20,17	819,76
15		21,13	875,67
16		21,13	909,82
17		22,11	961,32
18		22,11	994,62
19		22,11	1028,19
20		23,35	1094,55
21		24,34	1141,27
22		24,34	1178,60
23		24,34	1220,32
24		24,34	1252,96
25		24,34	1294,39



DADOS DIMENSIONAIS			
SEÇÃO NOMINAL - 4,00 mm ²			
Número de Condutores		Diâmetro Externo mm	Peso Nominal (kg/km)
2		12,89	263,27
3		13,47	324,70
4		15,19	433,96
5		15,51	491,01
6		16,63	551,52
7		16,63	604,14
8		17,79	669,65
9		20,49	773,82
10		21,35	841,05
11		21,35	890,57
12		21,56	954,01
13		22,53	1020,86
14		22,53	1069,65
15		23,62	1141,28
16		23,62	1189,41
17		24,74	1256,64
18		24,74	1303,75
19		24,74	1351,18
20		26,11	1435,04
21		27,23	1497,37
22		27,23	1548,42
23		27,23	1603,86
24		27,23	1650,15
25		27,23	1705,24



DADOS DIMENSIONAIS			
SEÇÃO NOMINAL - 6,00 mm ²			
Número de Condutores		Diâmetro Externo mm	Peso Nominal (kg/km)
2		14,36	336,15
3		15,04	422,85
4		17,05	567,35
5		17,42	647,84
6		18,74	733,43
7		18,74	810,42
8		20,09	902,03
9		23,19	1037,68
1		24,19	1130,42
11		24,19	1203,64
12		24,40	1292,73
13		25,54	1384,99
14		25,54	1457,32
15		26,81	1554,43
16		26,81	1625,96
17		28,12	1718,67
18		28,12	1788,97
19		28,12	1859,66
20		29,69	1971,37
21		31,00	2059,08
22		31,00	2133,20
23		31,00	2211,73
24		31,00	2281,03
25		31,00	2359,14



DADOS DIMENSIONAIS			
SEÇÃO NOMINAL - 10,00 mm ²			
Número de Condutores		Diâmetro Externo mm	Peso Nominal (kg/km)
2		16,60	468,61
3		17,43	604,90
4		19,91	814,72
5		20,37	941,90
6		21,99	1076,75
7		21,99	1201,90
8		23,66	1344,43
9		27,38	1539,40
10		28,62	1682,11
11		28,62	1802,43
12		28,83	1941,68
13		30,23	2083,74
14		30,23	2202,93
15		31,79	2349,97
16		31,79	2468,13
17		33,41	2610,77
18		33,41	2727,37
19		33,41	2844,46
20		35,30	3009,84
21		36,92	3147,28
22		36,92	3267,55
23		36,92	3392,21
24		36,92	3507,54
25		36,92	3631,67

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