



SPECIALCAVI
WE BRIDGE PEOPLE

CURRENT CAPACITY

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - SINGLE-CORE CABLES

Cables in insulated wall-mounted pipe

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

(****) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI UNEL standards

Capacity [A]				
Nominal cross section [mm ²]	Number of loaded conductors			
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (****)	13,5	17	12	15
1,50	17,5	23	15,5	20
2,50	24	31	21	28
4,00	32	42	28	37
6,00	41	54	36	48
10,00	57	75	50	66
16,00	76	100	68	88
25,00	101	133	89	117
35,00	125	164	110	144
50,00	151	198	134	175
70,00	192	253	171	222
95,00	232	306	207	269
120,00	269	354	239	312
150,00	309	402	275	355
185,00	353	472	314	417
240,00	415	555	369	490
300,00	-	-	-	-
400,00	-	-	-	-
500,00	-	-	-	-
600,00	-	-	-	-

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - SINGLE-CORE CABLES

Cables in air with protection

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

(****) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI UNEL standards

Nominal cross section [mm ²]	Capacity [A]			
	Number of loaded conductors			
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (****)	-	-	-	-
1,50	14,5	19	13,5	17
2,50	19,5	26	18	23
4,00	26	36	24	31
6,00	34	45	31	40
10,00	46	61	42	54
16,00	61	81	56	73
25,00	80	106	73	95
35,00	99	131	89	117
50,00	119	158	108	141
70,00	151	200	136	179
95,00	182	241	164	216
120,00	210	278	188	249
150,00	240	318	216	285
185,00	273	362	245	324
240,00	320	424	286	380
300,00	-	-	-	-
400,00	-	-	-	-
500,00	-	-	-	-
600,00	-	-	-	-

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - SINGLE-CORE CABLES

Cables in open air in positions that are not within easy reach

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

(****) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI UNEL standards

Nominal cross section [mm ²]	Capacity [A]			
	Number of loaded conductors			
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (****)	-	-	-	-
1,50	19,5	24	15,5	20
2,50	26	33	21	28
4,00	35	45	28	37
6,00	46	58	36	48
10,00	63	80	57	71
16,00	85	107	76	96
25,00	112	142	101	127
35,00	138	175	125	157
50,00	168	212	151	190
70,00	213	270	192	242
95,00	258	327	232	293
120,00	299	-	269	-
150,00	344	-	309	-
185,00	392	-	353	-
240,00	461	-	415	-
300,00	-	-	-	-
400,00	-	-	-	-
500,00	-	-	-	-
600,00	-	-	-	-

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - SINGLE-CORE CABLES

Cables in free air on a flat cloverleaf

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

(****) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI UNEL standards

Nominal cross section [mm ²]	Capacity [A]	
	Number of loaded conductors	
	3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (****)	-	-
1,50	19,5	24
2,50	26	33
4,00	35	45
6,00	46	58
10,00	63	80
16,00	85	107
25,00	110	135
35,00	137	169
50,00	167	207
70,00	216	268
95,00	264	328
120,00	308	383
150,00	356	444
185,00	409	510
240,00	485	607
300,00	561	703
400,00	656	823
500,00	749	946
600,00	855	1088

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - SINGLE-CORE CABLES

Cables in free air on a flat surface in contact

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

(****) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI UNEL standards

Nominal cross section [mm ²]	Capacity [A]			
	Number of loaded conductors		Number of loaded conductors	
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (****)	-	-	-	-
1,50	22	27	19	24
2,50	30	37	26	33
4,00	40	50	35	45
6,00	52	64	46	58
10,00	71	88	63	80
16,00	96	119	85	107
25,00	131	161	114	141
35,00	162	200	143	176
50,00	196	542	174	216
70,00	251	310	225	279
95,00	304	377	275	342
120,00	352	437	321	400
150,00	406	504	372	464
185,00	463	575	427	533
240,00	546	679	507	634
300,00	629	783	587	736
400,00	754	940	689	868
500,00	868	1083	789	998
600,00	1005	1254	905	1151

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - SINGLE-CORE CABLES

Cables in free air spaced on a horizontal surface

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

(****) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI UNEL standards

Capacity [A]				
Nominal cross section [mm ²]	Number of loaded conductors		Number of loaded conductors	
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (****)	-	-	-	-
1,50	-	-	-	-
2,50	-	-	-	-
4,00	-	-	-	-
6,00	-	-	-	-
10,00	-	-	-	-
16,00	-	-	-	-
25,00	146	182	146	182
35,00	181	226	181	226
50,00	219	275	219	275
70,00	281	353	281	353
95,00	341	430	341	430
120,00	396	500	396	500
150,00	456	577	456	577
185,00	521	661	521	661
240,00	615	781	615	781
300,00	709	902	709	902
400,00	852	1085	852	1085
500,00	982	1253	982	1253
600,00	1138	1454	1138	1454

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - SINGLE-CORE CABLES

Cables in free air spaced on a vertical surface

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

(****) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI UNEL standards

Capacity [A]				
Nominal cross section [mm²]	Number of loaded conductors		Number of loaded conductors	
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (****)	-	-	-	-
1,50	-	-	-	-
2,50	-	-	-	-
4,00	-	-	-	-
6,00	-	-	-	-
10,00	-	-	-	-
16,00	-	-	-	-
25,00	130	161	130	161
35,00	162	201	162	201
50,00	197	246	197	246
70,00	254	318	254	318
95,00	311	389	311	389
120,00	362	454	362	454
150,00	419	527	419	527
185,00	480	605	480	605
240,00	569	719	569	719
300,00	659	833	659	833
400,00	795	1008	795	1008
500,00	920	1169	920	1169
600,00	1070	1362	1070	1362

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - MULTICORE CABLES

Cable in insulated wall-mounted pipe

(*) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI-UNEL standards

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

Nominal cross section [mm ²]	Capacity [A]			
	Number of loaded conductors			
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (*)	-	-	-	-
1,50	14	18,5	13	16,5
2,50	18,5	25	17,5	22
4,00	25	33	23	30
6,00	32	42	29	38
10,00	43	57	39	51
16,00	57	76	52	68
25,00	75	99	68	89
35,00	92	121	83	109
50,00	110	145	99	130
70,00	139	183	125	164
95,00	167	220	150	197
120,00	192	253	172	227
150,00	219	290	196	259
185,00	248	329	223	295
240,00	291	386	261	346
300,00	334	442	298	396

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - MULTICORE CABLES

Cable in free air with protection

(*) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI-UNEL standards

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

Nominal cross section [mm ²]	Capacity [A]			
	Number of loaded conductors			
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (*)	13,5	17	12	15
1,50	16,5	22	15	19,5
2,50	23	30	20	26
4,00	30	40	27	35
6,00	38	51	34	44
10,00	52	69	46	60
16,00	69	91	62	80
25,00	90	119	80	105
35,00	111	146	99	128
50,00	133	175	118	154
70,00	168	221	149	194
95,00	201	265	179	233
120,00	232	305	206	268
150,00	258	334	225	300
185,00	294	384	255	340
240,00	344	459	297	398
300,00	394	532	339	455

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - MULTICORE CABLES

Cable in free air, spaced from the wall/ceiling or on a walkway

(*) The use of cables with a cross-section of 1 mm^2 is limited to cases permitted by the relevant CEI or CEI-UNEL standards

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

Nominal cross section [mm^2]	Capacity [A]			
	Number of loaded conductors			
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (*)	15	19	13,6	17
1,50	22	26	18,5	23
2,50	30	36	25	32
4,00	40	49	34	42
6,00	51	63	43	54
10,00	70	86	60	75
16,00	94	115	80	100
25,00	119	149	101	127
35,00	148	185	126	158
50,00	180	225	153	192
70,00	232	289	196	246
95,00	282	352	238	298
120,00	328	410	276	346
150,00	379	473	319	399
185,00	434	542	364	456
240,00	514	641	430	538
300,00	593	741	497	621

Technical information: CURRENT CAPACITY

LAYING IN FREE AIR - MULTICORE CABLES

Cable in free air, fixed to wall/ceiling

(*) The use of cables with a cross-section of 1 mm² is limited to cases permitted by the relevant CEI or CEI-UNEL standards

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

Nominal cross section [mm ²]	Capacity [A]			
	Number of loaded conductors			
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,00 (*)	15	19	13,5	17
1,50	19,5	24	17,5	22
2,50	27	33	24	30
4,00	36	45	32	40
6,00	45	58	41	52
10,00	63	80	57	71
16,00	85	107	76	96
25,00	112	138	96	119
35,00	138	171	119	147
50,00	168	209	144	179
70,00	213	269	184	229
95,00	258	328	223	278
120,00	299	382	259	322
150,00	344	441	299	371
185,00	392	506	341	424
240,00	461	599	403	500
300,00	530	693	464	576

Technical information: CURRENT CAPACITY

CORRECTION FACTORS FOR LAYING IN FREE AIR

CORRECTION FACTORS (k1) FOR AMBIENT TEMPERATURES OTHER THAN 30°C										
Insulation type	Temperature [°C]									
	10	15	20	25	35	40	45	50	55	60
THERMOPLASTIC - 70°C (**)	1,22	1,17	1,12	1,06	0,94	0,87	0,79	0,71	0,61	0,5
LASTOMERIC CROSSLINKED - 90°C (***)	1,15	1,12	1,8	1,04	0,96	0,91	0,87	0,82	0,76	0,71

(**) PVC based thermoplastic compound (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

CORRECTION FACTORS (k2) FOR CIRCUITS MADE WITH CABLES INSTALLED IN BUNDLES OR LAYERS												
Disposition (cables in contact)	Number of circuits or multicore cables											
	1	2	3	4	5	6	7	8	9	12	16	20
Bundled (1)	1,00	0,80	0,70	0,65	0,60	0,57	0,54	0,52	0,50	0,45	0,41	0,38
Single layer on wall, floor, or non-perforated walkway (2)	1,00	0,85	0,79	0,75	0,73	0,72	0,72	0,71	0,70	No further reduction for more than 9 circuits or multipolar cables		
Ceiling layer (3)	0,95	0,81	0,72	0,68	0,66	0,64	0,63	0,62	0,61			
Layer on horizontal or vertical walkways (perforated or non-perforated) (4)	1,00	0,88	0,82	0,77	0,75	0,73	0,73	0,72	0,72			
Layer on cable ladder or stapled to a support (5)	1,00	0,87	0,82	0,80	0,80	0,79	0,79	0,78	0,78			

NOTES

(1) These factors apply to bundles or layers of similar cables with uniform loads.

(2) Where the horizontal spacing between adjacent cables belonging to different circuits exceeds twice the outer diameter of the cable with the largest cross-section, it is not necessary to apply the correction factor.

(3) The same factors apply to:

single-core cable circuits;

multipolar cables.

(4) If a system consists of both bipolar and tripolar cables, the number of cables is taken to be equal to the number of circuits, and the corresponding factor is applied to the tables for two loaded conductors for bipolar cables and to that for three loaded conductors for tripolar cables.

(5) If a bundle or layer consists of "n" loaded single-core cables, they can be considered either as n/2 two-core circuits for phase-to-phase or phase-to-ground systems, or as n/3 three-core circuits for three-phase systems.

(6) The values given are the average over the range of conductor sizes and installation types. The tolerance of the values given is within 5%.

Technical information: CURRENT CAPACITY

CORRECTION FACTORS FOR LAYING IN FREE AIR - SINGLE-CORE CABLES

CORRECTION FACTORS FOR CIRCUITS MADE WITH SINGLE-POLAR CABLES INSTALLED IN LAYERS ON MULTIPLE SUPPORTS (e.g., walkways)					
Installation method	Number of 3-phase circuits				Use for
	Number of walkways	1	2	2	
Perforated walkways	2	0,96	0,87	0,81	3 cables in horizontal formation
	3	0,95	0,85	0,78	
Perforated vertical walkways	2	0,95	0,84	-	3 cables in vertical formation
Cable ladder or support element	2	0,98	0,93	0,89	3 cables in horizontal formation
	3	0,97	0,90	0,86	
Perforated walkways	2	0,97	0,93	0,89	3 cables in stranded formation
	3	0,96	0,92	0,86	
Vertical walkways	2	1,00	0,90	0,86	
Cable ladder or support element	2	0,97	0,95	0,93	
	3	0,96	0,94	0,90	

NOTES

These factors apply to similar uniformly loaded cables.

(1) The values refer to vertical distances between walkways of 300 mm. For smaller vertical distances, the factors should be reduced.

(2) The values refer to horizontal distances between walkways of 225 mm, with walkways mounted back to back. For smaller distances, the factors should be reduced.

(3) These factors are applicable to similar uniformly loaded cables.

Technical information: CURRENT CAPACITY

CORRECTION FACTORS FOR LAYING IN FREE AIR - MULTICORE CABLES

CORRECTION FACTORS FOR CIRCUITS MADE WITH MULTI-CORE CABLES INSTALLED IN LAYERS ON MULTIPLE SUPPORTS (e.g., walkways)							
Installation method	Number of cables per support						
	Number of walkways	1	2	3	4	6	9
Perforated walkways	2	1,00	0,87	0,80	0,77	0,73	0,68
	3	1,00	0,86	0,79	0,76	0,71	0,66
	2	1,00	0,99	0,96	0,92	0,87	-
	3	1,00	0,98	0,95	0,91	0,85	-
Perforated vertical walkways	2	1,00	0,88	0,81	0,76	0,71	0,70
	2	1,00	0,91	0,88	0,87	0,85	-
Cable ladder or support element	2	1,00	0,86	0,80	0,78	0,76	0,73
	3	1,00	0,85	0,79	0,76	0,73	0,70
	2	1,00	0,99	0,98	0,97	0,96	-
	3	1,00	0,98	0,97	0,96	0,93	-

- NOTES
- These factors apply to similar uniformly loaded cables.
- (1) The values refer to vertical distances between walkways of 300 mm. For smaller vertical distances, the factors should be reduced.
- (2) The values refer to horizontal distances between walkways of 225 mm, with walkways mounted back to back. For smaller distances, the factors should be reduced.
- (3) These factors apply to similar uniformly loaded cables.

Technical information: CURRENT CAPACITY

UNDERGROUND INSTALLATION - SINGLE-CORE CABLES

Single-core cables in buried pipes in contact (1 cable per pipe)

(*) The current-carrying capacity values indicated refer to the following installation conditions:
 soil temperature = 20°C
 installation depth = 0.8 m
 thermal resistivity of the soil = 1.5K*m/W

(**) PVC based thermoplastic compound based (maximum conductor temperature = 70°C)

(***) Elastomeric compound based on ethylene propylene rubber or similar (maximum conductor temperature = 80°C)

Nominal cross section [mm²]	Capacity [A] (*)			
	Number of loaded conductors			
	2		3	
	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)	THERMOPLASTIC - 70°C (**)	ELASTOMERIC CROSSLINKED - 90°C (***)
1,50	22	26	20	23
2,50	29	34	26	31
4,00	38	44	34	40
6,00	47	54	43	49
10,00	63	73	57	67
16,00	82	95	74	85
25,00	105	122	95	110
35,00	127	148	115	133
50,00	157	182	141	163
70,00	191	222	171	198
95,00	225	261	201	233
120,00	259	301	231	268
150,00	294	343	262	304
185,00	330	385	293	340
240,00	386	450	342	397
300,00	-	509	-	448
400,00	-	592	-	519
500,00	-	666	-	583
630,00	-	759	-	663

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CORRECTION FACTORS FOR UNDERGROUND INSTALLATION

CORRECTION FACTORS FOR SOIL TEMPERATURES OTHER THAN 20°C														
Insulation type	Temperature [°C]													
	10	15	20	25	35	40	45	50	55	60	65	70	75	80
THERMOPLASTIC - 70°C	1,10	1,05	0,95	0,89	0,84	0,77	0,71	0,63	0,55	0,45	-	-	-	-
ELASTOMERIC CROSSLINKED - 90°C	1,07	1,04	0,96	0,93	0,89	0,85	0,80	0,76	0,71	0,65	0,60	0,53	0,46	0,38

Type of laying: in protective pipes buried directly in the ground
 One single-core cable for each pipe

CORRECTION FACTORS FOR GROUPS OF MULTIPLE CIRCUITS INSTALLED ON THE SAME FLOOR				
Number of cable	Distance between circuits [mm]			
	in contact	0,25	0,5	1
2	0,80	0,90	0,90	0,95
3	0,70	0,80	0,85	0,90
4	0,65	0,75	0,80	0,90
5	0,60	0,70	0,80	0,90
6	0,60	0,70	0,80	0,90

Type of laying: in protective pipes buried directly in the ground
 One multi-core cable for each pipe

Number of circuits	Distance between circuits [mm]			
	in contact	0,25	0,5	1
2	0,85	0,90	0,95	0,95
3	0,75	0,85	0,90	0,95
4	0,70	0,80	0,85	0,90
5	0,65	0,80	0,85	0,90
6	0,60	0,80	0,80	0,90

Technical information: CURRENT CAPACITY

CORRECTION FACTORS FOR UNDERGROUND INSTALLATION - FOR DIFFERENT INSTALLATION DEPTHS

Laying depth [m]					
Correction factors	0,5	0,8	1,0	1,2	1,5
	1,02	1,00	0,98	0,96	0,94

CORRECTION FACTORS FOR UNDERGROUND INSTALLATION - FOR GROUPS OF MULTIPLE CIRCUITS INSTALLED ON THE SAME FLOOR

Soil resistivity [$K \cdot m/W$]					
Correction factors	1,0	1,2	1,5	2,0	2,5
single-core cables	1,08	1,05	1,00	0,90	0,82
multicore cables	1,06	1,04	1,00	0,91	0,84