

# Current carrying capacity of medium voltage cables

acc. to HD 620 S2, part 10C

## Bayka products

The values given below are applicable to these products:

### Column *copper conductor*

N2XSY / N2XS2Y / N2XS(F)2Y / N2XS(FL)2Y:

Metro MV

### Spalte *aluminium conductor*

NA2XSY / NA2XS2Y / N2XS(F)2Y / NA2XS(FL)2Y:

Metro MV AL

## General Conditions

Temperatures °C (Conductor)	
highest permissible operating temperature	+90
highest short circuit temperature (max. 5s)	+250

Concentric conductors are grounded on both ends.

Operating frequency 50 Hz.

The tabulated loading capacities are based on various conditions such as













- operating mode,
- laying conditions,
- environmental conditions.

In the event of deviating operating conditions, the loading capacities are to be multiplied by suitable conversion factors, which are based on the same calculation principles and operating conditions as the given values.

## Current carrying capacity of medium voltage cables

### Laying in earth (20°C)













recommended values acc. to HD 620 S2, part 10C, table 7

	copper conductor N2XSY / N2XS2Y / N2XS(F)2Y / N2XS(FL)2Y						aluminium conductor NA2XSY / NA2XS2Y / N2XS(F)2Y / NA2XS(FL)2Y					
												
$U_0 / U$	6 / 10 kV		12 / 20 kV		18 / 30 kV		6 / 10 kV		12 / 20 kV		18 / 30 kV	
cross-section mm <sup>2</sup>	copper conductor rated current in A						aluminium conductor rated current in A					
25	157	179	-	-	-	-	-	-	-	-	-	-
35	187	212	189	213	-	-	-	-	-	-	-	-
50	220	249	222	250	225	251	171	194	172	195	174	195
70	268	302	271	303	274	304	208	236	210	237	213	238
95	320	359	323	360	327	362	248	281	251	282	254	283
120	363	405	367	407	371	409	283	318	285	319	289	321
150	405	442	409	445	414	449	315	350	319	352	322	354
185	456	493	461	498	466	502	357	394	361	396	364	399
240	526	563	532	568	539	574	413	452	417	455	422	458
300	591	626	599	633	606	640	466	506	471	510	476	514
400	662	675	671	685	680	695	529	558	535	564	541	570
500	744	748	754	760	765	773	602	627	609	634	616	642
630	-	-	-	-	-	-	-	-	-	-	-	-
800	-	-	-	-	-	-	-	-	-	-	-	-
1000	-	-	-	-	-	-	-	-	-	-	-	-

## Current carrying capacity of medium voltage cables

### Laying in air (30°C)

recommended values acc. to HD 620 S2, part 10C, table 8

	copper conductor N2XSY / N2XS2Y / N2XS(F)2Y / N2XS(FL)2Y						aluminium conductor NA2XSY / NA2XS2Y / N2XS(F)2Y / NA2XS(FL)2Y					
												
U <sub>0</sub> / U	6 / 10 kV		12 / 20 kV		18 / 30 kV		6 / 10 kV		12 / 20 kV		18 / 30 kV	
cross-section mm <sup>2</sup>	copper conductor rated current in A						aluminium conductor rated current in A					
25	157	179	-	-	-	-	-	-	-	-	-	-
35	187	212	189	213	-	-	-	-	-	-	-	-
50	220	249	222	250	225	251	171	194	172	195	174	195
70	268	302	271	303	274	304	208	236	210	237	213	238
95	320	359	323	360	327	362	248	281	251	282	254	283
120	363	405	367	407	371	409	283	318	285	319	289	321
150	405	442	409	445	414	449	315	350	319	352	322	354
185	456	493	461	498	466	502	357	394	361	396	364	399
240	526	563	532	568	539	574	413	452	417	455	422	458
300	591	626	599	633	606	640	466	506	471	510	476	514
400	662	675	671	685	680	695	529	558	535	564	541	570
500	744	748	754	760	765	773	602	627	609	634	616	642
630	-	-	-	-	-	-	-	-	-	-	-	-
800	-	-	-	-	-	-	-	-	-	-	-	-
1000	-	-	-	-	-	-	-	-	-	-	-	-

## Current carrying capacity of medium voltage cables

### Admissible short-circuit temperatures and rated short-circuit current densities

recommended values acc. to HD 620 S2, part 10C, table 12

cables with ▼	admissible short-circuit temperature	rated short-circuit current densities in A/mm <sup>2</sup> for a rated short-circuit duration of 1s							
		conductor temperature at the beginning of short-circuit in °C							
		90	80	70	60	50	40	30	20
copper conductor	250	143	149	154	159	165	170	176	181
aluminium conductor	250	94	98	102	105	109	113	116	120