

Polycab offers a comprehensive range of HFFR Panel wire and cable conforming to IS 17048 standards.



These are low voltage cable of 1100 V grade with excellent Halogen Free Flame retardant (HFFR) properties.

These cables are available with halogen free compound having temperature rating of 70° C to 90°C and suitable to use in panel wiring.

Conductor: High conductivity annealed plain bunched/stranded copper conductor produced in-house from state-of-the art machine.

Insulation: In-house developed high insulation resistance thermoplastic or cross linked halogen free compound.

Polycab assures the highest quality standard in every product by having stringent quality control with requisite testing which are applied at every single stage from raw material to finished goods.

The construction is based on the application and requirement of the user against IS 17048:2018.



[POLYCAB HFFR-04XZ-R SC - Industrial cable, 1100 V AC](#)



[POLYCAB HFFR-01Z-R/03XZ-R SC - Industrial cable, 1100 V AC](#)



[POLYCAB HFFR-01Z-K/03XZ-K SC - Industrial cable, 1100 V AC](#)



[POLYCAB HFFR-04XZ-K SC - Industrial cable, 1100 V AC](#)

POLYCAB HFFR-04XZ-K SC

Industrial cable, 1100 V AC



Application

POLYCAB HFFR-04XZ-K SC, Single core cable insulated with cross linked halogen free flame retardant compound having low smoke emission and corrosive gases when exposed to fire condition. This cable is designed to use in conduit and for fixed protected installation. This is also suitable to use high rise buildings, hospitals, and offices where Smoke emission and toxic fume create a potential risk to life as well as the lifesaving equipment.

Voltage Rating

1100 V

Operation Temperature

Fixed: -15°C to + 90° C

Construction

- Annealed bare or tinned bunched copper conductor as per IS 8130, class 5
- Insulated with cross linked halogen free flame retardant compound type HFI-XL 90 to IS 17048

Core Identification

Red/Black/Blue/Yellow/White/Grey/Green-Yellow

Bending Radius

Fixed 4 x Overall Diameter
Occasional 6 x Overall Diameter

Standard and References

IS 8130
IS 17048
IEC 60332-1-2

Test Voltage

3000V AC at room temperature

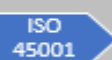
Compliance

Conductor resistance	IS 8130
Insulation resistance	IS 17048:2018
Oxygen Index	31% As per ASTM D2863
Smoke emission test	< 6% As Per ASTM D2843
Acid gas Generation	<0.0 As per IEC 60754-1
Test on vertical flame	Resist as per IEC 60332-1-2

Approval



OUR ACCREDITATION



POLYCAB HFFR-04XZ-K SC

Industrial cable, 1100 V AC

Product Code	Nominal cross-sectional area mm ²	Insulation thickness mm	Overall Diameter (Approx.) mm	Weight (Approx.)
LDIS09CLUALC001C0.5S	0.5	0.6	2.11	9
LDIS09CLUALC001C.75S	0.75	0.6	2.32	11
LDIS09CLUALC001C001S	1	0.6	2.49	14
LDIS09CLUALC001C1.5S	1.5	0.6	2.76	19
LDIS09CLUALC001C2.5S	2.5	0.7	3.42	31
LDIS09CLUALC001C004S	4	0.8	4.07	45
LDIS09CLUALC001C006S	6	0.8	4.62	64
LDIS09CLUALC001C010S	10	1	5.92	106
LDIS09CLUALC001C016S	16	1	6.97	162
LDIS09CLUALC001C025S	25	1.2	8.53	245
LDIS09CLUALC001C035S	35	1.2	9.71	338
LDIS09CLUALC001C050S	50	1.4	11.58	486
LDIS09CLUALC001C070S	70	1.4	13.25	672
LDIS09CLUALC001C095S	95	1.6	15.21	888
LDIS09CLUALC001C120S	120	1.6	16.81	1123
LDIS09CLUALC001C150S	150	1.8	18.77	1397
LDIS09CLUALC001C185S	185	2	20.75	1705
LDIS09CLUALC001C240S	240	2.2	23.70	2253
LDIS09CLUALC001C300S	300	2.4	27.07	2982

OUR ACREDITATION



POLYCAB HFFR-04XZ-K SC

Industrial cable, 1100 V AC

Electrical Characteristics

Current carrying capacity and maximum DC resistance

Nominal cross-sectional area mm ²	Reference method B (enclosed in conduit on a wall or in trunking etc)		Reference method C (clipped direct)		Reference method F (in free air or on a perforated cable tray etc horizontal or vertical etc.) Touching		Reference method G (in free air) spaced by one cable diameter		Maximum DC conductor resistance at 20°C Ω/km
	2 cables single phase ac or dc Amp.	3 or 4 cables three phase ac Amp.	2 cables single phase ac or dc flat and touching Amp.	3 or 4 cables three phase ac flat and touching or trefoil Amp.	2 cables single phase ac or dc flat Amp.	3 cables three phase ac trefoil Amp.	2 cables, single phase ac or dc 3 cables three phase ac flat		
							Horizontal Amp.	Vertical Amp.	
0.5	5	4	5	5	-	-	-	-	39
0.75	9	8	10	9	-	-	-	-	26
1	15	13	16	15	-	-	-	-	19.5
1.5	20	17	22	20	-	-	-	-	13.3
2.5	27	36	29	27	-	-	-	-	7.98
4	36	32	40	35	-	-	-	-	4.95
6	47	41	51	47	-	-	-	-	3.3
10	65	57	70	64	-	-	-	-	1.91
16	86	76	94	86	-	-	-	-	1.21
25	117	103	126	115	142	119	161	142	0.78
35	145	127	155	142	177	149	199	177	0.554
50	175	154	201	184	214	183	243	217	0.386
70	223	196	259	237	274	237	312	281	0.272
95	270	237	313	288	333	290	380	343	0.206
120	312	275	365	335	386	338	441	401	0.161
150	347	302	420	385	445	392	509	465	0.129
185	396	339	481	441	508	450	583	534	0.106
240	466	397	568	521	599	536	689	635	0.0801
300	532	454	656	601	691	621	796	735	0.0641

Air Ambient temperature: 40°C, Conductor operating temperature: 90°C

The above table is in accordance with BS 7671(Table 4E1A)

De-Rating Factor

De-rating factor for various ambient temperature.

Air Temperature	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C	85°C
De-Rating Factor	1.04	1.0	0.95	0.89	0.84	0.82	0.77	0.63	0.55	0.45	0.32

OUR ACCREDITATION



POLYCAB HFFR-04XZ-R SC

Industrial cable, 1100 V AC



Application

POLYCAB HFFR-04XZ-R SC, insulated with cross linked halogen free flame retardant compound having low smoke emission and corrosive gases when exposed to fire condition. This cable is designed to use in conduit and for fixed protected installation. This is also suitable to use high rise buildings, hospitals, and offices where Smoke emission and toxic fume create a potential risk to life as well as the lifesaving equipment.

Voltage Rating

1100 V

Operation Temperature

Fixed: -15°C to + 90° C

Construction

- Annealed stranded bare or tinned copper conductor as per IS 8130, class 2
- Insulated with cross linked halogen free flame retardant (HFFR) compound type HFI-XL 90 to IS 17048

Core Identification

Red/Black/Blue/Yellow/White/Grey.

Bending Radius

Fixed 4 x Overall Diameter
Occasional 6 x Overall Diameter

Standard and References

IS 8130
IS 17048
IEC 60332-1-2

Test Voltage

3000V AC at room temperature

Compliance

Oxygen Index	31%	As per ASTM D2863
Smoke emission test	< 6%	As Per ASTM D2843
Acid gas Generation	<0.0	As per IEC 60754-1
Test on vertical flame	as per IEC 60332-1-2	

Approval



OUR ACCREDITATION



POLYCAB HFFR-04XZ-R SC

Industrial cable, 1100 V AC

Product Code	Nominal cross sectional area mm ²	Insulation thickness mm	Overall Diameter (Approx.) mm	Weight (Approx.)
LDIS09CLUALC001C001S	1	0.7	2.67	15
LDIS09CLUALC001C1.5S	1.5	0.7	3.00	21
LDIS09CLUALC001C2.5S	2.5	0.8	3.62	32
LDIS09CLUALC001C004S	4	0.8	4.19	49
LDIS09CLUALC001C006S	6	0.8	4.74	68
LDIS09CLUALC001C010S	10	1.0	6.07	113
LDIS09CLUALC001C016S	16	1.0	7.13	171
LDIS09CLUALC001C025S	25	1.2	8.85	269
LDIS09CLUALC001C035S	35	1.2	10.00	364
LDIS09CLUALC001C050S	50	1.4	11.25	452
LDIS09CLUALC001C070S	70	1.4	13.53	707
LDIS09CLUALC001C095S	95	1.6	15.72	960
LDIS09CLUALC001C120S	120	1.6	17.28	1198
LDIS09CLUALC001C150S	150	1.8	19.34	1498
LDIS09CLUALC001C185S	185	2.0	21.47	1847
LDIS09CLUALC001C240S	240	2.2	24.30	2387
LDIS09CLUALC001C300S	300	2.4	27.06	2979
LDIS09CLUALC001C400S	400	2.6	30.84	3930
LDIS09CLUALC001C500S	500	2.8	34.36	4926
LDIS09CLUALC001C630S	630	2.8	37.90	6154

OUR ACREDITATION



POLYCAB HFFR-04XZ-R SC

Industrial cable, 1100 V AC

Electrical Characteristics

Current carrying capacity and Max. DC conductor resistance.

Nominal cross-sectional area mm ²	Reference Method B (enclosed in conduit on a wall or in trunking etc.)		Reference method C (clipped direct)		Reference Method F (in free air or on a perforated cable tray etc horizontal or vertical etc.)			Reference Method G (in free air)		Max. DC conductor resistance at 20°C
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, three-phase a.c.	2 cables single phase ac or dc flat and touching	3 or 4 cables three phase ac flat and touching or trefoil	Touching			Spaced by one cable diameter		
					2 cables, single-phase a.c. or d.c. flat	3 cables, three-phase a.c. flat	3 cables, three-phase a.c. trefoil	2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat	Hori zontal	
Amp.	Amp.	Amp.	Amp.	Amp.	Amp.	Amp.	Amp.	Amp.	Amp.	
1	15.5	14	17	16	-	-	-	-	13	18.1
1.5	21	18	23	21	-	-	-	-	17	12.1
2.5	28	38	31	28	-	-	-	-	24	7.41
4	38	34	42	37	-	-	-	-	32	4.61
6	49	44	54	49	-	-	-	-	41	3.08
10	68	60	74	67	-	-	-	-	56	1.83
16	91	80	99	90	-	-	-	-	74	1.15
25	121	106	130	118	147	123	166	147	96	0.727
35	149	131	160	147	182	154	206	183	119	0.524
50	180	159	207	190	220	188	250	224	144	0.387
70	230	202	267	244	282	244	321	289	182	0.268
95	278	245	323	297	343	298	391	354	219	0.193
120	322	284	376	345	398	349	455	413	253	0.153
150	358	311	433	397	459	404	525	480	289	0.124
185	409	349	496	455	523	464	602	551	329	0.0991
240	480	410	586	537	618	552	711	654	386	0.0754
300	549	468	676	620	713	640	821	758	442	0.0601
400	622	531	790	722	855	749	987	917	-	0.047
500	713	606	901	823	986	861	1140	1064	-	0.0366
630	819	695	1028	940	1141	990	1323	1239	-	0.0283

The ambient temperature is 40°C.

Conductor operating temperature 90°C.

The above table is in accordance with Table 4E1A of BS 7671:2018

De-Rating Factor

De-rating factor for 90°C thermosetting insulated cable

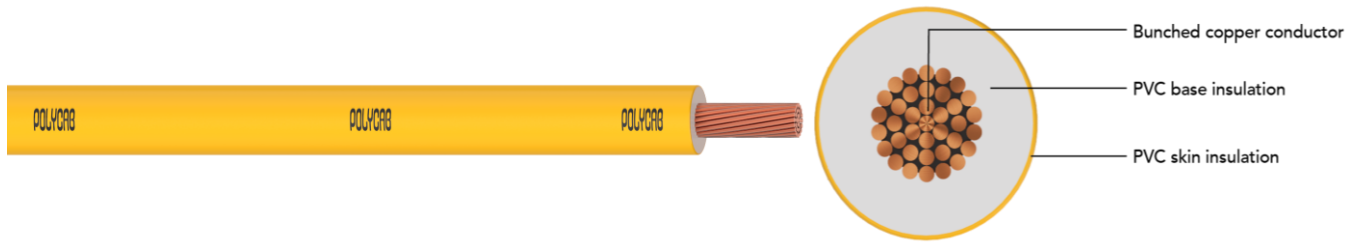
Air Temperature	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C	85°C
De-Rating Factor	1.04	1.0	0.95	0.89	0.84	0.82	0.77	0.63	0.55	0.45	0.32

OUR ACCREDITATION



POLYCAB HFFR-01Z-K/03XZ-K SC

Industrial cable, 1100 V AC



Application

POLYCAB HFFR-01Z-K/03XZ-K SC, insulated with cross linked halogen free flame retardant compound thermoplastic or cross linked thermoset compound having low smoke emission and corrosive gases when exposed to fire condition. This cable is designed to use in conduit and for fixed protected installation. This is also suitable to use high-rise buildings, hospitals, and offices where Smoke emission and toxic fume create a potential risk to life as well as the lifesaving equipment.

Voltage Rating

1100 V

Operation Temperature

Fixed: -15°C to + 70° C

Construction

- Annealed bare or tinned bunched copper conductor as per IS 8130, class 5
- Insulated with halogen free flame retardant compound type HFI-TP 70 or cross linked halogen free flame retardant compound type HFI-XL 70 as per IS 17048

Core Identification

Red/Black/Blue/Yellow/White/Grey/Green-Yellow

Bending Radius

Fixed 4 x Overall Diameter
Occasional 6 x Overall Diameter

Standard and References

IS 8130
IS 17048
IEC 60332-1-2

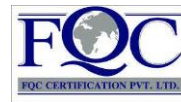
Test Voltage

3000V AC at room temperature

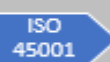
Compliance

Oxygen Index	> 31%	As per ASTM D2863
Smoke emission test	< 6%	As Per ASTM D2843
Acid gas Generation	- <0.0	As per IEC 60754-1
Under fire condition	- Resist	as per EN 60332-1-2

Approval



OUR ACREDITATION



POLYCAB HFFR-01Z-K/03XZ-K SC

Industrial cable, 1100 V AC

Product Code	Nominal cross sectional area mm ²	insulation thickness mm	Overall Diameter (Approx.) mm	Weight (Approx.) Kg/km
LDIS09CLUALS001C0.5S	0.5	0.6	2.11	9
LDIS09CLUALS001C.75S	0.75	0.6	2.32	11
LDIS09CLUALS001C001S	1	0.6	2.49	14
LDIS09CLUALS001C1.5S	1.5	0.6	2.76	19
LDIS09CLUALS001C2.5S	2.5	0.7	3.42	31
LDIS09CLUALS001C04S	4	0.8	4.07	45
LDIS09CLUALS001C006S	6	0.8	4.62	64
LDIS09CLUALS001C010S	10	1	5.92	106
LDIS09CLUALS001C016S	16	1	6.97	162
LDIS09CLUALS001C025S	25	1.2	8.53	245
LDIS09CLUALS001C035S	35	1.2	9.71	338
LDIS09CLUALS001C050S	50	1.4	11.58	486
LDIS09CLUALS001C070S	70	1.4	13.25	672
LDIS09CLUALS001C095S	95	1.6	15.21	888
LDIS09CLUALS001C120S	120	1.6	16.81	1123
LDIS09CLUALS001C150S	150	1.8	18.77	1397
LDIS09CLUALS001C185S	185	2	20.75	1705
LDIS09CLUALS001C240S	240	2.2	23.70	2253
LDIS09CLUALS001C300S	300	2.4	27.07	2982

OUR ACREDITATION



POLYCAB HFFR-01Z-K/03XZ-K SC

Industrial cable, 1100 V AC

Electrical characteristics

Current carrying capacity and maximum DC conductor resistance.

Nominal cross sectional area mm ²	Reference method B (enclosed in conduit on a wall or in trunking etc)		Reference method C (clipped direct)		Reference method F (in free air or on a perforated cable tray horizontal or vertical)					Maximum DC conductor resistance at 20°C Ω/km
	2 cables single phase AC or DC Amp.	3 or 4 cables three phase AC Amp.	2 cables single phase AC or DC flat and touching Amp.	3 or 4 cables three phase AC flat and touching or trefoil Amp.	Touching			Spaced by one meter		
					2 cables single phase AC or DC flat Amp.	3 cables three phase AC flat Amp.	3 cables three phase AC trefoil Amp.	2 cables ,single-phase AC or DC or 3 cables three phase AC flat		
								Hori zontal Amp.	Verti cal Amp.	
0.5	4	3.6	4.6	4	-	-	-	-	-	39
0.75	7	6	8	7	-	-	-	-	-	26
1	11	10	13	12	-	-	-	-	-	19.5
1.5	14	13	17	15	-	-	-	-	-	13.3
2.5	20	17	22	21	-	-	-	-	-	7.98
4	26	23	31	27	-	-	-	-	-	4.95
6	34	30	39	36	-	-	-	-	-	3.3
10	47	41	54	49	-	-	-	-	-	1.91
16	63	56	72	65	-	-	-	-	-	1.21
25	85	75	96	88	111	96	93	123	110	0.78
35	105	93	119	109	137	121	116	153	137	0.554
50	127	113	154	141	165	147	141	185	166	0.386
70	162	144	197	181	212	190	182	237	214	0.272
95	196	175	240	220	257	232	223	288	262	0.206
120	227	202	278	256	297	271	260	334	305	0.161
150	253	221	322	295	343	314	300	385	354	0.129
185	288	250	368	338	391	360	345	440	405	0.106
240	338	292	435	398	461	428	409	519	480	0.0801
300	387	332	501	460	531	495	473	598	556	0.0641

The ambient temperature is 40°C.

Conductor operating temperature 70°C.

The above table is in accordance with the BS 7671(Table 4D1A)

De-Rating Factor

De-rating factor for 70°C thermoplastic or thermosetting insulated cable

Ambient Temperature	35°C	40°C	45°C	50°C	55°C	60°C	65°C
De-Rating Factor	1.08	1	0.91	0.82	0.7	0.57	0.4

Note:

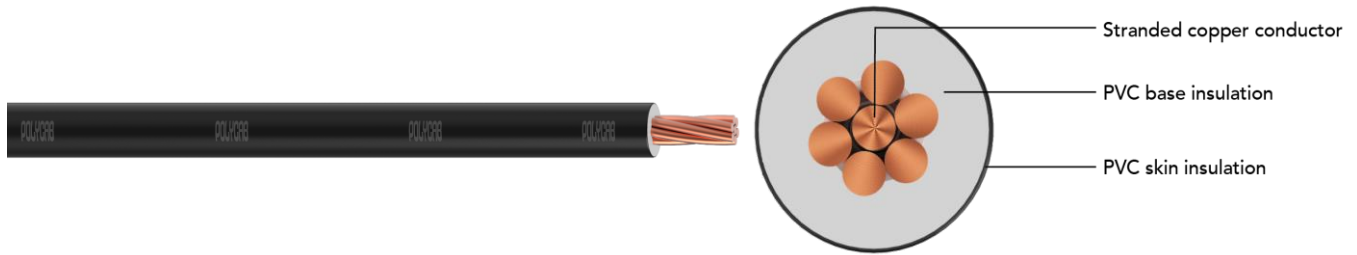
Cable with HFI XL-70 insulation is available on demand.

OUR ACCREDITATION



POLYCAB HFFR-01Z-R/03XZ-R SC

Industrial cable, 1100 V AC



Application

POLYCAB HFFR-01Z-R/03XZ-R SC, insulated with halogen free flame retardant thermoplastic compound or cross-linked halogen free flame retardant thermoset compound having low smoke emission and corrosive gases when exposed to fire condition. This cable is designed to use in conduit and for fixed protected installation. This is also suitable to use high rise buildings, hospitals, and offices where Smoke emission and toxic fume create a potential risk to life as well as the lifesaving equipment.

Voltage Rating

1100 V

Operation Temperature

Fixed: -15°C to + 70° C

Construction

- Annealed stranded bare or tinned copper conductor as per IS 8130, class 2
- Insulated with halogen free flame retardant compound type HFI-TP 70 or cross-linked halogen free flame retardant compound type HFI-XL 70 as per IS 17048

Core Identification

Red/Black/Blue/Yellow/White/Grey.

Bending Radius

Fixed installation – 6 x Overall Dia.

Standard and References

IS 8130
IS 17048
IEC 60332-1-2

Test Voltage

3000V AC at room temperature

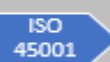
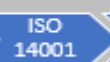
Compliance

Oxygen Index	> 31%	As per ASTM D2863
Smoke emission test	< 6%	As Per ASTM D2843
Acid gas Generation	- <0.0	As per IEC 60754-1
Under fire condition	-	As per EN 60332

Approval



OUR ACCREDITATION



POLYCAB HFFR-01Z-R/03XZ-R SC

Industrial cable, 1100 V AC

Product Code	Nominal cross-sectional area mm ²	Insulation thickness mm	Overall Diameter (Approx.) mm	Weight (Approx.)
LDIS09CLUALS001C001S	1	0.7	2.67	15
LDIS09CLUALS001C1.5S	1.5	0.7	3.00	21
LDIS09CLUALS001C2.5S	2.5	0.8	3.62	32
LDIS09CLUALS001C004S	4	0.8	4.19	49
LDIS09CLUALS001C006S	6	0.8	4.74	68
LDIS09CLUALS001C010S	10	1.0	6.07	113
LDIS09CLUALS001C016S	16	1.0	7.13	171
LDIS09CLUALS001C025S	25	1.2	8.85	269
LDIS09CLUALS001C035S	35	1.2	10.00	364
LDIS09CLUALS001C050S	50	1.4	11.25	452
LDIS09CLUALS001C070S	70	1.4	13.53	707
LDIS09CLUALS001C095S	95	1.6	15.72	960
LDIS09CLUALS001C120S	120	1.6	17.28	1198
LDIS09CLUALS001C150S	150	1.8	19.34	1498
LDIS09CLUALS001C185S	185	2.0	21.47	1847
LDIS09CLUALS001C240S	240	2.2	24.30	2387
LDIS09CLUALS001C300S	300	2.4	27.06	2979
LDIS09CLUALS001C400S	400	2.6	30.84	3930
LDIS09CLUALS001C500S	500	2.8	34.36	4926
LDIS09CLUALS001C630S	630	2.8	37.90	6154

OUR ACREDITATION



POLYCAB HFFR-01Z-R/03XZ-R SC

Industrial cable, 1100 V AC

Electrical characteristics

Current carrying capacity and maximum DC conductor resistance.

Nominal cross sectional area mm ²	Reference method B (enclosed in conduit on a wall or in trunking etc)		Reference method C (clipped direct)		Reference method F (in free air or on a perforated cable tray horizontal or vertical)					Maximum DC conductor resistance at 20°C Ω/km
	2 cables single phase AC or DC Amp.	3 or 4 cables three phase AC Amp.	2 cables single phase AC or DC flat and touching Amp.	3 or 4 cables three phase AC flat and touching or trefoil Amp.	Touching			Spaced by one meter		
					2 cables single phase AC or DC flat Amp.	3 cables three phase AC flat Amp.	3 cables three phase AC trefoil Amp.	2 cables ,single-phase AC or DC or 3 cables three phase AC flat		
								Horizontal Amp.	Vertical Amp.	
1	12	10	13	12	-	-	-	-	-	18.1
1.5	15	13	17	16	-	-	-	-	-	12.1
2.5	21	18	23	22	-	-	-	-	-	7.41
4	28	24	32	29	-	-	-	-	-	4.61
6	36	31	41	37	-	-	-	-	-	3.08
10	50	44	57	51	-	-	-	-	-	1.83
16	66	59	76	69	-	-	-	-	-	1.15
25	88	77	99	90	114	99	96	127	113	0.727
35	109	96	123	112	141	124	119	157	141	0.524
50	131	117	158	145	171	151	145	191	171	0.387
70	167	149	204	186	218	196	188	244	221	0.268
95	202	180	247	227	264	239	230	297	271	0.193
120	234	208	287	264	306	279	268	345	315	0.153
150	261	228	331	304	353	324	310	397	365	0.124
185	297	258	379	348	403	371	356	453	418	0.0991
240	348	301	448	411	475	441	422	535	495	0.0754
300	398	343	517	474	547	511	488	617	573	0.0601
400	475	406	604	552	656	599	571	741	692	0.047
500	545	464	689	629	755	686	652	854	800	
630	626	532	786	719	874	787	744	990	931	

Ambient temperature: 40°C

Conductor operating temperature: 70°C

The above table is in accordance with BS 7671(Table 4D1A)

De-Rating Factor

De-rating factor for various ambient temperature other than 40°C.

Ambient Temperature	45°C	50°C	55°C	60°C	65°C
De-Rating Factor	0.91	0.82	0.71	0.58	0.41

Note:

Cable with HFI XL-70 insulation available on demand

OUR ACCREDITATION

