

FIREX®

Interlock Armored Cables TECK90 and MC Industrial Cables



LEAD FREE



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OVER 180 YEARS OF EXPERIENCE

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Interlock Armored Cables

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Introduction

Nexans is one of the largest wire and cable manufacturers in the world, and in North America. In North America we manufacture in locations across the United States and Canada. We design and produce a wide range of cables used in power, industrial, construction and communication applications.

With more than nine decades of experience as a leader in the industrial and power cable markets, Nexans is contracted by heavy industry and utilities worldwide to provide turnkey solutions for the bulk transmission of power - from generating station through the transmission and distribution systems to commercial, residential and industrial areas.

This catalog has been prepared for the convenience of those using electrical conductors in industrial, commercial and residential applications. The information included in the many tabulations will be of particular value to the architect, engineer, electrician, and layperson alike.

Although we have listed the types of wires and cables suitable for most conditions, we are equipped to manufacture other types to suit special needs. We would be pleased to recommend the most suitable construction for any special condition that you may encounter.

The determination of the correct cable size and type, and the selection of methods of installation suitable for the type and location of particular circuits, should be made in accordance with local regulations. Any questions in this respect should be directed primarily to the local Electrical Inspection Authority.

We are pleased to note that all the cables in this catalog are LEAD FREE. This indicates that the Nexans cable components have less than 300 ppm of lead, which is well below the 1000 ppm level indicated in RoHS (restriction of hazardous substances) regulations and below the level requiring labeling by California proposition #65.

Applications

FIREX®-II TECK Cables, originally developed for use in Canadian mines, are flexible, resistant to mechanical abuse, corrosion resistant, compact and reliable. They are suitable for a wide range of applications, including hazardous locations.

Industries such as pulp and paper, chemical, petroleum and other primary and secondary manufacturing industries have used FIREX®-II TECK Cables, particularly in areas where cables are subject to the risk of mechanical damage and chemical attack.

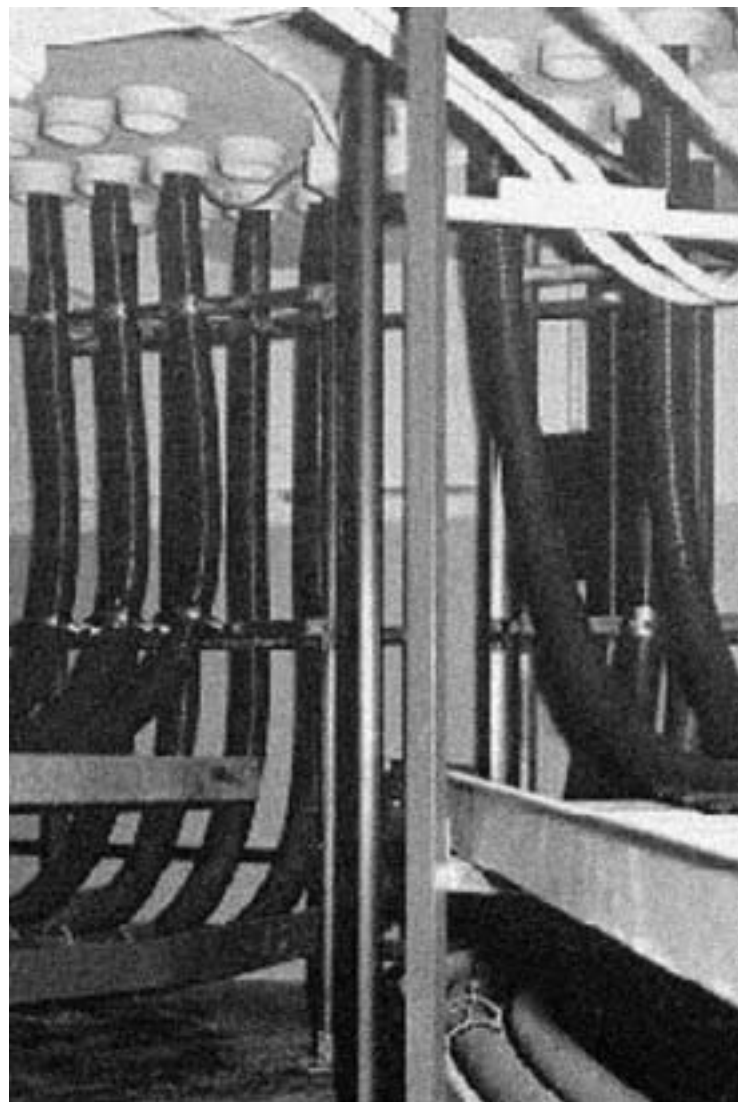
Commercial applications for FIREX®-II TECK Cables include apartment buildings and commercial complexes.

FIREX®-II TECK Cables can be relocated easily because they are rugged and flexible. They can be used in both dry and wet locations in open wiring, in ventilated, non-ventilated and ladder-type cable troughs, in ventilated flexible cableways, and for direct burial. TECK Cables are also suitable for service entrance installations – above and below ground.

Highlights

Nexans FIREX®-II TECK Cables are

- Available from stock
- Versatile
- Flexible
- Resistant to Mechanical Abuse and Corrosion
- Compact and Reliable
- "HL" and "FT4" Rated per CSA
- 90°C to -40°C
- Low Acid Gas (AG14)
- Lead Free



Aluminum Interlock Armored Power and Control Cable -40°C / +90°C rated - Lead Free Multiple conductors, with ground wire, inner PVC jacket, aluminum interlocked armor, outer PVC jacket

Construction

Conductor: bare, annealed copper Class B stranded in accordance with ASTM B8. In sizes 8 AWG to 1000 kcmil, the conductors are compact stranded to reduce cable diameter and weight.

Conductor Shield: extruded semi-conducting cross-linked polyethylene is applied for cables rated over 1000 volts.

Insulation: cross linked polyethylene. Meets CSA C22.2 No. 38 type RW90 for unshielded cables rated 5 kV or less.

Assembly: conductors are cabled in concentric layers with grounding wire, interstices are filled with suitable non-hygroscopic fillers, as required. A binder tape of synthetic material assembles the core in an essentially round configuration, as required.

Inner Jacket: black polyvinyl chloride jacket per CSA C22.2 No. 131-07, 90°C temperature rating, flame-retardant, low-acid-gas-emitting.

Armor: interlocking aluminum tape armor applied directly over the inner jacket.

Outer Jacket: overall polyvinyl chloride jacket per CSA C22.2 No. 131-07; low acid gas emission; limited flame spread and excellent corrosion resistance. Jacket color is black for 600 V and 1 kV cables, orange for 5 kV cables.

Conductor Identification

1 conductor: black
 2 conductors: black, white
 3 conductors: red, black, blue
 4 conductors: red, black, blue, white
 5 or more: number coding
 Composite:
 Power: color coded
 Control: number coded
 For color coding:
 14 AWG to 2 AWG: colored insulation
 1 AWG and larger: printed color stripe

Bending Radius

Fixed position:
 Unshielded Cables: 7 × cable overall diameter
 Shielded Cables: 12 × cable overall diameter

During pulling:
 Twice the above values

Specifications

- Meets the requirements of CSA C22.2 No. 38 type RW90 for unshielded conductors
- Meets CSA C22.2 No. 131-07 type TECK Cables up to 5 kV unshielded
- Control cables meet CSA C22.2 No. 239-97(R2006).

Product features

- Cables are CSA listed as Type TECK (for cables up to 5 kV)
- CSA listed insulated conductors
- Cables are flame-retardant and pass CSA FT1
- Cables are fire-retardant and pass CSA FT4
- ICEA T-29-520 Fire Test at 210,000 BTU/hr, IEEE 1202, 383 and UL 1685
- Cables are low-acid-gas-emitting per CSA C22.2 No. 0.3-01 and marked AG14
- Cables exhibit a -40°C low temperature rating with suitable precautions
- Temperature rating of 90°C dry and wet
- 130°C emergency rating and 250°C short circuit rating
- Cables are rated for Hazardous Locations (HL) per CSA C22.2 No. 174-M1987(R2008)*
- Excellent mechanical and physical properties
- Sunlight and oil resistant jacket
- Lead Free and RoHS compliant
- Suitable for direct burial, use in cable tray and embedment in concrete

Options

The following constructions can be provided on special orders:

- Aluminum conductors
- Steel interlock armor
- Extra ground wires
- Special color or number coding
- Specially colored jackets
- Other constructions and combinations (some manufacturing restrictions apply)

***Note:** These cables cannot be used in Class I or II Division 1 locations in accordance with the N.E.C.

Aluminum Interlocked Armored Power and Control Cable -40°C / +90°C rated - Lead Free

600 V, Multiconductor, 14 AWG (7w) with 14 AWG (7w) bare ground
Insulation Thickness: 30 mils / 0.76 mm
***Ampacity at 30°C Ambient Temperature: 15 Amps**

Part Number	# of Cond.	Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Armor		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight	
		mils	mm	inches	mm	inches	mm	inches	mm	lb/kft	kg/km
422204	2	45	1.14	.369	9.37	.600	15.24	.688	17.48	191	284
422212	3	45	1.14	.390	9.91	.621	15.77	.709	18.01	225	335
422220	4	45	1.14	.444	11.27	.676	17.17	.761	19.33	266	396
422238	5	45	1.14	.472	11.99	.703	17.86	.787	19.99	306	455
422246	6	45	1.14	.515	13.08	.743	18.87	.828	21.03	316	471
422253	7	45	1.14	.522	13.26	.755	19.18	.844	21.44	338	502
422261	8	60	1.52	.597	15.16	.825	20.96	.909	23.09	384	571
444182	9	60	1.52	.608	15.45	.836	21.23	.923	23.44	409	609
388207	10	60	1.52	.671	17.04	.898	22.81	.984	24.99	448	667
-----	11	60	1.52	.679	17.25	.906	23.01	.992	25.18	466	693
422279	12	60	1.52	.700	17.78	.927	23.55	1.013	25.73	489	728
443184	15	60	1.52	.764	19.41	.990	25.15	1.090	27.69	583	868
670101	19	60	1.52	.835	21.21	1.073	27.25	1.157	29.39	748	1113
398883	20	60	1.52	.850	21.59	1.105	28.07	1.189	30.20	766	1140
398875	25	80	2.03	.983	24.99	1.239	31.47	1.326	33.68	852	1268
432989	30	80	2.03	1.060	26.92	1.311	33.30	1.399	35.53	995	1481
-----	35	80	2.03	1.152	29.26	1.372	34.85	1.488	37.80	1066	1587
444547	40	80	2.03	1.179	29.95	1.431	36.35	1.519	38.58	1224	1822
443796	50	80	2.03	1.282	32.56	1.535	38.99	1.642	41.71	1468	2184
369785	60	80	2.03	1.435	36.45	1.710	43.43	1.850	46.99	1613	2400
-----	80	80	2.03	1.604	40.74	1.954	49.63	2.094	53.18	2132	3173
-----	90	80	2.03	1.689	42.90	2.039	51.79	2.183	55.44	2347	3494

600 V, Multiconductor, 12 AWG (7w) with 14 AWG (7w) bare ground
Insulation Thickness: 30 mils / 0.76 mm
***Ampacity at 30°C Ambient Temperature: 20 Amps**

Part Number	# of Cond.	Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Armor		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight	
		mils	mm	inches	mm	inches	mm	inches	mm	lb/kft	kg/km
422287	2	45	1.14	.405	10.29	.636	16.15	.724	18.39	238	354
422295	3	45	1.14	.429	10.90	.660	16.76	.745	18.92	280	417
422303	4	45	1.14	.502	12.75	.733	18.62	.817	20.75	298	443
383679	5	45	1.14	.522	13.26	.752	19.10	.839	21.31	347	516
422311	6	60	1.52	.599	15.21	.828	21.03	.912	23.16	402	598
422329	7	60	1.52	.614	15.60	.843	21.41	.927	23.55	438	652
383695	8	60	1.52	.656	16.66	.884	22.45	.971	24.66	476	708
-----	9	60	1.52	.700	17.78	.940	23.87	1.014	25.76	496	738
422337	10	60	1.52	.744	18.90	.988	25.10	1.077	27.35	531	790
-----	11	60	1.52	.760	19.30	1.028	26.11	1.096	27.84	622	925
416388	12	60	1.52	.776	19.71	1.037	26.34	1.125	28.58	651	969
444653	15	60	1.52	.842	21.39	1.101	27.97	1.189	30.20	755	1123
-----	19	80	2.03	.905	22.99	1.141	29.46	1.233	31.32	937	1394
432732	20	80	2.03	.974	24.74	1.233	31.32	1.321	33.55	973	1448
291104	25	80	2.03	1.093	27.76	1.348	34.24	1.436	36.47	1165	1733
444638	30	80	2.03	1.167	29.64	1.421	36.09	1.509	38.32	1302	1938
-----	35	80	2.03	1.308	33.22	1.528	38.81	1.668	42.36	1533	2281
-----	40	80	2.03	1.367	34.72	1.642	41.71	1.737	44.12	1593	2370
-----	50	80	2.03	1.483	37.67	1.758	44.65	1.853	47.06	1884	2804
-----	60	80	2.03	1.615	41.03	1.965	49.91	2.015	51.18	2311	3439
-----	80	110	2.79	1.865	47.37	2.215	56.26	2.269	57.63	3021	4495
-----	90	110	2.79	1.962	49.85	2.312	58.72	2.366	60.09	3318	4937

*Ampacity in accordance with the Canadian Electrical Code, Part 1. Derating required for more than 3 conductors.

Aluminum Interlocked Armored Power and Control Cable -40°C / +90°C rated - Lead Free

600 V, Multiconductor, 10 AWG (7w) with 12 AWG (7w) bare ground

Insulation Thickness: 30 mils / 0.76 mm

***Ampacity at 30°C Ambient Temperature: 30 Amps**

Part Number	# of Cond.	Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Armor		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight	
		mils	mm	inches	mm	inches	mm	inches	mm	lb/kft	kg/km
383588	2	45	1.14	.452	11.48	.684	17.37	.769	19.53	272	405
422345	3	45	1.14	.481	12.23	.712	18.08	.798	20.27	339	504
422352	4	45	1.14	.560	14.22	.783	19.89	.867	22.02	383	570
_____	5	60	1.52	.604	15.35	.833	21.16	.918	23.32	421	627
069815	6	60	1.52	.671	17.04	.900	22.86	.985	25.01	517	770
248153	7	60	1.52	.699	17.75	.928	23.57	1.018	25.85	539	802
318246	8	60	1.52	.726	18.44	.954	24.23	1.047	26.59	617	918
_____	9	60	1.52	.766	19.45	1.006	24.55	1.094	27.79	633	942
444562	10	60	1.52	.840	21.33	1.100	27.94	1.188	30.18	776	1154
_____	11	60	1.52	.879	22.33	1.135	28.83	1.222	31.03	795	1183
105395	12	80	2.03	.917	23.29	1.178	29.92	1.266	32.16	885	1318
444612	15	80	2.03	.987	25.06	1.247	31.67	1.335	33.91	1056	1571
_____	19	80	2.03	1.066	27.07	1.321	33.55	1.414	35.92	1209	1800
444620	20	80	2.03	1.098	27.89	1.357	34.47	1.445	36.70	1291	1921
_____	25	80	2.03	1.229	31.22	1.504	38.20	1.596	40.54	1528	2274
626804	30	80	2.03	1.317	33.45	1.573	39.95	1.680	42.67	1770	2634
_____	35	80	2.03	1.494	37.96	1.714	43.54	1.854	47.10	2097	3121
_____	40	80	2.03	1.567	39.80	1.917	48.69	1.967	49.96	2298	3421
_____	50	80	2.03	1.701	43.21	2.051	52.10	2.105	53.47	2743	4082
_____	60	110	2.79	1.910	48.50	2.260	57.40	2.314	58.78	3303	4916
_____	80	110	2.79	2.133	54.18	2.483	63.07	2.570	65.28	4225	6288
_____	90	110	2.79	2.246	57.05	2.596	65.94	2.683	68.15	4656	6928

*Ampacity in accordance with the Canadian Electrical Code, Part 1, Derating required for more than 3 conductors.

600 V, Composite Power and Control

Part Number	Conductor Size			Power Cond. Insulation Thickness		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Armor		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight		Ampacity** 30°C Ambient amps
	Power	Control	Ground	mils	mm	mils	mm	inches	mm	inches	mm	inches	mm	lb/kft	kg/km	
	AWG															
252197	12	14	14	30	.76	60	1.52	.591	15.00	.831	21.10	.929	23.59	380	566	20
252213	10	14	12	30	.76	60	1.52	.596	15.14	.836	21.23	.936	24.37	414	616	30
260877	10	12	12	30	.76	60	1.52	.665	16.90	.905	23.00	1.003	25.49	442	658	30
252338	8	14	10	45	1.14	60	1.52	.715	18.16	.955	24.26	1.053	26.75	530	789	45
218544	8	12	10	45	1.14	60	1.52	.755	19.17	1.010	25.27	1.159	29.43	558	830	45
252379	6	14	8	60	1.52	60	1.52	.900	22.86	1.175	29.85	1.288	32.72	700	1042	65
_____	6	12	8	60	1.52	80	2.03	.900	22.86	1.175	29.85	1.288	32.72	843	1254	65
067330	4	14	8	60	1.52	80	2.03	.904	22.96	1.179	29.57	1.308	33.22	985	1466	85
_____	4	12	8	60	1.52	80	2.03	.904	22.96	1.179	29.57	1.308	33.22	1001	1490	85
_____	3	14	6	60	1.52	80	2.03	.964	24.48	1.239	31.09	1.368	34.74	1155	1719	105
_____	3	12	6	60	1.52	80	2.03	.964	24.48	1.239	31.09	1.368	34.74	1172	1744	105
459156	2	14	6	60	1.52	80	2.03	1.026	26.05	1.301	32.66	1.430	36.31	1322	1967	120
_____	2	12	6	60	1.52	80	2.03	1.026	26.05	1.301	32.66	1.430	36.31	1339	1992	120
302976	1	14	6	80	2.03	80	2.03	1.182	30.03	1.457	36.64	1.586	40.29	1609	2394	140
_____	1	12	6	80	2.03	80	2.03	1.182	30.03	1.457	36.64	1.586	40.29	1626	2420	140
306621	1/0	14	6	80	2.03	80	2.03	1.263	32.08	1.538	38.69	1.667	42.34	1823	2713	155
_____	1/0	12	6	80	2.03	80	2.03	1.263	32.08	1.538	38.69	1.667	42.34	1885	2805	155
306639	2/0	14	6	80	2.03	80	2.03	1.348	34.23	1.623	40.84	1.772	44.49	2218	3300	185
_____	2/0	12	6	80	2.03	80	2.03	1.348	34.23	1.623	40.84	1.772	44.49	2235	3326	185
_____	3/0	14	4	80	2.03	80	2.03	1.450	36.82	1.725	43.13	1.854	47.08	2667	3969	210
_____	3/0	12	4	80	2.03	80	2.03	1.450	36.82	1.725	43.13	1.854	47.08	2683	3993	210
306613	4/0	14	4	80	2.03	80	2.03	1.567	39.80	1.872	47.17	2.051	52.09	3294	4902	235
_____	4/0	12	4	80	2.03	80	2.03	1.567	39.80	1.872	47.17	2.051	52.09	3312	4929	235

**Ampacity of power conductors per Canadian Electrical Code, Part 1.

Aluminum Interlocked Armored Power Cable -40°C / +90°C rated - Lead Free

1 kV, 1 Conductor with Concentric Bare Ground

Part Number	Cond. Size	Ground Size	Insulation Thickness		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Armor		Approximate Net over Outer Jacket		Approximate Net Cable Weight		Ampacity* 30°C Ambient
	AWG/ kcmil	AWG	mils	mm	mils	mm	inches	mm	inches	mm	inches	mm	lb/kft	kg/km	amps
—	6	8	60	1.52	30	.76	.453	11.50	.693	17.60	.791	20.09	331	493	100
—	4	6	60	1.52	30	.76	.497	12.63	.737	18.72	.835	21.21	428	637	135
—	3	6	60	1.52	30	.76	.525	13.33	.765	19.43	.863	21.92	473	704	155
295170	2	6	60	1.52	30	.76	.555	14.10	.795	20.19	.893	22.68	528	786	180
—	1	4	80	2.03	45	1.14	.658	16.70	.898	22.81	.996	25.30	696	1036	210
550335	1/0	4	80	2.03	45	1.14	.725	18.42	.965	24.51	1.069	27.15	781	1162	245
550343	2/0	4	80	2.03	45	1.14	.750	19.05	1.025	26.04	1.135	28.83	944	1405	285
550350	3/0	3	80	2.03	45	1.14	.807	20.49	1.070	27.18	1.180	29.97	1121	1668	330
550368	4/0	3	80	2.03	45	1.14	.859	21.82	1.134	28.80	1.244	31.60	1272	1893	385
550376	250	2	90	2.29	60	1.52	.955	24.25	1.247	31.67	1.355	34.42	1466	2181	425
535443	300	2	90	2.29	60	1.52	1.005	25.53	1.280	32.51	1.409	35.79	1715	2552	480
550384	350	1	90	2.29	60	1.52	1.080	27.43	1.353	34.37	1.465	37.21	1947	2897	530
208702	400	1	90	2.29	60	1.52	1.123	28.53	1.398	35.51	1.527	38.79	2164	3220	575
550392	500	1/0	90	2.29	60	1.52	1.237	31.42	1.514	38.46	1.625	41.28	2596	3863	660
391847	600	1/0	90	2.29	60	1.52	1.278	32.47	1.553	39.45	1.682	42.72	2960	4405	740
526319	750	2/0	90	2.29	60	1.52	1.408	35.75	1.683	42.75	1.812	46.02	3648	5429	845
528000	1000	2/0	90	2.29	60	1.52	1.561	39.64	1.911	48.53	2.045	51.94	4674	6955	1000

1 kV, 2 Conductors with Bare Ground

Part Number	Cond. Size	Ground Size	Insulation Thickness		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Armor		Approximate Net over Outer Jacket		Approximate Net Cable Weight		Ampacity* 30°C Ambient
	AWG/ kcmil	AWG	mils	mm	mils	mm	inches	mm	inches	mm	inches	mm	lb/kft	kg/km	amps
184838	14	14	45	1.14	45	1.14	.423	10.74	.663	16.84	.761	19.32	216	321	15
133280	12	14	45	1.14	45	1.14	.464	11.78	.696	17.68	.794	20.17	272	405	20
138941	10	12	45	1.14	45	1.14	.510	12.95	.750	19.05	.848	21.54	296	440	30
307884	8	10	45	1.14	60	1.52	.590	14.98	.819	20.80	.926	23.52	407	606	45
422493	6	8	60	1.52	60	1.52	.718	18.25	.945	24.00	1.055	26.80	545	811	65
302968	4	8	60	1.52	60	1.52	.812	20.61	1.084	27.53	1.188	30.18	742	1104	85
—	3	6	60	1.52	80	2.03	.902	22.91	1.177	29.90	1.306	33.17	912	1357	105
260315	2	6	60	1.52	80	2.03	.963	24.45	1.235	31.37	1.339	34.01	1029	1531	120
—	1	6	80	2.03	80	2.03	1.110	28.20	1.385	35.18	1.514	38.45	1252	1863	140
119917	1/0	6	80	2.03	80	2.03	1.185	30.09	1.454	36.93	1.558	39.57	1451	2159	155
527572	2/0	6	80	2.03	80	2.03	1.263	32.09	1.533	38.94	1.641	41.68	1675	2493	185
—	3/0	4	80	2.03	80	2.03	1.358	34.50	1.633	41.48	1.762	44.75	2031	3022	210
413187	4/0	4	80	2.03	80	2.03	1.463	37.16	1.731	43.97	1.863	47.32	2385	3549	235
318873	250	4	90	2.29	80	2.03	1.598	40.59	1.948	49.48	2.082	52.88	2870	4270	265
—	300	4	90	2.29	80	2.03	1.699	43.15	2.049	52.04	2.183	55.44	3291	4882	295
—	350	3	90	2.29	110	2.79	1.852	47.03	2.202	55.93	2.336	59.33	3837	5710	325
—	400	3	90	2.29	110	2.79	1.938	49.23	2.288	58.11	2.422	61.52	4236	6303	345
318865	500	3	90	2.29	110	2.79	2.097	53.27	2.447	62.15	2.581	65.56	5082	7563	395

* Ampacity in accordance with the Canadian Electrical Code, Part 1.

Aluminum Interlocked Armored Power Cable -40°C / +90°C rated - Lead Free

1 kV, 3 Conductors with Bare Ground

Part Number	Cond. Size	Ground Size	Insulation Thickness		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Armor		Approximate Net over Outer Jacket		Approximate Net Cable Weight		Ampacity* 30°C Ambient
	AWG/ kcmil	AWG	mils	mm	mils	mm	inches	mm	inches	mm	inches	mm	lb/kft	kg/km	amps
654228	14	14	45	1.14	45	1.14	.448	11.38	.685	17.40	.770	19.56	247	367	15
307850	12	14	45	1.14	45	1.14	.503	12.77	.735	18.67	.821	20.85	297	441	20
307843	10	12	45	1.14	60	1.52	.576	14.63	.807	20.50	.891	22.63	381	567	30
422360	8	10	45	1.14	60	1.52	.627	15.93	.855	21.72	.942	23.93	491	730	45
422378	6	8	60	1.52	60	1.52	.766	19.44	1.035	26.29	1.125	28.58	644	959	65
422386	4	8	60	1.52	80	2.03	.904	22.96	1.176	29.87	1.265	32.13	924	1375	85
307876	3	6	60	1.52	80	2.03	.964	24.48	1.236	31.39	1.326	33.68	1026	1526	105
422394	2	6	60	1.52	80	2.03	1.026	26.05	1.300	33.02	1.388	35.26	1274	1896	120
422402	1	6	80	2.03	80	2.03	1.182	30.03	1.457	37.01	1.547	39.29	1539	2291	140
422410	1/0	6	80	2.03	80	2.03	1.263	32.08	1.537	39.04	1.630	41.40	1796	2672	155
422428	2/0	6	80	2.03	80	2.03	1.348	34.23	1.621	41.14	1.729	43.92	2165	3222	185
438929	3/0	4	80	2.03	80	2.03	1.450	36.82	1.725	43.82	1.835	46.61	2571	3827	210
438937	4/0	4	80	2.03	80	2.03	1.567	39.80	1.815	46.10	1.925	48.90	3196	4756	235
438945	250	4	90	2.29	110	2.79	1.768	44.91	2.120	53.85	2.250	57.15	3830	5700	265
438952	300	4	90	2.29	110	2.79	1.877	47.67	2.235	56.77	2.367	60.12	4382	6520	295
438960	350	3	90	2.29	110	2.79	1.976	50.20	2.330	59.18	2.462	61.52	4990	7426	325
438978	400	3	90	2.29	110	2.79	2.074	52.68	2.422	61.52	2.554	64.87	5534	8235	345
438986	500	3	90	2.29	110	2.79	2.241	56.92	2.595	65.91	2.757	70.03	6674	9932	395
442632	600	2	90	2.29	110	2.79	2.408	61.17	2.758	70.05	2.935	74.55	7747	11528	455
560094	750	2	90	2.29	110	2.79	2.614	66.40	2.959	75.16	3.121	79.27	9596	14281	500

* Ampacity in accordance with the Canadian Electrical Code, Part 1.

1 kV, 4 Conductors with Bare Ground

Part Number	Cond. Size	Ground Size	Insulation Thickness		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Armor		Approximate Net over Outer Jacket		Approximate Net Cable Weight		Ampacity** 30°C Ambient
	AWG/ kcmil	AWG	mils	mm	mils	mm	inches	mm	inches	mm	inches	mm	lb/kft	kg/km	amps
133298	14	14	45	1.14	45	1.14	.493	12.52	.733	18.61	.827	21.00	282	420	15
369322	12	14	45	1.14	60	1.52	.569	14.46	.809	20.33	.903	22.94	356	530	20
649707	10	12	45	1.14	60	1.52	.632	16.04	.878	22.30	.965	24.51	436	649	30
383612	8	10	45	1.14	60	1.52	.694	17.62	.921	23.39	1.028	26.11	583	867	45
383620	6	8	60	1.52	80	2.03	.895	22.73	1.170	29.71	1.280	32.51	838	1247	65
529271	4	8	60	1.52	80	2.03	.995	25.27	1.270	32.26	1.351	34.31	1122	1669	85
199588	3	6	60	1.52	80	2.03	1.085	27.55	1.360	34.54	1.441	36.60	1359	2022	105
383646	2	6	60	1.52	80	2.03	1.145	29.09	1.420	36.07	1.501	38.13	1580	2351	120
105312	1	6	80	2.03	80	2.03	1.303	33.11	1.578	39.50	1.663	42.24	1927	2868	140
568261	1/0	6	80	2.03	80	2.03	1.394	35.40	1.669	42.39	1.774	45.06	2295	3415	155
443358	2/0	6	80	2.03	80	2.03	1.488	37.81	1.757	44.63	1.865	47.37	2711	4034	185
568279	3/0	4	80	2.03	80	2.03	1.607	40.81	1.852	47.04	1.960	49.78	3395	5053	210
568709	4/0	4	80	2.03	110	2.79	1.793	45.55	2.033	51.64	2.141	54.38	4197	6239	235
568337	250	4	90	2.29	110	2.79	1.952	49.57	2.302	58.52	2.417	61.39	4828	7230	265
167890	300	4	90	2.29	110	2.79	2.077	52.76	2.427	61.65	2.542	65.57	5630	8378	295
568295	350	3	90	2.29	110	2.79	2.189	55.60	2.539	64.49	2.654	67.41	6399	9522	325
227462	400	3	90	2.29	110	2.79	2.294	58.26	2.644	67.16	2.833	71.96	7132	10613	345
568345	500	3	90	2.29	110	2.79	2.481	63.02	2.831	71.91	3.020	76.71	8555	12732	395

** Ampacity assuming 4th conductor is a neutral of a 3 phase. 4 wire system in accordance with the Canadian Electrical Code, Part 1.

Aluminum Interlocked Armored Power Cable -40°C / +90°C rated - Lead Free

5 kV Unshielded, 3 Conductors with Bare Ground

Part Number	Cond. Size		Ground Size		Insulation Thickness		Inner Jacket Thickness		Nominal Diameter over Inner Jacket		Nominal Diameter over Armor		Nominal Diameter over Outer Jacket		Approximate Net Cable Weight		Ampacity* 30°C Ambient
	AWG/ kcmil	AWG	mils	mm	mils	mm	inches	mm	inches	mm	inches	mm	lb/kft	kg/km	amps		
_____	8	10	90	2.29	60	1.52	.931	23.64	1.206	30.63	1.315	33.40	721	1073	45		
645952	6	8	90	2.29	80	2.03	1.051	26.69	1.326	33.68	1.435	36.45	872	1297	65		
645960	4	8	90	2.29	80	2.03	1.146	29.11	1.421	36.09	1.530	38.86	1155	1719	85		
_____	3	6	90	2.29	80	2.03	1.200	30.49	1.475	37.46	1.584	40.23	1322	1968	105		
226225	2	6	90	2.29	80	2.03	1.266	32.15	1.541	39.14	1.670	42.42	1503	2237	120		
217760	1	6	90	2.29	80	2.03	1.335	33.91	1.610	40.89	1.739	44.17	1732	2577	140		
200766	1/0	6	90	2.29	80	2.03	1.415	35.95	1.690	42.93	1.819	46.20	2013	2997	155		
226233	2/0	6	90	2.29	80	2.03	1.500	38.10	1.775	45.09	1.904	48.36	2339	3481	185		
_____	3/0	4	90	2.29	80	2.03	1.606	40.80	1.956	49.68	2.090	53.09	2929	4359	210		
226241	4/0	4	90	2.29	80	2.03	1.724	43.79	2.074	52.68	2.208	56.08	3544	5274	235		
226274	250	4	90	2.29	110	2.79	1.882	47.80	2.232	56.69	2.366	60.10	4032	6001	265		
_____	300	4	90	2.29	110	2.79	1.990	50.55	2.340	59.44	2.474	62.84	4605	6853	295		
226282	350	3	90	2.29	110	2.79	2.094	53.19	2.444	62.08	2.578	65.48	5242	7800	325		
_____	400	3	90	2.29	110	2.79	2.188	55.56	2.538	64.47	2.672	67.87	5852	8709	345		
226290	500	3	90	2.29	110	2.79	2.355	59.81	2.705	68.71	2.839	72.11	7053	10495	395		

*Ampacity in accordance with the Canadian Electrical Code, Part 1.

Aluminum Interlock Armored Power and Control Cable UL Type MC, 600 V, 90°C rated - Lead Free Multiple conductors, with ground wire, aluminum interlocked armor, PVC jacket

Applications

Firex MC is suitable and allowed by the NEC for use in the following applications:

- for power, lighting and control circuits and as branch circuits and power feeders in industrial, commercial, institutional and residential installations up to 600 volts.
- fished or embedded in plaster and concrete.
- direct buried or used as an aerial cable when fixed to a messenger support cable.
- used in concealed or exposed applications.
- installed in cable trays and other raceways.
- in Class I and II, Division 2 as well as Class III, Division 1 and 2 hazardous locations.
- under raised floors of information technology rooms.
- where exposed to harsh chemicals and vapors.

Construction

Conductor: bare, annealed copper conforming to ASTM B3 and Class B stranded in accordance with ASTM B8.

Insulation: cross linked polyethylene type XHHW-2 per UL 44.

Assembly: conductors are cabled in concentric layers with grounding wire, interstices are filled with suitable non-hygroscopic fillers, as required. A binder tape of synthetic material assembles the core in an essentially round configuration.

Armor: interlocking aluminum tape armor applied directly over the core.

Jacket: overall polyvinyl chloride jacket per UL 1569, 90°C temperature rating; low acid gas emission; limited flame spread and excellent corrosion resistance.

Conductor Identification

Sizes #14 AWG to #10 AWG:
Method #1-E2 per ICEA S-73-532

Sizes #8 AWG to 500 kcmil:
Method #4 per ICEA S-73-532

See page 15.

Bending Radius

Fixed position: 7 x cable overall diameter

During pulling: 12 x cable overall diameter

Specifications

- Meets UL 44, XHHW-2 600V conductors
- Meets UL 1569 requirements for Type MC, Metal Clad cables
- Designated Type MC per NEC Article 330

Product features

- Cables are UL listed as Type MC, 600 V
- UL listed insulated conductors
- Cables pass UL 1685 and IEEE 383 vertical tray fire tests at 70,000 BTU/hr, ICEA T-29-520 fire test at 210,000 BTU/hr, IEEE 1202 and CSA FT4
- Cables exhibit a -25°C cold bend rating with suitable precautions
- Temperature rating of 90°C dry and wet
- 130°C emergency rating and 250°C short circuit rating
- Excellent mechanical and physical properties
- Sunlight and oil resistant jacket
- Lead Free
- Suitable for direct burial, use in cable tray and embedment in concrete
- Can be installed in hazardous locations designated Class I or II Division 2, NEC Articles 501.10(B) and 502.10(B) as well as Class III Division 1 and 2, NEC Article 503.10 A and B.

Options

The following constructions can be provided on special orders:

- Aluminum conductors
- Steel interlock armor
- Extra ground wires
- Special color or number coding
- Specially colored jackets
- Other constructions and combinations (some manufacturing restrictions apply)

Aluminum Interlocked Armored Power and Control Cable UL Type MC, 90°C rated - Lead Free

**600 V, Multiconductor with Bare Ground
Insulation Thickness: 30 mils / 0.76 mm**

Part Number	# of Cond.	Cond. Size	Ground Wire Size	Nominal Diameter over Armor		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Ampacity
		AWG	AWG	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	
640540	2	14 (7w)	14 (7w)	.480	12.19	50	1.27	.580	14.73	160	238	25
639930	3	14 (7w)	14 (7w)	.520	13.54	50	1.27	.625	15.88	180	268	25
—	4	14 (7w)	14 (7w)	.560	14.22	50	1.27	.665	16.89	210	313	20/25 ⁽²⁾
—	5	14 (7w)	14 (7w)	.590	14.99	50	1.27	.695	17.65	230	342	20
—	7	14 (7w)	14 (7w)	.645	16.38	50	1.27	.750	19.05	275	409	17.5
—	9	14 (7w)	14 (7w)	.715	18.16	50	1.27	.820	20.83	330	491	17.5
—	12	14 (7w)	14 (7w)	.790	20.07	50	1.27	.895	22.73	400	595	12.5
—	15	14 (7w)	14 (7w)	.840	21.34	50	1.27	.950	24.13	465	692	12.5
—	19	14 (7w)	14 (7w)	.900	22.86	50	1.27	1.010	25.65	550	819	12.5
—	25	14 (7w)	14 (7w)	1.045	26.54	50	1.27	1.155	29.34	730	1086	11.5
—	37	14 (7w)	14 (7w)	1.175	29.85	50	1.27	1.300	33.02	980	1458	10
640524	2	12 (7w)	12 (7w)	.498	12.65	50	1.27	.602	15.29	196	292	30
639963	3	12 (7w)	12 (7w)	.508	12.90	50	1.27	.612	15.54	226	336	30
633511	4	12 (7w)	12 (7w)	.550	13.97	50	1.27	.654	16.61	246	366	24/30 ⁽²⁾
—	5	12 (7w)	12 (7w)	.606	15.39	50	1.27	.706	17.93	302	449	24
—	7	12 (7w)	12 (7w)	.642	16.31	50	1.27	.743	18.87	362	539	21
—	9	12 (7w)	12 (7w)	.785	19.94	50	1.27	.890	22.61	458	682	21
—	12	12 (7w)	12 (7w)	.831	21.11	50	1.27	.935	23.75	545	811	15
—	15	12 (7w)	12 (7w)	.950	24.13	50	1.27	1.049	26.64	664	988	15
—	19	12 (7w)	12 (7w)	.981	24.92	50	1.27	1.080	27.43	779	1159	15
—	25	12 (7w)	12 (7w)	1.196	30.38	50	1.27	1.300	33.02	1040	1548	13.5
—	37	12 (7w)	12 (7w)	1.380	35.05	50	1.27	1.498	38.05	1430	2128	12
670322	2	10 (7w)	10 (7w)	.556	14.12	50	1.27	.658	16.71	240	357	40
639971	3	10 (7w)	10 (7w)	.620	15.75	50	1.27	.720	18.29	312	464	40
—	4	10 (7w)	10 (7w)	.626	15.90	50	1.27	.730	18.54	343	510	32/40 ⁽²⁾
—	5	10 (7w)	10 (7w)	.751	19.08	50	1.27	.855	21.72	423	630	32
—	7	10 (7w)	10 (7w)	.782	19.86	50	1.27	.882	22.40	509	757	28
—	9	10 (7w)	10 (7w)	.915	23.24	50	1.27	1.020	25.91	630	938	28
—	12	10 (7w)	10 (7w)	.971	24.66	50	1.27	1.077	27.36	758	1128	20
—	37	10 (7w)	10 (7w)	1.570	39.88	50	1.27	1.715	43.56	2070	3081	16

(1) Ampacities are in accordance with Table 310.16 of NEC for conductors in raceway or direct buried at 30°C ambient temperature and 90°C conductor temperature.

The overcurrent protection shall not exceed 15 amperes for 14 AWG, 20 amperes for 12 AWG and 30 amperes for 10AWG copper conductors after any correction factors for ambient temperature and number of conductors have been applied (NEC Article 240.4(D)).

For correction factors for different ambient temperatures and ampacities at different conductor temperatures see Table 310.16 of NEC.

Ampacities for cables having more than three conductors have been derated per Article 310.15(B)(2)(a) of NEC.

(2) Where the 4th conductor is the neutral of a balanced 3 phase system.

(3) With load diversity of 50% (see Table B.310.11 of NEC).

Aluminum Armored Power and Control Cable UL Type MC, 90°C rated - Lead Free

600 V, 3 Conductors with Bare Ground

Part Number	Cond. Size	Insulation Thickness		Ground Wire Size	Nominal Diameter over Armor		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Ampacity amps ⁽¹⁾
		AWG/kcmil	mils		mm	AWG	inches	mm	mils	mm	inches	mm	
634725	8 (7w)	45	1.14	10 (7w)	0.750	19.05	50	1.27	0.855	21.72	405	603	55
634733	6 (7w)	45	1.14	8 (7w)	0.820	20.83	50	1.27	0.925	23.50	545	811	75
634741	4 (7w)	45	1.14	8 (7w)	0.920	23.37	50	1.27	1.029	26.16	727	1082	95
634766	2 (7w)	45	1.14	6 (7w)	1.040	26.42	50	1.27	1.151	29.21	1038	1545	130
660594	1 (19w)	55	1.40	6 (7w)	1.169	29.69	50	1.27	1.279	32.49	1262	1878	150
634758	1/0 (19w)	55	1.40	6 (7w)	1.260	32.00	50	1.27	1.360	34.54	1501	2234	170
634774	2/0 (19w)	55	1.40	6 (7w)	1.349	34.26	50	1.27	1.459	37.08	1807	2689	195
645499	3/0 (19w)	55	1.40	4 (7w)	1.459	37.06	50	1.27	1.567	39.80	2244	3339	225
634782	4/0 (19w)	55	1.40	4 (7w)	1.590	40.39	60	1.52	1.722	43.69	2725	4055	260
634790	250 (37w)	65	1.65	4 (7w)	1.733	44.02	60	1.52	1.861	47.27	3173	4722	290
634808	350 (37w)	65	1.65	3 (7w)	1.922	48.82	60	1.52	2.050	52.07	4252	6327	350
634816	500 (37w)	65	1.65	2 (7w)	2.300	58.42	75	1.91	2.465	62.61	6205	9234	430
—	750 (61w)	80	2.03	1 (19w)	2.760	70.10	75	1.91	2.920	74.17	8970	13349	535
—	1000 (61w)	80	2.03	1/0 (19w)	3.080	78.23	85	2.16	3.265	82.93	11685	17389	615

(1) Ampacities are in accordance with Table 310.16 of NEC for conductors in raceway or direct buried at 30°C ambient temperature and 90°C conductor temperature.

For correction factors for different ambient temperatures and ampacities at different conductor temperatures see Table 310.16 of NEC.

Aluminum Interlocked Armored Power Cable UL Type MV-90 2.4 kV* or 5 kV*, XLPE insulation, non-shielded, aluminum interlocked armor, PVC jacket

Applications

Firex MV-90 is suitable and allowed by the NEC for use in the following applications:

- for power feeders in industrial, commercial, and institutional installations up to 5000 volts. (2400 volts per NEC)
- fished or embedded in plaster and concrete.
- direct buried or used as an aerial cable when fixed to a messenger support cable.
- used in concealed or exposed applications.
- installed in cable trays and other raceways.
- in Class I and II, Division 2 as well as Class III, Division 1 and 2 hazardous locations.
- where exposed to harsh chemicals and vapors.

Construction

Conductor: bare, annealed copper conforming to ASTM B3 and Class B stranded in accordance with ASTM B8.

Conductor shield: extruded thermosetting semi-conducting layer

Insulation: XLPE as per UL 1072 ICEA S-96-659

Assembly: insulated conductors are cabled with bare copper grounding conductor(s) and interstices are filled with suitable non-hygroscopic fillers, as required. A binder tape of synthetic material assembles the core in an essentially round configuration.

Armor: interlocking aluminum tape armor applied directly over the core.

Jacket: overall polyvinyl chloride jacket, 90°C temperature rating; low acid gas emission; limited flame spread and excellent corrosion resistance.

Conductor Identification

Unshielded cable:
Number coded

Bending Radius

Fixed position:
Unshielded: 7 x cable overall diameter

During pulling:
Unshielded: 12 x cable overall diameter

Specifications

- Meets ICEA S-96-659 for non-shielded cables
- Meets UL 1072 for Medium Voltage Cables, Type MV-90
- Designated Type MV as per NEC Article 328

Product features

- Cables are UL listed as Type MV-90, 2.4 kV
- UL listed insulated conductors
- Cables are 5 kV rated per ICEA S-96-659
- Cables pass UL 1685 and IEEE 383 vertical tray fire tests at 70,000 BTU/hr, ICEA T-29-520 fire test at 210,000 BTU/hr, IEEE 1202 and CSA FT4
- Cables exhibit a -25°C cold bend rating with suitable precautions
- Temperature rating of 90°C dry and wet
- 130°C emergency rating and 250°C short circuit rating
- Excellent mechanical and physical properties
- Sunlight and oil resistant jacket
- Suitable for direct burial, use in cable tray and embedment in concrete

Options

The following constructions can be provided on special orders:

- Aluminum conductors
- Steel interlock armor
- Extra ground wires
- Special color or number coding
- Specially colored jackets
- Other constructions and combinations (some manufacturing restrictions apply)

*The NEC and UL 1072 limit unshielded cable to circuits operating at a maximum of 2400 volts phase to phase. ICEA S-96-659 rates unshielded cable with the same insulation thickness to a maximum operating voltage of 5000 volts phase to phase.

Aluminum Interlocked Armored Power Cable UL Type MV-90, 90°C rated

**2.4 kV* or 5 kV* Unshielded, 3 Conductors with Bare Ground
Insulation Thickness: 90 mils / 2.29 mm**

Part Number	Cond. Size	Ground Wire Size	Nominal Diameter over Armor		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Ampacity	
	AWG/kcmil	AWG	inches	mm	mils	mm	inches	mm	lb/kft	kg/km	amps ^(1,2)	amps ⁽³⁾
—	8 (7w)	8 (7w)	1.055	26.80	50	1.27	1.165	29.59	605	900	59	85
—	6 (7w)	6 (7w)	1.130	28.70	50	1.27	1.240	31.50	785	1168	79	105
—	4 (7w)	6 (7w)	1.235	31.67	50	1.27	1.345	34.16	990	1473	105	135
—	2 (7w)	6 (7w)	1.360	34.54	60	1.52	1.470	37.34	1295	1927	140	180
—	1 (19w)	6 (7w)	1.465	37.21	60	1.52	1.575	40.01	1515	2255	160	200
—	1/0 (19w)	4 (7w)	1.555	39.50	60	1.52	1.685	42.80	1855	2761	185	230
—	2/0 (19w)	4 (7w)	1.650	41.91	60	1.52	1.780	45.21	2175	3237	215	260
—	3/0 (19w)	4 (7w)	1.785	45.34	60	1.52	1.915	48.64	2700	4018	250	295
650754	4/0 (19w)	3 (7w)	1.905	48.39	60	1.52	2.030	51.56	3230	4807	285	335
—	250 (37w)	3 (7w)	2.015	51.18	60	1.52	2.145	54.48	3655	5439	320	365
650747	350 (37w)	2 (7w)	2.235	56.77	75	1.91	2.365	60.07	4795	7136	395	440
650663	500 (37w)	1 (19w)	2.510	63.75	75	1.91	2.675	67.95	6535	9725	485	530
641464	750 (61w)	1/0 (19w)	2.905	73.79	85	2.16	3.070	77.98	9245	13758	615	650
—	1000 (61w)	1/0 (19w)	3.335	84.71	85	2.16	3.410	86.61	11850	17635	705	730

(1) Ampacity for cable in air in accordance with Table 310.71 of NEC, conductor temperature of 90°C and ambient temperature of 40°C.

(2) Ampacity for cable in ventilated tray in accordance to Article 392.13(A)(2) and Table 310.71 of NEC.

(3) Ampacity for cable direct buried in accordance with Table 310.83 with 90°C conductor temperature, R.H.O. 90, 100% load factor, 20°C earth temperature, one circuit.

*The NEC and UL 1072 limit unshielded cable to circuits operating at a maximum of 2400 volts phase to phase. ICEA S-96-659 rates unshielded cable with the same insulation thickness to a maximum operating voltage of 5000 volts phase to phase.



Conductor or Phase Identification

Per ICEA S-73-532-E3.4 Method 4 Number Code

<i>Conductor</i>	<i>Printing Details</i>	<i>Conductor</i>	<i>Printing Details</i>
1st	"1-ONE-1"	4th	"4-FOUR-4"
2nd	"2-TWO-2"	5th	"5-FIVE-5"
3rd	"3-THREE-3"	6th	"6-SIX-6"

Per ICEA S-73-532-E3.1 Method 1 and Table E2 (formerly K2)

Colored Insulation with/without Colored Stripe

<i>Conductor</i>	<i>Insulation</i>	<i>Stripe</i>	<i>Conductor</i>	<i>Insulation</i>	<i>Stripe</i>
1st	BLACK	—	19th	ORANGE	Blue
2nd	RED	—	20th	YELLOW	Blue
3rd	BLUE	—	21st	BROWN	Blue
4th	ORANGE	—	22nd	BLACK	Orange
5th	YELLOW	—	23rd	RED	Orange
6th	BROWN	—	24th	BLUE	Orange
7th	RED	Black	25th	YELLOW	Orange
8th	BLUE	Black	26th	BROWN	Orange
9th	ORANGE	Black	27th	BLACK	Yellow
10th	YELLOW	Black	28th	RED	Yellow
11th	BROWN	Black	29th	BLUE	Yellow
12th	BLACK	Red	30th	ORANGE	Yellow
13th	BLUE	Red	31st	BROWN	Yellow
14th	ORANGE	Red	32nd	BLACK	Brown
15th	YELLOW	Red	33rd	RED	Brown
16th	BROWN	Red	34th	BLUE	Brown
17th	BLACK	Blue	35th	ORANGE	Brown
18th	RED	Blue	36th	YELLOW	Brown

Note: The color code repeats at #1 "BLACK" as the 37th conductor (for cables with more than 36 conductors) for FIREX MC.



WARNING

FLAMMABLE

Non-metallic covering of electrical cables will burn and under certain conditions may transmit fire when ignited.

TOXIC

Burning non-metallic coverings may emit acid gases, which are highly toxic, and may generate dense smoke.

CORROSIVE

Emission of acid gases may corrode metal in the vicinity, such as sensitive instruments and reinforcing rod in concrete.

NOTICE

Nexans has endeavoured to ensure the accuracy of the data in this publication, however we cannot be liable for the consequences of errors or omissions. All data is subject to change without notice. The installer and / or user assumes all liability for the consequences of the installation and / or use of any of our products in contravention of any applicable law, regulation or code.

