H07RN-F BS EN 50525-2-21 Flexible Rubber Cable

Eland Product Group: **A6G and A5G**

APPLICATION

These cables are designed to provide high flexibility and have the capacity to withstand weather, oil/grease, mechanical and thermal stresses. Applications include handling equipment, mobile power supplies, worksites, stage and audio visual equipment, port areas and dams. Also for use in drainage and water treatment, cold environments and severe industrial environments.

CONSTRUCTION

Conductor
Class 5 flexible copper conductor to BS EN 60228 (previously BS 6360)

Insulation
EPR (Ethylene Propylene Rubber) Type EI4 according to BS EN 50363

Sheath
PCP (Polychloroprene) Type EM2 according to BS EN 50363

CABLE STANDARDS

BS EN 50525-2-21 (BS 7919), BS EN 60811-2-1,
BS EN/IEC 60332-1-2

The electrical and dimensional properties of this product are measured by the Technical and Quality Assurance department at the Eland Cables laboratory. Cable performance in respect of conductor resistance, construction quality (workmanship), dimensional consistency, and other parameters are verified to published standards and approved product drawings. Conformance to RoHS (Restriction of the use of Hazardous Substances) is determined and confirmed.

CHARACTERISTICS

Voltage Rating (Uo/U)
450/750V

Temperature Rating
Fixed: -30°C to +60°C
+85°C. For fixed protected installations.
Flexed: -15°C to +60°C

Minimum Bending Radius
Fixed: 4 x overall diameter
Flexed: 6 x overall diameter

Core Identification
2 core: Blue Brown
3 core: Green/Yellow Blue Brown
4 core: Green/Yellow Brown Black Grey
5 core: Green/Yellow Blue Brown Black Grey
6 core and above: Black with White numbers
Green/Yellow

Sheath Colour
Black

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DIMENSIONS

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	A2 GLANDS Brass	A2PL GLAND Plastic
A6G10015	1	1.5	0.8	5.8	52	20/16	20S
A6G10025	1	2.5	0.9	6.5	67	20/16	20S
A6G1004	1	4	1	7.4	92	20/16	20S
A6G1006	1	6	1	8.1	119	20S	20S
A6G1010	1	10	1.2	9.8	185	20S	20S
A6G1016	1	16	1.2	11.35	258	20	20
A6G1025	1	25	1.4	13.3	375	25	20
A6G1035	1	35	1.4	14.6	485	25	25
A6G1050	1	50	1.6	17.2	669	25	25
A6G1070	1	70	1.6	19.35	892	32	32
A6G1095	1	95	1.8	22.2	1160	32	32
A6G1120	1	120	1.8	24.3	1436	32	32
A6G1150	1	150	2	25.9	1748	40	40
A6G1185	1	185	2.2	29.7	2142	40	40
A6G1240	1	240	2.4	31.5	2698	50S	50S
A6G1300	1	300	2.6	36.5	3348	50	50S
A6G1400	1	400	2.8	40.4	4293	50	50
A6G1500	1	500	3	42.6	5262	50	50
A6G1630	1	630	3	47.2	6790	63S	63S
A5G02010	2	1	0.8	8.1	94	20S	20S
A5G02015	2	1.5	0.8	9	120	20S	20S
A5G02025	2	2.5	0.9	10.7	173	20S	20S
A5G02040	2	4	1	12.3	239	20	20
A5G02060	2	6	1	13.8	313	25	25
A5G0210	2	10	1.2	18.6	563	32	25
A5G0216	2	16	1.2	21.7	830	32	32
A5G0225	2	25	1.4	25.8	1211	40	40
A5G03010	3	1	0.8	8.74	117	20S	20S
A5G03015	3	1.5	0.8	9.68	147	20S	20S
A5G03025	3	2.5	0.9	11.48	123	20	20
A5G03040	3	4	1	13.2	297	25	25
A5G03060	3	6	1	14.78	390	25	25
A5G0310	3	10	1.2	19.9	705	32	32
A5G0316	3	16	1.2	23.31	1031	32	32
A5G0325	3	25	1.4	27.7	1512	40	40
A5G0335	3	35	1.4	30.2	1907	50S	50S
A5G0350	3	50	1.6	35.8	2651	50	50S
A5G0370	3	70	1.6	40.1	3484	50	50
A5G0395	3	95	1.8	46.4	4594	63S	63S
A5G04010	4	1	0.8	9.63	142	20S	20S
A5G04015	4	1.5	0.8	10.63	180	20S	20S
A5G04025	4	2.5	0.9	12.6	260	20	20

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ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	A2 GLANDS Brass	A2PL GLANDS Plastic
A5G04040	4	4	1	14.6	336	25	25
A5G04060	4	6	1	16.4	449	25	32
A5G0410	4	10	1.2	21.8	833	32	32
A5G0416	4	16	1.2	25.4	1138	40	40
A5G0425	4	25	1.4	30.7	1714	50S	50
A5G0435	4	35	1.4	33.4	2204	50S	50
A5G0450	4	50	1.6	39.6	3029	50	-
A5G0470	4	70	1.6	44.9	4121	63	-
A5G0495	4	95	1.8	51.9	5361	63	-
A5G05015	5	1.5	0.8	11.8	206	20	20L
A5G05025	5	2.5	0.9	14	297	25	25
A5G05040	5	4	1	16.2	422	25	25
A5G05060	5	6	1	18.2	567	32	32
A5G0510	5	10	1.2	24	1010	40	40
A5G0516	5	16	1.2	28.2	1400	40	40
A5G0525	5	25	1.4	33.9	2096	50S	50
A5G0535	5	35	1.4	37.2	2700	50	50
A5G0550	5	50	1.6	44	3730	63S	63S
A5G07015	7	1.5	0.8	15.13	315	25	25
A5G07025	7	2.5	0.9	17.6	445	25	32
A5G1215	12	1.5	0.8	18.2	493	25	32
A5G1225	12	2.5	0.9	21.4	702	32	32
A5G1915	19	1.5	0.8	22.1	710	32	32

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CONDUCTORS

Class 5 Flexible Copper Conductors for Single Core and Multi-Core Cables

NOMINAL CROSS SECTIONAL AREA mm²	MAXIMUM DIAMETER OF WIRES IN CONDUCTOR mm	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C
		Plain Wires ohms/km
1	0.21	19.5
1.5	0.26	13.3
2.5	0.26	7.98
4	0.31	4.95
6	0.31	3.3
10	0.41	1.91
16	0.41	1.21
25	0.41	0.78
35	0.41	0.554
50	0.41	0.386
70	0.51	0.272
95	0.51	0.206
120	0.51	0.161
150	0.51	0.129
185	0.51	0.106
240	0.51	0.0801
300	0.51	0.0641
400	0.51	0.0486
500	0.61	0.0384
630	0.61	0.0287

The above table is in accordance with BS EN 60228 (previously BS 6360)

ELECTRICAL CHARACTERISTICS (1mm² to 2.5mm²)

Current Carrying Capacity and Mass Supportable

NOMINAL CROSS SECTIONAL AREA mm²	CURRENT CARRYING CAPACITY		MAXIMUM MASS SUPPORTABLE BY TWIN FLEXIBLE CABLE (See Regulations 522.7.2 and 559.6.1.5 of the 17th Edition of IEE Wiring Regulations) kg
	Single-Phase AC Amps	Three-Phase AC Amps	
1	10	10	5
1.5	16	16	5
2.5	25	20	5

Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm²	DC OR SINGLE-PHASE AC mV/A/m	THREE-PHASE AC mV/A/m
1	46	40
1.5	32	27
2.5	19	16

Conductor operating temperature: 60°C

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ELECTRICAL CHARACTERISTICS (4mm² and above)

Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm²	60°C CONDUCTOR OPERATING TEMPERATURE			85°C CONDUCTOR OPERATING TEMPERATURE**		
	Single-Phase AC or DC		Three-Phase AC	Single-Phase AC or DC		Three-Phase AC
	1 Two Core Cable, With or Without Protective Conductor Amps	2 Single Core Cables Amps	1 Three Core, Four Core or Five Core Cable Amps	1 Two Core Cable, With or Without Protective Conductor Amps	2 Single Core Cables Touching Amps	1 Three Core, Four Core or Five Core Cable Amps
4	30	-	26	41	-	36
6	39	-	34	53	-	47
10	51	-	47	73	-	64
16	73	-	63	99	-	86
25	97	-	83	131	-	114
35	-	140	102	-	192	140
50	-	175	124	-	240	170
70	-	216	158	-	297	216
95	-	258	192	-	354	262
120	-	302	222	-	414	303
150	-	347	255	-	476	348
185	-	394	291	-	540	397
240	-	471	343	-	645	467
300	-	541	394	-	741	537
400	-	644	-	-	885	-
500	-	738	-	-	1017	-
630	-	861	-	-	1190	-

Ambient temperature: 30°C
Conductor operating temperature: 60°C / 85°C

The above table for 60°C conductor operating temperature is in accordance with Table 4F1A of the 17th Edition of IEE Wiring Regulations.

** 85°C Table is in accordance with Table 4H2A of the 16th Edition of IEE Wiring Regulations.

The current ratings tabulated are for cables in free air but may also be used for cables resting on a surface. If the cable is to be wound on a drum on load the ratings should be reduced in accordance with NOTE 2 below and for cables which may be covered, NOTE 3 below.

2. Flexible cables wound on reeling drums

The current ratings of cables used on reeling drums are to be reduced by the following factors:

a) Radial type drum

ventilated: 85%
unventilated: 75%

b) Ventilated cylindrical type drum

1 layer of cable: 85%
2 layers of cable: 65%
3 layers of cable: 45%
4 layers of cable: 35%

A radial type drum is one where spiral layers of cable are accommodated between closely spaced flanges; if fitted with solid flanges the ratings given above should be reduced and the drum is described as non-ventilated. If the flanges have suitable apertures the drum is described as ventilated.

A ventilated cylindrical cable drum is one where layers of cable are accommodated between widely spaced flanges and the drum and end flanges have suitable ventilating apertures.

3. Where cable may be covered or coiled up whilst on load, or the air movement over the cable restricted, the current rating should be reduced.

It is not possible to specify the amount of reduction but the table of rating factors for reeling drums can be used as a guide.

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Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm²	TWO CORE CABLE, DC mV/A/m	TWO CORE CABLE, SINGLE-PHASE AC mV/A/m			1 THREE CORE, FOUR CORE OR FIVE CORE CABLE, THREE-PHASE AC mV/A/m			2 SINGLE CORE CABLES, TOUCHING			
								DC mV/A/m	Single-Phase AC* mV/A/m		
4	12	12			10			-	-		
6	7.8	7.8			6.7			-	-		
10	4.6	4.6			4			-	-		
16	2.9	2.9			2.5			-	-		
		r	x	z	r	x	z		r	x	z
25	1.80	1.80	0.175	1.85	1.55	0.150	1.55	-	-	-	-
35	-	-	-	-	1.10	0.150	1.15	1.31	1.31	0.21	1.32
50	-	-	-	-	0.83	0.145	0.84	0.91	0.91	0.21	0.93
70	-	-	-	-	0.57	0.140	0.58	0.64	0.64	0.20	0.67
95	-	-	-	-	0.42	0.135	0.44	0.49	0.49	0.195	0.53
120	-	-	-	-	0.33	0.135	0.36	0.38	0.38	0.190	0.43
150	-	-	-	-	0.27	0.130	0.30	0.31	0.31	0.190	0.36
185	-	-	-	-	0.22	0.130	0.26	0.25	0.25	0.190	0.32
240	-	-	-	-	0.170	0.130	0.21	0.190	0.195	0.185	0.27
300	-	-	-	-	0.135	0.125	0.185	0.150	0.155	0.180	0.24
400	-	-	-	-	-	-	-	0.115	0.120	0.175	0.21
500	-	-	-	-	-	-	-	0.090	0.099	0.170	0.20
630	-	-	-	-	-	-	-	0.068	0.079	0.170	0.185

Conductor operating temperature: 60°C

r = Resistive Component
x = Reactive Component
z = Impedance Value

* A larger voltage drop will result if the cables are spaced.

DE-RATING FACTORS

AMBIENT TEMPERATURE	35°C	40°C	45°C	50°C	55°C
DE-RATING FACTOR	0.91	082	0.71	0.58	0.41

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