

H05Z-K / H07Z-K BS EN 50525-3-41 Cable



Eland Product Group: **A2Z**

APPLICATION

In pipes or ducts and internal wiring of appliances with maximum operating temperatures of 90°C, and generally in areas (such as public and government buildings) where smoke and toxic fumes may cause a threat to life and equipment. The cables produce no corrosive gases when burnt which is particularly important where electronic equipment is installed.

CONSTRUCTION

Conductor

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

Insulation

LSZH (Low Smoke Zero Halogen) Type EI5 thermosetting insulation according to BS EN 50363

CABLE STANDARDS

BS EN 50525-3-41 (previously BS 7211 Table 3 and 4b CENELEC HD22.9), BS EN/IEC 60332-1-2, BS EN 50267-2-1, BS EN/IEC 61034-1



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 (U_o/U)

H05Z-K - 0.5mm² to 1mm²: 300/500V

H07Z-K - 1.5mm² to 240mm²: 450/750V

Temperature Rating

-25°C to +90°C

Minimum Bending Radius

Up to 35mm²: 4 x overall diameter

50mm² and above: 6 x overall diameter

Insulation Colour

● Red ● Black ● Blue ● Orange ○ White ● Yellow
 ● Green/Yellow ● Grey ● Brown ● Violet ● Pink

DIMENSIONS

H05Z-K

ELAND PART NO.	NOMINAL CROSS SECTIONAL AREA mm ²	THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER		MINIMUM RESISTANCE OF INSULATION AT 90°C Mohms/km	NOMINAL WEIGHT kg/km
			Lower Limit mm	Upper Limit mm		
A2Z*0050	0.5	0.6	1.9	2.4	0.015	8.7
A2Z*0075	0.75	0.6	2.2	2.8	0.011	11.3
A2Z*0010	1	0.6	2.4	2.9	0.01	13.9

H07Z-K

ELAND PART NO.	NOMINAL CROSS SECTIONAL AREA mm ²	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER		MINIMUM RESISTANCE OF INSULATION AT 90°C Mohms/km	NOMINAL WEIGHT kg/km
			Lower limit mm	Upper limit mm		
A2Z*0015	1.5	0.7	2.8	3.5	0.010	19.3
A2Z*0025	2.5	0.8	3.4	4.3	0.009	30.9
A2Z*0040	4	0.8	3.9	4.9	0.007	44.9
A2Z*0060	6	0.8	4.4	5.5	0.006	64.2
A2Z*010	10	1	5.7	7.1	0.0056	108.2
A2Z*016	16	1	6.7	8.4	0.0046	163.4
A2Z*025	25	1.2	8.4	10.6	0.0044	248.1
A2Z*035	35	1.2	9.7	12.1	0.0038	340.6
A2Z*050	50	1.4	11.5	14.4	0.0037	484.2
A2Z*070	70	1.4	13.2	16.6	0.0032	671
A2Z*095	95	1.6	15.1	18.8	0.0032	895.8
A2Z*120	120	1.6	16.7	20.9	0.0029	1111.1
A2Z*150	150	1.8	18.6	23.3	0.0029	1389.2
A2Z*185	185	2	20.6	25.8	0.0029	1724.1
A2Z*240	240	2.2	23.5	29.4	0.0028	2225.4

Eland Part No. shown above designate the sheath colour (). For each colour substitute * for a colour code as listed below. e.g. A2ZRD0015 = 1.5mm² Red

Colour Codes

COLOUR	Black	Blue	Grey	Green/ Yellow	Orange	Red	Pink	Yellow	Violet	Brown	White
CODE	BK	BL	GR	GY	OR	RD	PK	YW	VI	BR	WH

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

NOMINAL CROSS SECTIONAL AREA mm ²	MAXIMUM DIAMETER OF WIRES IN CONDUCTOR mm	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C
		Plain Wires ohms/km
0.5	0.21	39
0.75	0.21	26
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

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

ELECTRICAL CHARACTERISTICS

Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm ²	REFERENCE METHOD A (ENCLOSED IN CONDUIT IN THERMALLY INSULATING WALL ETC) Amps		REFERENCE METHOD B (ENCLOSED IN CONDUIT ON A WALL OR IN A TRUNKING ETC) Amps		REFERENCE METHOD C (CLIPPED DIRECT) Amps		REFERENCE METHOD F (IN FREE AIR OR ON A PERFORATED CABLE TRAY ETC HORIZONTAL OR VERTICAL ETC) TOUCHING Amps			REFERENCE METHOD G (IN FREE AIR) SPACED BY ONE CABLE DIAMETER Amps		
	2 Cables Single-Phase AC or DC	3 or 4 Cables Three-Phase AC	2 Cables Single-Phase AC or DC	3 or 4 Cables Three-Phase AC	2 Cables Single-Phase AC or DC flat or touching	3 or 4 Cables Three-Phase AC flat and touching or trefoil	2 Cables Single-Phase AC or DC flat	3 Cables Three-Phase AC flat	3 Cables Three-Phase AC trefoil	2 Cables Single-Phase AC or DC or 3 Cables Three-Phase AC flat	Horizontal	Vertical
1	14	13	17	15	19	17.5	-	-	-	-	-	-
1.5	19	17	23	20	25	23	-	-	-	-	-	-
2.5	26	23	31	28	34	31	-	-	-	-	-	-
4	35	31	42	37	46	41	-	-	-	-	-	-
6	45	40	54	48	59	54	-	-	-	-	-	-
10	61	54	75	66	81	74	-	-	-	-	-	-
16	81	73	100	88	109	99	-	-	-	-	-	-
25	106	95	133	117	143	130	161	141	135	182	161	161
35	131	117	164	144	176	161	200	176	169	226	201	201
50	158	141	198	175	228	209	242	216	207	275	246	246
70	200	179	253	222	293	268	310	279	268	353	318	318
95	241	216	306	269	355	326	377	342	328	430	389	389
120	278	249	354	312	413	379	437	400	383	500	454	454
150	318	285	393	342	476	436	504	464	444	577	527	527
185	362	324	449	384	545	500	575	533	510	661	605	605
240	424	380	528	450	644	590	679	634	607	781	719	719

Ambient temperature: 30°C
 Conductor operating temperature: 90°C

1. Where a conductor operates at a temperature exceeding 70°C it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see also Regulation 512.1.2).

2. Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4D1A) must be used (see Regulation 523.1).

The above table is in accordance with Table 4E1A of the 17th Edition of IEE Wiring Regulations.

Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm ²	2 CABLES DC mV/A/m	2 CABLES SINGLE-PHASE AC mV/A/m									3 OR 4 CABLES THREE-PHASE AC mV/A/m											
		Reference Methods A and B (enclosed in conduit or trunking)			Reference Methods C, F and G (clipped direct, on tray or in free air)						Reference Methods A and B (enclosed in conduit or trunking)			Reference Methods C, F and G (clipped direct, on tray or in free air)								
					Cable Touching			Cable Spaced						Cable Touching Trefoil		Cable Touching Flat		Cable Spaced* Flat				
1	46	46			46						40			40								
1.5	31	31			31						27			27								
2.5	19	19			19						16			16								
4	12	12			12						10			10								
6	7.9	7.9			7.9						6.8			6.8								
10	4.7	4.7			4.7						4			4								
16	2.9	2.9			2.9						2.5			2.5								
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.850	0.310	1.900	1.850	0.190	1.85	1.850	0.280	1.850	1.600	0.270	1.650	1.600	0.165	1.600	1.600	0.190	1.600	1.600	0.270	1.650
35	1.35	1.350	0.290	1.350	1.350	0.180	1.35	1.350	0.270	1.350	1.150	0.250	1.150	1.150	0.155	1.150	1.150	0.180	1.150	1.150	0.260	1.200
50	0.99	1.000	0.290	1.050	0.990	0.180	1.000	0.990	0.270	1.000	0.870	0.250	0.900	0.860	0.155	0.870	0.860	0.180	0.870	0.860	0.260	0.890
70	0.68	0.700	0.280	0.750	0.680	0.175	0.710	0.680	0.260	0.730	0.600	0.240	0.650	0.590	0.150	0.610	0.590	0.175	0.620	0.590	0.250	0.650
95	0.49	0.510	0.270	0.580	0.490	0.170	0.520	0.490	0.260	0.560	0.440	0.230	0.500	0.430	0.145	0.450	0.430	0.170	0.460	0.430	0.250	0.490
120	0.39	0.410	0.260	0.480	0.390	0.165	0.430	0.390	0.250	0.470	0.350	0.230	0.420	0.340	0.140	0.370	0.340	0.165	0.380	0.340	0.240	0.420

Conductor operating temperature: 90°C

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

* Spacings larger than one cable diameter will result in a larger voltage drop.

The above table is in accordance with Table 4E1B of the 17th Edition of IEE Wiring Regulations.

For cables having conductors of 16mm² or less cross-sectional area their inductances can be ignored and (mV/A/m)r values only are tabulated. For cables having conductors greater than 16mm², cross-sectional area the impedance values are given as (mV/A/m)z, together with the resistive component (mV/A/m)r and the reactive component (mV/A/m)x.

The above paragraph is extracted from Appendix 4 of the 17th Edition of IEE Wiring Regulations.

DE-RATING FACTORS

AMBIENT TEMPERATURE	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	85°C	90°C	95°C
DE-RATING FACTOR	1.02	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	-	-	-