

6491B / H07Z-R / EN 50525-3-41 Cable



APPLICATION

Suitable for use in conduit and for fixed, protected installation.
For installations where fire, smoke emission and toxic fume create a potential risk to life and equipment.

CHARACTERISTICS

Voltage Rating U_o/U
450/750V

Temperature Rating
Fixed: 0°C to +90°C

Minimum Bending Radius
6 x overall diameter

CONSTRUCTION

Conductor
Class 2 stranded copper conductor)

Insulation
LSZH (Low Smoke Zero Halogen)

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

STANDARDS

EN 50525-3-41, EN 60228

Flame Retardant according to IEC/EN 60332-1-2
Halogen Free according to IEC/EN 61034-1/2,
IEC/EN 60754-1/2

REGULATORY COMPLIANCE

This cable is compliant with European Regulation EN 50575, the Construction Products Regulation.



This cable meets the requirements of the Low Voltage Directive 2014/35/EU and the RoHS Directive 2011/65/EU. RoHS compliance has been tested and confirmed by The Cable Lab® as meeting the requirements of the BSI RoHS Trusted Kitemark™.

DIMENSIONS

	NOMINAL CROSS SECTIONAL AREA mm ²	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
	1.5	0.7	3.4	22
	2.5	0.8	4.1	35
	4	0.8	4.7	50
	6	0.8	5.4	72
	10	1	6.8	121
	16	1	8	182
	25	1.2	9.8	285
	35	1.2	11	390
	50	1.4	13.2	510
	70	1.4	15.1	710
	95	1.6	17	980
	120	1.6	19	1220
	150	1.8	21	1500
	185	2	23.5	1910
	240	2.2	26.5	2490
	300	2.4	29.5	3100
	400	2.6	33.5	3950
	500	2.8	37	5000
	630	2.8	41	6350

* Designates the sheath colour. For each Eland Cables part number replace with the colour code as below e.g. A3Z6491B040BR = 4mm² Brown

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

NOMINAL CROSS SECTIONAL AREA mm ²	MINIMUM NO. OF WIRES IN CONDUCTOR mm						MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km	
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor	
	Cu	Al	Cu	Al	Cu	Al	Plain Wires	
1.5	7	-	6	-	-	-	12.1	
2.5	7	-	6	-	-	-	7.41	
4	7	-	6	-	-	-	4.61	
6	7	-	6	-	-	-	3.08	
10	7	7	6	6	-	-	1.83	
16	7	7	6	6	-	-	1.15	
25	7	7	6	6	6	6	0.727	
35	7	7	6	6	6	6	0.524	
50	19	19	6	6	6	6	0.387	
70	19	19	12	12	12	12	0.268	
95	19	19	15	15	15	15	0.193	
120	37	37	18	15	18	15	0.153	
150	37	37	18	15	18	15	0.124	
185	37	37	30	30	30	30	0.0991	
240	37	37	34	30	34	30	0.0754	

NOMINAL CROSS SECTIONAL AREA mm²	MINIMUM NO. OF WIRES IN CONDUCTOR mm						MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km
	Circular		Circular Compacted		Shaped		
	Cu	Al	Cu	Al	Cu	Al	
	Plain Wires						
300	61	61	34	30	34	30	0.0601
400	61	61	53	53	53	53	0.047
500	61	61	53	53	53	53	0.0366
600	91	91	53	53	53	53	0.0283

The above table is in accordance with EN 60228

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 IN WALL OR IN 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 1 x OD 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	3 or 4 Cables Three-Phase AC	2 Cables Single-Phase AC or DC	3 Cables Three-Phase AC		Horizontal	Vertical
								Flat	Trefoil		
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
35	131	117	164	144	176	161	200	176	169	226	201
50	158	141	198	175	228	209	242	216	207	275	246
70	200	179	253	222	293	268	310	279	268	353	318
95	241	216	306	269	355	326	377	342	328	430	389
120	278	249	354	312	413	379	437	400	383	500	454
150	318	285	393	342	476	436	504	464	444	577	527
185	362	324	449	384	545	500	575	533	510	661	605
240	424	380	528	450	644	590	679	634	607	781	719
300	486	435	603	514	743	681	783	736	703	902	833
400	-	-	683	584	868	793	940	868	823	1085	1008
500	-	-	783	666	990	904	1083	998	946	1253	1169
630	-	-	900	764	1130	1033	1254	1151	1088	1454	1362

Ambient temperature: 30°C

Conductor operating temperature: 90°C

Notes

- 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 Regulations 512.1.2 of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52).
- 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 of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.)

The above table is in accordance with Table 4E1A from the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.

VOLTAGE DROP

NOMINAL CROSS SECTIONAL AREA mm²	2 CABLES DC mV/A/m	2 CABLES SINGLE-PHASE AC mV/A/m									REFERENCE METHODS C, F AND G 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)								
					Cables Touching			Cables Spaced*						Cables touching, Trefoil			Cables touching, Flat			Cables spaced*, Flat		
1.5	31	31			31			31			27			27			27			27		
2.5	19	19			19			19			16			16			16			16		
4	12	12			12			12			10			10			10			10		
6	7.9	7.9			7.9			7.9			6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7			4.7			4			4			4			4		
16	2.9	2.9			2.9			2.9			2.5			2.5			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	1.85	0.31	1.90	1.85	0.19	1.85	1.85	0.28	1.85	1.60	0.27	1.65	1.60	0.165	1.60	1.60	0.19	1.60	1.60	0.27	1.65
35	1.35	1.35	0.29	1.35	1.35	0.18	1.35	1.35	0.27	1.35	1.15	0.25	1.15	1.15	0.155	1.15	1.15	0.18	1.15	1.15	0.26	1.20
50	0.99	1.00	0.29	1.05	0.99	0.18	1.00	0.99	0.27	1.00	0.87	0.25	0.90	0.86	0.155	0.87	0.86	0.18	0.87	0.86	0.26	0.89
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.68	0.26	0.73	0.60	0.24	0.65	0.59	0.15	0.61	0.59	0.175	0.62	0.59	0.25	0.65
95	0.49	0.51	0.27	0.58	0.49	0.17	0.52	0.49	0.26	0.56	0.44	0.23	0.50	0.43	0.145	0.45	0.43	0.17	0.46	0.43	0.25	0.49
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.39	0.25	0.47	0.35	0.23	0.42	0.34	0.14	0.37	0.34	0.165	0.38	0.34	0.24	0.42
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.32	0.25	0.41	0.29	0.23	0.37	0.28	0.14	0.31	0.28	0.165	0.32	0.28	0.24	0.37
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.25	0.25	0.36	0.23	0.23	0.32	0.22	0.14	0.26	0.22	0.165	0.28	0.22	0.24	0.33
240	0.19	0.21	0.26	0.33	0.20	0.16	0.25	0.195	0.25	0.31	0.185	0.22	0.29	0.17	0.14	0.22	0.17	0.165	0.24	0.17	0.24	0.29
300	0.155	0.175	0.25	0.31	0.16	0.16	0.22	0.155	0.25	0.29	0.15	0.22	0.27	0.14	0.14	0.195	0.135	0.16	0.21	0.135	0.24	0.27
400	0.12	0.14	0.25	0.29	0.13	0.155	0.20	0.125	0.24	0.27	0.125	0.22	0.25	0.11	0.135	0.175	0.11	0.16	0.195	0.11	0.24	0.26
500	0.093	0.12	0.25	0.28	0.105	0.155	0.185	0.098	0.24	0.26	0.10	0.22	0.24	0.09	0.135	0.16	0.088	0.16	0.18	0.085	0.24	0.25
630	0.072	0.10	0.25	0.27	0.086	0.155	0.175	0.078	0.24	0.25	0.088	0.21	0.23	0.074	0.135	0.15	0.071	0.16	0.17	0.068	0.23	0.24

Conductor Operating Temperature: 90°C

r = Resistive Component

x = Reactive Component

z = Impedance Value

* Spacings larger than those specified in Method 12 (see table 4A of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.) will result in larger volt drop.

The above table is in accordance with Table 4E1B from the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.

DE-RATING FACTORS

For Ambient Air Temperatures other than 30°C

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

The above table is in accordance with Table 4B1 of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.