



Mining trailing & reeling cables

BS 6708 Type 321 & Type 331 (1.9/3.3 kV)

BS 6708 Type 321 & 331 Armoured Trailing Cable (1.9/3.3 kV)

1,900/3,300 V pliable galvanised steel wire armoured 4-core trailing cable (25–150 mm²)



BS 6708:1998 Type 321 / 331

1,900/3,300 V · 25–150 mm²

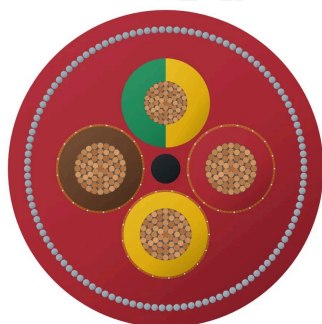
Pliable GSW Armoured Trailing

Application

BS 6708:1998 Type 321 (unscreened) and Type 331 (screened phase cores) pliable-armoured 1,900/3,300 V trailing cables with three MEPR phase cores, earth core, PCP inner sheath, pliable steel wire armour and PCP sheath.

Typical uses: Underground mine roadway extension feeders, Quarry electric shovels & mobile crushers, Coalface gate-end box interconnections, Open-cast dewatering pump feeders, Mobile skid substation links, Mechanically exposed 3.3 kV trailing routes

Construction



Cross-section, not to scale

1	Flexible phase & earth conductors (4)	IEC 60228 Class 5
2	MEPR core insulation	BS 6708:1998 (6.5 kV test)
3	Composite copper / nylon phase screen (Type 331)	Type 331 phase screen
4	Elastomeric centre	BS 6708:1998
5	Extruded PCP inner bedding sheath	BS 6708:1998
6	Pliable galvanised steel wire armour	BS 6708:1998
7	Heavy-duty PCP outer sheath	BS 6708:1998

Technical data

Typical values

Rated voltage U0/U	1,900/3,300 V AC · 6.5 kV routine AC test voltage	Current rating (25 °C)	110 to 320 A continuous at 25 °C ambient (Type 331) · 135 to 295 A (Type 321)
Core screening & earth path	Type 331: Composite Cu/nylon braid on 3 phase cores (0.55–1.35 Ω/km parallel) + insulated earth + pliable GSW armour · Type 321: Unscreened cores + full-size earth + pliable GSW armour	Ambient temperature range	–25 °C to +85 °C
Max. conductor temperature	+90 °C continuous MEPR operating temperature	Min. bending radius	620–980 mm (Type 331) · 640–940 mm (Type 321) (~10 × max OD)
Max. pulling tension	540 to 2,000 kgf (Type 331) · 840 to 2,000 kgf (Type 321)	Armour & sheaths	Extruded PCP inner bedding sheath + pliable galvanised steel wire armour (PWA) + heavy-duty black PCP outer sheath with blue stripe
Crush & impact protection	Pliable galvanised steel wire armour over PCP inner sheath resists rockfall and quarry vehicle run-over	Flame, oil & water	Heavy-duty flame-retardant polychloroprene (PCP) outer sheath resists oil, mine water and abrasion
Standards	BS 6708:1998 (Flexible cables for use at mines and quarries)		

Sizes

12 standard constructions

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Designation BS 6708 Type	Phase mm ²	Earth mm ²	Phase insul. Ø mm	Phase screen Ø mm	Earth insul. Ø mm	Inner min Ø mm	Inner max Ø mm	Min. OD mm	Max. OD mm	Min. bend mm	Max. pull kgf	Mass ≈ kg/km
☐ Type 331 · 3×25 + 16E (Scr)	25	16	13.50	15.50	15.50	42.20	44.70	57.80	61.60	620	540	6,400
☐ Type 331 · 3×35 + 25E (Scr)	35	25	15.10	17.10	17.10	48.20	50.70	64.60	68.40	690	780	7,800
☐ Type 331 · 3×50 + 35E (Scr)	50	35	16.20	18.20	18.20	52.60	55.60	69.80	73.80	740	1,110	9,100
☐ Type 331 · 3×70 + 50E (Scr)	70	50	18.15	20.15	20.15	60.00	63.00	80.30	84.60	850	1,560	12,400
☐ Type 331 · 3×95 + 70E (Scr)	95	70	19.60	21.60	21.60	65.10	68.90	86.40	90.70	910	2,000	14,600
☐ Type 331 · 3×120 + 70E (Scr)	120	70	21.95	23.95	23.95	68.80	72.60	90.90	95.20	960	2,000	16,300
☐ Type 331 · 3×150 + 70E (Scr)	150	70	23.10	25.40	25.40	71.50	74.00	93.80	98.10	980	2,000	18,200
☐ Type 321 · 3×35 + 35E (Unscr)	35	35	15.10	Unscreened	15.10	44.30	46.80	60.30	64.10	640	840	4,900
☐ Type 321 · 3×50 + 50E (Unscr)	50	50	16.20	Unscreened	16.20	51.30	54.30	68.30	72.30	720	1,200	6,400
☐ Type 321 · 3×70 + 70E (Unscr)	70	70	18.15	Unscreened	18.15	56.40	59.40	74.40	78.40	790	1,680	7,700
☐ Type 321 · 3×95 + 95E (Unscr)	95	95	19.60	Unscreened	19.60	63.80	66.80	84.90	89.20	890	2,000	10,800
☐ Type 321 · 3×120 + 120E (Unscr)	120	120	21.95	Unscreened	21.95	67.50	71.30	89.40	93.70	940	2,000	12,300

- In Type 331, the unscreened earth core insulation is built up to match the diameter over the screened phase cores (15.50–25.40 mm) so all four cores form a symmetrical assembly.
- In Type 321, all four unscreened cores (3 phase + 1 earth) have identical copper cross-sections and insulated diameters (15.10–21.95 mm).

Electrical parameters

12 sizes

Designation BS 6708 Type	Cont. current A (25 °C)	Phase DC 20 °C Ω/km	Earth DC 20 °C Ω/km	3 screens par. Ω/km	Armour DC 20 °C Ω/km	Reactance 50 Hz Ω/km	Reactance 60 Hz Ω/km	Min. IR 20 °C MΩ·km	3-ph V-drop mV/A/m
Type 331 · 3×25 + 16E (Scr)	110	0.795	1.240	1.350	0.965	0.125	0.150	1,250	1.69
Type 331 · 3×35 + 25E (Scr)	135	0.565	0.795	0.800	0.844	0.117	0.140	1,100	1.21
Type 331 · 3×50 + 35E (Scr)	170	0.393	0.565	0.700	0.715	0.113	0.136	950	0.85
Type 331 · 3×70 + 50E (Scr)	205	0.277	0.393	0.690	0.488	0.108	0.129	820	0.61
Type 331 · 3×95 + 70E (Scr)	250	0.210	0.277	0.840	0.382	0.105	0.126	720	0.48
Type 331 · 3×120 + 70E (Scr)	295	0.164	0.277	0.550	0.299	0.101	0.121	660	0.39
Type 331 · 3×150 + 70E (Scr)	320	0.132	0.277	0.550	0.240	0.098	0.118	600	0.32
Type 321 · 3×35 + 35E (Unscr)	135	0.565	0.565	—	0.990	0.117	0.140	1,100	1.21
Type 321 · 3×50 + 50E (Unscr)	170	0.393	0.393	—	0.760	0.113	0.136	950	0.85
Type 321 · 3×70 + 70E (Unscr)	205	0.277	0.277	—	0.530	0.108	0.129	820	0.61
Type 321 · 3×95 + 95E (Unscr)	250	0.210	0.210	—	0.400	0.105	0.126	720	0.48
Type 321 · 3×120 + 120E (Unscr)	295	0.164	0.164	—	0.320	0.101	0.121	660	0.39

– Armour DC resistance at 20 °C (0.240–0.990 Ω/km) works in parallel with the insulated earth core (and the 3 phase screens on Type 331) to provide high earth-fault conductivity.

Standards and approvals

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

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Typical values for this cable type, based on BS 6708:1998 · IEC 60228 Class 5. Values for your order are confirmed in the quotation. Subject to change without notice.
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