



Mining trailing & reeling cables

BS 6708 Type 7 / 7M / 7S

BS 6708 Type 7, Type 7M & Type 7S Mining Trailing Cable

640/1,100 V screened coalcutter & face-machine cables with central bare earth

- BS 6708
- 640/1,100 V · Types 7 / 7M / 7S
- Central Bare Earth

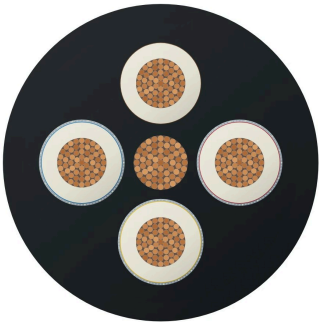


Application

640/1,100 V five-core trailing cable to BS 6708:1998 for underground coal cutters, shearers, Roadheaders and shuttle cars, with three tinned copper/nylon composite screened EPR phase cores, pilot core, conductive cradle and heavy-duty PCP sheath.

Typical uses: Underground coalcutters & shearers, Roadheaders & continuous miners, Mobile face crushers & feeders, Deep-mine gassy headings, Surface quarry mobile plant, Gate-end box trailing leads

Construction



Cross-section, not to scale

1	Phase & pilot conductors	IEC 60228 Class 5
2	Core insulation	BS 7655 / BS 6708
3	Identification separator	
4	Composite core screen	
5	Central bare earth	
6	Inner bedding	
7	Outer sheath	BS 6708 / BS 7655 EM2

Technical data

Typical values

Rated voltage (U0/U)	640/1,100 V AC (U0/U)	AC test voltage	3.0 kV AC on phase cores; 2.5 kV AC on Type 7S 3-core pilot unit
Current ratings (25 °C)	85 to 320 A continuous · 96 to 385 A intermittent (at 25 °C ambient)	Core screening by Type	Type 7: composite tinned copper/nylon braid on 3 phase cores (pilot unscreened) · Type 7M: braid screen on all 3 phase + 1 pilot core · Type 7S: braid screen on 3 phase cores + unscreened 3-core pilot unit
Central earth arrangement	Central uninsulated (bare) stranded tinned copper earth conductor (16 to 70 mm ²) in direct contact with composite core screens	Max. conductor temperature	+90 °C maximum continuous conductor temperature (EPR insulation)
Operating temperature range	-25 °C to +85 °C ambient flex / surface range (current ratings referenced at 25 °C)	Minimum bending radius	309 to 630 mm (~8 × maximum overall diameter)
Maximum pulling tension	480 to 2,000 kgf maximum pulling tension (Type 7/7M); 1,120 to 2,000 kgf (Type 7S)	Bedding & outer sheath	Rubber-based inner bedding compound + heavy-duty polychloroprene (PCP) outer sheath
Flame retardance	Flame retardant polychloroprene outer sheath to BS 6708 / BS EN 60332-1-2	Mine & quarry environment	Resists coal-cutter trailing abrasion, rock impact, mineral oils, grease and mine moisture in explosive gas/dust atmospheres
Standards	BS 6708 (Types 7, 7M, 7S); IEC 60228 Class 5; BS 7655		

Sizes

21 standard constructions

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Type · nominal CSA mm ²	Phase stranding	Cond. Ø mm	Insul. Ø mm	Screen Ø mm	Earth mm ²	Pilot mm ²	Min. OD mm	Max. OD mm	Min. bend R mm	Max. pull kgf	Cu mass kg/km	Mass ≈ kg/km	Cont. A (25 °C)	Interm. A (25 °C)
BS 6708 Type 7 · 640/1, 100 V (3 Screened Phase + 1 Unscreened Pilot + Central Bare Earth) 8 sizes														
☐ Type 7 · 3×16+16E+16P	126/0.40	5.50	8.85	11.15	1×16	1×16 (unscr.)	35.8	38.6	309	480	1,070	2,400	85	96
☐ Type 7 · 3×25+16E+16P	196/0.40	6.75	10.35	12.65	1×16	1×16 (unscr.)	39.7	42.9	343	642	1,330	2,950	110	125
☐ Type 7 · 3×35+18E+16P	276/0.40	8.00	11.60	13.90	1×18	1×16 (unscr.)	43.1	46.3	370	834	1,690	3,520	135	150
☐ Type 7 · 3×50+25E+25P	396/0.40	9.75	13.60	15.90	1×25	1×25 (unscr.)	48.5	51.8	414	1,200	2,320	4,600	170	200
☐ Type 7 · 3×70+35E+35P	360/0.50	11.60	15.70	18.00	1×35	1×35 (unscr.)	55.1	58.8	470	1,680	3,190	6,200	205	250
☐ Type 7 · 3×95+50E+50P	475/0.50	12.75	17.25	19.55	1×50	1×50 (unscr.)	62.4	66.1	529	2,000	4,300	7,900	250	310
☐ Type 7 · 3×120+50E+70P	608/0.50	15.10	20.05	22.35	1×50	1×70 (unscr.)	68.0	72.5	580	2,000	5,100	9,650	295	355
☐ Type 7 · 3×150+70E+95P	740/0.50	17.00	22.20	24.50	1×70	1×95 (unscr.)	70.4	78.4	627	2,000	6,500	11,500	320	385
BS 6708 Type 7M · 640/1, 100 V (3 Screened Phase + 1 Screened Pilot + Central Bare Earth) 8 sizes														
☐ Type 7M · 3×16+16E+16P	126/0.40	5.50	8.85	11.15	1×16	1×16 (screened)	35.8	38.6	309	480	1,130	2,500	85	96
☐ Type 7M · 3×25+16E+25P	196/0.40	6.75	10.35	12.65	1×16	1×25 (screened)	39.7	42.9	343	642	1,380	3,150	110	125
☐ Type 7M · 3×35+18E+35P	276/0.40	8.00	11.60	13.90	1×18	1×35 (screened)	43.1	46.3	370	834	1,800	3,650	135	150
☐ Type 7M · 3×50+25E+50P	396/0.40	9.75	13.60	15.90	1×25	1×50 (screened)	48.5	51.8	414	1,200	2,450	4,700	170	200
☐ Type 7M · 3×70+35E+70P	360/0.50	11.60	15.70	18.00	1×35	1×70 (screened)	55.1	58.8	470	1,680	3,350	6,350	205	250
☐ Type 7M · 3×95+50E+95P	475/0.50	12.75	17.25	19.55	1×50	1×95 (screened)	62.4	66.1	529	2,000	4,500	8,200	250	310
☐ Type 7M · 3×120+50E+120P	608/0.50	15.10	20.05	22.35	1×50	1×120 (screened)	68.0	72.5	580	2,000	5,300	9,900	295	355
☐ Type 7M · 3×150+70E+150P	740/0.50	17.00	22.20	24.50	1×70	1×150 (screened)	70.4	78.4	627	2,000	7,350	11,800	320	385
BS 6708 Type 7S · 640/1, 100 V (3 Screened Phase + 3-Core Pilot Unit + Central Bare Earth) 5 sizes														
☐ Type 7S · 3×50+25E+3×4P	396/0.40	9.75	13.60	15.90	1×25	3×4 unit (15.6 mm)	48.5	51.8	420	1,120	2,200	4,450	170	200
☐ Type 7S · 3×70+35E+3×6P	360/0.50	11.60	15.70	18.00	1×35	3×6 unit (17.7 mm)	55.1	58.8	470	1,570	3,150	6,080	205	250
☐ Type 7S · 3×95+50E+3×6P	475/0.50	12.75	17.25	19.55	1×50	3×6 unit (19.3 mm)	62.4	66.1	530	2,000	4,250	6,650	250	310
☐ Type 7S · 3×120+50E+3×10P	608/0.50	15.10	20.05	22.35	1×50	3×10 unit (22.1 mm)	68.0	72.5	580	2,000	4,800	8,300	295	355
☐ Type 7S · 3×150+70E+3×10P	740/0.50	17.00	22.20	24.50	1×70	3×10 unit (24.2 mm)	70.4	78.4	630	2,000	5,300	10,500	320	385

- In Type 7S, the 3-core unscreened pilot unit uses 3×4 mm² (56/0.30, unit Ø 15.60 mm), 3×6 mm² (84/0.30, unit Ø 17.70–19.25 mm) or 3×10 mm² (80/0.40, unit Ø 22.05–24.20 mm).

- Continuous and intermittent current ratings are referenced at 25 °C ambient temperature per BS 6708.

Electrical parameters

21 sizes

Type · nominal CSA mm ²	Phase DC res. Ω/km (20 °C)	Pilot DC res. Ω/km (20 °C)	Screens + earth Ω/km	Reactance 50 Hz Ω/km	Reactance 60 Hz Ω/km	Min. insul. res. MΩ·km	Voltage drop mV/A/m
BS 6708 Type 7 · Electrical data 8 sizes							
Type 7 · 3×16+16E+16P	1.240	1.240	0.660	0.109	0.131	435	2.62
Type 7 · 3×25+16E+16P	0.795	1.240	0.560	0.107	0.128	375	1.68
Type 7 · 3×35+18E+16P	0.565	1.240	0.540	0.101	0.121	325	1.20
Type 7 · 3×50+25E+25P	0.393	0.795	0.440	0.098	0.118	285	0.84
Type 7 · 3×70+35E+35P	0.277	0.565	0.300	0.095	0.114	260	0.61
Type 7 · 3×95+50E+50P	0.210	0.393	0.260	0.094	0.113	250	0.47
Type 7 · 3×120+50E+70P	0.164	0.277	0.240	0.092	0.110	250	0.38
Type 7 · 3×150+70E+95P	0.132	0.210	0.176	0.080	0.096	250	0.32
BS 6708 Type 7M · Electrical data 8 sizes							
Type 7M · 3×16+16E+16P	1.240	1.240	0.580	0.109	0.131	435	2.62
Type 7M · 3×25+16E+25P	0.795	0.795	0.470	0.107	0.128	375	1.68
Type 7M · 3×35+18E+35P	0.565	0.565	0.450	0.101	0.121	325	1.20
Type 7M · 3×50+25E+50P	0.393	0.393	0.380	0.098	0.118	285	0.84
Type 7M · 3×70+35E+70P	0.277	0.277	0.270	0.095	0.114	260	0.61
Type 7M · 3×95+50E+95P	0.210	0.210	0.230	0.094	0.113	250	0.47
Type 7M · 3×120+50E+120P	0.164	0.164	0.210	0.092	0.110	250	0.38
Type 7M · 3×150+70E+150P	0.132	0.132	0.158	0.080	0.096	250	0.32
BS 6708 Type 7S · Electrical data 5 sizes							
Type 7S · 3×50+25E+3×4P	0.393	5.470	0.440	0.098	0.118	285	0.84
Type 7S · 3×70+35E+3×6P	0.277	3.600	0.300	0.095	0.114	260	0.61
Type 7S · 3×95+50E+3×6P	0.210	3.600	0.260	0.094	0.113	250	0.47
Type 7S · 3×120+50E+3×10P	0.164	2.090	0.240	0.092	0.110	250	0.38
Type 7S · 3×150+70E+3×10P	0.132	2.090	0.176	0.080	0.096	250	0.32

– Screens + earth resistance reflects the three composite copper/nylon phase screens (plus pilot screen in Type 7M) in parallel contact with the central bare earth conductor.

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. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.