

Application

BS 5308 Part 1 Type 2 with individual and overall screens and a low-smoke zero-halogen sheathing system (near-equivalent to EN 50288-7) is a halogen-free, galvanised-steel-wire-armoured, polyethylene-insulated instrumentation and process-control cable for circuits with high requirements for interference immunity between individual signal pairs and high mechanical protection. The plain copper conductors are insulated with polyethylene (PE) and stranded into pairs (or triples); each pair is individually screened with an aluminium/polyester foil in contact with a tinned copper drain wire, and all screened pairs are enclosed by a further overall (collective) aluminium/polyester foil screen with its own tinned copper drain wire (individual + overall, PiMF). A layer of galvanised round steel wires over an inner LSZH bedding provides mechanical protection, and a low-smoke zero-halogen (LSZH) outer sheath completes the cable and limits smoke and corrosive gas emission in fire. In BS 5308 / PAS 5308 the Part denotes the core insulation (Part 1 = polyethylene, Part 2 = PVC) and the Type denotes the armour (Type 1 = unarmoured, Type 2 = galvanised steel-wire-armoured); the screening, either an overall (collective) screen only or individual pair screens plus an overall screen, is specified separately. Because Type 2 denotes the armour, this armoured construction is Part 1 Type 2. British near-equivalent of EN 50288-7 RE-2Y(St)H SWA PiMF. The cable is not intended for power distribution.



CONSTRUCTION

Conductor	Plain (bare) annealed copper, solid class 1, stranded class 2 or flexible class 5 (0.5 mm ² : 1/0.80 mm solid or 16/0.20 mm flexible) acc. to IEC 60228 (BS EN 60228).
Insulation	Polyethylene (PE). Cross-linked polyethylene (XLPE) on request; the XLPE version follows the BS 5308 Part 1 design, but BS 5308 Part 1 itself specifies PE.
Screen	Individual screen on every pair (IAM): aluminium/polyester foil in contact with a tinned copper drain wire (0.5 mm ²); the assembled pairs are enclosed by a collective (overall) aluminium/polyester foil screen (CAM) with a further tinned copper drain wire (0.5 mm ²).
Armour	Galvanised round steel wires acc. to EN 10257-1, over an LSZH inner sheath (bedding).
Sheath	Halogen-free, low-smoke (LSZH) thermoplastic compound; black (UV-resistant) or blue for intrinsically safe circuits.
Core identification	Each pair black/blue, individually screened and numbered; black/white on agreement. Triples: colour code on request.

ELECTRICAL & THERMAL PROPERTIES

Rated voltage U_o/U	300/500 V (300 V core to earth, 500 V core to core).
Test voltage	1.5 kV.
Standard	BS 5308 Part 1 Type 2 (withdrawn; current standard EN 50288-7); conductor acc. to IEC 60228.
Flame-retardant	Acc. to BS EN 60332-1-2 and IEC 60332-3-24.
Halogen-free	Acc. to IEC 60754-1/-2 (halogen-free) and IEC 61034-1/-2 (low smoke).
Max. conductor temperature	+70 °C (PE); +90 °C for the XLPE version.
Permitted outer cable temperature, fixed	-30 °C to +70 °C.
Min. bending radius, fixed	10 × overall diameter.
Reaction to fire (CPR)	Eca (EN 50575, armoured halogen-free version); Cca on request for the unarmoured LSZH version. The Declaration of Performance for the version supplied is available from Q Cables on request.

DIMENSIONS & TECHNICAL DATA

Pairs × mm2	Cond. R @20°C (Ω/km)	Nominal O.D. (mm)	Weight (kg/km)
2 × 0.5	36.7	13.3	311
4 × 0.5	36.7	14.8	373
5 × 0.5	36.7	15.8	451
6 × 0.5	36.7	16.9	483
8 × 0.5	36.7	17.9	537
10 × 0.5	36.7	19.9	781
12 × 0.5	36.7	20.5	804
16 × 0.5	36.7	23.5	968
20 × 0.5	36.7	25.6	1143
24 × 0.5	36.7	27.4	1264
2 × 0.75	25	14.3	342
4 × 0.75	25	15.8	439
5 × 0.75	25	17.3	496
6 × 0.75	25	18.4	578
8 × 0.75	25	19.2	664
10 × 0.75	25	22.3	876
12 × 0.75	25	23.1	942
16 × 0.75	25	25.7	1130
20 × 0.75	25	27.9	1325
24 × 0.75	25	30.1	1490
2 × 1	18.5	15	382
4 × 1	18.5	16.7	487
5 × 1	18.5	18.3	566
6 × 1	18.5	19.5	641
8 × 1	18.5	20.6	718
10 × 1	18.5	23.7	994
12 × 1	18.5	24.7	1083
16 × 1	18.5	27.4	1361
20 × 1	18.5	29.8	1510
24 × 1	18.5	32.2	1902
2 × 1.5	12.3	16.6	475
4 × 1.5	12.3	18.7	599
5 × 1.5	12.3	20.3	818
6 × 1.5	12.3	22.6	940
8 × 1.5	12.3	24.1	1037
10 × 1.5	12.3	26.9	1273
12 × 1.5	12.3	27.8	1353
16 × 1.5	12.3	31.2	1932
20 × 1.5	12.3	34.8	2224
24 × 1.5	12.3	37.6	2541

Triples × mm2	Cond. R @20°C (Ω/km)	Nominal O.D. (mm)	Weight (kg/km)
2 × 0.5	36.7	14.3	363
4 × 0.5	36.7	15.7	456
5 × 0.5	36.7	17.2	516

Triples × mm ²	Cond. R @20°C (Ω/km)	Nominal O.D. (mm)	Weight (kg/km)
6 × 0.5	36.7	18.8	611
8 × 0.5	36.7	19.7	766
10 × 0.5	36.7	22.7	950
12 × 0.5	36.7	23.3	975
16 × 0.5	36.7	26	1169
20 × 0.5	36.7	28.2	1365
24 × 0.5	36.7	30.5	1604
2 × 0.75	25	15.2	408
4 × 0.75	25	17.2	521
5 × 0.75	25	18.5	590
6 × 0.75	25	20.2	819
8 × 0.75	25	21.7	941
10 × 0.75	25	24.7	1103
12 × 0.75	25	25.6	1176
16 × 0.75	25	28.4	1439
20 × 0.75	25	31	1804
24 × 0.75	25	33.5	2164
2 × 1	18.5	16.1	447
4 × 1	18.5	18.2	579
5 × 1	18.5	19.6	688
6 × 1	18.5	21.7	913
8 × 1	18.5	23.8	1033
10 × 1	18.5	26.6	1277
12 × 1	18.5	27.3	1380
16 × 1	18.5	30.3	1686
20 × 1	18.5	33.2	2200
24 × 1	18.5	36.6	2504
2 × 1.5	12.3	18	531
4 × 1.5	12.3	20.2	817
5 × 1.5	12.3	22.8	998
6 × 1.5	12.3	25.2	1162
8 × 1.5	12.3	27	1304
10 × 1.5	12.3	30.2	1541
12 × 1.5	12.3	31	1952
16 × 1.5	12.3	35.4	2384
20 × 1.5	12.3	38.8	2795
24 × 1.5	12.3	41.8	3093

Outer diameters, weights and conductor resistances are nominal manufacturer values for the steel-wire-armoured individually-screened pair ($n \times 2 \times \text{mm}^2$) and triple ($n \times 3 \times \text{mm}^2$) constructions; all values are indicative and non-binding.