Fireguard

Flame Retardant Instrumentation & Data Cables

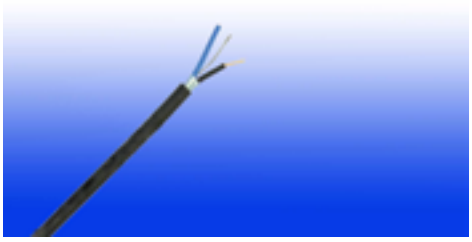
www.caledonian-cables.co.uk www.addison-cables.com

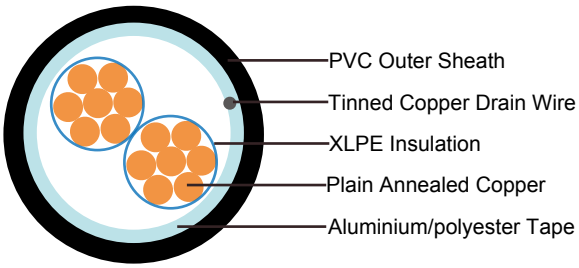
Caledonian

TABLE OF CONTENTS

Flame Retardant Overall Screened Instrumentation Cables (Multicore)

RE-2X(St)Y





APPLICATION

The unarmoured XLPE versions are generally used for indoor installation and suitable for wet and damp areas. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as options.

Overall Screen: Aluminium/polyester tape is applied over the laid up cores with metallic side down in contact with tinned copper drain wire, 0.5mm². Copper braid screen or aluminium/polyester tape combined with copper braid screen can be offered as option.

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.

Outer Sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: -30°C - +90°C

Temperature range fixed installation: -5°C - +50°C

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius: 7.5 x Overall Diameter

ELECTRICAL PROPERTIES

300V

Conductor Area Size		mm^2	0.5	0.75	1.0	1.5
Insulation Thickness (Nominal)		mm	0.4	0.4	0.4	0.5
Insulation Thickness (Minimum)		mm	0.26	0.26	0.26	0.35
Conductor Resistance (20°C)		ohm/km	36.7	25.0	18.5	12.3
Minimum Insulation Resistance (20°C)		Mohm/km	1000			
Maximum Mutual Capacitance		nf/km	250			
Capacitance Unbalance		pf/500m	500			
Maximum L/R (Ratio)		µH/Ω	25	25	25	40
Operating Voltage		V	300			
Dielectric Strength for 1 Minute	AC	V	≥1000			
	DC	V	≥2000			

500V

Conductor Area Size		mm^2	0.5	0.75	1.0	1.5	2.5
Insulation Thickness (Nominal)		mm	0.6	0.6	0.6	0.6	0.7
Insulation Thickness (Minimum)		mm	0.44	0.44	0.44	0.44	0.53
Conductor Resistance (20°C)		ohm/km	36.7	25.0	18.5	12.3	7.4
Minimum Insulation Resistance (20°C)		Mohm/km	1000				
Maximum Mutual Capacitance		nf/km	250				
Capacitance Unbalance		pf/500m	500				
Maximum L/R (Ratio)		µH/Ω	25	25	25	40	60
Operating Voltage		V	500				
Dielectric Strength for 1 Minute	AC	V	≥2000				
	DC	V	≥3000				

CONSTRUCTION PARAMETERS

300V

Conductor		RE-2X(St)Y			
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
$0.5mm^2$					
2x0.5	2	0.4	0.9	5.5	40
3x0.5	2	0.4	0.9	5.7	49
4x0.5	2	0.4	0.9	6.2	59
5x0.5	2	0.4	0.9	6.7	69
8x0.5	2	0.4	1.0	8.0	101
10x0.5	2	0.4	1.0	9.1	123
12x0.5	2	0.4	1.0	9.4	139
14x0.5	2	0.4	1.0	9.8	157
16x0.5	2	0.4	1.0	10.3	175
20x0.5	2	0.4	1.1	11.3	215
24x0.5	2	0.4	1.1	12.8	254
27x0.5	2	0.4	1.1	13.0	279
30x0.5	2	0.4	1.2	13.7	311
37x0.5	2	0.4	1.2	14.7	370
40x0.5	2	0.4	1.2	15.2	397
$0.75mm^2$					
2x0.75	2	0.4	0.9	5.8	47
3x0.75	2	0.4	0.9	6.1	59
4x0.75	2	0.4	0.9	6.6	72
5x0.75	2	0.4	1.0	7.4	88
8x0.75	2	0.4	1.0	8.5	125
10x0.75	2	0.4	1.1	10.0	158
12x0.75	2	0.4	1.1	10.3	181
14x0.75	2	0.4	1.1	10.8	204
16x0.75	2	0.4	1.1	11.4	228
20x0.75	2	0.4	1.2	12.4	280
24x0.75	2	0.4	1.3	14.3	339
27x0.75	2	0.4	1.3	14.6	372
30x0.75	2	0.4	1.3	15.1	406
37x0.75	2	0.4	1.3	16.2	485
40x0.75	2	0.4	1.4	16.9	528
$1.0mm^2$					
2x1.0	2	0.4	0.9	6.2	57
3x1.0	2	0.4	0.9	6.6	72
4x1.0	2	0.4	0.9	7.1	89
5x1.0	2	0.4	0.9	7.7	106
8x1.0	2	0.4	1.0	9.2	158
10x1.0	2	0.4	1.0	10.7	195
12x1.0	2	0.4	1.0	11.0	224
14x1.0	2	0.4	1.0	11.6	255

Conductor		RE-2X(St)Y			
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
16x1.0	2	0.4	1.1	12.4	292
20x1.0	2	0.4	1.2	13.5	360
24x1.0	2	0.4	1.2	15.3	427
27x1.0	2	0.4	1.2	15.6	471
30x1.0	2	0.4	1.2	16.2	516
37x1.0	2	0.4	1.3	17.6	630
40x1.0	2	0.4	1.3	18.3	676
$1.5mm^2$					
2x1.5	2	0.5	0.9	7.2	74
3x1.5	2	0.5	0.9	7.6	97
4x1.5	2	0.5	1.0	8.5	124
5x1.5	2	0.5	1.0	9.2	149
8x1.5	2	0.5	1.1	10.9	224
10x1.5	2	0.5	1.1	12.8	276
12x1.5	2	0.5	1.1	13.2	318
14x1.5	2	0.5	1.2	14.0	370
16x1.5	2	0.5	1.2	14.8	415
20x1.5	2	0.5	1.3	16.1	512
24x1.5	2	0.5	1.3	18.3	609
27x1.5	2	0.5	1.4	18.9	682
30x1.5	2	0.5	1.4	19.6	748
37x1.5	2	0.5	1.4	21.1	901
40x1.5	2	0.5	1.5	22.1	978

500V

Conductor		RE-2X(St)Y			
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
$0.5mm^2$					
2x0.5	2	0.6	0.9	6.3	47
3x0.5	2	0.6	0.9	6.6	57
4x0.5	2	0.6	0.9	7.1	69
5x0.5	2	0.6	0.9	7.8	81
8x0.5	2	0.6	1.0	9.2	119
10x0.5	2	0.6	1.0	10.7	146
12x0.5	2	0.6	1.1	11.2	171
14x0.5	2	0.6	1.1	11.8	192
16x0.5	2	0.6	1.1	12.4	214
20x0.5	2	0.6	1.2	13.6	262
24x0.5	2	0.6	1.2	15.4	310
27x0.5	2	0.6	1.2	15.7	339
30x0.5	2	0.6	1.3	16.5	378

Conductor		RE-2X(St)Y			
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
37x0.5	2	0.6	1.3	17.7	449
40x0.5	2	0.6	1.3	18.3	480
$0.75mm^2$					
2x0.75	2	0.6	0.9	6.6	54
3x0.75	2	0.6	0.9	7.0	68
4x0.75	2	0.6	0.9	7.6	83
5x0.75	2	0.6	1.0	8.4	102
8x0.75	2	0.6	1.0	9.8	145
10x0.75	2	0.6	1.0	11.4	178
12x0.75	2	0.6	1.0	11.8	203
14x0.75	2	0.6	1.1	12.6	236
16x0.75	2	0.6	1.1	13.3	264
20x0.75	2	0.6	1.2	14.5	324
24x0.75	2	0.6	1.3	16.7	392
27x0.75	2	0.6	1.3	17.0	430
30x0.75	2	0.6	1.3	17.6	469
37x0.75	2	0.6	1.4	19.2	570
40x0.75	2	0.6	1.4	19.9	611
$1.0mm^2$					
2x1.0	2	0.6	0.9	7.0	64
3x1.0	2	0.6	0.9	7.4	82
4x1.0	2	0.6	1.0	8.3	105
5x1.0	2	0.6	1.0	9.0	124
8x1.0	2	0.6	1.0	10.5	179
10x1.0	2	0.6	1.1	12.5	226
12x1.0	2	0.6	1.1	12.9	260
14x1.0	2	0.6	1.1	13.5	295
16x1.0	2	0.6	1.2	14.4	337
20x1.0	2	0.6	1.2	15.6	407
24x1.0	2	0.6	1.3	17.9	492
27x1.0	2	0.6	1.3	18.3	541
30x1.0	2	0.6	1.3	19.0	592
37x1.0	2	0.6	1.4	20.6	721
40x1.0	2	0.6	1.4	21.4	774
$1.5mm^2$					
2x1.5	2	0.6	0.9	7.6	78
3x1.5	2	0.6	1.0	8.2	106
4x1.5	2	0.6	1.0	8.9	131
5x1.5	2	0.6	1.0	9.7	157
8x1.5	2	0.6	1.1	11.6	236
10x1.5	2	0.6	1.2	13.8	297
12x1.5	2	0.6	1.2	14.2	342
14x1.5	2	0.6	1.2	14.9	389
16x1.5	2	0.6	1.2	15.7	437

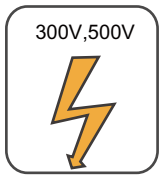
Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

Conductor		RE-2X(St)Y			
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
20x1.5	2	0.6	1.3	17.2	539
24x1.5	2	0.6	1.4	19.7	650
27x1.5	2	0.6	1.4	20.2	717
30x1.5	2	0.6	1.4	20.9	786
37x1.5	2	0.6	1.5	22.7	958
40x1.5	2	0.6	1.5	23.6	1028
$2.5mm^2$					
2x2.5	2	0.7	1.0	9.0	113
3x2.5	2	0.7	1.0	9.5	149
4x2.5	2	0.7	1.0	10.4	187
5x2.5	2	0.7	1.1	11.6	232
8x2.5	2	0.7	1.2	13.9	351
10x2.5	2	0.7	1.3	16.4	441
12x2.5	2	0.7	1.3	17.0	511
14x2.5	2	0.7	1.3	17.9	584
16x2.5	2	0.7	1.4	19.0	667
20x2.5	2	0.7	1.4	20.6	811
24x2.5	2	0.7	1.5	23.7	977
27x2.5	2	0.7	1.6	24.4	1093
30x2.5	2	0.7	1.6	25.3	1200
37x2.5	2	0.7	1.7	27.5	1463
40x2.5	2	0.7	1.7	28.5	1572

Note: Other conductor sizes & core configurations are available upon request. The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.



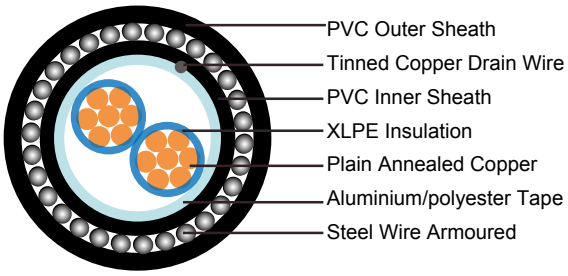
Rated Voltage

Standard

Flame Retardancy
BS EN 60332-1-2

Flame Retardant Overall Screened, Armoured Instrumentation Cables (Multicore)

RE-2X(St)YSWAY



APPLICATION

The armoured XLPE versions are generally used when the risk of mechanical damage is increased. The galvanized steel wire armour provides excellent protection. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.
Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as options.
Overall Screen: Aluminium/polyester tape is applied over the laid up cores with metallic side down in contact with tinned copper drain wire, 0.5mm². Copper braid screen or aluminium/polyester tape combined with copper braid screen can be offered as option.
Inner Sheath: Thermoplastic PVC compound according to EN 50290-2-22.
Armouring: Galvanised steel wire.
Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design.

LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.
Outer Sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: -30°C - +90°C
Temperature range fixed installation: -5°C - +50°C
Maximum short circuit temperature (5 Seconds): 250°C
Minimum bending radius: 10 x Overall Diameter

ELECTRICAL PROPERTIES

300V

Conductor Area Size		mm^2	0.5	0.75	1.0	1.5
Insulation Thickness (Nominal)		mm	0.4	0.4	0.4	0.5
Insulation Thickness (Minimum)		mm	0.26	0.26	0.26	0.35
Conductor Resistance (20°C)		ohm/km	36.7	25.0	18.5	12.3
Minimum Insulation Resistance (20°C)		Mohm/km	1000			
Maximum Mutual Capacitance		nf/km	250			
Capacitance Unbalance		pf/500m	500			
Maximum L/R (Ratio)		µH/Ω	25	25	25	40
Operating Voltage		V	300			
Dielectric Strength for 1 Minute	AC	V	≥1000			
	DC	V	≥2000			

500V

Conductor Area Size	mm^2	0.5	0.75	1.0	1.5	2.5
Insulation Thickness (Nominal)	mm	0.6	0.6	0.6	0.6	0.7
Insulation Thickness (Minimum)	mm	0.44	0.44	0.44	0.44	0.53
Conductor Resistance (20°C)	ohm/km	36.7	25.0	18.5	12.3	7.4
Minimum Insulation Resistance (20°C)	Mohm/km	1000				
Maximum Mutual Capacitance	nf/km	250				
Capacitance Unbalance	pf/500m	500				
Maximum L/R (Ratio)	µH/Ω	25	25	25	40	60
Operating Voltage	V	500				

Dielectric Strength for 1	AC	V	≥2000
Minute	DC	V	≥3000

CONSTRUCTION PARAMETERS

300V

Conductor		RE-2X(St)YSWAY					
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
$0.5mm^2$							
2x0.5	2	0.4	0.9	0.9	1.3	9.9	201
3x0.5	2	0.4	0.9	0.9	1.3	10.1	217
4x0.5	2	0.4	0.9	0.9	1.3	10.6	238
5x0.5	2	0.4	0.9	0.9	1.3	11.1	260
8x0.5	2	0.4	1.0	0.9	1.4	12.5	329
10x0.5	2	0.4	1.0	0.9	1.4	13.7	382
12x0.5	2	0.4	1.0	0.9	1.4	14.0	405
14x0.5	2	0.4	1.0	0.9	1.4	14.4	434
16x0.5	2	0.4	1.0	0.9	1.4	15.0	464
20x0.5	2	0.4	1.1	0.9	1.5	16.1	537
24x0.5	2	0.4	1.1	0.9	1.5	17.6	614
27x0.5	2	0.4	1.1	0.9	1.5	17.8	645
30x0.5	2	0.4	1.2	0.9	1.5	18.5	695
37x0.5	2	0.4	1.2	0.9	1.6	19.7	789
40x0.5	2	0.4	1.2	1.25	1.6	20.9	953
$0.75mm^2$							
2x0.75	2	0.4	0.9	0.9	1.3	10.2	217
3x0.75	2	0.4	0.9	0.9	1.3	10.5	237
4x0.75	2	0.4	0.9	0.9	1.4	11.2	266
5x0.75	2	0.4	1.0	0.9	1.4	12.0	302
8x0.75	2	0.4	1.0	0.9	1.4	13.1	368
10x0.75	2	0.4	1.1	0.9	1.5	14.8	447
12x0.75	2	0.4	1.1	0.9	1.5	15.1	477
14x0.75	2	0.4	1.1	0.9	1.5	15.6	513
16x0.75	2	0.4	1.1	0.9	1.5	16.2	551
20x0.75	2	0.4	1.2	0.9	1.6	17.4	639
24x0.75	2	0.4	1.3	0.9	1.6	19.3	746
27x0.75	2	0.4	1.3	0.9	1.6	19.6	787
30x0.75	2	0.4	1.3	1.25	1.6	20.8	957
37x0.75	2	0.4	1.3	1.25	1.7	22.1	1084
40x0.75	2	0.4	1.4	1.25	1.7	22.8	1153
$1.0mm^2$							
2x1.0	2	0.4	0.9	0.9	1.3	10.6	237
3x1.0	2	0.4	0.9	0.9	1.3	11.0	261
4x1.0	2	0.4	0.9	0.9	1.4	11.7	296
5x1.0	2	0.4	0.9	0.9	1.4	12.3	329

Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

Conductor		RE-2X(St)YSWAY					
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
8x1.0	2	0.4	1.0	0.9	1.4	13.8	419
10x1.0	2	0.4	1.0	0.9	1.5	15.5	500
12x1.0	2	0.4	1.0	0.9	1.5	15.8	538
14x1.0	2	0.4	1.0	0.9	1.5	16.4	583
16x1.0	2	0.4	1.1	0.9	1.5	17.2	641
20x1.0	2	0.4	1.2	0.9	1.5	18.3	739
24x1.0	2	0.4	1.2	1.25	1.6	21.0	987
27x1.0	2	0.4	1.2	1.25	1.6	21.3	1042
30x1.0	2	0.4	1.2	1.25	1.6	21.9	1106
37x1.0	2	0.4	1.3	1.25	1.7	23.5	1278
40x1.0	2	0.4	1.3	1.25	1.7	24.2	1346
1.5mm^2							
2x1.5	2	0.5	0.9	0.9	1.4	11.8	284
3x1.5	2	0.5	0.9	0.9	1.4	12.2	316
4x1.5	2	0.5	1.0	0.9	1.4	13.1	366
5x1.5	2	0.5	1.0	0.9	1.4	13.8	409
8x1.5	2	0.5	1.1	0.9	1.5	15.7	536
10x1.5	2	0.5	1.1	0.9	1.5	17.6	635
12x1.5	2	0.5	1.1	0.9	1.5	18.0	688
14x1.5	2	0.5	1.2	0.9	1.5	18.8	762
16x1.5	2	0.5	1.2	0.9	1.6	19.8	836
20x1.5	2	0.5	1.3	1.25	1.6	21.8	1100
24x1.5	2	0.5	1.3	1.25	1.7	24.2	1281
27x1.5	2	0.5	1.4	1.25	1.7	24.8	1375
30x1.5	2	0.5	1.4	1.25	1.7	25.5	1464
37x1.5	2	0.5	1.4	1.25	1.8	27.2	1681
40x1.5	2	0.5	1.5	1.25	1.8	28.2	1792

500V

Conductor		RE-2X(St)YSWAY					
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
0.5mm^2							
2x0.5	2	0.6	0.9	0.9	1.3	10.7	228
3x0.5	2	0.6	0.9	0.9	1.3	11.0	247
4x0.5	2	0.6	0.9	0.9	1.4	11.7	278
5x0.5	2	0.6	0.9	0.9	1.4	12.4	305
8x0.5	2	0.6	1.0	0.9	1.4	13.8	381
10x0.5	2	0.6	1.0	0.9	1.5	15.5	452
12x0.5	2	0.6	1.1	0.9	1.5	16.0	491
14x0.5	2	0.6	1.1	0.9	1.5	16.6	527

Conductor		RE-2X(St)YSWAY					
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
16x0.5	2	0.6	1.1	0.9	1.5	17.2	564
20x0.5	2	0.6	1.2	0.9	1.5	18.4	643
24x0.5	2	0.6	1.2	1.25	1.6	21.1	872
27x0.5	2	0.6	1.2	1.25	1.6	21.4	912
30x0.5	2	0.6	1.3	1.25	1.6	22.2	976
37x0.5	2	0.6	1.3	1.25	1.6	23.4	1090
40x0.5	2	0.6	1.3	1.25	1.7	24.2	1153
$0.75mm^2$							
2x0.75	2	0.6	0.9	0.9	1.3	11.0	245
3x0.75	2	0.6	0.9	0.9	1.3	11.4	267
4x0.75	2	0.6	0.9	0.9	1.4	12.2	302
5x0.75	2	0.6	1.0	0.9	1.4	13.0	343
8x0.75	2	0.6	1.0	0.9	1.4	14.4	422
10x0.75	2	0.6	1.0	0.9	1.5	16.2	503
12x0.75	2	0.6	1.0	0.9	1.5	16.6	537
14x0.75	2	0.6	1.1	0.9	1.5	17.4	591
16x0.75	2	0.6	1.1	0.9	1.5	18.1	636
20x0.75	2	0.6	1.2	0.9	1.6	19.5	738
24x0.75	2	0.6	1.3	1.25	1.6	22.4	997
27x0.75	2	0.6	1.3	1.25	1.6	22.7	1047
30x0.75	2	0.6	1.3	1.25	1.6	23.3	1106
37x0.75	2	0.6	1.4	1.25	1.7	25.1	1271
40x0.75	2	0.6	1.4	1.25	1.7	25.8	1335
$1.0mm^2$							
2x1.0	2	0.6	0.9	0.9	1.3	11.4	265
3x1.0	2	0.6	0.9	0.9	1.4	12.0	297
4x1.0	2	0.6	1.0	0.9	1.4	12.9	342
5x1.0	2	0.6	1.0	0.9	1.4	13.6	380
8x1.0	2	0.6	1.0	0.9	1.4	15.1	473
10x1.0	2	0.6	1.1	0.9	1.5	17.3	578
12x1.0	2	0.6	1.1	0.9	1.5	17.7	622
14x1.0	2	0.6	1.1	0.9	1.5	18.3	674
16x1.0	2	0.6	1.2	0.9	1.6	19.4	749
20x1.0	2	0.6	1.2	1.25	1.6	21.3	976
24x1.0	2	0.6	1.3	1.25	1.6	23.6	1139
27x1.0	2	0.6	1.3	1.25	1.7	24.2	1213
30x1.0	2	0.6	1.3	1.25	1.7	24.9	1286
37x1.0	2	0.6	1.4	1.25	1.7	26.5	1472
40x1.0	2	0.6	1.4	1.25	1.8	27.5	1563
$1.5mm^2$							
2x1.5	2	0.6	0.9	0.9	1.3	12.2	298
3x1.5	2	0.6	1.0	0.9	1.4	12.8	341
4x1.5	2	0.6	1.0	0.9	1.4	13.5	385
5x1.5	2	0.6	1.0	0.9	1.4	14.3	431

Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

Conductor		RE-2X(St)YSWAY					
No. of Core X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
8x1.5	2	0.6	1.1	0.9	1.5	16.4	565
10x1.5	2	0.6	1.2	0.9	1.5	18.6	682
12x1.5	2	0.6	1.2	0.9	1.6	19.2	747
14x1.5	2	0.6	1.2	0.9	1.6	19.9	814
16x1.5	2	0.6	1.2	1.25	1.6	21.4	1010
20x1.5	2	0.6	1.3	1.25	1.7	23.1	1172
24x1.5	2	0.6	1.4	1.25	1.7	25.6	1371
27x1.5	2	0.6	1.4	1.25	1.7	26.1	1452
30x1.5	2	0.6	1.4	1.25	1.8	27.0	1558
37x1.5	2	0.6	1.5	1.25	1.8	28.8	1794
40x1.5	2	0.6	1.5	1.25	1.8	29.7	1893
$2.5mm^2$							
2x2.5	2	0.7	1.0	0.9	1.4	13.6	369
3x2.5	2	0.7	1.0	0.9	1.4	14.1	419
4x2.5	2	0.7	1.0	0.9	1.4	15.0	479
5x2.5	2	0.7	1.1	0.9	1.5	16.4	561
8x2.5	2	0.7	1.2	0.9	1.5	18.6	738
10x2.5	2	0.7	1.3	1.25	1.6	22.1	1039
12x2.5	2	0.7	1.3	1.25	1.6	22.7	1127
14x2.5	2	0.7	1.3	1.25	1.7	23.8	1240
16x2.5	2	0.7	1.4	1.25	1.7	25.0	1363
20x2.5	2	0.7	1.4	1.25	1.8	26.7	1572
24x2.5	2	0.7	1.5	1.25	1.8	29.8	1845
27x2.5	2	0.7	1.6	1.25	1.9	30.7	2000
30x2.5	2	0.7	1.6	1.6	1.9	32.3	2339
37x2.5	2	0.7	1.7	1.6	1.9	34.5	2695
40x2.5	2	0.7	1.7	1.6	2.0	35.7	2864

Note: Other conductor sizes & core configurations are available upon request. The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

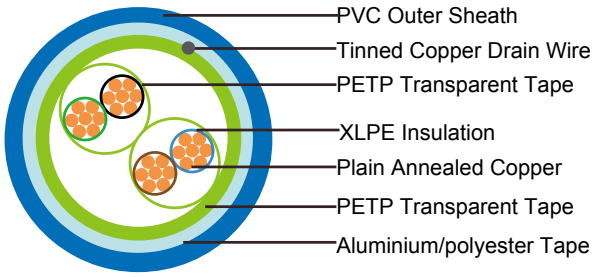
Rated Voltage

Standard

Flame Retardancy
BS EN 60332-1-2

Flame Retardant Overall Screened Instrumentation Cables (Multipair)

RE-2X(St)Y



APPLICATION

The unarmoured XLPE versions are generally used for indoor installation and suitable for wet and damp areas. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as options.

Pairs: Two insulated conductors uniformly twisted together with a lay not exceeding 100mm (≤1.5mm^2) or 150mm (for 2.5mm^2).

Binder Tape: PETP transparent tape.

Overall Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm². Copper braid screen or aluminium/polyester tape combined with copper braid screen can be offered as option.

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design.

LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.
Outer Sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: -30°C - +90°C
Temperature range fixed installation: -5°C - +50°C
Maximum short circuit temperature (5 Seconds): 250°C
Minimum bending radius: 7.5 x Overall Diameter

ELECTRICAL PROPERTIES

300V

Conductor Area Size		mm^2	0.5	0.75	1.0	1.5
Insulation Thickness (Nominal)		mm	0.4	0.4	0.4	0.5
Insulation Thickness (Minimum)		mm	0.26	0.26	0.26	0.35
Conductor Resistance (20°C)		ohm/km	36.7	25.0	18.5	12.3
Minimum Insulation Resistance (20°C)		Mohm/km	1000			
Maximum Mutual Capacitance		nf/km	250			
Capacitance Unbalance		pf/500m	500			
Maximum L/R (Ratio)		µH/Ω	25	25	25	40
Operating Voltage		V	300			
Dielectric Strength for 1	AC	V	≥1000			
Minute	DC	V	≥2000			

500V

Conductor Area Size	mm^2	0.5	0.75	1.0	1.5	2.5
Insulation Thickness (Nominal)	mm	0.6	0.6	0.6	0.6	0.7
Insulation Thickness (Minimum)	mm	0.44	0.44	0.44	0.44	0.53
Conductor Resistance (20°C)	ohm/km	36.7	25.0	18.5	12.3	7.4
Minimum Insulation Resistance (20°C)	Mohm/km	1000				
Maximum Mutual Capacitance	nf/km	250				
Capacitance Unbalance	pf/500m	500				
Maximum L/R (Ratio)	µH/Ω	25	25	25	40	60
Operating Voltage	V	500				

Dielectric Strength for 1	AC	V	≥2000
Minute	DC	V	≥3000

CONSTRUCTION PARAMETERS

300V

Conductor		RE-2X(St)Y			
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
$0.5mm^2$					
1x2x0.5	2	0.4	0.9	5.5	40
2x2x0.5	2	0.4	0.9	7.7	67
3x2x0.5	2	0.4	1.0	8.3	89
4x2x0.5	2	0.4	1.0	9.0	109
5x2x0.5	2	0.4	1.1	10.1	134
8x2x0.5	2	0.4	1.1	11.8	190
10x2x0.5	2	0.4	1.1	13.7	233
12x2x0.5	2	0.4	1.2	14.4	274
16x2x0.5	2	0.4	1.2	15.9	346
20x2x0.5	2	0.4	1.3	17.4	425
24x2x0.5	2	0.4	1.3	19.8	504
$0.75mm^2$					
1x2x0.75	2	0.4	0.9	5.8	47
2x2x0.75	2	0.4	1.0	8.5	85
3x2x0.75	2	0.4	1.0	8.9	109
4x2x0.75	2	0.4	1.1	10.0	139
5x2x0.75	2	0.4	1.1	10.9	166
8x2x0.75	2	0.4	1.1	12.7	240
10x2x0.75	2	0.4	1.2	15.1	302
12x2x0.75	2	0.4	1.2	15.6	347
16x2x0.75	2	0.4	1.3	17.5	451
20x2x0.75	2	0.4	1.4	19.1	554
24x2x0.75	2	0.4	1.4	21.8	657
$1.0mm^2$					
1x2x1.0	2	0.4	0.9	6.2	57
2x2x1.0	2	0.4	1.0	9.2	104
3x2x1.0	2	0.4	1.1	9.9	140
4x2x1.0	2	0.4	1.1	10.8	174
5x2x1.0	2	0.4	1.1	11.8	208
8x2x1.0	2	0.4	1.2	14.1	313
10x2x1.0	2	0.4	1.2	16.5	386
12x2x1.0	2	0.4	1.3	17.2	454
16x2x1.0	2	0.4	1.4	19.3	590
20x2x1.0	2	0.4	1.4	20.9	715
24x2x1.0	2	0.4	1.5	24.1	863
$1.5mm^2$					

Conductor		RE-2X(St)Y			
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
1x2x1.5	2	0.5	0.9	7.2	74
2x2x1.5	2	0.5	1.1	10.9	144
3x2x1.5	2	0.5	1.1	11.5	190
4x2x1.5	2	0.5	1.2	12.9	244
5x2x1.5	2	0.5	1.2	14.1	294
8x2x1.5	2	0.5	1.3	16.8	443
10x2x1.5	2	0.5	1.4	20.0	557
12x2x1.5	2	0.5	1.4	20.6	644
16x2x1.5	2	0.5	1.5	23.2	839
20x2x1.5	2	0.5	1.6	25.3	1032
24x2x1.5	2	0.5	1.7	29.1	1243

500V

Conductor		RE-2X(St)Y			
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
$0.5mm^2$					
1x2x0.5	2	0.6	0.9	6.3	47
2x2x0.5	2	0.6	1.0	9.2	84
3x2x0.5	2	0.6	1.0	9.7	105
4x2x0.5	2	0.6	1.1	10.8	134
5x2x0.5	2	0.6	1.1	11.8	159
8x2x0.5	2	0.6	1.2	14.1	233
10x2x0.5	2	0.6	1.2	16.6	286
12x2x0.5	2	0.6	1.3	17.3	335
16x2x0.5	2	0.6	1.4	19.4	431
20x2x0.5	2	0.6	1.4	21.0	516
24x2x0.5	2	0.6	1.5	24.2	623
$0.75mm^2$					
1x2x0.75	2	0.6	0.9	6.6	54
2x2x0.75	2	0.6	1.0	9.8	99
3x2x0.75	2	0.6	1.1	10.6	131
4x2x0.75	2	0.6	1.1	11.5	161
5x2x0.75	2	0.6	1.2	12.8	198
8x2x0.75	2	0.6	1.2	15.1	285
10x2x0.75	2	0.6	1.3	18.0	360
12x2x0.75	2	0.6	1.3	18.5	412
16x2x0.75	2	0.6	1.4	20.8	532
20x2x0.75	2	0.6	1.5	22.7	652
24x2x0.75	2	0.6	1.6	26.1	787
$1.0mm^2$					
1x2x1.0	2	0.6	0.9	7.0	64

Conductor		RE-2X(St)Y			
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
2x2x1.0	2	0.6	1.0	10.5	118
3x2x1.0	2	0.6	1.1	11.3	159
4x2x1.0	2	0.6	1.2	12.6	204
5x2x1.0	2	0.6	1.2	13.8	243
8x2x1.0	2	0.6	1.2	16.2	354
10x2x1.0	2	0.6	1.3	19.3	447
12x2x1.0	2	0.6	1.4	20.2	524
16x2x1.0	2	0.6	1.5	22.6	679
20x2x1.0	2	0.6	1.5	24.5	821
24x2x1.0	2	0.6	1.6	28.2	990
$1.5mm^2$					
1x2x1.5	2	0.6	0.9	7.6	78
2x2x1.5	2	0.6	1.1	11.6	152
3x2x1.5	2	0.6	1.2	12.5	206
4x2x1.5	2	0.6	1.2	13.6	257
5x2x1.5	2	0.6	1.3	15.2	317
8x2x1.5	2	0.6	1.3	17.9	466
10x2x1.5	2	0.6	1.4	21.3	587
12x2x1.5	2	0.6	1.5	22.2	689
16x2x1.5	2	0.6	1.6	25.0	895
20x2x1.5	2	0.6	1.7	27.2	1100
24x2x1.5	2	0.6	1.8	31.3	1324
$2.5mm^2$					
1x2x2.5	2	0.7	1.0	9.4	113
2x2x2.5	2	0.7	1.2	13.8	221
3x2x2.5	2	0.7	1.2	14.6	294
4x2x2.5	2	0.7	1.3	16.3	379
5x2x2.5	2	0.7	1.4	18.1	468
8x2x2.5	2	0.7	1.4	21.5	696
10x2x2.5	2	0.7	1.6	25.8	887
12x2x2.5	2	0.7	1.6	26.6	1030
16x2x2.5	2	0.7	1.7	29.9	1341
20x2x2.5	2	0.7	1.9	32.8	1668
24x2x2.5	2	0.7	2.0	37.8	2005

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

Rated Voltage

Standard

Flame Retardancy
BS EN 60332-1-2

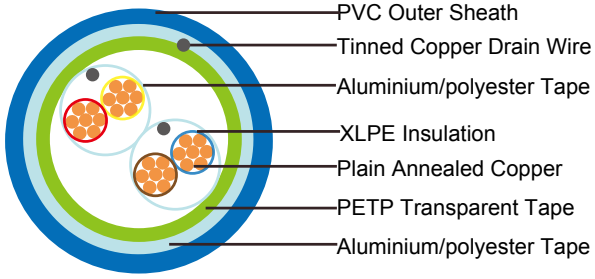
Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

Flame Retardant Individual and Overall Screened Instrumentation Cables (Multipair)

RE-2X(St)Y PiMF



APPLICATION

The unarmoured XLPE versons are generally used for indoor installation and suitable for wet and damp areas. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as options.

Pairs: Two insulated conductors uniformly twisted together with a lay not exceeding 100mm (≤1.5mm^2) or 150mm (for 2.5mm^2).

Individual Screen: Aluminium/polyester tape is applied over each pair with metallic side down in contact with tinned copper drain wire, 0.5mm².

Binder Tape: PETP transparent tape.

Overall Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm². Copper braid screen or aluminium/polyester tape combined with copper braid screen can be offered as option.

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3,

UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.
Outer Sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: -30°C - +90°C
Temperature range fixed installation: -5°C - +50°C
Maximum short circuit temperature (5 Seconds): 250°C
Minimum bending radius: 7.5 x Overall Diameter

ELECTRICAL PROPERTIES

300V

Conductor Area Size		mm^2	0.5	0.75	1.0	1.5
Insulation Thickness (Nominal)		mm	0.4	0.4	0.4	0.5
Insulation Thickness (Minimum)		mm	0.26	0.26	0.26	0.35
Conductor Resistance (20°C)		ohm/km	36.7	25.0	18.5	12.3
Minimum Insulation Resistance (20°C)		Mohm/km	1000			
Maximum Mutual Capacitance		nf/km	250			
Capacitance Unbalance		pf/500m	500			
Maximum L/R (Ratio)		µH/Ω	25	25	25	40
Operating Voltage		V	300			
Dielectric Strength for 1	AC	V	≥1000			
Minute	DC	V	≥2000			

500V

Conductor Area Size		mm^2	0.5	0.75	1.0	1.5	2.5
Insulation Thickness (Nominal)		mm	0.6	0.6	0.6	0.6	0.7
Insulation Thickness (Minimum)		mm	0.44	0.44	0.44	0.44	0.53
Conductor Resistance (20°C)		ohm/km	36.7	25.0	18.5	12.3	7.4
Minimum Insulation Resistance (20°C)		Mohm/km	1000				
Maximum Mutual Capacitance		nf/km	250				
Capacitance Unbalance		pf/500m	500				
Maximum L/R (Ratio)		µH/Ω	25	25	25	40	60
Operating Voltage		V	500				

Dielectric Strength for 1	AC	V	≥2000
Minute	DC	V	≥3000

CONSTRUCTION PARAMETERS

300V

Conductor		RE-2X(St)Y PiMF			
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
$0.5mm^2$					
2x2x0.5	2	0.4	1.0	8.6	85
3x2x0.5	2	0.4	1.0	9.0	109
4x2x0.5	2	0.4	1.1	10.1	139
5x2x0.5	2	0.4	1.1	11.0	165
8x2x0.5	2	0.4	1.1	12.9	238
10x2x0.5	2	0.4	1.2	15.3	301
12x2x0.5	2	0.4	1.2	15.8	345
16x2x0.5	2	0.4	1.3	17.7	448
20x2x0.5	2	0.4	1.4	19.4	550
24x2x0.5	2	0.4	1.5	22.3	664
$0.75mm^2$					
2x2x0.75	2	0.4	1.0	9.2	100
3x2x0.75	2	0.4	1.1	9.9	135
4x2x0.75	2	0.4	1.1	10.8	167
5x2x0.75	2	0.4	1.2	12.0	205
8x2x0.75	2	0.4	1.2	14.1	298
10x2x0.75	2	0.4	1.3	16.8	375
12x2x0.75	2	0.4	1.3	17.3	432
16x2x0.75	2	0.4	1.4	19.4	560
20x2x0.75	2	0.4	1.5	21.2	688
24x2x0.75	2	0.4	1.5	24.2	817
$1.0mm^2$					
2x2x1.0	2	0.4	1.0	9.9	120
3x2x1.0	2	0.4	1.1	10.7	163
4x2x1.0	2	0.4	1.2	12.0	209
5x2x1.0	2	0.4	1.2	13.1	251
8x2x1.0	2	0.4	1.2	15.4	369
10x2x1.0	2	0.4	1.3	18.3	464
12x2x1.0	2	0.4	1.4	19.1	546
16x2x1.0	2	0.4	1.5	21.4	709
20x2x1.0	2	0.4	1.5	23.2	860
24x2x1.0	2	0.4	1.6	26.6	1037
$1.5mm^2$					
2x2x1.5	2	0.5	1.1	11.8	164
3x2x1.5	2	0.5	1.2	12.7	223
4x2x1.5	2	0.5	1.2	14.0	279

Conductor		RE-2X(St)Y PiMF			
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
5x2x1.5	2	0.5	1.3	15.5	344
8x2x1.5	2	0.5	1.3	18.3	508
10x2x1.5	2	0.5	1.4	21.8	639
12x2x1.5	2	0.5	1.5	22.8	752
16x2x1.5	2	0.5	1.6	25.5	978
20x2x1.5	2	0.5	1.7	27.9	1202
24x2x1.5	2	0.5	1.8	32.1	1447

500V

Conductor		RE-2X(St)Y PiMF			
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
$0.5mm^2$					
2x2x0.5	2	0.6	1.0	10.0	101
3x2x0.5	2	0.6	1.1	10.8	133
4x2x0.5	2	0.6	1.1	11.8	164
5x2x0.5	2	0.6	1.2	13.1	201
8x2x0.5	2	0.6	1.2	15.4	289
10x2x0.5	2	0.6	1.3	18.4	365
12x2x0.5	2	0.6	1.4	19.2	427
16x2x0.5	2	0.6	1.5	21.5	550
20x2x0.5	2	0.6	1.5	23.3	661
24x2x0.5	2	0.6	1.6	26.7	798
$0.75mm^2$					
2x2x0.75	2	0.6	1.1	10.8	122
3x2x0.75	2	0.6	1.1	11.5	156
4x2x0.75	2	0.6	1.2	12.8	199
5x2x0.75	2	0.6	1.2	14.0	237
8x2x0.75	2	0.6	1.3	16.7	353
10x2x0.75	2	0.6	1.4	19.8	444
12x2x0.75	2	0.6	1.4	20.5	509
16x2x0.75	2	0.6	1.5	23.0	659
20x2x0.75	2	0.6	1.6	25.1	807
24x2x0.75	2	0.6	1.7	28.9	973
$1.0mm^2$					
2x2x1.0	2	0.6	1.1	11.6	143
3x2x1.0	2	0.6	1.2	12.5	191
4x2x1.0	2	0.6	1.2	13.7	238
5x2x1.0	2	0.6	1.3	15.2	292
8x2x1.0	2	0.6	1.3	17.9	427
10x2x1.0	2	0.6	1.4	21.3	537
12x2x1.0	2	0.6	1.5	22.2	630

Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

Conductor		RE-2X(St)Y PiMF			
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	kg/km
16x2x1.0	2	0.6	1.6	25.0	816
20x2x1.0	2	0.6	1.7	27.2	1000
24x2x1.0	2	0.6	1.8	31.3	1204
$1.5mm^2$					
2x2x1.5	2	0.6	1.1	12.5	173
3x2x1.5	2	0.6	1.2	13.5	235
4x2x1.5	2	0.6	1.3	15.0	302
5x2x1.5	2	0.6	1.3	16.5	362
8x2x1.5	2	0.6	1.4	19.7	545
10x2x1.5	2	0.6	1.5	23.5	685
12x2x1.5	2	0.6	1.6	24.4	804
16x2x1.5	2	0.6	1.7	27.4	1043
20x2x1.5	2	0.6	1.8	29.9	1281
24x2x1.5	2	0.6	1.9	34.4	1541
$2.5mm^2$					
2x2x2.5	2	0.7	1.2	14.9	245
3x2x2.5	2	0.7	1.3	16.1	335
4x2x2.5	2	0.7	1.4	17.9	432
5x2x2.5	2	0.7	1.5	19.9	531
8x2x2.5	2	0.7	1.6	23.8	801
10x2x2.5	2	0.7	1.7	28.3	1005
12x2x2.5	2	0.7	1.8	29.4	1180
16x2x2.5	2	0.7	1.9	33.0	1533
20x2x2.5	2	0.7	2.1	36.2	1901
24x2x2.5	2	0.7	2.2	41.6	2284

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

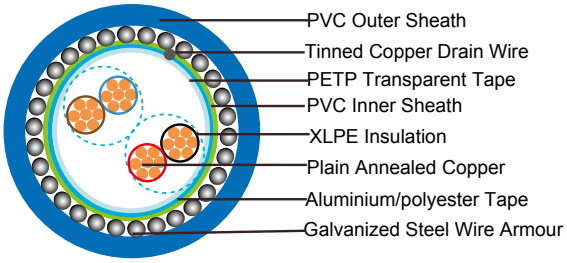
Rated Voltage

Standard

Flame Retardancy
BS EN 60332-1-2

Flame Retardant Overall Screened, Armoured Instrumentation Cables (Multipair)

RE-2X(St)YSWAY



APPLICATION

The armoured XLPE versions are generally used when the risk of mechanical damage is increased. The galvanized steel wire armour provides excellent protection. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as options.

Pairs: Two insulated conductors uniformly twisted together with a lay not exceeding 100mm (≤1.5mm^2) or 150mm (for 2.5mm^2).

Binder Tape: PETP transparent tape.

Overall Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm². Copper braid screen or aluminium/polyester tape combined with copper braid screen can be offered as option.

Inner Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Amouring: Galvanized steel wire armour.

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite

properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.
Outer Sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: -30°C - +90°C
Temperature range during installation: -5°C - +50°C
Maximum short circuit temperature (5 Seconds): 250°C
Minimum bending radius: 10 x Overall Diameter

ELECTRICAL PROPERTIES

300V

Conductor Area Size		mm^2	0.5	0.75	1.0	1.5
Insulation Thickness (Nominal)		mm	0.4	0.4	0.4	0.5
Insulation Thickness (Minimum)		mm	0.26	0.26	0.26	0.35
Conductor Resistance (20°C)		ohm/km	36.7	25.0	18.5	12.3
Minimum Insulation Resistance (20°C)		Mohm/km	1000			
Maximum Mutual Capacitance		nf/km	250			
Capacitance Unbalance		pf/500m	500			
Maximum L/R (Ratio)		µH/Ω	25	25	25	40
Operating Voltage		V	300			
Dielectric Strength for 1 Minute	AC	V	≥1000			
	DC	V	≥2000			

500V

Conductor Area Size	mm^2	0.5	0.75	1.0	1.5	2.5
Insulation Thickness (Nominal)	mm	0.6	0.6	0.6	0.6	0.7
Insulation Thickness (Minimum)	mm	0.44	0.44	0.44	0.44	0.53
Conductor Resistance (20°C)	ohm/km	36.7	25.0	18.5	12.3	7.4
Minimum Insulation Resistance (20°C)	Mohm/km	1000				
Maximum Mutual Capacitance	nf/km	250				
Capacitance Unbalance	pf/500m	500				
Maximum L/R (Ratio)	µH/Ω	25	25	25	40	60
Operating Voltage	V	500				

Dielectric Strength for 1	AC	V	≥2000
Minute	DC	V	≥3000

CONSTRUCTION PARAMETERS

300V

Conductor		RE-2X(St)YSWAY					
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
0.5mm^2							
1x2x0.5	2	0.4	0.9	0.9	1.3	9.9	201
2x2x0.5	2	0.4	0.9	0.9	1.4	12.3	289
3x2x0.5	2	0.4	1.0	0.9	1.4	12.9	327
4x2x0.5	2	0.4	1.0	0.9	1.4	13.6	365
5x2x0.5	2	0.4	1.1	0.9	1.5	14.9	423
8x2x0.5	2	0.4	1.1	0.9	1.5	16.6	524
10x2x0.5	2	0.4	1.1	0.9	1.5	18.5	618
12x2x0.5	2	0.4	1.2	0.9	1.5	19.2	676
16x2x0.5	2	0.4	1.2	1.25	1.6	21.6	927
20x2x0.5	2	0.4	1.3	1.25	1.6	23.1	1055
24x2x0.5	2	0.4	1.3	1.25	1.7	25.7	1227
0.75mm^2							
1x2x0.75	2	0.4	0.9	0.9	1.3	10.2	217
2x2x0.75	2	0.4	1.0	0.9	1.4	13.1	327
3x2x0.75	2	0.4	1.0	0.9	1.4	13.5	363
4x2x0.75	2	0.4	1.1	0.9	1.5	14.8	426
5x2x0.75	2	0.4	1.1	0.9	1.5	15.7	476
8x2x0.75	2	0.4	1.1	0.9	1.5	17.5	598
10x2x0.75	2	0.4	1.2	1.25	1.6	20.8	856
12x2x0.75	2	0.4	1.2	1.25	1.6	21.3	917
16x2x0.75	2	0.4	1.3	1.25	1.6	23.2	1085
20x2x0.75	2	0.4	1.4	1.25	1.7	25.0	1254
24x2x0.75	2	0.4	1.4	1.25	1.8	27.9	1460
1.0mm^2							
1x2x1.0	2	0.4	0.9	0.9	1.3	10.6	237
2x2x1.0	2	0.4	1.0	0.9	1.4	13.8	364
3x2x1.0	2	0.4	1.1	0.9	1.5	14.7	425
4x2x1.0	2	0.4	1.1	0.9	1.5	15.6	482
5x2x1.0	2	0.4	1.1	0.9	1.5	16.6	542
8x2x1.0	2	0.4	1.2	0.9	1.5	18.9	706
10x2x1.0	2	0.4	1.2	1.25	1.6	22.2	986
12x2x1.0	2	0.4	1.3	1.25	1.6	22.9	1079
16x2x1.0	2	0.4	1.4	1.25	1.7	25.2	1297
20x2x1.0	2	0.4	1.4	1.25	1.8	27.0	1488
24x2x1.0	2	0.4	1.5	1.25	1.8	30.2	1745
1.5mm^2							

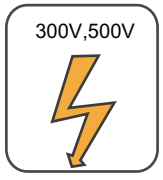
Conductor		RE-2X(St)YSWAY					
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
1x2x1.5	2	0.5	0.9	0.9	1.4	11.8	284
2x2x1.5	2	0.5	1.1	0.9	1.5	15.7	455
3x2x1.5	2	0.5	1.1	0.9	1.5	16.3	518
4x2x1.5	2	0.5	1.2	0.9	1.6	17.9	614
5x2x1.5	2	0.5	1.2	0.9	1.6	19.1	696
8x2x1.5	2	0.5	1.3	1.25	1.6	22.5	1057
10x2x1.5	2	0.5	1.4	1.25	1.7	25.9	1286
12x2x1.5	2	0.5	1.4	1.25	1.7	26.5	1395
16x2x1.5	2	0.5	1.5	1.25	1.8	29.3	1689
20x2x1.5	2	0.5	1.6	1.6	1.9	32.3	2172
24x2x1.5	2	0.5	1.7	1.6	1.9	36.1	2544

500V

Conductor		RE-2X(St)YSWAY					
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
$0.5mm^2$							
1x2x0.5	2	0.6	0.9	0.9	1.3	10.7	228
2x2x0.5	2	0.6	1.0	0.9	1.4	13.8	345
3x2x0.5	2	0.6	1.0	0.9	1.4	14.3	380
4x2x0.5	2	0.6	1.1	0.9	1.5	15.6	444
5x2x0.5	2	0.6	1.1	0.9	1.5	16.6	494
8x2x0.5	2	0.6	1.2	0.9	1.5	18.9	628
10x2x0.5	2	0.6	1.2	1.25	1.6	22.3	888
12x2x0.5	2	0.6	1.3	1.25	1.6	23.0	962
16x2x0.5	2	0.6	1.4	1.25	1.7	25.3	1140
20x2x0.5	2	0.6	1.4	1.25	1.7	26.9	1279
24x2x0.5	2	0.6	1.5	1.25	1.8	30.3	1509
$0.75mm^2$							
1x2x0.75	2	0.6	0.9	0.9	1.3	11.0	245
2x2x0.75	2	0.6	1.0	0.9	1.4	14.4	374
3x2x0.75	2	0.6	1.1	0.9	1.5	15.4	434
4x2x0.75	2	0.6	1.1	0.9	1.5	16.3	489
5x2x0.75	2	0.6	1.2	0.9	1.5	17.6	560
8x2x0.75	2	0.6	1.2	1.25	1.6	21.9	838
10x2x0.75	2	0.6	1.3	1.25	1.6	23.7	1008
12x2x0.75	2	0.6	1.3	1.25	1.7	24.4	1091
16x2x0.75	2	0.6	1.4	1.25	1.7	26.7	1289
20x2x0.75	2	0.6	1.5	1.25	1.8	28.8	1488
24x2x0.75	2	0.6	1.6	1.6	1.9	33.1	1963
$1.0mm^2$							

Conductor		RE-2X(St)YSWAY					
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
1x2x1.0	2	0.6	0.9	0.9	1.3	11.4	265
2x2x1.0	2	0.6	1.0	0.9	1.4	15.1	411
3x2x1.0	2	0.6	1.1	0.9	1.5	16.1	481
4x2x1.0	2	0.6	1.1	0.9	1.5	17.2	547
5x2x1.0	2	0.6	1.2	0.9	1.6	18.8	637
8x2x1.0	2	0.6	1.2	1.25	1.6	21.9	945
10x2x1.0	2	0.6	1.3	1.25	1.7	25.2	1153
12x2x1.0	2	0.6	1.4	1.25	1.7	26.1	1259
16x2x1.0	2	0.6	1.5	1.25	1.8	28.7	1511
20x2x1.0	2	0.6	1.5	1.25	1.8	30.6	1718
24x2x1.0	2	0.6	1.6	1.6	1.9	35.2	2031
$1.5mm^2$							
1x2x1.5	2	0.6	0.9	0.9	1.3	12.2	298
2x2x1.5	2	0.6	1.1	0.9	1.5	16.4	480
3x2x1.5	2	0.6	1.2	0.9	1.5	17.3	558
4x2x1.5	2	0.6	1.2	0.9	1.6	18.6	648
5x2x1.5	2	0.6	1.3	1.25	1.6	20.9	871
8x2x1.5	2	0.6	1.3	1.25	1.7	23.8	1124
10x2x1.5	2	0.6	1.4	1.25	1.8	27.4	1373
12x2x1.5	2	0.6	1.5	1.25	1.8	28.3	1507
16x2x1.5	2	0.6	1.6	1.25	1.9	31.2	1821
20x2x1.5	2	0.6	1.7	1.6	2.0	34.3	2335
24x2x1.5	2	0.6	1.8	1.6	2.0	38.5	2734
$2.5mm^2$							
1x2x2.5	2	0.7	1.0	0.9	1.4	13.6	407
2x2x2.5	2	0.7	1.2	0.9	1.5	18.6	626
3x2x2.5	2	0.7	1.2	0.9	1.6	19.6	733
4x2x2.5	2	0.7	1.3	1.25	1.6	22.0	996
5x2x2.5	2	0.7	1.4	1.25	1.7	24.0	1160
8x2x2.5	2	0.7	1.4	1.25	1.7	27.3	1508
10x2x2.5	2	0.7	1.6	1.6	1.9	32.8	2091
12x2x2.5	2	0.7	1.6	1.6	1.9	33.7	2272
16x2x2.5	2	0.7	1.7	1.6	2.0	37.1	2746
20x2x2.5	2	0.7	1.9	1.6	2.1	40.2	3325
24x2x2.5	2	0.7	2.0	1.6	2.2	45.4	3809

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.



Rated Voltage

Standard

Flame Retardancy
BS EN 60332-1-2

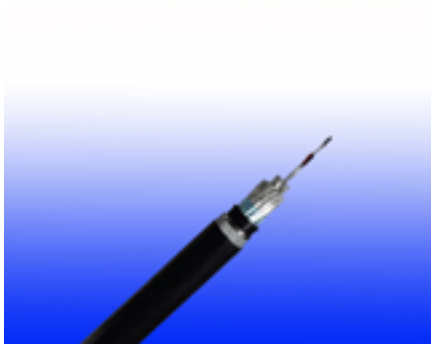
Caledonian

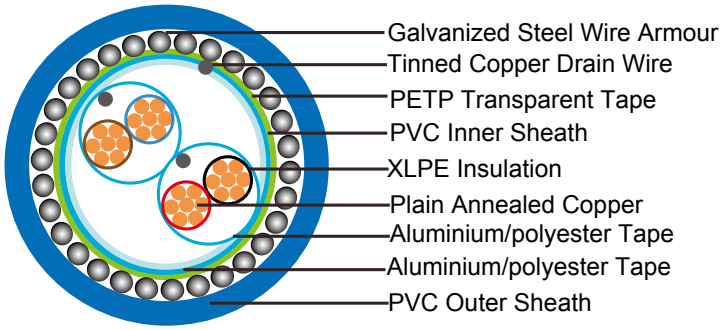
FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

Flame Retardant Individual and Overall Screened, Armoured Instrumentation Cables (Multipair)

RE-2X(St)YSWAY PiMF





APPLICATION

The armoured XLPE versions are generally used when the risk of mechanical damage is increased. The galvanized steel wire armour provides excellent protection. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as options.

Pairs: Two insulated conductors uniformly twisted together with a lay not exceeding 100mm (≤1.5mm^2) or 150mm (for 2.5mm^2).

Individual Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm².

Binder Tape: PETP transparent tape.

Overall Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm². Copper braid screen or aluminium/polyester tape combined with copper braid screen can be offered as option.

Inner Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Amouring: Galvanized steel wire armour.
Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.
Outer Sheath Option: Thermoplastic PVC compound. UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.
Outer Sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: -30°C - +90°C
Temperature range during installation: -5°C - +50°C
Maximum short circuit temperature (5 Seconds): 250°C
Minimum bending radius: 10 x Overall Diameter

ELECTRICAL PROPERTIES

300V

Conductor Area Size		mm^2	0.5	0.75	1.0	1.5
Insulation Thickness (Nominal)		mm	0.4	0.4	0.4	0.5
Insulation Thickness (Minimum)		mm	0.26	0.26	0.26	0.35
Conductor Resistance (20°C)		ohm/km	36.7	25.0	18.5	12.3
Minimum Insulation Resistance (20°C)		Mohm/km	1000			
Maximum Mutual Capacitance		nf/km	250			
Capacitance Unbalance		pf/500m	500			
Maximum L/R (Ratio)		μH/Ω	25	25	25	40
Operating Voltage		V	300			
Dielectric Strength for 1 Minute	AC	V	≥1000			
	DC	V	≥2000			

500V

Conductor Area Size		mm^2	0.5	0.75	1.0	1.5	2.5
Insulation Thickness (Nominal)		mm	0.6	0.6	0.6	0.6	0.7
Insulation Thickness (Minimum)		mm	0.44	0.44	0.44	0.44	0.53
Conductor Resistance (20°C)		ohm/km	36.7	25.0	18.5	12.3	7.4
Minimum Insulation Resistance (20°C)		Mohm/km	1000				
Maximum Mutual Capacitance		nf/km	250				

Capacitance Unbalance		pf/500m	500					
Maximum L/R (Ratio)		µH/Ω	25	25	25	40	60	
Operating Voltage		V	500					
Dielectric Strength for 1	AC	V	≥2000					
Minute	DC	V	≥3000					

CONSTRUCTION PARAMETERS

300V

Conductor		RE-2X(St)YSWAY PiMF					
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
$0.5mm^2$							
2x2x0.5	2	0.4	1.0	0.9	1.4	13.2	330
3x2x0.5	2	0.4	1.0	0.9	1.4	13.6	365
4x2x0.5	2	0.4	1.1	0.9	1.5	14.9	428
5x2x0.5	2	0.4	1.1	0.9	1.5	15.8	478
8x2x0.5	2	0.4	1.1	0.9	1.5	17.7	601
10x2x0.5	2	0.4	1.2	1.25	1.6	21.0	861
12x2x0.5	2	0.4	1.2	1.25	1.6	21.5	921
16x2x0.5	2	0.4	1.3	1.25	1.7	23.6	1100
20x2x0.5	2	0.4	1.4	1.25	1.7	25.3	1258
24x2x0.5	2	0.4	1.5	1.25	1.8	28.4	1483
$0.75mm^2$							
2x2x0.75	2	0.4	1.0	0.9	1.4	13.8	361
3x2x0.75	2	0.4	1.1	0.9	1.5	14.7	421
4x2x0.75	2	0.4	1.1	0.9	1.5	15.6	476
5x2x0.75	2	0.4	1.2	0.9	1.5	16.8	546
8x2x0.75	2	0.4	1.2	0.9	1.6	19.1	702
10x2x0.75	2	0.4	1.3	1.25	1.6	22.5	985
12x2x0.75	2	0.4	1.3	1.25	1.6	23.2	1070
16x2x0.75	2	0.4	1.4	1.25	1.7	25.3	1271
20x2x0.75	2	0.4	1.5	1.25	1.8	27.3	1472
24x2x0.75	2	0.4	1.5	1.25	1.8	30.3	1704
$1.0mm^2$							
2x2x1.0	2	0.4	1.0	0.9	1.4	14.5	400
3x2x1.0	2	0.4	1.1	0.9	1.5	15.5	470
4x2x1.0	2	0.4	1.2	0.9	1.5	16.8	548
5x2x1.0	2	0.4	1.2	0.9	1.6	18.1	626
8x2x1.0	2	0.4	1.2	1.25	1.6	21.1	931
10x2x1.0	2	0.4	1.3	1.25	1.7	24.2	1135
12x2x1.0	2	0.4	1.4	1.25	1.7	25.0	1244
16x2x1.0	2	0.4	1.5	1.25	1.8	27.5	1499
20x2x1.0	2	0.4	1.5	1.25	1.8	29.3	1710
24x2x1.0	2	0.4	1.6	1.6	1.9	33.6	2234

Conductor		RE-2X(St)YSWAY PiMF					
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
1.5mm^2							
2x2x1.5	2	0.5	1.1	0.9	1.5	16.6	499
3x2x1.5	2	0.5	1.2	0.9	1.6	17.7	590
4x2x1.5	2	0.5	1.2	0.9	1.6	19.0	678
5x2x1.5	2	0.5	1.3	1.25	1.6	21.2	910
8x2x1.5	2	0.5	1.3	1.25	1.7	24.2	1181
10x2x1.5	2	0.5	1.4	1.25	1.8	27.9	1444
12x2x1.5	2	0.5	1.5	1.25	1.8	28.9	1589
16x2x1.5	2	0.5	1.6	1.6	1.9	32.5	2128
20x2x1.5	2	0.5	1.7	1.6	2.0	35.1	2468
24x2x1.5	2	0.5	1.8	1.6	2.0	39.3	2642

500V

Conductor		RE-2X(St)YSWAY PiMF					
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
0.5mm^2							
2x2x0.5	2	0.6	1.0	0.9	1.4	14.6	381
3x2x0.5	2	0.6	1.1	0.9	1.5	15.6	441
4x2x0.5	2	0.6	1.1	0.9	1.5	16.6	498
5x2x0.5	2	0.6	1.2	0.9	1.6	18.1	578
8x2x0.5	2	0.6	1.2	1.25	1.6	21.1	853
10x2x0.5	2	0.6	1.3	1.25	1.7	24.3	1038
12x2x0.5	2	0.6	1.4	1.25	1.7	25.1	1127
16x2x0.5	2	0.6	1.5	1.25	1.8	27.6	1343
20x2x0.5	2	0.6	1.5	1.25	1.8	29.4	1515
24x2x0.5	2	0.6	1.6	1.6	1.9	33.7	1999
0.75mm^2							
2x2x0.75	2	0.6	1.1	0.9	1.5	15.6	431
3x2x0.75	2	0.6	1.1	0.9	1.5	16.3	482
4x2x0.75	2	0.6	1.2	0.9	1.6	17.8	567
5x2x0.75	2	0.6	1.2	0.9	1.6	19.0	637
8x2x0.75	2	0.6	1.3	1.25	1.6	22.4	959
10x2x0.75	2	0.6	1.4	1.25	1.7	25.7	1168
12x2x0.75	2	0.6	1.4	1.25	1.7	26.4	1255
16x2x0.75	2	0.6	1.5	1.25	1.8	29.1	1504
20x2x0.75	2	0.6	1.6	1.6	1.9	32.1	1940
24x2x0.75	2	0.6	1.7	1.6	2.0	36.1	2281
1.0mm^2							
2x2x1.0	2	0.6	1.1	0.9	1.5	16.4	471
3x2x1.0	2	0.6	1.2	0.9	1.5	17.3	543

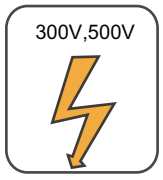
Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

Conductor		RE-2X(St)YSWAY PiMF					
No. of Pairs X Cross Section	Class of Conductor	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Armour Wire Diameter	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Approx. Weight
mm^2		mm	mm	mm	mm	mm	kg/km
4x2x1.0	2	0.6	1.2	0.9	1.6	18.7	629
5x2x1.0	2	0.6	1.3	1.25	1.6	20.9	847
8x2x1.0	2	0.6	1.3	1.25	1.7	23.8	1085
10x2x1.0	2	0.6	1.4	1.25	1.7	27.2	1312
12x2x1.0	2	0.6	1.5	1.25	1.8	28.3	1449
16x2x1.0	2	0.6	1.6	1.6	1.9	32.0	1941
20x2x1.0	2	0.6	1.7	1.6	1.9	34.2	2222
24x2x1.0	2	0.6	1.8	1.6	2.0	38.5	2617
$1.5mm^2$							
2x2x1.5	2	0.6	1.1	0.9	1.5	17.3	526
3x2x1.5	2	0.6	1.2	0.9	1.6	18.5	622
4x2x1.5	2	0.6	1.3	0.9	1.6	20.0	729
5x2x1.5	2	0.6	1.3	1.25	1.7	22.4	971
8x2x1.5	2	0.6	1.4	1.25	1.7	25.6	1265
10x2x1.5	2	0.6	1.5	1.25	1.8	29.6	1546
12x2x1.5	2	0.6	1.6	1.25	1.9	30.7	1714
16x2x1.5	2	0.6	1.7	1.6	2.0	34.6	2289
20x2x1.5	2	0.6	1.8	1.6	2.0	37.1	2634
24x2x1.5	2	0.6	1.9	1.6	2.1	41.8	3105
$2.5mm^2$							
2x2x2.5	2	0.7	1.2	0.9	1.6	19.9	670
3x2x2.5	2	0.7	1.3	1.25	1.0	21.8	921
4x2x2.5	2	0.7	1.4	1.25	1.7	23.8	1089
5x2x2.5	2	0.7	1.5	1.25	1.8	26.0	1268
8x2x2.5	2	0.7	1.6	1.25	1.8	29.9	1673
10x2x2.5	2	0.7	1.7	1.6	2.0	35.5	2288
12x2x2.5	2	0.7	1.8	1.6	2.0	36.6	2512
16x2x2.5	2	0.7	1.9	1.6	2.1	40.4	3036
20x2x2.5	2	0.7	2.1	1.6	2.2	43.8	3564
24x2x2.5	2	0.7	2.2	1.6	2.4	49.6	4231

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.



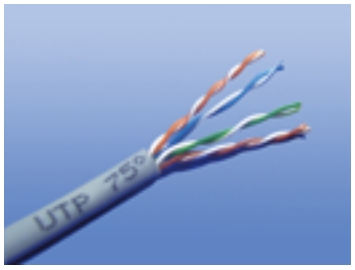
Rated Voltage

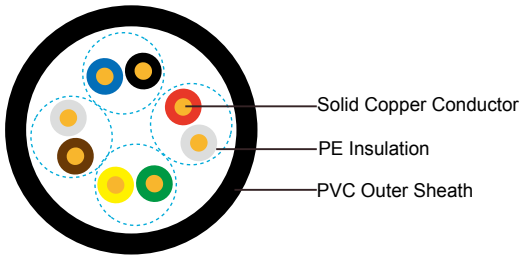
Standard

Flame Retardancy
BS EN 60332-1-2

Flame Retardant CAT5E Data Cables

FGD-CAT5EU/UTP4P24
FGD-CAT5EF/UTP4P24
FGD-CAT5ESF/UTP4P24





U/UTP CAT5E

APPLICATION

Cat5E is a cable standard for Gigabit Ethernet and other network protocol, suitable for basic voice and data installations up to 100 MHz. In addition, these cables can be offered with copper wire braid armoured & flame retardant outer sheath, providing additional mechanically protection still maintaining the flexibility of the cable.

STANDARDS

ISO/IEC 11801 EN 50173 ANSI/TIA/EIA 568

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

CABLE CONSTRUCTION

Conductors: 24AWG solid bare copper.
Insulation: PE.
Twinning: Two coloured insulated conductors twisted together to form a pair.
Outer Sheath: Thermoplastic PVC compound.
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.
Cat5EF/UTP: These cables have collective shielding of Aluminium/polyester tape with drain wire.
Cat5ESF/UTP: These cables have double collective shielding of Aluminium/polyester tape & copper wire braid.

Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C - +75°C

Minimum bending radius during installation (mobile state): 8 x Overall Diameter

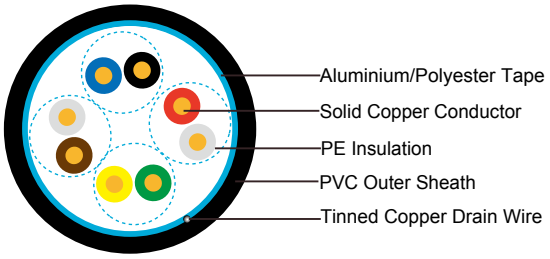
Minimum bending radius during operation (fixed state): 4 x Overall Diameter

ELECTRICAL PROPERTIES

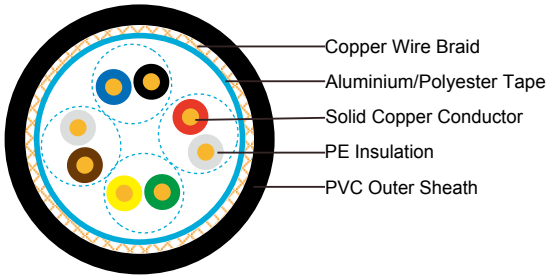
AWG		24
Nominal Conductor Diameter	mm	0.50/0.51/0.53
Maximum DC Resistance@20°C	Ω/100m	9.38
Maximum DCR Unbalance	%	5
Maximum Mutual Capacitance	pF/m	55.8
Maximum Capacitance Unbalance	pF/100m	330
Characteristic Impedance@1-100MHz	Ω	100±15
Maximum Propagation Delay Skew	ns/100m	45

TRANSMISSION PROPERTIES

FREQ MHz	Attenuation dB/100m	NEXT dB	PSNEXT dB	ELFEXT dB/100m	PSELFEXT dB/100m	RL dB
0.772	1.8	67.0	64.0	66.0	63.0	—
1	2.0	65.3	62.3	63.8	60.8	20.2
4	4.1	56.3	53.3	51.7	48.7	23.0
8	5.8	51.8	48.8	45.7	42.7	24.5
10	6.5	50.3	47.3	43.8	40.8	25.0
16	8.2	47.3	44.3	39.7	36.7	25.0
20	9.3	45.8	42.8	37.7	34.7	25.0
25	10.4	44.3	41.3	35.8	32.8	24.3
31.25	11.7	42.9	39.9	33.9	30.9	23.6
62.5	17.0	38.4	35.4	27.8	24.8	21.5
100	22.0	35.3	32.3	23.8	20.8	20.1



F/UTP CAT5E



SF/UTP CAT5E

CONSTRUCTION PARAMETERS

Cable Code	Conductor Diameter	Diameter Over Insulation	Pairs	Screen	Approx. Overall Diameter
	mm	mm			mm
FGD-CAT5EU/UTP4P24	0.50/0.51	0.91	4	Nil	5.1
FGD-CAT5EF/UTP4P24	0.53	1.00	4	Overall Aluminum Tape Screen	6.3
FGD-CAT5ESF/UTP4P24	0.53	1.00	4	Overall Aluminum Tape Screen & Copper Wire Braid	6.6

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

Standard

Flame Retardancy
BS EN 60332-1-2

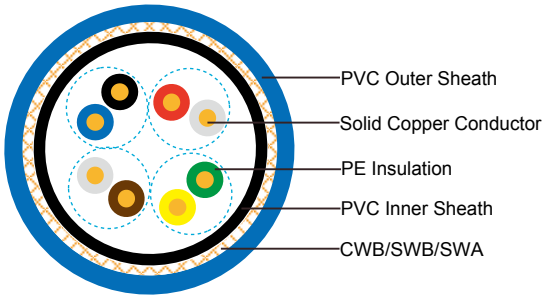
Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

Flame Retardant CAT5E CWB/SWB/SWA Armoured Data Cables

FGD-CAT5EU/UTP4P24 CWB/SWB/SWA
FGD-CAT5EF/UTP4P24 CWB/SWB/SWA
FGD-CAT5ESF/UTP4P24 CWB/SWB/SWA



U/UTP CAT5E

APPLICATION

Cat5E is a cable standard for Gigabit Ethernet and other network protocol, suitable for basic voice and data installations up to 100 MHz. In addition, these cables can be offered with copper wire braid armoured & flame retardant outer sheath, providing additional mechanically protection still maintaining the flexibility of the cable.

STANDARDS

ISO/IEC 11801 EN 50173 ANSI/TIA/EIA 568

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

CABLE CONSTRUCTION

Conductors: 24AWG solid bare copper.
Insulation: PE.
Twinning: Two coloured insulated conductors twisted together to form a pair.
Inner Sheath: Flame retardant, low smoke and halogen-free polyolefin, coloured black.
Armouring:
CWB: Copper Wire Braid
SWB: Steel Wire Braid
SWA: Steel Wire Armour
Outer Sheath: Thermoplastic PVC compound.
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.
Cat5EF/UTP: These cables have collective shielding of Aluminium/polyester tape with drain wire.

Cat5ESF/UTP: These cables have double collective shielding of Aluminium/polyester tape & copper wire braid.

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C - +75°C
Minimum bending radius during installation (mobile state): 8 x Overall Diameter
Minimum bending radius during operation (fixed state): 4 x Overall Diameter

ELECTRICAL PROPERTIES

AWG		24
Nominal Conductor Diameter	mm	0.50/0.53
Maximum DC Resistance@20°C	Ω/100m	9.38
Maximum DCR Unbalance	%	5
Maximum Mutual Capacitance	pF/m	55.8
Maximum Capacitance Unbalance	pF/100m	330
Characteristic Impedance@1-100MHz	Ω	100±15
Maximum Propagation Delay Skew	ns/100m	45

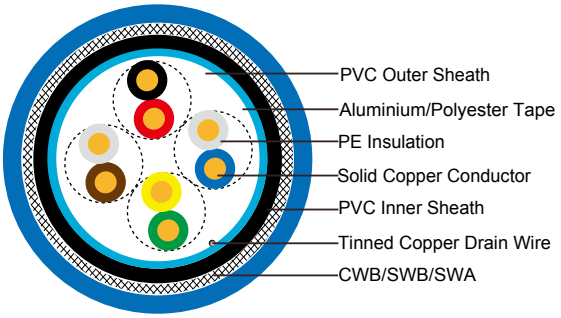
TRANSMISSION PROPERTIES

FREQ MHz	Attenuation dB/100m	NEXT dB	PSNEXT dB	ELFEXT dB/100m	PSELFEXT dB/100m	RL dB
0.772	1.8	67.0	64.0	66.0	63.0	—
1	2.0	65.3	62.3	63.8	60.8	20.2
4	4.1	56.3	53.3	51.7	48.7	23.0
8	5.8	51.8	48.8	45.7	42.7	24.5
10	6.5	50.3	47.3	43.8	40.8	25.0
16	8.2	47.3	44.3	39.7	36.7	25.0
20	9.3	45.8	42.8	37.7	34.7	25.0
25	10.4	44.3	41.3	35.8	32.8	24.3
31.25	11.7	42.9	39.9	33.9	30.9	23.6
62.5	17.0	38.4	35.4	27.8	24.8	21.5
100	22.0	35.3	32.3	23.8	20.8	20.1

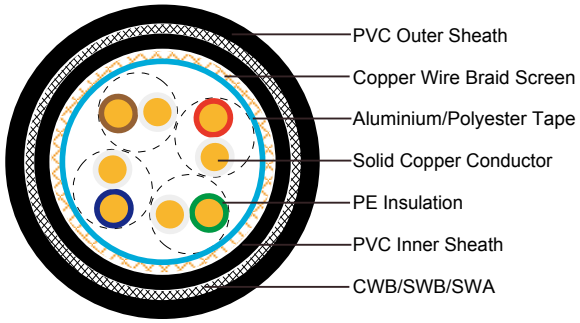
Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com



F/UTP CAT5E



SF/UTP CAT5E

CONSTRUCTION PARAMETERS

Cable Code	Conductor Diameter	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Nominal Weight
	mm	mm	mm	mm	mm	kg/km
FGD-CAT5EU/UTP4P24 CWB	0.5	0.2	0.6	1.0	7.68	97
FGD-CAT5EU/UTP4P24 SWB	0.5	0.2	0.6	1.0	7.68	93
FGD-CAT5EU/UTP4P24 SWA	0.5	0.2	0.6	1.0	8.68	165
FGD-CAT5EF/UTP4P24 CWB	0.53	0.2	0.6	1.0	8.28	116
FGD-CAT5EF/UTP4P24 SWB	0.53	0.2	0.6	1.0	8.28	112
FGD-CAT5EF/UTP4P24 SWA	0.53	0.2	0.6	1.0	9.28	192
FGD-CAT5ESF/UTP4P24 CWB	0.53	0.2	0.6	1.0	8.76	123
FGD-CAT5ESF/UTP4P24 SWB	0.53	0.2	0.6	1.0	8.76	119
FGD-CAT5ESF/UTP4P24 SWA	0.53	0.2	0.6	1.0	9.76	216

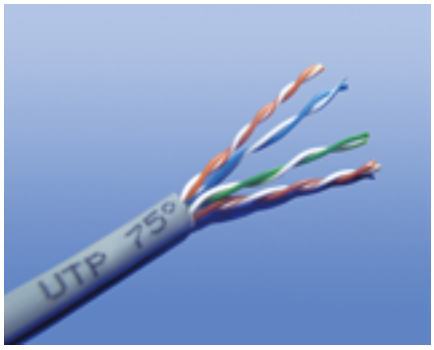
Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

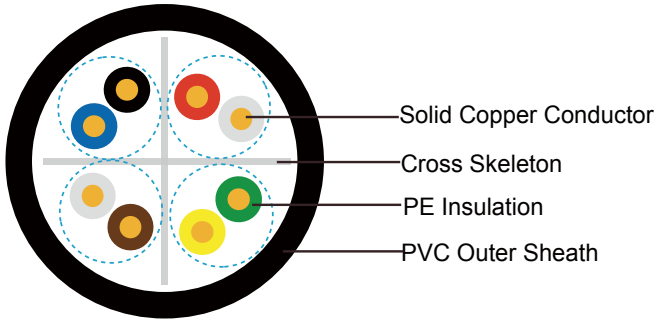
Standard

Flame Retardancy
BS EN 60332-1-2

Flame Retardant CAT6 Data Cables

FGD-CAT6U/UTP4P23
FGD-CAT6F/UTP4P23
FGD-CAT6SF/UTP4P23





APPLICATION

U/UTP CAT6

Cat6 Cable is a cable standard for Gigabit Ethernet and other network protocol, suitable for 10BaseT, 100BaseTx & 1000BaseT (Gigabit Ethernet) application. In addition, these cables can be offered with copper wire braid armoured & flame retardant outer sheath, providing additional mechanically protection still maintaining the flexibility of the cable.

STANDARDS

ISO/IEC 11801 EN 50173 ANSI/TIA/EIA 568

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

CABLE CONSTRUCTION

Conductors: 23AWG solid bare copper.
Insulation: PE.
Twinning: Two coloured insulated conductors twisted together to form a pair.
Outer Sheath: Thermoplastic PVC compound.
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.
Cat6F/UTP: These cables have collective shielding of Aluminium/polyester tape with drain wire.
Cat6SF/UTP: These cables have double collective shielding of Aluminium/polyester tape & copper wire braid.

Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C - +75°C

Minimum bending radius during installation (mobile state): 8 x Overall Diameter

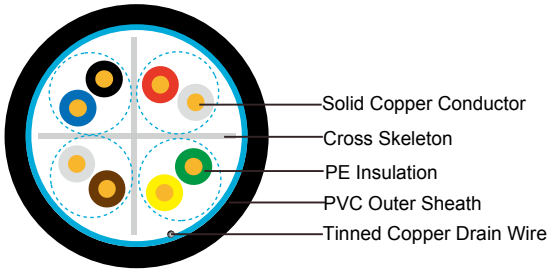
Minimum bending radius during operation (fixed state): 4 x Overall Diameter

ELECTRICAL PROPERTIES

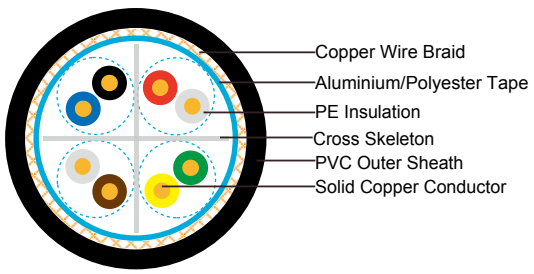
AWG		23
Nominal Conductor Diameter	mm	0.56/0.57/0.58
Maximum DC Resistance@20°C	Ω/100m	9.38
Maximum DCR Unbalance	%	3
Maximum Mutual Capacitance	pF/m	5.8
Maximum Capacitance Unbalance	pF/100m	30
Characteristic Impedance@1-100MHz	Ω	100±15
Maximum Propagation Delay Skew	ns/100m	18

TRANSMISSION PROPERTIES

FREQ MHz	Attenuation dB/100m	NEXT dB	PSNEXT dB	ELFEXT dB/100m	PSELFEXT dB/100m	RL dB
0.772	1.8	76.0	74.	70.0	67.0	—
1	2.0	74.3	72.3	67.8	64.8	20.0
4	3.8	65.3	63.3	55.7	52.7	23.0
8	5.3	60.8	58.8	49.7	46.7	24.5
10	6.0	59.3	57.3	47.8	44.8	25.0
16	7.6	56.3	54.3	43.7	40.7	25.0
20	8.5	54.8	52.8	41.7	38.7	25.0
25	9.5	53.3	51.3	39.8	36.8	24.3
31.25	10.7	51.9	49.9	37.9	34.9	23.6
62.5	15.4	47.4	45.4	31.8	28.8	21.5
100	19.8	44.3	42.3	27.8	24.8	20.1
155	25.2	41.5	39.5	23.9	20.9	18.8
200	29.0	39.8	37.8	21.7	18.7	18.0
250	32.8	38.3	36.3	19.8	16.8	17.3



F/UTP CAT6



SF/UTP CAT6

CONSTRUCTION PARAMETERS

Cable Code	Conductor Diameter	Diameter Over Insulation	Pairs	Screen	Approx. Overall Diameter
	mm	mm			mm
FGD-CAT6U/UTP4P23	0.56/0.57	1.02	4	Nil	6.0
FGD-CAT6F/UTP4P23	0.57/0.58	1.02	4	Overall Aluminum Tape Screen	6.3
FGD-CAT6SF/UTP4P23	0.57/0.58	1.02	4	Overall Aluminum Tape Screen & Copper Wire Braid	6.6

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

Standard

Flame Retardancy
BS EN 60332-1-2

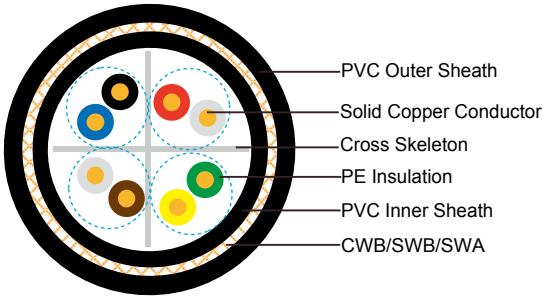
Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com

Flame Retardant CAT6 CWB/SWB/SWA Armoured Data Cables

FGD-CAT6U/UTP4P23 CWB/SWB/SWA
FGD-CAT6F/UTP4P23 CWB/SWB/SWA
FGD-CAT6SF/UTP4P23 CWB/SWB/SWA



U/UTP CAT6

APPLICATION

Cat6 Cable is a cable standard for Gigabit Ethernet and other network protocol, suitable for 10BaseT, 100BaseTx & 1000BaseT (Gigabit Ethernet) application. In addition, these cables can be offered with copper wire braid armoured & flame retardant outer sheath, providing additional mechanically protection still maintaining the flexibility of the cable.

STANDARDS

ISO/IEC 11801 EN 50173 ANSI/TIA/EIA 568

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

CABLE CONSTRUCTION

Conductors: 23AWG solid bare copper.
Insulation: PE .
Twinning: Two coloured insulated conductors twisted together to form a pair.
Inner Sheath: Flame retardant, low smoke and halogen-free polyolefin, coloured black.
Armouring:
CWB: Copper Wire Braid
SWB: Steel Wire Braid
SWA: Steel Wire Armour
Outer Sheath: Thermoplastic PVC compound.
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.
Cat6F/UTP: These cables have collective shielding of Aluminium/polyester tape with drain wire.

Cat6SF/UTP: These cables have double collective shielding of Aluminium/polyester tape & copper wire braid.

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C - +75°C

Minimum bending radius during installation (mobile state): 8 x Overall Diameter

Minimum bending radius during operation (fixed state): 4 x Overall Diameter

ELECTRICAL PROPERTIES

AWG		23
Nominal Conductor Diameter	mm	0.56/0.57/0.58
Maximum DC Resistance@20°C	Ω/100m	9.38
Maximum DCR Unbalance	%	3
Maximum Mutual Capacitance	pF/m	5.8
Maximum Capacitance Unbalance	pF/100m	30
Characteristic Impedance@1-100MHz	Ω	100±15
Maximum Propagation Delay Skew	ns/100m	18

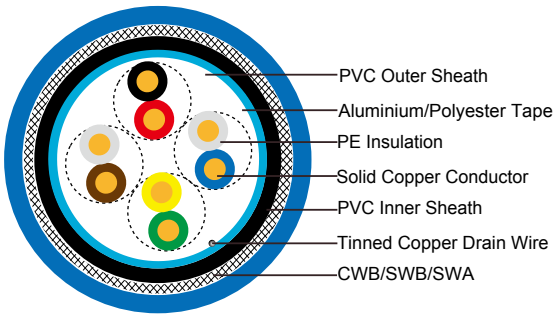
TRANSMISSION PROPERTIES

FREQ MHz	Attenuation dB/100m	NEXT dB	PSNEXT dB	ELFEXT dB/100m	PSELFEXT dB/100m	RL dB
0.772	1.8	76.0	74.0	70.0	67.0	—
1	2.0	74.3	72.3	67.8	64.8	20.0
4	3.8	65.3	63.3	55.7	52.7	23.0
8	5.3	60.8	58.8	49.7	46.7	24.5
10	6.0	59.3	57.3	47.8	44.8	25.0
16	7.6	56.3	54.3	43.7	40.7	25.0
20	8.5	54.8	52.8	41.7	38.7	25.0
25	9.5	53.3	51.3	39.8	36.8	24.3
31.25	10.7	51.9	49.9	37.9	34.9	23.6
62.5	15.4	47.4	45.4	31.8	28.8	21.5
100	19.8	44.3	42.3	27.8	24.8	20.1
155	25.2	41.5	39.5	23.9	20.9	18.8
200	29.0	39.8	37.8	21.7	18.7	18.0
250	32.8	38.3	36.3	19.8	16.8	17.3

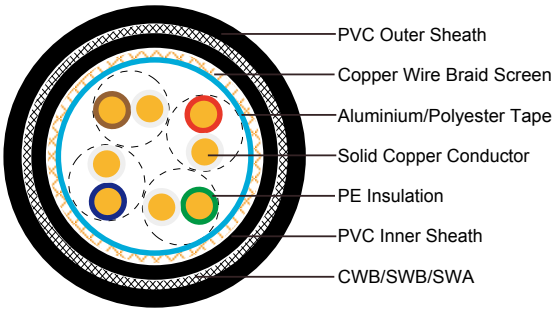
Caledonian

FIREGUARD Flame Retardant Instrumentation & Data Cables

www.caledonian-cables.co.uk www.addison-cables.com



F/UTP CAT6



SF/UTP CAT6

CONSTRUCTION PARAMETERS

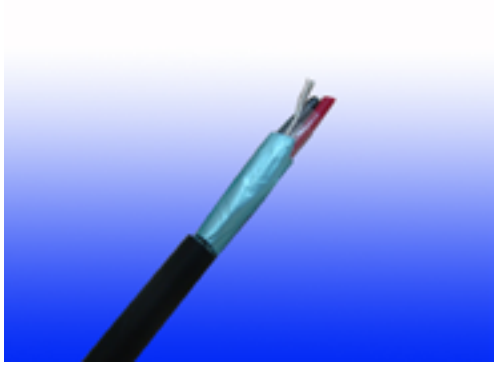
Cable Code	Conductor Diameter	Nominal Insulation Thickness	Nominal Inner Sheath Thickness	Nominal Outer Sheath Thickness	Approx. Overall Diameter	Nominal Weight
	mm	mm	mm	mm	mm	kg/km
FGD-CAT6U/UTP4P23 CWB	0.56/0.57	0.2	0.6	1.0	7.88	115
FGD-CAT6U/UTP4P23 SWB	0.56/0.57	0.2	0.6	1.0	7.88	109
FGD-CAT6U/UTP4P23 SWA	0.56/0.57	0.2	0.6	1.0	8.88	189
FGD-CAT6F/UTP4P23 CWB	0.57/0.58	0.2	0.6	1.0	8.48	126
FGD-CAT6F/UTP4P23 SWB	0.57/0.58	0.2	0.6	1.0	8.48	132
FGD-CAT6F/UTP4P23 SWA	0.57/0.58	0.2	0.6	1.0	9.48	213
FGD-CAT6SF/UTP4P23 CWB	0.57/0.58	0.2	0.6	1.0	8.96	154
FGD-CAT6SF/UTP4P23 SWB	0.57/0.58	0.2	0.6	1.0	8.96	148
FGD-CAT6SF/UTP4P23 SWA	0.57/0.58	0.2	0.6	1.0	9.96	242

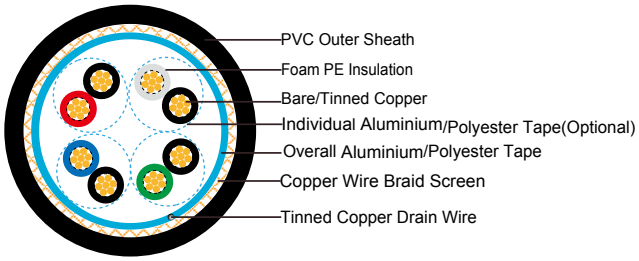
Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

Standard

Flame Retardancy
BS EN 60332-1-2

Flame Retardant RS485 Databus Cables





RS 485

APPLICATION

The cables are designed for RS485 data connections where continued functionality is required during a fire situation. This cable combines low capacitance insulation with one of the highest levels of screening to provide high speed, interference free, data transmission where continued functionality is required during a fire situation.

STANDARDS

Basic design adapted to EIA/TIA 485

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	BS EN 60332-1-2

CABLE CONSTRUCTION

MULTIPAIR RS 485 OVERALL SCREENED DATABUS CABLE

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2 or class 5.
Insulation: Foam PE or foam skin PE.
Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.
Cabling: Pairs are cabled together in concentric layers.
Overall Screen: Aluminum/polyester tape with tinned copper drain wire.
Outer Sheath: Thermoplastic PVC compound.
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

MULTIPAIR RS 485 OVERALL DOUBLE SCREENED DATABUS CABLE

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2 or class 5.
Insulation: Foam PE or foam skin PE.
Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.
Cabling: Pairs are cabled together in concentric layers.
Overall Screen: Aluminium/polyester tape+copper wire braid.
Outer Sheath: Thermoplastic PVC compound.
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

MULTIPAIR RS 485 INDIVIDUAL & OVERALL SCREENED DATABUS CABLE

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2 or class 5.
Insulation: Foam PE or foam skin PE.
Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.
Cabling: Pairs are cabled together in concentric layers.
Individual Screen: Individual aluminium/polyester tape.
Overall Screen: Copper wire braid.
Outer Sheath: Thermoplastic PVC compound.
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

MULTIPAIR RS 485 OVERALL SCREENED DATABUS CABLE

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2 or class 5.
Insulation: Foam PE or foam skin PE.
Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.
Cabling: Pairs are cabled together in concentric layers.
Overall Screen: Copper wire braid.
Outer Sheath: Thermoplastic PVC compound.
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -20°C - +90°C

Temperature range during installation (mobile state): -5°C - +60°C

Minimum bending radius: 8 x Overall Diameter

ELECTRICAL PROPERTIES

Dielectric test	1000 V r.m.s. for 5' (core-core)
	1000 V r.m.s. for 5' (core-screen)
Impedance	120Ω
Capacitance	45 nF/km conductor to conductor
	90 nF/km conductor to shield

CONSTRUCTION PARAMETERS

Multipair RS 485 Overall Screened Databus Cable

RE-02Y(St)Y / RE-02YS(St)Y

No.of Pair	Nominal Cross Sectional Area	No./Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.	mm^2	No/mm	mm	mm	mm	kg/km
1	0.22	7/0.2	0.7	1.1	5.7	40
2	0.22	7/0.2	0.7	1.1	9.0	72
4	0.22	7/0.2	0.7	1.1	10.3	103
1	0.50	16/0.2	0.7	1.1	6.2	52
2	0.50	16/0.2	0.7	1.1	10.1	95
4	0.50	16/0.2	0.7	1.1	11.7	143
1	0.75	24/0.2	0.7	1.1	6.7	61
2	0.75	24/0.2	0.7	1.1	10.9	114
4	0.75	24/0.2	0.7	1.1	12.7	176
1	1.00	30/0.2	0.7	1.1	6.8	67
2	1.00	30/0.2	0.7	1.1	11.2	122
4	1.00	30/0.2	0.7	1.1	13.0	192

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

Multipair RS 485 Overall Double Screened Databus Cable

RE-02Y(St)CY / RE-02YS(St)CY

No.of Pair	Nominal Cross Sectional Area	No./Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.	mm^2	No/mm	mm	mm	mm	kg/km
1	0.22	7/0.2	0.7	1.1	6.2	55
2	0.22	7/0.2	0.7	1.1	9.4	98
4	0.22	7/0.2	0.7	1.1	10.8	133
1	0.50	16/0.2	0.7	1.1	6.7	68

No.of Pair	Nominal Cross Sectional Area	No./Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.	mm^2	No/mm	mm	mm	mm	kg/km
2	0.50	16/0.2	0.7	1.1	10.6	124
4	0.50	16/0.2	0.7	1.1	12.1	177
1	0.75	24/0.2	0.7	1.1	7.1	79
2	0.75	24/0.2	0.7	1.1	11.4	146
4	0.75	24/0.2	0.7	1.1	13.2	214
1	1.00	30/0.2	0.7	1.1	7.3	85
2	1.00	30/0.2	0.7	1.1	11.7	154
4	1.00	30/0.2	0.7	1.1	13.5	231

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

Multipair RS 485 Individual & Overall Screened Databus Cable

RE-02Y(St)CY PiMF / RE-02YS(St)CY PiMF

No.of Pair	Nominal Cross Sectional Area	No./Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.	mm^2	No/mm	mm	mm	mm	kg/km
1	0.22	7/0.2	0.7	1.1	6.4	56
2	0.22	7/0.2	0.7	1.1	10.2	101
4	0.22	7/0.2	0.7	1.1	11.7	139
1	0.50	16/0.2	0.7	1.1	7.0	69
2	0.50	16/0.2	0.7	1.1	11.4	128
4	0.50	16/0.2	0.7	1.1	13.2	184
1	0.75	24/0.2	0.7	1.1	7.5	80
2	0.75	24/0.2	0.7	1.1	12.3	150
4	0.75	24/0.2	0.7	1.1	14.3	221
1	1.00	30/0.2	0.7	1.1	7.6	86
2	1.00	30/0.2	0.7	1.1	12.6	159
4	1.00	30/0.2	0.7	1.1	14.7	238

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

Multipair RS 485 Overall Screened Databus Cable

RE-02YCY / RE-02YSCY

No.of Pair	Nominal Cross Sectional Area	No./Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No.	mm^2	No/mm	mm	mm	mm	kg/km
1	0.22	7/0.2	0.7	1.1	6.0	51
2	0.22	7/0.2	0.7	1.1	9.2	91
4	0.22	7/0.2	0.7	1.1	10.6	126
1	0.50	16/0.2	0.7	1.1	6.5	64
2	0.50	16/0.2	0.7	1.1	10.4	117
4	0.50	16/0.2	0.7	1.1	12.0	169
1	0.75	24/0.2	0.7	1.1	6.9	74
2	0.75	24/0.2	0.7	1.1	11.2	138
4	0.75	24/0.2	0.7	1.1	13.0	205
1	1.00	30/0.2	0.7	1.1	7.1	80
2	1.00	30/0.2	0.7	1.1	11.5	147
4	1.00	30/0.2	0.7	1.1	13.3	222

Note: The parameters listed above are nominal values as per cable standards. Actual values may vary due to material and manufacturing process variations. For precise specifications or customized requirements, please contact us for further information.

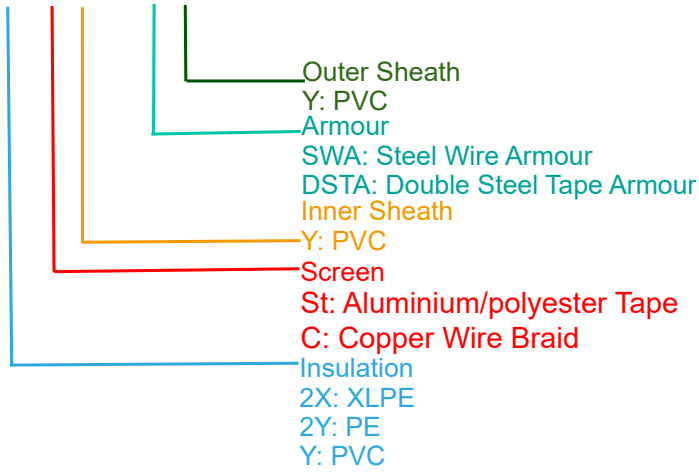
Rated Voltage

Standard

Flame Retardancy
BS EN 60332-1-2

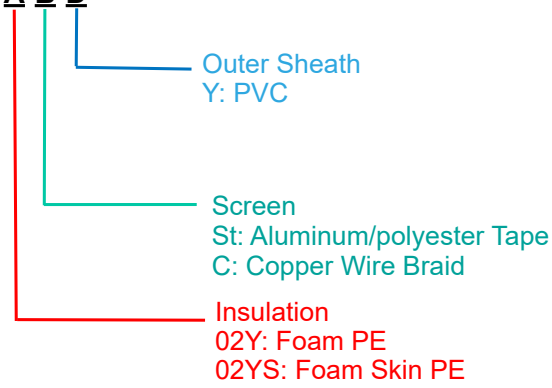
TYPE CODES FOR INSTRUMENTATION CABLES

RE-2X(St)Y-SWA-Y



TYPE CODES FOR RS485 DATABUS CABLES

RE-A-B-D



EN 50288-7 COLOUR CODE

Unless otherwise specified e.g. by means of numbered cores or tapes, the coding for identification shall be given in IEC 60189-2 or EN 60708, as appropriate. The colours shall meet the requirements of 4.4 of EN 50288-1.

Coloured or numbered non-hygroscopic binder tapes may be applied over screened cabling elements as identification.

4.4 of EN 50288-1:

When required, the insulated conductors shall be identified by colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting. Colours shall be clearly identifiable and shall correspond reasonably with the standard colours shown in HD 402.

The colour(s) or the symbol used for core identification shall be durable such that it cannot be removed when tested to EN 50289-3-8.

Technical Information for Fire Properties

FLAME RETARDANCE IN ACCORDANCE WITH DIFFERENT STANDARDS

The following standards specify a method for flame propagation test for single core cables. The single cable sample undergoes the flame action of a bunsen burner. The test only lasts few minutes.

The IEC 60332-1 standards are taken over as EN standards and transferred to national standards Example: IEC 60332-1 becomes EN 60332-1 and introduced in Germany as DIN EN 60332-1.

Flame retardance in accordance with EN 60332:2004

EN 60332:2004 Tests on electrical and optical cables under fire conditions. The standard applies to single insulated wires (cables) and requires a vertical flame test with a maximum flame climb of 450mm. The test lasts between 1 and8 minutes, depending on the cable diameter.

EN 60332-1-1:2004 / BS EN 60332-1-1:2004 / IEC 60332-1-1:2004 / DIN EN 60332-1-1:2004 / VDE 0482-1-1:2005-06 Test on electrical and optical cables under fire conditions. Test for a vertical flame propagation fo a singleinsulated wire or cables.

EN 60332-1-2:2004 / BS EN 60332-1-2:2004 / IEC 60332-1-2:2004 / DIN EN 60332-1-2:2004 / VDE 0482-1-2:2005-06 / CEI 60332-1-2 (CEI 20-35/1-2) Tests on electrical and optical fiber cables under fire conditions. Test for a verticalflame propagation for a single insulated wire or cable – Procedure for 1kW premixed flame.

This standard specifies a method of test for resistance to vertical flame propagation for a single insulated wire or cable. Part 1-1 specifies the test apparatus and Part 1-2 specifies the test procedure.

The cable sample is deemed to pass the test if the distance between the lower edge of the top support and the onset of charring is greater than 50mm. In addition, a failure shall be recorded if burning extends downward to a point greater than 540mm from the lower edge of the top support.

EN 60332-1-2:2004 specifies the use of 1kW premix flame and is for general use, except that the procedure may not be suitable for the testing of small insulated conductors or cables of less than 0.5mm sq cross section because the conductor melts before the test is completed, or for the testing of small optic fiber cables because the fiber will be broken before the test is completed. In this case, the procedure given by EN 60332-2-1/2 is recommended.

EN 60332-2-1:2004 / BS EN 60332-2-1:2004 / IEC 60332-2-1:2004 / DIN EN 60332-2-1:2004 / VDE 0482-2-1:2005-06 Tests on electrical and optical cables under fire conditions. Test for a vertical flame propagation for a single small insulated wire or cable.

EN 60332-2-2:2004 / BS EN 60332-2-2:2004 / IEC60332-2-2:2004 / DIN EN 60332-2-2:2004 / VDE 0482-2-2:2005-06 / CEI 60332-2-2 (CEI 20-35/2-2) Test on electric and optical fiber cables under fire conditions. Tests for vertical flame propagation for a single small insulated wire or cable. Procedure for diffusion flame.
This test applies to small dimensions cables.
This standard specifies a method of test for resistance to vertical flame propagation for a single insulated wire or cable. Part 2-1 specifies the test apparatus and Part 2-2 specifies the test procedure.

Flame retardance in accordance with NF C32-070-2.1 (C2)

NF C32-070:2001 Insulated conductors and cables for installation - Classification tests on conductors and cables with regard to fire behavior.
NF C32-070 2.1 Procedure for 1 kW pre-mixed flame.

The NF F 32070 2.1 (Category C2) and IEC 60332-1-2 are very similar. The sole difference is the time during which the flame is applied.

Flame retardance in accordance with EN 50265-1:1999 (replaced by EN 60332)

EN 50265-1:1999 / BS EN 50265-1:1999 / DIN EN 50265-1:1999 / VDE 0482-265-1:1999-04– Common test methods for cables under fire conditions. Test for resistance to a vertical flame propagation for a single insulated conductor or cable. Apparatus (Replaced by EN 60332-1-1:2004 and EN 60332-2-1:2004).

EN 50265-2-1:1999 / BS EN 50265-2-1:1999 / DIN EN 50265-2-1:1999 / VDE 0482-265-2-1:1999-04 – Common test methods for cables under fire conditions. Test for resistance to a vertical flame propagation for a single insulated conductor or cable. Part 2-1: Procedure 1kW pre-mixed flame (Replaced by EN 60332-1-2:2004).

EN 50265-2-2:1999 / BS EN 50265-2-2:1999 / DIN EN 50265-2-2:1999 / VDE 0482-265-2-2:1999-04 – Common test methods for cables under fire conditions. Test for resistance to a vertical flame propagation for a single insulated conductor or cable. Part 2-2: Procedure Diffusion flame (Replaced by EN 60332-2-2:2004).

Flame retardance in accordance with BS 4066 Part 1 & 2 (replaced by EN 60332)

BS 4066-2:1980 (superseded) – Tests on electic cables under fire conditions. Method of test on a single vertical insulated wire or cable.

This standard is no longer in force and is replaced by BS EN 50265-2-1 which was also superseded by BS EN 60332-1:2009.

Flame retardance in accordance with NBN C 30-004 (cat. F1)

NBN C 32-004 specifies a method of test for measuring the vertical flame propagation characteristics of a single wire or cable. The cable specimen is deemed to have passed the test and categorized as F1 if after burning has ceased, the charred or affected portion does not reach within 50mm of the lower edge of the top clamp which is equivalent to 425mm above the point of flame application.

Flame retardance in accordance with IEEE 383

In the IEEE 383 test, cables are supported by a one foot wide vertical rack eight feet high. The cables are positioned in the centre six inches of the rack, spaced one-half diameter apart. The rack is centered in an eight foot enclosure. A ten inch ribbon burner ignites the cable with a 21 kW (70000 BTU). The burner is positioned 2 feet above the floor and 9 to 12 inches of cables are exposed to direct flames for 20 minutes. Cables on which flame extends above the top of the 8 foot rack fail the test.

REDUCED FIRE PROPAGATION IN ACCORDANCE WITH DIFFERENT STANDARDS

These standards specify a method for fire propagation test for vertically mounted bunched cables. These tests simulate the chimney effect in vertical installation of bunch of cables. A certain number of cable sections with a length of 3.5 m is fastened to a vertical ladder in an adapted chamber. The amount of combustible materials for cables and duration of flame application depends on the category the cable has to meet.

Resistance of the wires bundle arranged vertically to the spread of the flame should be such that after a certain time and stopping the source of ignition, flame is extinguished by itself and the length of charred fragments will not exceed 2.5 m in height measured above the lower edge of the burner.

Reduced fire propagation in accordance with IEC 60332-3

This test is the most common one to verify the behaviour of a cables for the fire propagation. The cables are installed on a bunch of vertical ladder inside a metal cabinet and undergo the action of a ribbon flame at 750°C.The standard is subdivided in several parts that differ one from the other for the quantity of cable to be installed, the installation mode and the flame application time.

EN 60332-3-10:2009 / BS EN 60332-3-10:2009 / IEC 60332-3-10 ed1.1 / DIN EN 60332-3-10:2009 / VDE

0482-332-3-10:2010-08 – Common test methods for cables under fire conditions. Tests on electric and optical fiber cables under fire conditions - Part 3-10: Test for vertical flame spread of vertically mounted bunched wires or cables.

EN 60332-3-21:2009 / BS EN 60332-3-21:2009 / IEC 60332-3-21 ed1.1 / DIN EN 60332-3-21 / VDE 0482-332-3-21:2010-08 / CEI EN 60332-3-21:2009 (CEI 20-22/3-1)– Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-21: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A . F/R

-Installation In one layer (front).
-Installation In two layers (front and rear)
-The quantity of the Installed cable is equal to 7 litres/m of combustible materials for cables
-The time of application of the flame is 40 minutes

EN 60332-3-22:2009 / BS EN 60332-3-22:2009 / IEC 60332-3-22 ed1.1 / DIN EN 60332-3-22:2009 /VDE 0482-332-3-22:2010-08 / CEI EN 60332-3-22:2009 (CEI 20-22/3-2)– Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cable - Category A

-Installation In one layer (front).
-The quantity of the installed cable is equal to 7 litres/m of combustible materials for cables
-The time of application of the flame is 40 minutes

EN 60332-3-23:2009 / BS EN 60332-3-23:2009 / IEC 60332-3-23 ed1.1 / DIN EN 60332-3-23:2009 / VDE 0482-332-3-23:2010-08 / CEI EN 60332-3-23:2009 (CEI 20-22/3-3)– Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-23: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category B

-Installation In one layer (front).
-The quantity of the installed cable is equal to 3.5 litres/m of combustible materials for cables
-The time of application of the flame is 40 minutes

EN 60332-3-24:2009 / BS EN 60332-3-24:2009 / IEC 60332-3-24 ed1.1 / DIN EN 60332-3-24:2009 / VDE 0482-332-3-24:2010-08 / CEI EN 60332-3-24:2009 (CEI 20-22/3-4) – Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted

bunched wires or cables - Category C

-Installation In one layer (front).
-The quantity of the installed cable is equal to 1.5 litres/m of combustible materials for cables
-The time of application of the flame is 20 minutes

EN 60332-3-25:2009 / BS EN 60332-3-25:2009 / IEC 60332-3-25 ed1.1 / DIN EN 60332-3-25: 2009 / VDE 0482-332-3-25:2010-08 / CEI EN 60332-3-25:2009 (CEI 20-22/3-5)– Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D
-Installation In one layer (front).
-The quantity of the installed cable is equal to 0.5 litres/m of combustible materials for cables.
-The time of application of the flame is 20 minutes.

Summary of test condition:

IEC	60332-3-21	60332-3-22			60332-3-23		60332-3-24		60332-3-25	
BS EN 50266	50266-2-1	50266-2-2			50266-2-3		50266-2-4		50266-2-5	
CEI	20-22/3-1	20-22/3-2			20-22/3-3		20-22/3-4		20-22/3-5	
Category	AF/R	A			B		C		D	
Conductor cross-sectionsmm^2	＞35	＞35	≤35		＞35	≤35	＞35	≤35	＞35	≤35
NMV (litres per metre of cable)	7	7			3.5		1.5		0.5	
Minimum length of test pieces (m)	3.5	3.5			3.5		3.5		3.5	
Standard ladder (500 mm wide): • number of layers • maximum width of test sample	1front+1rear 300mm	≥1front 300mm	1front 300mm	- -	≥1front 300mm	1front 300mm	≥1front 300mm	1front 300mm	≥1front 300mm	
Wide ladder (800 mm wide): • number of layers • maximum width of test sample	- -	- -	- -	1front 600mm	- -		- -		- -	
Positioning of test pieces	Spaced 0.5×Diameter cable (Max.20mm)	Touching	Spaced 0.5×Diameter cable (Max.20mm)		Touching	Spaced 0.5×Diameter cable (Max.20mm)	Touching	Spaced 0.5×Diameter cable (Max.20mm)	Touching	
Number of burners	1	1	1	2	1		1		1	
Ladder mounting	Front and rear	Front, Wider ladder for larger cables			Front		Front		Front	
Flame application time (min)	40	40	40		40		40		40	

Test conditions	Wind speed: <8 m/s; Ternperature: 5°C - +40°C
Extent of the charred portion	≤2.5m above the bottom edge of the burner, neither at the front nor at the rear of the ladder.

Reduced fire propagation in accordance with NF C32-070-2.2 (C1)

NF C32-070 :2001 Insulated conductors and cables for installation.
-Classification tests on conductors and cables with regard to fire behavior.

A 1600mm vertically installed bundled of cable is exposed to the effects of a radiating oven (approx 830°C) and forced ventilation. Pilot flames arranged above the oven burn off the emitted gases. The test duration is 30 minutes, with the ventilation stopped for every 10 minutes during the flame application period. The cable sample is classified under Category C1 according to NF F 32070-2.2 if the carbonised part of the cable sample does not extend more than 0.8m above the upper base of the oven.

Depending on the damaged length, they can be further classified into 4 classes A, B, C and D according to NF F 16-101 as follows:

Category	Test Result
A	No damaged length from top of the oven in upper position.
B	Damaged length from top of oven in upper position not extending more than 50mm.
C	Damaged length from top of oven in upper position not extending more than 300mm.
D	Damaged length from top of oven in upper position not extending above the top of the chimney.

Reduced fire propagation in accordance to EN 50266-1, EN 50266-2-2, EN 50266-2-3, EN 50266-2-4.

EN 50266-1:2001 / BS EN 50266-1:2001 / DIN EN 50266-1:2001 / VDE 0482-266-1:2001-09– Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables - Part 1: Apparatus (Replaced by EN 60332-3-10:2009).

EN 50266-2-1:2001 / BS EN 50266-2-1:2001 / DIN EN 50266-2-1:2001 / VDE 0482-266-2-1:2001-09 / CEI EN 50266-2-1– Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables - Part 2-1 : Procedures. Category A F/R (Replaced by EN 60332-3-21:2009).

EN 50266-2-2:2001 / BS EN 50266-2-2:2001 / DIN EN 50266-2-2:2001 / VDE 0482-266-2-2:2001-09 / CEI EN 50266-2-2– Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables - Part 2-2: Procedures. Category A (Replaced by EN 60332-3-22:2009).

EN 50266-2-3:2001 / BS EN 50266-2-3:2001 / DIN EN 50266-2-3:2001 / VDE 0482-266-2-3:2001-09 / CEI

EN 50266-2-1– Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables
- Part 2-3: Procedures. Category B (Replaced by EN 60332-3-23:2009).

EN 50266-2-4:2001 / BS EN 50266-2-4:2001 / DIN EN 50266-2-4:2001 / VDE 0482-266-2-4:2001-09 / CEI EN 50266-2-4:2001 – Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables - Part 2-4: Procedures. Category C (Replaced by EN 60332-3-24:2009).

Reduced fire propagation in accordance with BS 4066-3

BS 4066-3:1994 (superseded) – Tests on electic cables under fire conditions. Tests on bunched wires or cables.
This standard is no longer in force and is replaced by the BS EN 50266-1:2001.

Reduced fire propagation in accordance with NBN C 32-004 (F2)

NBN C 32-004 specifies a method of test for measuring the vertical flame propagation characteristics of a bunch of cables. The cable specimen is deemed to have passed the test and categorized as F2 if after burning has ceased, the extent of charred or affected portion does not reach a height exceeding 2.5m above the bottom edge of the burner.

Caledonian

www.caledonian-cables.co.uk
sales@caledonian-cables.co.uk

ADDIMAX

www.addison-cables.com
sales@addison-cables.com

Address: Marchants Industrial Centre, Mill Lane,
Laughton, Lewes, East Sussex, BN8 6AJ, UK
Tel: 44-20 7419 5087
Fax: 44-20 7831 9489