



Colour Codes & Cable Make Up

A) Colour Code According to IEC 189-3

Standard Colours	Easily Identifiable Combinations		Less-easily Identifiable Combinations	
BLUE	RED	Black	BROWN	Black
ORANGE	RED	Blue	ORANGE	Black
GREEN	ORANGE	Green	ORANGE	Grey
BROWN	ORANGE	Blue	GREEN	Grey
GREY	ORANGE	Violet	GREEN	Violet
WHITE	YELLOW	Black	VIOLET	Black
RED	YELLOW	Red	GREY	Black
BLACK	YELLOW	Green **	GREY	Violet
YELLOW	YELLOW	Blue	WHITE	Brown
VIOLET	YELLOW	Violet	WHITE	Orange
PINK	GREEN	Black	WHITE	Violet
TURQUOISE	GREEN	Red	GREEN	Blue
	BLUE	Black	BROWN	Blue
	GREY	Red	GREY	Brown
	GREY	Blue	GREEN	Brown
	WHITE	Black	WHITE	Grey
	WHITE	Red	ORANGE	Brown
	WHITE	Green	ORANGE	Red
	WHITE	Blue	RED	Brown
			WHITE	Yellow

**NOTE: The colour YELLOW-Green should be reserved for earth or safety wires.

B) Colour Code & Cable Make Up According to ICEA S-80-576

Pair No.	a-wire		b-wire		Pair No.	a-wire		b-wire	
1	WHITE	Blue	BLUE	White	13	BLACK	Green	GREEN	Black
2	WHITE	Orange	ORANGE	White	14	BLACK	Brown	BROWN	Black
3	WHITE	Green	GREEN	White	15	BLACK	Grey	GREY	Black
4	WHITE	Brown	BROWN	White	16	YELLOW	Blue	BLUE	Yellow
5	WHITE	Grey	GREY	White	17	YELLOW	Orange	ORANGE	Yellow
6	RED	Blue	BLUE	Red	18	YELLOW	Green	GREEN	Yellow
7	RED	Orange	ORANGE	Red	19	YELLOW	Brown	BROWN	Yellow
8	RED	Green	GREEN	Red	20	YELLOW	Grey	GREY	Yellow
9	RED	Brown	BROWN	Red	21	VIOLET	Blue	BLUE	Violet
10	RED	Grey	GREY	Red	22	VIOLET	Orange	ORANGE	Violet
11	BLACK	Blue	BLUE	Black	23	VIOLET	Green	GREEN	Violet
12	BLACK	Orange	ORANGE	Black	24	VIOLET	Brown	BROWN	Violet
					25	VIOLET	Grey	GREY	Violet

In accordance with ICEA publication S-80-576-2002, the colour code is composed of ten (10) distinctive colours to identify 25 pairs. Marking of each mate of the primary conductor in a pair with the colour of that primary conductor is optional.

When cables of larger than 25 pairs are required, the core shall be assembled into 25-pair sub-units, each colour coded in accordance with ICEA publication S-80-576. Cables with over 600 pairs shall have 25-pair binder groups combined into super units. These super units shall be wrapped with a solid colour thread that follows the primary colour scheme of white, red, black, yellow and violet. Binder colour code integrity shall be maintained wherever cables are spliced.

C) Colour Code According to IEC 60189-2, BT210B

Colour Scheme for Pairs & Triples

Cabling Element No.	a-wire		b-wire	Cabling Element No.	a-wire		b-wire	Cabling Element No.	a-wire		b-wire
	Base	Ink Bands			Base	Ink Bands			Base	Ink Bands	
1	WHITE		BLUE	35	BLUE	Black	GREY	69	GREEN	Red	BROWN
2	WHITE		ORANGE	36	YELLOW	Blue	BLUE	70	GREEN	Red	GREY
3	WHITE		GREEN	37	YELLOW	Blue	ORANGE	71	GREEN	Black	BLUE
4	WHITE		BROWN	38	YELLOW	Blue	GREEN	72	GREEN	Black	ORANGE
5	WHITE		GREY	39	YELLOW	Blue	BROWN	73	GREEN	Black	GREEN
6	RED		BLUE	40	YELLOW	Blue	GREY	74	GREEN	Black	BROWN
7	RED		ORANGE	41	WHITE	Orange	BLUE	75	GREEN	Black	GREY
8	RED		GREEN	42	WHITE	Orange	ORANGE	76	YELLOW	Green	BLUE
9	RED		BROWN	43	WHITE	Orange	GREEN	77	YELLOW	Green	ORANGE
10	RED		GREY	44	WHITE	Orange	BROWN	78	YELLOW	Green	GREEN
11	BLACK		BLUE	45	WHITE	Orange	GREY	79	YELLOW	Green	BROWN
12	BLACK		ORANGE	46	ORANGE	Red	BLUE	80	YELLOW	Green	GREY
13	BLACK		GREEN	47	ORANGE	Red	ORANGE	81	WHITE	Brown	BLUE
14	BLACK		BROWN	48	ORANGE	Red	GREEN	82	WHITE	Brown	ORANGE
15	BLACK		GREY	49	ORANGE	Red	BROWN	83	WHITE	Brown	GREEN
16	YELLOW		BLUE	50	ORANGE	Red	GREY	84	WHITE	Brown	BROWN
17	YELLOW		ORANGE	51	ORANGE	Black	BLUE	85	WHITE	Brown	GREY
18	YELLOW		GREEN	52	ORANGE	Black	ORANGE	86	RED	Brown	BLUE
19	YELLOW		BROWN	53	ORANGE	Black	GREEN	87	RED	Brown	ORANGE
20	YELLOW		GREY	54	ORANGE	Black	BROWN	88	RED	Brown	GREEN
21	WHITE	Blue	BLUE	55	ORANGE	Black	GREY	89	RED	Brown	BROWN
22	WHITE	Blue	ORANGE	56	YELLOW	Orange	BLUE	90	RED	Brown	GREY
23	WHITE	Blue	GREEN	57	YELLOW	Orange	ORANGE	91	BROWN	Black	BLUE
24	WHITE	Blue	BROWN	58	YELLOW	Orange	GREEN	92	BROWN	Black	ORANGE
25	WHITE	Blue	GREY	59	YELLOW	Orange	BROWN	93	BROWN	Black	GREEN
26	RED	Blue	BLUE	60	YELLOW	Orange	GREY	94	BROWN	Black	BROWN
27	RED	Blue	ORANGE	61	WHITE	Green	BLUE	95	BROWN	Black	GREY
28	RED	Blue	GREEN	62	WHITE	Green	ORANGE	96	YELLOW	Brown	BLUE
29	RED	Blue	BROWN	63	WHITE	Green	GREEN	97	YELLOW	Brown	ORANGE
30	RED	Blue	GREY	64	WHITE	Green	BROWN	98	YELLOW	Brown	GREEN
31	BLUE	Black	BLUE	65	WHITE	Green	GREY	99	YELLOW	Brown	BROWN
32	BLUE	Black	ORANGE	66	GREEN	Red	BLUE	100	YELLOW	Brown	GREY
33	BLUE	Black	GREEN	67	GREEN	Red	ORANGE	101	WHITE	Grey	BLUE
34	BLUE	Black	BROWN	68	GREEN	Red	GREEN	102	WHITE	Grey	ORANGE

Note 1: In each triple there shall be a c-wire, coloured TURQUOISE.

Note 2: Uppercase letters indicate the base, solid colour of insulation, and the lower case indicates ink bands applied onto the base colour.

Make-up & Unit Identification Colours – 20 Pair Unit

Pair Size	Center	1st Layer	2nd Layer	1	2	3	4	5	6	7	8	9-15	16
20Pairs	No. of Unit	1		ORANGE									
40Pairs		4 x ½		ORANGE	GREEN								
80Pairs		1	6 x ½		ORANGE	ORANGE	NATURAL	GREEN					
160Pairs		4 x ½	6		ORANGE	GREEN	ORANGE	NATURAL	NATURAL	NATURAL	NATURAL	GREEN	
320Pairs		1	5	10	ORANGE	ORANGE	NATURAL	NATURAL	NATURAL	GREEN	ORANGE	NATURAL	NATURAL

Note 1: ½ refers to sub-units of 10 Pairs.



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D) Colour Code & Cable Make Up According to CW 1171, CW 1224, CW 1236

Colour Scheme for Pairs

Pair No.	a-wire	b-wire	Pair No.	a-wire	b-wire
1	WHITE	BLUE	13	BLACK	GREEN
2	WHITE	ORANGE	14	BLACK	BROWN
3	WHITE	GREEN	15	BLACK	GREY
4	WHITE	BROWN	16	YELLOW	BLUE
5	WHITE	GREY	17	YELLOW	ORANGE
6	RED	BLUE	18	YELLOW	GREEN
7	RED	ORANGE	19	YELLOW	BROWN
8	RED	GREEN	20	YELLOW	GREY
9	RED	BROWN	21	VIOLET	BLUE
10	RED	GREY	22	VIOLET	ORANGE
11	BLACK	BLUE	23	VIOLET	GREEN
12	BLACK	ORANGE	24	VIOLET	BROWN
			25	VIOLET	GREY

Binder Colour Identification (Double & Quadruple Units)

Unit	Position of Sub-unit or Unit			
	First	Second	Third	Fourth
Double	BLUE	BLUE	ORANGE	ORANGE
Quadruple	BLUE	ORANGE	GREEN	BROWN

Binder Colour Identification (Centre & Layers)

Position of Units		
First	Intermediate	Last
RED	NATURAL	GREEN

No. of Pairs	No. & Pair Sizes of Units in Centre and successive Layers				No. of Pair in Spare Pair Unit	No. of Unusable Pairs Allowed
	Centre	1 st Layer	2 nd Layer	3 rd Layer		
50	1x50				0	1
100	1x25	3x(12+13)			0	1
	1x100					
200	1x50	6x25			4	2
	4x50					
300	1x50	5x50			4	3
	1x100	8x25				
400	1x100	6x50			4	3
	3x50	7x50				
500	1x100	8x50			4	4
	3x50	9x50				
	1x100	5x100				
600	1x50	5x50	10x50		4	4
	4x50	6x100				
	4x50	8x100				
1000	3x100	7x100			4	5
	3x100	9x100				
	4x100	8x100				
1600	1x100	5x100	10x100		4	6
	4x50	6x100	12x100			
2000	4x50	6x100	12x100		8	6
	3x100	8x100	13x100			
2400	3x100	8x100	13x100		8	7
	1x100	5x100	10x100	16x100		
3200	1x100	5x100	10x100	16x100	8	7
	3x100	7x100	12x100	18x100		
4000	3x100	7x100	12x100	18x100	8	8
	4x100	9x100	15x100	20x100		
4800	4x100	9x100	15x100	20x100	8	8

Note: Alternative make-ups are shown for some sizes and as a further alternative any cable can be made-up using 25 Pair Units throughout.

E) Colour Code & Cable Make Up According to DIN VDE 0815 & 0816

DIN VDE 0815 for Installation Cables

1) VDE 0815 and VDE 0816 Unit Twisted

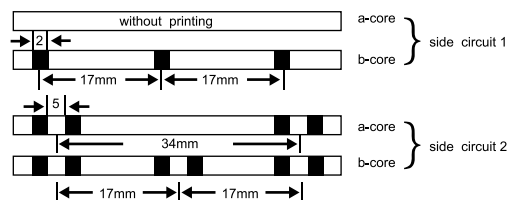
Colour Code for the following Installation Cable Types:

J-YY . . . Bd, J-HH . . . Bd, J-Y(St)Y . . . Bd,

J-H(St)H . . . Bd and J-2Y(St)Y . . . Bd

Star-quad bundles

The insulating coverings of single cores of a star quad are marked with black rings.



The cores of 5 star quads of a sub unit are counted according to the sequence of basic colours:

Quad 1: basic colour of all cores red

Quad 2: basic colour of all cores green

Quad 3: basic colour of all cores grey

Quad 4: basic colour of all cores yellow

Quad 5: basic colour of all cores white

The marker of units are identified with a red helix, the others with white or uncoloured.

The quads of sub units are counted according to the sequence of basic colours.

The units are counted continuously through all layers beginning in the inner layer.

2) VDE 0815

Colour Code for the following Installation Cable Types:

J-Y(St)Y . . . Lg

(Pairs in layers)

2-paired installation cables are stranded to a star quad

circuit 1 a-core red, b-core black

circuit 2 a-core white, b-core yellow

4- and multi-paired installation cables

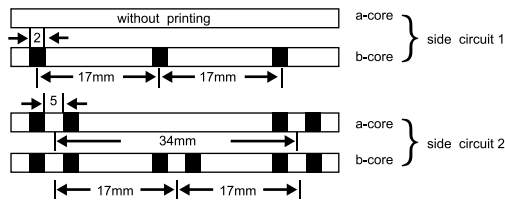
a-core of 1st pair in each layer is red, all other pairs are white.

b-core blue, yellow, green, brown, black in continual repetition.

Counting: from outside to inside.

3) VDE 0815

Colour Code for the following Installation Cable Types:



The insulating cores of five star quads of a sub-unit must have the following colours:

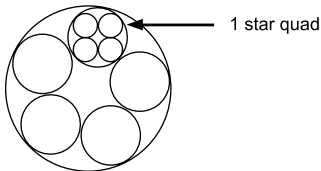
Quad No	Colour of Conductor			
	1	2	3	4
1	RED	RED	RED	RED
2	GREEN	GREEN	GREEN	GREEN
3	GREY	GREY	GREY	GREY
4	YELLOW	YELLOW	YELLOW	YELLOW
5	WHITE	WHITE	WHITE	WHITE

The first sub- or main-unit in each layer is to be marked by an open helix of plastic tape of red (marker). All other sub- or main-units must be whipped with an open helix of white or uncoloured plastic tape.

The quads of a sub-unit are to be counted according to the sequence of basic colours. In cables with more than 5 star quads, the sub- and main-units must be counted continuously beginning with maker-unit at inner layer towards outside.

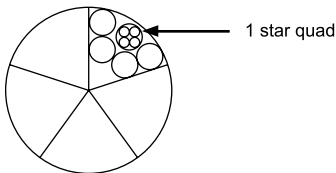
Design of a sub-unit:

Consist of 5 star quads = 10 pairs (DA)(DA = double core or pair)



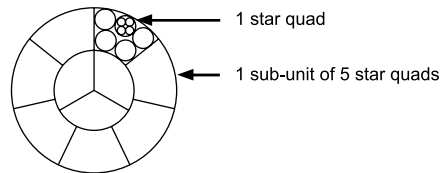
Design of a main-unit:

Consist of 5 sub-units = 50 pairs (DA)



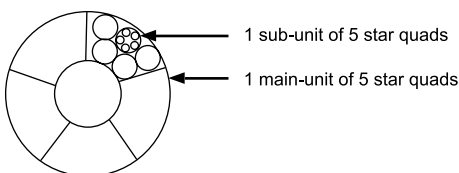
Design of a main-unit:

Consist of 10 sub-units = 100 pairs(DA)



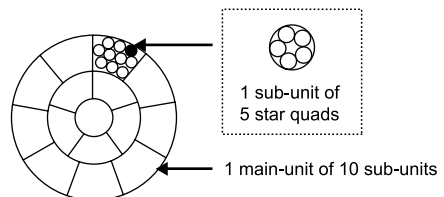
Design of a 300-pairs cable:

Consist of 6 main-units, each of 50 pairs (DA)



Design of a 1500 pairs cable:

Consist of 15 main-units, each of 100 pairs (DA)





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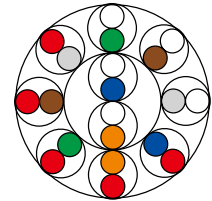
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F) Colour Code & Cable Make Up According to IEC 60708-1

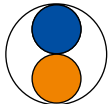
Colour Scheme for Pairs

Pair No.	Colour of insulation		Pair No.	Colour of insulation	
	a-wire	b-wire		a-wire	b-wire
1	WHITE	BLUE	6	RED	BLUE
2	WHITE	ORANGE	7	RED	ORANGE
3	WHITE	GREEN	8	RED	GREEN
4	WHITE	BROWN	9	RED	BROWN
5	WHITE	GREY	10	RED	GREY

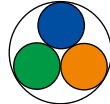


Sub-unit of base (10 pairs)

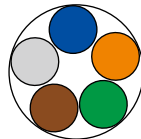
Identification of basic sub-units, construction of 50 and 100 pair units, and cable cores of up to 100 pairs



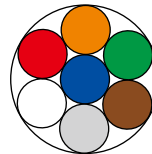
20 pairs



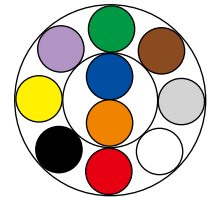
30 pairs



50 pairs



70 pairs



100 pairs

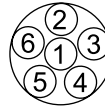
Identification of basic units and cable core constructions for cables of more than 100 pairs - Numbered units



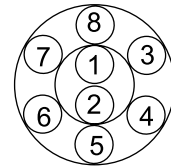
150 pairs (3 x 50p)



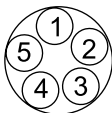
200 pairs (4 x 50p)



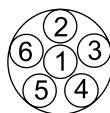
300 pairs (6 x 50p)



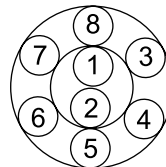
400 pairs (8 x 50p)



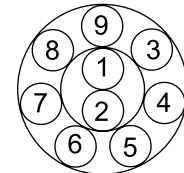
500 pairs (5 x 100p)



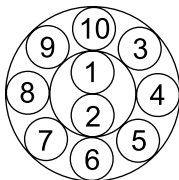
600 pairs (6 x 100p)



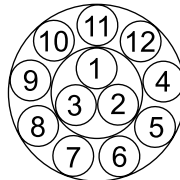
800 pairs (8 x 100p)



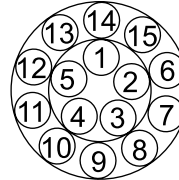
900 pairs (9 x 100p)



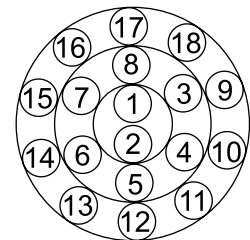
1000 pairs (10 x 100p)



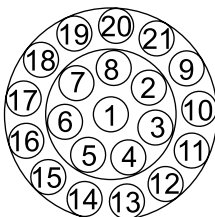
1200 pairs (12 x 100p)



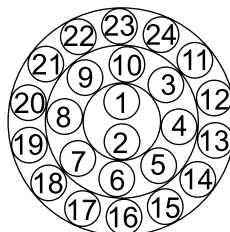
1500 pairs (15 x 100p)



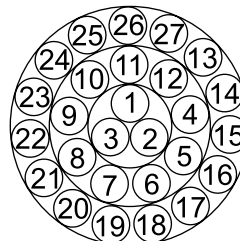
1800 pairs (18 x 100p)



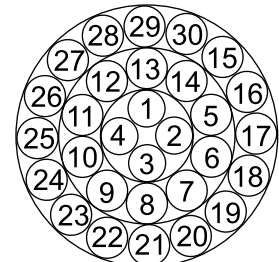
2100 pairs (21 x 100p)



2400 pairs (24 x 100p)



2700 pairs (27 x 100p)



3000 pairs (30 x 100p)

G) Colour Code & Cable Make Up According to GR-421, ICEA S-85-625 & ICEA S-84-608

Pair Identification Colours

For pairs numbering 1 through 25, the pair identification colours are outlined below. In cable constructions containing more than 25 pairs, the colours are repeated as necessary. Colour coded binders are used to identify 25 pair groups of colour coded pairs.

Pair Number	Tip Colour	Ring Colour	Pair Number	Tip Colour	Ring Colour
1	WHITE	BLUE	13	BLACK	GREEN
2	WHITE	ORANGE	14	BLACK	BROWN
3	WHITE	GREEN	15	BLACK	GREY
4	WHITE	BROWN	16	YELLOW	BLUE
5	WHITE	GREY	17	YELLOW	ORANGE
6	RED	BLUE	18	YELLOW	GREEN
7	RED	ORANGE	19	YELLOW	BROWN
8	RED	GREEN	20	YELLOW	GREY
9	RED	BROWN	21	VIOLET	BLUE
10	RED	GREY	22	VIOLET	ORANGE
11	BLACK	BLUE	23	VIOLET	GREEN
12	BLACK	ORANGE	24	VIOLET	BROWN
			25	VIOLET	GREY

Identification of Groups of Pairs

For cables through 600 pairs, 25 pair groups are identified by their binder colours in the same sequence as the pair identification is accomplished. Group 1 has White-Blue binders. Group 2 has White-Orange binders, etc. In this manner, each pair is uniquely identified. In cables having 25 pairs or less, binders are normally not used. However, if specified, the binders will be Group 1, White-Blue. For cables of 100 pairs or less, the use of the White binder is optional.

Group Number	Group Pair Counts	Colour of Binders		Group Number	Group Pair Counts	Colour of Binders	
1	1-25	WHITE	BLUE	13	301-325	BLACK	GREEN
2	26-50	WHITE	ORANGE	14	326-350	BLACK	BROWN
3	51-75	WHITE	GREEN	15	351-375	BLACK	GREY
4	76-100	WHITE	BROWN	16	376-400	YELLOW	BLUE
5	101-125	WHITE	GREY	17	401-425	YELLOW	ORANGE
6	126-150	RED	BLUE	18	426-450	YELLOW	GREEN
7	151-175	RED	ORANGE	19	451-475	YELLOW	BROWN
8	176-200	RED	GREEN	20	476-500	YELLOW	GREY
9	201-225	RED	BROWN	21	501-525	VIOLET	BLUE
10	226-250	RED	GREY	22	526-550	VIOLET	ORANGE
11	251-275	BLACK	BLUE	23	551-575	VIOLET	GREEN
12	276-300	BLACK	ORANGE	24	576-600	VIOLET	BROWN

Super-units Binder Identification Colours

It is desirable for manufacturing purposes to combine four 25 pair groups into "super units" when cables have 900 pairs or more.

Pair Number	Group Number	Binder Colour
1-600	1-24	WHITE
601-1200	25-48	RED



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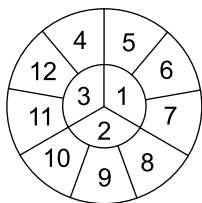
1201-1800	49-72	BLACK
1801-2400	73-96	YELLOW
2401-3000	97-120	VIOLET
3001-3600	121-144	BLUE
3601-4200	145-168	ORANGE

Standard Telephone Cable

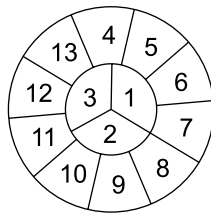
Various arrangements of pairs, units, groups, and super units are possible for standard non-screened telephone cables both filled and aircore.

The following constructions illustrate the lay-ups normally provided. Cables containing 1200 pairs or more are also available with mirror image core constructions as shown.

Unit Assemblies (Units or U)

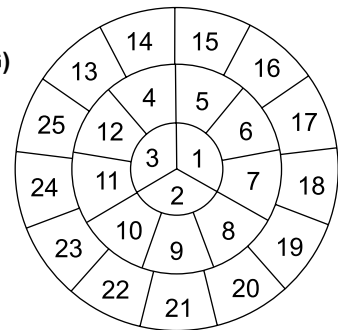


12 Pairs Unit
U12



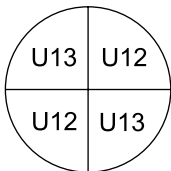
13 Pairs Unit
U13

Group Assemblies (Group or G)

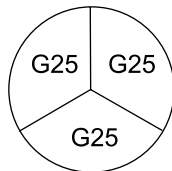


25 Pairs Groups
G25

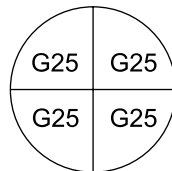
Super Units Assemblies (Super Units or SU)



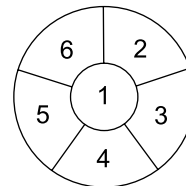
50 Pairs
SU50



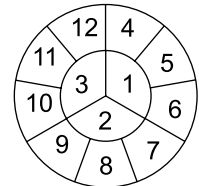
75 Pairs
SU75



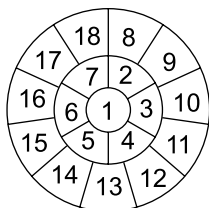
100 Pairs
SU100



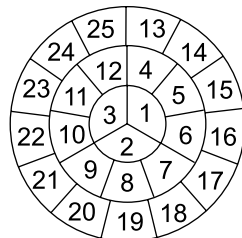
6 Pairs



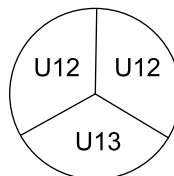
12 Pairs



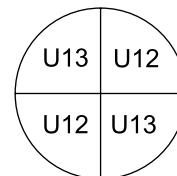
18 Pairs



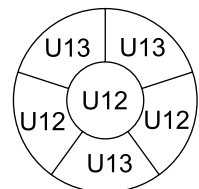
25 Pairs



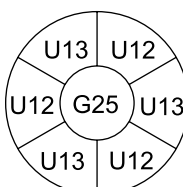
37 Pairs



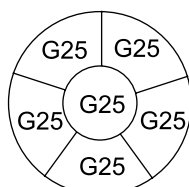
50 Pairs



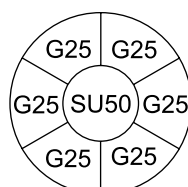
75 Pairs



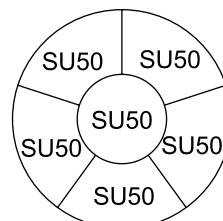
100 Pairs



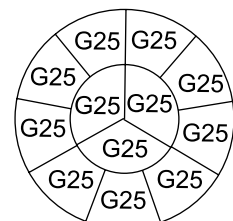
150 Pairs



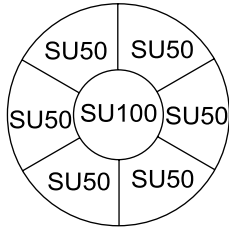
200 Pairs



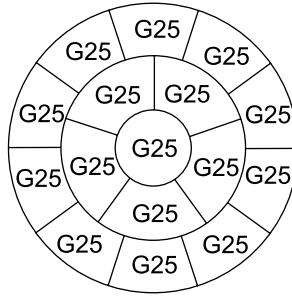
300 Pairs



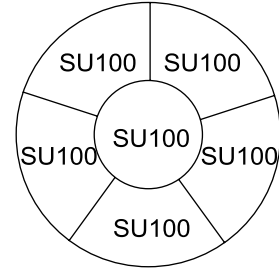
300 Pairs



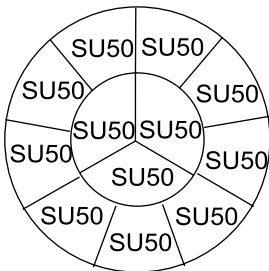
400 Pairs



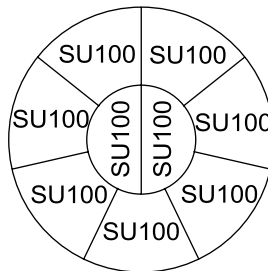
400 Pairs



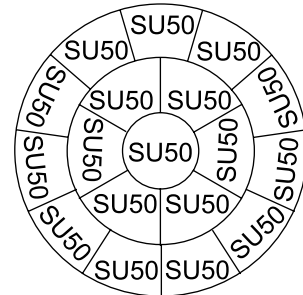
600 Pairs



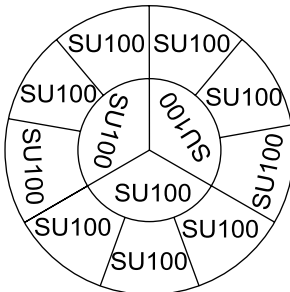
600 Pairs



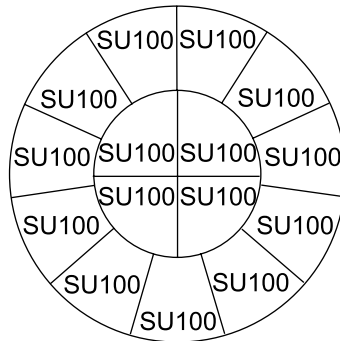
900 Pairs



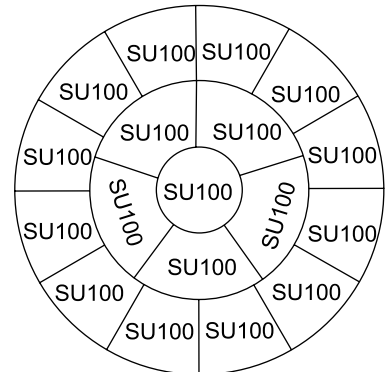
900 Pairs



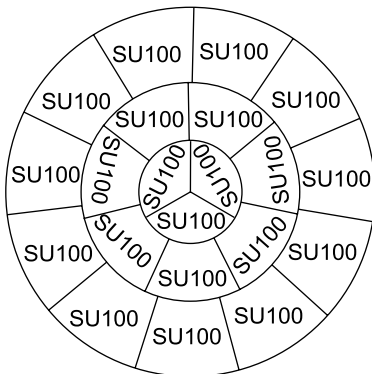
1200 Pairs



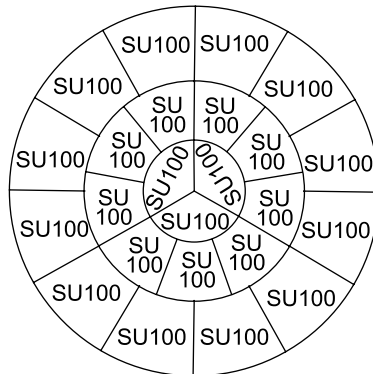
1500 Pairs



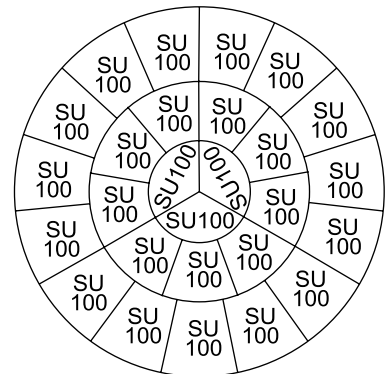
1800 Pairs



2100 Pairs



2400 Pairs



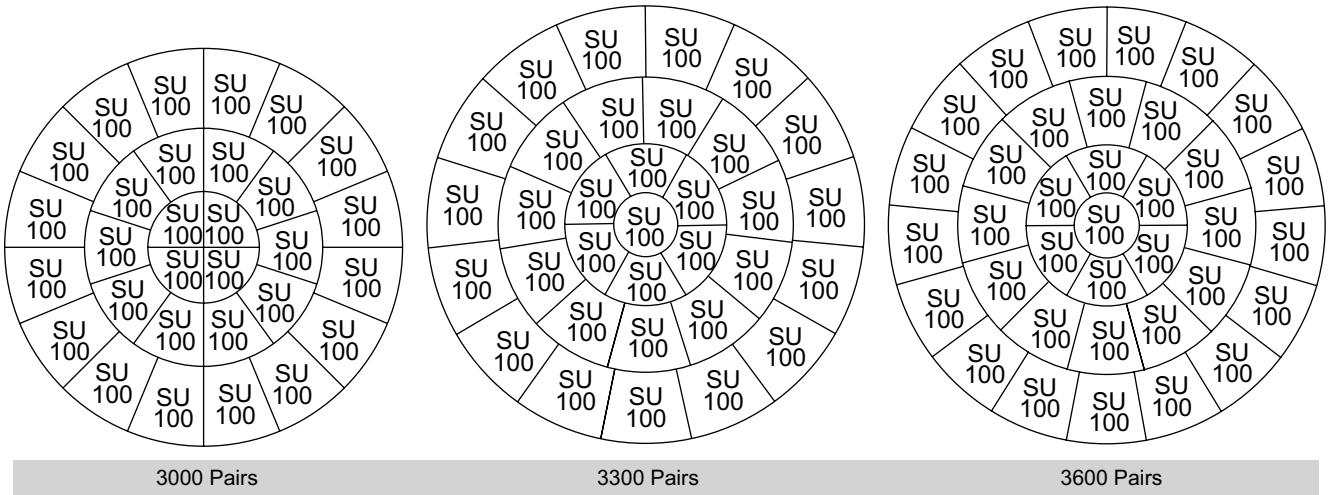
2700 Pairs



Caledonian

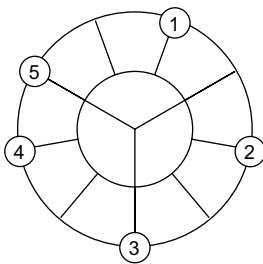
ORDERING INFORMATION

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

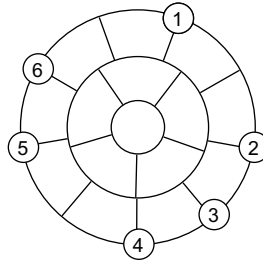


Mirror Image Core Lay-ups

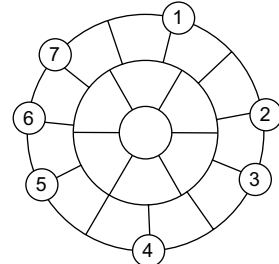
Mirror image telephone cable core constructions are available in 1200 pair or more cable designs, all of which use 100 pair super units.



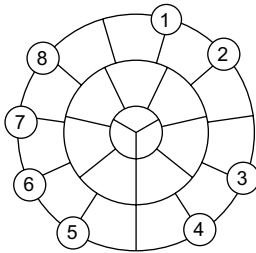
1200 Pairs



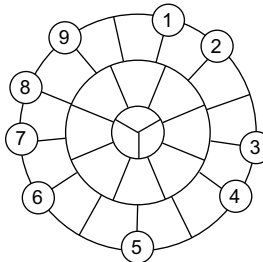
1500 Pairs



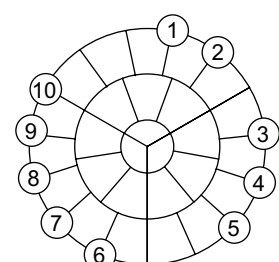
1800 Pairs



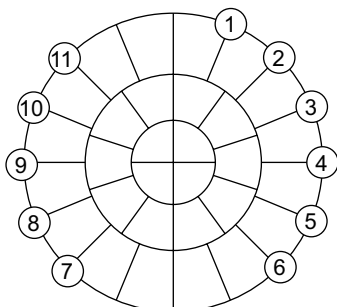
2100 Pairs



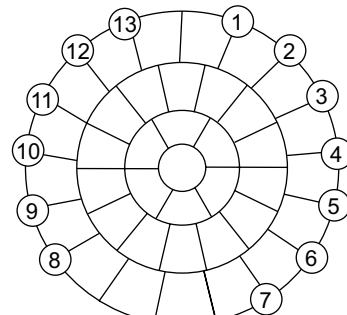
2400 Pairs



2700 Pairs



3000 Pairs



3800 Pairs

H) Colour Code According to BT CW 110J

Pair No.	a-wire		b-wire		Pair No.	a-wire		b-wire		Pair No.	a-wire		b-wire	
1	WHITE	BLUE			35	YELLOW	WHITE	Green		69	VIOLET	BROWN	Blue	
2	WHITE	ORANGE			36	YELLOW	GREEN	Brown		70	VIOLET	GREY	Blue	
3	WHITE	GREEN			37	YELLOW	GREY	Green		71	VIOLET	WHITE	Orange	
4	WHITE	BROWN			38	YELLOW	WHITE	Brown		72	VIOLET	ORANGE	Green	
5	WHITE	GREY			39	YELLOW	GREY	Brown		73	VIOLET	ORANGE	Brown	
6	WHITE	WHITE	Blue		40	YELLOW	WHITE	Grey		74	VIOLET	GREY	Orange	
7	WHITE	ORANGE	Blue		41	BLACK	BLUE			75	VIOLET	WHITE	Green	
8	WHITE	GREEN	Blue		42	BLACK	ORANGE			76	VIOLET	GREEN	Brown	
9	WHITE	BROWN	Blue		43	BLACK	GREEN			77	VIOLET	GREY	Green	
10	WHITE	GREY	Blue		44	BLACK	BROWN			78	VIOLET	WHITE	Brown	
11	WHITE	WHITE	Orange		45	BLACK	GREY			79	VIOLET	GREY	Brown	
12	WHITE	ORANGE	Green		46	BLACK	WHITE	Blue		80	VIOLET	WHITE	Grey	
13	WHITE	ORANGE	Brown		47	BLACK	ORANGE	Blue		81	RED	BLUE		
14	WHITE	GREY	Orange		48	BLACK	GREEN	Blue		82	RED	ORANGE		
15	WHITE	WHITE	Green		49	BLACK	BROWN	Blue		83	RED	GREEN		
16	WHITE	GREEN	Brown		50	BLACK	GREY	Blue		84	RED	BROWN		
17	WHITE	GREY	Green		51	BLACK	WHITE	Orange		85	RED	GREY		
18	WHITE	WHITE	Brown		52	BLACK	ORANGE	Green		86	RED	WHITE	Blue	
19	WHITE	GREY	Brown		53	BLACK	ORANGE	Brown		87	RED	ORANGE	Blue	
20	WHITE	WHITE	Grey		54	BLACK	GREY	Orange		88	RED	GREEN	Blue	
21	YELLOW	BLUE			55	BLACK	WHITE	Green		89	RED	BROWN	Blue	
22	YELLOW	ORANGE			56	BLACK	GREEN	Brown		90	RED	GREY	Blue	
23	YELLOW	GREEN			57	BLACK	GREY	Green		91	RED	WHITE	Orange	
24	YELLOW	BROWN			58	BLACK	WHITE	Brown		92	RED	ORANGE	Green	
25	YELLOW	GREY			59	BLACK	GREY	Brown		93	RED	ORANGE	Brown	
26	YELLOW	WHITE	Blue		60	BLACK	WHITE	Grey		94	RED	GREY	Orange	
27	YELLOW	ORANGE	Blue		61	VIOLET	BLUE			95	RED	WHITE	Green	
28	YELLOW	GREEN	Blue		62	VIOLET	ORANGE			96	RED	GREEN	Brown	
29	YELLOW	BROWN	Blue		63	VIOLET	GREEN			97	RED	GREY	Green	
30	YELLOW	GREY	Blue		64	VIOLET	BROWN			98	RED	WHITE	Brown	
31	YELLOW	WHITE	Orange		65	VIOLET	GREY			99	RED	GREY	Brown	
32	YELLOW	ORANGE	Green		66	VIOLET	WHITE	Blue		100	RED	WHITE	Grey	
33	YELLOW	ORANGE	Brown		67	VIOLET	ORANGE	Blue		101	WH	Red	BLUE	
34	YELLOW	GREY	Orange		68	VIOLET	GREEN	Blue		102	WH	Red	ORANGE	