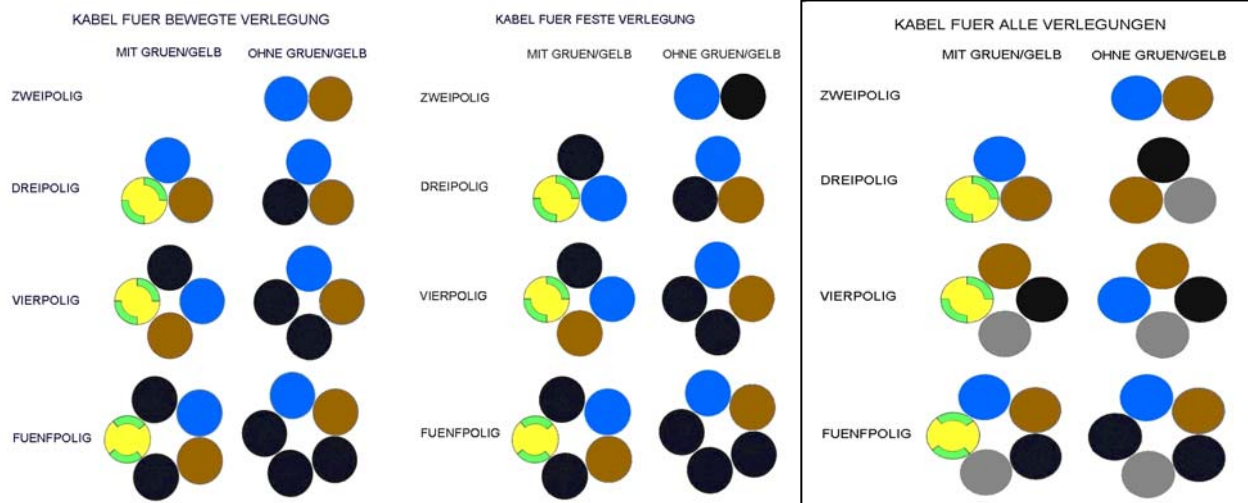


Colour-Coding for Cables and Wires

Old schema off colour-coding acc. harmonized document HD 308 S1	New schema of colour-coding acc. harmonized document HD 308 S2 valid from 1.4.2006
--	---



From six core: - J - Construction: 1 green-yellow core, further cores back with embossed numbering
- O – construction: All cores back with embossed numbering

Exceptions: a) 4-core with green-yellow alternative only for particular applications: Green-yellow, blue, brown, black
a) 3-core without green-yellow alternative only for particular applications: Blue, brown, black

What are the principal enhancements of the new system?

The principal enhancement is the introduction of the "grey" core colour for an outer conductor. The colours and the colour sequences in the cable are shown in the tables above. **The arrangement of the core colours for earth conductors and neutral lines is unchanged, that is: green-yellow and blue.**

DIN VDE 0293-308 (VDE 0293 part 308): 2003-01 provides for 2 exceptions whereby these variants, marked with the footnote "a)" or "b)", are applicable only for particular applications. These special applications are defined in DIN EN 60446 (VDE 0198): 1999-10, section 3.2.2. Accordingly for particular applications where there is no danger of confusion and no neutral line existing in the system, the blue core can be used as external conductor. However, no colour other than blue may be used for the neutral line. The colour light-blue is generally replaced by blue in this colour system.

Transitional period between old and new system with identification of cable cores and wires through colours

In general, standards cover comparable products. By referring to product standards in contracts it is possible to dispense with a considerable proportion of specification details. However there are exceptions, namely in the case of transitional periods with revised standards or "replacement standards" contingent on harmonisation. In this case the old and the new definitions are equally valid during the agreed transitional period. This applies also for the core identification of cables and wires. By harmonising the core colours of cables and wires through the installation technology standards committees, the wiring industry was granted the time period of 01.10.2001 to 01.04.2006, to change over its product range to the new core colours and to dispose of their existing stock with the old identification.

During the transitional period users of the cable and wiring, and the dealers, have the opportunity to complete projects that they have already started with the previously used products and reduce old stocks correspondingly. The electrical trade have indicated that from their side there should be no difficulties in effecting the changeover. The cable manufacturers intend to carry out the changeover as quickly as possible, but due to the various different operational conditions it is not possible to nominate a harmonised changeover date. The rough target for this is the end of 2003 so that from 01.01.2004 the proportion of products on the market with the new core identification system will increase sharply.

Core colour-coding of PVC control lines with 6 or more coloured cores

(In accordance with DIN VDE 293)

Core no.	Colour	Core no.	Colour	Core no.	Colour	Core no.	Colour	Core no.	Colour	Core no.	Colour
0	yellow-green	17	pink - white	34	orange-blue	51	transp. red	68	transp. white-black	85	beige-white-brown
1	white	18	orange-white	35	transp.-blue	52	beige-red	69	beige-white-black	86	red-white-grey
2	black	19	transp.-white	36	beige-blue	53	pink-violet	70	brown-white-blue	87	violet-white-grey
3	blue	20	beige-white	37	grey-brown	54	orange-violet	71	brown-white-blue	88	pink-white-grey
4	brown	21	blue-black	38	red-brown	55	transp.-violet	72	grey-white-blue	89	orange-white-grey
5	grey	22	brown-black	39	violet-brown	56	beige-violet	73	red-white-blue	90	transp-white-grey
6	red	23	grey-black	40	pink-brown	57	transp.-pink	74	violet-white-blue	91	beige-white-grey
7	violet	24	red-black	41	orange-brown	58	beige-pink	75	pink-white-blue	92	blue-white-red
8	pink	25	violet-black	42	transp.-brown	59	transp.-orange	76	orange-white-blue	93	brown-white-red
9	orange	26	pink-black	43	beige-brown	60	beige-orange	77	transp-white-blue	94	violet-white-red
10	transparent	27	orange-black	44	red-grey	61	blue-white-black	78	beige-white-blue	95	pink-white-red
11	beige	28	transp.-black	45	violet-grey	62	brown-white-black	79	grey-white-brown	96	orange-white-red
12	black-white	29	beige-black	46	pink-grey	63	grey-white-black	80	red-white-brown	97	brown-white-violet
13	brown-white	30	brown-blue	47	orange-grey	64	red-white-black	81	violet-white-brown	98	orange-white-violet
14	grey-white	31	grey-blue	48	transp.-grey	65	violet-white-black	82	pink-white-brown	99	brown-black-blue
15	red-white	32	red-blue	49	beige-grey	66	pink-white-black	83	orange-white-brown	100	grey-black-blue
16	violet-white	33	pink-blue	50	orange-red	67	orange-white-black	84	transp-white-brown	101	red-black-blue

Example core colours :

YSLY-JB 12 x 1.5: yellow/green, white, black, blue, brown, grey, red, violet, pink, orange, transparent, beige**YSLY-OB 12 x 1.5:** white, black, blue, brown, grey, red, violet, pink, orange, transparent, beige, black/white

Colour-Coding for Electronic Cables LiYY and LiYCY, acc. to DIN 47100 or factory standard

Core stranding				pairwise stranding				
Core-No.	Core colour	Core-No.	Core colour	Pair-No.			Core colour	
							a-core	b-core
1	white	23	white-red	1	23	45	white	brown
2	brown	24	brown-red	2	24	46	green	yellow
3	green	25	white-black	3	25	47	grey	pink
4	yellow	26	brown-black	4	26	48	blue	red
5	grey	27	grey-green	5	27	49	black	violet
6	pink	28	yellow-grey	6	28	50	grey-pink	red-blue
7	blue	29	pink-green	7	29	51	white-green	brown-green
8	red	30	yellow-pink	8	30	52	white-yellow	yellow-brown
9	black	31	green-blue	9	31	53	white-grey	grey-brown
10	violet	32	yellow-blue	10	32	54	white-pink	pink-brown
11	grey-pink	33	green-red	11	33	55	white-blue	brown-blue
12	blue-red	34	yellow-red	12	34	56	white-red	brown-red
13	white-green	35	green-black	13	35	57	white-black	brown-black
14	brown-green	36	yellow-black	14	36	58	grey-green	yellow-grey
15	white-yellow	37	grey-blue	15	37	59	pink-green	yellow-pink
16	yellow-brown	38	pink-blue	16	38	60	green-blue	yellow-blue
17	white-grey	39	grey-red	17	39	61	green-red	yellow-red
18	grey-brown	40	pink-red	18	40	62	green-black	yellow-black
19	white-pink	41	grey-black	19	41	63	grey-blue	pink-blue
20	pink-brown	42	pink-black	20	42	64	grey-red	pink-red
21	white-blue	43	blue-black	21	43	65	grey-black	pink-black
22	brown-blue	44	red-black	22	44	66	blue-black	red-black

For more cores than listed the colour sequence is repeated. The first colour is the basic colour, the second colour is the colour of the ring marking. The distance between two rings is app. 7 mm. For the 4-core type differs from this pattern because the colours are white, yellow, brown and green.

JE-LiYCY und JE-Y(ST)Y acc. to DIN 57815

pair	1	2	3	4
a-core	blue	grey	green	white
b-core	red	yellow	brown	black

The cores are marked with the basic colour of the insulation which is repeated in the same sequence at each bundle.

Identification of the bundle - variante 1 "Bd Z"

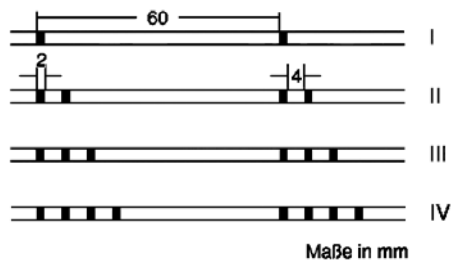
The bundles (4 pairs each) are clearly to be identified by a number helix.

Identification of the bundle - variante 2 "Bd Si"

bundle-No.	Colour of rings	Group of rings	helix
1	pink	I	-
2		II	
3		III	
4		IIII	
5	orange	I	-
6		II	
7		III	
8		IIII	
9	violet	I	-
10		II	
11		III	
12		IIII	
13	pink	I	blue
14		II	
15		III	
16		IIII	
17	orange	I	red
18		II	
19		III	
20		IIII	

The bundles are counted from inside to outside.

Ringidentification (group of rings)



Core Colouring of the Telecommunication Cables according to VDE

J-Y(ST)Y	J-YY
<p>For the 2-paired installation cables:</p> <p>1. pair a-core red, b-core black 2. pair a-core white, b-core yellow</p> <p>For all other cables:</p> <p>a-core 1st pair each layer red, at all the other pairs white;</p> <p>b-core blue, yellow, green, brown, black, colours are repeated</p> <p>Counting from outside to inside</p>	<p>The cores are to be identified by rings</p> <p>circuit 1 a-core without rings</p> <p>b-core ■ ■ ■</p> <p>circuit 2 a-core ■ ■ ■ ■</p> <p>b-core ■ ■ ■ ■ ■ ■</p> <p>The basic colours of the insulation sheath of the 5 star quads of a bundle</p> <p>quad 1 red quad 2 green quad 3 grey quad 4 yellow quad 5 white</p> <p>The tracer bundles are marked by a red helix.</p>

Layer Stranding of Installation Cables J-Y (ST) Y

Number of pairs	Number of pairs in layers					
	1	2	3	4	5	6
2	2					
4	4					
5	6					
10	2	8				
16	5	11				
20	1	6	13			
24	2	8	14			
30	4	10	16			
40	1	7	13	19		
50	4	10	15	21		
60	1	6	12	18	23	
100	2	8	14	20	25	31

A-2Y(L)2Y			A-2YF(L)2Y		
The cores are to be identified by rings			The cores are to be identified by rings		
circuit 1	a-core	without rings	circuit 1	a-core	without rings
	b-core	■ ■ ■		b-core	■ ■ ■
circuit 2	a-core	■ ■ ■ ■	circuit 2	a-core	■ ■ ■ ■
	b-core	■ ■ ■ ■ ■ ■		b-core	■ ■ ■ ■ ■ ■
The basic colours of the insulation sheath of the 5 star quads of a basic bundle:			The basic colours of the insulation sheath of the 5 star quads of a basic bundle:		
		quad 1 red quad 2 green quad 3 grey quad 4 yellow quad 5 white			quad 1 red quad 2 green quad 3 grey quad 4 yellow quad 5 white
The tracer bundles are marked by a red helix.			The tracer bundles are marked by a red helix.		

Core Colouring of the Telecommunication Cables according to ÖVE [Austrian association of electrical engineers]

YR *
YYSch *
JB-YY *
* core colours acc. to the factory norm

F-vYAY, F-YAY						
pair-No.	colour of a-core	colour of b-core				
		blue	yellow	green	brown	black
1 ... 5	white-blue	1	2	3	4	5
6 ... 10	white-yellow	6	7	8	9	10
11 ... 15	white-green	11	12	13	14	15
16 ... 20	white-brown	16	17	18	19	20
21 ... 25	white-black	21	22	23	24	25
26 ... 30	red-blue	26	27	28	29	30
31 ... 35	red-yellow	31	32	33	34	35
36 ... 40	red-green	36	37	38	39	40
41 ... 45	red-brown	41	42	43	44	45
46 ... 50 *	red-black	46	47	48	49	50

* From the 51st pair the colour sequence is repeated.

F-2YA2Y, F-2YC2Y, F-2YJA2Y

The cores are stranded in star quads. Two opposite cores of a quad build a talking circuit.

core identification in a quad :

circuit 1	a-core ... natural b-core ... red
circuit 2	c-core ... green d-core ... blue

One quad is marked as a tracer quad with a black a-core in each layer.

Number of star quads in each layer

number of		number of star quads in each layer					
quads	pairs	1	2	3	4	5	6
25	50	3	8	14			
50	100	4	10	15	21		
75	150	3	9	15	21	27	
100	200	2	8	14	20	25	31

Core Colouring of the Data Transmission Cables Category 5

Colour-code according to IEC 708-1

Cable element		Colour of the insulation sheath		
	a-core			b-core
1	white (-blue)			blue
2	white (-orange)			orange
3	white (-green)			green
4	white (-brown)			brown
5	white			grey
6	red			blue
7	red			orange
8	red			green
9	red			brown
10	red			grey
Counting in pairs (to 10 pairs)				
Cable element		Colour of the insulation sheath		
	a-core	b-core	c-core	d-core
1	white	blue	turquoise	violet
2	white	orange	turquoise	violet
3	white	green	turquoise	violet
4	white	brown	turquoise	violet
5	white	grey	turquoise	violet
Counting in quads (to 5 quads)				