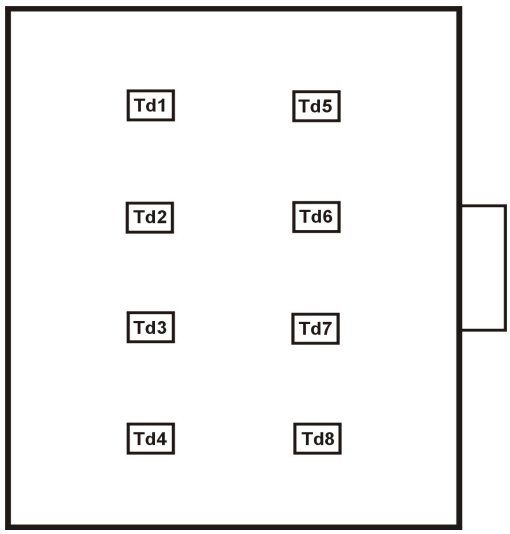
Measured values inside the test furnace

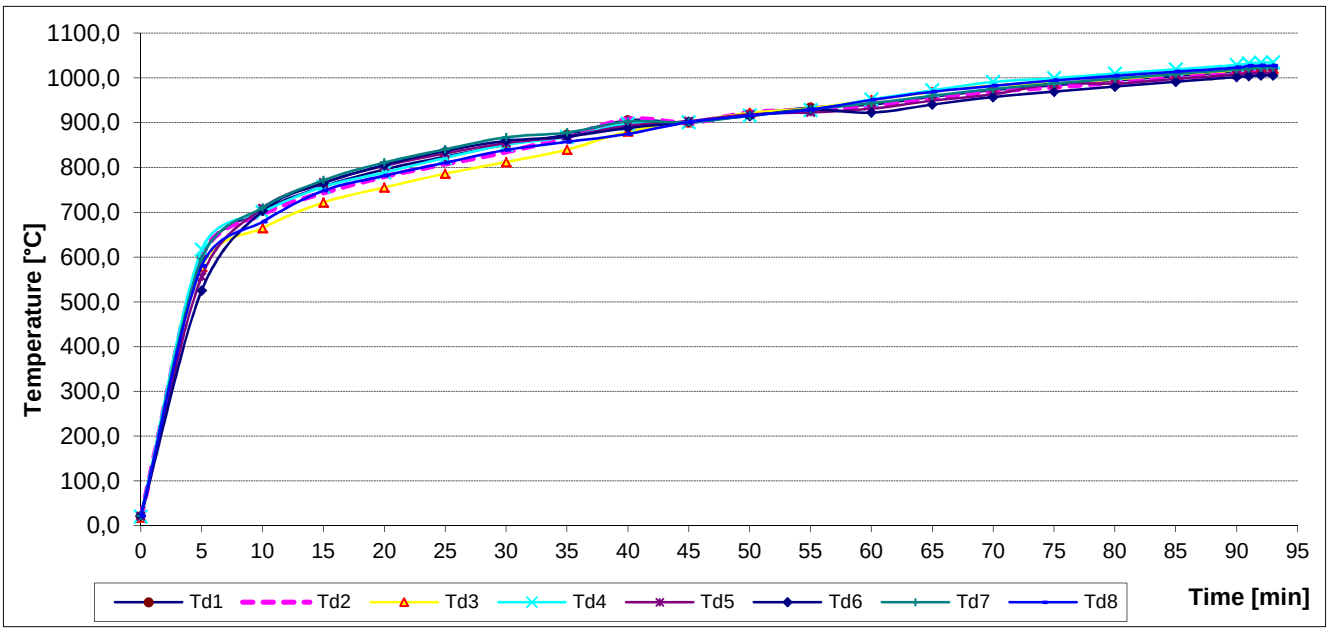
Time	Temperature [°C]											Deviation	Pressure
t [min]	Td1	Td2	Td3	Td4	Td5	Td6	Td7	Td8	Tave	Tn	To	d_e [%]	p [Pa]
0	20,4	19,0	18,3	20,8	21,3	22,1	21,7	21,7	20,7	20,0	20,8	0,0	17,8
5	598,8	601,0	578,0	616,6	556,2	525,1	596,6	580,0	581,5	576,0	20,9	-2,1	19,1
10	702,8	695,6	664,4	700,1	708,9	702,8	710,0	678,7	695,4	678,0	20,9	0,1	18,3
15	757,5	743,5	722,0	756,9	766,4	764,7	771,5	748,1	753,8	739,0	21,0	0,6	17,7
20	795,4	779,7	755,3	788,7	803,5	805,5	811,1	781,4	790,1	781,0	21,0	0,9	18,1
25	824,3	807,9	786,2	821,6	831,6	837,1	840,6	810,5	820,0	815,0	21,1	0,8	17,8
30	851,0	834,6	812,1	850,8	854,6	859,4	867,4	839,1	846,1	842,0	21,1	0,8	19,8
35	873,0	868,0	839,8	868,3	869,5	869,1	877,9	856,8	865,3	865,0	21,2	0,7	18,4
40	905,3	908,0	880,1	897,8	893,0	888,1	902,6	875,0	893,7	885,0	21,2	0,7	19,6
45	900,5	900,3	901,2	901,0	903,5	901,8	900,9	901,2	901,3	902,0	21,3	0,7	19,5
50	918,8	922,3	921,9	916,1	918,6	915,0	915,2	915,9	918,0	918,0	21,3	0,6	17,5
55	933,9	927,9	932,3	928,2	923,1	929,5	929,9	929,2	929,3	932,0	21,4	0,3	18,3
60	940,7	937,7	950,7	952,0	931,4	922,4	943,6	950,8	941,2	945,0	21,4	0,2	17,1
65	957,8	955,7	968,6	972,4	949,1	940,4	959,8	968,9	959,1	957,0	21,5	0,1	17,7
70	972,7	970,4	982,8	991,0	963,4	957,1	974,9	982,3	974,3	968,0	21,6	0,2	19,2
75	983,4	979,4	988,3	999,5	986,9	969,1	987,3	994,4	986,0	979,0	21,6	0,2	18,3
80	994,3	990,0	996,8	1009,8	987,4	980,6	998,5	1004,7	995,3	988,0	21,6	0,2	17,7
85	1004,5	1000,4	1008,4	1019,2	997,8	991,4	1008,6	1013,8	1005,5	997,0	21,7	0,3	19,3
90	1014,6	1010,5	1016,8	1028,9	1007,8	1002,0	1018,6	1023,1	1015,3	1006,0	21,7	0,3	17,6
91	1017,1	1013,3	1020,2	1032,6	1010,1	1003,9	1020,8	1026,9	1018,1	1008,0	21,8	0,3	18,7
92	1018,4	1014,6	1024,0	1034,0	1011,8	1005,5	1022,2	1027,5	1019,8	1009,0	21,8	0,3	19,5
93	1020,4	1017,2	1020,6	1034,6	1011,7	1005,7	1023,5	1027,0	1020,1	1011,0	21,8	0,3	19,3

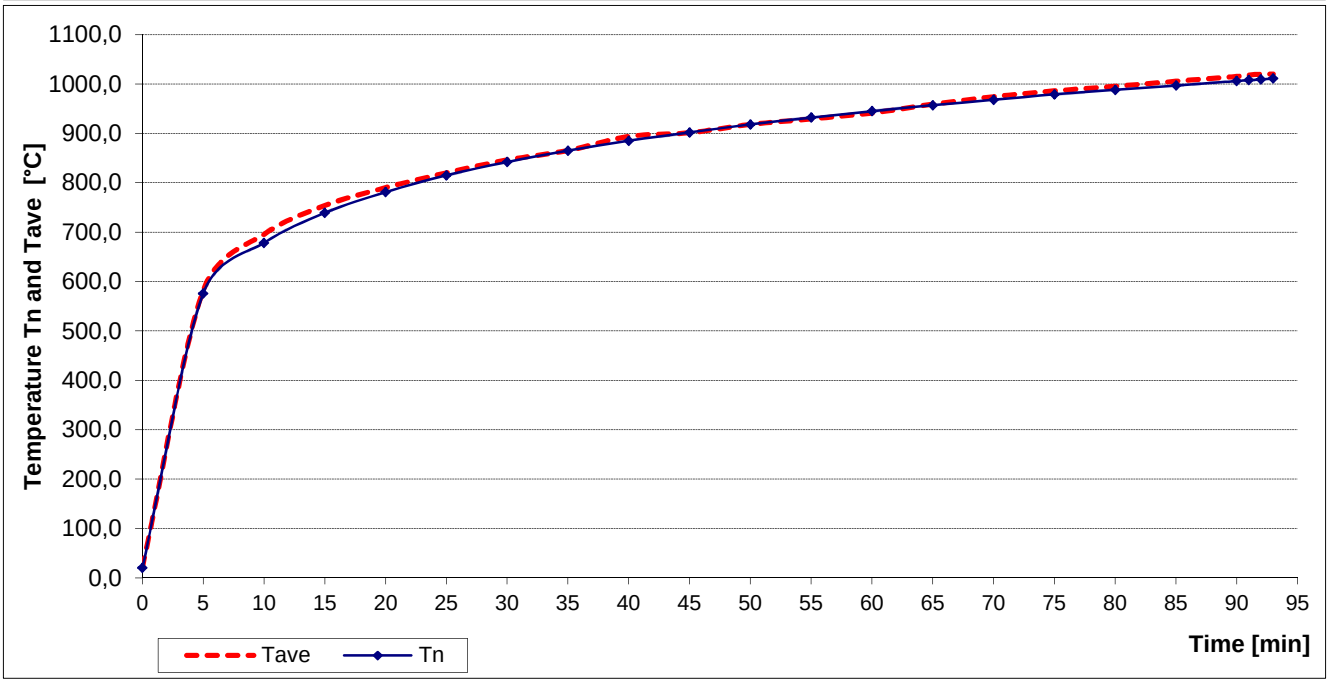
Tave Average temperature in the test furnace calculated from plate thermometers
Tn Standard temperature in the test furnace laid down to test guideline
To Ambient temperature
d_e Deviation of the average temperature from the standard temperature calculated according to test guideline
p Pressure inside the test furnace measured under the ceiling of the test furnace

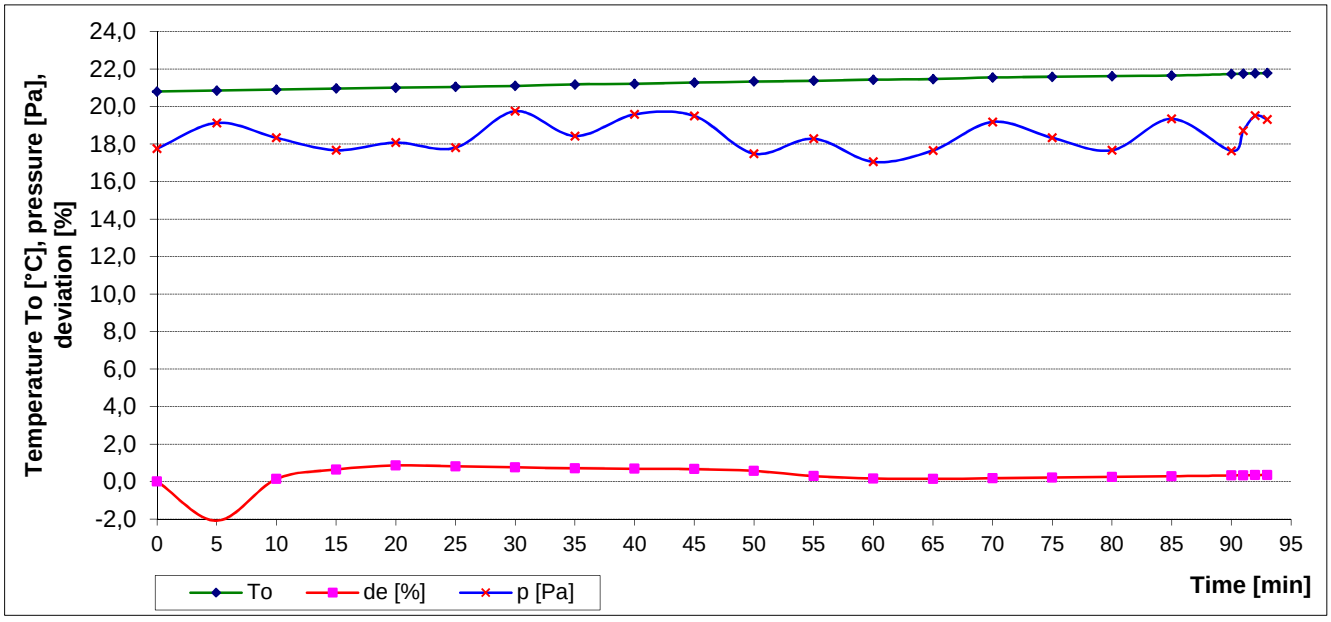
Layout of measuring points inside the test furnace:



Measured values inside the test furnace /graph







Measured time of tested specimens from S1 to S10 - power cables

Specimen	Bulbs	Time to permanent failure / interruption [min:s]
S1	1-L1	83:46
	2-L2	83:46
	3-L3	x
	4-PEN	x
S2	5-L1	no failure / interruption
	6-L2	no failure / interruption
	7-L3	no failure / interruption
	8-PEN	no failure / interruption
S3	9-L1	no failure / interruption
	10-L2	no failure / interruption
	11-L3	no failure / interruption
	12-PEN	no failure / interruption
S4	13-L1	no failure / interruption
	14-L2	no failure / interruption
	15-L3	no failure / interruption
	16-PEN	no failure / interruption
S5	17-L1	84:04
	18-L2	x
	19-L3	84:04
	20-PEN	x
S6	21-L1	no failure / interruption
	22-L2	no failure / interruption
	23-L3	no failure / interruption
	24-PEN	no failure / interruption
S7	25-L1	x
	26-L2	x
	27-L3	72:48
	28-PEN	x
S8	29-L1	no failure / interruption
	30-L2	no failure / interruption
	31-L3	no failure / interruption
	32-PEN	no failure / interruption
S9	33-L1	no failure / interruption
	34-L2	no failure / interruption
	35-L3	no failure / interruption
	36-PEN	no failure / interruption
S10	37-L1	no failure / interruption
	38-L2	no failure / interruption
	39-L3	no failure / interruption
	40-PEN	no failure / interruption

Specimen No.	Cables
1	2 cables (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
2	2 cables (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
3	cable (N)HXCH-O FE180/E90 4x16RE/16 0,6/1 kV + fireboxes PMO3B
4	cable (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV + fireboxes PMO3B
5	2 cables (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
6	2 cables (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
7	2 cables (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
8	2 cables (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
9	2 cables (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
10	2 cables (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV

x Conductor was turned off manually after permanent interruption / failure of other conductors in the cable
Power cables were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W.
Circuit breakers with rating 3 A were used.

Measured time of tested specimens from S11 to S20 - power cables

Specimen	Bulbs	Time to permanent failure / interruption [min:s]
S11	41-L1	83:59
	42-L2	83:59
	43-L3	x
	44-PEN	x
S12	45-L1	no failure / interruption
	46-L2	no failure / interruption
	47-L3	no failure / interruption
	48-PEN	no failure / interruption
S13	49-L1	x
	50-L2	70:22
	51-L3	x
	52-PEN	x
S14	53-L1	no failure / interruption
	54-L2	no failure / interruption
	55-L3	no failure / interruption
	56-PEN	no failure / interruption
S15	57-L1	no failure / interruption
	58-L2	no failure / interruption
	59-L3	no failure / interruption
	60-PEN	no failure / interruption
S16	61-L1	no failure / interruption
	62-L2	no failure / interruption
	63-L3	no failure / interruption
	64-PEN	no failure / interruption
S17	65-L1	83:25
	66-L2	83:25
	67-L3	83:25
	68-PEN	x
S18	69-L1	no failure / interruption
	70-L2	no failure / interruption
	71-L3	no failure / interruption
	72-PEN	no failure / interruption
S19	73-L1	82:50
	74-L2	x
	75-L3	82:50
	76-PEN	x
S20	77-L1	75:20
	78-L2	x
	79-L3	75:20
	80-PEN	x

Specimen No.	Cables
11	2 cables (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
12	2 cables (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
13	2 cables (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
14	2 cables (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
15	2 cables (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
16	2 cables (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
17	2 cables (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
18	2 cables (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
19	cable (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
20	cable (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV

x Conductor was turned off manually after permanent interruption / failure of other conductors in the cable
Power cables were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W.
Circuit breakers with rating 3 A were used.

Measured time of tested specimens from S21 to S30 - power cables

Specimen	Bulbs	Time to permanent failure / interruption [min:s]
S21	81-L1	40:09
	82-L2	40:09
	83-L3	40:09
	84-PEN	x
S22	85-L1	29:22
	86-L2	29:22
	87-L3	x
	88-PEN	x
S23	89-L1	no failure / interruption
	90-L2	no failure / interruption
	91-L3	no failure / interruption
	92-PEN	no failure / interruption
S24	93-L1	88:10
	94-L2	x
	95-L3	88:10
	96-PEN	x
S25	97-L1	89:30
	98-L2	89:30
	99-L3	x
	100-PEN	x
S26	101-L1	no failure / interruption
	102-L2	no failure / interruption
	103-L3	no failure / interruption
	104-PEN	no failure / interruption
S27	105-L1	no failure / interruption
	106-L2	no failure / interruption
	107-L3	no failure / interruption
	108-PEN	no failure / interruption
S28	109-L1	no failure / interruption
	110-L2	no failure / interruption
	111-L3	no failure / interruption
	112-PEN	no failure / interruption
S29	113-L1	no failure / interruption
	114-L2	no failure / interruption
	115-L3	no failure / interruption
	116-PEN	no failure / interruption
S30	117-L1	40:01
	118-L2	40:01
	119-L3	x
	120-PEN	x

Specimen No.	Cables
21	cable (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
22	cable (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
23	cable (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
24	cable (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
25	cable (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
26	cable (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
27	cable (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
28	cable (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
29	cable (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
30	cable (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV

x Conductor was turned off manually after permanent interruption / failure of other conductors in the cable
Power cables were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W.
Circuit breakers with rating 3 A were used.

Measured time of tested specimens from S31 to S40 - power cables

Specimen	Bulbs	Time to permanent failure / interruption [min:s]
S31	121-L1	no failure / interruption
	122-L2	no failure / interruption
	123-L3	no failure / interruption
	124-PEN	no failure / interruption
S32	125-L1	no failure / interruption
	126-L2	no failure / interruption
	127-L3	no failure / interruption
	128-PEN	no failure / interruption
S33	129-L1	no failure / interruption
	130-L2	no failure / interruption
	131-L3	no failure / interruption
	132-PEN	no failure / interruption
S34	133-L1	no failure / interruption
	134-L2	no failure / interruption
	135-L3	no failure / interruption
	136-PEN	no failure / interruption
S35	137-L1	84:06
	138-L2	84:06
	139-L3	84:06
	140-PEN	x
S36	141-L1	58:16
	142-L2	x
	143-L3	58:16
	144-PEN	x
S37	145-L1	55:31
	146-L2	x
	147-L3	55:31
	148-PEN	x
S38	149-L1	57:03
	150-L2	x
	151-L3	57:03
	152-PEN	x
S39	153-L1	no failure / interruption
	154-L2	no failure / interruption
	155-L3	no failure / interruption
	156-PEN	no failure / interruption
S40	157-L1	no failure / interruption
	158-L2	no failure / interruption
	159-L3	no failure / interruption
	160-PEN	no failure / interruption

Specimen No.	Cables
31	cable (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
32	cable (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
33	cable (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
34	cable (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
35	cable (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
36	cable (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
37	cable (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
38	cable (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
39	cable (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
40	cable (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV

x Conductor was turned off manually after permanent interruption / failure of other conductors in the cable

Power cables were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W.
Circuit breakers with rating 3 A were used.

Measured time of tested specimens from S41 to S50 - power cables

Specimen	Bulbs	Time to permanent failure / interruption [min:s]
S41	161-L1	no failure / interruption
	162-L2	no failure / interruption
	163-L3	no failure / interruption
	164-PEN	no failure / interruption
S42	165-L1	no failure / interruption
	166-L2	no failure / interruption
	167-L3	no failure / interruption
	168-PEN	no failure / interruption
S43	169-L1	no failure / interruption
	170-L2	no failure / interruption
	171-L3	no failure / interruption
	172-PEN	no failure / interruption
S44	173-L1	75:40
	174-L2	x
	175-L3	75:40
	176-PEN	x
S45	177-L1	71:44
	178-L2	71:44
	179-L3	x
	180-PEN	x
S46	181-L1	48:21
	182-L2	48:21
	183-L3	48:21
	184-PEN	x
S47	185-L1	no failure / interruption
	186-L2	no failure / interruption
	187-L3	no failure / interruption
	188-PEN	no failure / interruption
S48	189-L1	no failure / interruption
	190-L2	no failure / interruption
	191-L3	no failure / interruption
	192-PEN	no failure / interruption
S49	193-L1	no failure / interruption
	194-L2	no failure / interruption
	195-L3	no failure / interruption
	196-PEN	no failure / interruption
S50	197-L1	no failure / interruption
	198-L2	no failure / interruption
	199-L3	no failure / interruption
	200-PEN	no failure / interruption

Specimen No.	Cables
41	cable (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
42	cable (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
43	cable (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
44	cable (N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV
45	cable (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
46	cable (N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV
47	cable (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
48	cable (N)HXCH-O FE180/E90 4x50RE/25 0,6/1 kV
49	cable (N)HXH-O FE180/E90 4x50RM 0,6/1 kV
50	cable (N)HXH-O FE180/E90 4x50RM 0,6/1 kV

x Conductor was turned off manually after permanent interruption / failure of other conductors in the cable
Power cables were tested by three-phase voltage supply 3 x 230/400V with bulbs 240V / 60 W.
Circuit breakers with rating 3 A were used.

Measured time of tested specimen S52 to S61 - communication cables

Specimen	Bulbs	Time to permanent failure / interruption [min:s]
S52	209-L	no failure / interruption
	210-PEN	no failure / interruption
	211-L	no failure / interruption
	212-PEN	no failure / interruption
S53	213-L	no failure / interruption
	214-PEN	no failure / interruption
	215-L	no failure / interruption
	216-PEN	no failure / interruption
S54	217-L	no failure / interruption
	218-PEN	no failure / interruption
	219-L	no failure / interruption
	220-PEN	no failure / interruption
S55	221-L	no failure / interruption
	222-PEN	no failure / interruption
	223-L	no failure / interruption
	224-PEN	no failure / interruption
S56	225-L	no failure / interruption
	226-PEN	no failure / interruption
	227-L	no failure / interruption
	228-PEN	no failure / interruption
S57	229-L	no failure / interruption
	230-PEN	no failure / interruption
	231-L	no failure / interruption
	232-PEN	no failure / interruption
S58	233-L	no failure / interruption
	234-PEN	no failure / interruption
	235-L	no failure / interruption
	236-PEN	no failure / interruption
S59	237-L	no failure / interruption
	238-PEN	no failure / interruption
	239-L	no failure / interruption
	240-PEN	no failure / interruption
S60	241-L	no failure / interruption
	242-PEN	no failure / interruption
	243-L	no failure / interruption
	244-PEN	no failure / interruption
S61	245-L	no failure / interruption
	246-PEN	no failure / interruption
	247-L	no failure / interruption
	248-PEN	no failure / interruption

Specimen No.	Cables
52	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
53	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
54	cable JE-H(St)H Bd 2x2x0,8 FE180/E90 + fireboxes PMO3B
55	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
56	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
57	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
58	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
59	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
60	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
61	cable JE-H(St)H Bd 2x2x0,8 FE180/E90

Signal cables were tested by three-phase voltage supply 1 x 110V with LED diods 3V / 0,03W.
Circuit breakers with rating 3 A were used.

Measured time of tested specimens from S62 to S68 - communication cables

Specimen	Bulbs	Time to permanent failure / interruption [min:s]
S62	249-L	no failure / interruption
	250-PEN	no failure / interruption
	251-L	no failure / interruption
	252-PEN	no failure / interruption
S63	253-L	no failure / interruption
	254-PEN	no failure / interruption
	255-L	no failure / interruption
	256-PEN	no failure / interruption
S64	257-L	no failure / interruption
	258-PEN	no failure / interruption
	259-L	no failure / interruption
	260-PEN	no failure / interruption
S65	261-L	no failure / interruption
	262-PEN	no failure / interruption
	263-L	no failure / interruption
	264-PEN	no failure / interruption
S66	265-L	no failure / interruption
	266-PEN	no failure / interruption
	267-L	no failure / interruption
	268-PEN	no failure / interruption
S67	269-L	no failure / interruption
	270-PEN	no failure / interruption
	271-L	no failure / interruption
	272-PEN	no failure / interruption
S68	273-L	no failure / interruption
	274-PEN	no failure / interruption
	275-L	no failure / interruption
	276-PEN	no failure / interruption

Specimen No.	Cables
62	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
63	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
64	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
65	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
66	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
67	cable JE-H(St)H Bd 2x2x0,8 FE180/E90
68	cable JE-H(St)H Bd 2x2x0,8 FE180/E90

Signal cables were tested by three-phase voltage supply 1 x 110V with LED diods 3V / 0,03W.
Circuit breakers with rating 3 A were used.

PHOTOS

Photo taken before the test.

Photo taken before the test.

Photo taken before the test.

PHOTOS

Photo taken before the test.

Photo taken before the test.

Photo taken before the test.

PHOTOS

Photo taken after the test.

Photo taken after the test.

Photo taken after the test.

PHOTOS

Photo taken after the test.

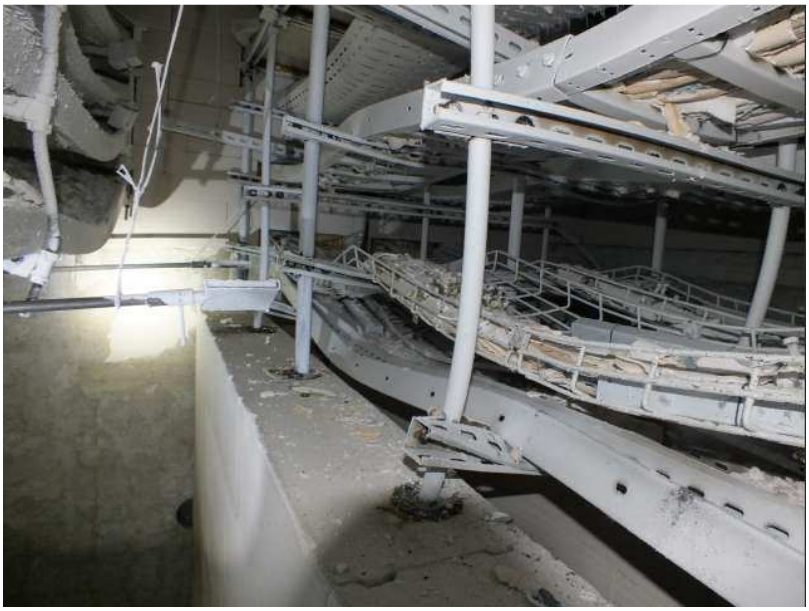


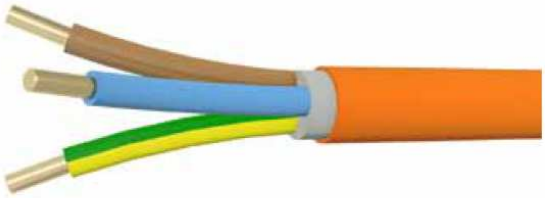
Photo taken after the test.

Photo taken after the test.

FLAME-X 950 (N)HXH FE180/E90 0,6/1 kV

DIN VDE 0266, DIN 4102-12

Halogen-free low smoke fire resistant security power cables



FIRE PERFORMANCE	
Insulation integrity FE 180:	DIN VDE 0472-814 (800°C, 180 min.), IEC 60331-21
System integrity E90:	DIN 4102-12 (90 min.)
Flame propagation:	DIN EN 50266-2-2, VDE 0482-266-2-2, IEC 60332-3-22
Smoke density:	DIN EN 61034-2, VDE 0482-1034-2, IEC 61034-2
Gases evolved during combustion:	DIN EN 50267-2-2, VDE 0482-267-2-2, IEC 60754-2: pH ≥ 4,3; conductivity ≤ 2,5 µS/mm
CONSTRUCTION	
Conductors:	bare copper conductor, circular solid class 1 (RE) or stranded circular or circular compacted class 2 (RM) according to EN 60228
Insulation:	special fire resistant cross-linked compound
Inner covering:	special flame-retardant and halogen-free compound
Sheath:	thermoplastic halogen- free compound type HM4 according to HD 604 S1
Colour of sheath:	orange
CHARACTERISTIC	
Core identification:	according to HD 308 S2 or EN 50334

	(N)HXH-O FE180/E90	**(N)HXH-J FE180/E90**
	without protective conductor	with protective conductor
1-core:	black	green-yellow
2-core:	blue, brown	—
3-core:	brown, black, grey	green-yellow, blue, brown
4-core:	blue, brown, black, grey	green-yellow, brown, black, grey
5-core:	blue, brown, black, grey, black	green-yellow, blue, brown, black, grey
more 5-core:	black with numbering	green-yellow, others cores black with numbering

Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-30°C
Lowest installation temperature:	-5°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	15D - for single core cable; 12D - for multicore cable (D - overall cable diameter)
Maximum permissible tensile stress with cable grip for Cu-conductor:	50 N/mm²
Application:	Fire resistant security cables for installation everywhere where high safety requirements have a special significance e.g., in industrial complexes, power stations, public buildings, hotels, underground railway systems, hospitals etc.
Standard packing:	500 m on drums. Other forms of packing and delivery are available on request.

CABLES

Number and cross-sectional area of conductor			Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at 20°C
n x mm²			mm	kg/km	W/km
1	x	1,5RE	7,4	71	12,1
1	x	2,5RE	7,7	84	7,41
1	x	4RE	8,2	103	4,61
1	x	6RE	8,7	125	3,08
1	x	10RE	9,5	170	1,83
1	x	16RM	10,8	240	1,15
1	x	25RM	12,5	347	0,727
1	x	35RM	13,6	446	0,524
1	x	50RM	15,5	590	0,387
1	x	70RM	17,0	801	0,268
1	x	95RM	19,8	1094	0,193
1	x	120RM	21,2	1333	0,153
1	x	150RM	23,6	1643	0,124
1	x	185RM	25,7	2023	0,0991
1	x	240RM	29,0	2609	0,0754
1	x	300RM	31,6	3237	0,0601
1	x	400RM	36,2	4183	0,0470
2	x	1,5RE	14,1	268	12,1
2	x	2,5RE	14,9	310	7,41
2	x	4RE	15,8	367	4,61
2	x	6RE	16,8	435	3,08
2	x	10RE	18,4	562	1,83
2	x	16RM	21,0	776	1,15
2	x	25RM	24,4	1098	0,727
3	x	1,5RE	14,8	296	12,1
3	x	2,5RE	15,6	347	7,41
3	x	4RE	16,6	417	4,61
3	x	6RE	17,7	503	3,08
3	x	10RE	19,4	665	1,83
3	x	16RM	22,2	932	1,15
3	x	25RM	25,9	1337	0,727
3	x	35RM	28,2	1694	0,524
3	x	50RM	32,8	2296	0,387
3	x	70RM	36,0	3025	0,268
3	x	95RM	41,6	4106	0,193
3	x	120RM	45,1	5002	0,153
3	x	150RM	50,3	6177	0,124
3	x	185RM	55,4	7643	0,0991
3	x	240RM	62,5	9825	0,0754
4	x	1,5RE	16,0	345	12,1
4	x	2,5RE	16,9	407	7,41
4	x	4RE	18,0	495	4,61
4	x	6RE	19,2	603	3,08
4	x	10RE	21,1	809	1,83
4	x	16RM	24,3	1144	1,15

CABLES

Number and cross-sectional area of conductor			Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at 20°C
n x mm²			mm	kg/km	W/km
4	x	25RM	28,4	1655	0,727
4	x	35RM	31,2	2126	0,524
4	x	50RM	36,3	2879	0,387
4	x	70RM	39,8	3815	0,268
4	x	95RM	46,6	5240	0,193
4	x	120RM	50,1	6355	0,153
4	x	150RM	56,2	7879	0,124
4	x	185RM	61,4	9683	0,0991
4	x	240RM	69,5	12491	0,0754
5	x	1,5RE	17,3	402	12,1
5	x	2,5RE	18,3	478	7,41
5	x	4RE	19,6	586	4,61
5	x	6RE	20,9	717	3,08
5	x	10RE	23,0	969	1,83
5	x	16RM	26,6	1380	1,15
5	x	25RM	31,4	2022	0,727
5	x	35RM	34,6	2619	0,524
5	x	50RM	40,2	3525	0,387
5	x	70RM	44,2	4705	0,268
5	x	95RM	51,5	6428	0,193
5	x	120RM	55,9	7867	0,153
5	x	150RM	62,3	9701	0,124
5	x	185RM	68,4	11968	0,0991
5	x	240RM	77,4	15444	0,0754
7	x	1,5RE	18,7	472	12,1
7	x	2,5RE	19,8	569	7,41
7	x	4RM	22,1	751	4,61
8	x	1,5RE	20,0	523	12,1
10	x	1,5RE	23,2	659	12,1
10	x	1,5RM	24,0	694	12,1
10	x	2,5RE	24,8	801	7,41
12	x	1,5RE	23,9	721	12,1
12	x	2,5RE	25,5	882	7,41
14	x	1,5RE	25,1	798	12,1
14	x	2,5RE	26,8	982	7,41
19	x	1,5RE	27,8	992	12,1
19	x	2,5RE	30,1	1263	7,41
20	x	1,5RE	29,4	1079	12,1
20	x	1,5RM	30,4	1135	12,1

CABLES

Number and cross-sectional area of conductor			Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at 20°C
n x mm²			mm	kg/km	W/km
24	x	2,5RE	35,4	1612	7,41
30	x	1,5RE	35,0	1510	12,1
30	x	2,5RE	37,5	1885	7,41
3	x	25RM+16RM	27,6	1561	0,727 / 1,15
3	x	35RM+16RM	29,5	1917	0,524 / 1,15
3	x	50RM+25RM	34,5	2631	0,387 / 0,727
3	x	70RM+35RM	37,8	3461	0,268 / 0,524
3	x	95RM+50RM	44,1	4742	0,193 / 0,387
3	x	120RM+70RM	47,7	5822	0,153 / 0,268
3	x	150RM+70RM	51,9	6979	0,124 / 0,268
3	x	185RM+95RM	57,9	8744	0,0991 / 0,193
3	x	240RM+120RM	64,7	11176	0,0754 / 0,153
4	x	35RM+16RM	33,3	2429	0,524 / 1,15
4	x	50RM+25RM	38,6	3279	0,387 / 0,727
4	x	70RM+35RM	42,4	4349	0,268 / 0,524
4	x	95RM+50RM	49,6	5959	0,193 / 0,387
4	x	120RM+70RM	53,5	7305	0,153 / 0,268
4	x	150RM+70RM	59,0	8864	0,124 / 0,268

FLAMEX 950 (N)HXCH FE180/E90 0,6/1 kV

DIN VDE 0266, DIN 4102-12

Halogen-free low smoke fire resistant security power cables with copper concentric conductor

FIRE PERFORMANCE	
Insulation integrity FE 180:	DIN VDE 0472-814 (800°C, 180 min.), IEC 60331-21
System integrity E30:	DIN 4102-12 (90 min.)
Flame propagation:	DIN EN 50266-2-2, VDE 0482-266-2-2, IEC 60332-3-22
Smoke density:	DIN EN 61034-2, VDE 0482-1034-2, IEC 61034-2
Gases evolved during combustion:	DIN EN 50267-2-2, VDE 0482-267-2-2, IEC 60754-2: pH ≥ 4,3; conductivity ≤ 2,5 µS/mm

CONSTRUCTION	
Conductors:	bare copper conductor, circular solid class 1 (RE) or stranded circular or circular compacted class 2 (RM) according to EN 60228
Insulation:	special fire resistant cross-linked compound
Inner covering:	special flame-retardant and halogen-free compound
Concentric conductor:	inner layer - round copper wires, outer layer - copper tape
Separator:	tape
Sheath:	thermoplastic halogen- free compound type HM4 according to DIN VDE 0276-604

CHARACTERISTIC	
Colour of sheath:	orange
Core identification:	according to HD 308 S2 or EN 50334

2-core:	blue, brown
3-core:	brown, black, grey
3 core:*	blue, brown, black
4-core:	blue, brown, black, grey
5-core:	blue, brown, black, grey, black
≥ 7-core:	black with numbering

*For certain applications only.

Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-30°C
Lowest installation temperature:	-5°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	15D - for single core cable; 12D - for multicore cable (D - overall cable diameter)
Maximum permissible tensile stress with cable grip for Cu-conductor:	50 N/mm², (total cross-section in mm2 of the conductors (any screen not included)
Application:	Fire resistant security cables for installation everywhere where high safety requirements have a special significance e.g., in industrial complexes, power stations, public buildings, hotels, underground railway systems, hospitals etc.
Standard packing:	500 m on drums. Other forms of packing and delivery are available on request.

CABLES

Number and cross-sectional area of conductor			Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at 20°C
n x mm²			mm	kg/km	W/km
2	x	1,5 RE/1,5	15,9	324	12,1 / 12,1
2	x	2,5 RE//2,5	16,6	374	7,41 / 7,41
2	x	4 RE/4	17,9	453	4,61 / 4,61
2	x	6 RE/6	19,2	541	3,08 / 3,08
2	x	10 RE/10	20,9	708	1,83 / 1,83
2	x	16 RM/16	24,0	988	1,15 / 1,15
2	x	25 RM/16	27,5	1319	0,727 / 1,15
2	x	35 RM/16	29,6	1598	0,524 / 1,15
3	x	1,5 RE/1,5	16,6	354	12,1 / 12,1
3	x	2,5 RE/2,5	17,4	413	7,41 / 7,41
3	x	4 RE/4	18,8	505	4,61 / 4,61
3	x	6 RE/6	20,1	612	3,08 / 3,08
3	x	10 RE/10	21,9	814	1,83 / 1,83
3	x	16 RM/16	25,3	1147	1,15 / 1,15
3	x	25 RM/16	29,0	1561	0,727 / 1,15
3	x	35 RM/16	31,2	1923	0,524 / 1,15
3	x	50 RM/25	35,9	2638	0,387 / 0,727
3	x	70 RM/35	39,6	3481	0,268 / 0,524
3	x	95 RM/50	45,5	4713	0,193 / 0,387
3	x	120 RM/70	49,5	5845	0,153 / 0,268
3	x	150 RM/70	54,8	7045	0,124 / 0,268
3	x	185RM/95	59,9	8773	0,0991 / 0,193
4	x	1,5 RE/1,5	17,8	404	12,1 / 12,1
4	x	2,5 RE/2,5	18,7	476	7,41 / 7,41
4	x	4 RE/4	20,2	587	4,61 / 4,61
4	x	6 RE/6	21,6	715	3,08 / 3,08
4	x	10 RE/10	23,7	961	1,83 / 1,83
4	x	16 RM/16	27,3	1363	1,15 / 1,15
4	x	25 RM/16	31,5	1885	0,727 / 1,15
4	x	35 RM/16	33,6	2357	0,524 / 1,15
4	x	50 RM/25	39,4	3232	0,387 / 0,727
4	x	70 RM/35	43,5	4285	0,268 / 0,524
4	x	95 RM/50	50,4	5869	0,193 / 0,387
4	x	120 RM/70	54,6	7223	0,153 / 0,268
4	x	150 RM/70	60,8	8808	0,124 / 0,268
4	x	185 RM/95	66,1	10872	0,0991 / 0,193
4	x	240 RM/120	74,2	13955	0,0754 / 0,153
5	x	1,5 RE/2,5	19,1	471	12,1 / 7,41
5	x	2,5 RE/2,5	20,1	550	7,41 / 7,41
5	x	4 RE/4	21,7	680	4,61 / 4,61
5	x	6 RE/6	23,0	830	3,08 / 3,08
5	x	10 RE/10	25,6	1125	1,83 / 1,83
5	x	16 RM/16	29,6	1604	1,15 / 1,15
5	x	25 RM/16	33,9	2254	0,727 / 1,15
5	x	35 RM/16	37,3	2881	0,524 / 1,15

CABLES

Number and cross-sectional area of conductor			Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at 20°C
n x mm²			mm	kg/km	W/km
5	x	50 RM/25	43,3	3890	0,387 / 0,727
5	x	70 RM/35	48,3	5240	0,268 / 0,524
5	x	95 RM/50	55,5	7104	0,193 / 0,387
7	x	1,5 RE/2,5	20,4	544	12,1 / 7,41
7	x	2,5 RE/2,5	21,6	643	7,41 / 7,41
7	x	4 RM/4	24,1	849	4,61 / 4,61
10	x	1,5 RE/2,5	25,0	740	12,1 / 7,41
10	x	2,5 RE/4	26,8	903	7,41 / 4,61
12	x	1,5 RE/2,5	25,7	803	12,1 / 7,41
12	x	2,5 RE/4	27,5	986	7,41 / 4,61
16	x	2,5 RE/6	30,6	1241	7,41 / 3,08
19	x	1,5 RE/4	30,0	1115	12,1 / 4,61
19	x	2,5 RE/6	32,4	1413	7,41 / 3,08
21	x	1,5 RE/6	31,5	1219	12,1 / 3,08
21	x	2,5 RE/10	34,1	1576	7,41 / 1,83
24	x	1,5 RE/6	35,3	1448	12,1 / 3,08
24	x	2,5 RE/10	37,8	1816	7,41 / 1,83

FLAME-X 950

JE-H(St)H...Bd FE180/E90

TF Kable

Adapted to DIN VDE 0815

Halogen- free low smoke fire resistant wiring cables for telecommunication and data processing systems

CONSTRUCTION

Conductors:	bare solid copper conductor 0,8 mm
Insulation:	special core insulation with mica tape and halogen-free cross-linked compound type HI1 acc. to DIN VDE 0207-23
Pair:	two cores twisted to pair and each 4 pairs consist to unit
Separator:	polyester tape
Screen:	aluminium/polyester laminated tape and solid copper drain wire
Drain wire:	solid tinned annealed copper wire 0,8 mm
Sheath:	thermoplastic halogen-free, flame retardant compound type HM2 acc. to DIN VDE 0207-24
Colour of sheath:	grey, orange or red

Identification of pairs:

Pair no.	a-wire	b-wire
1	blue	red
2	grey	yellow
3	green	brown
4	white	black

Two-pair cables shall be cabled in quad formation and colour coded: blue, yellow, red, grey

TECHNICAL DATA

Operating voltage: peak voltage max. 225V (not for purposes of high current and power installation)
Loop resistance: maximum 73,2 Ω/km
Insulation resistance at temperature 20°C: minimum 100 MΩ x km
Mutual capacitance: maximum 120 nF/km at 800 Hz (this values may be extended at 20% with a make-up up to 4 pairs)
Capacitance unbalance: maximum 200 pF/100 m at 800 Hz (20% of the values, but one value up to 400 pF is allowed)
Test voltage 50 Hz: core/core – 500V; core/screen – 2000V

Temperature range:
flexing:: - 5°C to + 50°C
fixed installation - 30°C to + 70°C
Minimum bending radius: 6 x D (D is the overall diameter of the cable)

Insulation integrity FE 180: DIN VDE 0472-814 (800°C, 180 minutes), IEC 60331
System integrity E90: DIN VDE 4102-12 (90 min.)
Flame retardant: VDE 0482-266-2-4, DIN EN 50266-2-4 (IEC 60332-3 Category C)
Smoke density: VDE 0482-1034-2, DIN EN 61034-2 (IEC 61034-2: light transmittance values > 70%)
Gases evolved during combustion: VDE 0482-267-2-2, DIN EN 50267-2-2(IEC 60754-2: pH ≥ 3,5; conductivity ≤ 100 µS·cm$^{-1)}$

Application: Fire resistant, halogen-free static screened installation cables for telecommunication purpose. The static screen prevents strong interference impulse. Suitable for fixed installation everywhere, where in case of fire human life and material assets are to be protected, e.g. in industrial complexes, public buildings, hotels, airports, under ground railway networks, hospitals. Not for purposes of high current and power installation.

Standard length cable packing: 500 m on drums. Other forms of packing and delivery are available on request.

FLAME-X 950

JE-H(St)H...Bd FE180/E90

TF Kable

Adapted to DIN VDE 0815

Number pairs and diameter of conductor n x 2 x mm	Approximate overall diameter mm	Approximate net weight of cable kg/km
1 x 2 x 0,8	10,5	105
2 x 2 x 0,8	11,9	151
4 x 2 x 0,8	18,3	277

DRAWINGS

No. Baks	No. FIRES	Cable type	Position	Construction details
1	**50**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV	**1**	Korytko KGJ/KGOJ 400H 60/... B-400/ 1.5 m / 15kg/m / grubość blachy 0,9 mm Mocowanie: Ceownik CWP/CWOP40H40/1, wysięgnik WWS /WWSO 400 pręt gwintowany PG M12
2	**49**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV		
3	**48**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
4	**47**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
5	**46**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
6	**45**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
7	**44**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
8	**43**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
9	**68**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
10	**67**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
11	**42**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV	**2**	Korytko KGJ/KGOJ 400H 60/... B-400/ 1.5 m / 15kg/m / grubość blachy 0,9 mm Mocowanie: Ceownik CWP/CWOP40H40/1, wysięgnik WMC /WMCO 400 pręt gwintowany PG M12
12	**41**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV		
13	**40**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
14	**39**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
15	**38**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
16	**37**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
17	**36**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
18	**35**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
19	**34**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV	**3**	rabinka DUD/DUOD 400H 60/... B-400/ 1.5 m / 20kg/m / grubość blachy 1,2 mm Mocowanie: Ceownik CWP/CWOP40H40/1, wysięgnik WWS /WWSO 400 pręt gwintowany PG M12
20	**33**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV		
21	**32**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
22	**31**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
23	**30**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
24	**29**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
25	**28**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
26	**27**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
27	**66**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
28	**65**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
29	**26**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV	**4**	Drabinka DUD/DUOD 400H 60/... B-400/ 1.5 m / 20kg/m / grubość blachy 1,2 mm Mocowanie: Ceownik CWP/CWOP40H40/1, wysięgnik WMC /WMCO 400 pręt gwintowany PG M12
30	**25**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV		
31	**24**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
32	**23**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
33	**22**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
34	**21**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
35	**20**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
36	**19**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
82	**63**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
83	**64**	JE-H(St)H Bd 2x2x0,8 FE180/E90		

DRAWINGS

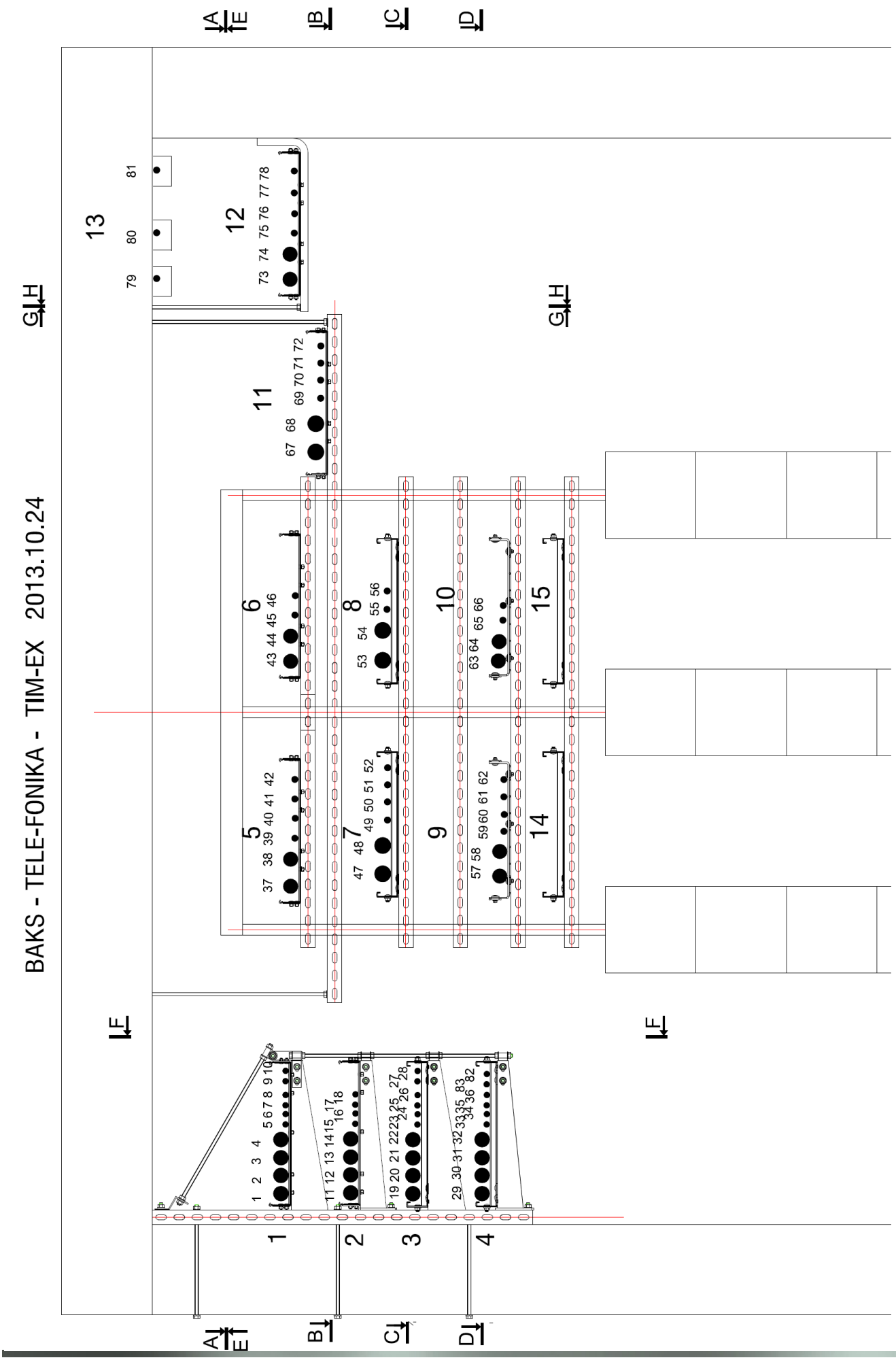
No. Baks	No. FIRES	Cable type	Position	Construction details
37	**18**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV	**5**	Korytko KGJ/KGOJ 400H 60/... B-400/ 1.2m / 20kg/m / grubość blachy 0,9 mm Mocowanie: Ceownik CWP/CWOP40H40/07, obejma rury OBR 35.Podłoga podniesiona na ruszcie stalowym z profili C 40x40x2. Wspornik rura stalowa Ø 34x6,3x1000. Płyta podłogowa KNAUF EHB 600x600x36 Obciążenie podłogi 150kG/m2
38		(N)HXH-O FE180/E90 4x50RM 0,6/1 kV		
39	**17**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
40		(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
41	**62**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
42	**61**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
43	**12**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV	**6**	
44		(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
45	**11**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
46		(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
47	**16**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV	**7**	Drabinka DUD/DUOD 400H 60/... B-400/ 1.5 m / 20kg/m / grubość blachy 1,2 mm Mocowanie: CeownikCWP/CWOP40H40/07, obejma rury OBR 35.Podłoga podniesiona na ruszcie stalowym z profili C 40x40x2. Wspornik rura stalowa Ø 34x6,3x1000. Płyta podłogowa KNAUF EHB 600x600x36 Obciążenie podłogi 150kG/m2
48		(N)HXH-O FE180/E90 4x50RM 0,6/1 kV		
49	**15**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
50		(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
51	**60**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
52	**59**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
53	**10**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV	**8**	
54		(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
55	**9**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
56		(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
57	**14**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV	**9**	Korytko siatkowe KDS/ KDSO 400H60/... B-400 1.2 m /20kg/m / grubość drutu Ø 4,5 mmMocowanie:CeownikCWP/CWOP40H40/07, obejma rury OBR35.Podłoga podniesiona na ruszcie stalowym z profili C 40x40x2. Wspornik rura stalowa Ø 34x6,3x1000. Płyta podłogowa KNAUF EHB 600x600x36 Obciążenie podłogi 150kG/m2
58		(N)HXH-O FE180/E90 4x50RM 0,6/1 kV		
59	**13**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
60		(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
61	**58**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
62	**57**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
63	**8**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV	**10**	
64		(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
65	**7**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
66		(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
67	**6**	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV	**11**	Korytko KGJ/KGOJ 400H 60/... B-400/ 1.5 m / 20kg/m / grubość blachy 0,9 mm Mocowanie: Ceownik CWP/CWOP40H40/2, pręt gwintowany PG M10
68		(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV		
69	**5**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
70		(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
71	**56**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
72	**55**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
73	**2**	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV	**12**	Korytko KGJ/KGOJ 400H 60/... B-400/ 1.5 m / 20kg/m / grubość blachy 0,9 mm Mocowanie: WFL/WFLO400, pręt gwintowany PG M8
74		(N)HXH-O FE180/E90 4x50RM 0,6/1 kV		
75	**1**	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
76		(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV		
77	**53**	JE-H(St)H Bd 2x2x0,8 FE180/E90		
78	**52**	JE-H(St)H Bd 2x2x0,8 FE180/E90		

DRAWINGS

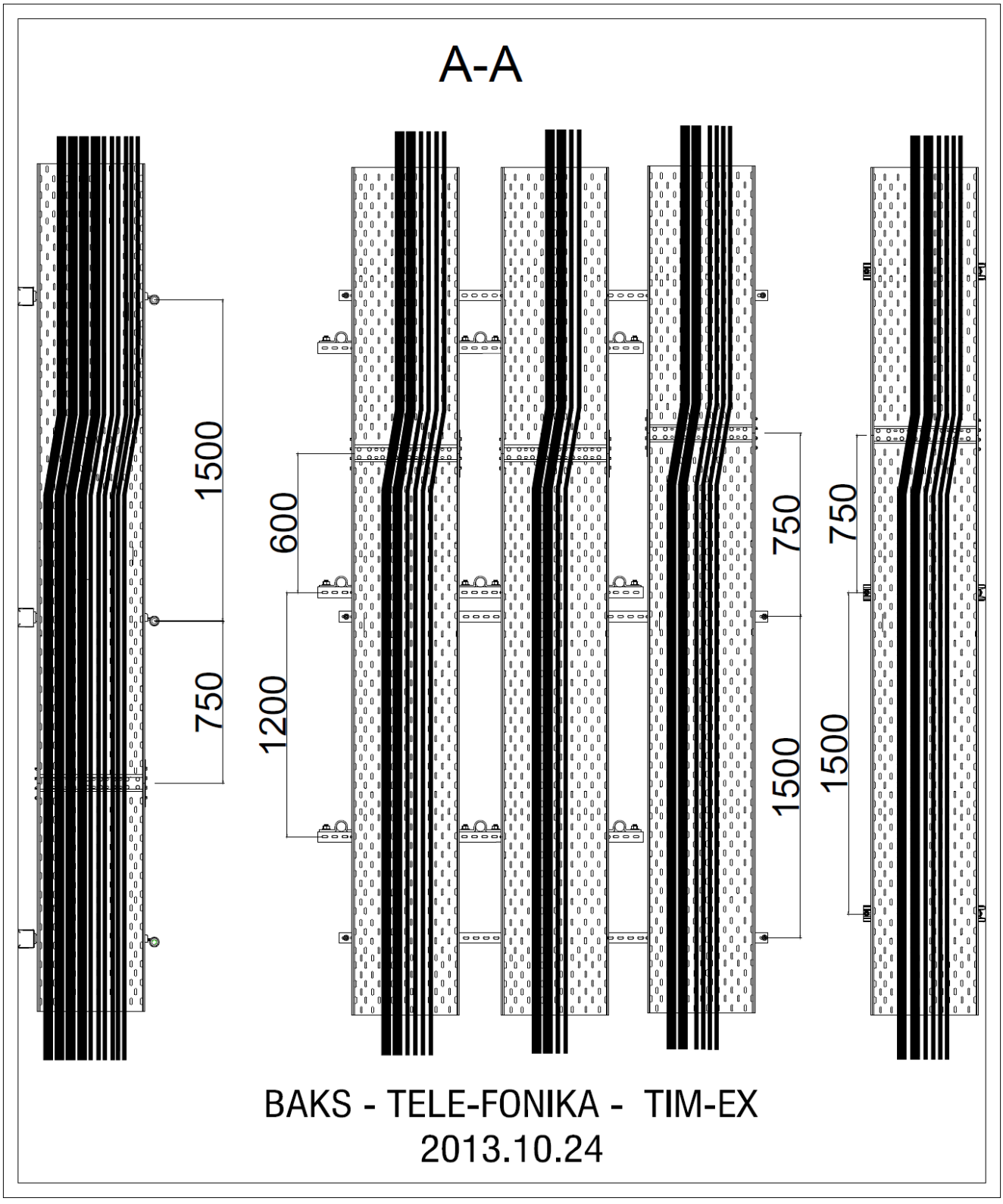
No. Baks	No. FIRES	Cable type	Position	Construction details
79	**54**	JE-H(St)H Bd 2x2x0,8 FE180/E90	**13**	Obejma kablowa KSA+ puszki PMO3B Mocowanie co 300mm
80	**4**	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV		
81	**3**	(N)HXCH-O FE180/E90 4x16RE/16 0,6/1 kV		
			14, 15	Drabinka kablowa DUP/DUOP 400H60 CeownikCWP/CWOP40H40/07, obejma rury OBR 25. Obciążenie 20kG/m Podłoga podniesiona na ruszcie stalowym z profili C 40x40x2. Wspornik rura stalowa Ø 24x2 x1000. Płyta podłogowa KNAUF EHB 600x600x36

No.	Cable type	Outer diameter [mm] (approx.)	Cable weight (kg/m) (approx.)	Count
1	(N)HXH-J FE180/E90 4x1,5RE 0,6/1 kV	16,0	0,35	16
2	(N)HXH-O FE180/E90 4x50RM 0,6/1 kV	36,3	2,88	16
3	(N)HXCH-O FE180/E90 4x1,5RE/1,5 0,6/1 kV	17,8	0,40	17
4	(N)HXCH-O FE180/E90 4x16RE/16 0,6/1 kV	27,3	1,36	1
5	(N)HXCH-O FE180/E90 4x50RM/25 0,6/1 kV	39,4	3,23	16
6	JE-H(St)H Bd 2x2x0,8 FE180/E90	12,0	0,15	17
			Total	**83**

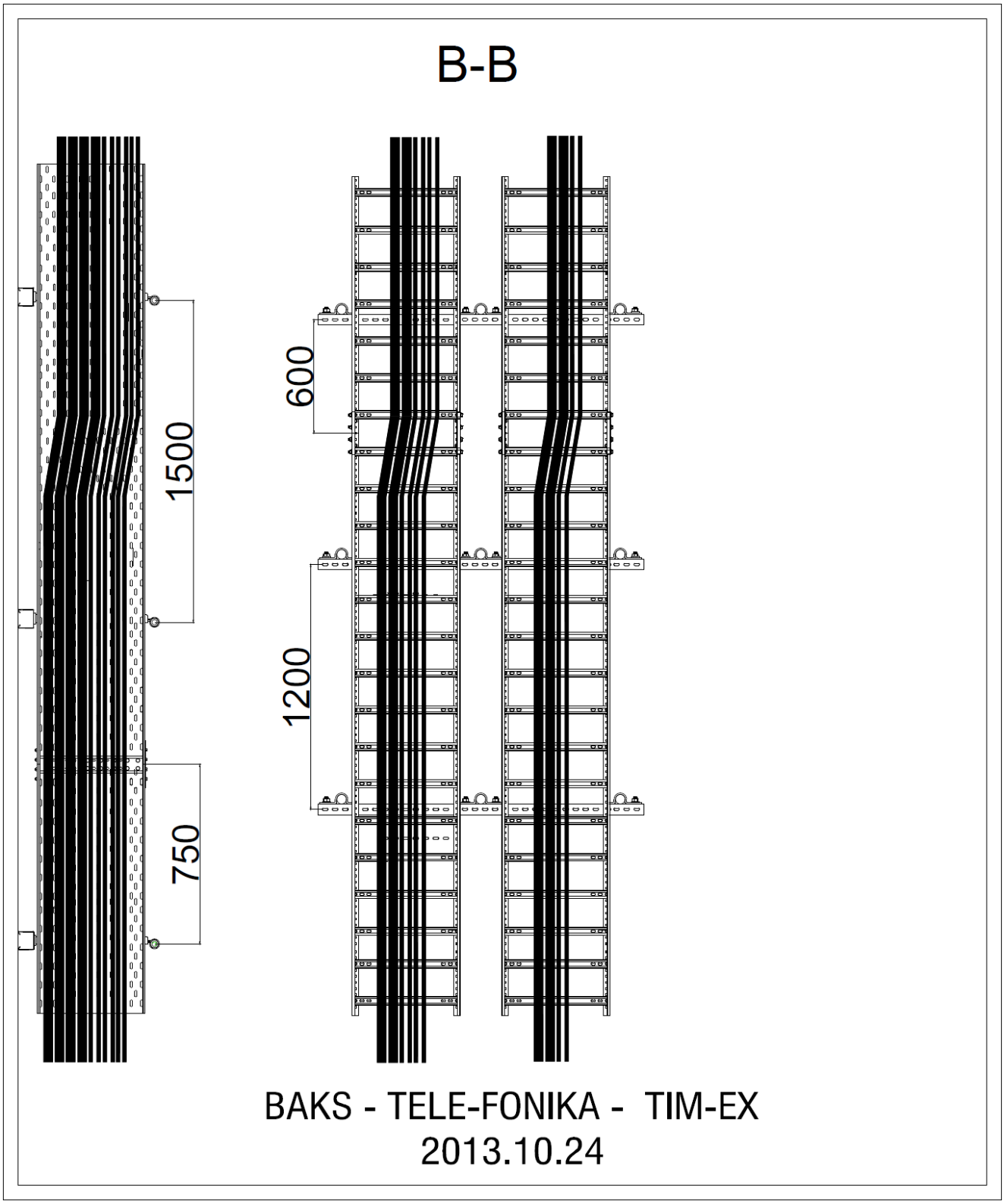
DRAWINGS


BAKS - TELE-FONIKA - TIM-EX 2013.10.24
A
E
B
C
D
G
H
F
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

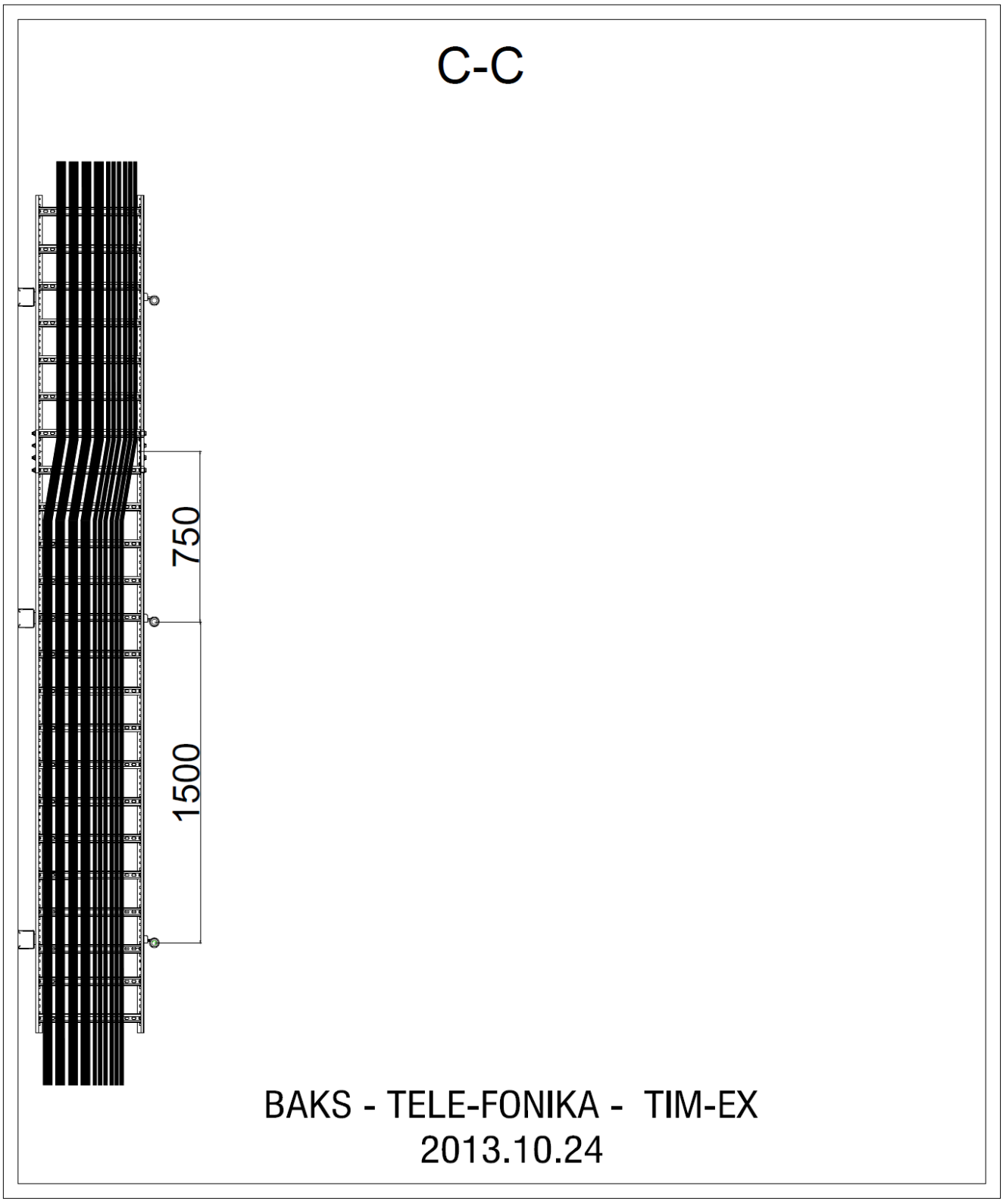
DRAWINGS


A-A
1500
750
600
1200
750
1500
750
1500
BAKS - TELE-FONIKA - TIM-EX
2013.10.24

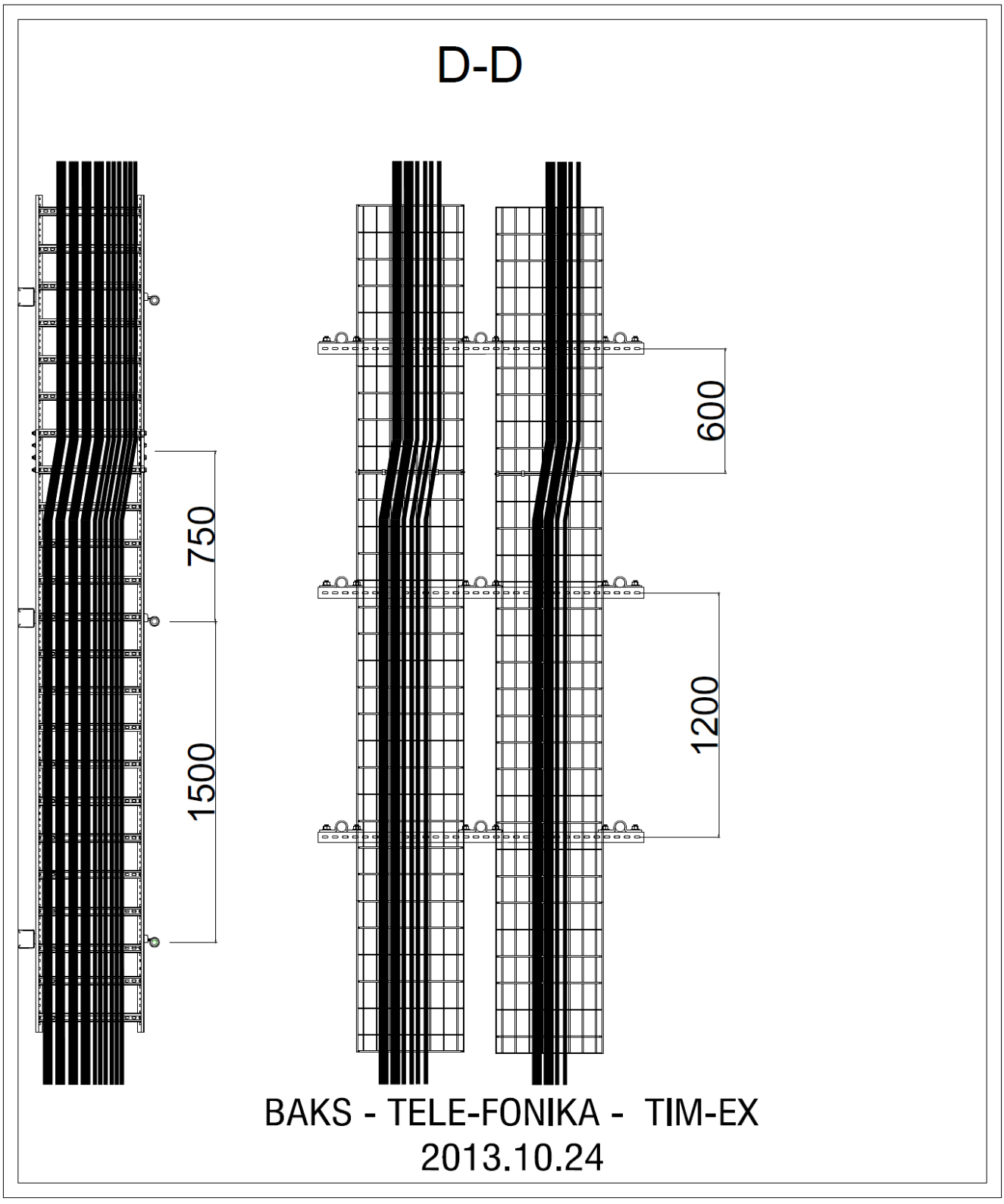
DRAWINGS



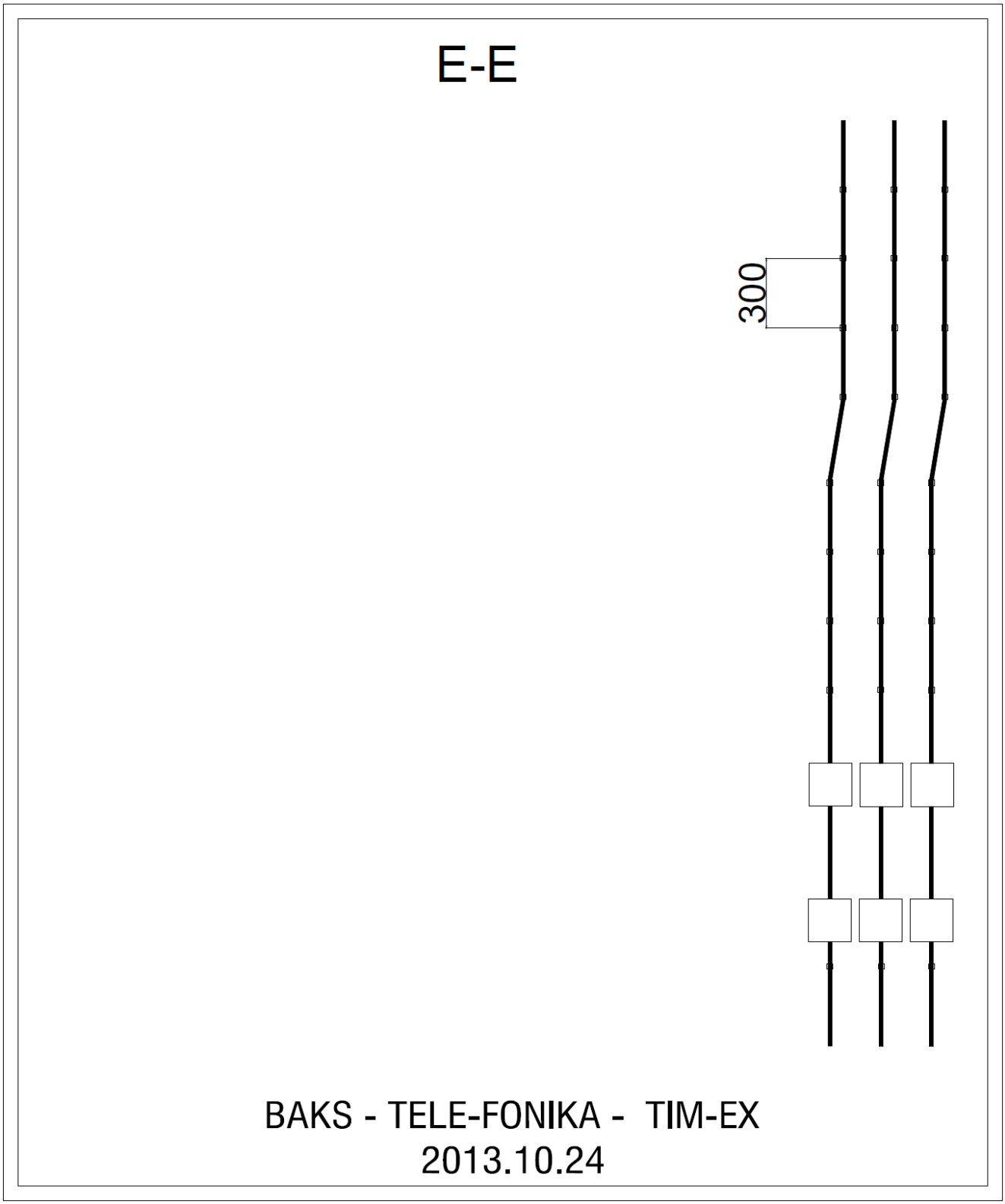
DRAWINGS



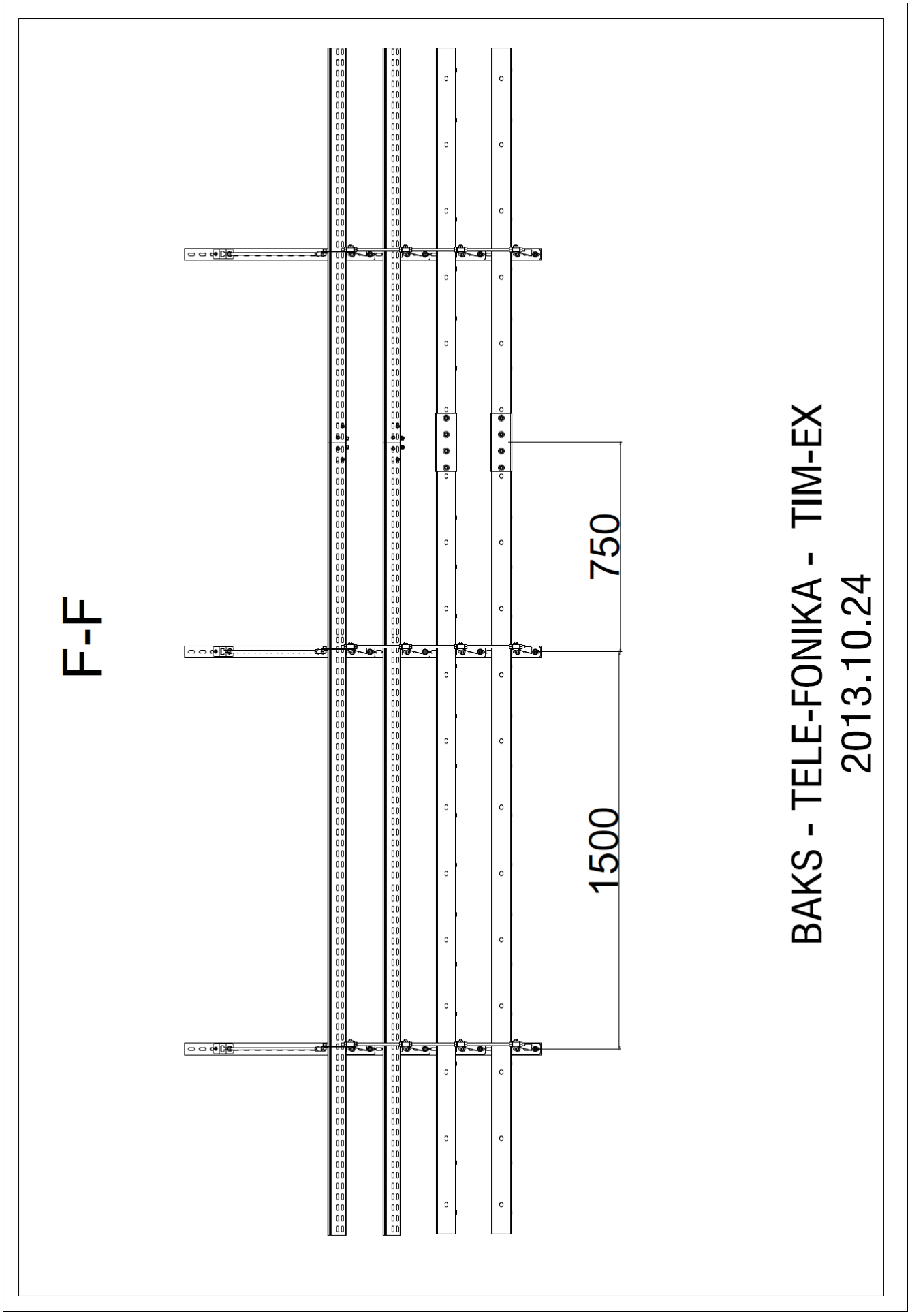
DRAWINGS



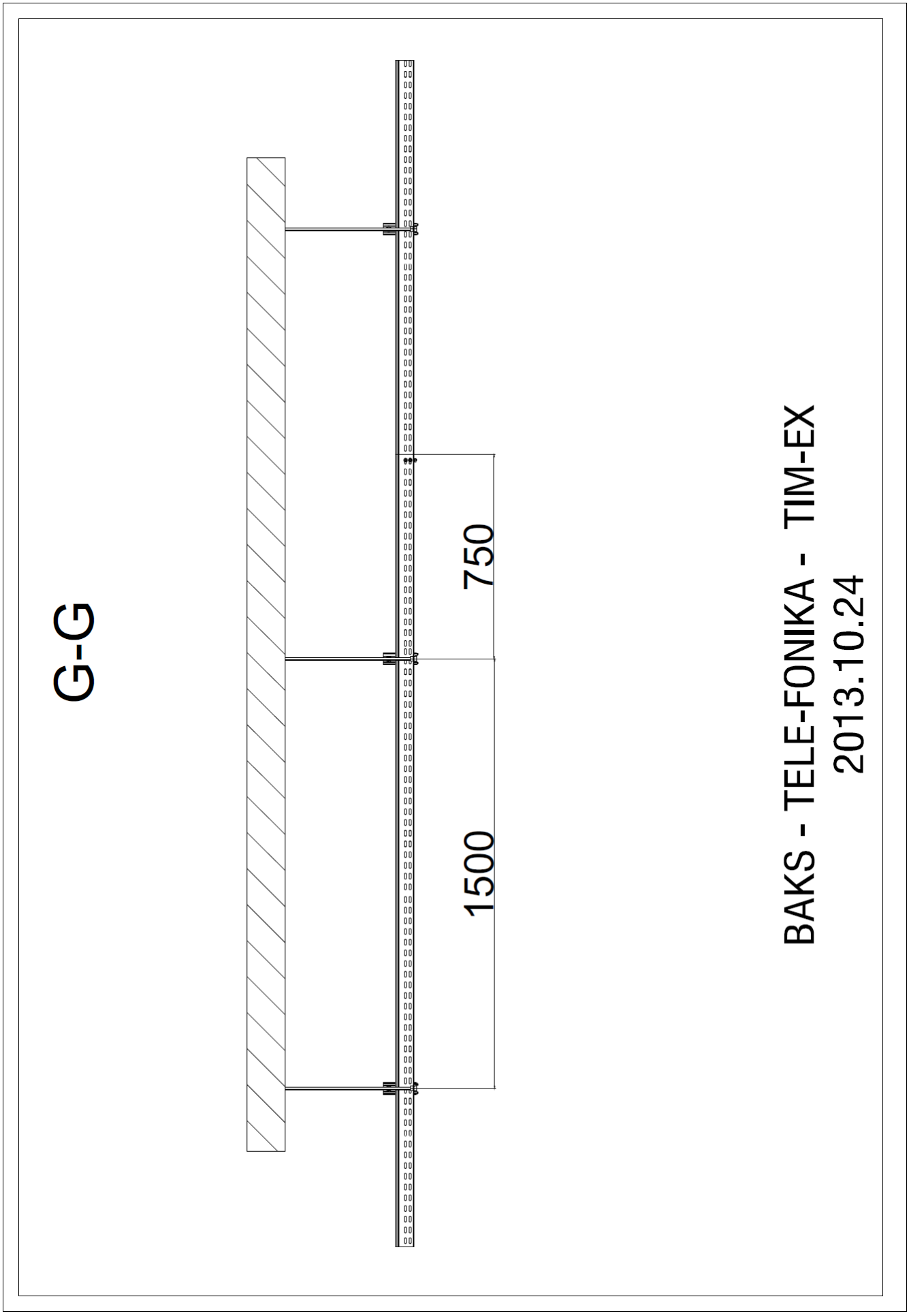
DRAWINGS



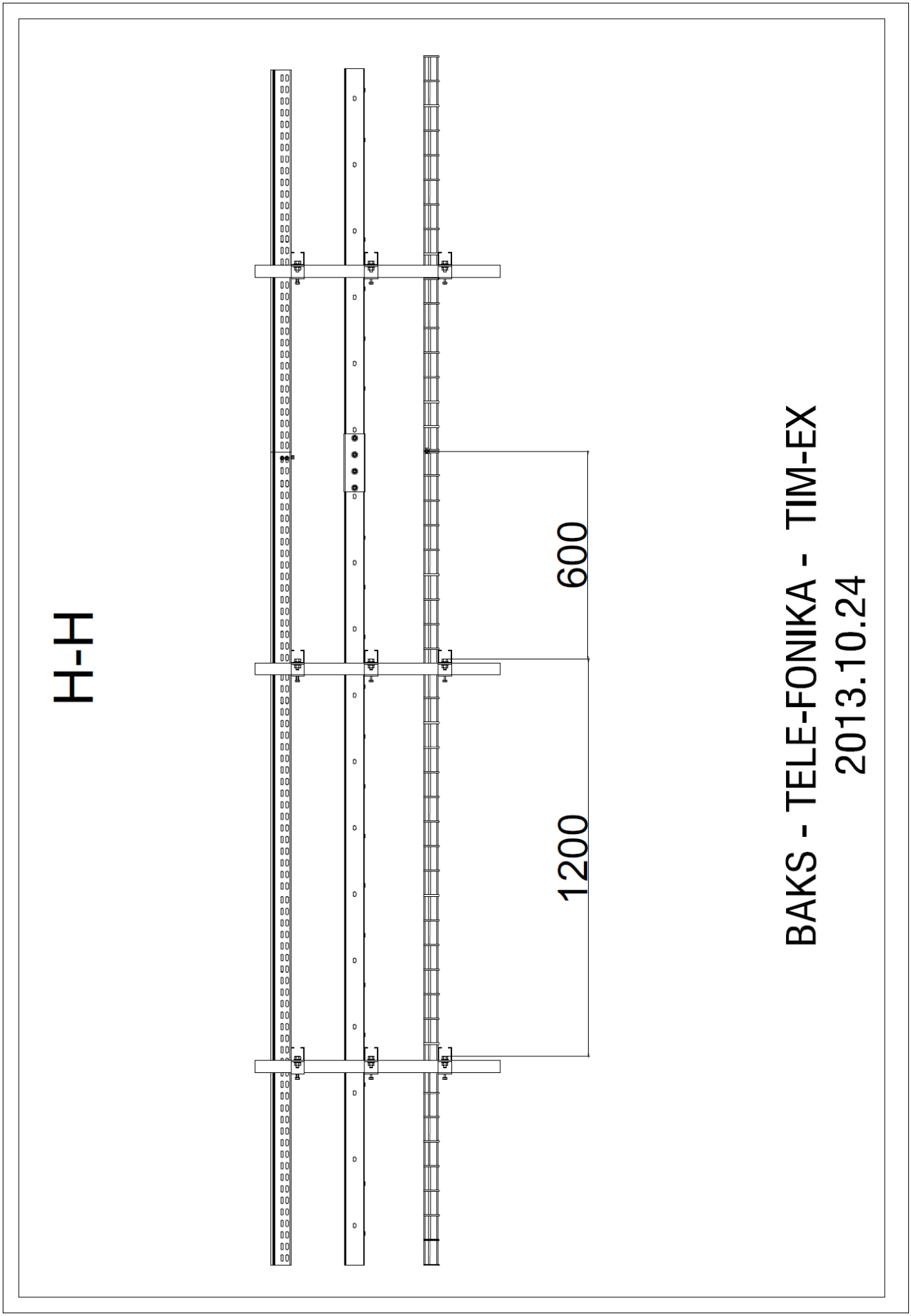
DRAWINGS



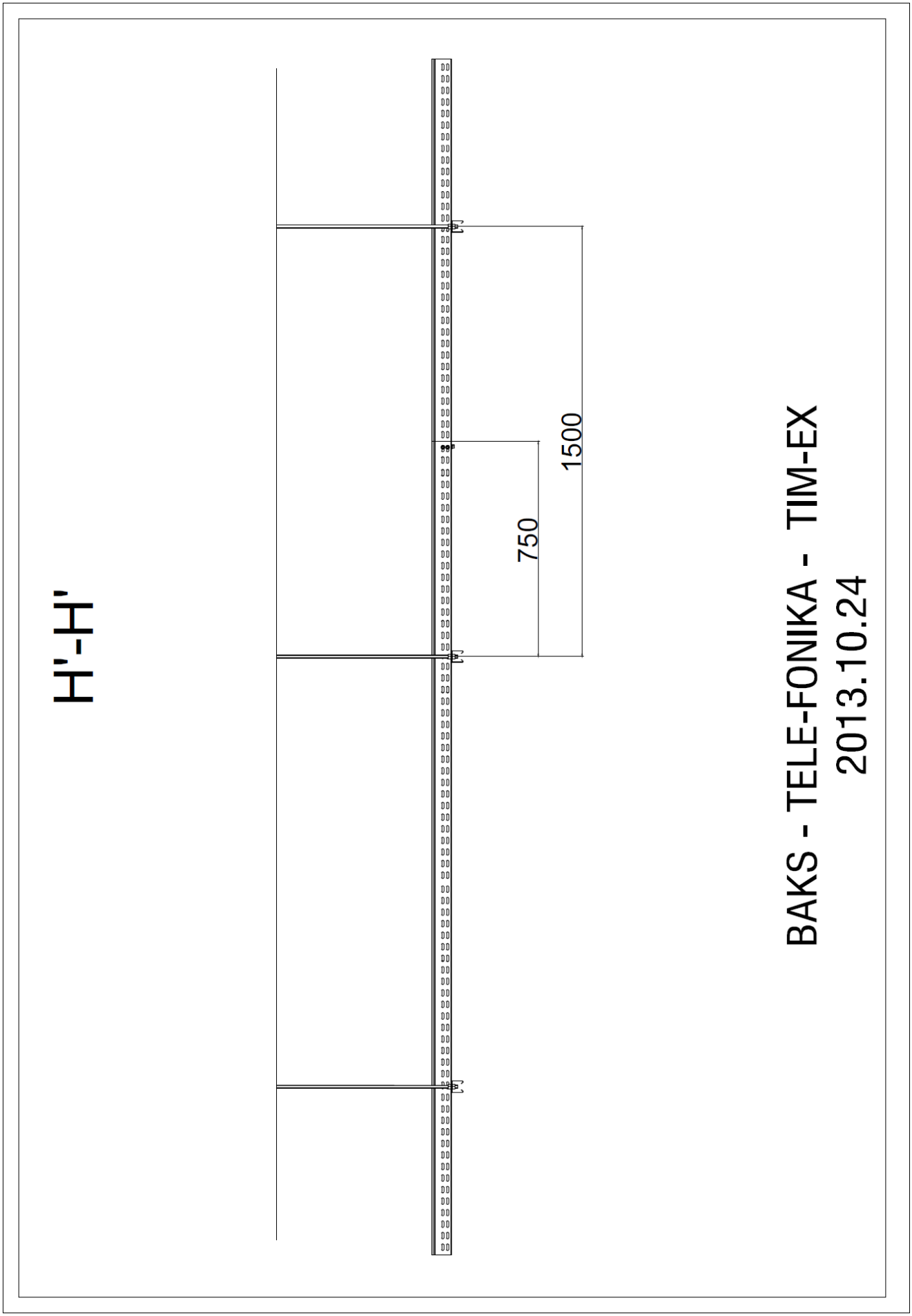
DRAWINGS



DRAWINGS



DRAWINGS



7. FINAL PROVISION

- This report details the method of construction, the test conditions and results obtained when the specific element of construction described herein was following the procedure outlined in STN EN 1363-1, and where appropriate STN 92 0205:2012. Any significant deviation with respect to size, constructional details, loads, stresses, edge or end conditions other than those allowed under the field of direct application in the relevant test method is not covered by this report.
- Because of the nature of the fire resistance testing and consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.
- The test results refer only to the tested subjects. This test report is not an approval of the tested product by the test laboratory or the accreditation body overseeing the laboratory's activities. The test was carried out on testing equipment that is the property of FIRES, s.r.o., Batizovce. Without the written permission of the test laboratory this test report may be copied and/or distributed only as the whole. Any modifications of the test report can be made only by the fire resistance test laboratory FIRES, s.r.o., Batizovce.

Approved by:

Ing. Štefan Rástocký
leader of the testing laboratory

Prepared by:

Bc. Dávid Šubert
technician of the testing laboratory

8. NORMATIVE REFERENCES

STN EN 1363-1: 2001	Fire resistance tests. Part 1: General requirements
STN 92 0205:2012	Fire behaviour of construction products and building constructions.Circulit integrity maintenance of cable systems. Requirements, testing and classification.
DIN 4102 – 2:1977-09	Fire behaviour of building materials and elements - requirements and testing
DIN 4102 – 12:1998-11	Fire resistance of electric cable systems required to maintain circuit integrity
ZP-27/2008 PAVUS	Test method for determination of functionality class of cables and cable loadbearing constructions - cable circuits in case of fire

THE END OF THE TEST REPORT