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STN	**Vodiče na vonkajšie vedenia. Vodiče z koncentricky zlanovaných kruhových drôtov. Oprava AC**	**STN EN 50182/AC** 34 7506

Conductors for overhead lines - Round wire concentric lay stranded conductors

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/13

Obsahuje: EN 50182:2001/AC Jul.:2013

Corrigendum to EN 50182:2001

English version

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1 Modifications due to the Corrigendum from June 2005:

Subclause 5.6.5

In table 3, **replace** "□" by "≤" so as to have it read:

Table 3 - Number of joints permitted in a given length

Conductor length *L* (m)				**Number of joints permitted**
Number of aluminium layers				
1	**2**	**3**	**4**	
L ≤ 1 500	-	-	-	2
1 500 < L ≤ 2 000	L ≤ 1 500	-	-	3
L > 2 000	1 500 < L ≤ 2 000	L ≤ 1 500	-	4
-	2 000 < L ≤ 2 500	1 500 < L ≤ 2 000	L ≤ 1 500	5
-	L > 2 500	2 000 < L ≤ 2 500	1 500 < L ≤ 2 000	6
-	-	2 500 < L ≤ 3 000	2 000 < L ≤ 2 500	7
-	-	3 000 < L ≤ 3 500	2 500 < L ≤ 3 000	8
-	-	L > 3 500	3 000 < L ≤ 3 500	9
-	-	-	3 500 < L ≤ 4 000	10
-	-	-	L > 4 000	11

Subclause 5.10

In the first line **replace** "□/km" by "Ω/km".

Annex B, clause B.3

In the equations for Case 1, Case 2, Case 3 and Case 4 (two instances), **replace** "□" by "π".

Annex F, clause F.1

Replace "F.1 to F.48" by "F.1 to F.52".

Replace tables F.29 and F.31 as given below.

Add the new tables F.49 to F.52.

Table F.29 - Characteristics of aluminium alloy conductors used in Spain - Type AL3

Code	Old code	Area-	No. of wires	Diameter		Mass per unit length	Rated strength	DC resistance
				Wire	Conductor			
		mm²		mm	mm	kg/km	kN	Ω/km
28-AL3	D 28	27,8	7	2,25	6,75	76,0	8,21	1,181 7
43-AL3	D 40	43,1	7	2,80	8,40	117,7	12,72	0,763 1
55-AL3	D 56	54,6	7	3,15	9,45	148,9	16,09	0,602 9
76-AL3	D 80	75,5	19	2,25	11,3	207,4	22,29	0,437 8
117-AL3	D 110	117,0	19	2,80	14,0	321,2	34,51	0,282 7
148-AL3	D 145	148,1	19	3,15	15,8	406,5	43,68	0,223 4
188-AL3	D 180	188,1	19	3,55	17,8	516,3	55,48	0,175 9
279-AL3	D 280	279,3	37	3,10	21,7	769,3	82,38	0,118 8
381-AL3	D 400	381,0	61	2,82	25,4	1 053,0	112,39	0,087 4
454-AL3	D 450	454,5	61	3,08	27,7	1 256,1	134,07	0,073 3
547-AL3	D 550	547,3	61	3,38	30,4	1 512,7	161,46	0,060 8
638-AL3	D 630	638,3	61	3,65	32,9	1 764,0	188,29	0,052 2

NOTE Direction of lay of external layer is right-hand (Z).

Table F.31 - Characteristics of aluminium alloy conductors steel reinforced used in Spain - Type AL3/ST1A

Code	Old code	Areas			No. of wires		Wire diameter		Diameter		Mass per unit length	Rated strength	DC resistance
		Al	Steel	Total			Al	Steel	Core	Conductor			
		mm²	mm²	mm²	Al	Steel	mm	mm	mm	mm	kg/km	kN	Ω/km
27-AL3/4-ST1A	DA 30	26,7	4,45	31,1	6	1	2,38	2,38	2,38	7,14	107,7	12,95	1,235 6
47-AL3/8-ST1A	DA 56	46,8	7,79	54,6	6	1	3,15	3,15	3,15	9,45	188,6	22,37	0,705 4
67-AL3/11-ST1A	DA 78	67,3	11,2	78,6	6	1	3,78	3,78	3,78	11,3	271,6	32,21	0,489 8
94-AL3/22-ST1A	DA 110	94,2	22,0	116,2	30	7	2,00	2,00	6,00	14,0	432,2	53,53	0,353 0
119-AL3/28-ST1A	DA 145	119,3	27,8	147,1	30	7	2,25	2,25	6,75	15,8	547,0	67,75	0,278 9
147-AL3/34-ST1A	DA 180	147,3	34,4	181,6	30	7	2,50	2,50	7,50	17,5	675,3	82,61	0,225 9
226-AL3/53-ST1A	DA 280	226,4	52,8	279,3	30	7	3,10	3,10	9,30	21,7	1 038,4	124,91	0,146 9

NOTE Direction of lay of external layer is right-hand (Z).

Table F.49 - Characteristics of aluminium alloy conductors used in Portugal - Type AL4

Code	Old code	Area	Nº of wires	Diameter		Mass per unit length	Rated strength	DC resistance
				Wire	Conductor			
		mm^2		mm	mm	kg/km	kN	Ω/km
34-AL4	Aster 34,4	34,4	7	2,50	7,5	93,8	11,17	0,9592
55-AL4	Aster 54,6	54,6	7	3,15	9,5	148,9	17,73	0,6042
76-AL4	Aster 75,5	75,5	19	2,25	11,3	207,4	24,55	0,4388
117-AL4	Aster 117	117,0	19	2,80	14,0	321,2	38,02	0,2833
148-AL4	Aster 148	148,1	19	3,15	15,8	406,5	48,12	0,2239
570-AL4	Aster 570	570,2	61	3,45	31,1	1576,0	185,33	0,0585
851-AL4	Aster 851	850,7	91	3,45	38,0	2360,7	276,47	0,0392
1144-AL4	Aster 1144	1143,5	91	4,00	44,0	3173,4	360,22	0,0293
NOTE Direction of lay of external layer is right-hand (Z).								

Table F.50 - Characteristics of aluminium alloy conductors steel reinforced used in Portugal - Type AL4/ST6C

Code	Old code	Areas			Nº of wires		Wire diameter		Diameter		Mass per unit length	Rated strength	DC resistance
							Al	Steel	Core	Conductor			
		Al	Steel	Total	Al	Steel	mm	mm	mm	mm	kg/km	kN	Ω/km
119-AL4/28-ST6C	Pastel 147,1	119,3	27,8	147,1	30	7	2,25	2,25	6,75	15,8	547,0	79,12	0,2795
NOTE Direction of lay of external layer is right-hand (Z).													

Table F.51 - Characteristics of aluminium conductors steel reinforced used in Portugal - Type AL1/ST1A

Code	Old code	Areas			Nº of wires		Wire diameter		Diameter		Mass per unit length	Rated strength	DC resistance
							Al	Steel	Core	Conductor			
		Al	Steel	Total	Al	Steel	mm	mm	mm	mm	kg/km	kN	Ω/km
26-AL1/4-ST1A	30	26,25	4,37	30,62	6	1	2,36	2,36	2,36	7,08	106,7	9,34	1,0932
42-AL1/7-ST1A	50	42,41	7,07	49,48	6	1	3	3	3,00	9,00	172,4	14,93	0,6765
80-AL1/13-ST1A	90	75,40	12,57	87,96	6	1	4	4	4,00	12,00	306,4	25,28	0,3806
80-AL1/476-ST1A	Guinea 130	80,36	46,88	127,24	12	7	2,92	2,92	8,76	14,60	588,4	66,46	0,3598
96-AL1/56-ST1A	Dorking 153	96,51	56,30	152,81	12	7	3,2	3,2	9,60	16,00	706,7	77,08	0,2992
94-AL1/22-ST1A	Canna 116	94,25	21,99	116,24	30	7	2	2	6,00	14,00	432,2	42,41	0,3065
203-AL1/33-ST1A	235	202,62	32,46	235,08	26	7	3,15	2,43	7,29	19,89	813,3	68,82	0,1425
136-AL1/22-ST1A	Partridge 160	135,93	21,99	157,92	26	7	2,58	2	6,00	16,32	547,3	47,75	0,2124
212-AL1/49-ST1A	Panther 260	212,06	49,48	261,54	30	7	3	3	9,00	21,00	972,4	90,76	0,1362
264-AL1/62-ST1A	Bear 325	264,42	61,70	326,12	30	7	3,35	3,35	10,05	23,45	1212,6	109,38	0,1093
429-AL1/56-ST1A	Zebra 485	428,88	55,60	484,48	54	7	3,18	3,18	9,54	28,62	1618,9	128,49	0,0674
565-AL1/30-ST1A	Zambeze 595	565,38	29,59	594,97	42	7	4,14	2,32	6,96	31,80	1792,4	119,67	0,0511
NOTE Direction of lay of external layer is right-hand (Z)													

Table F.52 - Characteristics of aluminium conductors aluminium clad steel reinforced used in Portugal - Type AL1/20SA

Code	Old code	Areas			Nº of wires		Wire diameter		Diameter		Mass per unit length	Rated strength	DC resistance
							Al	Steel	Core	Conductor			
		Al	Steel	Total	Al	Steel	mm	mm	mm	mm	kg/km	kN	Ω/km
484-AL1/34-20SA	Rail AW	483,84	33,54	517,39	45	7	3,7	2,47	7,41	29,61	1557,7	117,9	0,0584
NOTE Direction of lay of external layer is right-hand (Z)													

2 Modification due to the Corrigendum from July 2013:

Replace Table F.3 with the following one:

Table F.3 - Characteristics of aluminium conductors steel reinforced used in Austria - Type AL1/ST1A

Code	Old code	Areas			No. of wires		Wire diameter		Diameter		Mass per unit length	Rated strength	DC resistance	Final modulus of elasticity	Coefficient of linear expansion	Current carrying capacity
		Al	Steel	Total			Al	Steel	Core	Cond.						
		mm²	mm²	mm²	Al	Steel	mm	mm	mm	mm	kg/km	kN	Ω/km	N/mm²	1/K	A
34-AL1/6-ST1A	35/6	34,4	5,73	40,1	6	1	2,70	2,70	2,70	8,1	138,7	12,37	0,834 2	81 000	1,92E-05	180
48-AL1/8-ST1A	50/8	48,3	8,04	56,3	6	1	3,20	3,20	3,20	9,6	194,8	16,81	0,593 9	81 000	1,92E-05	220
70-AL1/11-ST1A	70/12	69,9	11,4	81,3	26	7	1,85	1,44	4,32	11,7	282,2	26,27	0,413 2	77 000	1,89E-05	290
94-AL1/22-ST1A	94/22	94,2	22,0	116,2	30	7	2,00	2,00	6,00	14,0	432,5	43,17	0,306 7	82 000	1,78E-05	350
94-AL1/15-ST1A	95/15	94,4	15,3	109,7	26	7	2,15	1,67	5,01	13,6	380,6	34,93	0,306 0	77 000	1,89E-05	350
97-AL1/34-ST1A	95/34	96,8	34,4	131,1	36	7	1,85	2,50	7,50	14,9	536,5	57,07	0,299 0	90 000	1,67E-05	360
122-AL1/20-ST1A	120/20	121,6	19,8	141,4	26	7	2,44	1,90	5,70	15,5	491,0	44,50	0,237 6	77 000	1,89E-05	410
119-AL1/42-ST1A	120/42	118,8	41,6	160,4	36	7	2,05	2,75	8,25	16,5	653,9	68,79	0,243 5	90 000	1,67E-05	415
128-AL1/30-ST1A	125/30	127,9	29,8	157,8	30	7	2,33	2,33	6,99	16,3	587,0	56,41	0,226 0	82 000	1,78E-05	425
149-AL1/24-ST1A	150/25	148,9	24,2	173,1	26	7	2,70	2,10	6,30	17,1	600,8	53,67	0,194 0	77 000	1,89E-05	470
150-AL1/53-ST1A	150/53	149,6	52,8	202,4	36	7	2,30	3,10	9,30	18,5	827,1	84,29	0,193 4	90 000	1,67E-05	480
172-AL1/40-ST1A	170/40	171,8	40,1	211,8	30	7	2,70	2,70	8,10	18,9	788,2	74,89	0,168 3	82 000	1,78E-05	515
184-AL1/30-ST1A	185/30	183,8	29,8	213,6	26	7	3,00	2,33	6,99	19,0	741,0	65,27	0,157 1	77 000	1,89E-05	535
209-AL1/34-ST1A	210/35	209,1	34,1	243,2	26	7	3,20	2,49	7,47	20,3	844,1	73,36	0,138 1	77 000	1,89E-05	590
212-AL1/49-ST1A	210/50	212,1	49,5	261,5	30	7	3,00	3,00	9,00	21,0	973,1	92,46	0,136 3	82 000	1,78E-05	610
243-AL1/39-ST1A	240/40	243,1	39,5	282,5	26	7	3,45	2,68	8,04	21,8	980,1	85,12	0,118 8	77 000	1,89E-05	640
238-AL1/82-ST1A	240/80	237,8	82,4	320,2	36	19	2,90	2,35	11,8	23,4	1 305,3	134,37	0,121 8	99 890	1,64E-05	645
257-AL1/60-ST1A	257/60	256,6	59,9	316,5	30	7	3,30	3,30	9,90	23,1	1 177,5	108,20	0,112 6	82 000	1,78E-05	665
304-AL1/49-ST1A	300/50	304,3	49,5	353,7	26	7	3,86	3,00	9,00	24,4	1 227,3	105,09	0,094 9	77 000	1,89E-05	740
341-AL1/109-ST1A	340/110	341,2	108,8	450,0	78	19	2,36	2,70	13,5	27,7	1 797,4	183,73	0,084 8	84 000	1,67E-05	800
382-AL1/49-ST1A	380/50	381,7	49,5	431,2	54	7	3,00	3,00	9,00	27,0	1 442,5	121,30	0,075 8	70 000	1,93E-05	840
449-AL1/39-ST1A	450/40	448,7	39,5	488,2	48	7	3,45	2,68	8,04	28,7	1 549,1	119,05	0,064 4	62 000	2,09E-05	920
562-AL1/49-ST1A	560/50	561,7	49,5	611,2	48	7	3,86	3,00	9,00	32,2	1 939,5	146,28	0,051 5	62 000	2,09E-05	1 040
635-AL1/117-ST1A	635/117	634,7	117,0	751,7	38+22	19	3,25/4,30	2,80	14,0	35,6	2 671,2	236,50	0,045 5	84 120	1,82E-05	1 106
679-AL1/86-ST1A	680/85	678,6	86,0	764,5	54	19	4,00	2,40	12,0	36,0	2 549,7	206,56	0,042 6	68 000	1,94E-05	1 150
1288-AL1/183-ST1A	1280/183	1288,2	182,8	1 471,1	100	19	4,05	3,50	17,5	49,9	5 001,6	407,20	0,022 5	79 260	1,90E-05	1 780

NOTE 1 Direction of lay of external layer is right-hand (Z).

NOTE 2 Values of final modulus of elasticity and coefficient of linear expansion of the conductor sizes listed in the Table are used in Austria.
Values for other conductor constructions may be calculated using the method given in IEC 61597.

NOTE 3 Guideline values of current carrying capacity are valid up to a frequency of 60 Hz, assuming a wind velocity of 0,6 m/s, the effect of solar radiation for Austria, an initial ambient temperature of 35 °C and a conductor temperature of 80 °C. For special applications, when there is no air turbulence, the values should be reduced by 30 %.