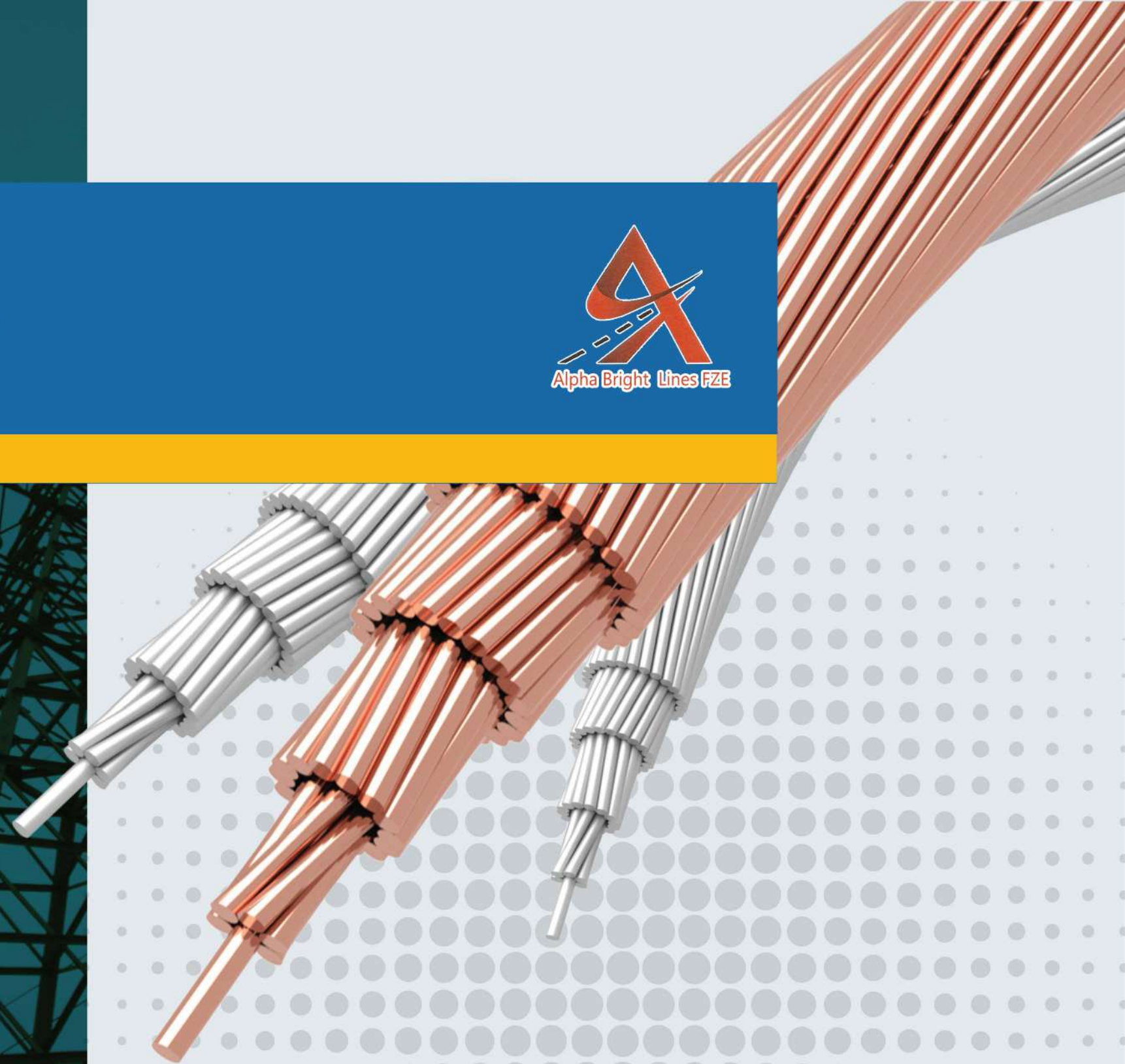


**ALPHA BRIGHT LINES FZE**

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## Bare Wire Production

Ø8 mm wire rod from the continuous casting plants is drawn down to Ø0.05 mm at cold working temperature successively at different drawing machines with annealing units in accordance with the standards and/or customer requirements.

**Size range:**  
 ø0.05-4.50 mm

**Related Standards:**  
 ASTM B1, ASTM B2, ASTM B3, EN 13601, EN 13602



## Tin & Nickel Plated Wire Production

### Tin Plating Process

Bare copper wires from Ø0,8 to 2,9 mm are electroplated with tin layer thickness acc. to international standards or special customer requirements. Tin plated wires are drawn down to 0,05 mm.

### Nickel Plating Process

Bare copper wires from Ø0,8 to 2,0 mm are electroplated with nickel layer thickness acc. to international standards or special customer requirements. Nickel layer thickness is generally mentioned as 2, 4, 7, 10 or 27% by weight.

**Tin Plated Wire**  
 Ø0,05 - 2,90 mm

**Nickel Plated Wire**  
 Ø0,10 - 2,00 mm



## Multi Wire Drawing

### Multiwire:

Bundles consisting of 3-24 wires are drawn down to Ø0,05-1,04 mm on spools as static or dynamic winding according to customer request.

### Related Standards:

ASTM B1, ASTM B3, ASTM B33, ASTM B355 EN 13602

### Fields of Application:

Stranded-bunched wires, ropes, data cables, renewable energy system cables and local area network (LAN) cables.

### Multiwire on Braider Bobbins:

Bare, tin or nickel plated multiwires are also supplied on different types of braider bobbins by using state of the art rewinding machines.

## Bunching

Bunched wires having cross sections from 0.055 to 300 mm<sup>2</sup> are produced by bunching a certain number of single end wires with certain diameters.

### Regular Bunch:

In regular bunch construction the respective wires do not have a defined position in the bunch cross section, the surface is irregular and the diameter and roundness varies.

### Concentric Bunched Conductors:

They have cross sections from 0,055 to 300 mm<sup>2</sup> and are produced by bunching a certain number of single end wires with certain diameters to obtain a defined geometric arrangement with smooth and regular surface.

### Concentric Geometric Arrangement of Concentric Bunched Conductors:

**Unilay Concentric:** There is one or more layers of wires (1+6, 1+6+12... etc.) around one single wire at the center. Each wire layer has the same lay length and direction.

**Unidirectional Concentric:** Lay directions of layers are the same but lay lengths increase from center.

**Equilay Concentric:** Lay lengths of layers are the same but lay directions are different.

**Conventional, True Concentric:** Lay directions of layers are different and lay lengths increase from center.

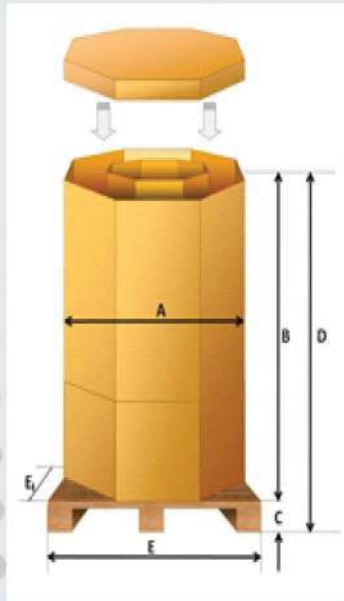
COILS

Carton Baskets

WIRE SIZE mm	50kg Coil	100kg Coil	200kg Coil	500kg Coil	1ton Coil	2ton Coil	0.5-1ton C.Coil	0.5-2ton U.Coil	2-3ton Coil	3-4ton Coil	0.5ton	1.50-1.75ton	1.8-2ton
0.05													
0.07													
0.1													
0.12													
0.15													
0.2													
0.25													
0.3													
0.4													
0.5													
0.6													
0.8											*		
1											**		
1.2	*										**	*	*
1.35	**	*									**	**	**
1.5	**	**									*	**	**
1.6	**	**										**	**
2	**	**										**	**
2.5	**	**	*									*	**
3	**	**	*										**
3.2			**										**
3.6			**	*									**
4.5			*	**	*								*
6.35			*	**	**	**	*	*					*
8			*	*	*	**	*	**					*
9.3			*	*	*	*	*	**					*
10			*	*	*	*	**	**					*
12			*	*	*	*	**	*					*
16			*	*	*	*	**	*					*
Trolley wire													
Flat wire			*										
OF 8									**				
ETP 8									*	**			
ETP 11									**				
ETP 16									**				
OF 12.5									**				
OF 20									**				
16x0.05-0.07mw													
16x0.10 mw													
16x0.13 mw													
24x0.15 mw													
24x0.18 mw													
24x0.20 mw													
24x0.50 mw													
16x1.04 mw													
0.05-1.00 mm <sup>2</sup>													
0.50 - 10.00 mm <sup>2</sup>													
10.0-50.0 mm <sup>2</sup>													
35-240mm <sup>2</sup> rope	*												

BARE COPPER SINGLE WIRE  
 ASTM B3, EN 13601, EN 13602

SIZE AWG	Nominal Diameter		Nominal CMA	Nominal DCR		Nominal Weight		Elongation min (%)
	(inc)	(mm)		(Ω/mft)	(Ω/km)	(lbs/mft)	(kg/km)	
44	0.002	0.05	3.9	2628.1	8.623	0.012	0.018	15
43	0.0022	0.056	4.9	2084.5	6.839	0.015	0.022	15
42	0.0025	0.063	6.2	1653.1	5.424	0.019	0.028	15
41	0.0028	0.071	7.8	1311.5	4.303	0.024	0.035	15
40	0.0031	0.08	9.9	1039.6	3.411	0.03	0.045	15
39	0.0035	0.09	12.5	824.7	2.706	0.038	0.056	15
38	0.004	0.101	15.7	654.1	2.146	0.048	0.071	20
37	0.0045	0.113	19.8	518.6	1.701	0.06	0.09	20
36	0.005	0.127	25	411.3	1.349	0.076	0.113	20
35	0.0056	0.143	31.5	326.1	1.07	0.096	0.143	20
34	0.0063	0.16	39.8	258.7	849	0.121	0.18	20
33	0.0071	0.18	50.1	205.1	673	0.152	0.227	20
32	0.008	0.202	63.2	162.7	534	0.192	0.286	20
31	0.0089	0.227	79.7	129	423	0.242	0.361	20
30	0.01	0.255	100.5	102.3	336	0.306	0.455	20
29	0.0113	0.286	126.7	81.1	266	0.385	0.573	20
28	0.0126	0.321	159.8	64.3	211	0.486	0.723	25
27	0.0142	0.361	201.5	51	167	0.613	0.912	25
26	0.0159	0.405	254.1	40.5	133	0.773	1.15	25
25	0.0179	0.455	320.4	32.1	105	0.974	1.45	25
24	0.0201	0.511	404.1	25.4	83	1.229	1.828	25
23	0.0226	0.573	509.5	20.2	66	1.549	2.305	25
22	0.0253	0.644	642.5	16	53	1.953	2.907	25
21	0.0285	0.723	810.1	12.7	42	2.463	3.665	25
20	0.032	0.812	1,021.40	10.1	33	3.106	4.621	25
19	0.0359	0.912	1,288.10	8	26	3.917	5.828	25
18	0.0403	1,024	1,624.10	6.3	21	4,938	7,348	25
17	0.0453	1,149	2,047.60	5	16	6,226	9,264	25
16	0.0508	1,291	2,582.70	4	13	7,853	11,685	25
15	0.0571	1,449	3,255.80	3.2	10	9.9	14,731	25
14	0.0641	1,628	4,106.20	2.5	8	12,485	18,578	25
13	0.072	1,828	5,178.20	2	7	15,745	23,428	25
12	0.0808	2,052	6,528.60	1.6	5	19,851	29,538	25
11	0.0907	2,305	8,233.70	1.2	4	25,035	37,252	25
10	0.1019	2,588	10,381.60	1	3	31,566	46,97	30
9	0.1144	2,906	13,091.90	0.8	3	39,807	59,232	30
8	0.1285	3,264	16,509.70	0.6	2	50,198	74,695	30
7	0.1443	3,665	20,816.70	0.5	2	63,294	94,182	30
6	0.162	4,115	26,250.50	0.4	1	79,816	118,766	30
5	0.1819	4,621	33,102.20	0.3	1	100,649	149,765	30
4	0.2043	5,189	41,738.50	0.2	1	126,908	188,839	30
3	0.2294	5,827	52,633.50	0.2	1	160,035	238,132	30
2	0.2576	6,544	66,368.10	0.2	1	201,795	300,271	30
1	0.2893	7,348	83,688.70	0.1	0	254,459	378,636	30
0	0.3249	8,252	105,560.00	0.1	0	320.96	477,589	31
Feb-00	0.3648	9,266	133,079.00	0.1	0	404,633	602,094	32
Mar-00	0.4096	10,404	167,772.20	0.1	0	510,119	759,057	33
Apr-00	0.46	11,684	211,600.00	0	0	643.38	957,349	34

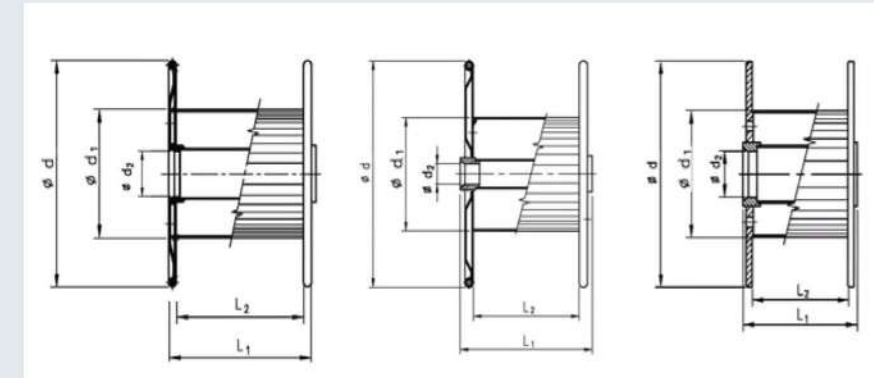


### Carton Baskets

Capacity	Basket dim. (mm)				Pallet dim. (mm)			Tare (kg)
	A	B	D	E	C	E	E1	
500 kg	650	1020	1135	650	115	620	650	13-16
1500-1750 kg	900	1500	1665	940	130	940	940	30-35
1800-2000 kg	1060	1420	1560	1100	130	1100	1100	40-50

Carton baskets are tightened with composite straps and shrink-wrapped.

Only 1800-2000 kg baskets are used for tin plated wires.



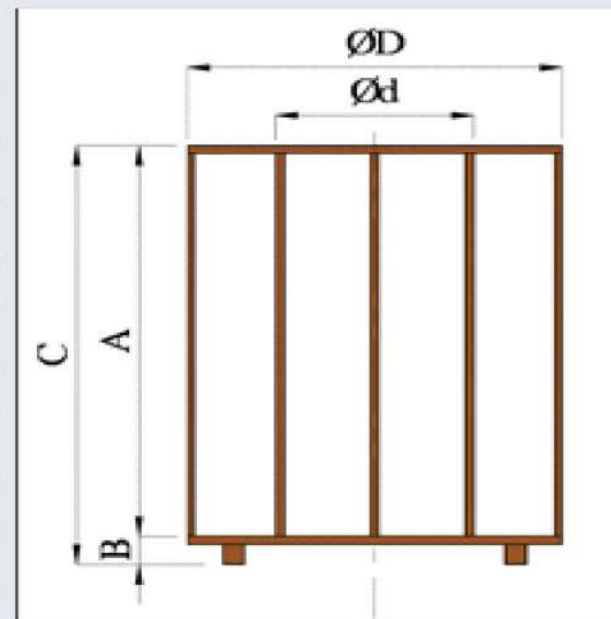
### Double Walled Steel Spools

SPOOL TYPE	Dimensions (mm)							NET WEIGHT (kg)	TARE (kg)
	d	d1	d2	L1	L2	L3	V (dm3)		
400	400	224	127	300	250	25	21	~125	37-45
560	560	315	127	400	355	22,5	67	~330	57-64
630	630	355	127	450	400	25	85	~515	67-74
1250	1250	630	80	800	650	55	570	~2500	195-210



### Steel Construction Basket

Capacity	Basket dim. (mm)					Tare (kg)
	D	d	A	B	C	
500 kg	650	350	1250	120	1370	75-90
1500-1750 kg	950	440	1720	120	1820	181-240
1800-2000 kg	1100	600	1553	120	1670	189-226



### Single Walled Spools

560	560	315	127	355	475	60	67	~330	40-45
630	630	315	127	400	475	37,5	93,5	~515	45-50

### Massive Steel Spools

400	400	224	127	280	250	15	21	~125	37-45
560	560	315	127	395	355	20	67	~330	57-60
800	800	450	127	540	500	20	200	~1000	180-195

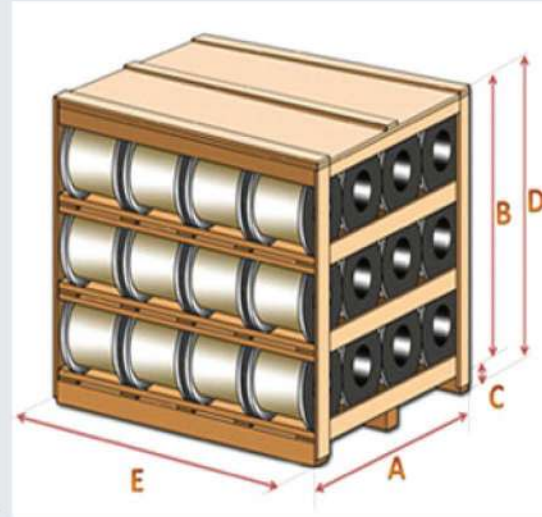


### Wooden Spools

SPOOL TYPE	Dimensions (mm)						NET WEIGHT (kg)	TARE (kg)
	d	d1	d2	L1	L2	L3		
630	630	280	127	430	380	20	300-450	~28
800	800	460	127	530	470	30	700-800	~30
1250	1250	700	80	580	460	60	1500-2500	~200

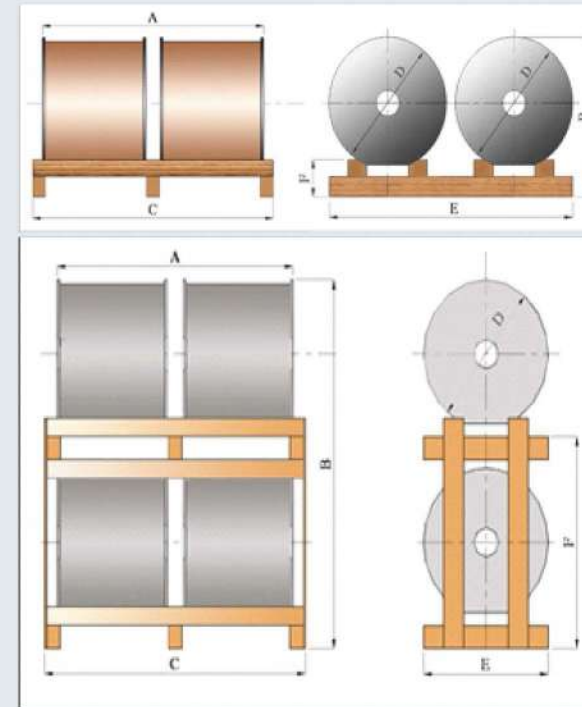
### Stacked Wooden Pallets

Spool Type	Basket dim. (mm)					Number of spools	NET WEIGHT (kg)	Tare (kg)
	A	B	C	D	E			
160	1000	790	110	900	930	120	~1150	98-107
200	1000	720	110	830	930	60	~800	97,5-101
250	1000	850	110	960	930	48	~1250	118-130



### Wooden Pallets for Vertical Position of Spools

Spool Type	Basket dim. (mm)					Number of spools	NET WEIGHT (kg)	Tare (kg)
	A	B	C	D	E			
400	400	143	543	400	900*950	4	~300	150-170
560	400	143	543	560	680x680	1	~329	55-60
630	450	143	593	630	680x680	1	~500	67-74
800	540	155	695	800	850x850	1	~820	180-195



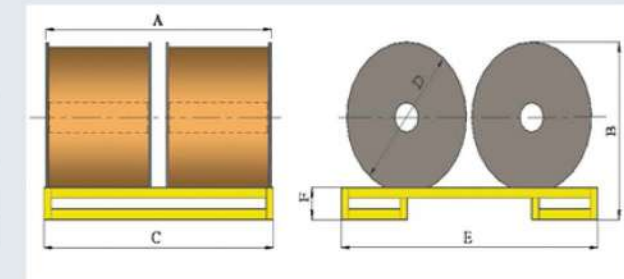
### Wooden Pallets for Horizontal Position of Spools

Spool Type	Basket dim. (mm)					Number of spools	NET WEIGHT (kg)	Tare (kg)
	A	B	C	D	E			
400(Single)	600	510	1000	530	185	3	~250	130-150
400(Single)	900	510	1000	900	160	6	~500	300-315
560(Single)	880	670	900	600	190	2	~660	100-120
560(Double)	880	1400	900	600	840	4	~1300	200-240
560P*(Double)	730	1450	870	610	1210	4	~700	200-240
560P*(Single)	1100	690	1140	1160	160	6	~1050	235-265
560P*(Double)	1100	2360	1140	1210	1210	12	~2100	270-285
630(Single)	920	740	1000	700	190	2	~1000	120-144
630(Double)	920	1540	1000	700	910	4	~1550	240-288

\* plastic

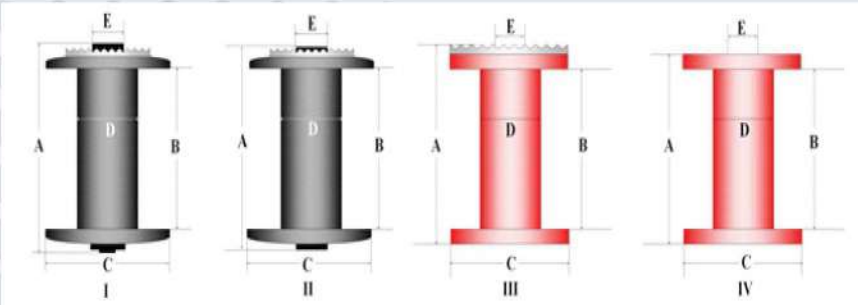
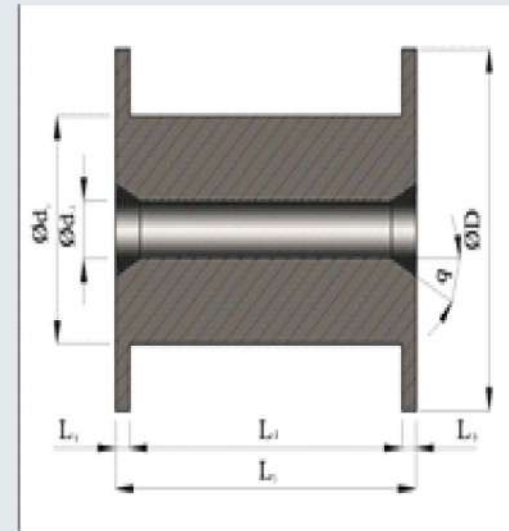
### Steel Pallets for Horizontal Position of Spools

Spool Type	Basket dim. (mm)					Number of spools	NET WEIGHT (kg)	Tare (kg)
	A	B	C	D	E			
630(Single)	775	780	960	675	200	2	~750	184-194
630(Single)	775	780	960	1330	200	4	~1500	366-386



## Plastic Spools

Spool Type	Basket dim. (mm)							NET WEIGHT (kg)	TARE (kg)
	D	d1	d2	L1	L2	L3	b		
100	100	63	16	100	80	10	30	~2	0,125
160	160	100	22-95	160	128	16	30	~9	0,35-0,28
200	200	125	22-76-100	200	160	20	30	~17	0,60-0,54
250	250	160	22-76,2-102-127	200	160	20	30	~25	1,11-1,35
400	400	250	127	260	300	20	30	~110	5
560	560	360	127	356	280	40	30	~200	13,5
630	630	400	127	350	450	50	30	~250	17



## Braider Bobbin Dimensions

EXPLANATION	I	II	III	III	IV	IV
	SPIRKA	SPIRKA	SHORT*	LONG*	SHORT*	LONG*
BOBBIN TYPE	S2	S3	WSN 01	WSN 02		
CARRIER			16	24	16	24
SNAP RING	YES	YES	YES	YES	NO	NO
A (mm)	100	100	82	116	82,2	116,2
B (mm)	70	80	69	104	71,2	105,7
C (mm)	75	80	66	66	65,8	65,4
D (mm)	23	23	34	34	35,3	34,4
E (mm)	10	10	16,5	16,5	16,8	16,4
TARE (gr)	118	126/110	90	112	55,0-75,0	68,0/87,0
GROSS WEIGHT (gr)	1350-1450	1800-1850	850,0-900,0	1200,0-1250,0	850,0-900,0	1200,0-1250,0

\* Wardwell



### Reel Handling - Packing

We, always desire to provide high quality service not only in our products but also in our customer relations. Giving you the best service for both the use of our products and the possible problems that can be confronted during the use of our products is our priority. In order to give you satisfying service and prevent the possible problems, we recommend you to take below mentioned points into consideration.

Packing and usage specifications of the products (whether the spool would be used vertical or horizontal) must be defined by the customer in order to provide the customer with appropriate packing and the position of spools.

Adequate equipment must be used while unloading and transferring the products. e.g. forklifts, cranes etc. Do not touch the naked products with bare hands and avoid using of improper tilting equipment. While handling plastic spools, pay attention to carry the spool by grabbing from each sides of the spool in order to avoid local piling of the wire. Carrying the spool with one hand can cause the flange to break harming the bearer and damaging the material.

Do not rock or drop the spools.

The packaging must be checked before use of product in order to detect any damaged regions on the product. The products must be stored in an environment free of humidity, dust and dirt.

Keep the spools from greasy and corrosive media. Protect the spools against shocks even when empty. Do not tear up the packaging until you use the product. While tilting the loaded spool, use tilting apparatus to avoid damaging of the material and local piling of wire that can be caused by uncontrolled tilting. Try to prevent any factor that can damage the wire in your production line.

Partially used products must be protected from humidity, dust and dirt by covering the product with a protective material such as nylon or carton. Do not rock the basket during transportation and use. Carry the basket in vertical position. Care should be taken to protect nylon cover from tearing.

Do not keep the basket in greasy and humid medium.

Do not use any crane or span during loading and unloading the basket into/from trucks. Use lift truck. Take off the strip and nylon cover just before use.

Pay attention to keep the symmetry axis of the basket and the point of entrance to the pay-off on the same line while positioning the basket for pay-off. The distance between the basket and pay-off must be at least 2,5 meters.

IN OPEN SIDED WAREHOUSES ONCE THE PACKAGING IS OPENED, USE COPPER PRODUCT IN MAXIMUM 4 WEEKS, OTHERWISE THE PRODUCT MAY BE OXIDIZED.

In case of reclaims;

The QC number of the product which is being reclaimed must be stated.

In order to understand the problem occurred in the use of product, photographs demonstrating the process in which the product is used, should be taken if possible.

If the product is dispatched with a damaged packaging the photos showing the damaged packaging should be taken.

If the problem is local, the photos of the problematic regions on the product should be taken.

To let us understand what kind of problem had been confronted, try to get wire break samples or samples from the problematic regions of the product.

While returning problematic products try to avoid any further damaging of the product.