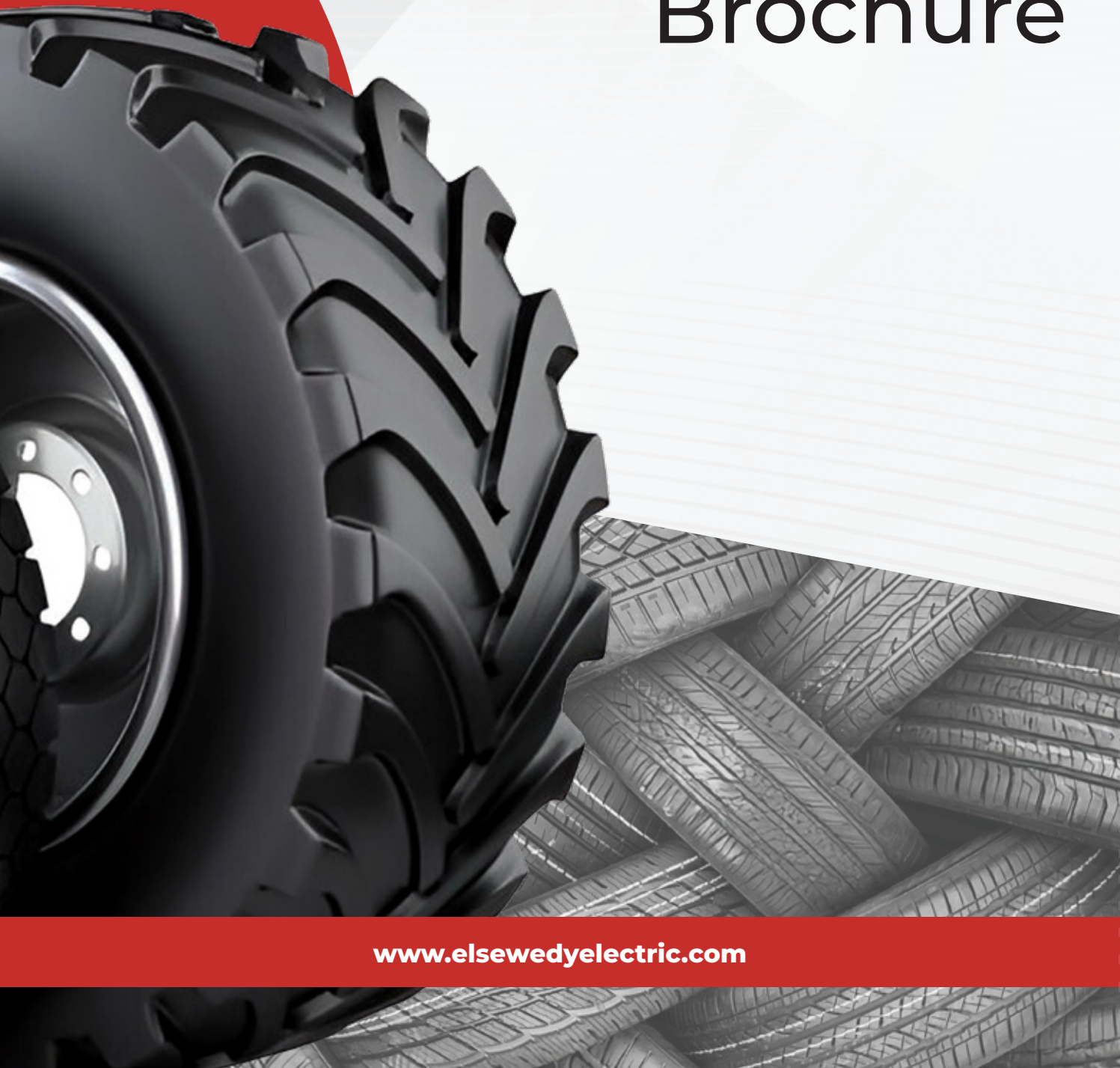




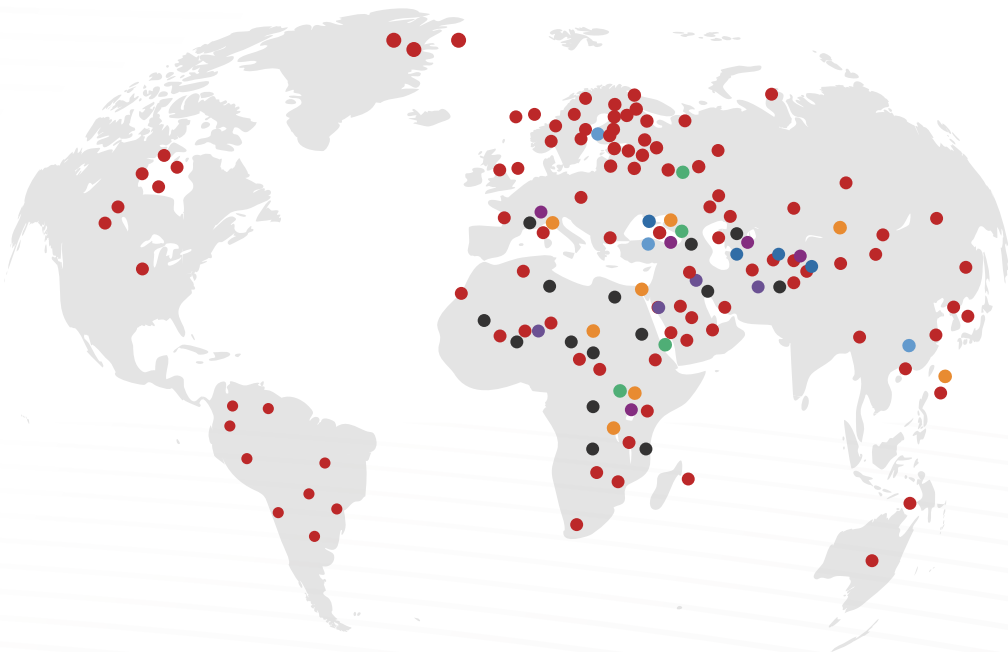
Tire Bead Wire Brochure



www.elsewedyelectric.com

ELSEWEDY ELECTRIC, a leading industrial force with over 18,000 employees and USD 4.8 billion in revenue (2022), empowers sustainable development through comprehensive infrastructure solutions. Our vast portfolio spans five key business sectors and encompasses everything from wire, cable, steel products and accessories to transformers, busways, motors, and fiberglass poles. We have also installed over 100 million electric meters, showcasing our expertise in efficient energy management. Our global presence is solidified through 31 production facilities in 19 countries, with exports reaching over 110 countries worldwide. We offer an all-encompassing Engineering, Procurement & Construction (EPC) service, delivering the most intricate turnkey projects with exceptional efficiency. As an unwavering advocate for sustainable energy solutions, ELSEWEDY ELECTRIC drives decarbonization, digitalization, and a sustainable future globally. Our talent-centric approach fuels our growth, empowering businesses and communities wherever we operate. We equip our customers with the tools to embrace digitalization and navigate the ever-changing world, remaining committed to exceeding customer expectations while protecting the environment.

Global Presence



- Wire, Cable, & Accessories
- Electrical Products
- Meters
- Transformer
- Telecommunication
- Renewable Energy
- Project Development
- Export

 85+ Years Of Evolution	 19K Employees	 31 Production Facilities	 48 International Offices
 19 Operation Countries	 20% Engineers	 5B Revenue in USD	 110 Export Countries

About Elsewedy Steel

Since 2006, Elsewedy Steel has provided a wide range of reinforcement solutions to the Egyptian market. Our product line complies with international standards and offers galvanized steel wires, pre-stressed concrete strands and pre-stressed concrete wires and bead wire. Currently, we trade and export to more than 26 nations worldwide.

Elsewedy Steel follows explicit quality control procedures of inspection, starting from raw material to manufacturing and packaging processes, through a series of high technology on-line instruments, followed by laboratory tests, such as geometrical, zinc and electrical tests, and abiding to the international standards. With a 90,000 m2 production facility and fully automated control systems utilizing cutting edge technology, we offer our customers the most effective and efficient solutions.

Bead Wire Definition

Bead wire is an essential reinforced material for radial and conventional tires, this product prevents tires from changing shape due to air pressure or external forces. Elsewedy Steel can meet the highest requirements of customers in performance indicators such as strength and adhesion, and are widely used in the rubber industry and other wire industries.

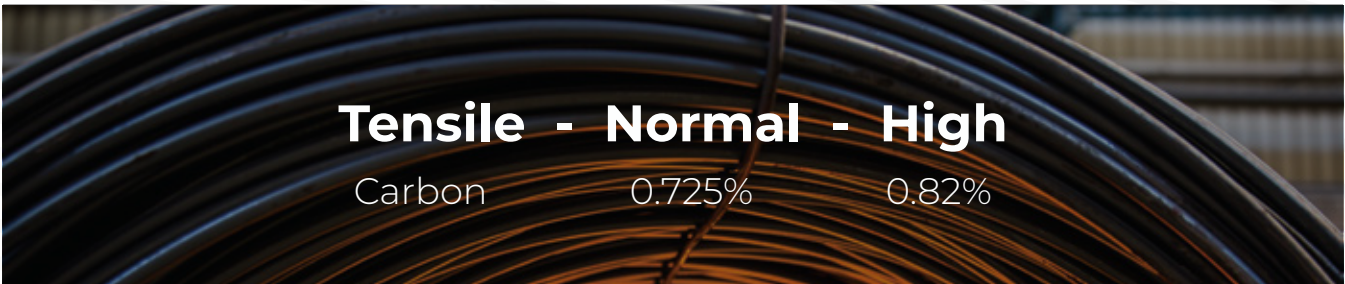


Raw Material: Wire Rod

The Wire rod is procured from renowned manufacturers with highest reput in the market.

Name	C	Si	Mn	P	S	Cr
C60	0.55 - 0.65	0.15 - 0.30	0.40 - 0.80	max. 0.03	max. 0.03	
C70	0.65 - 0.75	0.15 - 0.30	0.40 - 0.80	max. 0.03	max. 0.03	
C80	0.75 - 0.88	0.15 - 0.30	0.40 - 0.80	max. 0.03	max. 0.03	

Average steel composition:



Bead Wire Physical and mechanical Properties:

Wire Diameters	Breaking Load	Elongation	Torsion
Bend or Flexion	Straightness	Residual Torsion	Wire Cast/Helix
Coating Weight	Coating Composition		

Diameter

The **arithmetic average** of the maximum and minimum thickness of the wire measured in the same place **and expressed in millimetres**

Breaking force

The maximum force which a test specimen can support during a tensile test of loading to break, expressed in Newton.

Tensile strength

The breaking load or force of a wire per unit of cross-sectional area of the unstrained specimen, expressed in Newton per square millimetre or Megapascal.

Elongation at break

The increase in length of a test specimen which results from subjecting it to the breaking force in a tensile test expressed as a percentage of the initial length.

Arc Height

Arc Height is the amount (in mm) of bending a bead wire sample has when placed on 2 support points with an interdistance of 620 mm.

Torsions

The number of revolutions made by a specific length of wire when twisted until rupture on its own axis in one direction.

Coating

MASS OF COATING

The quantity of the covering layer applied to the surface of the wire expressed in grams per kg of wire surface.



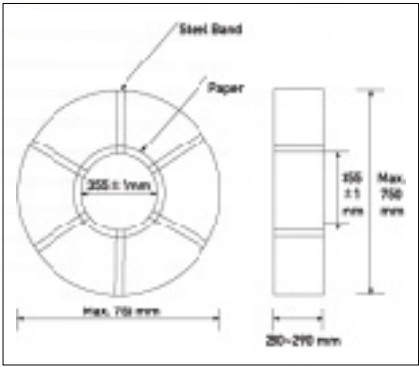
Applications

Used in manufacturing:

Regular and radial
tires for cars, bikes
and trucks
Air supports

High-pressure hose

Flexible duct



Standard Units					
		Reelless Coil	Metal Reel	Metal Reel	Metal Reel
		C1000	BS 450/6	BS 900	BS 1150
Diameter of Flange	mm		760	760	760
Diameter of Barrel	mm		437	355	355
Overall Width	mm		385	345	385
Traverse	mm	280	320	280	320
Bore	mm		70.5	70.5 or 33	70.5 or 33
Number x Diameter of Drivehole	mm	2/35	2/35	2/20+2/35	2/20 + 2/35
Distance Drivehole/ Bore	mm		115	63.5 + 115	63.5 + 115
Overall Diameter	mm	720	-	-	-
Core Diameter	mm	355	-	-	-
Approx. Wire Capacity	kg	445	445	450	520

Low Tin: Sn: 1-3 % , Cu: 99-97 %
High Tin: Sn: 6-12% , Cu: 94-88 %

Coating composition as per customer requirement can also be manufactured.

Standard Packing Units							
Reels			Dimensions	mm	mm	mm	mm
Type	Number	Protection	Length	Width	Height	Approx.	Approx.
			(mm)	(mm)	(mm)	Tare (kg)	Net (kg)
C 1000	2	Cardboard	765	765	730	28	890
C 1000	2	Polyethylene	765	765	740	30	890
900	3	Polyethylene	1160	760	150	306	450
1150	3	Polyethylene	1280	760	150	327	520

HANDSAMPLES

Upon request, a number of samples are provided. Per reel, 10 pieces of wire, each 450 mm long, are put in a plastic bag with desiccant, which goes with the shipment.

STORAGE CONDITIONS

The packing units can be stored for six months, inside a warehouse where the combination of temperature and humidity does not lead to condensation. It is recommended to condition the units at ambient temperature before they are opened.

All reelless coils are provided with desiccant.

Mounting of Reelless Coil - Method

1

Lift the reelless coil with the appropriate device.

2

Lower the coil onto one of the remountable flanges.

3

Remove the lifting device & place the other flange on top of the coil.

4

Tighten the assembly by means of a wrench.

5

Tilt the table until the spool is in upright position.

Dimensions of the Collapsible Reel	
Diameter of Flange (mm)	765
Overall Width (mm)	339
Bore (mm)	33 or 70.5
Number x Diameter of Drivehole (mm)	40
Distance Drivehole/ Bore (mm)	115

ORDERING PROCEDURE

Inquiries or orders of bead wires must specify:

Dimensions and Type of Wire

Type of Coating

Type of Reel

Total Quantity

Customer specific Requirements if any

National/International Standard to be followed

RETURN OF PACKING

Spools and Pallets (cages) are to be returned to the plant of origin.



Bead Wire

Technical Specifications



Technical Specifications				
Wire Diameter (mm)	Tolerance (mm)	Tensile Type	Tensile Class (N/mm²)	Breaking Force Minimum(N)
0.890	+/- 0.02	NT	≥ 2100	≥ 1200
0.965	+/- 0.02	NT	≥ 2000	≥ 1350
1.420	+/- 0.02	NT	≥ 1950	≥ 2880
1.550	+/- 0.02	NT	≥ 2000	≥ 3525
1.650	+/- 0.02	NT	≥ 1850	≥ 3680
1.820	+/- 0.03	NT	≥ 1650	≥ 3970
2.000	+/- 0.03	NT	≥ 1800	≥ 5260
3.000	+/- 0.03	NT	≥ 1750	≥ 11000
0.890	+/- 0.02	HT	≥ 2350	≥ 1350
0.965	+/- 0.02	HT	≥ 2250	≥ 1530
1.295	+/- 0.02	HT	≥ 2250	≥ 2795
1.550	+/- 0.02	HT	≥ 2200	≥ 3900
1.600	+/- 0.02	HT	≥ 2200	≥ 4150
2.000	+/- 0.03	HT	≥ 2100	≥ 6205
2.200	+/- 0.03	HT	≥ 2100	≥ 6864

Sizes and Tensile strengths as per customer requirement can also be manufactured

ELSEWEDY Steel is able to supply any bead wire diameter between 0.7 and 3 mm
Bronze coating from 1 to 12% Sn.



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