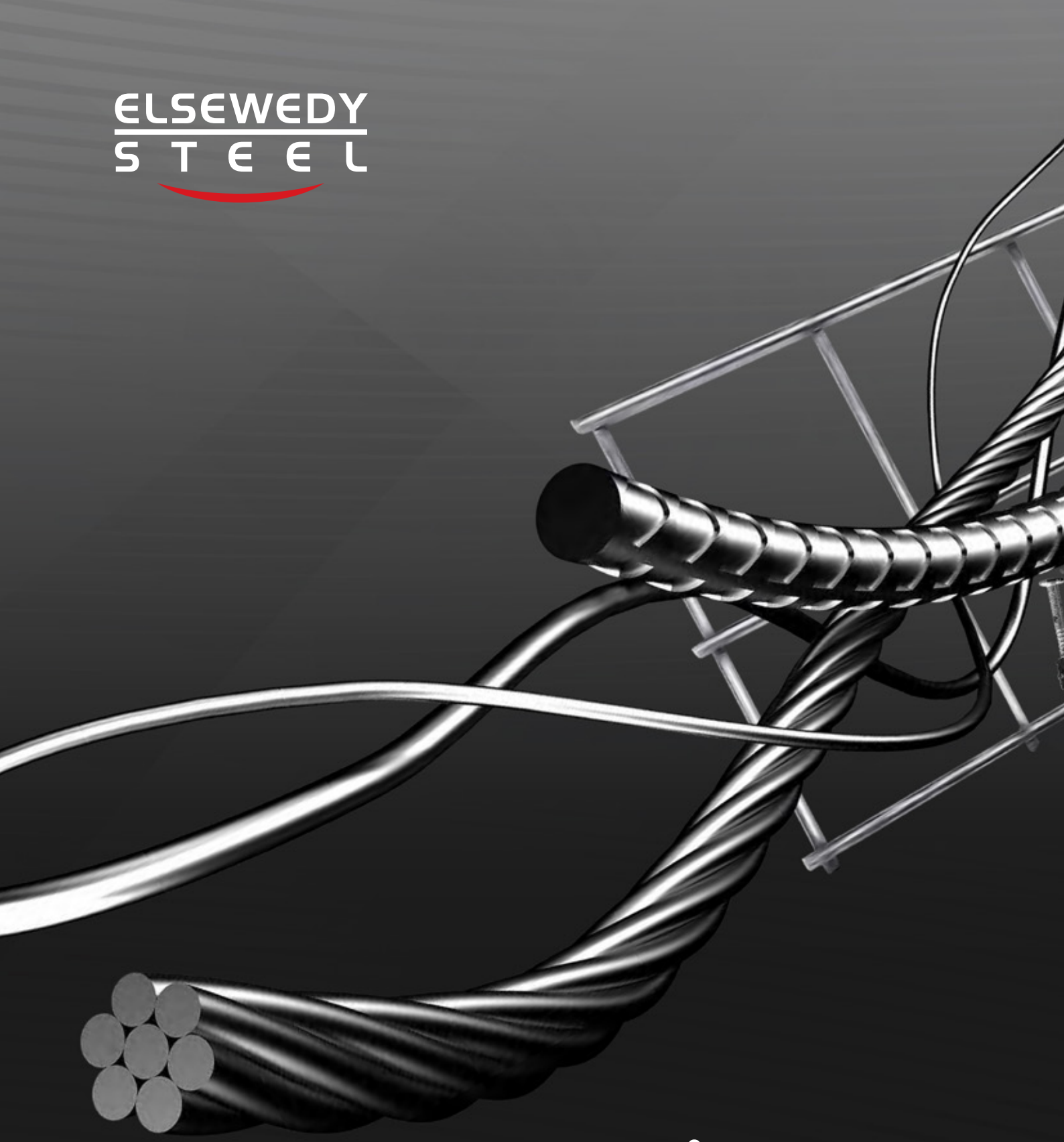
ELSEWEDY STEEL



Leading
With Strength

www.elsewedyelectric.com

ABOUT ELSEWEDY ELECTRIC

A global leader that has evolved from a local manufacturer of electrical products into an integrated infrastructure solutions provider; with over 19,000 employees and with recorded revenues of more than USD 5 Billion in 2023. We Operate in five key business sectors: Wire, Cable & Accessories, Electrical Products, Engineering & Construction, Digital Solutions, and Infrastructure Investments. With a strong presence in 19 different countries, 31 production facilities spread across African and Asian countries including Egypt, Algeria, KSA, Qatar, Indonesia, Pakistan, and Tanzania. We export a wide range of high-end products to over 110 countries worldwide. At the heart of our approach is an all-in-one integrated Engineering, Procurement & Construction (EPC) service, enabling us to deliver the most complex turnkey projects on time and with the highest efficiency.

WE OPERATE IN FIVE KEY BUSINESS SECTORS

- WIRE, CABLE & ACCESSORIES
- ELECTRICAL PRODUCTS
- ENGINEERING & CONSTRUCTION
- DIGITAL SOLUTIONS
- INFRASTRUCTURE INVESTMENTS

ABOUT ELSEWEDY STEEL

Founded in 2006, Elsewedy Steel, subsidiary of Elsewedy Electric, is a leader in the steel downstream and wire drawing industry, providing specialized reinforcement solutions to markets worldwide. Our product line is dedicated to delivering superior quality and innovation, offering an array of products including steel drawn wires, pre-stressed concrete strands and wires, tire bead wire, and more—all crafted to meet international standards.

Our two state-of-the-art facilities cover 90,000 m², with an annual production capacity of 200,000 metric tons. Our commitment to excellence is fueled by innovation and precision, supported by cutting-edge, semi-automated technologies within our production processes. With a dedicated team of 350 professionals, we serve a wide range of industries, including construction, transportation, automotive, and more, delivering solutions that drive progress and build stronger infrastructures. At Elsewedy Steel, we don't just produce steel products; we forge the foundation for a resilient, sustainable future—*leading with strength* every step of the way.

PRODUCT RANGE

PRE-STRESSED CONCRETE STEEL STRANDS (PC STRANDS)

Product Overview

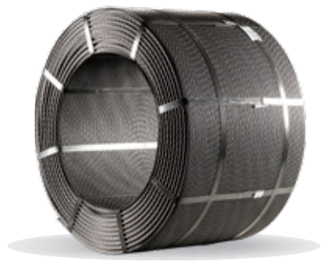
- It is a 7 wire steel strand produced from hot-rolled, high carbon steel wire rods, which after cleaning & descaling is drawn into wire, fabricated into multi-wire strand & thermally stress-relieved.
- Used to “pre-stress” concrete structural members to improve their ability to withstand loads.
- Can be dry or oiled as per the customer’s requirements.

Product Applications

Commercials buildings, bridges & tunnels, tanks & silos and parking buildings.

Advantages of Pre-stressed Slabs

- Larger slab spans allowing fewer columns.
- Savings in materials (concrete and steel) & shorter lead times due to fast installation.
- Significant reduction in building weight versus a conventional concrete building.
- Reducing the occurrence of cracks.
- Allowing extremely long span bridges to be constructed without the use of temporary intermediate supports. This minimizes the impact on the environment and avoids disruption to water or road traffic below.



ASTM A416M-2012 Low Relaxation

Grade	Nominal Diameter , d		Tolerance on Diameter	Area of Strand		Weight of Strand		Tensile Strength	Minimum Braking Load	Minimum Load at 1% Extension	Lay Length
-	mm	in	mm	mm²	in²	kg/ 1000m	lb/ 1000ft	N/mm²	KN	KN	mm
250	7.90	5/16	+/-0,40	37	0.058	294	197	1,725	64.5	58.1	(12 - 16) xd
	9.50	3/8	+/-0,40	52	0.080	405	272	1,725	89.0	80.1	
	11.10	7/16	+/-0,40	69.70	0.108	548	367	1,725	120	108.1	
	12.70	1/2	+/-0,40	92.90	0.144	730	490	1,725	160	144.1	
	15.20	6/10	+/-0,40	139	0.216	1090	737	1,725	240	216.2	
270	9.53	3/8	+0,65/-0,15	55	0.085	430	290	1,860	102	92.1	
	11.10	7/16	+0,65/-0,15	74.2	0.115	580	390	1,860	138	124.1	
	12.70	1/2	+0,65/-0,15	98.70	0.153	780	520	1,860	184	165.3	
	13.20	1/2 S	+0,65/-0,15	108	0.167	840	570	1,860	200	180.1	
	14.30	9/16	+0,65/-0,15	124	0.192	970	650	1,860	230	207.0	
	15.20	6/10	+0,65/-0,15	140	0.217	1100	740	1,860	261	234.6	
	15.70	6/10 S	+0,65/-0,15	150	0.231	1200	780	1,860	279	251.4	

- Maximum relaxation loss after 1000 hrs ≤ 2.5 % when initial load is at 70% of specified breaking load, and 3.5% when initial load is at 80% of specified breaking load.
- Minimum elongation, LO=610 mm: 3.5%.

BS5896-2012 Relaxation Class 2

Steel Name	Steel Number	Diameter, d	Tensile Strength	Cross Sectional Area	Mass per meter	Deviation on Mass per meter	Characteristic Value of Max. Force Fm	Maximum Value of Max. Force	Fp 0,1%	Curvature of Strand	Lay Length mm
-	-	mm	N/mm²	mm²	g/m	%	KN	KN	KN		mm
Y1670S7	1.1364	15.2	1,670	139	1086	± 2	232	267	204	Max Bow Height=25mm /1meter	(14 - 18)xd
Y1770S7	1.1365	9.3	1,770	52	406.1	± 2	92	106	81		
Y1770S7	1.1365	11.0	1,770	70	546.7	± 2	124	143	109		
Y1770S7	1.1365	12.5	1,770	93	726.3	± 2	165	190	145		
Y1770S7	1.1365	12.9	1,770	100	781	± 2	177	204	156		
Y1770S7	1.1365	15.7	1,770	150	1172	± 2	266	306	234		
Y1860S7	1.1366	9.3	1,860	52	406.1	± 2	96.7	111	85.1		
Y1860S7	1.1366	9.6	1,860	55	429.6	± 2	102	117	89.8		
Y1860S7	1.1366	11.0	1,860	70	546.7	± 2	130	150	114		
Y1860S7	1.1366	12.5	1,860	93	726.3	± 2	173	199	152		
Y1860S7	1.1366	12.9	1,860	100	781	± 2	186	214	164		
Y1860S7	1.1366	15.2	1,860	139	1086	± 2	259	298	228		
Y1860S7	1.1366	15.7	1,860	150	1172	± 2	279	321	246		

- Max relaxation loss after 1000 hrs ≤ 2,5 % when initial load is at 70% of specified breaking load, 3,5% when initial load at 80% of specified breaking load.
- The diameter of central wire shall be at least 3% greater than the diameter of outer helical wire.
- Minimum elongation, LO=500 mm: 3.5%.

prEN10138 - 3:2011

Steel Name	Steel Number	Diameter, d	Tensile Strength	Cross Sectional Area	Mass per meter	Deviation on Mass per meter	Characteristic Value of Max. Force Fm	Maximum Value of Max. Force Fm	Fp 0,1%	Curvature of Strand	Lay Length mm
-	-	mm	N/mm²	mm²	g/m	%	KN	KN	KN		mm
Y1770S7	1.1365	9.3	1770	52	406.1	± 2	92	106	81	Max bow height= 25mm /1meter	(14 -18)xd
Y1770S7	1.1365	12.5	1770	93	726.3	± 2	165	190	145		
Y1860S7	1.1366	9.3	1860	52	406.1	± 2	96.7	111	85.1		
Y1860S7	1.1366	9.6	1860	55	429.6	± 2	102	117	89.8		
Y1860S7	1.1366	12.5	1860	93	726.3	± 2	173	199	152		
Y1860S7	1.1366	12.9	1860	100	781	± 2	186	214	164		
Y1860S7	1.1366	15.2	1860	139	1086	± 2	259	298	228		
Y1860S7	1.1366	15.7	1860	150	1172	± 2	279	321	246		

- The diameter of central wire shall be at least 3% greater than the diameter of outer helical wire.
- Minimum elongation, LO=500 mm: 3.5%

Packaging Dimensions

Inner Diameter = (800) mm. **Outer Diameter =** (1000 – 1500) mm. **Width =** (750) mm.
Weight = (3 – 4) Tons.

PRODUCT RANGE

PRE-STRESSED CONCRETE WIRES (PC WIRES)

Specifications

- Pre-stressed concrete wire (PC wire) is a high-grade, low-relaxation steel wire that is primarily used to counter the low- tension qualities inherent in concrete.
- The process involves the continuous heating and stretching of a cold drawn high-carbon steel wire, to produce a finished product with a much improved yield stress and greatly reduced load relaxation.

Applications

- Concrete pipes
- Railway track sleepers
- Concrete floor beams
- Precast hollow core floor slabs

Product Name: **PCW**
Description: Prestressed concrete wire
Size (mm): 4, 5, 6, 7, 8, 9.40
Surface: Smooth or indented
Standards: BS 5896 - ASTM A421 - En 10138-2 - Customer specification
Relaxation: Low relaxation

PCW						
Diameter (mm)	Tensile strength (KN)	Weight/m (g/m)	Cross section area (mm^2)	Permissible deviation in W/m (%)	Braking load (KN)	Min. Elongation (%)
4	1860	98.4	12.6	±2	26.9	3.5
5	1860	153.1	19.6	±2	42	3.5
6	1770	221	28.3	±2	57.6	3.5
7	1770	300.7	38.5	±2	78.3	3.5
8	1670	392.8	50.3	±2	96.6	3.5
9.4	1570	542	69.4	±2	109	3.5

PRODUCT RANGE

PC BARS

We offer high carbon steel wire, cold-drawn, with a plain surface or indented, treated to eliminate stresses (Thermomechanical), straightened and cut to length into Bars, threaded and milled at the ends from diameter 7 mm up to 9.4 mm to meet your project's specific needs. Our PC bars are manufactured to meet the highest standards for strength, durability, and performance.

Strength:

Made from high-quality steel, our PC Bars boast a tensile strength up to 1770 Mega Pascals (MPa), making them ideal for applications requiring superior load-bearing capacity.

Quality:

We adhere to rigorous international standards including pr EN 10138-2, ASTM A416, and BS 5896, ensuring consistent quality and reliability in every PC Bar we produce.

Key Features and Benefits:

High Tensile Strength
Withstands significant pulling forces without breaking

Guaranteed Minimum Yield Strength
Ensures the bar can deform under pressure without permanent damage

Excellent Ductility
Bends easily without cracking, allowing for flexibility in various applications

Fatigue Resistance
Withstands repeated stress without failure, to be suitable for long-term use

Corrosion Resistant
C1 grade provides enhanced protection against rust

Surface Type
Smooth or indented

Surface Type
Threaded and milled at the ends

Applications:

- Railway Sleepers.
- Reinforcement applications.

PC Bars									
Standard	Diameter mm	Cross section Area mm^2	Weight g/m	Tensile Strength N/mm^2	Characteristic value of maximum force KN	Maximum value of maximum force KN	Characteristic value of 0,1 % proof force KN	Minimum Elongation %	Maximum curvature mm/1m
prEN10138-2	7,00	38,5	300,7	1770	68,1	78,3	59,9	3,5	2,5
	8,00	50,3	393	1670	84	96,6	73,9		
	9,00	63,6	469,70	1570	99,9	115	87		
	9,40	69,4	542,00	1570	109	125	95		

PRODUCT RANGE
TIRE BEAD WIRE

Tire 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.

Applications

Radial and bias-ply tires for cars, trucks, aircraft, and other vehicles

High-pressure hose

Flexible duct

Standard Units

		Reelles 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.

TIRE BEAD WIRE
TECHNICAL SPECIFICATION

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.

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.

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.

PRODUCT RANGE

DRAWN WIRES

LOW CARBON GALVANIZED STEEL WIRES

Application
Armoring cables, barbed wires, mesh wires and all commercial applications.

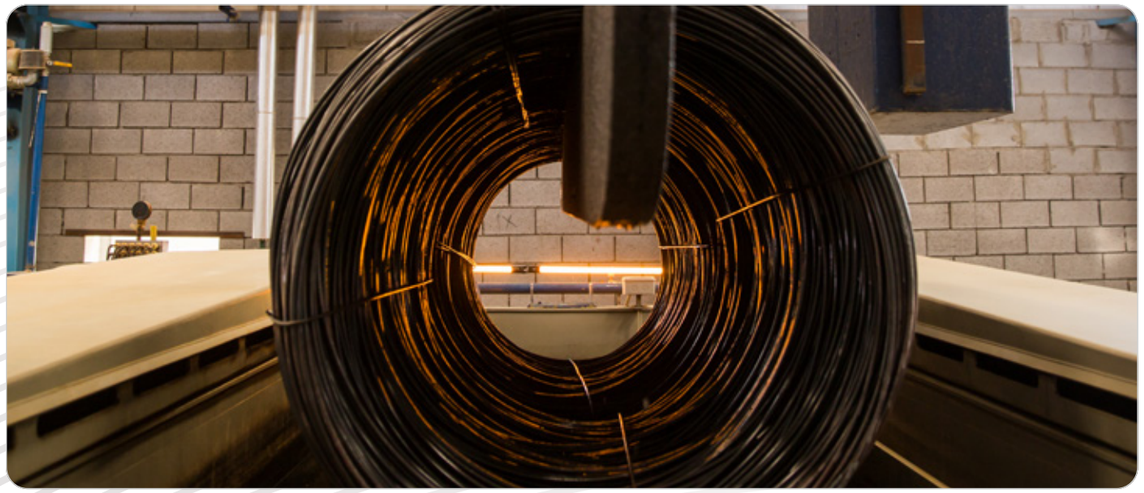
Wires Diameter Range
0.80 to 5.00 mm.

Applicable Standards
BS EN 10244-2 , 10257-1 , BS 5467 , ASTM A641 or as per customer requirements.

Packaging
Air coil (seaworthy packing for export) or as per customer requirements.

Technical Specifications

Diameter (mm)	Tolerance (mm)	Minimum Zinc Weight for Cables application (g / m²)	Minimum Zinc Weight for commercial market (g / m²)
0.80	+/- 0.035	145	50
0.90	+/- 0.035	155	55
1.25	+/- 0.040	180	65
1.60	+/- 0.045	195	70
2.00	+/- 0.050	215	80
2.50	+/- 0.060	245	95
3.15	+/- 0.070	255	100
4.00	+/- 0.080	275	110
5.00	+/- 0.080	280	110



PRODUCT RANGE

DRAWN WIRES

HIGH CARBON GALVANIZED STEEL WIRES & STRANDS

Application
Steel core for A.C.S.R in “Overhead Power Transmission”, stay wires, earth wires, damper wires “Vibration Damper” and all commercial applications.

Wires Diameter Range
1.30 to 5.00 mm.

Strand Composition
1 , 2 , 3 , 4 , 7 & 19 wires constructions are applicable.

Surface Quality
Hot dipped galvanized and greased.

Applicable Standards
IEC 63248 , IEC 60888 & IEC 61089 / BS EN 50189 & BS EN 50182 / ASTM B 498 & ASTM B 232 / ASTM A 641 / DIN 48200 & DIN 48204 or as per customer requirements.

Packaging
Wooden drums, Z2 coils, air coils or as per customer requirements.

High Carbon Galvanized Steel Wires

Diameter (mm)	Tolerance (mm)	Minimum Ultimate Tensile Strength (N/mm²)	Minimum Zinc Weight for Cables application (g / m²)	Minimum Zinc Weight for commercial market (g / m²)
1.45	+/- 0.030	1,450	200	40
2.00	+/- 0.050	1,450	215	50
2.50	+/- 0.050	1,410	230	50
2.70	+/- 0.050	1,410	230	50
3.00	+/- 0.050	1,410	230	60
3.50	+/- 0.050	1,410	245	60
4.00	+/- 0.050	1,380	245	80
4.80	+/- 0.050	1,380	260	80
5.00	+/- 0.050	1,380	260	80

High Carbon Galvanized Steel Strands

No. of Wires	Diameter (mm)	Tolerance (mm)	Minimum Ultimate Tensile Strength (N/mm²)	Minimum Zinc Weight for commercial market (g / m²)	Grease Y/N
7	1.45	+/- 0.030	1,450	183	Y
19	1.68	+/- 0.030	1,450	198	Y
7	2.15	+/- 0.030	1,450	214	Y
19	2.68	+/- 0.050	1,410	229	Y (7 wires layer)
7	3.00	+/- 0.050	1,410	244	Y
7	3.40	+/- 0.050	1,410	259	Y
7	4.00	+/- 0.050	1,380	274	N
7	4.45	+/- 0.060	1,380	305	N

PRODUCT RANGE

DRAWN WIRES

BLACK HIGH CARBON STEEL WIRES

Application
Mattresses springs and all commercial applications.

Wires Diameter Range
1.30 to 5.00 mm.

Applicable Standards
As per customer requirements.

Packaging
Air coils or as per customer requirements.

Black high Carbon Steel Wires		
Diameter (mm)	Tolerance (mm)	Tensile Strength Range (m^2)
1.30	+/- 0.030	1,600
2.00	+/- 0.050	1,300 – 1,650
2.20	+/- 0.050	1,250 – 1,700
2.40	+/- 0.050	1,230 – 1,600
4.00	+/- 0.050	950 – 1,500
4.80	+/- 0.050	1,400
5.00	+/- 0.050	1,370

RAW MATERIALS

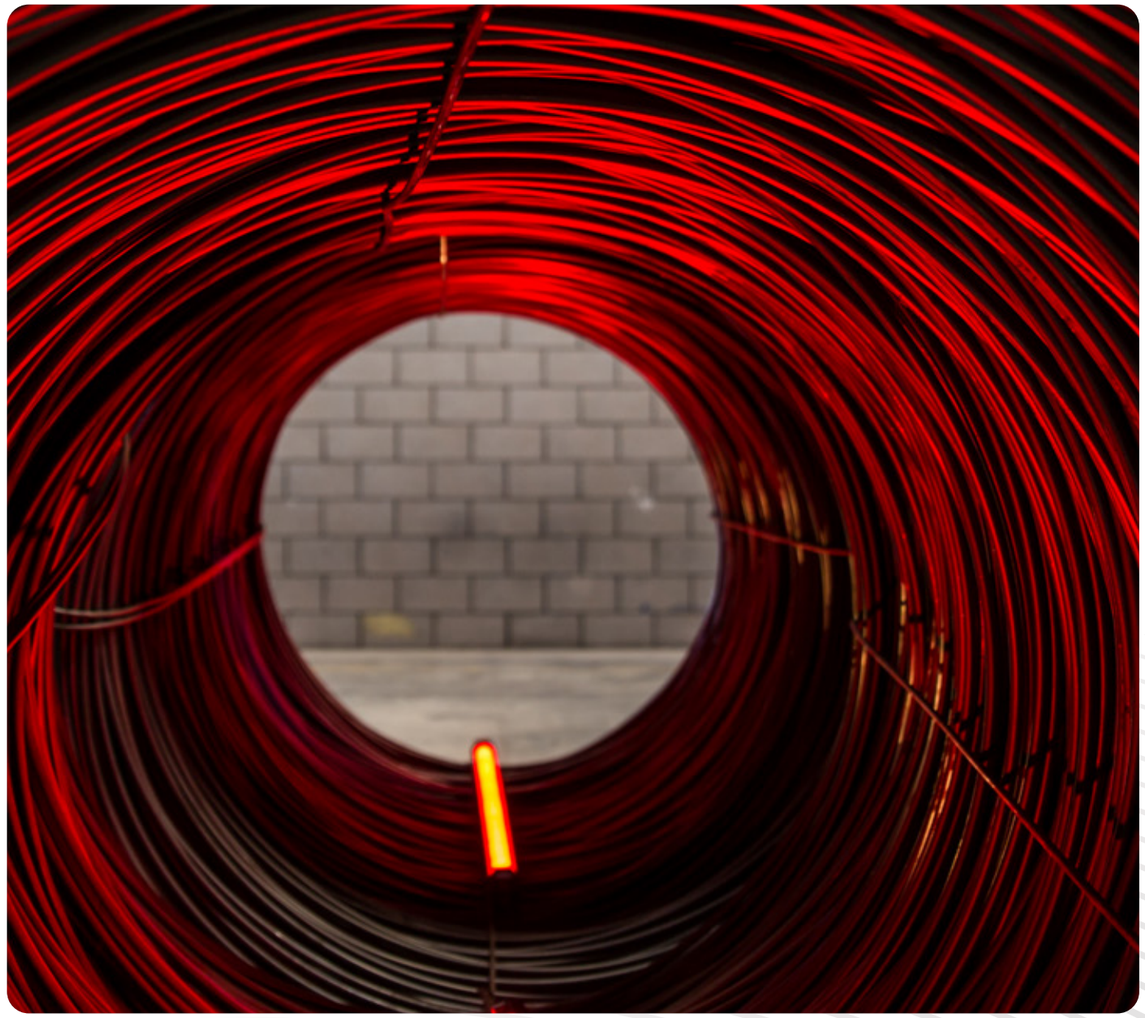
To ensure high quality of finished products, we strictly apply inspection procedures for raw materials coming from the most reputable national and international suppliers, according to the international standards.

Steel

- Low Carbon Grades AISI (1006, 1008, 1010, 1012 , 1015 , 1018)
- High Carbon Grades AISI (1042, 1045, 1050, 1060, 1065, 1070, 1075, 1080 , 1085)

Zinc

- Special High Grade Zinc of purity 99,995 according to ASTM B6.



QUALITY CONTROL

Quality control procedures of inspection starts with raw material, manufacturing and packaging processes using a Series of high technology on-line instruments, followed by laboratory tests according to the international standards.

Geometrical Tests

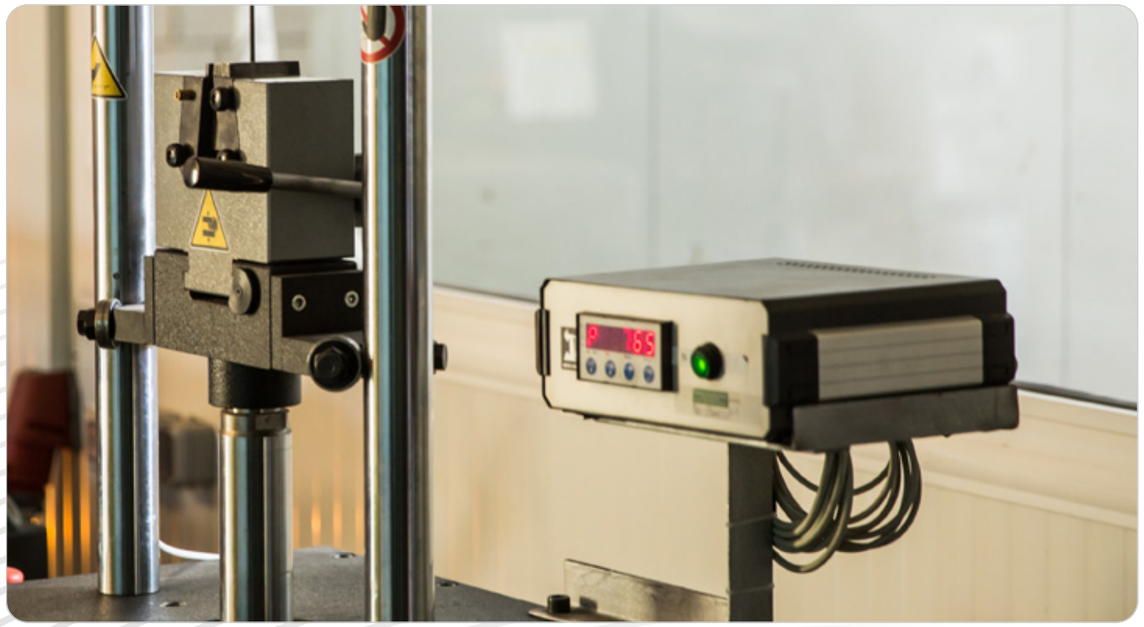
- Diameter checks: Guarantees that wires are correctly rounded and within specified tolerance of diameters.
- Ovality and surface finish: To ensure the best quality wire surface free from defects , roughness or discontinuities.
- For PC Strands/Wires: Tensile strength, relaxation test (120,240, 1000 hours) and bending tests are applied.

Zinc Tests

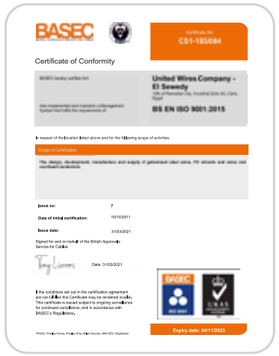
Zinc Coating:
Ensures that the zinc coating over wires surface is smooth, continuous and of thickness according to international standards.
Zinc Adhesion:
Ensures adhesion of zinc coating layers over wires surface or as per customer requirements.

Electrical Test

DC resistance test is according to international standards or as per customer requirements.



SYSTEM APPROVALS



BASEC BS EN ISO 9001:2015

EGAC- ISO 17025

ISO 14001

ISO 45001

PRODUCT APPROVALS

Dubai Central Laboratory Department (DCLD) product conformity

Sudan Approval

CARES BS EN 9001

ISO 45001

Roads and Transport Authority (RTA) Approval

Romania Technical Approval

ASQPE Approval

PARTNERS OF SUCCESS

HEAD OFFICE: Plot No. 13co3, Cairo Festival City,
5th Settlement, P.O.Box 310, New Cairo, Egypt.

Call Now
19159

+202 2759 9700
+202 2759 9701

info.steel@elsewedy.com

Go green

ELSEWEDY STEEL

www.elsewedyelectric.com