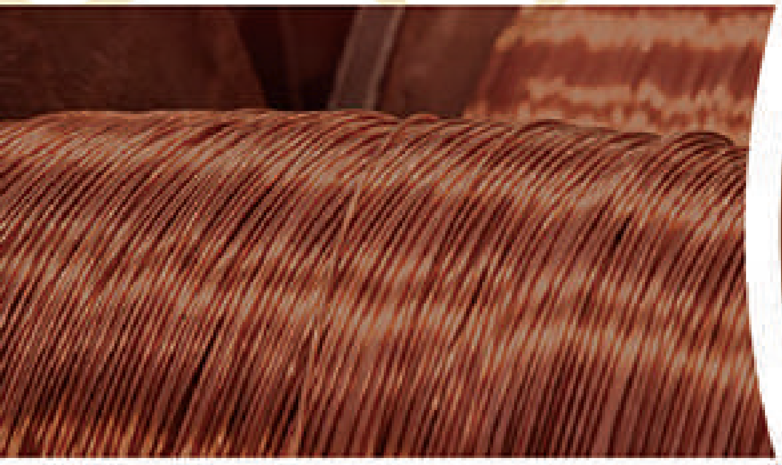
For any questions or more tehnical support for our products
and services , don't hesitate to call (SWANCO) .
See the contact information as below.


INNOVATION SOLUTIONS
FACTORY FOR INDUSTRY.

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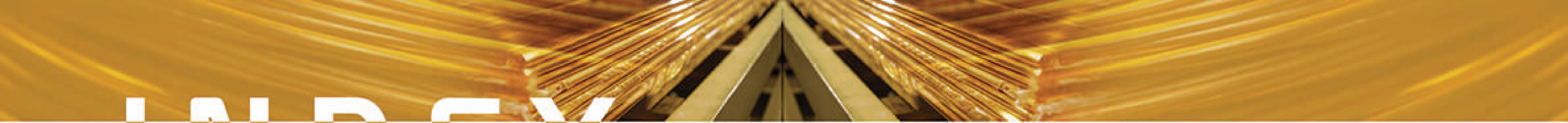
P.O.BOX 519 Riyadh 11383



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GENERAL OVERVIEW

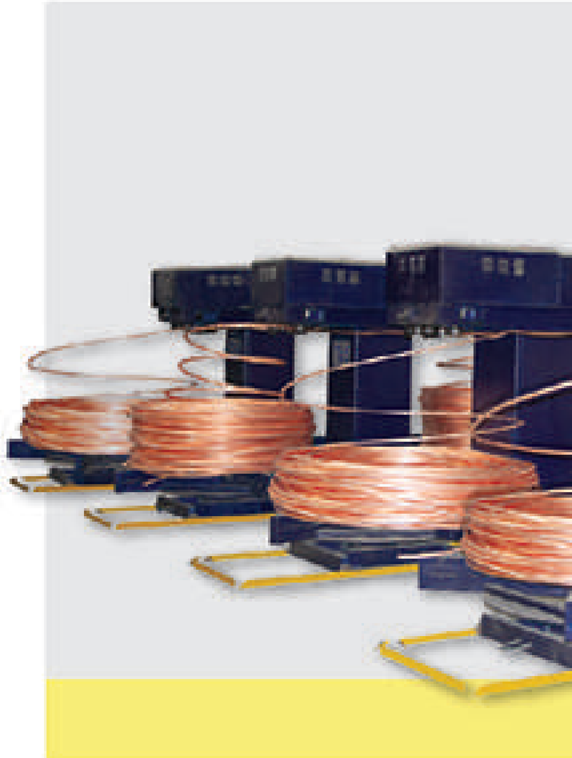
SWANCO Company was established in 2012 with the objective to support OEM and non-OEM customers in Saudi Arabia and abroad.

SWANCO has got Certificate ISO 9001:2008 , Swanco products are approved in ABB and almost reputed customers.

Enameling section equipped with a fully computerized and latest MAG machine Austrian Plant and in drawing section last Modern Machines for copper and aluminum rod drawing.

Busbar section equipped with modern up casting Furnace for Oxygen free copper rod,
In addition latest modern extrusion machine and high technology hydraulic drawing machine Alse have facility of Busbar Tinning in our Automatic tin plating machine.

One of the most important reasons for our success, customer confidence in our products, caused by the quality of the products and our permanent attention of customer satisfaction, we have selected highly experienced engineers, also professional technicians to lead the company to be continued success.



PRODUCT RANGE

1 - Copper and aluminum busbar
2 - Tin Plated Copper & aluminum busbar
3 - Enameled Round (Copper & Aluminum) wire
4 - Bare copper & aluminum wire.

SWANCO BUSBAR

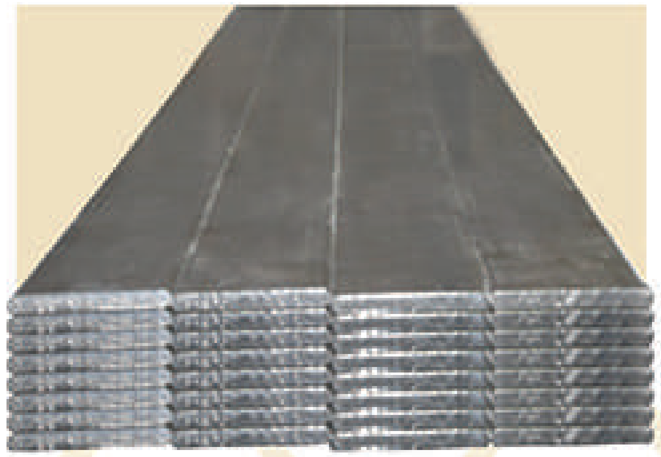
Swanco Copper busbar have purity 99.99% and Aluminum Busbar 99.7% to be excellent flexural properties and good electrical properties therefore suitable for a wide variety of uses like switchgear, distribution panel, substation or other electrical apparatus.

We have facility of manufacturing all standard shapes of busbar (sharp edge-Full round- corner radius).

TIN PLATED BUSBARS

We have automatically tin-plating plant in our factory for manufacturing of tin plated copper and aluminum busbars as per international specification and customer requirement. Process: In-house.

Coating thickness: from 8 to 10 micron and as per customer's requirement.



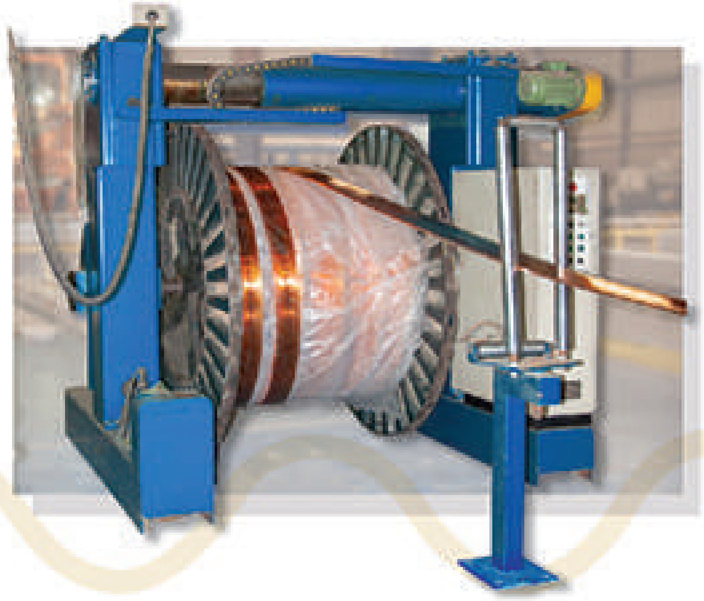
COPPER BUSBAR PRODUCT SPECIFICATION

We are manufacturing Busbar according to international specification and as per cusomer requirement.

Material designation	Specification		Purity	Oxygen content		Hardness HV	Bend Test Degree	Conductivity %IACS	Resistivity mm²/m	Density G/CM³
	BS EN	ASTM								
CU-OFE(CW008A)	BS EN 13301	ASTM B187	99.95% (min)	≤10ppm	Both having same physical properties	70-95	90	100 (min)	0.01724	8.91
CU-ETP OFE(CW008A)			99.90% (min)	180-450 ppm		70-95	90	100 (min)	0.01724	

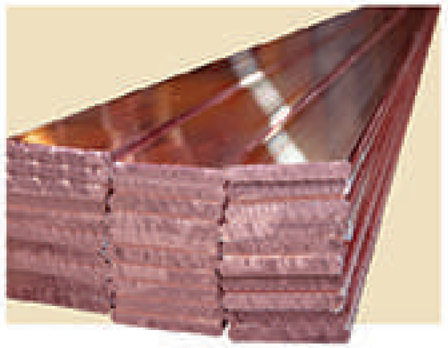
ALUMINUM BUSBAR PRODUCT SPECIFICATION

Material designation	Specification	Purity	Tensile Strength MPa	Temper	Elongation Min	Bend Test (Degree)	Electrical Conductivity at 20°C % IACS(min)
	BS EN		min				
CC grade Aluminum	BS EN 755-2:2013	99.75% (min)	60	Annealed (O)	25	120	60
			85	Half Hard (H1)	25	120	60
			95	Full Hard (H2)	6	120	60



BUSBAR SIZE RANGE

We are manufacturing copper and aluminum bus bar with a cross-section area of as little as 45mm2 up to 1600mm2 for both of them (Copper & Aluminum)



BUSBAR THICKNESS FROM 3 TO 12MM

WIDTH FROM 10 TO 150MM

MM	3	4	5	6	7	8	9	10	12
10									
12									
15									
20									
25									
30									
35									
40									
42									
50									
55									
60									
65									
70									
80									
84									
85									
90									
100									
112									
115									
120									
150									
160									

OTHER DIMENSIONS AVAILABLE ON REQUEST

SUPER ENAMELED WIRE (COPPER & ALUMINUM)

We are pioneer Manufacturers of super enameled wires (Copper and aluminum) which conforming to international specification and customer specification .

APPLICATION

Enameled wires conforming to International standards and customer's specifications are used for the winding of Electrical machines such as heavy duty Motors and hermetic motors hand tools L.T & H.T Coils and Oil filled induction coils , Generators, Transformers, Lifting magnets etc.

PRODUCT SPECIFICATION

We are producing enameled Round copper and aluminum wire as per below specification.

IEC60317-0-1: Specification for particular type of winding Copper wire

IEC6031 7-0-3 General requirements — Enameled round aluminum wire

IEC60851 (All parts): winding wire Test Method

IEC 60264(All parts): Packing of winding wire

Temp.Class	Type Of Enamel	Diameter Range	Specification
(B), 105°C / 120°C	Polyvinyl acetal (PVA/ PVF)	Copper Wire 0.60 to 4.00mm (22 AWG - 6 AWG) Aluminum Wire 1.20mm to 5.00mm (16 AWG - 4 AWG)	IEC 60317 - 12 IS17730-9
(F) 130°C / 155°C	Polyester		IEC 60317-3 & IEC 60317-34 IS17730-9
(H) 180°C	Polyestermide		IEC 60317 - 8 IEC 60317 - 15
(C) 200°C	Polyestermide (base Coat) Polyamide-imide (top coat)		IEC 60317 - 13 IEC 60317 - 25

OUR STANDARD DIAMETERS OF ENAMELED ROUND (COPPER / ALUMINUM) WIRE

Diameter - and Increase in diameter of enamelled round winding wires
(METRIC INTERMEDIATE SIZES) (BASIS: IEC 60317-0-1)

		Conductor Diameter		Grade- 1		Grade- 2		Grade- 3	
Nominal Size (mm)	Nond. ToL+ (mm)	Min. (mm)	Max. (mm)	Min Increase (mm)	Max Overall Dia (mm)	Min Increase (mm)	Max Overall Dia (mm)	Min Increase (mm)	Max Overall Dia (mm)
0.500	0.005	0.495	0.505	0.024	0.544	0.45	0.566	0.067	0.587
0.560	0.006	0.554	0.566	0.025	0.606	0.047	0.630	0.071	0.653
0.600	0.006	0.594	0.606	0.027	0.649	0.050	0.674	0.075	0.698
0.630	0.006	0.624	0.636	0.027	0.346	0.050	0.704	0.075	0.728
0.670	0.007	0.663	0.67	0.028	0.722	0.053	0749	0.080	0.774
0.710	0.007	0.703	0.717	0.028	0.762	0.053	0.789	0.080	0.814
0.750	0.008	0.742	0.758	0.030	0.805	0.056	0834	0.085	0.861
0.800	0.008	0.792	0.808	0.030	0.855	0.056	0.884	0.085	0.911
0.850	0.009	0.841	0.859	0.032	0.909	0.060	0.939	0.090	0.968
0.900	0.009	0.891	0.909	0.032	0.959	0.060	0.989	0.090	1.018
0.950	0.01	0.940	0.960	0.034	1.012	0.063	1.044	0.095	1.074
1.000	0.010	0.990	1.010	0.034	1.062	0.063	1.094	0.095	1.123
1.060	0.011	1.049	1.071	0.034	1.124	0.065	1.157	0.098	1.188
1.120	0.011	1.109	1.131	0.034	1.184	0.065	1.217	0.098	1.248
1.180	0.012	1.168	1.192	0.035	1.246	0.067	1.279	0.100	1.311
1.250	0.013	1.237	1.263	0.035	1.316	0.067	1.349	0.100	1.381
1.320	0.013	1.307	1.333	0.036	1.388	0.069	1.422	0.103	1.455
1.400	0.014	1.386	1.414	0.036	1.468	0.041	1.502	0.103	1.535
1.500	0.015	1.458	1.515	0.038	1.570	0.071	1.606	0.107	1.640
1.600	0.016	1.584	1.616	0.038	1.670	0.073	1.706	0.107	1.74
1.700	0.017	1.683	1.717	0.039	1.772	0.073	1.809	0.110	1.844
1.800	0.018	1.782	1.818	0.039	1.872	0.075	1.909	0.110	1.944
1.900	0.019	1.881	1.919	0.040	1.974	0.075	2.012	0.113	2.048
2.000	0.020	1.980	2.020	0.040	2.074	0.077	2.2355	0.113	2.148
2.120	0.021	2.099	2.1414	0.041	2.196	0.077	2.355	0.116	2.272
2.240	0.022	2.218	2.261	0.041	2.316	0.079	2.478	0.116	2.392
2.360	0.024	2.336	2.384	0.042	2.438	0.079	2.618	0.119	2.516
2.500	0.025	2.475	2.525	0.042	2.578	0.081	2.772	0.119	2.655
2.650	0.027	2.623	2.677	0.043	2.730	0.081	2.922	0.123	2.811
2.800	0.028	2.772	2.828	0.043	2.880	0.084	3.126	0.123	2.961
3.000	0.030	2.970	3.030	0.045	3.083	0.084	3.276	0.127	3.166
3.150	0.032	3.118	3.182	0.045	3.233	0.086	3.479	0.127	3.316
3.350	0.034	3.316	3.384	0.046	3.435	0.086	3.679	0.130	3.521
3.550	0.036	3.514	3.586	0.046	3.635	0.089	3.883	0.130	3.721
3.750	0.038	3.712	3.788	0.047	3.838	0.089	4.133	0.134	3.926
4.000	0.040	3.960	4.040	0.047	4.088	0.089	4.387	0.134	4.167
4.250	0.043	4.207	4.293	0.049	4.341	0.092	4.387	0.138	4.431
4.750	0.048	4.702	4.798	0.050	4.843	0.094	4.891	0.142	4.936

A FULL AND COMPREHENSIVE TEST ON (FROM) RAW MATERIAL TO FINISHED PRODUCT)

We are dedicated towards delivering Supreme quality of Winding Wires and Busbar to our Valuable clients. We understand the need of our valuable clients. We do complete quality and Performance measure Inspection at each level of manufacturing ensuring enhanced level of satisfaction .

LIST FOR ENAMELED ROUND COPPER QUALITY CHECK TESTS

(1) Quality Test on Raw Material (8 mm continuous cast copper rod (ETP).			
Ser. No.	Test Description	Unit	Specification No.
1	Sur face finish	-------	ASTMB49-10
2	Measurement Rod Diameter(Minimum and Maximum)	(mm)	ASTMB49-10
3	Electrical Resistance	μΩ	ASTMB49-10
4	Electrical Conductivity	%IACS	ASTMB49-10
5	Tensile Strength	N/MM²	ASTMB49-10
6	Elongation at Break	%	ASTMB49-10
7	Copper Purity	%	ASTMB49-10
(2) Quality Test on Enameled Wire			
Ser. No.	Test Description	Unit	Specification No.
1	Visual Inspection	------------	IEC60317-0-1
Electrical Test			
1	Tangent Delta	°C	IEC60317-01-&IEC60851-5
2	Break Down Voltage	volt	IEC60317-01-&IEC60851-5
3	Electrical	Ω	IEC60317-01-&IEC60851-5
4	High Voltage Continuity test (connected with mag machine)	No. of fault	IEC60317-01-&IEC60851-5
5	In line continuity test (connected with mag machine)	No. of fault	IEC60317-01-&IEC60851-5
Mechanical Test			
1	(Flexibility and Adherence) Peel Test	No. of revolution	IEC60317-0-1-&IEC60851-3
2	Elongation	%	IEC60317-0-1-&IEC60851-3
3	(Flexibility and Adherence) Springiness test	Degree	IEC60317-0-1-&IEC60851-3
4	(Flexibility and Adherence) Mandrel Winding Test	------------	IEC60317-0-1-&IEC60851-3
5	(Flexibility and Adherence) Jerk Test	-------	IEC60317-0-1-&IEC60851-3
6	(Flexibility and Adherence) Stretching Test	Sample status	IEC60317-0-1-&IEC60851-3
Termal Test			
1	Cut Through Test	°C	IEC60317-0-1-&IEC60851-6
2	Heat Shock Test	------------	IEC60317-0-1-&IEC60851-6

LIST FOR ALL QUALITY CHECK TEST ON ENAELED ROUND ALUMINUM WIRE

Ser. No.	Test Description	Unit	Specification No.
(1) Quality Test on Raw Material (EC grade Aluminum Wire Rod)			
1	Surface finish	-------	ASTMB49-10
2	Measurement Rod Diameter(Minimum and Maximum)	(mm)	ASTMB49-10
3	Electrical Resistance	μΩ	ASTMB49-10
4	Electrical Conductivity	%IACS	ASTMB49-10
5	Electrical Resistivity	($\Omega.mm^2/m$)	ASTMB49-10
6	Tensile Strength	N/mm^2	ASTMB49-10
7	Elongation at Break	%	ASTMB49-10
(2) Quality Test on Enameled Aluminum Wire			
Ser. No.	**Test Description**	**Unit**	**Specification No.**
1	Visual Inspection	-------	IS1373-0-3&IEC60317-0-3
2	Diamensions test	(mm)	IEC160317-0-3&IS3730-0-3
Electrical Test			
1	Tangent Delta	°C	IS13778-5&IEC60317-0-3
2	Break Down Voltage	Volt	IS13778-5&IEC60317-0-3
3	Electrical Resistance	Ω	IS13778-5&IEC60317-0-3
In Line Testing			
4	High Voltage continuity test (connected with mag machine)	No. of fault	IS13778-5&IEC60317-0-3
5	In line continuity test (connected with mag machine)	No. of fault	IS13778-5&IEC60317-0-3
Mechanical Test			
1	Elongation	%	IS13778-5&IEC60317-0-3
2	Flexibility and adherence (Mandrel winding test)	-----------	IS13778-5&IEC60317-0-3
3	Flexibility and adherence (Jerk test)	-----------	IS13778-5&IEC60317-0-3
4	Flexibility and adherence (Stretching test)	Sample status	IS13778-5&IEC60317-0-3
Termal Test			
1	Cut Through Test	°C	IS13778-5&IEC60317-0-3
2	Heat Shock Test	-----------	IS13778-5&IEC60317-0-3

LIST FOR ALL QUALITY CHECK TEST ON BUSBAR

Ser. No.	Test Description	Unit	Specification No.
(1) Quality Test on copper cathode sheets grade A (size 960x960 mm, thickness 8-12 mm)			
1	Surface finish	---------	ASTM B115-93
2	Copper Purity	%	ASTM B115-93
(2) Quality Test on OFHC up casting CU Rod (8.mm, 12.5mm, 16mm and 20mm)			
Ser. No.	**Test Description**	**Unit**	**Specification No.**
1	Visual Inspection	---------	BSEN 13601:2013
2	Copper Purity		BSEN 13601:2013
(3) Quality Test on Finished Product			
1	Visual Inspection	---------	BSEN 13601:2013
Electrical Test			
3	Electrical Resistivity	($\Omega mm^2/m$)	BSEN 13601:2013
4	Electrical Conductivity	% IACS	BSEN 13601:2013
Mechanical Test			
Test Description			
2	Tensile Strength	M PA	BSEN 13601:2013
3	Elongation	%	BSEN 13601:2013
4	Hardness test	HB	BSEN 13601:2013
5	Bending test	Degree	BSEN 13601:2013
Chemical Test			
1	Copper Purity (Optical Emission Spectrometer)	%	BSEN 13601:2013

FINAL STAGE PACKAGING FOR FINISHED PRODUCT

BUSBAR PACKING

Copper Busbar will be covered with insulated paper and plastic, and finally inside wooden boxes to be more safety and maintain the quality of products .

ENAMELED WIRE PACKING

Enameled wire packing on different types of spools (cylindrical or conical) as per IEC60-264 and as per Customer requirement. Finally spool is covered with plastic and Strong carton paper to protect wire against any damage.

CERTIFICATES


INTERCERT
CERTIFICATE OF REGISTRATION
SWANCO – Innovation Solutions Factory for Industry
ISO 14001:2015


INTERCERT
CERTIFICATE OF REGISTRATION
SWANCO – Innovation Solutions Factory for Industry
ISO 45001:2018


INTERCERT
CERTIFICATE OF REGISTRATION
SWANCO – Innovation Solutions Factory for Industry
ISO 9001:2015

CERTIFICATES

Elantas Europe S.r.l.

ELANTAS
Electrical Insulation

Innovation solutions factory for industry

To whom it may concerns

DECLARATION

Hereby we, as Elantas Europe S.r.l., declare that the enameled wire od diameter 2,30mm, produced by Innovation solutions factory for industry, made with Terebec MT533 as basecoat and Sivamid 595 as topcoat, granted that the enamels on the wire are properly polymerized, RESIST TO TRANSFORMER OILS according to IEC 60851-4 standard test.

Please, find here below our relevant test report

TEST REPORT

Resistance to transformer oil (IEC 60851-4/RD4.1.3.3)

TEST RESULT OF THE WIRE

MECHANICAL PROPERTIES

ELECTRICAL PROPERTIES

COMMENTS:

Fausto D'Emidio
Head of BL Wire Enamel

Gino Paolo Piccioni
Technical Assistance Manager
For Wire Enamel

A member of ALTANA

CERTIFICATES

تقرير اختبار

	CDL-MET-274
	1197
	24/12/2021
	24/12/2021
	24/12/2021
	SWANCO
	SAUDI ARABIA

1		99.90 %	

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29/12/2014