

Manufacturers of Transformer Laminations



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posco POGGENAMP
Posco Poggenamp Electrical Steel Pvt. Ltd.
Your Trust And Success, Our Tomorrow

Creating Another Success Story



HISTORY

Poggenamp Nagarsheths established by two dynamic, foresighted brothers in 1982, is a leading manufacturer of laminations for motor and transformer industries today. The name of the company was inspired by two renowned scientists Poggendorff from Germany and Andre Ampere from France.

The beginning was humble but focused, and dedication and hard work aided the unit's growth and progress over the decades. A joint stock company closely held by families, Nagarsheth and Doshi, is now moving towards newer directions with an innovative approach undertaken by the second generation of the families.

GROUP COMPANY

A new feather in the cap of the POGGENAMP family is a Joint Venture with Posco – IPPC, India – a 100% subsidiary of South Korean Conglomerate POSCO. POSCO is the fifth largest steel producer and the second highest in terms of revenue globally. The new entity is Posco Poggenamp Electrical Steel Pvt. Ltd.

The Joint Venture between POSCO and POGGENAMP will primarily focus on manufacturing laminations for both power and distribution transformer industries. Prime CRGO coils in superior grades will be supplied by POSCO to cater to a wide spectrum of transformers.

POSCO AND THEIR VISION

POSCO began its journey in 1968 with no capital, technology or experience under the dynamic leadership of President Tae Joon Park along with 39 employees as Pohang works. The company, followed governmental policy and focused on developing major infrastructure including steel production for modernization.

In a span of five years, it was in 1973, that Pohang Works completed the first production line with a 9.1 million tons production line for crude steel. Pohang Works was well established in 1983 after four expansions.

The implementation of sustainable and efficient facilities and the increase in productivity of crude steel pushed POSCO to the top of the world. The year 1999 was witness to a total revamping of the Company's overall processes.

POSCO was privatized in 2000 and is working towards its goal to achieve production of 50 million tons of crude steel. It is expanding production base in overseas countries such as Vietnam and India, processing to build integrated steel mill. POSCO current installed capacity in year 2016 for GO steel is 300,000 MT

VISION OF POSCO POGGENAMP

Posco Poggenamp's vision is to capitalize on the high demand the power sector is witnessing currently. The main aim is to become a significant global player in the supply of laminations to industries over the next decade. Posco Poggenamp envisions itself as a major provider in implementation of all projects that use laminations for static machine requirements.

MISSION OF POSCO POGGENAMP

- Pool resources and know-how to manufacture the best products
- Committed to persistent innovation and product development
- Achieve organizational growth by providing a professional and rewarding work environment to employees

INFRASTRUCTURE

Posco Poggenamp is having state of the art facility built in a green corridor for their manufacturing process at village Vavdi, Kheda, near Ahmedabad, Gujarat. The corporate office is located in the city of Ahmedabad.

State of the art technology and facilities at the manufacturing unit will aid the company to consistently meet the stringent requirements of customers. All facilities under one roof ensure the production of world class products from inception to completion until they reach the customers.

Spread over 46,000 sq. meters of land and 10,000 sq. meters of built up area; the high-tech manufacturing facility is totally dust proof and naturally cooled through positive air pressure.



PRODUCT RANGE

Posco Poggenamp manufactures laminations for Power and Distribution transformers as well as for Shunt Reactor Core from various grades of Cold Rolled Grain Oriented (CRGO) electrical steel. We process lamination up to 765 Kv class / 500 MVA and capable to process up to 1200 Kv class / 1000 MVA rating. Our installed capacity for CRGO lamination is 24000 MT/ per annum.

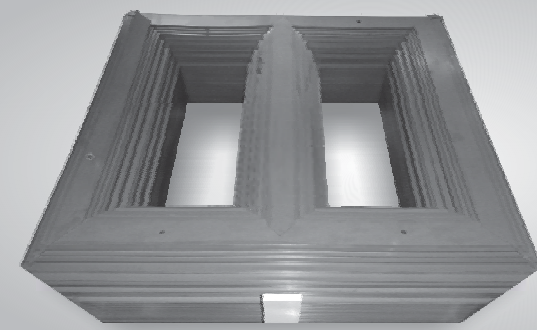
1) CRGO Cut Laminations:

CNC Cut-to-Length machines are able to process lamination in various shapes and size with 90°/75°/45° angle cutting. The material can be cut at different dimension ranging from 25 mm to 1050 mm wide and length from 100 mm to 6000 mm long. We process vertical step lap and horizontal step lap as per customer specification from 3/5/7/9/11 steps. CRGO lamination requires a high degree of precision therefore we routinely perform stringent quality check which measures burr level, camber, waviness, stack height, weight and other dimensions.

A salient feature is processing of rectangular strip laminations in 0.10/0.18 mm thicknesses for Reactors and Invertors for high frequency application.

Additional features for Power Transformer Laminations

- Offset in center leg upto 480 mm instead of standard 50 mm
- Slot punching in center leg upto any length to control eddy control losses



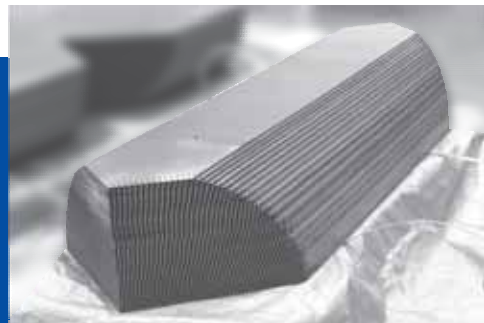
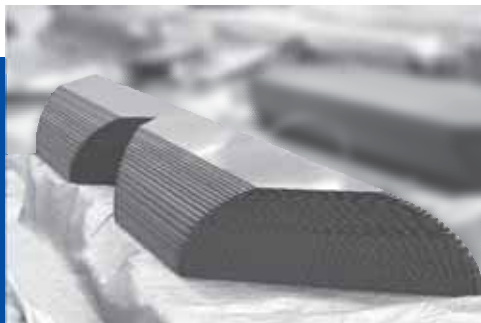
2) Built-Up Transformers Core

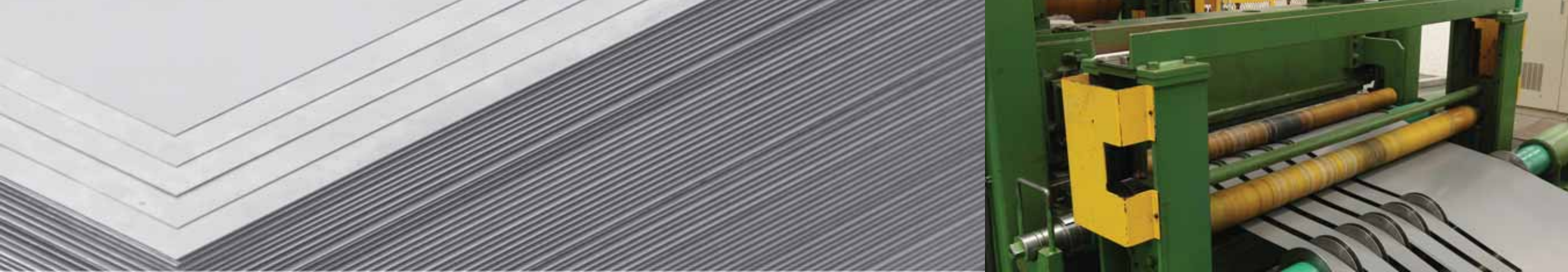
Posco Poggenamp has different sizes and types of stacking tables in order to produce complete flat stacked lamination. The cores are built on modern core stacking tables. Stacking on guiding bolts and most accurate setting of the leg supports on centre distance enables to keep the geometrical dimension to an absolute minimization of the air gaps. We built transformer core from 16 KVA to 5 MVA rating. A pre-measurement of the core losses guarantees the required No Load Losses measured on a digital power analyzer.



3) CRGO Slit Coil

CNC slitting line can slit coils from 10 mm to maximum 1250 mm and thickness ranging from 0.18 mm to 0.35 mm of various grades. Slitting is the first and foremost manufacturing process in order to obtain any type of cut lamination. The slitting quality is constantly controlled. Tungsten carbide slitter blades are used in order to achieve a minimum formation of burrs.





TECHNICAL SPECIFICATION FOR EACH CNC CTL LINE MODELS

Items	USP200H-M (Rectangular Cut)	USFT250E	USFT450AS	USFT640AS	UST1000AS
Strip Width, mm	25 to 200	30 to 250	45 to 450	70 to 640	100 to 1050
Strip Thickness, mm	0.18 to 0.50	0.20 to 0.35	0.20 to 0.35	0.20 to 0.35	0.20 to 0.35
Length of Cut, mm	~ 2000	~1500	~ 2500	~ 3500	~ 6000
Un-Coiler	1 Head	1 Head	2 Heads	2 Heads	4 Heads
V-Notch	No	Yes	Yes	Yes	Yes
Shear	Fix	Fix	Fix	Fix	Swing
Hole Punch	1	1	2	2	2
Tip Cutting	X	X	X	Yes	Yes
Slot Punch	X	X	X	X	Yes
2nd Feed Unit	X	X	X	X	Yes
Stacking Type	M-Type	M-type	A-type	A-type	A-type
Step Lap	No	1 to 5 Steps	2 to 7 Steps	2 to 9 Steps	2 to 11 Steps

SLITTING LINE TECHNICAL SPECIFICATION

[A] Slitting Line - 1

Material	Silicon steel (GO or NO) in coil, CRCA steel in coil
Tensile strength	180 – 450 N/mm ²
Shearing strength	150 – 450 N/mm ²
Strip thickness	0.18 – 1.0 mm for Silicon steel 0.18 – 2.5 mm for CRCA
Strip width	10 mm – 1250 mm
Coil inside diameter	508 mm
Coil outside diameter	2000 mm (maximum)
Coil weight	Upto 20 M.T.
Minimum Slitting width	10 mm

Line speed (m/min)	Thickness (mm)	Recoiling tension (N)
0 – 200	0.18 – 2.5	Maximum 30, 600

[B] Slitting Line - 2

Material	CRGO and CRNGO Silicon Steel
Strip thickness	0.27 mm to 1.0 mm
Strip width	25 mm to 1200 mm
Coil outer diameter	1750 mm maximum
Coil inside diameter	508 mm
Coil weight	Upto 15 M.T.
Line Speed	Maximum 100 m/min.
Inside diameter of winding	508 mm
Outside diameter of Winding	800 – 2000 mm Maximum
Minimum slitting width	25 mm

OTHER MACHINERIES DETAILS:

- Slit Coil Packing Machine – 2 Nos.
- Material handling equipments like Forklift and Crane capacity 2T – 1No., 5T – 1No., 7.5T – 1No., 10T – 3 Nos., 30T – 1No.
- Imported Continuous Annealing line is also available in case customer demand annealed lamination





TYPICAL ELECTRICAL STEEL PROPERTY

Grade	Thickness (mm)	Core loss @ 1.7T, 50 Hz
23HP85d	0.23	0.80
23HP90	0.23	0.88
23CG120	0.23	1.10
27HP90d	0.27	0.88
27HP100	0.27	0.98
27HP110	0.27	1.05
27CG130	0.27	1.10
27CG120	0.27	1.15
27CG140	0.27	1.20
30HP105	0.30	1.02
30CG130	0.30	1.20
35CG145	0.35	1.35

GRAIN ORIENTED ELECTRICAL STEEL GRADES

Thickness	POSCO	JIS C 2553	ASTM	EN 10107	IEC 60404	BIS [3024]
mm [inch]	2006 W/Kg, 17/50	2006 W/Kg, 17/50	1999 W/Kg, 17/50	1995 W/Kg, 17/50	2008 W/Kg, 17/50	2006 W/Kg, 17/50
0.18 [0.007]			M2, 1.00			
0.23 [0.009]	23PHD085 / 0.85	23R085 / 0.85			M85-23P5 / 0.85	23HP85d / 0.85
	23PHD090 / 0.90				M90-23P5 / 0.90	23HP90d / 0.90
	23PH090 / 0.90	23P090 / 0.90	23Q054 / 1.19			23HP90 / 0.90
	23PH095 / 0.95	23P095 / 0.95		M100-23P / 1.00	M95-23P5 / 0.95	23HP95 / 0.95
	23PH100 / 1.00	23P100 / 1.00	23P060 / 1.32		M100-23P5 /1.00	
	23CG120 / 1.20					
0.27 [0.0106]	27PHD090 / 0.90	27R090 / 0.90			M90-27P5 / 0.90	27HP90d / 0.90
	27PHD095 / 0.95				M95-27P5 / 0.95	27HP95d / 0.95
	27PH095 / 0.95					27HP95 / 0.95
	27PH100 / 1.00	27P100 / 1.00	27P066 / 1.46	M103-27P / 1.03	M100-27P5 / 1.00	27HP100 / 1.00
	27PH110 / 1.10				M110-27P5 / 1.10	27HP110 / 1.10
	27PG130 / 1.30	27G130/1.30			M130-27S5 / 1.30	27CG130 / 1.30
0.30 [0.0118]	30PH100 / 1.00			M105-30P / 1.05		
	30PH105 / 1.05	30P105 / 1.05			M105-30PS / 1.05	30HP105 / 1.05
	30PG130 /1.30	30G130 / 1.30		M117-30P / 1.17	M130-30S5 / 1.30	30CG130 / 1.30
0.35 [0.0138]	35PG145 / 1.45	35G145 / 1.45		M150-35S / 1.50	M145-35S5 / 1.45	35CG145 / 1.45

WAREHOUSE:

We use CRGO steel from reputable steel mills and we keep in stock various steel grades in order to fulfill customer's requirement.

CRGO steel is a steel to be handled with care. As the magnetic property of the steel is the important quality required, handling, storing and processing of this steel must be made with caution. Storage of CRGO coils has to be done properly as improper storage may result unintentionally in excessive stresses.

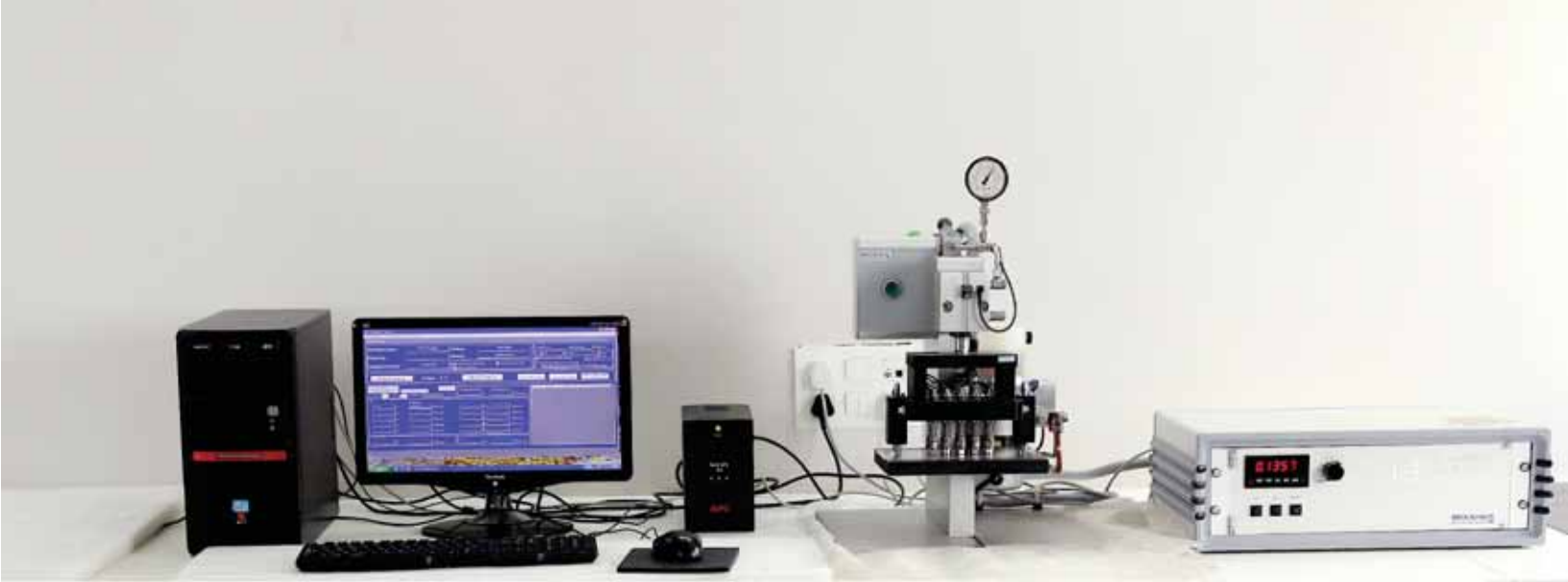
We have ample of space to store CRGO prime coil and we maintain grade wise CRGO mother coil in our plant. EOT cranes are able to carry up to 30 MT weight so we take extra care while shifting material at slitting line.

PACKING/DISPATCH:

The finished goods are usually packed on wooden pallets, MS pallets and cardboard boxes. In order to protect the material against atmospheric moisture and rust, VCI and plastic/metal straps are used. However, the packing method can be adjusted as per customer's requirement. We can also supply material on double decker MS pallet.

Special care is taken when packaging the lamination in order to guarantee the stability of the pallets and protection from possible oxidation or other type of damages, during the loading and unloading process and transport. We can also pack ready to built core as to easy core building process.





CERTIFICATIONS

We are an ISO 9001:2008 Quality Management System, ISO 14001:2004 Environment Management System and OHSAS 18001:2007 Occupational Health and Safety Management System. We are approved by Power Grid Corporation of India Limited (PGCIL) to supply lamination up to 765 Kv class and National Thermal Power Corporation Limited (NTPC).



QUALITY CONTROL AND TESTING LABORATORY:

Posco Poggenamp possesses world class testing equipment to provide zero defect products. In our facility, we endeavor to do all the analysis with our high technological test equipments for the sheets which will be used for power, distribution transformer and shunt reactor core. Moreover, we also obtain B-H curve of the sheets and we record all the results.

By doing all these tests we obtain the characteristics map of the products. After we decide the suitability of the sheets, we use particular steel for slitting and cutting. The laminations are delivered with their test certificates.

We are committed to achieve total customer satisfaction through continuous innovation, team work and timely delivery of quality products.

We serve by meeting the expectations of our customers in domestic and international areas.



TESTING EQUIPMENTS:

- 1) Dr. Brockhaus Messitechnik Epstein Frame
- 2) Dr. Brockhaus Franklin Insulation Resistance Tester
- 3) Dr. Brockhaus Single Sheet Tester
- 4) Dr. Brockhaus Stacking Factor Tester
- 5) Yokogawa WT500 Digital Power Analyzer
- 6) Optical Measurement Table up to 5 metre
- 7) Vickers Hardness Tester [5 Kgs to 50 Kgs]

