



UMANG BOARDS
PRIVATE LIMITED



Eglitz : 9829760261

www.umangboards.com

TRANSFORMER BOARD
MOULDED AND
MACHINE COMPONENTS
EPOXY DOTTED PAPER
CREPE PAPER AND TUBE
PRESS PAN AND KRAFT PAPER



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CHAIRMAN'S MESSAGE

"True competition is with none other than yourself"- S.K. Dhanuka

We at Umang Boards compete with ourselves to cater to the demand and supply gap in market for complete insulation for use in power and distribution transformer. We aim to have a global perspective in the work we do. Building trust through the responsible and sustainable management of our business is a vital part of our culture. Strong governance and leadership and transparent reporting are critical to long-term creation of value. Over the past decade we have incorporated corporate social responsibility. We have been in association with various charitable trusts in India to help the people. We focus at reducing the environmental impacts by taking necessary measures at our workspace. We have developed a water-recycling unit in our manufacturing premises to control the usage of water with the reverse osmosis and demineralization plants installed to conserve and save water.

We focus at providing cellulose-based insulation solutions customized to cater to the exact needs of our customer. Over the years we have been successful in developing a range of insulation products, and we aim to research and develop and increase the range of our products.





COMPANY CREDENTIAL

Umang Boards is India's leading manufacturer of complete set of cellulose based insulation for use in power and distribution transformers. The company is certified with ISO 9001:2008, 14001:2003, and 18001:2007, ISO/IEC 17025 - 2005. We are the only company in India to have **ISO/IEC 17025-2005 (Accredited by NABL)** Umang Boards was established in the year 2001, and since then we have been manufacturing top-notch transformer insulation products. We focus at providing cellulose-based insulation solutions customized to cater to the exact needs of our customer.

We believe in customer satisfaction and try every day to achieve it. Our dedicated and highly qualified technical and management team aim to deliver the finest quality product to the consumer. We perform a strict quality control system in our workspace through ongoing refinements in response to continuous feedback. Our Continuous improvement policy helps us to keep

pace with the industry and manufacture consistent superior quality insulation. We use 100 % unbleached softwood pulp, which is sourced, from renowned suppliers around the world. The continuous improvement process in our company runs from the top management to the ground level workers, and through this we have been able to make decisions on the basis of verifiable data and statistical methods.

We manufacture a wide range of transformer insulation including pre-compressed press boards with different grades that confirm to relevant national and international standards (IS 1576, DIN 7733, BS 231, JIS C 2305-3-1, ASTM and IEC 60641-3-1). We also manufacture machined and moulded components, crepe paper tapes & tubes, diamond dotted (epoxy coating) paper and many more. Water is sourced from underground tube well at our factory premises, and this water is filtered to the top purity through our finest reverse osmosis plant and demineralization plant

installed in the same premises. We have consolidated internal and external resources, which has enhanced our Competitive and raised our industrial status and goodwill over the years; as a result the business structure has been able to take a concrete shape. At Umang Boards, we assure and supply inter national quality transformer insulation with exceptional service support, competitive prices and quicker delivery time; making it a value for money for our consumers in India and around the world.



MISSION

We aim to achieve growth by providing economical and quality product to our customers. We aim to use our resources in the most effective possible way by using high-tech machines and educated workforce to provide quality and customer satisfaction. Our Vision is to be a global leader in electrical power transformer insulation through the use of cutting edge technology and developing high quality products and services.

MAIN OBJECTIVE

-To cater to the demand and supply gap in market for complete insulation for use in power transformer.

-To be the world leader in the electrical insulation and provide high quality and cost effective pricing to our consumers.

- To manufacture cellulose based press boards, free from any metal particles and impurities.

- To manufacture top-notch quality complete insulation products and maintain a consistency in quality with high strength and least variation in thickness and other parameters conforming to all national and international standards.

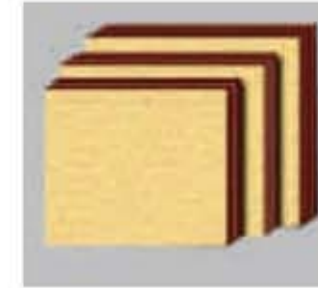
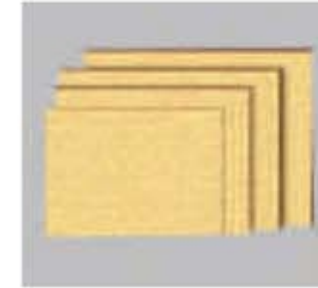
- To strive for customer satisfaction by providing shorter delivery period, after sales service support to our customers.

-To maintain a green and environment friendly atmosphere in the workspace.

Our Vision is to be a global leader in electrical power transformer insulation through the use of cutting edge technology and development of high quality products and services.

VISION

PRODUCT RANGE



TRANSFORMER BOARD
MOULDED AND
MACHINE COMPONENTS
EPOXY DOTTED PAPER
CREPE PAPER AND TUBE
PRESS PAN AND KRAFT PAPER



TECHNICAL SPECIFICATIONS

S. No.	Properties	Thickness	Units	Min. /Max. or range	Type
1.	Thickness Deviation from nominal	≤12.0 mm >12.0 mm	%	Max	± 5.0 % ± 4.0 %
2.	Apparent Density		g/cm ³	Range	1.15 -1.3
3.	Flexural Strength, Perpendiculars to laminations Machine direction Cross Machine direction		MPa	Min.	100 80
4.	Internal Ply Strength Flexural Strength, Perpendicular to laminations I) Direct tested at 23 °C Machine direction Cross Machine direction II) Oil impregnated tested at 23 ⁰ C Machine direction Cross Machine direction III) Aged for 1 week at 120 ⁰ C Machine direction Cross Machine direction		MPa	Min.	80 80 80 80 90 90
5.	Compressibility C		%	Max.	3.5
6.	Reversible part of Compressibility C _{rev}		%	Min.	65
7.	Shrinkage - Machine direction Cross machine direction Thickness		%	Max.	0.5 0.7 6.0
8.	Moisture Content		%	Max.	8.00
9.	Ash Content		%	Max.	1.0
10.	Contamination of dielectric liquid Difference between the test oil and blank I) Neutralisation Value II) Sludge content III) Dissipation factor		Mg KOH/g Mg/l	± Max ±	0.08 500 0.005
11.	Conductivity of Aqueous Extract		(mS/m)	Max	15.0
12.	PH of Aq. Extract		--	Range	6.0 – 10.0
13.	Oil Absorption		%	Min.	6.0
14.	Electric Strength in oil		kV/mm	Min.	8
15.	Finish	Confirming to IEC 60763-3-1, Type LB. 3.1A			

TRANSFORMER BOARD

Grade: UB- HD-3.1 Laminated
Confirming to IEC 60763-3-1, Type B. 3.1 A.1
HIGH DENSITY LAMINATED

Characteristic Features

- Made of 100% Electrical Grade Sulphate Pulp
- Natural Colour
- High purity and mechanical strength
- Low shrinkage and compressibility
- Good compatibility with liquid dielectrics strength

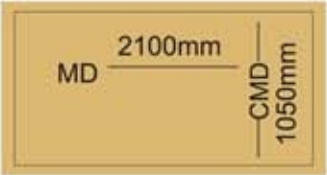


Type	Thickness	Sheet Size	
		Length (MM)	Width (MM)
High Density Laminated UB-HD-3.1	7.0 MM to 50.0 MM	2000 MM	1050 MM
		2100 MM	1050 MM

APPLICATIONS

'UMANG" UB-HD-3.1 Laminated Grade Transformer Boards is recommended to be used in all types of Power and Distribution Transformers

STANDARD SHEET SIZE OF BOARD



TECHNICAL SPECIFICATIONS

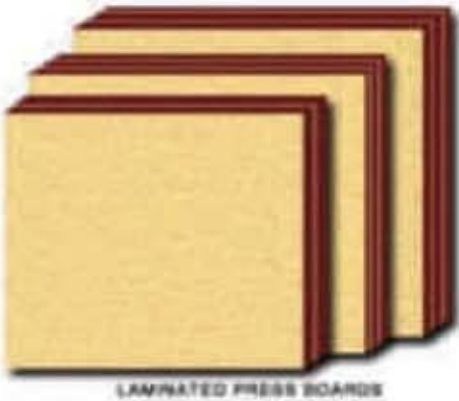
S. No.	Properties	Thickness	Units	Min. /Max. or range	Type
1.	Thickness Deviation from nominal	≤12.0 mm >12.0 mm	%	Max	± 5.0 % ± 4.0 %
2.	Apparent Density		g/cm ³	Range	1.15 -1.3
3.	Flexural Strength, Perpendiculars to laminations Machine direction Cross Machine direction		MPa	Min.	100 80
4.	Internal Ply Strength Flexural Strength, Perpendicular to laminations I) Direct tested at 23 ⁰ C Machine direction Cross Machine direction II) Oil impregnated tested at 23 ⁰ C Machine direction Cross Machine direction III) Aged for 1 week at 120 ⁰ C Machine direction Cross Machine direction		MPa	Min.	80 80 80 80 90 90
5.	Compressibility C		%	Max.	3.5
6.	Reversible part of Compressibility C _{rev}		%	Min.	65
7.	Shrinkage - Machine direction Cross machine direction Thickness		%	Max.	0.5 0.7 6.0
8.	Moisture Content		%	Max.	8.00
9.	Ash Content		%	Max.	1.0
10.	Contamination of dielectric liquid Difference between the test oil and blank I) Neutralisation Value II) Sludge content III) Dissipation factor		Mg KOH/g Mg/l	± Max ±	0.08 500 0.005
11.	Conductivity of Aqueous Extract		(mS/m)	Max	15.0
12.	PH of Aq. Extract		--	Range	6.0 – 10.0
13.	Oil Absorption		%	Min.	6.0
14.	Electric Strength in oil		kV/mm	Min.	8
15.	Finish	Confirming to IEC 60763-3-1, Type LB. 3.1A			

TRANSFORMER BOARD

Grade: UB- HD-3.1 Laminated
Confirming to IEC 60763-3-1, Type B. 3.1 A.1
HIGH DENSITY LAMINATED

Characteristic Features

- Made of 100% Electrical Grade Sulphate Pulp
- Natural Colour
- High purity and mechanical strength
- Low shrinkage and compressibility
- Good compatibility with liquid dielectrics strength

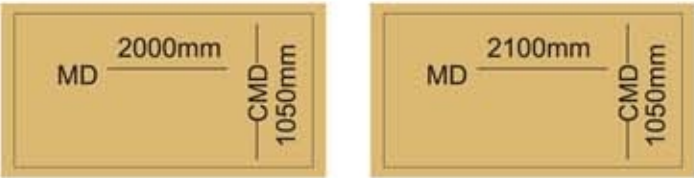


Type	Thickness	Sheet Size	
		Length (MM)	Width (MM)
High Density Laminated UB-HD-3.1	7.0 MM to 50.0 MM	2000 MM	1050 MM
		2100 MM	1050 MM

APPLICATIONS

'UMANG' UB-HD-3.1 Laminated Grade Transformer Boards is recommended to be used in all types of Power and Distribution Transformers

STANDARD SHEET SIZE OF BOARD



TECHNICAL SPECIFICATIONS

S. No.	Properties	Thickness	Units	Min. /Max. or range	Type
1.	Thickness Deviation from nominal	≤1.6 mm >1.6 mm	%	Max	± 7.5 % ± 5.0 %
2.	Apparent Density		g/cm ³	Range	1.00 -1.20
3.	Tensile Strength, Machine direction Cross Machine direction		MPa	Min.	80 55
4.	Elongation – machine direction cross machine direction		%	Min.	6 8
5..	Shrinkage - Machine direction Cross machine direction Thickness		%	Max.	0.8 1.2 6.0
6..	Plybond resistance		N/30 mm	Min.	250
7.	Moisture Content		%	Max.	8.00
8.	Ash Content		%	Max.	0.7
9.	Conductivity of Aqueous Extract		(mS/m)	Max	8
10.	PH of Aq. Extract		--	Range	6.0 – 9.0
11.	Oil Absorption		%	Min.	13
12.	Electric Strength in air		kV/mm	Min.	12
13.	Electric Strength in oil	≤1.6 mm >1.6 mm	kV/mm	Min.	40 30
14.	Finish	Confirming to IEC 60641-3-1, Type B 2.1 A			CALANDERED

TRANSFORMER BOARD

Grade: UB- LD-2.1
Confirming to IEC 60641-3-1, Type B. 2.1 A
and IS 1576 Type D,
CALANDERED

Characteristic Features

- Made of 100% Electrical Grade Sulphate Pulp
- Natural Colour
- High purity and mechanical strength
- Low shrinkage and compressibility
- Good compatibility with liquid dielectrics strength

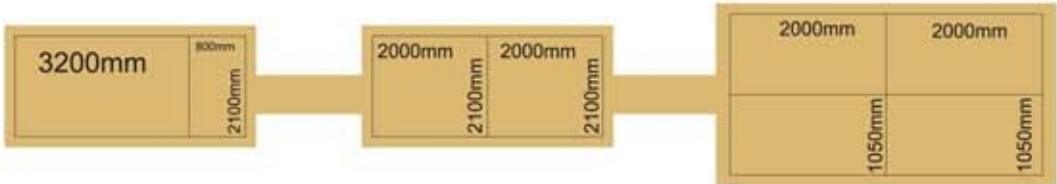


Type	Thickness	Sheet Size	
		Length (MM)	Width (MM)
Calendered Boards - UB-LD-2.1	1.0mm to3.0mm	3200 mm	2100 mm
		2000 mm	2100 mm
		2000 mm	1050 mm

APPLICATIONS

'UMANG' UB-LD-2.1 Laminated Grade Transformer Boards is recommended to be used in all types of Power and Distribution Transformers

STANDARD SHEET SIZE OF BOARD



TECHNICAL SPECIFICATIONS

S. No.	Properties	Thickness	Units	Min. /Max. or range	Type
1.	Thickness Deviation from nominal	≤1.6 mm >1.6 mm	%	Max	± 7.5 % ± 5.0 %
2.	Apparent Density		g/cm ³	Range	0.75 – 0.95
3.	Tensile Strength, Machine direction Cross Machine direction		MPa	Min.	50 40
5.	Elongation – machine direction cross machine direction		%	Min.	6.0 8.0
8.	Shrinkage - Machine direction Cross machine direction Thickness		%	Max.	1.0 1.5 6
9.	Plybond resistance		N/30 mm	Min.	250
10.	Moisture Content		%	Max.	8.0
11.	Ash Content		%	Max.	0.7
12.	Conductivity of Aqueous Extract		(mS/m)	Max	8
13.	PH of Aq. Extract		--	Range	6.0 – 9.0
14.	Oil Absorption		%	Min.	25
15.	Electric Strength in air		kV/mm	Min.	9
16.	Electric Strength in oil	≤ 1.6 mm >1.6 mm	kV/mm	Min.	35 30
17.	Finish	Confirming to IEC 60641-3-1, Type B. 5.1			

TRANSFORMER BOARD

Grade: UB- LD(M)-5.1
Confirming to IEC 60641-3-1, Type B. 5.1
MOULDBLE

Characteristic Features

- Made of 100% Electrical Grade Sulphate Pulp
- Natural Colour
- High purity and mechanical strength
- Low shrinkage and compressibility
- Good compatibility with liquid dielectrics strength

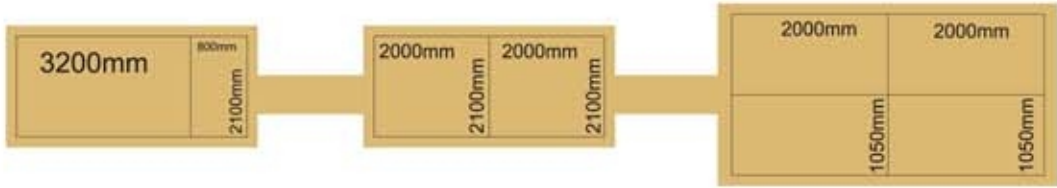


Type	Thickness	Sheet Size	
		Length (MM)	Width (MM)
Mouldable Boards - UB-LD(M) -5.1	1.0mm to 3.0mm	3200 mm	2100 mm
		2000 mm	2100 mm
		2000 mm	1050 mm

APPLICATIONS

'UMANG" UB-LD(M)-5.1 Grade Transformer Boards is recommended to be used in all types of Power and Distribution Transformers

STANDARD SHEET SIZE OF BOARD

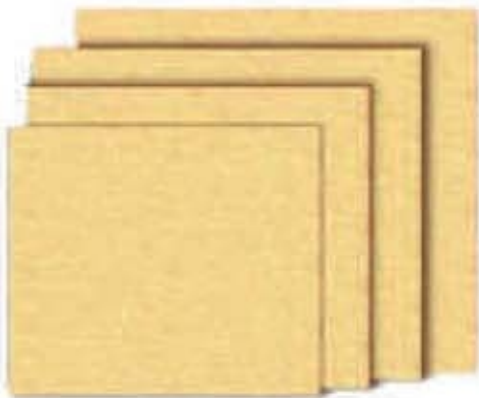


TRANSFORMER BOARD

Grade: UB- DT-3.1
asper UBPL specification

Characteristic Features

- Made of mixture of Pulp
- Natural Colour
- High purity and mechanical strength
- Low shrinkage and compressibility
- Good compatibility with liquid dielectrics strength

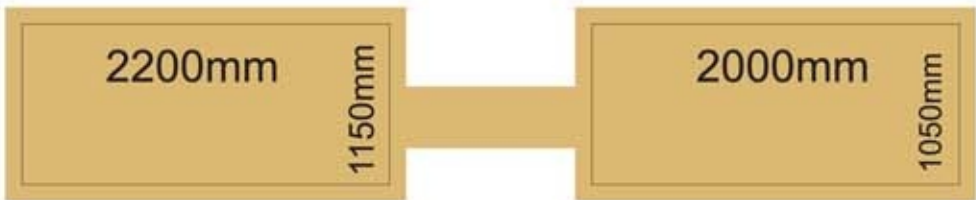


Type	Thickness	Sheet Size	
		Length (MM)	Width (MM)
Grade: UB- DT-3.1	1.0mm to 3.0mm	2200MM	1150MM
		2000MM	1050MM

APPLICATIONS

'UMANG" UB-DT-3.1 Grade Transformer Boards is recommended to use in oil immersed Distribution Transformers.

STANDARD SHEET SIZE OF BOARD



MACHINED COMPONENTS

Umang Boards also offers extensive range of machined components made from UBPL's pressboard and calendered board. Our components are made with stringent quality checks ensuring, that are burr free finish and low thickness tolerance.

TYPES

- Runners
- Wedges of trapezoidal
- Rectangular and other Profiles
- Edge rounded spacer strips
- Spacer rings
- L profile and frames
- End Rings
- Clamping Rings
- Stress Ring Blanks
- Collars with Spacers
- Cylinders
- Corrugated Board



APPLICATIONS

'UMANG" make machined components are recommended to be used in oil immersed power and distribution transformers.

MOULDED COMPONENTS

Umang Boards insulation components, meet the high and stringent requirements of the distribution as well as power transformer industry. We have standard size, as well as customized size that are made as per customer drawings'. Wet or dry sheet is used, depending on the type of component.

TYPES

- Angle rings and Caps
- Clamping Rings
- Square Tubes
- Edge Protection Ring
- End Rings Fixation Elements
- Led Exit System
- Shielding Elements
- Snouts and Flange tubes
- Bushings
- U Channels
- Protections



APPLICATIONS

Primarily components are used to form barrier in the oil - cellulose insulation structure in power and distribution transformers. Flexibility to build optimum shape, according to design, helps to build optimum insulation and reduce the size of the unit.

KRAFT PAPER AND PRESS PAHN PAPER

'UMANG BOARDS' offers Kraft Paper and Press Pahn Paper. Our Process is efficient to produce thermally upgraded craft paper and press pan paper in rolls and slitted reels.

Characteristic Features

KRAFT PAPER

- Kraft paper as per IEC 60554-3 - 5
- paper thickness of 1.5 mil to 5 mil
- Slitting as per customer requirements



PRESS PAN PAPER

- Press pan as per IEC 60641-3 -2
- Paper thickness of 5 mil to 20 mil
- Slitting as per customer requirement



APPLICATIONS

"Umang" Kraft paper tapes is recommended to be use in all types of power and distribution transformers and is used as wrap for conductor and interlayer insulation between winding.

TECHNICAL SPECIFICATION

S. No.	Properties	Units	3 mil	5 mil	8 mil	10 mil
1.	Thickness	mm	0.075	0.125	0.200	0.250
2.	Thickness, Range	mm	0.068 to 0.08	0.112 to 0.138	0.18 to 0.22	0.23 to 0.28
3.	Apparent Density (Range)	g/cc	1.0 – 1.2	1.0 – 1.2	1.0 – 1.2	1.0 – 1.2
4.	Tensile strength (min) MD CD	Mpa	80	80	80	80
			40	40	40	40
5.	Elongation (min) MD CMD	%	1.0	1.0	1.0	1.0
			5.0	5.0	5.0	5.0
6.	Shrinkage (min) MD CD PD	%	1	1	1	1
			1.5	1.5	1.5	1.5
			7	7	7	7
7.	Moisture content (max)	%	8	8	8	8
8.	Oil Absorption, (Min)	%	10.0	10.0	10.0	10.0
9.	Ash content (max)	%	1	1	1	1
10.	Conductivity of aqueous extract(max)	mS/m	8	8	8	8
11.	pH of aqueous extract (Range)	6 - 9	6 - 9	6 - 9	6 - 9	6 - 9
12.	Electric strength in Air, (min)	kV/mm	11	11	10	10
13.	Electric strength in Oil, (min)	kV/mm	60	60	55	55
14.	Recommended curing temperature	°C	120 to 140	120 to 140	120 to 140	120 to 140
15.	Recommended curing time	Hrs	6 - 8	6 - 8	6 - 8	6 - 8
16.	Bonding Shear Strength @ 140 Deg C for 6 hours & load 2 psi	psi	60 - 70	80 - 90	80 - 90	70 - 80

DIAMOND DOTTED PAPER

'UMANG BOARDS' offers Diamond Dotted Paper. Our process is efficient to produce single sided as well as double sided epoxy coating on high grade press paper. The base paper has been proven for usage as insulation in transformers and coated paper is completely compatible with trans-former oil when thermally aged.

Characteristic Features

- Diamond dotted paper in roll form and tube form
- Base paper thickness of
0.075mm (3 mil),
0.125mm (5 mil),
0.175mm (7 mil)
0.25mm (10 mil)
with a coating of epoxy resin formulation
- Base Kraft paper as per IEC 60554-3-5
- Available in Red and Natural color coating.



APPLICATIONS

"Umang" diamond dotted paper and tube is recommended to be use in all types of power and distribution transformers.

TECHNICAL SPECIFICATION

S. No.	Properties	units	Specified values under IEC-60554- 3 -3	Typical test values obtained			
1.	Thickness	mm		60/120gsm	60/150gsm	100/200gsm	60/90gsm
				0.38	0.43	0.51	0.37
2.	Density	g/cc		0.35	0.36	0.44	0.29
3.	Hill count per 10mm		10 - 18.	13.3	13.2	12.2	10.4
4.	Tensile Index MD	Nm/g	39	32	25	25	28
5.	Elongation at break (MD)	%	The elongation /stretch at break shall be within 15% of that specified by purchaser	101	154	116	65
6.	Moisture content	%	8	5.8	3.6	6.9	4.1
7.	Ash content	%	1	0.55	0.5	0.6	0.5
8.	Conductivity of aqueous extract	mS/m	10 max	9.2	9.6	9.1	9.5
9.	pH of aqueous extract		6 to 8	7.01	6.5	6.9	6.4
10.	Electric strength Air	kV/mm	Not specified	5.4	5.5	6.4	5.5
11.	Electric strength Oil	kV/mm	Not specified	22.5	21.4	26.3	28.3

CREPE PAPER TAPES AND TUBE

Characteristic Features

CREPE TUBE

- Crepe Paper Tape confirms IEC 60554-3-3
- Base Kraft paper used confirms IEC 60554-3-5
- Elongation can be altered as per customer requirement

CREPE TUBE

- ID / OD as per customer needs
- Crepe Tubes can be conditioned and non-conditioned
- Tube length upto 1500mm



APPLICATION

"Umang" crepe tube and crepe paper is recommended to be used in all types of power and distribution transformers and is used as warp for conductor and interlayer insulation between winding.

SIZE

- Tube Length can be made as per the customer requirement (upto 1500mm) as well as the ID and OD can be altered
- Crepe paper tapes can be altered as per requirements (30 -150%)

IN HOUSE LABORATORY

We have a highly qualified technical team, which ensures that the insulation is defect-free product. Our team follows strict NABL, ISO, IEC, ASTM, BIS and IEEE guidelines.

We perform a variety of quality control tests in our laboratory with include Mechanical, Electrical and Chemical tests.

1. Mechanical tests include tensile strength, compressibility, elongation and reverse compressibility.
2. Chemical tests include conductivity, PH measurement, and percentage ash content.
3. Electrical tests include electric strength.

We at Umang Boards are very particular about our raw material quality that we use in our processes. Therefore our quality team inspects each raw material at its manufacturing location as well as it is tested in our in-house laboratory and external authorized laboratories. Water is sourced from underground tube well at our factory premises, and this water is filtered to the top purity through our finest reverse osmosis plant and demineralization plant installed in the same premises. Our quality team makes sure that water going in and out of the production process is of treated properly to ensure good quality and sustainability.

PACKAGING

We take precautions into account when organizing the shipment for dispatch. Therefore, we use high tech machine to deliver a damage free and quality product to our customers.

We offer the following packaging for our products to make it fit for any mode of transport.



Wooden Base Pallet (Standard)

We offer two way wooden pallet packing that enhances the strength and provides durability.



HDPE packing with polythene wrapping

We offer HDPE packing which is heat resistant and light weight.

GROUP COMPANIES

ANUP INSULATION PVT. LTD.

H-40, RIICO Industrial Area, Phase-1
Bindayaka, Jaipur 302012
Rajasthan, India
Tel & Fax: +91-141- 2240578
Email : info@anupinsulation.com
www.anupinsulation.com

PRODUCTS

- Bare wire & Strips of Copper & Aluminium
- Enameled wires of Aluminium and Copper
- Paper Covered Wire & Strips of Aluminium & Copper
- Silted Insulation Paper



UMANG BOARDS BKK CO. LTD.

A TRADING HOUSE OF
VARIOUS TRANSFORMER
BOARDS

PRODUCTS

- Transformer CRGO & CRNGO
- Transformer Oil
- Enameled & Paper covered wire & Strips of Aluminum & Copper
- Electrical Insulation Press Boards & components



UMANG BOARDS THAILAND CO. LTD.

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The 22nd Floor, Silom Road,
Silom, Bangkok 10500
Bangkok, Thailand
Tel: 662-630-3220
Fax: 662-630221
Email : sales@umangboards.co.th
www.umangboards.co.th

PRODUCTS

- Transformer CRGO & CRNGO in cut to size & Silted Rolls
- Transformer Corrugated Tanks & Fin walls
- Laminated Wood components, slitted Insulation Papers & DDP paper
- Electrical Insulation Press Boards & components



CORPORATE SOCIAL RESPONSIBILITY

At Umang Boards, we firmly believe in our commitment to local communities and society for ensuring sustainable development. Our prime endeavor is to remain dedicated towards wealth creation for the society.

We take utmost care in the selection of community interventions we initiate. Our prime endeavor is to remain focused on creating long-term welfare of the society to the best of our capabilities.

Through the esteemed Dhanuka Charitable Trust, we are able to provide financial support in the following sectors: -

Sustainable livelihood

- In association with Akshaya Patra Foundation, which helps feed food to the underprivileged people in the society.

Education

- Provide merit scholarships to students

Healthcare

- In association with Mother Teresa foundation, Jaipur, which helps elderly and physically challenged people in the society.
- In association with SDMH Avedna Ashram, which helps patients with terminal illness, a shelter for people in pain.



धानुका चैरिटेबल ट्रस्ट