UMANG BOARDS LIMITED

INDIA'S
LEADING MANUFACTURER OF

- TRANSFORMER INSULATIONS
- WINDING WIRES
- INSULATING CHEMICALS

UMANG BOARDS LIMITED

OUR CERTIFICATIONS


TÜV NORD

CERTIFICATE

Management system as per
ISO 9001 : 2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

UMANG BOARDS LIMITED
"UMANG HOUSE" 7-B, Bharat Mata Path, Jamna Lal Bajaj Marg, C-Scheme, Jaipur - 302 001, Rajasthan, India
and other locations as per annexure

operates a management system in accordance with the requirements of ISO 9001:2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope -

Unit 1 - Manufacture of Pressboard, Pre Compressed Pressboard, Calendared Board, Laminated Board, Crepe Paper Tube and Tapes, Diamond Dotted Paper, Moulded Board, Machining / Molded Components for Transformers.
Unit 2 - Manufacture of Super Enameled and Paper Covered Wire & Strip of Copper and Aluminum and Varnish/Enamel.

Certificate Registration No. **44 100 28393022** Valid from **06.04.2021**
Audit Report No. **2.5-10075/2020** Valid until **28.11.2023**
Initial certification **29.11.2005**

Certification Body
at TÜV NORD CERT GmbH Mumbai, **06.04.2021**

TÜV NORD CERT GmbH Langemarckstrasse 20 45141 Essen www.tuev-nord-cert.com
TUV India Pvt. Ltd., 801, Raheja Plaza – 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India www.tuv-nord.com/in

IAF DAkkS


TÜV NORD

CERTIFICATE

Management system as per
ISO 14001 : 2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

UMANG BOARDS LIMITED
"UMANG HOUSE" 7-B, Bharat Mata Path, Jamna Lal Bajaj Marg, C-Scheme, Jaipur - 302 001, Rajasthan, India
and other locations as per annexure

operates a management system in accordance with the requirements of ISO 14001:2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope -

Unit 1 - Manufacture of Pressboard, Pre Compressed Pressboard, Calendared Board, Laminated Board, Crepe Paper Tube and Tapes, Diamond Dotted Paper, Moulded Board, Machining / Molded Components for Transformers.
Unit 2 - Manufacture of Super Enameled and Paper Covered Wire & Strip of Copper and Aluminum and Varnish/Enamel.

Certificate Registration No. **44 104 28393022** Valid from **06.04.2021**
Audit Report No. **2.5-10075/2020** Valid until **28.11.2023**
Initial certification **07.12.2011**

Certification Body
at TÜV NORD CERT GmbH Mumbai, **06.04.2021**

TÜV NORD CERT GmbH Langemarckstrasse 20 45141 Essen www.tuev-nord-cert.com
TUV India Pvt. Ltd., 801, Raheja Plaza – 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India www.tuv-nord.com/in

IAF DAkkS


TÜV NORD

CERTIFICATE

Management system as per
ISO 45001 : 2018

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

UMANG BOARDS LIMITED
"UMANG HOUSE" 7-B, Bharat Mata Path, Jamna Lal Bajaj Marg, C-Scheme, Jaipur - 302 001, Rajasthan, India
and other locations as per annexure

operates a management system in accordance with the requirements of ISO 45001:2018 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope -

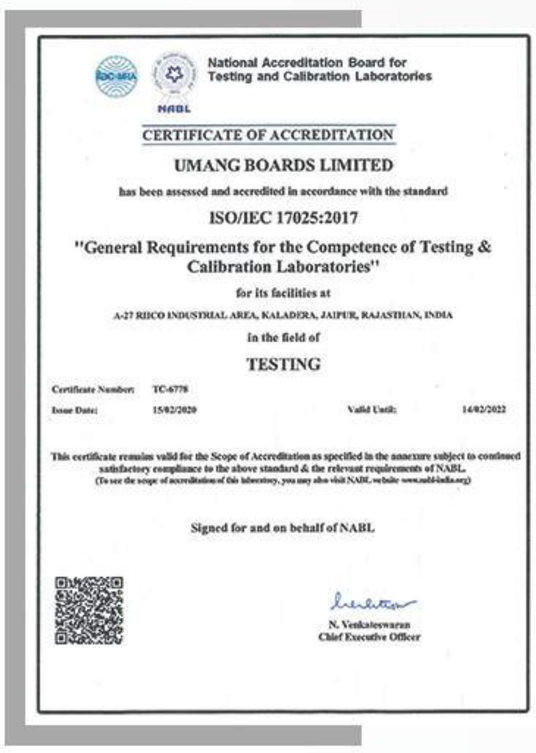
Unit 1 - Manufacture of Pressboard, Pre Compressed Pressboard, Calendared Board, Laminated Board, Crepe Paper Tube and Tapes, Diamond Dotted Paper, Moulded Board, Machining / Molded Components for Transformers.
Unit 2 - Manufacture of Super Enameled and Paper Covered Wire & Strip of Copper and Aluminum and Varnish/Enamel.

Certificate Registration No. **44 126 28393022** Valid from **06.04.2021**
Audit Report No. **2.5-10075/2020** Valid until **28.11.2023**
Initial certification **07.12.2011** (BS OHSAS 18001)

Certification Body
at TÜV NORD CERT GmbH Mumbai, **06.04.2021**

TÜV NORD CERT GmbH Langemarckstrasse 20 45141 Essen www.tuev-nord-cert.com
TUV India Pvt. Ltd., 801, Raheja Plaza – 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India www.tuv-nord.com/in

IAF DAkkS


National Accreditation Board for Testing and Calibration Laboratories

NABL

CERTIFICATE OF ACCREDITATION

UMANG BOARDS LIMITED

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

A-27 RIICO INDUSTRIAL AREA, KALADERA, JAIPUR, RAJASTHAN, INDIA

in the field of

TESTING

Certificate Number: TC-6778
Issue Date: 15/02/2020 Valid Until: 14/02/2022

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

9001 : 2015
ISO

14001 : 2015
ISO

45001 : 2018
ISO

17025 : 2017
ISO/IEC

Quick Facts

25+
Country Exports

300+
Employee Strength

35+
Unique Products

UMANG BOARDS LIMITED

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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 carter 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 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 carter 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.

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

UMANG BOARDS LIMITED

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 carter 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 consistentsuperior 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, JISC 2305-3-1, ASTM and IEC60641 3-1). We also manufacture machined and moulded components, crepe papertapes & 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 resultthe 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.

UMANG BOARDS LIMITED

MAIN OBJECTIVE

- To carter 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.

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.

VISION

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.

MANUFACTURING FACILITIES

UMANG BOARDS LIMITED

Unit 1

Land Area : 11,200 square meters
Built Up (RCC) Area: 1,00,000 sq.ft.
Products Manufactured

- Transformer board
- Diamond Dotted paper
- Crepe paper
- Machined components
- Moulded Components

Unit 2

Land Area : 51,000 square meters
Built Up (RCC) Area: 1,85,000 sq.ft.
Products Manufactured

- Aluminium and Copper Enameled Round Wires
- Aluminium and Copper Enamelled Flat Wires
- DPC / TPC Aluminium Wire
- Insulation Varnish/ Wire Enamel
- Laminated Wood/ Perma Wood
- Insulation Kraft Paper
- Insulation Press Paper

PRODUCT DIVISION

UMANG BOARDS LIMITED

Division 1

TRANSFORMER INSULATIONS

Division 2

WINDING WIRES

Division 3

INSULATING CHEMICAL

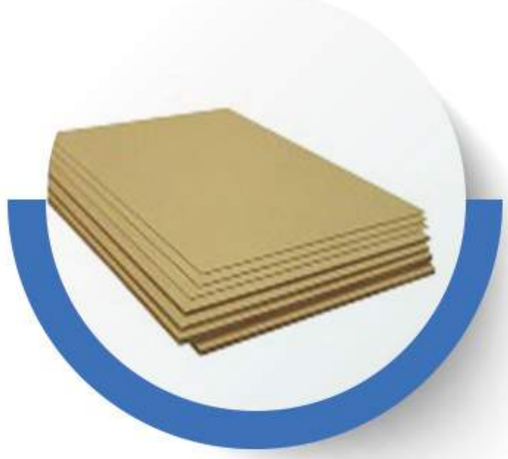
PRODUCT RANGE

TRANSFORMER INSULATIONS

UMANG BOARDS LIMITED

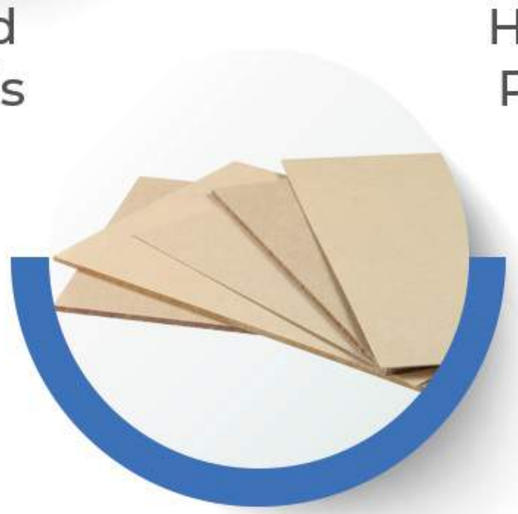
Cellulose Transformer Insulation Boards

Calendered Pressboards



High Density Pressboards

Laminated Pressboards

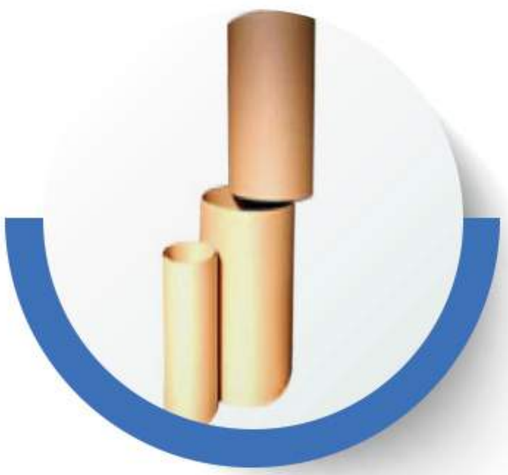


Medium Density Pressboards

Mouldable Pressboards

Machined and Milled Components

Corrugated Boards

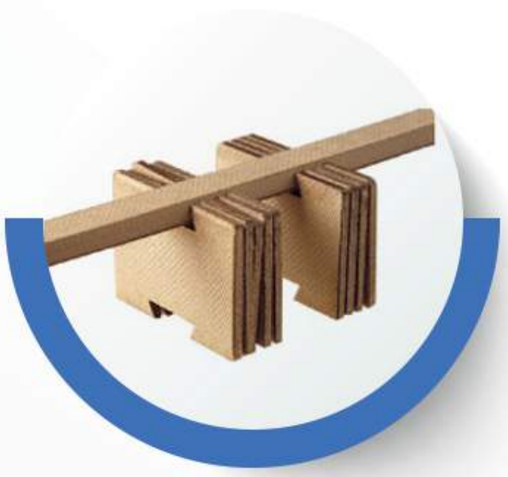


Cylinders

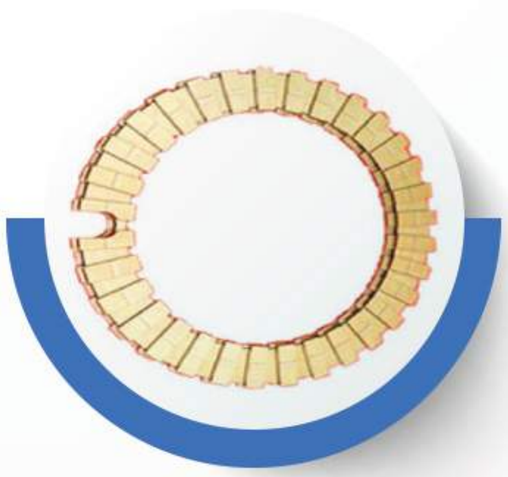
Duct Spacing

L Profile & Frames

Spacer Strips



Spacers



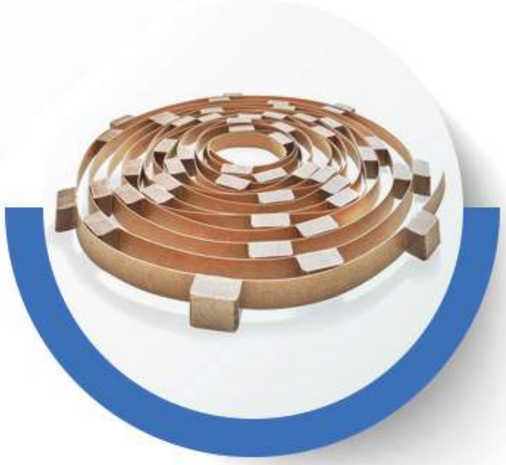
Spacers Ring

U Channel

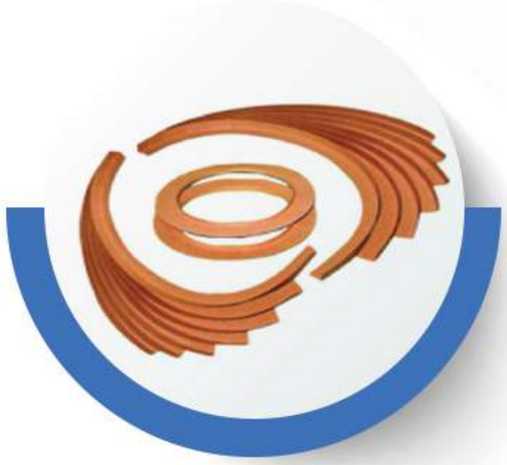
UMANG BOARDS LIMITED

Moulded Components and Other Components

Angle Ring, Cap Ring, Snouts



Clankband

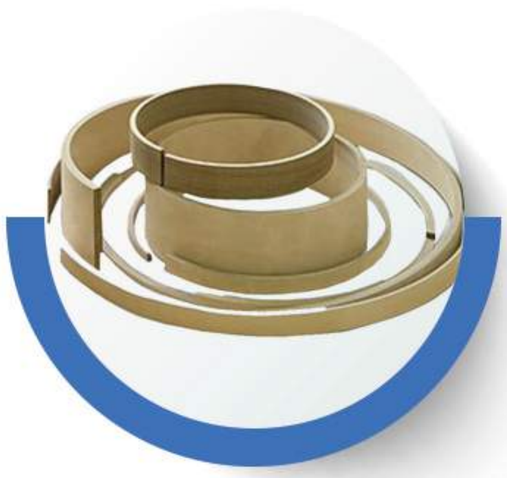


Corner Collars

Couched High Voltage Terminal Leads

Crepe Paper Tubes

DDP Paper Tubes



End Rings

Shielding Insulations

Insulation Papers

Electrical Grade Crepe Paper

Electrical Grade Diamond Dotted Paper

Electrical Grade Kraft Paper

Electrical Grade Press Paper

HIGH DENSITY TRANSFORMER BOARD

Grade: UB-HD-3.1
Confirming to IEC 60641-3-1 Type B 3.1A

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

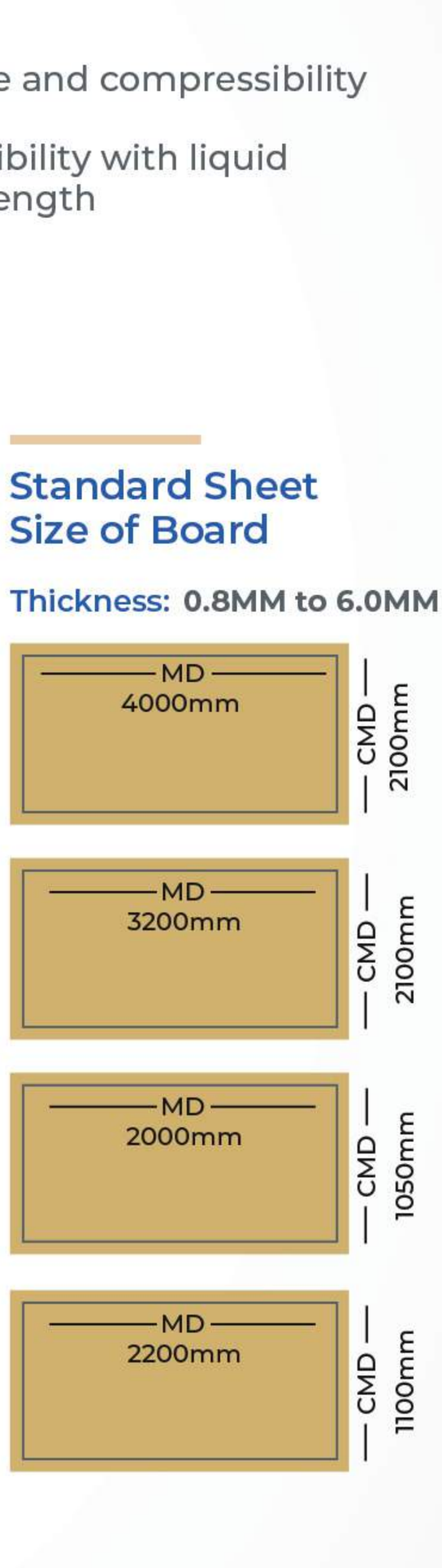
Technical Specifications

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	≤1.6 mm >1.6 - 3.0 mm > 3.0 mm	g/cm³	Range	1.00 - 1.20 1.10 -1.25 1.15 - 1.30
3.	Tensile Strength, Machine Direction	≤1.6 mm >1.6 - 3.0 mm > 3.0 mm	MPa	Min.	100 105 110
4.	Tensile Strength, Cross Machine Direction	≤1.6 mm >1.6 - 3.0 mm > 3.0 mm	MPa	Min.	75 80 85
5.	Elongation- Machine Direction Cross Machine Direction		%	Min.	2.5 3.5
6.	Compressibility C	≤1.6 mm >1.6 - 3.0 mm >3.0 - 6.0 mm >6.0 mm	%	Max.	10.0 7.5 5.0 4.5
7.	Reversible part of Compressibility C_{rev}	≤1.6 mm >1.6 - 3.0 mm >3.0 - 6.0 mm >6.0 mm	%	Min.	45 50 50 50
8.	Shrinkage- Machine Direction Cross Machine Direction Thickness		%	Max.	0.5 0.7 6.0
9.	Plybond Resistance		N/30 mm	Min.	250
10.	Moisture Content		%	Max.	6.00
11.	Ash Content		%	Max.	0.7
12.	Conductivity of Aqueous Extract	≤1.6 mm >1.6 - 3.0 mm >3.0 - 6.0 mm >6.0 mm	(mS/m)	Max.	5.0 6.0 8.0 10.0
13.	PH of Aq. Extract		--	Range	6.0 - 9.0
14.	Oil Absorption	≤1.6 mm >1.6 - 3.0 mm >3.0 - 6.0 mm >6.0 mm	%	Min.	11.0 9.0 7.0 6.0
15.	Electric Strength in Air		kV/mm	Min.	12
16.	Electric Strength in Oil	≤1.6 mm >1.6 mm	kV/mm	Min.	45 35

Note : These values do not constitute specification of our products and also provided are values in accordance with the IEC specification. Since test conditions cannot always duplicate actual field installations or end use, Umang Boards make no warranties with respect to such data and assume no responsibility for performance characteristics resulting from conditions which may differ from those used in laboratory tests.

Standard Sheet Size of Board

Thickness: 0.8MM to 6.0MM



UMANG BOARDS LIMITED

LAMINATED TRANSFORMER BOARD

Grade: UB-LB-3.1 Laminated
Confirming to IEC 60763-3-1, Type B. 3.1 A.1

Characteristic Features

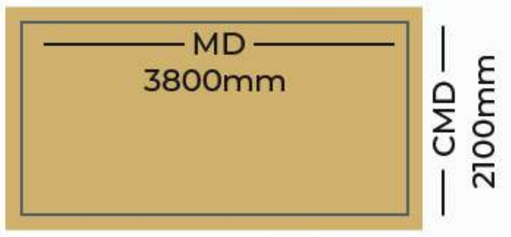
- Made of 100% Electrical Grade Sulphate Pulp
- Natural Colour
- High purity and mechanical strength
- Low shrinkage and compressibility
- Good compatibility with liquid dielectrics strength

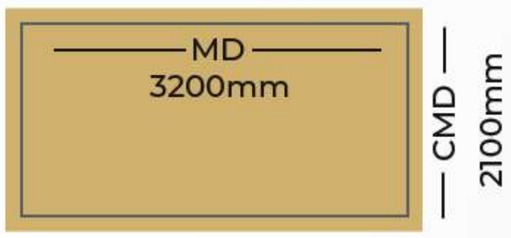
Technical Specification

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/cm³	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, Pipendicular to Laminations › Direct tested at 23°C Machine Direction Cross Machine Direction › Oil impregnated tested at 23°C Machine Direction Cross Machine Direction › Aged for 1 week at 120°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.	8.0
9.	Ash Content		%	Max.	1.0
10.	Contamination of dielectric Squid Difference between the test oil and blank › Neutralisation Value › Sludge content › 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			Matte Finish

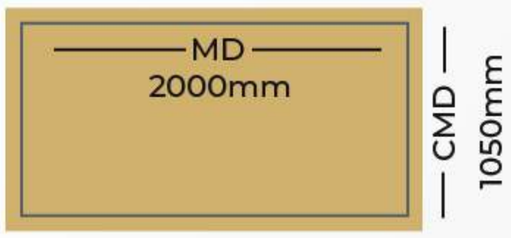
Standard Sheet Size of Board

Thickness: 7MM to 25MM





Thickness: 7MM to 40.0MM



TRANSFORMER BOARDS FOR DISTRIBUTION TRANSFORMERS

Grade: UB-DT- 3.1
Confirming to IEC 60641-3-1, Type B. 3.1 B

Characteristic Features

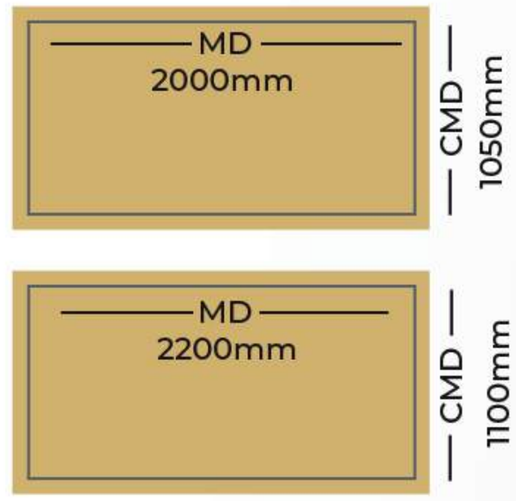
- Made of Pulp
- Natural - Colour
- High purity and mechanical strength
- Low shrinkage and compressibility
- Good compatibility with liquid dielectrics strength

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	≤1.6 mm >1.6 - 3.0 mm	g/cm³	Range	0.95 -1.15 1.05 -1.2
3.	Tensile Strength, Machine Direction	≤1.6 mm >1.6 - 3.0 mm	MPa	Min.	80 85
4.	Tensile Strength, Cross Machine Direction	≤1.6 mm >1.6 - 3.0 mm	MPa	Min.	45 50
5.	Elongation- Machine Direction Cross Machine Direction		%	Min.	 3 4
6.	Compressibility C	≤1.6 mm >1.6 – 3.0 mm	%	Max.	11 7.5
7.	Reversible part of Compressibility C_{rev}	≤1.6 mm >1.6 - 3.0 mm	%	Min.	45 50
8.	Shrinkage- Machine Direction Cross Machine Direction Thickness		%	Max.	 0.7 1.0 6
9.	Plybond Resistance		N/30 mm	Min.	250
10.	Moisture Content		%	Max.	6
11.	Ash Content		%	Max.	0.7
12.	Conductivity of Aqueous Extract	≤1.6 mm >1.6 - 3.0 mm	(mS/m)	Max.	5 6
13.	PH of Aq. Extract		--	Range	6.0 - 9.0
14.	Oil Absorption	≤1.6 mm >1.6 - 3.0 mm	%	Min.	13 11
15.	Electric Strength in Air		kV/mm	Min.	12
16.	Electric Strength in Oil	≤1.6 mm >1.6 mm	kV/mm	Min.	40 35
17.	Finish	Confirming to IEC 60641-3-1, Type B. 3.1 B			MATT FINISH

Standard Sheet Size of Board

Thickness: 1.0MM to 3.0MM



UMANG BOARDS LIMITED

CALANDERED TRANSFORMER BOARD

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

Characteristic Features

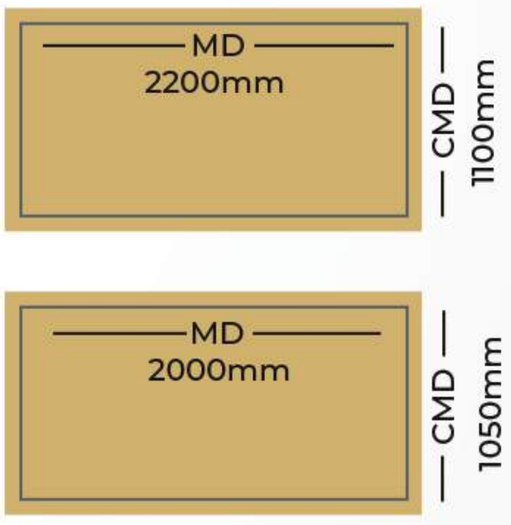
- Made of 100% Electrical Grade Sulphate Pulp
- Natural Colour
- High purity and mechanical strength
- Low shrinkage and compressibility
- Good compatibility with liquid dielectrics strength

Technical Specification

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/cm³	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 2.1A			Calendered

Standard Sheet Size of Board

Thickness: 1MM to 3MM



PSP 3050
TRANSFORMER BOARD

Grade: UB3050

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

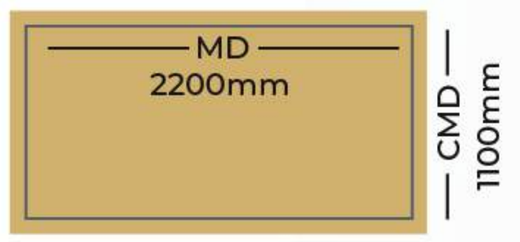
Technical Specifications

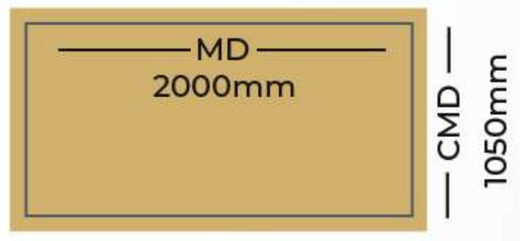
S No.	Properties	Thickness	Units	Min./ Max. or Range	Type
1.	Thickness Deviation from nominal	≤1.6 mm >1.6 mm	%	Max.	± 7.5% ±5.0%
2.	Apparent Density	-	g/cm³	Range	1.2 - 1.3
3.	Area Weight Tolerance : +/- 10	0.8 1.0 1.5 2.0 3.0 4.0	g/m2%	Max.	1000 1250 1875 2500 3750 5000
4.	Area Yield	0.8 1.0 1.5 2.0 3.0 4.0	Approx. m2/kg	Max.	1.00 0.80 0.53 0.40 0.27 0.20
5.	Tensile Strength, Machine Direction	-	MPa	Min.	90
6.	Tensile Strength, Cross Machine Direction	-	MPa	Min.	60
7.	Elongation- Machine Direction Cross Machine Direction	MD CMD	%	Min.	6.0 8.0
8.	Shrinkage- Machine Direction Cross Machine Direction Thickness	MD CMD Thickness	%	Max.	0.7 1.0 5.0
9.	Moisture Content		%	Max.	8.00
10.	Ash Content		%	Max.	0.7
11.	Conductivity of Aqueous Extract	≤3 mm 4.0 mm	(mS/m)	Max.	8.00 10.00
12.	PH of Aq. Extract		--	Range	6.0 - 9.0
13.	Oil Absorption	-	%	Min.	6.00
14.	Electric Strength in Air		kV/mm	Min.	12
15.	Electric Strength in Oil	≤1.6 mm >1.6 mm	kV/mm	Min.	40 30

Note : These values do not constitute specification of our products and also provided are values in accordance with the IEC specification. Since test conditions cannot always duplicate actual field installations or end use, Umang Boards make no warranties with respect to such data and assume no responsibility for performance characteristics resulting from conditions which may differ from those used in laboratory tests.

Standard Sheet Size of Board

Thickness: 0.8MM to 4.0MM





UMANG BOARDS LIMITED

MOULDABLE TRANSFORMER BOARD

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

Characteristic Features

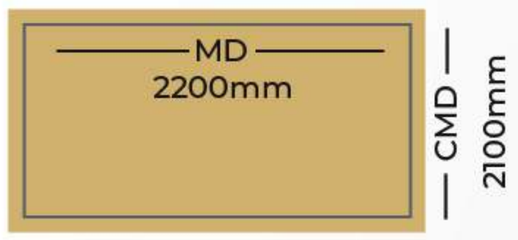
- Made of 100% Electrical Grade Sulphate Pulp
- Natural Colour
- High purity and mechanical strength
- Low shrinkage and compressibility
- Good compatibility with liquid dielectrics strength

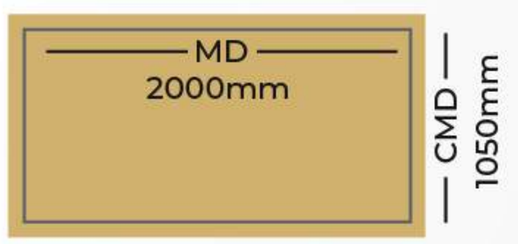
Technical Specification

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/cm³	Range	0.75 - 0.95
3.	Tensile Strength, Machine Direction Cross Machine Direction		MPa	Min.	50 40
4.	Elongation- Machine Direction Cross Machine Direction		%	Min.	6.0 8.0
5.	Shrinkage- Machine Direction Cross Machine Direction Thickness		%	Max.	1.0 1.5 6
6.	Plybond Resistance		N/30 mm	Min.	250
7.	Moisture Content		%	Max.	8.0
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.	25
12.	Electric Strength in Air		kV/mm	Min.	9
13.	Electric Strength in Oil	≤1.6 mm >1.6 mm	kV/mm	Min.	35 30
14.	Finish	Confirming to IEC 60641-3-1, Type B. 5.1			Moulded

Standard Sheet Size of Board

Thickness: 1.0MM to 3.0MM





ELECTRICAL INSULATION KRAFT PAPER

'UMANG BOARDS' offers Kraft Paper. Our Process is efficient to produce thermally upgraded kraft paper in rolls and slitted reels.

Characteristic Features

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

Technical Specification

S No.	Properties		Units	Min./ Max. or Range	Value
1.	Thickness		%	Range	± 10.0
2.	On Roll Width		mm		± 5.0
3.	Density		g/cc	Range	0.75 -0.85
4.	Moisture Content		%	Max.	8.0
5.	Air Permeability		Micro m/Pa.s	Range	0.5-1.0
6.	Conductivity of Aqueous Extract		mS/m	Max.	10.0
7.	PH of Aqueous Extract			Range	6.0 – 8.0
8.	Ash Content		%	Max.	1.0
9.	Water Absorption		mm	Min.	10
10.	Tensile Index	MD CMD	NM/g	Min.	93 34
11.	Elongation	MD CMD	%	Min.	2 4
12.	Tear Index MD/CMD	≤ 4 Mil > 4 Mil	mN M2/g	Min.	5/6 6/7
13.	Electric Strength Air		KV/mm	Min.	7

Note : These values do not constitute specification of our products and also provided are values in accordance with the IEC specification. Since test conditions cannot always duplicate actual field installations or end use, Umang Boards make no warranties with respect to such data and assume no responsibility for performance characteristics resulting from conditions which may differ from those used in laboratory tests.

Dimensions

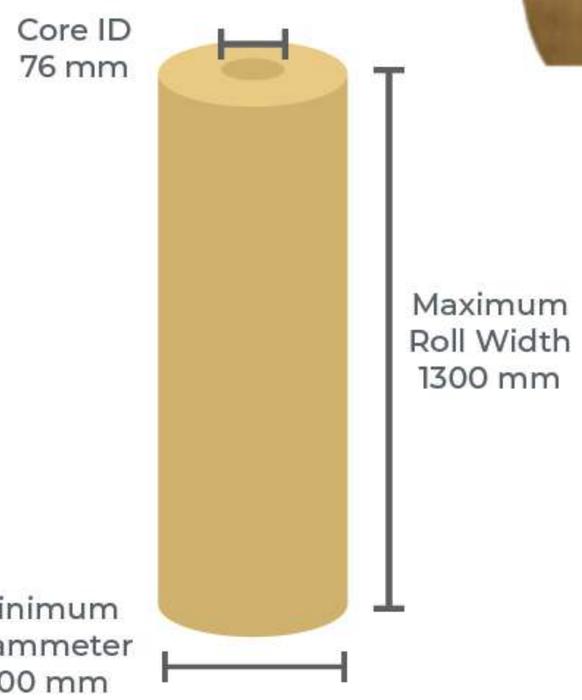
ELECTRICAL INSULATION PRESS PAN PAPER

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

Characteristic Features

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

Dimensions



Technical Specification

S No.	Properties	5.0 mil	7.0 mil	10 mil	12 mil	15 mil	20 mil
1.	Thickness in mm	0.125	0.175	0.250	0.300	0.375	0.500
2.	Thickness Tolerance (mm), Range	0.112 - 0.138	0.158 – 0.193	0.225 – 0.275	0.270 – 0.330	0.338 – 0.412	0.450 – 0.550
3.	Density, (g/cc), min	0.90 – 1.0	0.90 – 1.0	0.90 – 1.0	0.90 – 1.0	0.90 – 1.0	0.90 – 1.0
4.	Moisture content, (%), max	8.0	8.0	8.0	8.0	8.0	8.0
5.	Shrinkage MD, (%), max	1.0	1.0	1.0	1.0	1.0	1.0
6.	Shrinkage CD, (%), max	1.50	1.50	1.50	1.50	1.50	1.50
7.	Shrinkage PD, (%), max	9.0	9.0	9.0	9.0	9.0	9.0
8.	Conductivity of Aqueous extract, (mS/m), max	8	8	8	8	8	8
9.	PH of Aqueous Extract, Range	6.0 - 9.0	6.0 - 9.0	6.0 - 9.0	6.0 - 9.0	6.0 - 9.0	6.0 - 9.0
10.	Oil Absorption, (%), min	10.0	10.0	10.0	10.0	10.0	10.0
11.	Ash Content, (%), max	1.0	1.0	1.0	1.0	1.0	1.0
12.	Tensile Strength (Mpa), min MD/CD	50/30	50/30	50/30	30/20	30/20	30/20
13.	Elongation, (%), min, MD/CD	1.0/5.0	1.5/5.0	1.5/5.0	2.0/5.0	2.0/5.0	2.0/5.0
14.	Dielectric Strength Air/Oil (kV/mm), min	9/60	8/50	7/50	5.5/50	5.5/45	5.5/40

Note : These values do not constitute specification of our products and also provided are values in accordance with the IEC specification. Since test conditions cannot always duplicate actual field installations or end use, Umang Boards make no warranties with respect to such data and assume no responsibility for performance characteristics resulting from conditions which may differ from those used in laboratory tests.

UMANG BOARDS LIMITED

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 transformer oil when thermally aged.

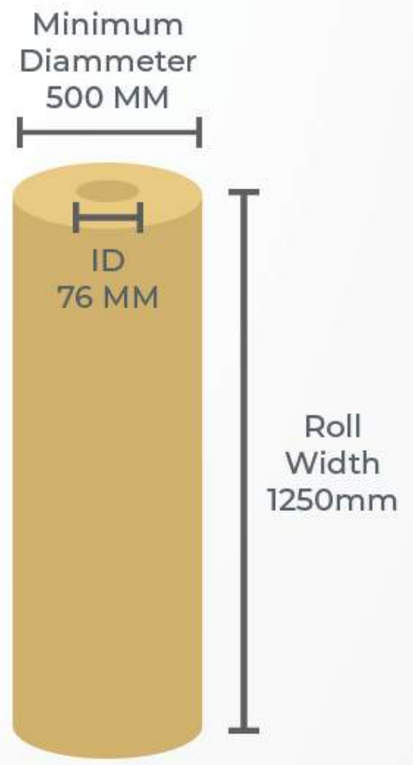
Characteristic Features

- 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), 0.4mm (15 mil), 0.5mm (20 mil) with a coating of epoxy resin formulation
- Base Kraft Paper as per IEC 60554-3-5
- Available in Red and Natural Color Coating
- Thermally upgraded DDP are also available

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 to0.08	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) Machine Direction Cross Machine Direction	MPa	 80 40	 80 40	 80 40	 80 40
5.	Elongation (min) Machine Direction Cross Machine Direction	%	 1.0 5.0	 1.0 5.0	 1.0 5.0	 1.0 5.0
6.	Shrinkage (min) MD CD PD	%	1 1.5 7	1 1.5 7	1 1.5 7	1 1.5 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 Aq. 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 temprature	°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 Strenght @ 140°C for 6 hours & load 2 psi	psi	60 - 70	80 - 90	80 -90	70 - 80

Dimensions



UMANG BOARDS LIMITED

CREPE PAPER TAPES AND TUBE

Characteristic Features

CREPE TAPE

- 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 2000 mm

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 Aq. 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 Roll Dimensions

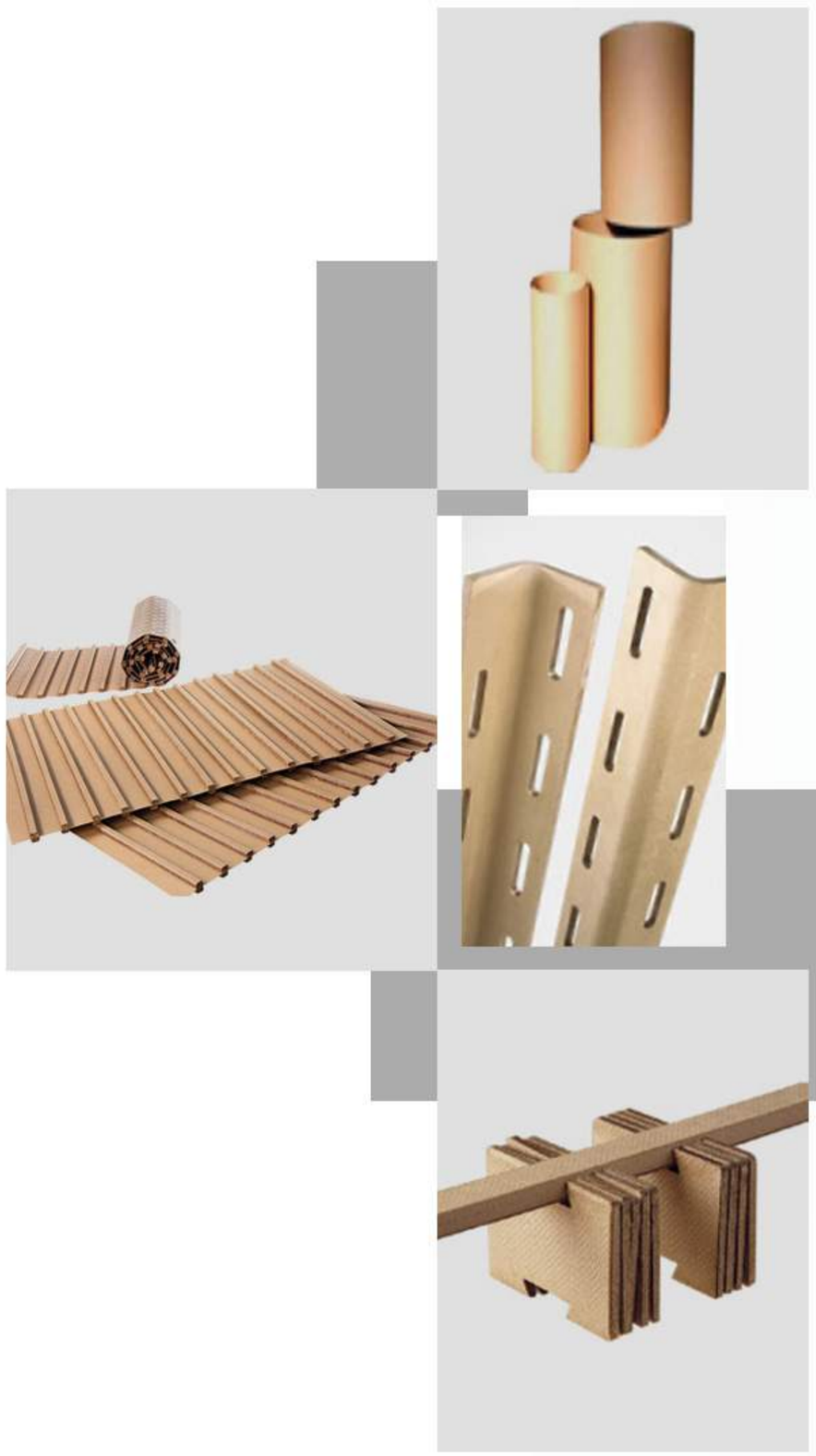
Crepe Paper Tube Dimensions

MACHINED AND MILLED COMPONENTS

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

Types

- Runners
- Wedges of trapezoidal
- Rectangular and other Proles
- Edge rounded spacer strips
- Spacer rings
- L prole 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.

UMANG BOARDS LIMITED

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.

- Mechanical tests include tensile strength, compressibility, elongation and reverse compressibility.
- Chemical tests include conductivity, PH measurement, and percentage ash content.
- 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.

QUALITY

At Umang Boards Private Limited, quality plays a very important role. We follow rigorous quality control procedures to make sure that we are able to deliver a superior quality product to our customer. We make sure that our insulation solutions are free from metal and other impurities. Our Winding wires are free from any dust particles and attain high BDV values. Lastly in our chemical division we aim to achieve highest quality products with good solid content values while maintaining other parameters.

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. 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.

UMANG BOARDS LIMITED

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.

PRODUCT RANGE

WINDING WIRES

UMANG BOARDS LIMITED

Aluminium

Kraft/Crepe Coated Al Round Wire

Paper Covered Al Flat Wire

Super Enamelled Al Flat Wire

Super Enamelled Al Round Wire

Copper

Kraft / Crepe Coated CU Round Wire

Paper Covered CU Flat Wire

Super Enamelled CU Flat Wire

Super Enamelled CU Round Wire

UMANG BOARDS LIMITED

Super Enamelled Al Flat Wire

Characteristic Features

- **Size:** 10 sq.mm to 80 sq. mm
- **Insulation Class:** Modified Polyester (Class130 and 155), Hermatic (Class180), Dual Coat (Class 200)
- **Conductor:** EC Grade Aluminum

Technical Specification

Strips Type Properties	Test Method	Interval	Acceptance Criterial	Test Values for a SEM Strips 200 AL Sample(8.00 x 3.00)
THERMAL PROPERTIES				
Heat Shock	IEC 60851 – 6.3	All Sizes	≥ 220°C, 6 x T	≥ 220°C, 6 x T
Temperature Index	IEC 60172	1)	≥ 200°C 2)	≥ 200°C 2)
ELECTRICAL PROPERTIES				
Conductivity Resistance	IEC 60851 – 5.3	3)	0.02817 Ωmm²/m	0.02817 Ωmm²/m
Conductivity	1/R	3)	>35.5 m/ (Ωmm²)	>35.5 m/ (Ωmm²)
Breakdown Voltage	IEC 6.851 – 5.4	All Sizes	2.0 kV	4.2 kV
MECHANICAL PROPERTIES				
Flexibility Bending Edgewise	IEC 60851 – 3.5	Width ≤ 10 mm Width ≤ 10 mm	4.x width 5.x width	3 x width 4 x width
Bending Flatwise		All Sizes	4 x thickness	3 x thickness
Abrasion Av. N	IEC 60851-3.5	All Sizes	10''% Stretch, Loss of adhesion < 1 x width	15''% stretch
Cut & Stretch				

Test conducted on round wire, 1,00 mm grade 2, according to IEC 60172
1. Dependence of dimension is expressed by the unit.
2. Values above are for information only. All values noted are typical and can vary between lots and dimensions.

UMANG BOARDS LIMITED

Super Enamelled Al Round Wire

Characteristic Features

- **Diameter:** 0.5 mm to 5 mm
- **Insulation Class:** Modified Polyester (Class130 & 155), Hermatic (Class180), Dual Coat (Class 200)
- **Conductor:** EC Grade Aluminum
- **Spools:** PT 35 to PT 200

Technical Specification

Wire Type Properties	Modified Polyster	Modified Polyster	Polysterimide	Dual Coated Wire PE/PEI + PAI
Thermal Class	130	155	180	200
Class Insulation	B	F	H	H+
Colour	Brown/ Reddish Golden	Light Brown to Dark Brown	Dark Brown (Mahogany)	Reddish Brown to Golden
Range (Size)	0.2 to 4.0 mm	0.2 to 4.0 mm	0.2 to 4.0 mm	0.2 to 4.0 mm
Specification	IS 13730-34, IEC 60317-34, IS 13730-9, IEC 60317-9 for 1.0 mm Wire	IS 13730-3, IEC 60317-3 for 1.0 mm Wire	IS 13730-8,IEC 60317-8,IS 13730-15,IEC 60317-15 for 1.0 mm Wire	IS 13730-13,IEC 60317-13 NEMA MW 35A/35C, IEC 60371 – 25
MECHANICAL TESTS				
Flexibility (Upto 1.6mm)	3 x D	3 x D	3 x D	3 x D
Peel	N. A.	N. A.	N. A.	N.A.
Abrasion Av. N	5.20	-	5.45	6.45
THERMAL TESTS				
Heat Shock	155°C – 30 Min	175°C – 30 Min	200°C – 30 Min	15% Str – 3xd – 240°C
Cut Through	240°C – 2 Min	270°C – 2 Min	300°C – 2 Min	320°C – 2 min
CHEMICAL TESTS				
Solvent Resistance	Good	Good	Very Good	Excellent
Refrigerant Resistance	N. A.	N. A.	Very Good	Excellent
Solderabilty	N. A.	N. A.	N. A.	N. A.
Transformer Oil	N. A.	N. A.	Excellent	Excellent
RESISTANCE				
Electrical Resistance	Within Range	Within Range	Within Range	Within Range
Breakdown Voltage	Above 8.0 KV	Above 8.0 KV	Above 8.0 KV	Above 8.0 KV
Cont. of Covering (Pin Hole)	Normally - Nil	Normally - Nil	Normally - Nil	Normally - Nil
Tandent Delta–Bending Point	110-120	145-155	165-195	175-195

UMANG BOARDS LIMITED

Kraft / Crepe Coated CU Round Wire

Characteristic Features

- **Diameter:** 0.5 mm to 5 mm
- **Covering:** Electrical Grade Insulation Kraft / Crepe Paper
- **Conductor:** EC Grade Copper

Applications

Mainly used as insulation in oil cooled transformers as leads and shields

Super Enamelled CU Round Wire

Characteristic Features

- **Diameter:** 0.5 mm to 5 mm
- **Insulation Class:** Modified Polyester (Class130 & 155), Hermatic (Class180), Dual Coat (Class 200)
- **Conductor:** EC Grade Copper
- **Spools:** PT 35 to PT 200

UMANG BOARDS LIMITED

PRODUCT RANGE

INSULATING CHEMICALS

PE

Polyester

PAi

Polyamide Imide

MPE

Modified Polyester

PU

Poly Utherene

PEI

Polyesteramide

Applications

Use in Air Conditioner, Automobile Engine, Distribution Transformer, Electronics, Fans, Fridge, Motors, Power Transformer, Switch Gear, and Television

UMANG BOARDS LIMITED

LAMINATED DENSIFIED WOOD

Characteristic Features

- Good electrical insulation properties
- High mechanical strength at low specific density
- Easy and fast to dry
- Very good oil absorption

Technical Specification

Technical Data	Standard	Units	Parallel		Crosswise		Tangential	
PHYSICAL PROPERTIES								
Density	IEC61061	g/cm3	0.7 ÷ 0.9	0.9 ÷ 1.1	1.2 ÷ 1.3	1.3 ÷ 1.4	0.7 ÷ 0.9	0.9 ÷ 1.1	1.2 ÷ 1.3	1.3 ÷ 1.4	0.9 ÷ 1.1	1.2 ÷ 1.3
Oil Absorption	IEC61061	%	32	30	7	/	30	28	10	/	28	7.5
Continuos Working Temprature	-	°C	105	105	105	100	105	105	105	100	105	105
Temprature Limit For Drying Process	-	°C	140	140	140	130	140	140	140	130	140	140
Contamination of Diaelectric Liquids	IEC61061	Δtg δ	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MECHANICAL PROPERTIES								
Flexural Strenght 1)	IEC61061 UNI EN ISO 178	Mpa	145	150	200	220	120	130	140	150	135	180
Modulus of Elasticity In Flexure	IEC61061 UNI EN ISO 178	Gpa	10	14	16	18	7.5	9.5	12	15	11	13
Compressive Strength	IEC61061 UNI EN ISO 604	MPa	130 95	130 95	145 130	170 160	150 60	210 75	245 110	240 170	140 /	160 /
ELECTRICAL PROPERTIES								
Electri Strength	IEC 61061 IEC 60243	Kv/mm	/ F 0	15 16 17	16 17 18	18 19 20	7 8 9	15 16 17	16 17 18	18 19 18	7 8 9	16 17 18	18 19 20
Breakdown Voltage	IEC 61061 IEC 60243	Kv/25mm	>80		>80	>80	>80	>80	>80	>80	>80	>80	>80
Surface Resistivity	IEC 60093	Ω	10^{12}		10^{12}	10^{12}	10^{12}	10^{12}	10^{12}	10^{12}	10^{12}	10^{12}	10^{12}
Volume Resistance	IEC 60093	Ω cm	10^{12}		10^{12}	10^{12}	10^{12}	10^{12}	10^{12}	10^{12}	10^{12}	10^{12}	10^{12}
Dissipation Factor	IEC 60250	tg δ	0.01		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Relative Permittivity	IEC 60250	ε r	3.3		3.5	3.8	4.2	3.3	3.5	3.8	4.2	3.5	3.8

GROUP COMPANIES

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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
- Siltted Insulation Paper

PRODUCTS

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

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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 Insualtion Press Boards & Components

CORPORATE SOCIAL RESPONSIBILITY

UMANG BOARDS LIMITED

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 longterm welfare of the society to the best of our capabilities.

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

Sustainable Livelihood

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

AKSHAYA PĀTRA
Unlimited food for education

Education

Provide merit scholarships to students

Mother Teresa
Education Redefined
ASHA

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

sdmh
the hospital that cares

धानुका चैरिटेबल ट्रस्ट

UMANG BOARDS LIMITED

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LIMITED

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