INDOWUD®

CREATED WITH

AHIMSA DESIGN PHILOSOPHY

दुःखो रक्षति रक्षितः अहिंसा परमो धर्मः

Only when we make
the right choices we achieve
the right results

Termite Proof | Water Proof | Flame Retardant
Easily Machinable | Thermoformable | Eco-friendly & Recyclable

“We **don’t kill** to create
We **don’t cut down** to build
We **don’t destroy** to design”

“If you **love something**
It **will work** that’s
the **real Design** mantra”

*With over 30 years in the ply industry, Mr. Bengani is respected as the **founder of Uniply**. Today, as the Chairman of Indowud nfc, he is pioneering natural fibre composite wood in India and the world.*

"Embracing a Sustainable Future, One nfc board at a Time"

In a world grappling with the escalating climate crisis, every responsible citizen and business leader must actively seek solutions. At Indowud nfc, we believe that innovation and sustainability are not mere buzzwords, but the cornerstones of building a better tomorrow.

It is with immense honour that I present to you our remarkable range of sustainable products. Crafted from a naturally abundant and renewable resource, our products are eco-friendly and have superior qualities that make them the ideal choice for home owners, architects, designers, builders and contractors.

Our meticulous manufacturing process ensures that our products are termite-proof, water-proof, and even flame-retardant + smoke suppressant, making them suitable for a wide range of applications for all interiors and exteriors. Whether you're a homeowner seeking solutions or a builder committed to green construction, we have a product that's perfect for your vision.

By choosing our nfc products, you join us on this journey, embracing the future, embracing sustainability. Together, let's build a world where beauty and responsibility go hand in hand.

Sincerely,
B L BENGANI

A pioneering wood that lets the nation ***breathe*** *freely.*

Indowud nfc is the first of its kind agricultural-husk wood. This husk is often thrown away or burnt causing alarming air pollution in India and rest of the world. The use of this husk is of great value to national health and breathable air levels. These husks are made to boards using the state-of-the-art technology and mimics all the values of wood - unmatched in India and probably, the world.

Ahimsa Design Philosophy

No trees are cut when making Indowud nfc. You can use it to make indoor furniture and even exteriors of homes, offices, resorts and swimming pool decks.

India has one of the worst termite problems when it comes to wood. But Indowud nfc does not allow termites to reside or eat into it. So you don't even need to kill a single termite! Isn't that amazing?

A
Axe the axe, no more trees cut

H
Healthy homes with anti-bacterial properties

I
Ice, rain and water proof

M
Mouldable and easy to design with

S
Secure against termites and rodents

A
Agricultural husk made, preventing air pollution from waste husk burning

Building sustainable
and healthy homes

Building healthy homes is a way to stay away from bacteria.

Non-hazardous additives are used during manufacturing of Indowud nfc to create an anti-bacterial protective shield.

It is non-toxic, does not emit VOC emissions and is engineered to keep bacteria away. Our house is the only sanctuary one can retreat to, let us all make it safe, secure and healthy!

CII has Certified Indowud nfc as Sustainable Green Product and has awarded GreenPro ecolabel

A product which bears GreenPro Ecolabel has lower environment impact and contributes significantly for enhancing the performance of Green Buildings and Green Companies.

GreenPro Ecolabel is accredited by Global Ecolabelling Network (GEN) through GENICES - GEN's Internationally Coordinated Ecolabelling System.

PRODUCTS

Eco-friendly products for a healthier planet

- zerOwud nfc board
- Indowud nfc board
- nfc door
- nfc frame
- nfc Jaali
- nfc decking
- nfc flute
- nfc textured panel
- nfc trims
- nfc fence
- nfc glu

ZerOwud nfc

Build green with zerowud panels

Standard size : 8 feet x 4 feet
(2440mm x 1220mm)
Thickness (mm) : 6mm, 8mm,
12mm, 16mm,
18mm, 25mm.

Available in both side surface smooth

Contact us for custom sizes

ZerOwud boasts good strength & durability, making it ideal for various applications, from furniture and cabinetry to wall panels.

For more details, visit www.zerOwud.com

Indowud nfc Board

Transforming agricultural waste into sustainable panel

Range : nfc Neo, nfc Create and nfc Build
Available size : 8 feet x 4 feet
(2440mm x 1220mm)
Thickness : 6mm, 8mm, 12mm, 15/16mm,
18mm, 25mm.

Available in both side rough surface

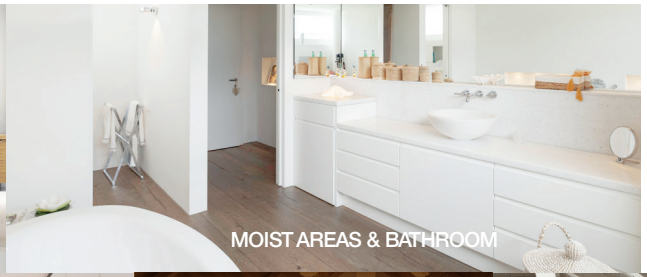
Contact us for custom sizes

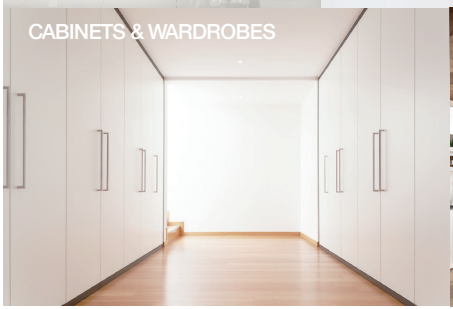
Offering a sustainable and high-performing alternative to traditional wood products. Durable and versatile, Indowud nfc is ideal for various applications in interiors and exteriors.

Indowud *neo and create*

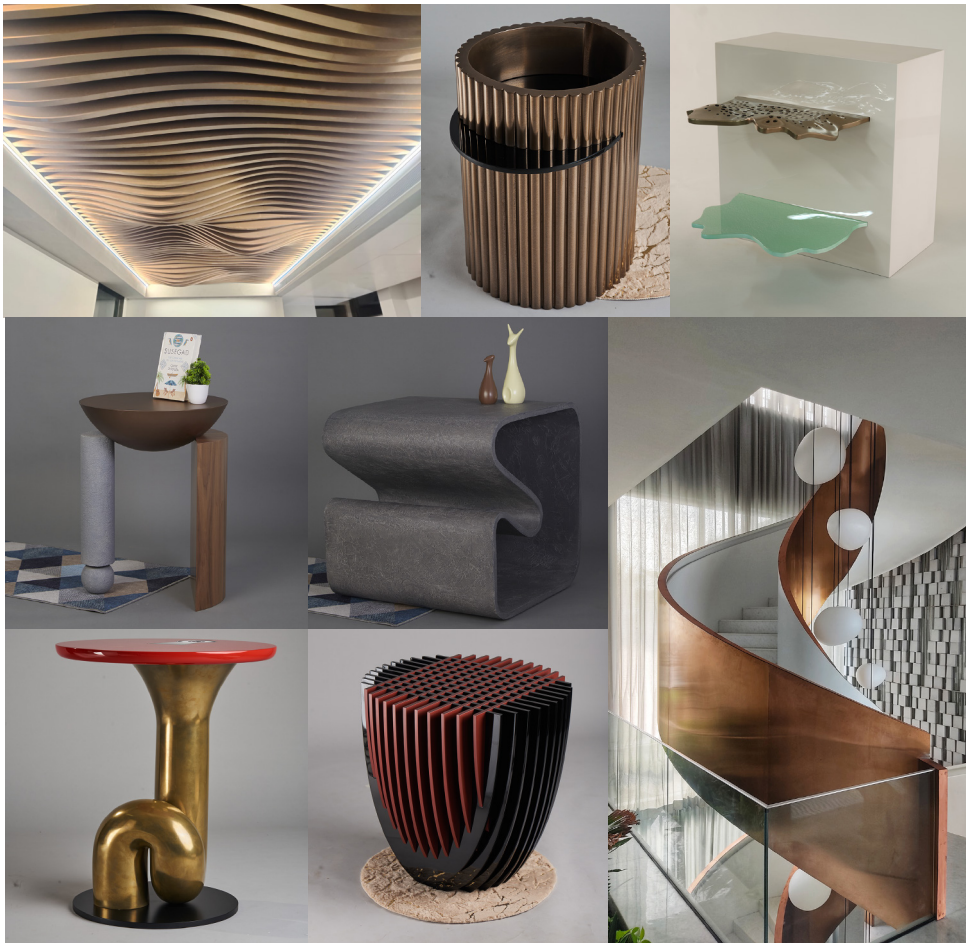
INTERIOR DESIGN

Indowud nfc is created for design. Mouldable and yet sturdy.
It is a superior alternative to wood in many ways. It looks, feels & works like wood too.





"Converting Imagination to Reality"

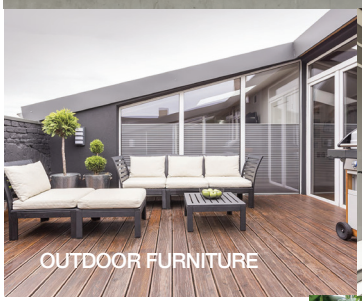


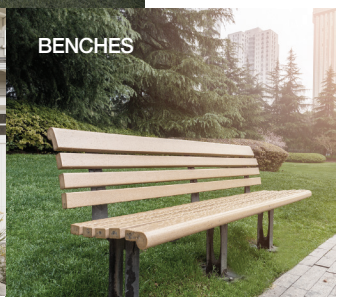
real images : designed by top architects

Indowud build

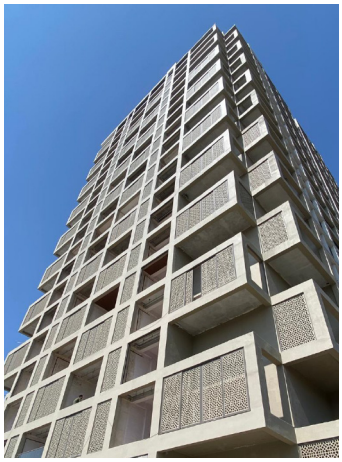
ALL WEATHER EXTERIOR

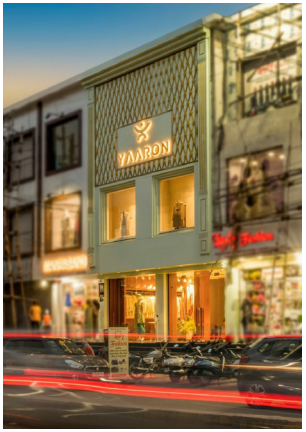
Indowud nfc is built for extreme weather conditions. Far superior than any wood based panels. You can use it freely for all exteriors and interiors.

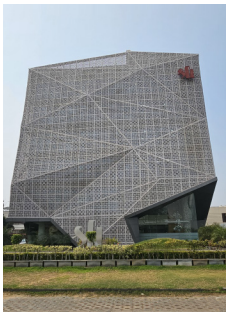




Building Beautiful Exteriors







real site images

nfc door

The eco-friendly door

Size : 7 feet x 3 feet (2140mm x 920mm) &

8 feet x 3 feet (2440mm x 920mm)

Thickness : 28mm & 30mm

Seeking an eco-friendly alternative for your entryway? Look no further than Indowud nfc door. These doors combine the timeless beauty of natural wood panel. One can easily paint, polish, varnish or overlay veneer / laminate easily

nfc frame

Reimagine doorways with nfc-frames

Easy to paint, varnish, stain

Available size : 3”x2”,
4” x 2.5”,
5” x 2.5”.

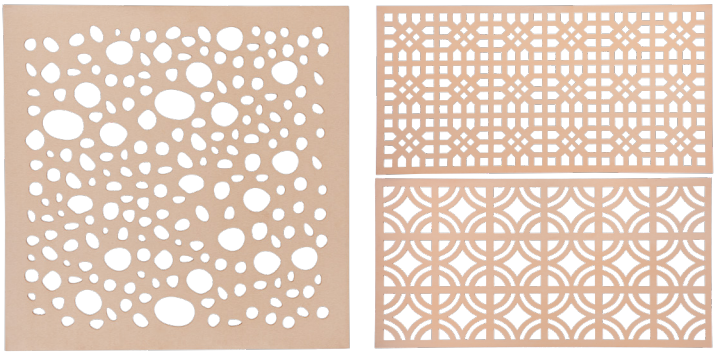
Standard length : 7’ (2140mm),
8’ (2440mm),
10’ (3050mm).

Indowud nfc Door Frames boast open grains akin to natural wood. Customize with ease, as these frames adapt to your desired aesthetic, effortlessly merging beauty and Sustainability.

Tap Here to download the nfc-frame brochure

nfc Jaali

Elevate your space with intricate patterns



Contact us for customisation of designs.

Introducing Indowud NFC Jaali: A fusion of art, sustainability and strength. Our CNC routed nfc boards, including stunning mashrabia screens, enhance interiors and lighten the weight of building exteriors.

nfc decking

Elevate your outdoor living with solid composite decking

Available size : 8 feet x 6 inch (2440mm x 150mm)
Thickness : 25mm, 30mm.

Contact us for custom sizes

The natural beauty of wood comes without the maintenance hassle. Our solid nfc decking provides exceptional strength, durability, and weather resistance. It is easy to stain to match the desired colour.

Tap Here to view the available patterns

nfc flute

The perfect blend of nature's elegance and modern design

Available size : 8 feet x 1 feet
(2440mm x 300mm),
Thickness : 18mm & 25mm.

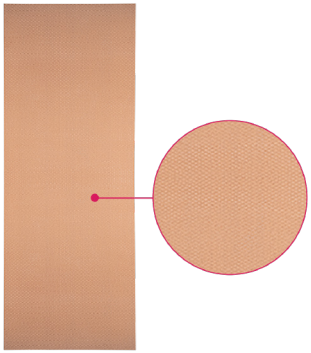
Contact us for custom sizes

nfc flutes offer fluting and louver solutions to cater to green architecture, fostering a harmonious relationship between human habitation and nature, paving the way for a more sustainable panelling in the louver and flute designs

Tap Here to view the available patterns

nfc textured panels

The magic of nature with intricate and captivating wooden grains

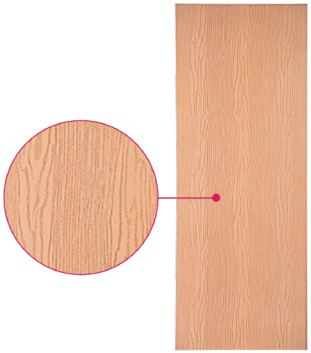


Textured

Available size : 8 feet x 2 feet
(2440mm x 600mm),
Thickness : 8mm, 12mm, 15mm,
18mm, 25mm

Open grain, Deep grove

Deep texture : 8 feet x 1 feet
(2440mm x 300mm)
Thickness : 13mm, 15mm, 23mm



Contact us for custom sizes

Indowud introduces a revolutionary line of natural fibre composites featuring stunning wooden textured designs. Crafted from sustainable materials, these composites offer the warmth and elegance of wood with the durability and versatility of modern composites. Indowud: The perfect choice for eco-conscious designers and homeowners seeking a touch of nature's beauty in their projects.

Tap Here to view the available designs

nfc trim

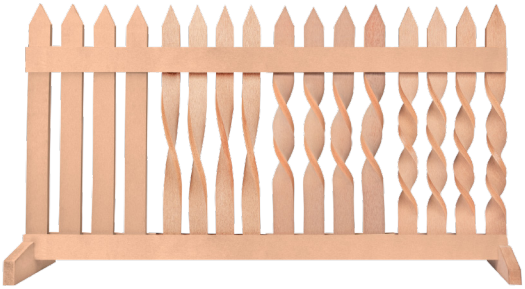
Natural choice for eco-friendly trims

Available size :
Standard Length : 8 feet (2440mm) Thickness :
8mm, 12mm, 15mm, 18mm,
25mm, 30mm
Standard width : 100mm, 150mm, 200mm, 250mm

Indowud nfc trims offer a sustainable and versatile solution for your cut to size needs. The trims are perfect for adding a touch of elegance to any project. Available in a variety of sizes, Indowud cut trims can be easily customized to fit your specific requirements.

nfc fence

Beauty and sustainability combined



Available size :

Length : 4 feet (1220mm),

Width : 50mm, 75mm, 100mm

Thickness : 15mm, 18mm, 25mm

Style : Standard & single, double, triple twist

Indowud fences offer a beautiful and eco-friendly alternative to traditional wood fencing. Strong, durable, and weather-resistant, Indowud fences are perfect for any outdoor space. Choose Indowud and experience the difference nature can make.

Tap Here to view the available designs

nfc glu

NFC-GLU extends a strong water-resistant bond with almost all surfaces whether rough or smooth, porous or non-porous. We strongly recommend to use NFC-GLU with Indowud nfc for bonding different surfaces together and faster.

Faster setting time

Water resistant

Strong Bonding

Better Glue Coverage

Can bond mostly all panels

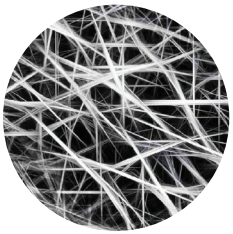
(*Subject to availability)

Indowud nfc created with
AHIMSA design philosophy helps safeguard the environment. Made with sustainable agricultural-husk, Indowud nfc is crafted in a world standard design, research, and manufacturing facility in Chennai, India.

Engineering a revolutionary product that surpasses the best global practices.

SELECTION OF RAW MATERIAL

We acquire the finest quality of virgin PVC Resin from Japan and South Korea and have partnered with local farming community for uninterrupted supply of natural fibres.



MATRIX FORMULATION

These polymers and fibres, when mixed with minerals, coupling agents, heat stabilizers and necessary additives under monitored temperature and pressure, form a homogeneous matrix which is responsible for bonding between the polymers and fibres.

INTERFACE STRENGTH

The bonds and density of the compound are the deciding factors in the interfacial strength of each board. This is achieved with a mathematical accuracy of fibre dispersion and interfacial bonding to achieve better impact resistance and internal strength of Indowud nfc.

MANUFACTURING

The compound is then extruded under controlled temperature in a continuous process through various calibration pads. The cooling bracket is the final stage of the process flow. After which the boards are taken for further processing like transverse cutting, trimming, and surface processing.

Indowud nfc is a
***high performance** wood,*
fortified for durability.

- Termite proof
- Water proof
- Flame retardant - V_0 rating in UL94 test Class 1 or A as per ASTM E84
- Easily machinable
- No splintering, no crack
- Durable
- Anti rodent
- Good screw holding
- Resistant to fungus, algae or mold
- Anti-bacterial
- UV resistant
- Thermoformable
- Smoke suppressant
- 100% Recyclable
- No harmful ingredients
- Absorbs Sound
- 100% Eco-friendly
- No formaldehyde emission

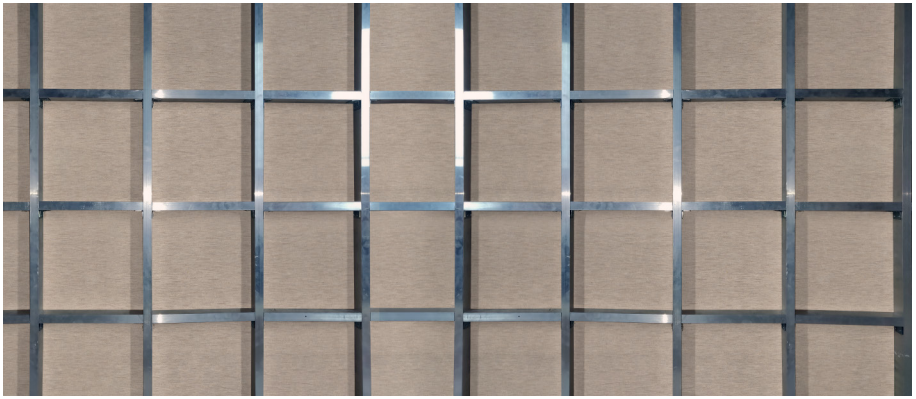
Indowud nfc ***inspires*** *you to design smarter and create faster.*

Handling Indowud nfc is as easy as conventional wood.
You can cut, nail, screw, drill, overlay laminate & veneers, print, paint or varnish.

Changing the world with small, simple steps.

SUPPORT & SUGGESTIONS

Indowud nfc boards are homogeneous in its structure. Hence, constructive support/frames, etc are required as per the table below for larger areas to avoid deformations



Maximum Support Distance

Thickness of Indowud nfc board (in mm)		6	8	12	15/16	18	20	25
Neo (in mm)	625+ Kg/CBM	150	200	250	300	350	400	500
Create (in mm)	725+ Kg/CBM	200	250	300	350	400	450	550
Build (in mm)	825+ Kg/CBM	250	350	450	550	600	650	750

NOTE

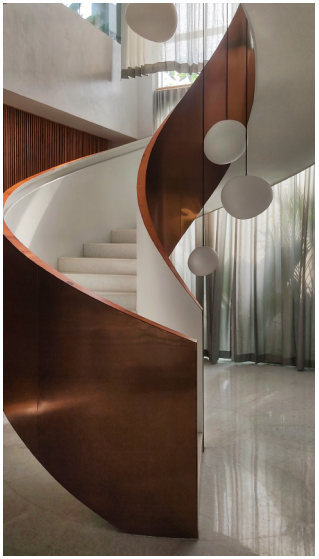
1. The Suggested distance may be increased or decreased depending on application.
2. Fixing of magnetic ball catch is a must at the top and bottom of the wardrobe/cabinet shutter. Use of straightener/stiffener is recommended.
3. Use box type hinges at a span of every 300mm.
4. Shutters should be fixed only after overlaying laminate, veneer, edge band/ lipping or applying epoxy/solvent based putty/primer/sealant all around in order to close micro pores to avoid possible bowing.
5. Ensure framing on all four sides and necessary stiffeners for sliding doors/shutters.
6. Suggested glue : NFC-GLU, PUR, HeatX, Wp1, Probond, Plastilok, Relam. Drying time may vary depending on the atmospheric conditions.
7.For ceiling, use 12mm or higher thickness board with suggested grid square support of 300mm for create or build and 200mm for neo.
8. For decking flooring, use 25mm or higher thickness with a suggested support of 300mm. Leave a gap of 4mm between two deck panels.
9.Do not pour water on raw boards before closing micro pores of the surface and edges. Do not use NC putty.
10.Leave 12mm gap between the board and the wall and 5mm gap on ceiling and floor for breathing and expansion/ contraction. Leave a gap of 3mm between 2 boards/trims

Tap Here for more details

Thermoforming

Indowud nfc can be thermoformed using thermoforming machine, heat oven, heat gun, infrared heater, etc. Effortless thermoforming without any compromises on the strength is a unique feature of Indowud nfc. The high content of natural fibres makes sure that the density and dimensional stability is uncompromised post thermoforming.

Heating temperature	140 – 160 degree Celsius
Heating time	1-2 min/mm of board thickness (for example 18-36 minutes for 18 mm board)
Locking time	5-20 minutes depending on the thickness of the panel and atmospheric conditions
Cooling time	1-2 minutes/mm of board thickness



The board panel may shrink when shape is given. Hence, any cut or work must be done after the board gets its desired shape. It is suggested to prepare a mould to ensure even/proper shaping of the nfc boards

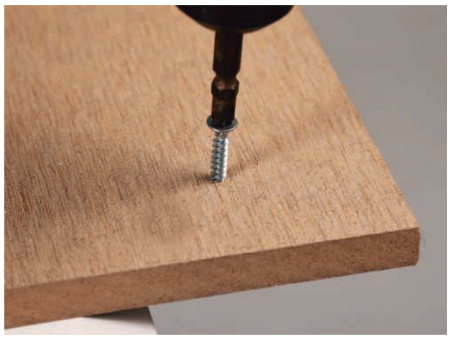
Tap Here for more details

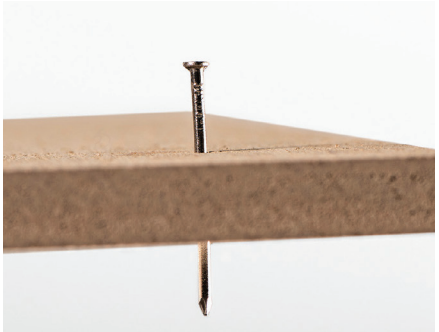
PRINTING

Any Pattern or design can be printed on Indowud nfc using a flatbed digital printer. Ensure that the board is free from dust before printing. we also recommend applying a transparent sealant or a coat of varnish to protect the printed area from abrasion and dust.

SCREWING AND NAILING

High content of natural fibres enables good screw/nail holding. Choose fasteners that are counter sunk wide head and fully threaded. Gluing the edge adds to the strength of the joinery. Stainless steel screws will be ideal for outdoor applications.





Indowud nfc is a GreenPro certified product and adds merit to projects with Green Rating

Module Compliance	Maximum Points with Indowud	
Materials with recycled content	★★★	3 Points
Wood based material with FSC certification and/or rapidly renewable	★★★	3 Points
Local Materials	★★★	3 Points
Use of certified Green Building materials	★	1 Points
Composite wood with no urea formaldehyde	★	1 Points

Contact us for more details

Tap Here for more details

Oct 2021

Quality *the world and time can test.*

COMPARITIVE STUDY OF nfc WITH OTHERS

NO	PROPERTIES	nfc	PVC/WPC FOAM BOARD	PLYWOOD	MDF
1	DENSITY (KG/CBM)	650-800	400-600	650-750	600-700
2	RAW MATERIALS	Natural fibres and Thermoplastics	PVC and fillers materials	Medium/Soft wood, Formaldehyde, Urea/Phenol	Medium/Softwood, Urea, Formaldehyde
3	TERMITE PROOF	✓	Not always	✗	✗
4	WATER PROOF	✓	✓	For some time	✗
5	FLAME RESISTANT	✓	Hazardous	✗	✗
6	SCREW HOLDING	Above par	Below par	Above par	Below par
7	CONVENTIONAL TOOLS	✓	✓	✓	✓
8	OVERLAY LAMINATE/VENEER	✓	Not always	✓	✓
9	OUTDOOR AND INDOOR APPLICATIONS	Both indoor & outdoor	Preferably indoor	Indoor	Only indoor
10	SWELLING	✗	✗	✓	✓
11	WEATHER AND AGEING RESISTANT	✓	✗	✗	✗
12	ECO-FRIENDLY	✓	✓	✗	✗

Available dimensions: Indowud nfc boards are generally available in 8' X 4' - 6mm, 8mm,12mm,15mm,16mm, 18mm, 20mm, 25mm and 7' X 3' - 28mm, 30mm. However customised dimensions are available in any size and thickness. Density may vary by 5%. Please check with us for further details.

nfc BOARDS WITH HIGH FIBRE CONTENT

The following tests were carried out on the samples of Indowud nfc board by the National Test House, Central Institute of Plastic Engineering & Technology (CIPET), Indian Plywood Industries Research & Training Institute (IPIRTI), Spectro Labs and SGS Labs.

TEST	METHOD	UNIT	RESULT
DENSITY	ASTM D792	Kg/CBM	800.349
WATER ABSORPTION AFTER 2 HRS	IS : 2380	%	0.02
WATER ABSORPTION AFTER 24 HRS	IS : 2380	%	0.12
THICKNESS SWELLING AFTER 2 HRS	IS : 2380	%	0.06
MODULUS OF RUPTURE - AVERAGE	IS : 2380	N/mm^2	14.5
MODULUS OF RUPTURE - MINIMUM INDIVIDUAL	IS : 2380	N/mm^2	14.4
MODULUS OF ELASTICITY - AVERAGE	Is : 2380	N/mm^2	1327
MODULUS OF ELASTICITY - MINIMUM INDIVIDUAL	IS : 2380	N/mm^2	1290
SCREW WITHDRAWAL - FACE	IS : 2380	N	2252
SCREW WITHDRAWAL - EDGE	IS : 2380	N	1409
TENSILE STRENGTH	ASTM D638	MPa	7.6
COMPRESSION STRENGTH	ASTM D695	MPa	40.2
ELONGATION @ BREAK	ASTM D638	%	2
CHARPY IMPACT STRENGTH	ASTM D6110	KJ/m^2	6.25
HEAT DEFLECTION @ 0.45MPA	ASTM D648	°C	64.45
SOFTENING TEMPERATURE @ 1 KG	ASTM D1525	°C	72.5
VOC EMISSIONS	EPA : 5035A (by GCMS)	Mg/KG	Below detectable limit
TEST FOR TERMITE RESISTANCE	**IS 4833**		**No sign of termite attack**
TEST FOR FUNGAL RESISTANCE	**IS 4873**		**No sign of fungal attack**
TEST FOR BORER RESISTANCE	**IS 4873**		**No sign of borer attack**

SOUND ABSORBTION COEFFICIENT AS PER IS 10420:1982 AND TRANSMISSION LOSS AS PER ISO 10534-2:1998		
FREQUENCY (Hz)	SOUND ABSORPTION CO-EFF.	TRANSMISSION LOSS (dB/1.0)
125	0.02	26.19
250	0.03	22.53
500	0.04	32.85
1000	0.06	40.20
1500	0.06	44.50
2000	0.05	47.33
2500	0.05	45.61
3000	0.06	47.83
3500	0.08	46.6
4000	0.10	47.56
Sound Transmission Class (Average of Transmission Loss) : 40.12		

Fire Test

TEST	METHOD	LIMIT	RESULT
FIRE RESISTANCE	APPENDIX 11 OF UIC 564.2 OR		CLASS A
FLAMMABILITY	UL94		V0 Rating
FLAME SPREAD INDEX	ASTM E84 : 2020	0 – 25 CLASS 1 OR A	6 CLASS 1 OR A
SMOKE DEVELOPED INDEX	ASTM E84 : 2020	450	100

UIC564-2 test is connected to regulations relating to fire protection and firefighting measures in passenger carrying railway vehicles or assimilated vehicles used on international services. Under Appendix 11, the specimen is held vertically in a frame and is exposed to a gas flame which is directed on to the surface of the specimen.

UL94 is a flammability standard by the Underwriters Laboratories of the United States of America. The standard determines the material's tendency to either extinguish or spread the flame once the specimen is ignited. V0 rating means - burning stops within 10 seconds.

ASTM E84 is an American test standard for assessing the surface burning characteristics of building products. The purpose of this test is to observe the flame spread in order to determine the relative burning behaviour of material. Flame spread index is the measurement for the speed at which the flames progresses across the interior surface of a building, while the smoke developed index measures the amount of smoke the product emits as it burns.

Tap Here for more details

INDOWUD®
DESIGN TECHNOLOGY

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Visit Website