

NFC BOARDS

- Water proof
- Termite proof
- Flame resistant
- Easily machinable
- Easy to thermoform
- Eco-friendly & Recyclable



INDOWUD
NATURE REINFORCED

Pioneers of NFC
NATURAL FIBRE COMPOSITE

DANUBE
No.1 building material company

STRENGTHENED AND FORTIFIED FOR DURABILITY



INDOWUD

NATURE REINFORCED

Rationale of our logo

Strength, Solidity, Harmony & Responsibility - the four keywords of the product have been embedded into the logo

Interlinking diamonds convey the principal ideas, the ratio of organic and inorganic blend of the product, Company & its eco-responsibility, Strength & durability, Product & end user, Quality & commitment

Indowud Turquoise represents the aesthetics, calmness, maturity, and responsibility; Indowud crimson conveys dynamism and futuristic spirit.

The tag line – Nature Reinforced accurately captures the USP of the product acting as clear descriptor



Passion + Latest technology + Futuristic vision = Indowud
NFC... That adds Life.



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 fibre.



MATRIX FORMULATION

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

0%

Wood
Powdering and termite problem
Formaldehyde emission
Maintenance



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 boards.

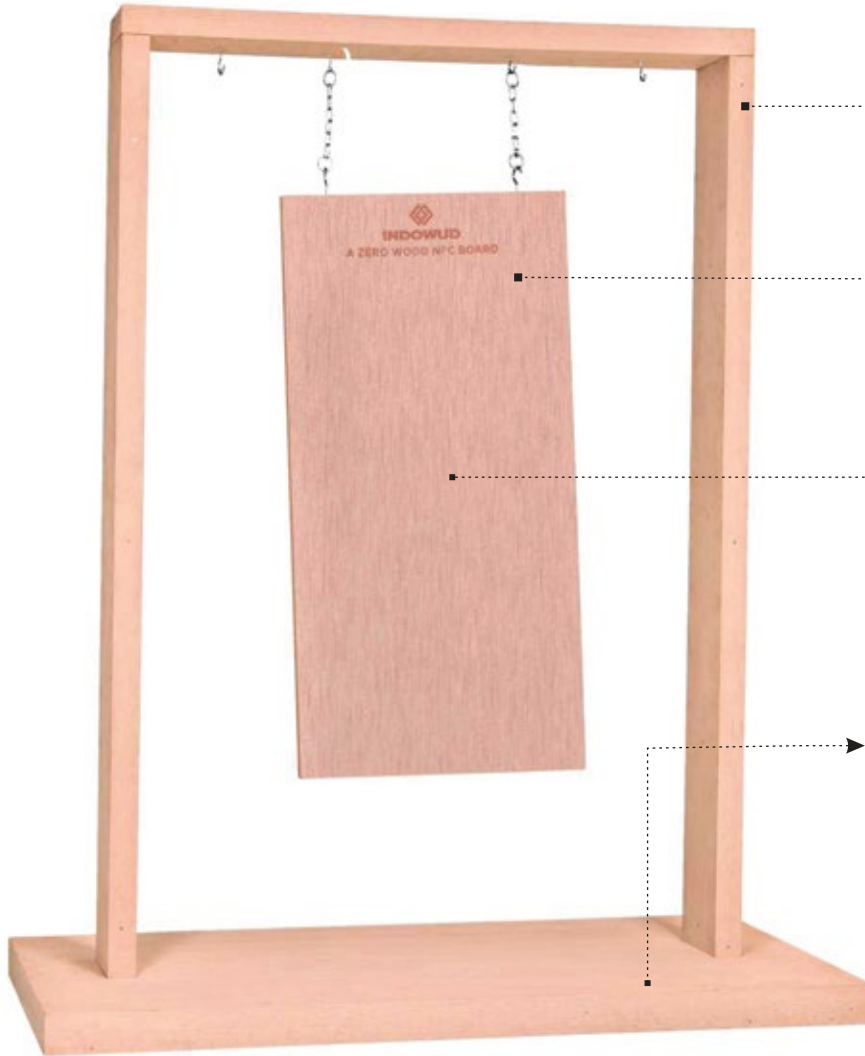


MANUFACTURING

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

One product, infinite scope of applications



AT TRIBUTES

Looks like wood
Feels like wood
Available in 2.44m X 1.22m
Standard Thickness –
6mm, 8mm, 12mm, 15mm, 18mm
Density – Over 750Kg/CBM
Customized dimensions can be
made on request



INDOWUD
NATURE REINFORCED

Environmental Impact

Zero Wood
100% recyclable
100% eco-friendly
Long life
No formaldehyde emission
Free from harmful ingredients

Working

Cutting
Nailing
Screwing
Drilling
CNC Routing
Thermoforming
Overlay Laminate or Veneers
Overlay Wall Papers
Printing, Painting & Varnishing

Performance

Termite Proof
Water Proof
Flame Resistant – V0 rating in UL94 test
Easily Machinable
Durable
Good screw holding
Resistant to fungus, algae or mold
No splintering, no crack
Resistant to expansion/contraction
UV resistant
Suitable for all exterior and interior applications



INDOWUD
NATURE REINFORCED

DANUBE
No.1 building material company



Termite proof



Water proof



Anti Rodent



Flame Resistant

Smoke Suppressant



Thermoform



Digital Printing

meets the most challenging demands



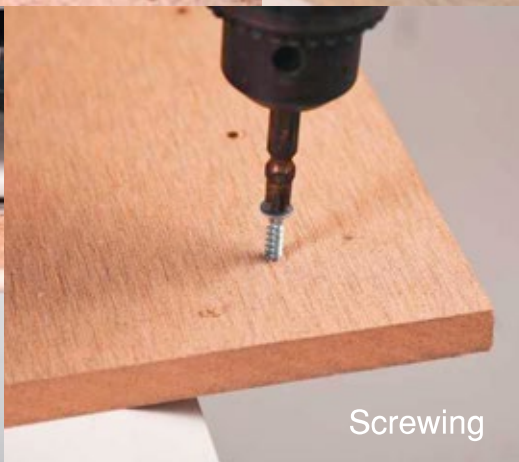
CNC Routing



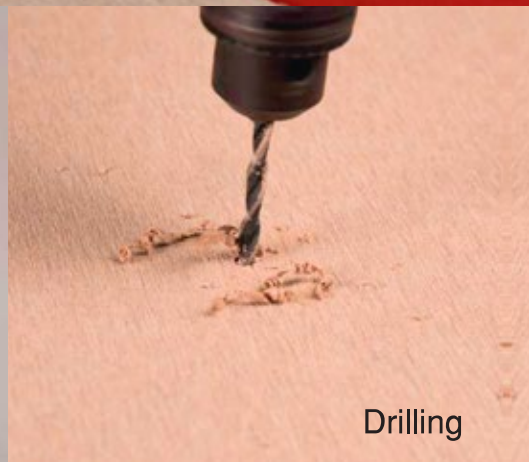
Painting



Cutting



Screwing



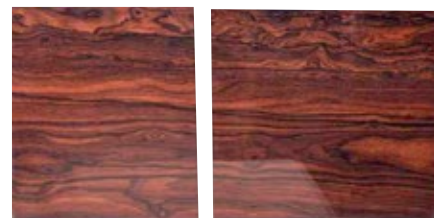
Drilling



Nailing



Overlay Laminate



Overlay Veneer & Varnish

Indowud NFC has endless application possibilities...

Wall paneling, Outdoor furniture, Garden, Pool and Seaside furniture, Kitchen and Dining areas, CNC routing, Thermoforming, Cabinets and Wardrobes, Partitions, Fencing, Signage and many more...



Terrace & Outdoor furniture



Gates



Exteriors



Garden Furniture



Wall Paneling



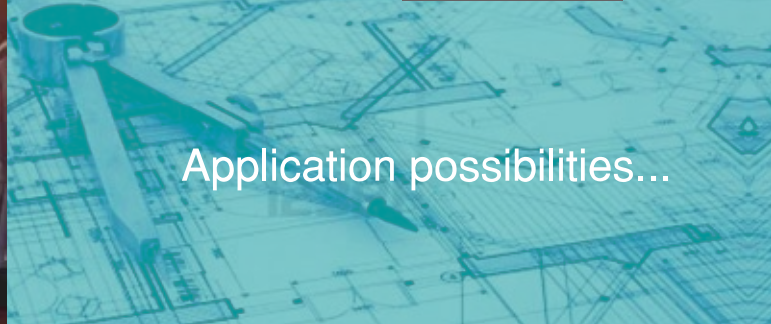
Kitchen & Dining areas



Pergolas & Sidings



Showrooms



Application possibilities...



Facades / Cladding

Easy to work with...

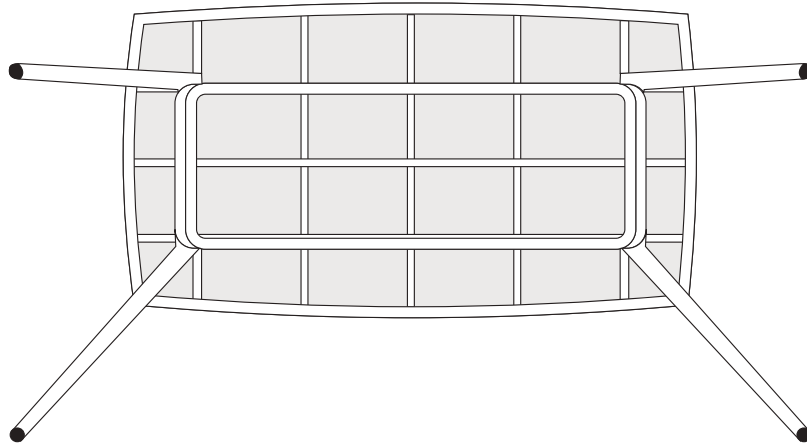


General Information on working with NFC Boards

A) SUPPORT

Due to its features, Indowud NFC boards are best suited for all types of interior and exterior applications. Generally speaking, Indowud stands out to what it commits – One product, Infinite scope of applications. However, thermoplastic properties of NFC boards must be taken into consideration during designing and execution process.

Depending on the application, fastening is usually done using screws or nails. Select wide head screw, fully threaded and tighten slowly. Additionally, gluing on the joinery can be done for improved strength.



Indowud NFC boards are homogeneous in its structure. Hence, constructive support (Frames, supports, etc.) is required for larger areas to avoid unwanted deformations

Board Thickness (mm)	6	8/9	12	15/16	18	20	25
Suggested maximum fixing distance (mm)	200	250	300	350	400	450	550

Note: The suggested distance may vary depending on the type of application and hence may be increased or decreased on practical application. The same may also be considered for wardrobe shelves and support for ceiling application.

Magnetic ball catch is a must at top and bottom of wardrobe shutters

Suitable lipping all around/ proper centre support is required for the shelf to prevent deformation under pressure.

Select a distance of 15mm from the edge of the board to fastening point to avoid upward bending of the board.

B) THERMOFORM

Unique properties of Indowud NFC ensures that the board can be easily thermoformed. High content of natural fibre ensures that there is no compromise on the strength of the board post thermoforming.



Heating Temperature	: 100 – 120 degree Celsius
Heating Time	: 1 – 2 min/mm of board thickness (for example 18 – 36 minutes for 18mm board)
Locking (Desired Shape) Time	: 5 minutes
Cooling Time	: 1 – 2 min/mm of board thickness

NOTE

1. The panel may shrink when heated and given a shape, hence any cut or work is suggested after the panel gets its shape
2. The time for shape may vary depending on design and thickness
3. If the radius of the shape is too small, the board surface may tear

C) DIGITAL PRINTING

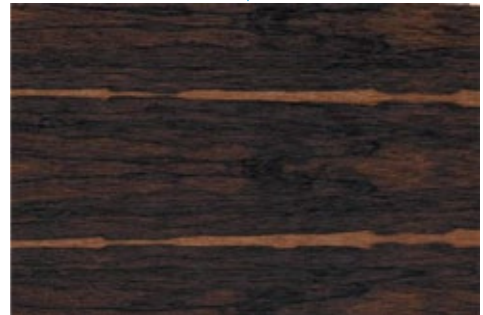
NFC Boards are suitable for printing applications. In digital printing, many wood patterns and customized designs are feasible.



Ensure that the board is free from dust before printing

Upon printing, various types of varnish and finish is possible.

Transparent coating is suggested to protect the print surface from dust and abrasion.



D) SURFACE FINISH

Various types of surface finish is possible on Indowud NFC Boards. Surfaces can be customised and optimised with paint, varnish and print. Since the coating is applied subsequently, modifications are possible at any time by removing the existing surface and applying a new one.

Depending on the requirement and application, different types of surface finish is possible. We suggest to use UV Protected Varnish / Paint for outdoor application.



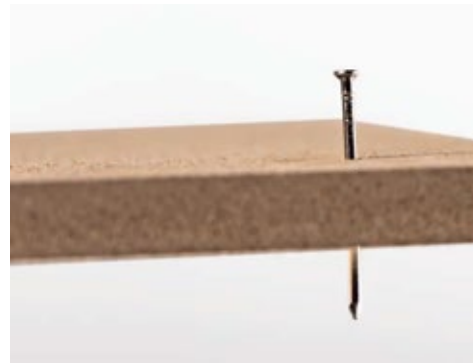
E) SCREWING & NAILING

NFC boards can be worked with wide head fasteners such as screws and nails. Selection of fastener is usually done depending on the type of application. Additionally, gluing also adds to the strength of the joinery.



Tightening of screw must be slow and only up to the surface. For outdoor applications, stainless steel screws or nails are suggested to avoid corrosion.

The screw holding strength depends on the threading of the screw. Use of wide head, full threaded, length 2.5 times to the thickness of the board is suggested for fastening applications.



Nails can be driven directly into the board or through the board. Nail holding strength depends on the type of nail used.

A misty forest scene with tall, thin trees and a path, overlaid with a vertical mirror effect on the right side. The text "It's Eco Friendly" is positioned in the upper left quadrant.

It's Eco Friendly

**An initiative towards making this
earth a better place to live in.**



100%



RECYCLABLE



INDOWUD
NATURE REINFORCED

DANUBE
No.1 building material company

NFC Boards with High Fibre Content

The following tests were carried out on the samples of Indowud NFC board by National Test House and the Central Institute of Plastic Engineering & Technology (CIPET).

TEST	UNIT	METHOD	RESULT
Density	Kg/CBM	ASTM D792	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	N/mm ²	IS : 2380	14.5
Modulus of rupture - Minimum individual	N/mm ²	IS : 2380	14.4
Modulus of elasticity - Average	N/mm ²	IS : 2380	1327
Modulus of elasticity - Minimum individual	N/mm ²	IS : 2380	1290
Screw withdrawal - Face	N	IS : 2380	2252
Screw withdrawal - Edge	N	IS : 2380	1409
Tensile strength	MPa	ASTM D638	7.6
Compression Strength	Mpa	ASTM D695	40.2
Elongation @ break	%	ASTM D638	2
Charpy Impact strength	KJ/m ²	ASTM D6110	6.25
Heat deflection @ 0.45MPa	°C	ASTM D648	64.45
Softening temperature @ 1kg	°C	ASTM D1525	72.5
Flammability		UL94	V0 Rating

UL94, is a flammability standard released 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. Indowud NFC rated V0 – burning stops within 10 seconds, similar to class I/A

Comparative study of NFC with others

PROPERTIES	NFC	PVC / WPC foam board	Plywood	MDF
Density (Kg/CBM)	700 - 800	400 - 600	650 - 750	600 - 700
Raw Materials	Natural fibres & Thermoplastics	PVC and fillers materials	Medium/Softwood, Formaldehyde, Urea/Phenol	Medium/Softwood, Urea, Formaldehyde
Termite Proof	✓	Not always	✗	✗
Water Proof	✓	✓	For some time	✗
Flame resistant	✓	Not known	✗	✗
Screw holding	Good	Poor	Excellent	Reasonable
Conventional tools	✓	✓	✓	✓
Overlay laminate/veneer	✓	Not always	✓	✓
Outdoor and indoor applications	Both indoor and outdoor	Preferably indoor	Indoor	Only indoor
Shrinking and swelling	✗	✗	✓	✓
Weather and Aging resistant	✓	✗	✗	✗
Ecofriendly	✓	✓	✗	✗

Available dimensions: Indowud NFC boards are generally available in 8' X 4' – 6mm, 8mm, 9mm, 12mm, 15mm, 16mm, 18mm, 20mm and 25mm. However, customized dimensions are available in any size and thickness. Density may vary \pm 5%

Please check with us for further details

Suggested Glue : Polymer based glue like Probond
For seamless joinery - apply glue on the edges

*One product,
infinite scope of applications*



INDOWUD
NATURE REINFORCED



+971 50 494 3441



enquiry@aldanube.com

UAE | OMAN | BAHRAIN | QATAR | KUWAIT | SAUDI ARABIA

DANUBE
No.1 building material company