TIPWOOD

Natural Fiber Composites

Tipco Industries Ltd.

THE NEED FOR NATURAL COMPOSITES

TIPWOOD

Current State of De-Forestation

- **MAIN REASONS FOR DEFORESTATION**
  - Agriculture expansion
  - Fire wood
  - Pasture for livestock
  - Civilization/Settlements
  - Timber harvesting
- **25 Million acres** of Tropical Forests cut down annually (2000-05)
- Results in **top-soil erosion**, **species extinction** and drastic **climate change**
- **Sustainable re-forestation** does not match the depleted quantity (**10-15%** of depleted forests), often replaced by lesser plantations and secondary forests
- **Laws** preventing de-forestation **are often abused**, and are not globally enforceable.

A GLOBAL THREAT & THE SOLUTION

TIPWOOD

THE TOP 10 COUNTRIES WITH HIGHEST LEVELS OF DEFORESTATION

TIPWOOD®

A new class of material made from special modified Synthetic Resins and renewable Natural Fibers, like Jute / Kanaf / Hemp fibers, designed for diversified use in building & construction, interiors / exteriors and furniture applications, etc.

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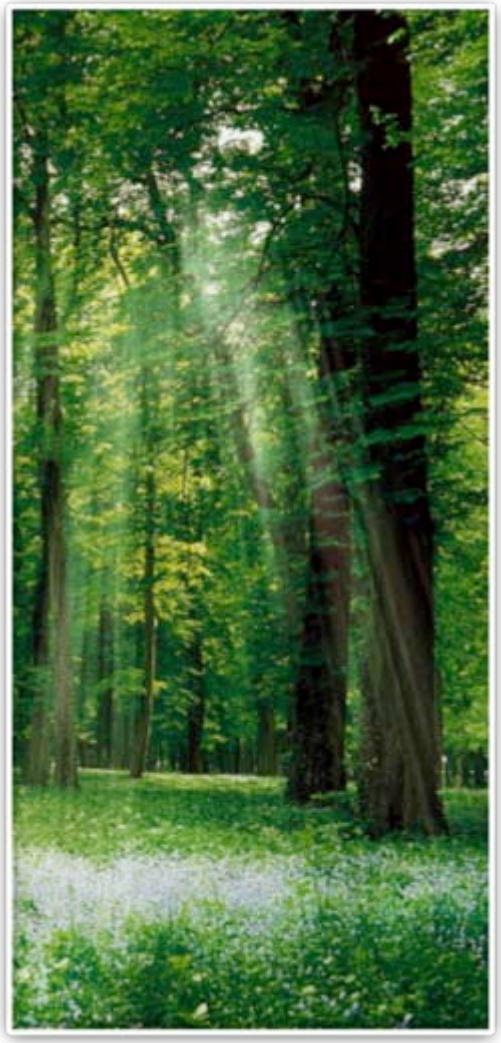
GREEN TECHNOLOGY



Plastics & Composites

- Are eco-friendly
- Use low energy in per kg conversion
- Replace wood and metals

TIPWOOD has **extremely low Carbon Footprint.**

- Synthetic Resins (Plastics)
- Natural Fibers (annually renewable)
- No cutting wastage (cut-to length)
- Promoting Agriculture

NATURAL FIBER COMPOSITES & PROPERTIES

TIPWOOD

- Flame retardant
- Very low carbon footprint
- Lower water absorption
- Reducing energy costs
- Termite proof
- Reducing material costs
- Superior mechanical properties
- Can be painted, polished, varnished, coated, etc
- Resistance to fatigue & corrosion
- Can be cut, sawn, planed, drilled, nailed, shaped etc.
- High heat resistance
- Electrical insulation

- Ecofriendly
- Termite proof
- Fungus proof
- Any length

possible various cross sections

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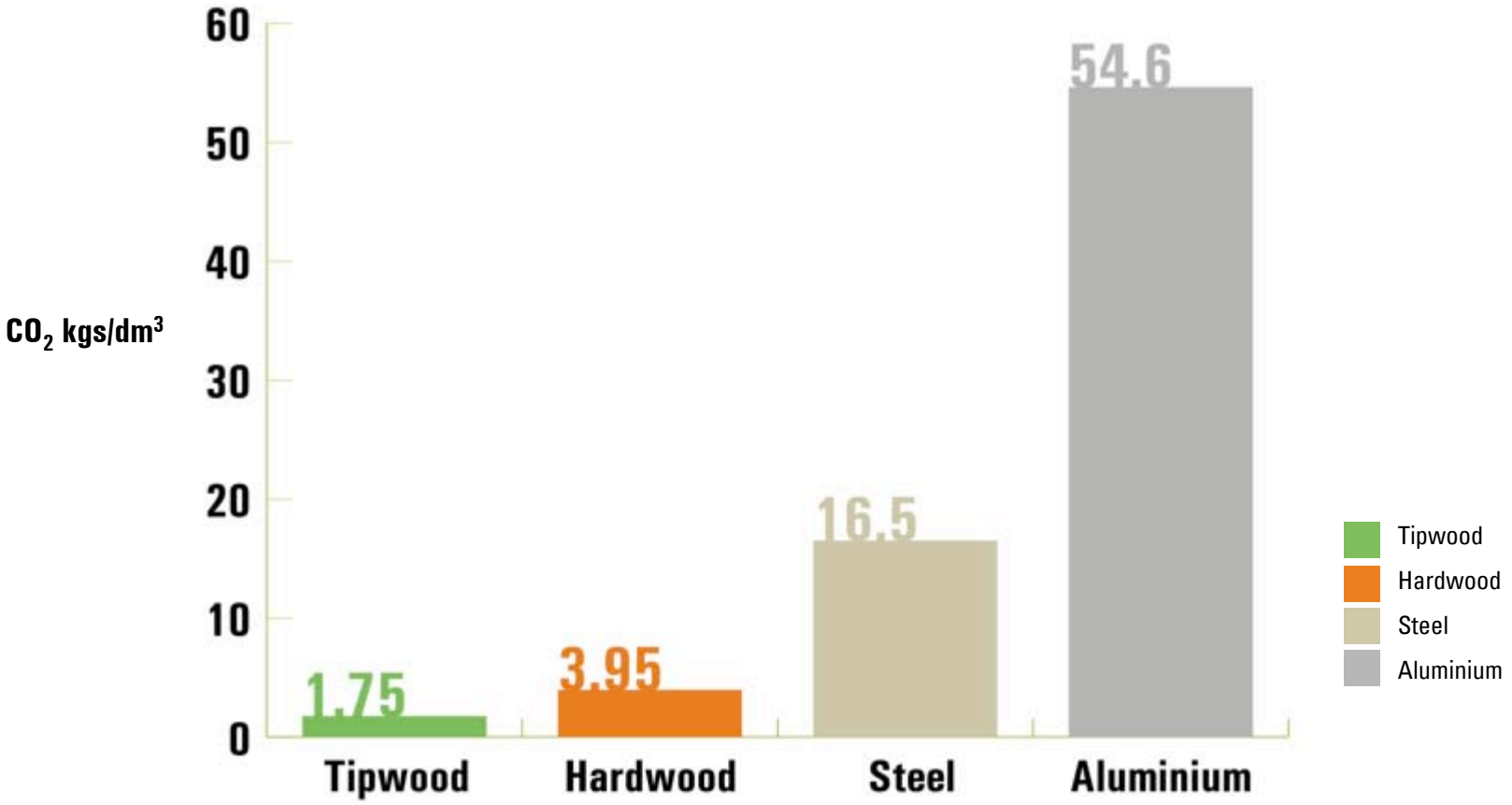
TIPWOOD® PROFILES

TYPICAL PROPERTIES OF TIPWOOD

PROPERTY	VALUE	UNIT	SPECIFICATION
Ultimate Tensile Strength	80-130	N/mm2	ASTMD-3039
Tensile Modulus	12000	N/mm2	ASTMD-3039
Flexural Strength	70-105	N/mm2	ASTMD-790
Flexural Modulus	6000-8000	N/mm2	ASTMD-790
Compressive Strength	70-100	N/mm2	ASTMD-695
Water Absorption after 24 hours	0.35	%	IS-12406-88
Water Absorption after 2 hours boiling	Nil	%	IS-12406-88
Water Absorption after 2 hrs	Nil	%	IS-12406-88
Screw Withdrawal Strength	5500-7000	N/mm2	ASTMD-1761
Flammability	HB – V_2	Rating	UL-94

Property of material subject to fiber orientation, sample preparation and type of reinforcement used

LOWEST CARBON FOOTPRINT

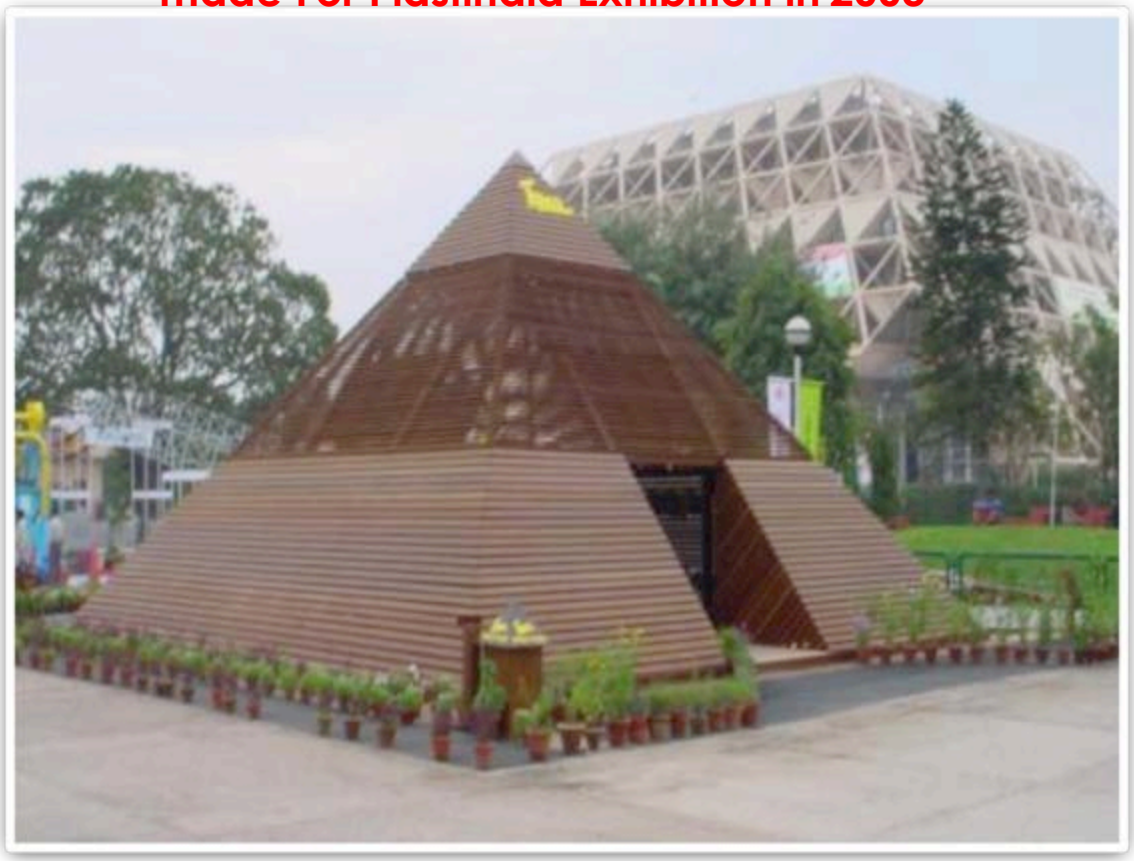


Courtesy: KIEM Innovations BV, The Netherlands

APPLICATIONS OF TIPWOOD

OUTDOOR STRUCTURES

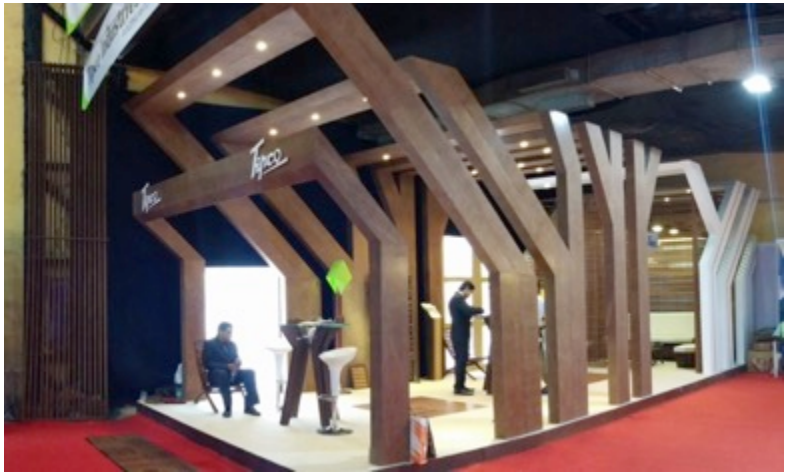
34' x 34' Pyramid structure
made For Plastindia Exhibition in 2003

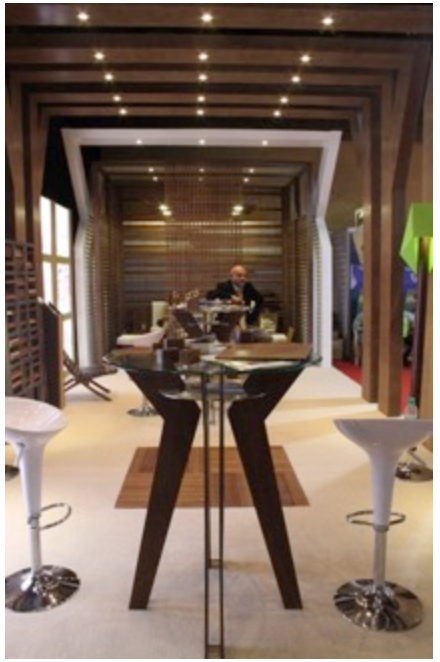


Same 34' x 34' Pyramid structure re-used in Plastindia in 2009,after being out in the open for 6 years

APPLICATIONS OF TIPWOOD

TIPWOOD AT ACETECH 2014

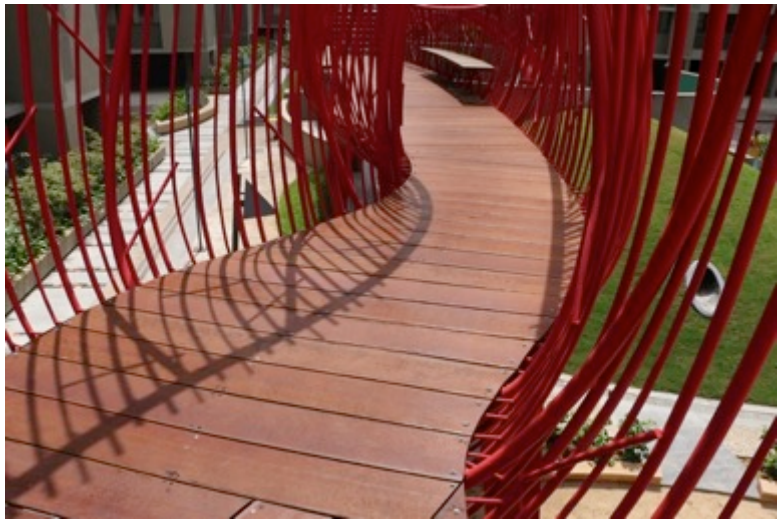


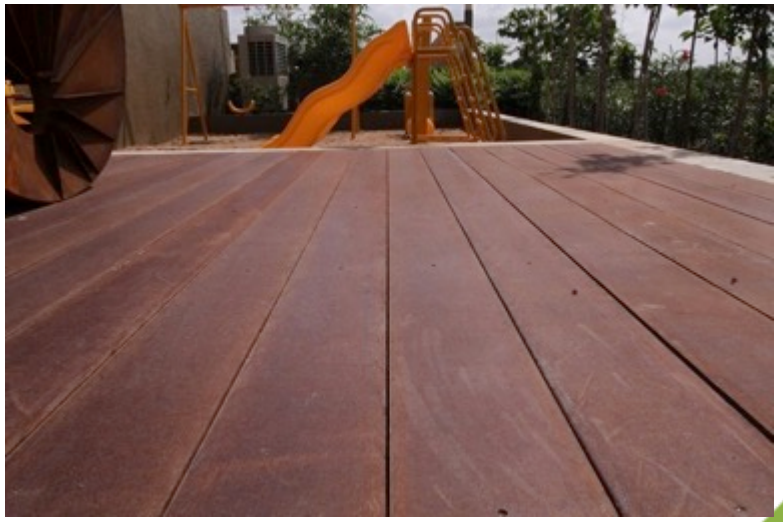


1000 sq. ft. house made from Tipwood for Exhibition

APPLICATIONS OF TIPWOOD

DECKING/ PATHWAYS / WALKWAYS / SKIRTINGS FOR POOLS





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DECKING/ PATHWAYS / WALKWAYS / SKIRTINGS FOR POOLS






FENCING & GATING SYSTEMS

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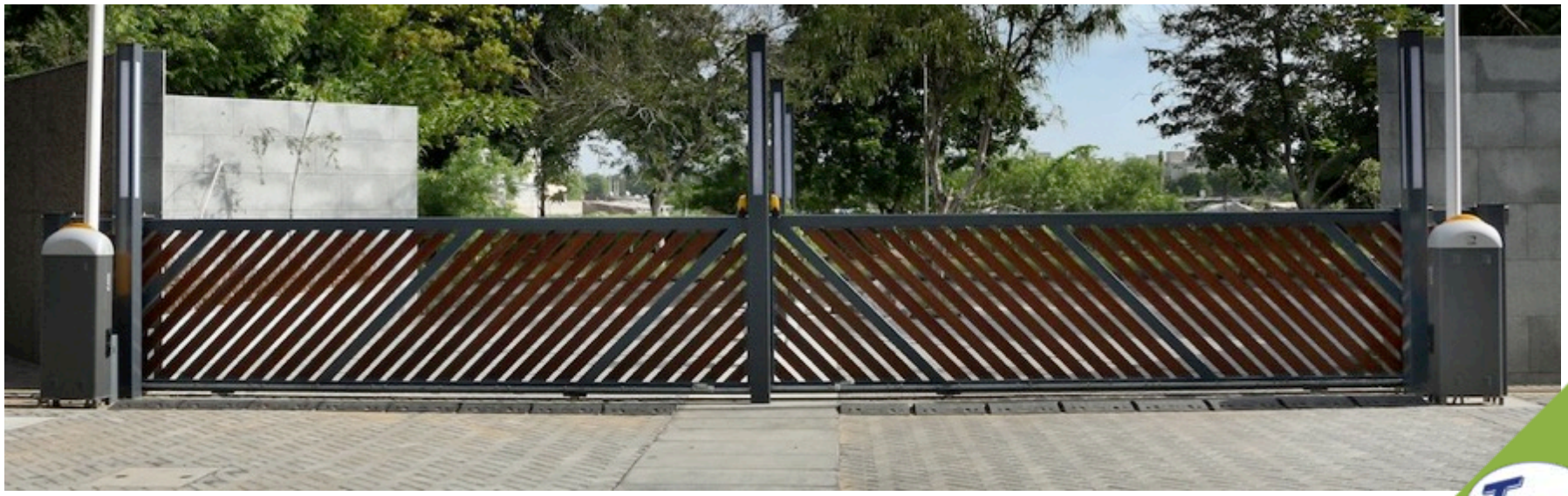

APPLICATIONS OF TIPWOOD

FURNITURE

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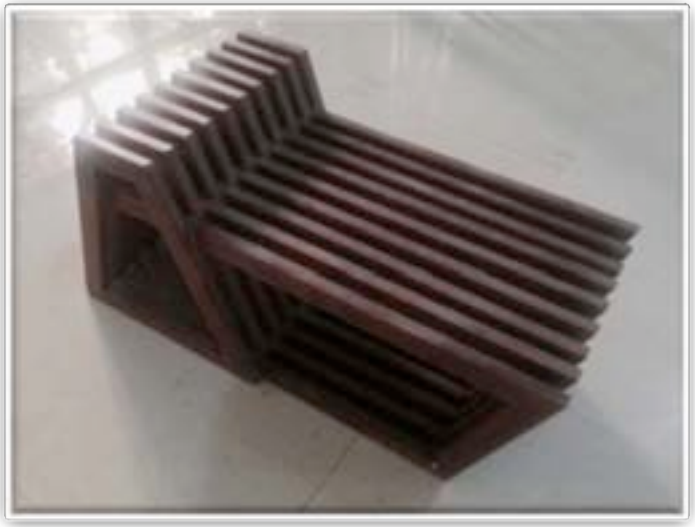
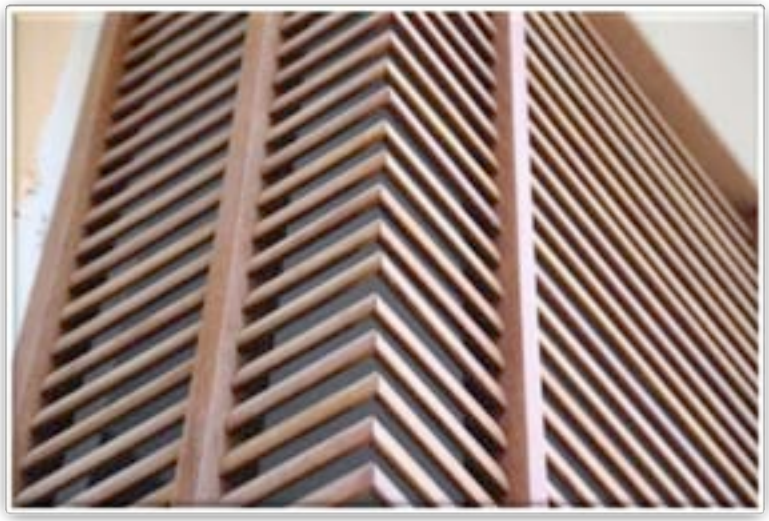


APPLICATIONS OF TIPWOOD

LOUVERS



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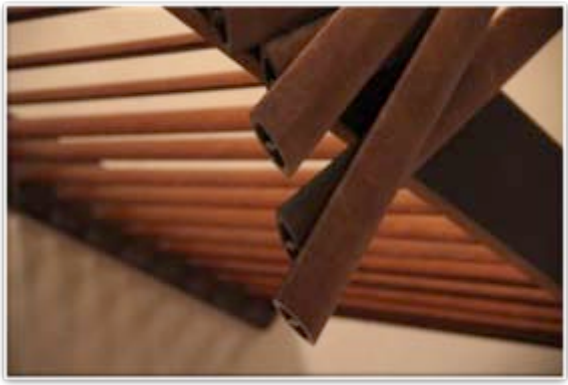

APPLICATIONS OF TIPWOOD

BUILDING – CLADDING & EXTERIORS

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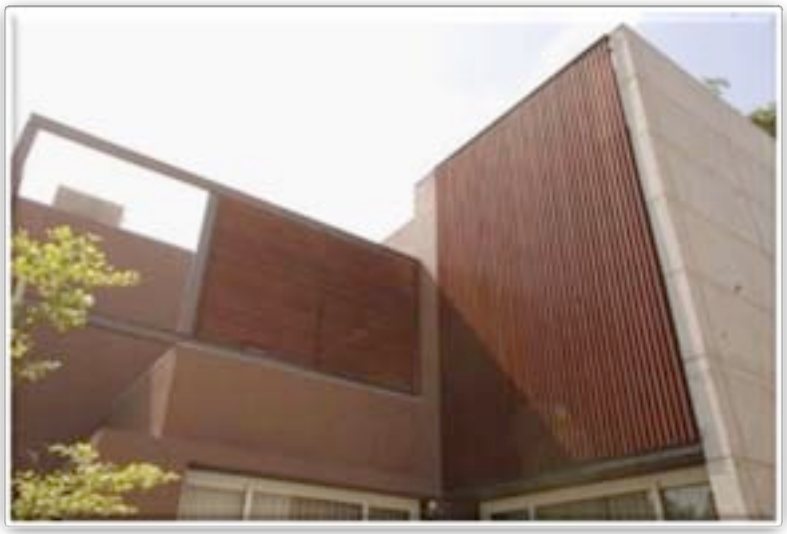

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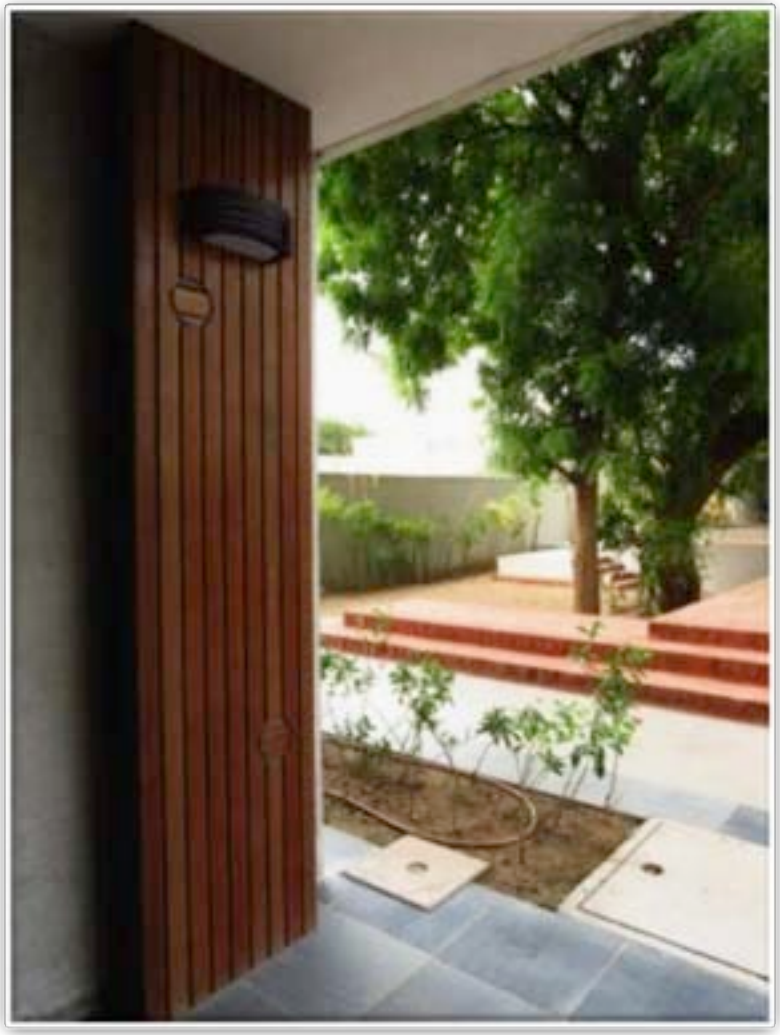

APPLICATIONS OF TIPWOOD

BUILDING – CLADDING & EXTERIORS

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PERGHOLAS / CABANAS / TRELLISES

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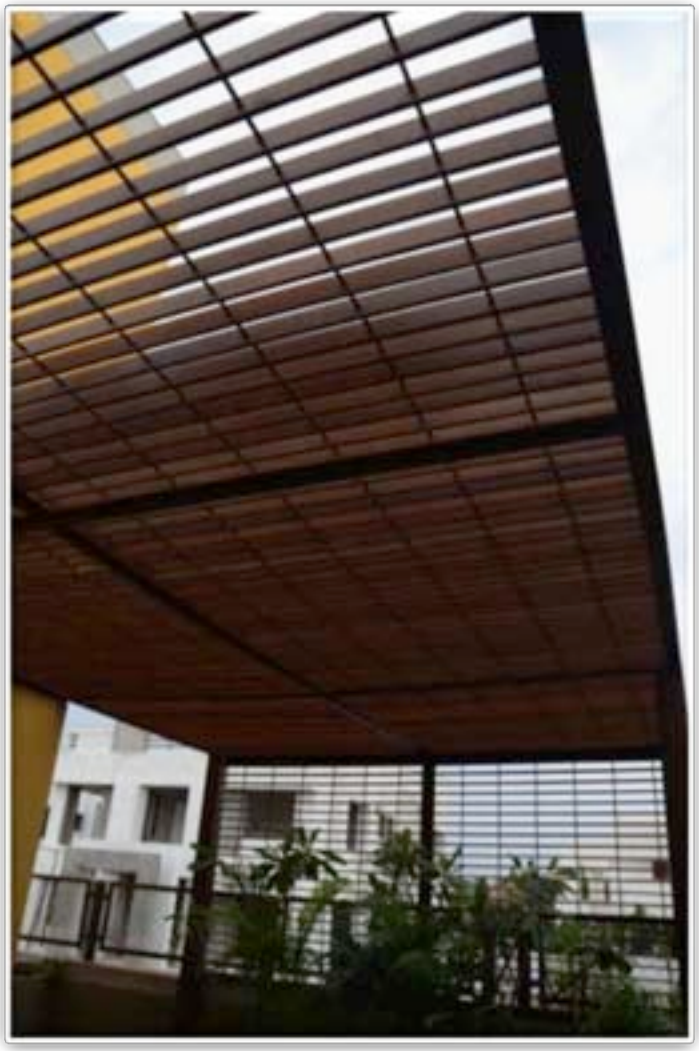
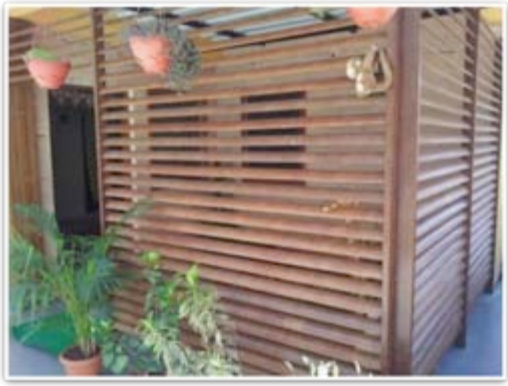
PERGHOLAS / CABANAS / TRELLISES



APPLICATIONS OF TIPWOOD

TIPWOOD

SCREENS & GRILLS



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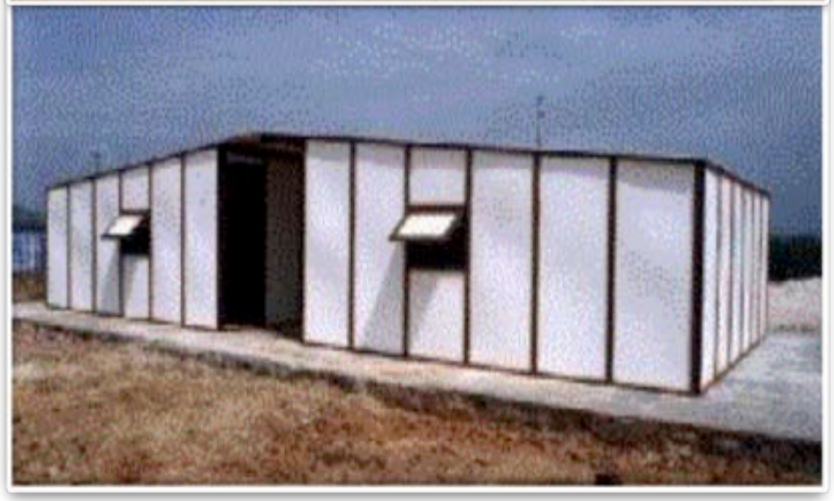
APPLICATIONS OF TIPWOOD

PARTITIONS

APPLICATIONS OF TIPWOOD

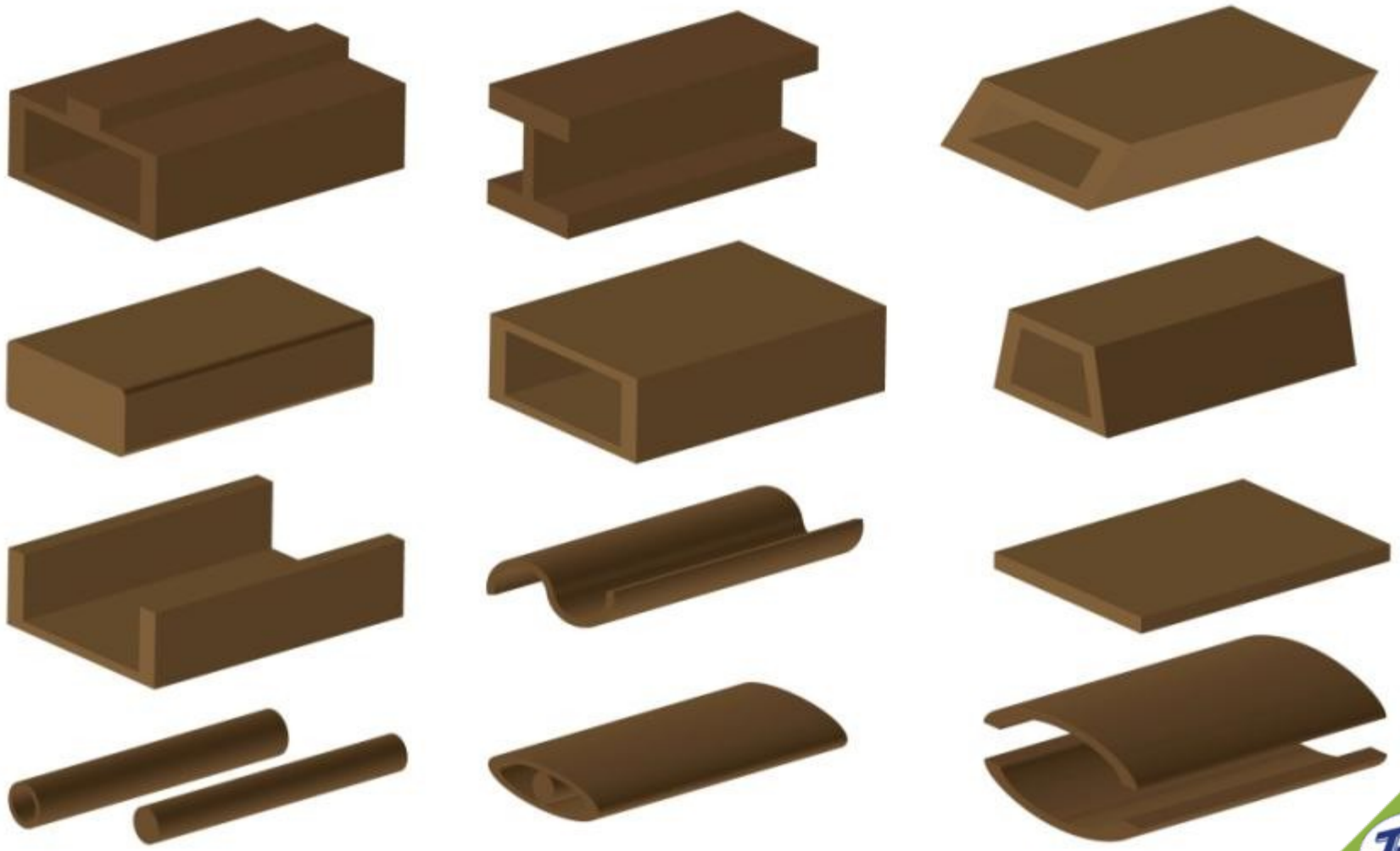
CABINS / OUTPOSTS / BUNKERS (DEFENCE)



ENDLESS POSSIBILITIES

TIPWOOD

SOLIDS, HOLLOW SHAPES, LOAD BEARING, FLATS, INTRICATE GEOMETRY



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LIMITLESS POSSIBILITIES
WITH
TIPWOOD

TIPWOOD

DEALERS / DISTRIBUTORS & AGENTS WANTED
Contact : tipwood@tipco.in

GO GREEN

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