

**ONE MONTH CERTIFICATE COURSE IN
PLYWOOD MANUFACTURING
TECHNOLOGY**

PROSPECTUS

Indian Plywood Industries Research and Training Institute

(An Autonomous body of the Ministry of Environment and Forests, Government of India)

Field Station Kolkata

2/2 Biren Roy Road (West), Sarsuna

Kolkata- 700 061

Telefax: 033 24983120

E-mail: ipirti@vsnl.net

1. RESEARCH AND DEVELOPMENT ACTIVITIES

The institute is specially mandated to undertake research on all aspects of wood and panel products made from wood and other renewable fibers.

Research

- | | | |
|----------------------------|---|---|
| Wood/Wood Based Composites | - | Plywood, Block Board, Flush Doors and LVL |
| | - | Saw milling. Finger Jointing, Glulam |
| Composites from non-wood | - | Agro/Forest/Wood residues. Bamboo |
| | | Lignocellulosic materials, etc. |

Treatment for Enhancing Service Life of Wood and wood based composites

Training & Education

- HRD for industries.
- For Officers of regulating/resource Management departments, Forests Excise. Customs, Bureau of Indian Standards (BIS, the national standardization organization)
- Projects for Engineering students as partial fulfillment for completion of engineering degree in Chemical/ Mechanical engineering.
- To facilitate research leading to Ph.D. Degree from FRI University in the field of Wood Science & Technology.

Standardization and Testing

- Evolving/Revising national material/product standards,
- Testing for conformity to Indian Standard Specifications.

2. TRAINING PROGRAMME

The institute offers short term vocational courses on different aspects related to plywood and other allied subjects. The one month training course is a special training programme for the technicians/supervisors working in plywood industries or those who are planning to join the plywood industries.

3. DURATION OF THE COURSE : 1 MONTH

Technicians working in the plywood industry and have reading/ writing knowledge in English are eligible for the course. Also fresh candidate having passed PUC/ITI and reading/ writing knowledge can also join the course. Candidates are selected from all over the country. Preference in admission is given to candidates sponsored by industries or organizations. Quotas for SC/ST/OBC/physically handicapped persons are as per the Government of India rules.

4. FOODING AND LODGING FACILITIES

The participant will be accommodated in dormitory guest house in the vicinity of IPIRTI campus. Range will be Rs. 150 per trainee per day. No accommodation is provided for spouse and children of the trainees. Canteen facilities in IPIRTI campus can be available on choice. The charges per meal are Rs 25.

5. COURSE FEE

A non refundable course fee of Rs 10000 + 10.3 % service tax at the time of admission. The amount is to be deposited in the form of demand draft on any nationalized bank drawn in favor of “Indian Plywood Industries Research & Training Institute” payable at Kolkata.

6. TRAINING METHODS

Class room teaching

Class room lectures are designed to enhance the trainees’ ability to comprehend the analytical methods, which help trainees to assimilate knowledge through interaction with the faculty members. In class room lectures, audio-visual aids are used very frequently.

In Plant Training

The aim of in plant training is effective absorption of essentials of technologies, processes and practices learnt during theory and lab practical through implementation in simulated factory floor conditions. Trainees deal with various production processes at the institute’s in-house pilot plant facilities complete in all respects related to saw milling, plywood/block board manufacture, resin/adhesive manufacture, testing and evaluation.

7. PLYWOOD MANUFACTURE COURSE

Theory

Forestry and Timber Raw Material

Source of timber for plywood, wood anatomy, defects in wood, wood destroying organisms, protection of wood, properties of wood.

Plywood Processing

Storage of logs in log yard and water, log preparation and log centering, peeling lathe for rotary cutting of veneers, lathe setting, knife grinding, veneer peeling, peeling defects and remedial measures, clippers and clipping of veneers, veneer slicer, slicing of veneer, matching of decorative veneer, veneer drying, veneer up gradation, veneer storage.

Resin and Adhesive

Adhesive made from material of natural origin. Raw material used for synthetic resin, Urea formaldehyde resin, Phenol formaldehyde, other synthetic resin, substituted Phenolic resin, additives used in plywood adhesive, preparation of glue mix, properties of resin and adhesive.

Practical

Estimation of purity of Phenol, formalin, paraformaldehyde, urea and melamine. Estimation of free formaldehyde in urea formaldehyde resins. Preparation of conventional and modified PF resins, UF resins, UMF resins. Characterization of resins prepared, UF resin adhesive formulation for MR plywood, PF resin adhesive formulation of BWR and BWP plywood, adhesive application and board making. Plywood manufactures drying.

Plywood manufacture Dry end

Preparation of veneer for assembly, Construction of plywood, Glue spreader and its operation, Glue spreading and veneer assembly, Cold press – construction and operation, Cold press –and preparation, Hot press – construction and operation, Hot pressing of plywood, Gluing faults and causes, Gluing faults and remedial measures, Trimming machine and operation, Sanders and their operation, Finishing of plywood, Storage of plywood, Wood destroying agents and affect on plywood, Preservative treatment of plywood.

Practical

Glue spreaders - components of the machine, Operation and maintenance, Hydraulic presses - cold and hot. Hydraulic system, advantages and disadvantages over mechanical system, Material handling- why and how of handling, indirect and direct handling, handling equipments and devices, Trimming - machines and operation.

Testing and evaluation

BIS specification for plywood, Method of testing of plywood, testing of plywood, Testing of Block Board & Flush doors, Testing of Particle Board.

Practical

Determination of density and moisture content of woods, swelling and shrinkage characteristics of wood, compression strength of wood, bending strength of wood. Nail and screw holding power of wood. Test methods for different panel materials/products from wood and other lignocellulosic materials.

Theory and Practical

Wood preservation and testing on retention of preservative chemicals.

Factory Visit

Log storage - need for storage, dry storage, wet storage, precautions in storage. Steaming and boiling - heating schedules, effect of heating on properties of wood, advantages and disadvantages of heating. Preparation of logs for peeling - cross cutting, debarking and cleaning,

Log centering - purpose and economic importance of centering, centering errors and their influence on veneer yield, methods of centering.

Veneer peeling lathe - machine parts, cutting action, undesirable movement of wood on lathe, play in lathe machine parts, spindle overhanging, dynamic equilibrium and slackness.

Peeling lathe settings- setting of knife, setting of pressure bar, and setting of the gap.

Maintenance of peeling lathe - general procedures, lubricants and lubrication, storage of spare parts for replacement. Measurement of veneer recovery, Yield calculation, Quality evaluation.

Veneer Clipping - functions, types, clipping efficiency, clipping allowance, veneer yield, dry clipping, soning and slacking.

Veneer drying - purpose, drying variables, moisture movement in veneers during drying, special measures for controlling final moisture content, drying defects and their control, types of dryers, drying time, dryer productivity, dryer capacity. Knife grinding machine and grinding wheels - knives, grinding machines, composition, abrasives, grain size, grade, structure, bond, wheel selection, grinding head, grinding bed, coolant, grinding procedures, maintenance. Jointing and splicing of veneers.

8. EVALUATION AND GRADING

Evaluation system of trainees' performance is designed to encourage them for active participation in all the components of the training viz. class room lectures, laboratory/in plant practical classes, seminars, project work, excursions and tours, as also general conduct. Evaluation system helps each trainee to measure his achievement in various activities that are essential to make him a professional.

INDIAN PLYWOOD INDUSTRIES RESEARCH AND TRAINING INSTITUTE (IPIRTI)
(An Autonomous body of the Ministry of Environment & Forests, Government of India)
 2/2, Biren Roy Road, Sarsuna (west), Kolkata – 700 061
 Ph: 033 2498 3120; Fax: 033 2498 3120; E – mail: ipirti@vsnl.net

Application form for admission to one month training course on ‘Plywood Manufacture’

Application Form no.....
 D/D No.....dated.....
 Issued at.....

**Affix Passport size
 photograph**

Application Form

I. General

1	Name of the candidate(in Capital Letters)	
2	a) Age as on 01.10.2010 b) Date of birth as recorded in SSLC/ Matriculation certificate	
3	Name of father/ guardian Occupation and Annual Income	
4	Full postal address for communication with telephone nos.(if any) in block letters	
5	Do you belong to any reservation category? If yes, then please furnish the category you belong (enclose certificate)	Yes No ST/SC/OBC
6	Are you sponsored by any wood based industry?	Yes No
7	Whether you need accommodation?	Yes No

II. for Sponsored Candidates

(If your answer is 'Yes' for item No.6 under I, please forward this application through your Sponsoring authority):

I hereby sponsor Shri.....graduated from.....

University for undergoing One month training course on Plywood Manufacture at IPIRTI, Field Station, Kolkata.

Date:

Signature of the Sponsoring Authority with their company seal

Place:

Declaration

III I hereby declare that the particulars furnished in this form are true to the best of my knowledge and belief. If any information is found to be untrue/false, I am liable to be disqualified from Course.

Date:

Signature of the Candidate

Place: