

**Surface Finish by Dyeing, Staining, Pigmenting, Matting and Polishing**  
**– Course: Manual woodworking techniques. Instruction examples for**  
**practical vocational training**



# Table of Contents

|  |          |
|--|----------|
| <b><u>Surface Finish by Dyeing, Staining, Pigmenting, Matting and Polishing – Course: Manual</u></b> |          |
| <b><u>woodworking techniques. Instruction examples for practical vocational training</u></b> .....   | <b>1</b> |
| <u>Preliminary Remarks</u> .....   | 1        |
| <u>Instruction Example 9.1.: Rack</u> .....  | 1        |
| <u>Instruction Example 9.2.: Staining Test Board</u> .....   | 3        |
| <u>Instruction Example 9.3.: Corner Shelf Board</u> .....  | 5        |
| <u>Instruction Example 9.4.: Round Table Board</u> .....   | 7        |



# Surface Finish by Dyeing, Staining, Pigmenting, Matting and Polishing – Course: Manual woodworking techniques. Instruction examples for practical vocational training

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Berlin

Original title:

Lehrbeispiele für die berufspraktische Ausbildung  
"Oberflächenbehandlung durch Färben, Beizen, Pigmentieren, Mattieren und Polieren"

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First edition © IBE

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Order No.: 93–33–3309/2

## Preliminary Remarks

The present material contains 4 selected instruction examples, with which the finishing of wood surfaces can be practised.

In this connection, simple and prepared wood surfaces are to be worked, which have been manufactured by means of manual or mechanical woodworking techniques. The following surface finishing methods will be described in individual steps:

- Washing, sanding and dedusting
- Extracting resin, bleaching
- Dyeing, staining, pigmenting
- Filling pores
- Matting, varnishing, polishing.

To facilitate the preparation and execution of work, each instruction example states the necessary materials, tools, testing means and auxiliaries. Furthermore, the previous knowledge needed to perform the exercises is mentioned.

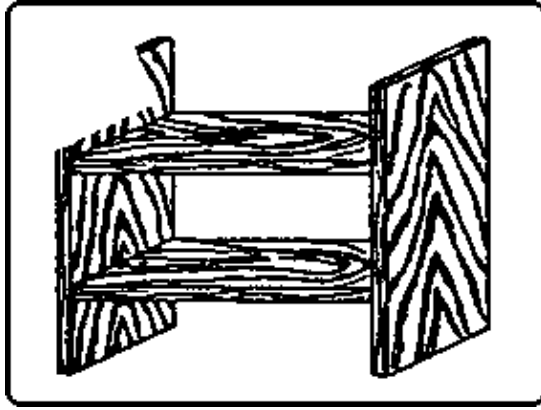
The given sequence of operations for each instruction example contains the individual steps leading to the respective surface finishing. This order of working steps should be followed, in order to obtain a good quality.

The working drawings contain the practising pieces with rough dimensions. They may be supplemented with other practising pieces or substituted, if not available in the pre-set dimensions or forms.

## Instruction Example 9.1.: Rack

Surface finishing of wood pieces by bleaching, dyeing and matting.

### Material



- Prepared rack made from wood poor in tanning agent, with spotty boards
- Bleaching agent solution:
  - 500 gr. – 30 % hydrogen peroxide, 400 gr. water and 100 gr. 10 % ammonia solution
- Dyeing agent:
  - turpentine oil stain (fat-soluble coal-tar dyes dissolved in oil of turpentine)
- Nitrocellulose matting agent

**Tools**

Wood scraper with cloth covering, sponge, several vegetable bristle brushes, distributing paintbrushes, linen cloths, hard-bristle brush

**Measuring and testing means**

Visual inspection (measuring by the eye)

**Auxiliary accessories**

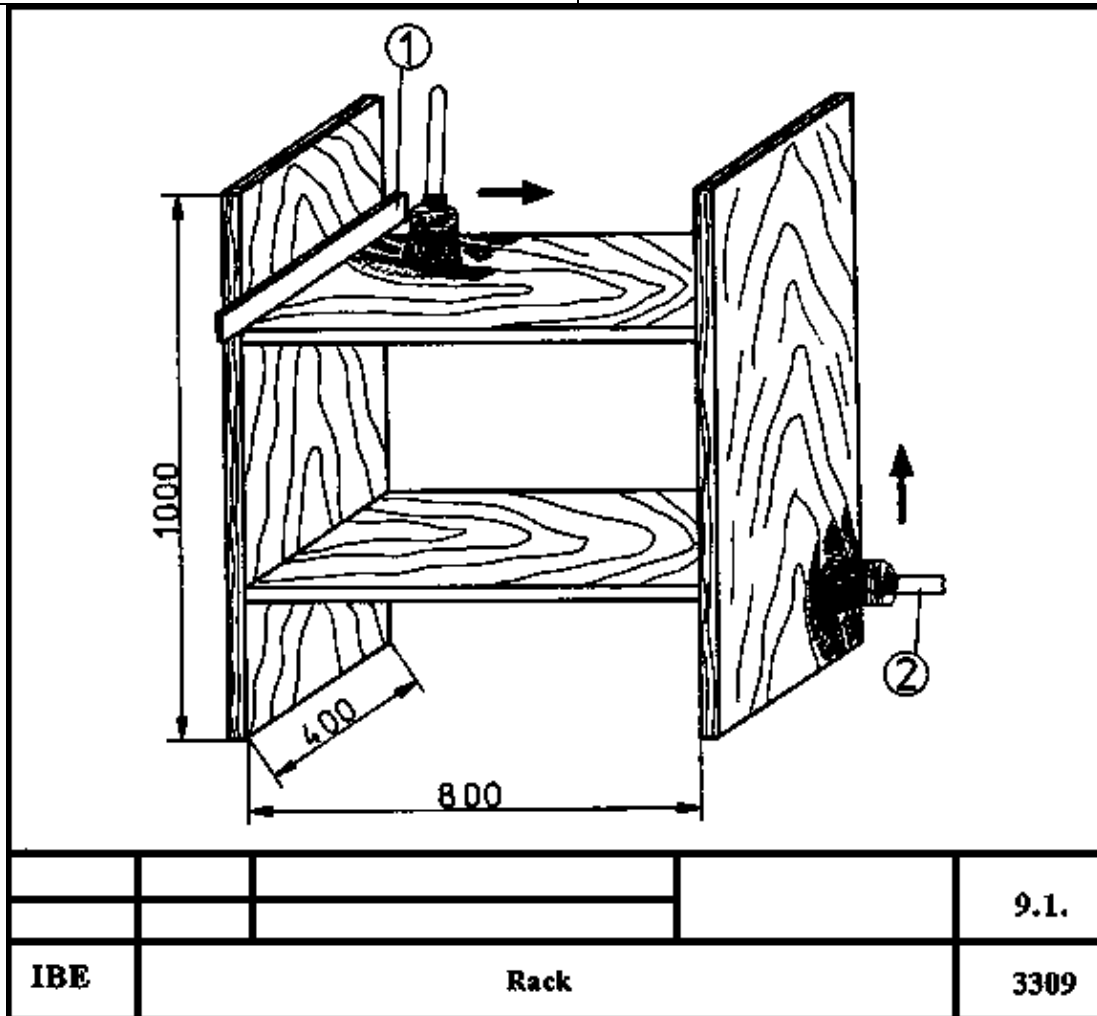
Earthenware pot, thin cover of foil or cardboard, rubber gloves

**Necessary previous knowledge**

Fundamentals of manual woodworking

| Sequence of operations  | Comments   |
|---|--|
| 1. Prepare the workplace. Make working available.   | Check completeness.  |
| 2. Put the prepared rack on a clean support.  |  |
| 3. Apply bleaching agent in wood grain direction to the entire surface of the spotted boards. | Richly apply solution with covered wood scraper several times. Foam must remain. |
| 4. Brush surface with hard brush, then wash thoroughly with warm water.                       | Use sponge to wash.  |
| 5. Let it dry at ambient temperature for 24 hours.  |  |
| 6. Wetly apply dye with paintbrush to the surfaces and distribute it uniformly.               | 1 – Cover adjoining board edges (with foil or cardboard) on one side.            |
|   | 2 – Coat vertical surfaces from bottom to top.                                   |
| 7. Let it dry at ambient temperature for 24 hours.  |  |

|  |                                   |
|--|-----------------------------------|
| 8. Apply highly fluid matting agent to the surface and let it dry.                     | Use linen cloth.                  |
| 9. Slightly sand the hardened surfaces, brush them and apply semi-fluid matting agent. | Do not touch the same spot twice. |
| 10. Check finally.   |                                   |

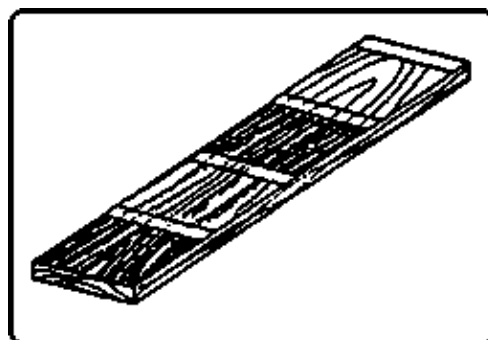


Rack

### Instruction Example 9.2.: Staining Test Board

Surfacing of a board by washing, sanding and dedusting, staining as single staining procedure and matting.

#### Material



– Board containing tanning agent

Thickness: 10 to 20 mm  
 Width: 200 mm  
 Length: 500 mm

- Single stains of several colour shades
- Nitrocellulose matting agent

### Tools

Sponge, sanding pad with fine coated abrasives, bench brush and pore brush, soft paintbrushes without metal rings for each staining procedure, linen cloth for matting.

### Measuring and testing means

Visual inspection (measuring by the eye)

### Auxiliary accessories

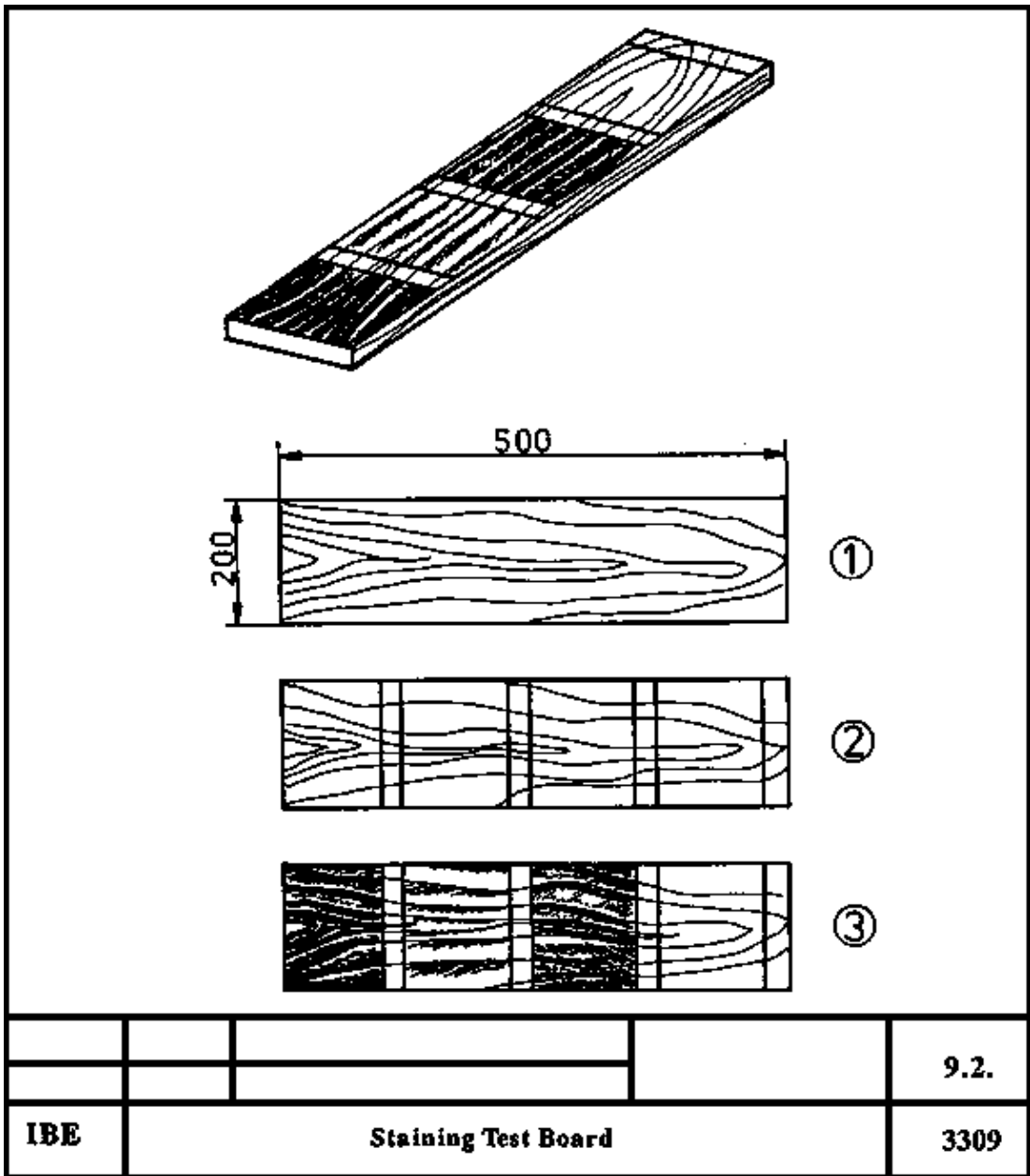
Supporting table

### Necessary previous knowledge

Fundamentals of manual woodworking

| Sequence of operations  | Comments  |
|---|---|
| 1. Prepare the workplace. Make working material available.  | Check completeness.                             |
| 2. Place on support the prepared, planed board pre-sanded on edges and surfaces.  | Stage 1   |
| 3. Wash board on one surface.   | Sponge the surface wetly and uniformly.         |
| 4. After material has dried, finely sand in longitudinal direction and de-dust thoroughly.                              | Strongly brush the surface with the pore brush. |
| 5. Apply marks for different staining shades.   | Stage 2   |
|   | Mark surfaces with graphite pencil.             |
| 6. Richly apply the single stains of different colours to each of the marked fields and repeat it after 2 to 4 minutes. | Stage 3   |
|   | Use another paintbrush for each staining agent. |
| 7. After another 2 to 4 minutes, equally distribute excessive staining agent.   |   |
| 8. Brush surface after it has completely dried.   |   |
| 9. Apply highly fluid matting agent to the surface and let it dry.  | Do matting at 20°C at least.                    |
| 10. Slightly sand the hardened surface, brush it and apply semi-fluid matting agent.                                    | Do not touch the same spot twice.               |
| 11. Check finally.  |   |



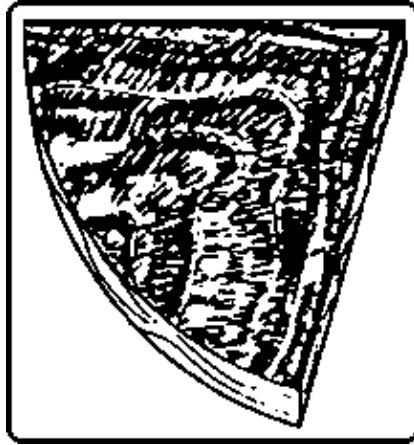


Staining Test Board

**Instruction Example 9.3.: Corner Shelf Board**

Surfacing of a board by extracting resin, pigment staining and varnishing.

**Material**



– Resinous board:

thickness: 20 mm  
width: 300 mm  
length: 300 mm

– Saponification agent:

Curd soap solution or 10% ammonium chloride solution

– Neutralizing agent:

10 to 15 % acetic acid

– Pigment staining agent

– Oil or alkyd resin varnish

### Tools

Sponge, hard brush, various vegetable fibre paintbrushes without metal rings, bench brush, sanding pad with fine coated abrasives

### Measuring and testing means

Visual inspection (measuring by the eye)

### Auxiliary accessories

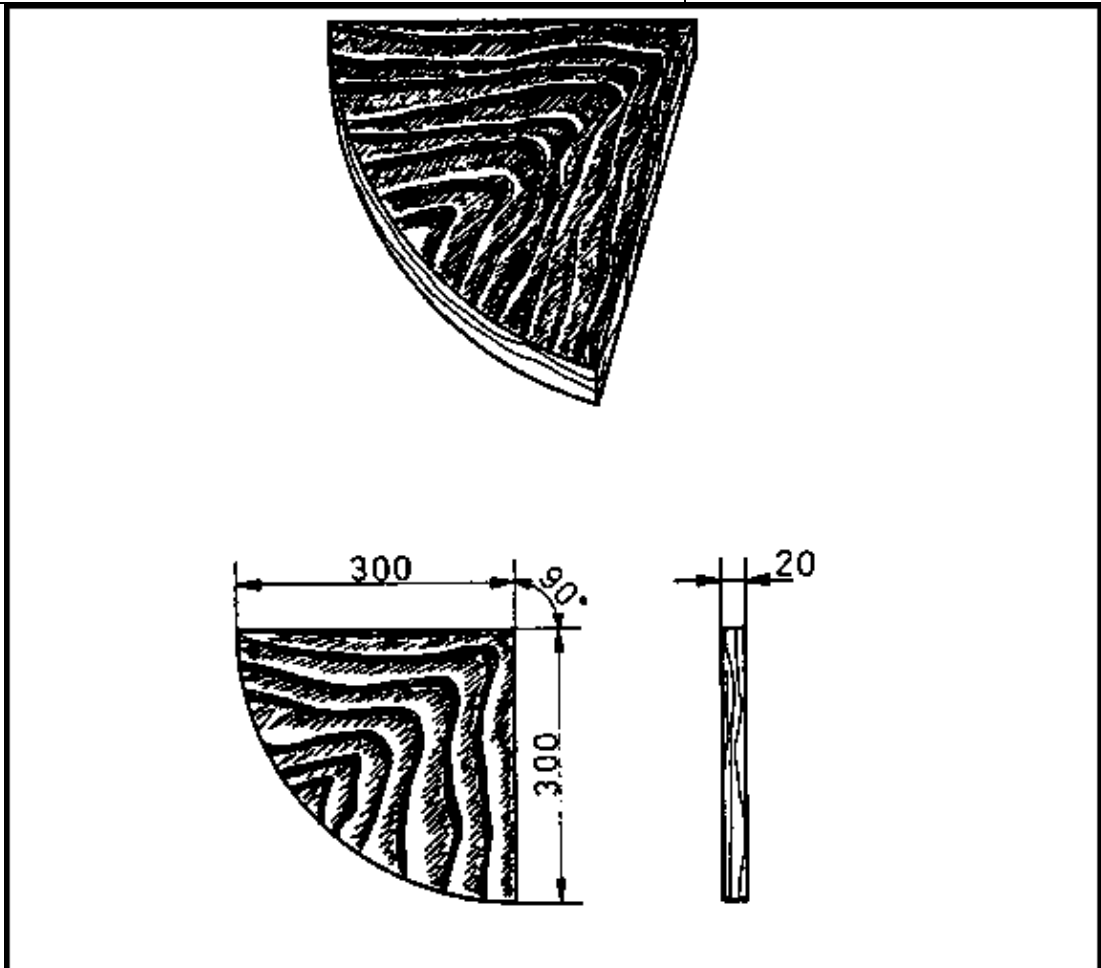
Supporting table, earthenware pots for saponification and neutralizing agents, rubber gloves, sawdust

### Necessary previous knowledge

Fundamentals of manual woodworking

| Sequence of operations  | Comments   |
|---|--|
| 1. Prepare the workplace. Make working material available.                      | Check completeness.  |
| 2. Place on support the prepared, planed board pre-sanded on edges and surface. |  |
| 3. Wetly apply saponification agent to both surfaces.                           | Sponge the entire surface with the solution several times. |
| 4. After a reaction time of 15 minutes, strongly brush in wood grain direction. |  |

|   |  |
|---|--|
| 5. Wash immediately, rub down with sawdust and clean.                                       |  |
| 6. Neutralize the surface.  | Apply 10 to 15 % acetic acid.  |
| 7. Wash the surface with warm water and finely sand after it has dried.                     |  |
| 8. Apply pigment staining agent to the surface and distribute it.                           | Thoroughly rub the staining agent into the pores.                                  |
| 9. After the surface has dried, brush it.   |  |
| 10. Apply three varnish coats to the surface until it has closed pores and becomes shining. | After the first coat has dried, intermediately sand it with fine coated abrasives. |
| 11. Check finally.  |  |



|            |                           |  |  |             |
|------------|---------------------------|--|--|-------------|
|            |                           |  |  |             |
|            |                           |  |  | 9.3.        |
| <b>IBE</b> | <b>Corner Shelf Board</b> |  |  | <b>3309</b> |

Corner Shelf Board

### Instruction Example 9.4.: Round Table Board

Surfacing of a board by filling the pores and polishing.

#### Material



– Wooden table board

thickness: 20 mm  
diameter: 300 mm

- Shellac polishing agent
- spirit
- pumice powder
- polishing oil
- tincture of benzoin stryax benzoin solution
- polish-off solution polishing down solution

### Tools

Pore brush, polishing cloth, sanding pad with felt covering, soft cloths

### Measuring and testing means

Visual inspection (measuring by the eye)

### Auxiliary accessories

Supporting table

### Necessary previous knowledge

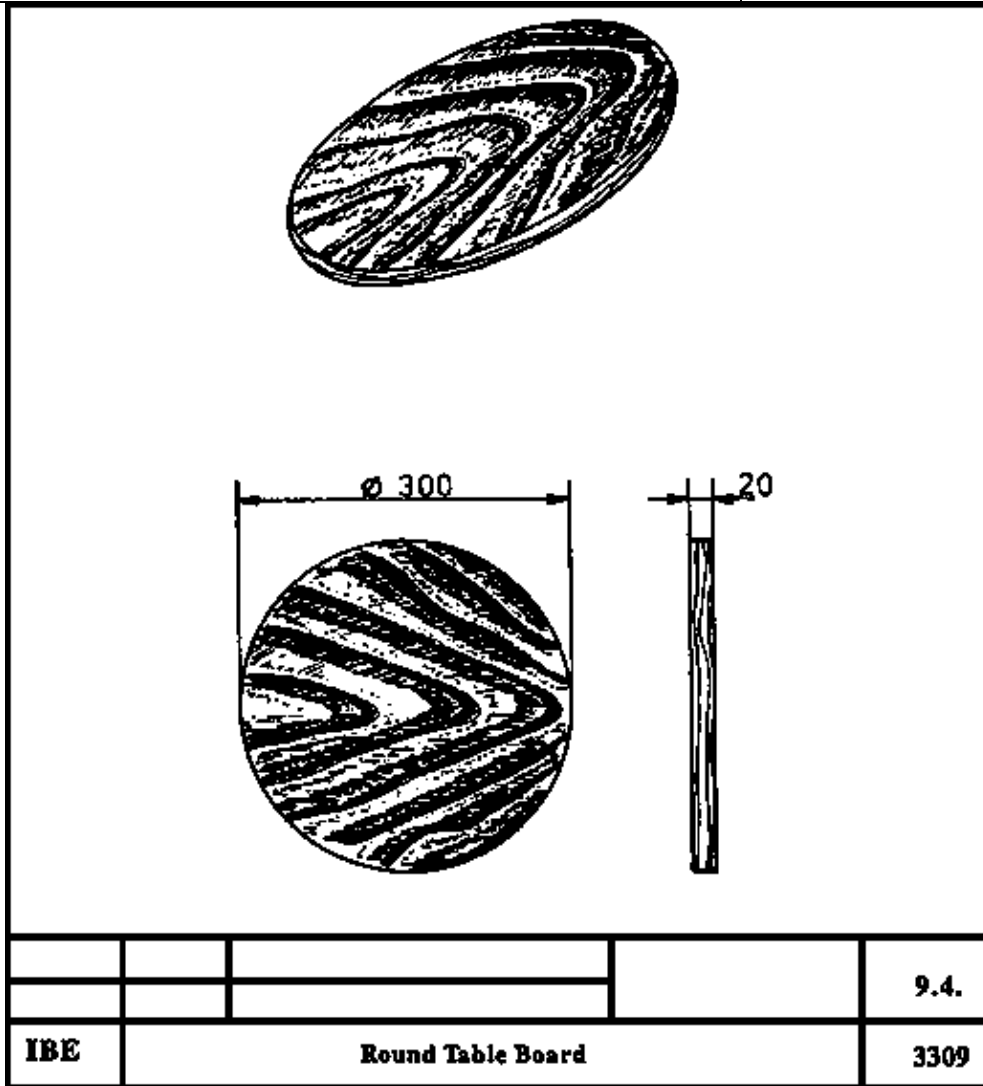
Fundamentals of manual woodworking

| Sequence of operations  | Comments   |
|---|--|
| 1– Prepare the workplace. Make working material available.  | Check completeness.  |
| 2. Put the prepared wooden table board on clean support and brush it.   |  |
| 3. Fill the pores with a mixture of diluted polishing agent and pumice powder.  | Rub it into the pores at pressure.   |
| 4. Apply the primary coat without polishing oil.  | Apply the coat to the entire surface by circularly moving the polishing ball.                |
| 5. Let it dry in a warm room for 24 hours.  |  |
| 6. Apply the first finishing layer, at first without polishing oil, afterwards with polishing oil.  | Polishing ball must not stick to the surface. Circularly move the ball without interruption. |
| 7. Sand the first finishing layer, then apply the second finishing layer.   | Give enough time for intermediate drying.  |
| 8. Finally polish down with styrax benzoin solution and remove polishing oil with polishing down solution until last polishing oil residues disappear | Apply tincture with a soft cloth, wipe down the surface with dry                             |

and the surface becomes crystal-clear.

cloth, change cloths several times.

9. Check finally.



Round Table Board

