

SUBJECT: BASIC TECHNOLOGY
TOPIC: DRAWING INSTRUMENTS AND MATERIALS
CLASS: JS1
WEEK: 1
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DRAWING INSTRUMENTS AND MATERIALS

Technical drawing is a form of visual arts in which a person uses various drawing instruments to mark paper or another two-dimensional medium. Also, technical drawing is a universal language used for communication among technical people. These are engineers, technicians, designers, builders, draughts men, etc.

Digital drawing is the act of using a computer to draw.

DRAWING INSTRUMENTS

Drawing instruments are tools used in technical drawing that does not get consumed while using them. They include the following:

(1) Drawing Board:

This is a flat wooden board with a smooth, rigid surface. The drawing paper is placed on it before the drawing begins. There are two main types:

(a) Full imperial size:

It has dimension of 812 × 585mm. They are usually found in the studio and are used by draughtsman. It has a tee-square (or parallel bar on it) which can slide from the top of the table to the bottom. The board can also be inclined to a desired position.



(b) Half imperial size:

It has dimension of 585 × 452mm. It is mostly used by students because it is portable and ideal for much smaller work.

(2) Tee-square:

This is a T-shape instrument containing a head and a stock. It is used for drawing all horizontal lines and for setting the paper on the board. It is also used to support set-squares during drawings.

(3) Set-squares:

We have the 45° and 30°/60° set-squares. They are used for drawing vertical and angled (or diagonal) lines. They can also be paired up for specific angle drawing.

(4) Ruler:

There are two types of ruler:

(a) Scale Rule:

It is used to produce reduced or enlarged sizes of objects. They are usually triangular in shape and have three edges. Each edge of the scale rule is graduated and each scale designation is marked on the rule.



(b) Metric rule:

This is a 30 cm wooden or plastic instrument, used for measuring lengths/straight lines and for dimensioning scaled drawings. It is usually graduated in centimetre, millimetres and inches.

(5) Protractor:

The protractor is used for measuring angles in degrees. It has divisions ranging from half a degree to 180°.

(6) French curves:

This instrument is used to draw different types of curves.

(7) Drawing set:

This is a pack containing different drawing items like a pair of compasses, divider, etc.

DRAWING MATERIALS

Drawing materials, on the other hand, are items that get consumed with use. They include the following:

(1) Drawing paper:

This is the paper on which the drawing is produced. The paper commonly used for technical drawing is the A3 paper. Other drawing papers are the A1, A2, A4, etc., depending on the work to be done.

(2) Drawing Pencil:

There are two types of pencils:

(a) Soft pencils: These are soft and black. They are lighter in colour. They include grade pencils such as B, 2B, 3B up to 8B pencils.

(b) Hard pencils: These are hard pencils and darker in colour than B grade pencils. They include H grade pencils such as H, 2H up to 8H pencils.

(3) Pencil sharpeners:

This is a material used to sharpen all pencils to a conical point shape.

(4) Emery cloth:

Instead of re-sharpening the pencil, this material is used to restore sharpness to the pencil.



Fig 1: An emery cloth

(5) Brush:

The brush is used to remove dirt from the paper after erasing.

(6) Eraser:

This material is used to remove mistakes. It is made of soft quality rubber.

(7) Templates:

These are available in various shapes, such as geometrical shapes (e.g. squares, circles, polygons, etc.) or shapes of architectural designs (e.g. floor plan, plumbing, furniture, etc.) or letters and alphabets.

(8) Lettering instruments:

They are used to draw various types of letters and alphabets. These include lettering machine, letter guide, template, pen, scribe etc.

(9) Drawing Paper Clips or Adhesive Tape:

They are used to hold drawing papers on the boards.

ASSIGNMENT

1. List ten (10) instruments and materials for technical drawing.
2. Discuss the main types of drawing boards used in technical drawing.