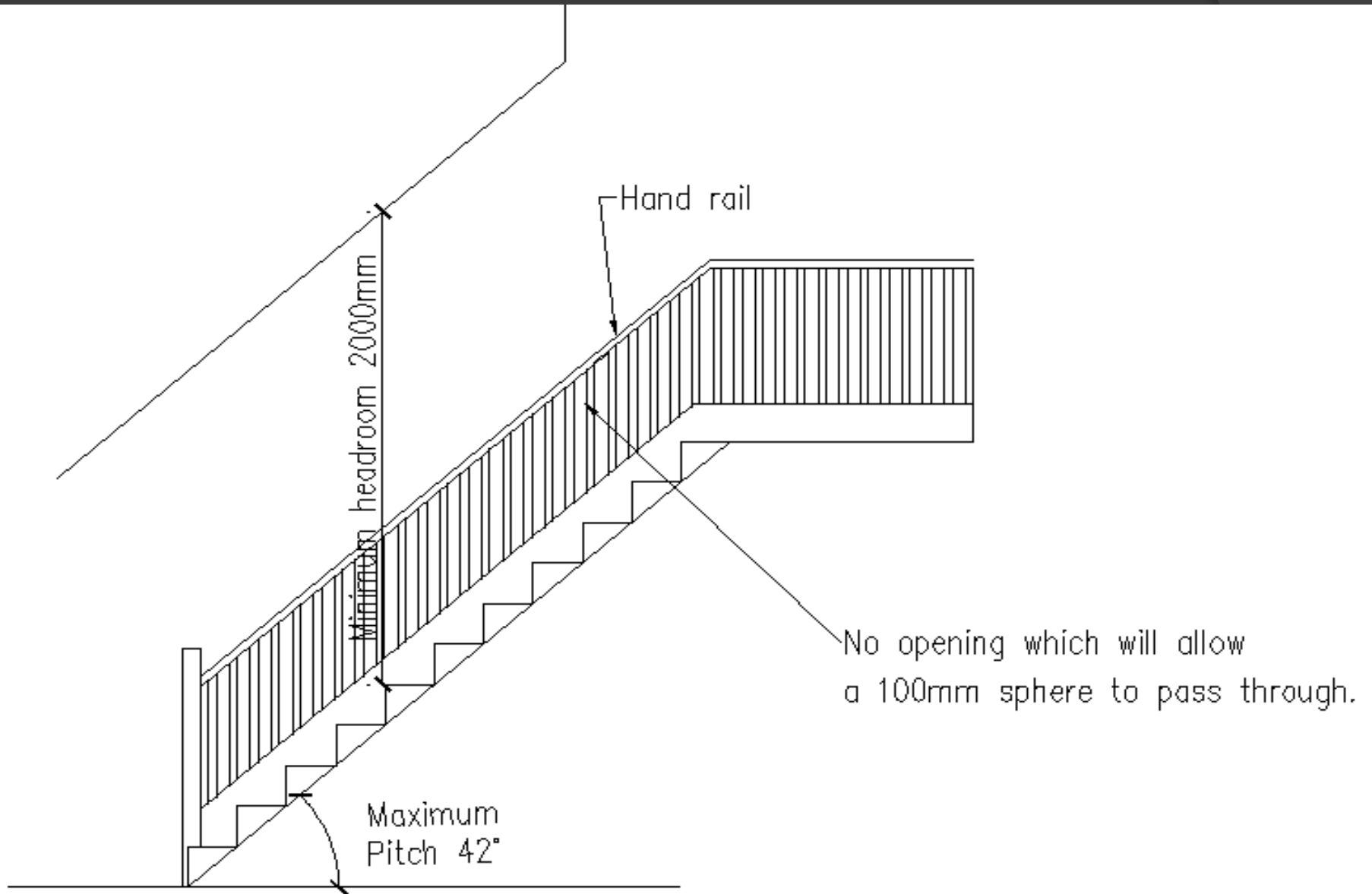


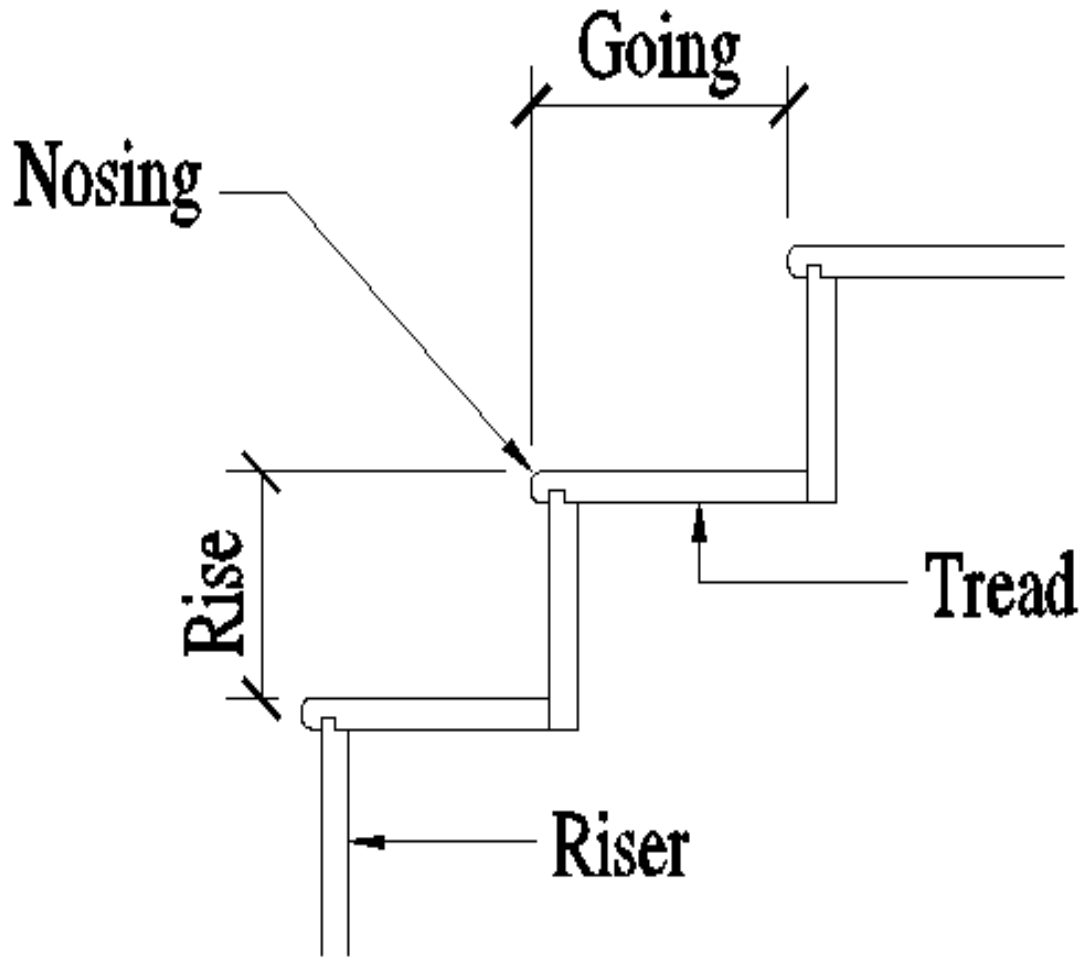
Subject: Building Material and Construction-IV
Topic: Stairs
Presented by: Nilofar Saifi

STAIRS

Stair Detail



Tread Detail



Minimum Going for domestic stairs is 220mm.

Maximum Rise is 220mm string and handrail.

In consecutive flights of stairs, each step shall have the same rise and the same going.

Handrail to be provided on both sides of stairs if width is 1.0 metres wide or more.

Stair Terms

- Stairwell

The space in which the stairs and landing are housed.

- Tread

Upper surface of a step on which the foot is placed

- Riser

The vertical member between two treads

- Step

Rise plus tread

- Nosing

The exposed edge of tread usually rounded or splayed.

Stair Terms

- Handrail

Member parallel to the string and spanning between newels or fixed to the wall.

- Baluster

Vertical infill members between string and handrail.

- Newel

Post at bottom and top of flight supporting handrail.

- String

Members into which the ends of treads and risers are housed and wedged.

- Pitch line

Line connecting the nosing of all treads in one flight.

Wood for Staircase



Pine, poplar, oak, maple, and cherry are the most popular wood for staircase construction

Pine– Southern Yellow Pine is the most common material used to make stairs because of its strength and cost. Because it is economical, there are several grades of this wood.

Poplar- Color variation and distinctive graining is common in poplar. However, it accepts paint well and is nearly clear. Because of these characteristics, poplar is commonly used in painted or carpeted stairs. It is the least expensive of the hardwoods.

Hardwoods-Oak, Cherry, and Maple are the most popular types of hardwoods. When stairs are made out of these materials, they are considered to be “finish grade.” It is expected that the stairs will be viewed as a showpiece in the room and the wood must be of exceptional quality. Because of this, only wood with knots and flaws up to 1/8” in size are accepted.

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Wooden Staircase components

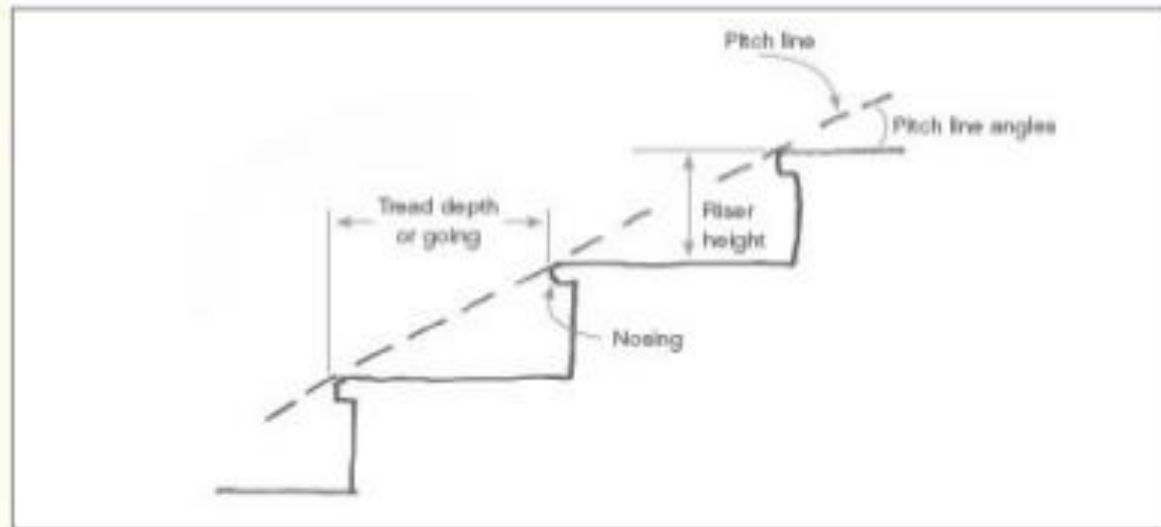


The three main parts of a staircase are :

Tread- The part of the staircase, horizontal to the floor, that a person steps on while walking between floors. Usually has a bull nose edge finish.

Riser- Risers work as a backing to the tread to keep the foot from traveling past the edge of the tread. They are vertical to floor.

Stringer- The purpose of the stringer is to contain both the tread and the riser and provide structure to the staircase. This component runs at a diagonal from floor to floor.



Types of Staircases



There are 6 standard stair types that are used in most practical applications. Custom designed stairs are also available to showcase the unique décor of your home.

Box– A complete boxed in stair with housed stringers on both sides. On this stairway, the ends of each tread and riser are installed into recessed stringer routings creating a box appearance.

Box



Types of Staircases



Open 1 Side– One side of these stairs is closed or boxed in. The opposite side is open with all returned end treads. On the open side, the wall usually runs underneath the stringer for support. These stairs are considered to be more decorative than the box type because the balusters will run directly into the treads.

Open 2 Sides– A decorative stair design, each tread is mitered and open on both sides. There is not a boxed in section anywhere on this stair type. Walls typically run beneath both sides of this stair.

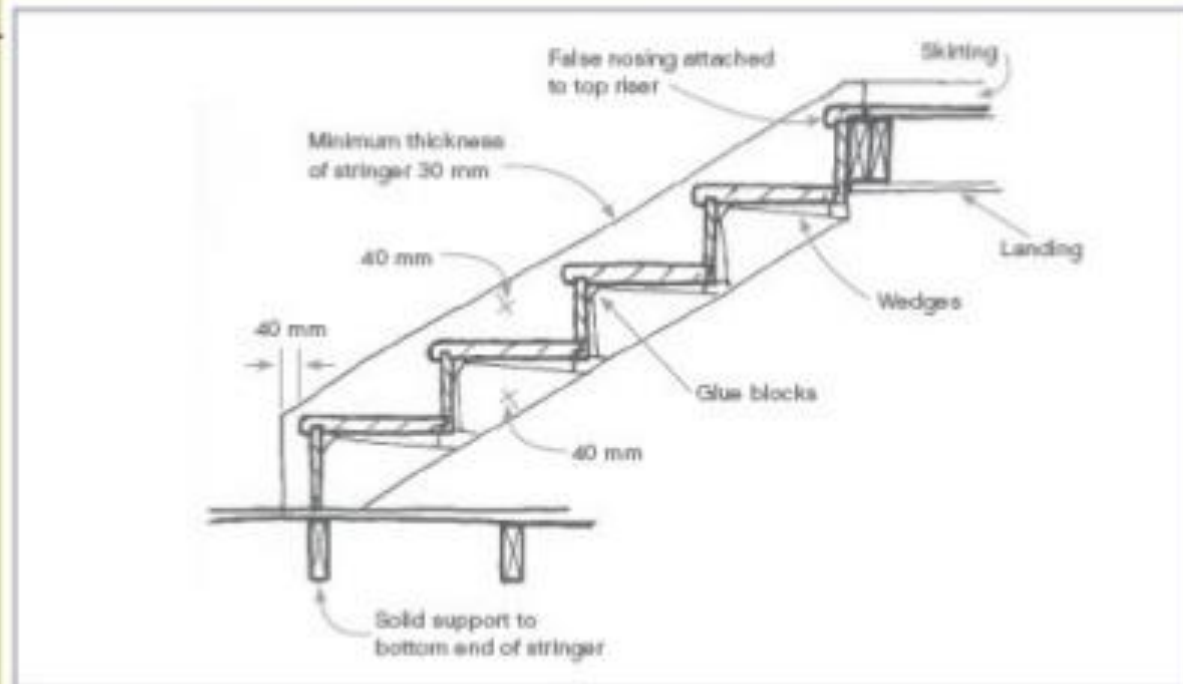
Open 1 Side



Open 2 Sides

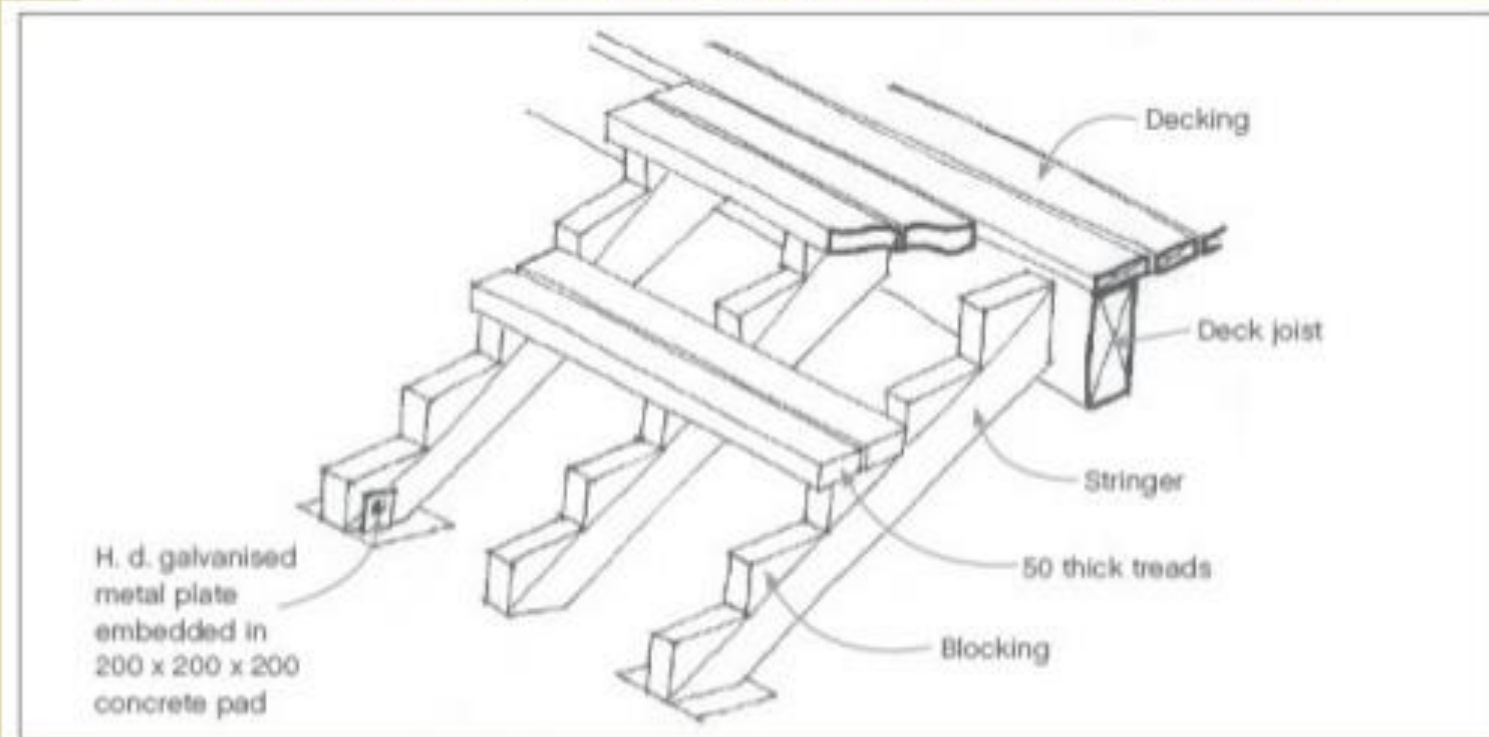


Interior Wooden Staircase



A stringer that closes off the ends of the treads and risers is a closed stringer. If the stair is built between walls the stringer may be called a wall stringer. In this case the stringer is attached to the wall and transfers the stair load directly to the wall. It is generally sized to accommodate the tread and riser, and align with skirtings.

Exterior Wooden Staircase



A simple form of stair can be constructed from solid timber to provide access to exterior deck areas

The treads can be attached to the stringers with by 50 x 50 mm brackets. The stair timber and fixings used should meet the same durability requirements as the deck construction. Exposed bolts and other fastenings will need to be type 316 stainless steel or epoxy coated hot-dip galvanised steel.

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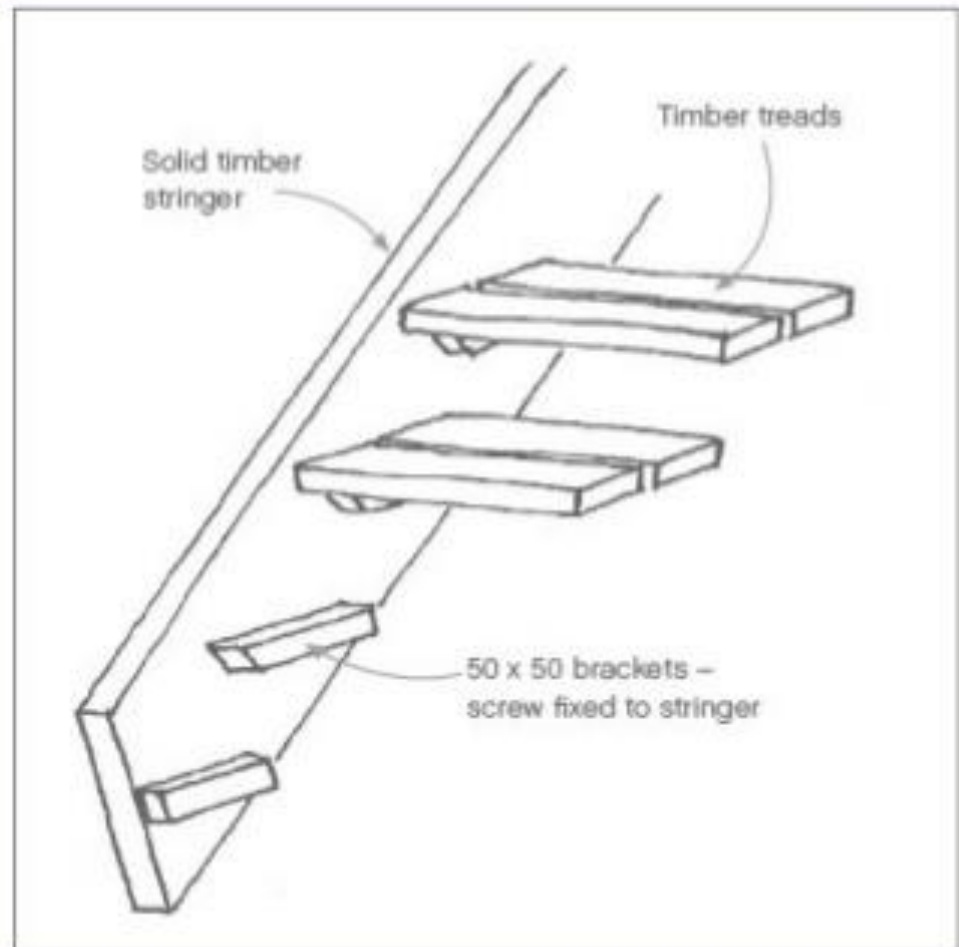
Exterior Wooden Staircase



Timber treads need to be coated with a non-slip finish or grooved to provide a slip resistant surface.

Balustrades and handrails will be needed if a fall greater than one metre is possible.

Open treads that have a gap of more than 100 mm between treads are not suitable where the stair may be accessed by the public, e.g. the front steps to a house.



Advantage/ Disadvantage of Wooden Staircase



Advantages

- Allows paddlers easier access from a steep or eroding shoreline
- Aesthetically pleasing; less disruptive to “natural” shoreline than concrete
- May be easily and inexpensively repaired, if damaged

Disadvantages

- Installation may be costly and may require alteration to shoreline
- May be susceptible to undercutting
- May require maintenance as stairs age and weather