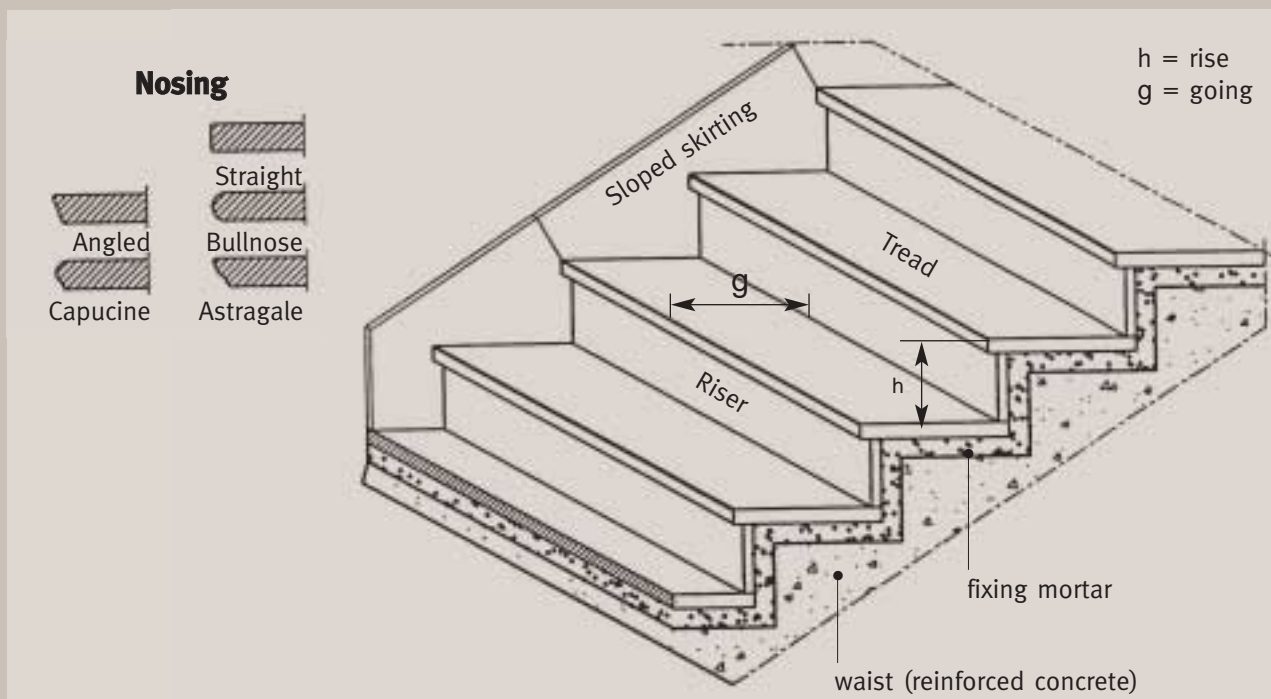


# Bedded stair flooring



## Definition

Staircase flooring consists of horizontal treads which form the walking surface and vertical or inclined risers bedded in cement mortar on a concrete or masonry support incorporated into the structural framework.

## Choice of flooring

The stone selected must have a wear resistance compatible with the intended usage conditions and be frost resistant for exterior use (see standard XP B10-601).

## Treads

- Standard thickness 3 cm on the interior, 3 or 4 cm on the exterior.
- Standard width: 30 to 35 cm for straight treads.
- Standard length: 80 to 140 cm for straight treads, and up to 200 cm for balanced steps.

It is recommended that nonslip nosing be integrated into the steps of staircases in public places.

A 1.5% slope has to be respected.

## Risers

- Standard thickness: 2 cm.
- Upper part may or may not be set into the tread.
- Height between 15 and 21 cm (generally 17 cm).

## Provisions to foresee

- For treads: tread thickness + 3 cm of mortar.
- For risers: riser thickness + 2 cm of mortar.
- Traditional rule: Blondel's formula  

$$2r + g = 60 \text{ to } 64 \text{ cm}$$

## bedded stair flooring

### Fixing mortar

- River or quarry sand, grade 0.08/3 mm.
- White cement or special mortar which does not stain stone.
- Mortar mixing proportions: 350 kg of cement per m<sup>3</sup> of dry sand.

### Fixing of banisters

- The banister should be bedded into the concrete support, with a flexible joint at the point where it enters the tread.

### Joints

- **Horizontal joints between the riser and the tread**
  - Width  $\geq 1$  mm.
  - Joints are filled with cement grout which does not stain stone at least 24 hours after the stair flooring has been laid.
- **Dividing joints**
  - For very wide exterior staircases embedded between masonry or reinforced concrete stringers, provide dividing joints  $\geq 10$  mm wide every 5 m in the fixing mortar and the flooring.
  - Joints are filled with a pliable and rot-proof material.



Ebisu Garden Place – Tokyo. Architect: Cossin, Sanville, Kume Sekei.

