

BOTTOM POST

The bottom post is fitted to the stringer using a mortise joint. Cut a 50mm deep by 32mm wide mortise into centre of the post. (Refer Figure 8) The top of the post is set 978mm above the top of the stringer and fixed using the following method.

- 1) 2 off 16mm flush plugs and 120mm x 8 gauge screws
- 2) 65mm chipboard screws into floor (assumes timber)
- 3) Construction adhesive

Cut a 28mm wide section out of the nosing of tread #1, flush with the face of riser #1. This cut out will allow the post to sit hard against the riser.

TOP POST

The top post is to be cut so its slips over the top of the stringer and down on to the last tread.

- 1) Mark the upper floor level on the post (1072mm down from top of post)
- 2) It is best to mark this post out before cutting, double-checking all measurements.
- 3) The top horn of the stringer will need to be cut level with the floor, but no further than the front face of the post.
- 4) The top post must sit on the floor by 30mm, in order to maintain both carpet wrap and the correct flight rail strike point.
- 5) Mark the trench that needs to be cut to allow the post to slide over the stringer.
- 6) The inside face of the post needs to be cut level with the last tread (one riser down from the floor).
- 7) The outside face of the post needs to be cut in line with the bottom of the stringer and then chamfered to match the top of the post.
- 8) Fix through either side of the top post into the stringer.

PINS & EXTENSION POSTS

For turned style balustrade, pins are required to prevent the flight rails from striking the posts in the turned section. The pins are fitted into an extension post by using the dowel supplied.

PIN NAME	TOTAL LENGTH	TOP SQUARE
Quarter landing	750mm	400mm
2 Tread winder	750mm	2 x 200mm
Standard	750mm	200mm
3 Tread winder	550mm	200mm

All extension posts are pre-drilled to accept the dowel. The pins are fixed into the extension posts using construction adhesive and 65mm screws through the dowel. The finished height of the extension post and pin needs to be calculated in the same manner as the bottom post.

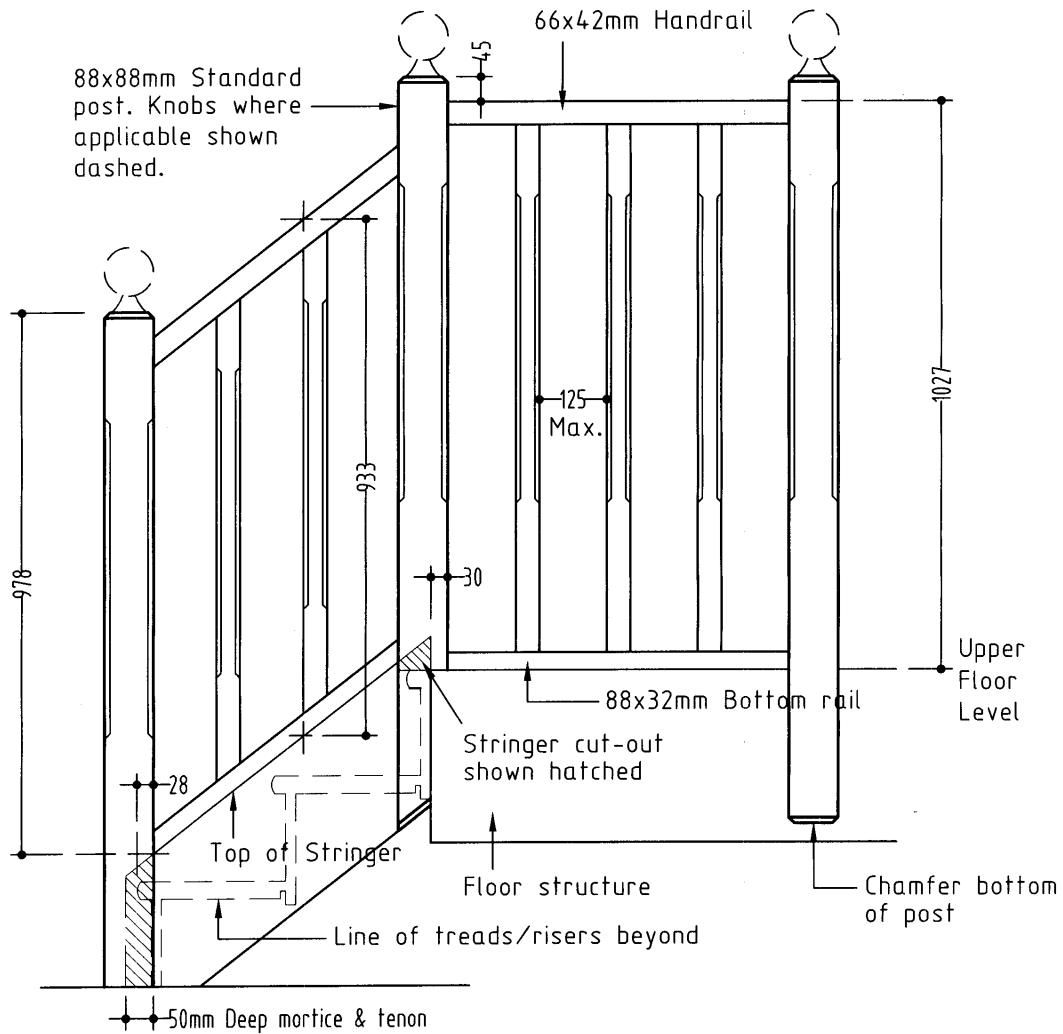


Figure 8
Typical Section Detail — Chamfered Style

LEVEL RAILS & POSTS

The level rail finishes 1027mm above floor level and 45mm below the top of post. Therefore, the post height for level (balcony) balustrade is 1072mm above floor level.

Cut the post to suit the overhang of the balustrade (normally 30mm). Fix of these posts where they run past the face of the floor joist.

BALUSTRADE HEIGHTS

We recommend the following balustrade heights:

- Flight Rail: Measured 933mm plumb above the top of stringer.
- Level Rail: Measured 1027mm above floor level.

HANDRAIL

When using a post with a square top, the level rail may be rested on top of the posts and scribed from the underside. Before cutting the bottom rail, lay it down in front of the posts and scribed to length.

When installing the handrail, use a baluster at either end for support and screw the handrail to the post from the underside. Do not screw down through the top of the handrail.

BALUSTER SPACING

The most accurate method of determining baluster spacing is as follows.

- 1) Measure the distance between posts.
- 2) Decide how many balusters are required in the section and multiply by the baluster width.
- 3) Deduct this measurement from the total distance between posts.
- 4) Divide the remainder by the number of balusters plus 1 to close.

Example: *Level balustrade section 2350mm long using pine timber balusters*

$$14 \times 42\text{mm Pine Balusters} = 588\text{mm}$$

$$2350\text{mm} - 588\text{mm} = 1762\text{mm}$$

$$1762\text{mm divided by } (14+1) \text{ Spacings} = 117.5\text{mm}$$

Therefore, 14 balusters and 15 fillets @ 117.5mm long are required

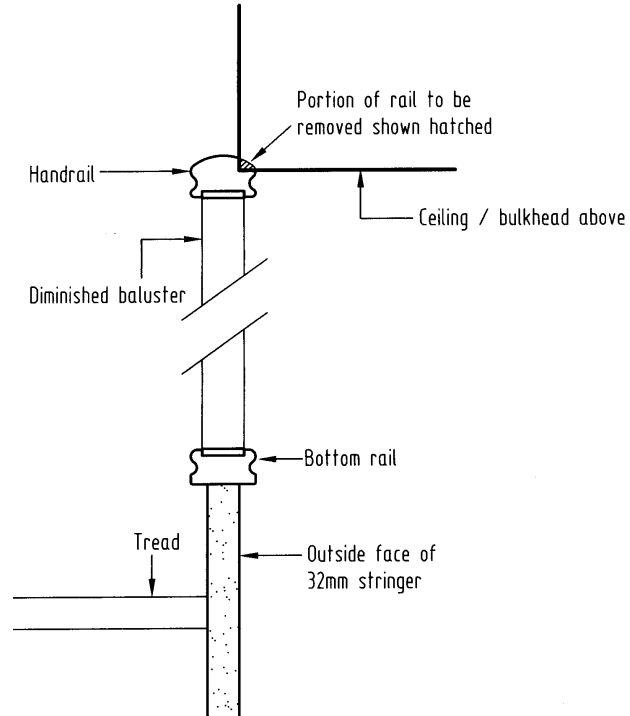


Figure 9
Diminishing Balustrade — Cross Section

DIMINISHING BALUSTRADE

Diminishing balustrade occurs as the balustrade strikes the ceiling before landing on the upper floor.

- 1) Rebate the handrail over the bulkhead (Refer Figure 9)
- 2) Mitre the intersecting handrails at the ceiling line (Refer Figure 10)
- 3) Continue the bottom rail up the flight and mitre into the underside of the handrail.
- 4) When using turned balusters, insert the fillet into handrail and plane level with the rebate. Nail the diminished baluster into the fillet. If using chamfered balusters, plain square balusters can be chamfered on site to the suit the reducing length.

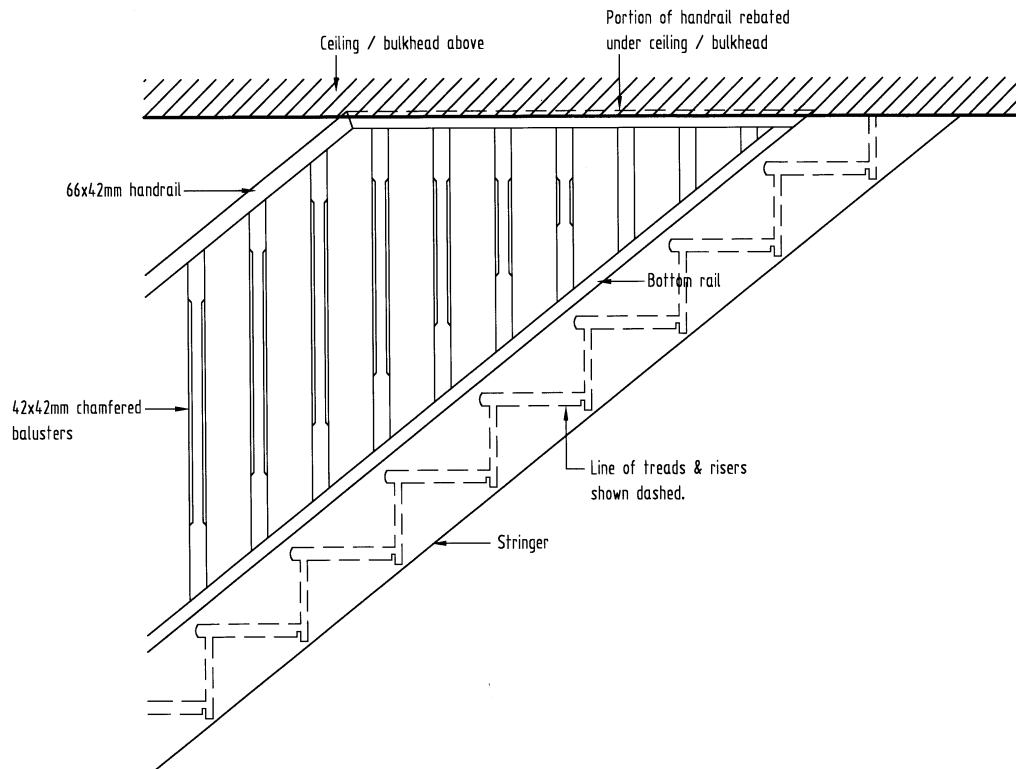


Figure 10
Diminishing Balustrade — Elevation

WALL RAIL

Install the wall rail at the same height as the flight rail (933mm plumb above the top of stringer).

- 1) Mark the center of the bracket height on the wall, 840mm above the top of the stringer.
- 2) For framed walls, locate the studs along this line.
- 3) Drill a 4mm hole center of the MDF wall plate, and then screw to the wall.
- 4) Plumb cut the wall rail to length (usually 36 degrees and the same length as the stringers).
- 5) Using only 1 screw at this stage, mount the brackets to the MDF plates at either end of the wall.
- 6) Fix the wall rail to the brackets, and insert the other screws when the angle is correct.
- 7) Proceed to install the remaining brackets; making sure that the wall rail is straight.