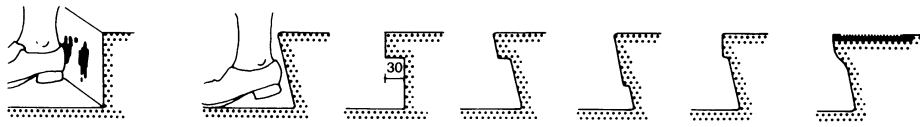


STAIRS



① Step profiles

To avoid marking risers with shoe polish from heels, use recessed profiles which have longer goings ①.

Maximum space is required at hip (handrail) level, but at foot level considerably less is needed so the width at string level can be reduced, allowing more space for the stairwell.

Staggering the handrail and string allows better structural fixing. A good string and handrail arrangement with a 12 cm space between stairwell strings is shown in ③. An additional handrail for children (height about 60 cm) is also shown, along with some less popular string and handrail positions.

Circles in theatres, choir lofts, galleries and balconies must have a protective guard rail (height *h*). This is compulsory wherever there is a height difference in levels of 1 m or more.

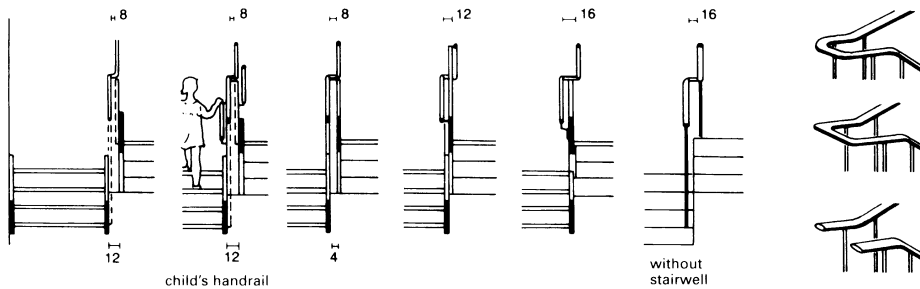
For a drop of <12 m, *h* = 0.90 m

For a drop of >12 m, *h* = 1.10 m

Loft ladders have an angle of 45–55°. However, if user requirements stipulate a stair-like access (e.g. where loads are carried and available length is too short for a flight of normal stairs), then alternating tread stairs may be designed → ⑪. There should be a minimum number of risers for this type of stair (riser ≤ 20 cm). Here 'the sum of the goings + twice the rise = 630 mm' is achieved by shaping the treads; goings are measured (staggered) at the axes *a* and *b* → ⑫, of the right and left foot.

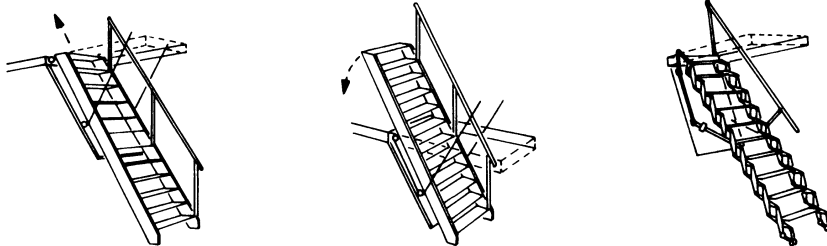


② Handrail profiles



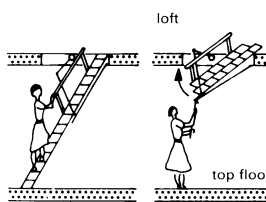
③ Handrail and string details

④ Handrail on landing

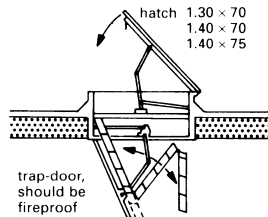


⑤ Space-saving retractable stairs, in one, two or three sections → ⑦

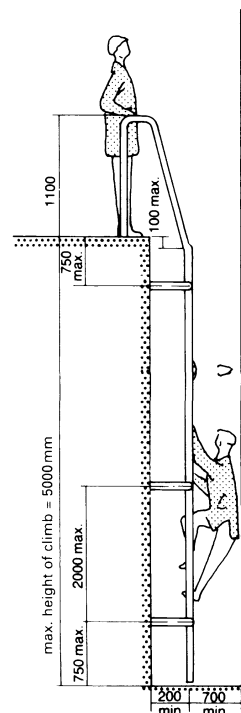
⑥ Space-saving loft ladder (scissor frame) for rooms 2.0–3.8 m high



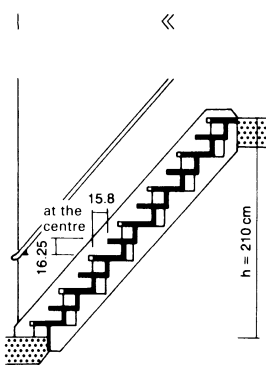
⑦ Space-saving, telescopic aluminium or wooden ladders for lofts → ⑤ + ⑥



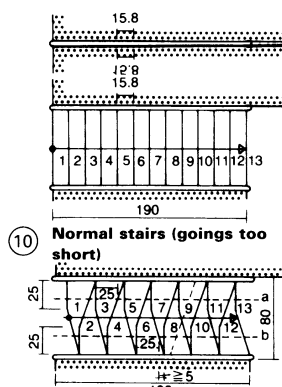
⑧ Flat roof exit with loft steps



⑫ Fixed catladder



⑨ Wooden alternating tread stair, section through centre



⑪ Plan: goings at lines *a* and *b* are ≥ 20 cm

| storey height, ground level | size of loft ladder |
|-----------------------------|---------------------|
| 220–280 | 100 × 60(70) |
| 220–300 | 120 × 60(70) |
| 220–300 | 130 × 60(70,80) |
| 240–300 | 140 × 60(70,80) |

| storey height, FFL to underside of ceiling (cm) | size of loft ladder (cm) |
|---|--------------------------|
| 220–280 | 100 × 60(70) |
| 220–300 | 120 × 60(70) |
| 220–300 | 130 × 60(70,80) |
| 240–300 | 140 × 60(70,80) |

| |
|---------------------------------------|
| frame width: W = 59, 69, 79 cm |
| frame length: L = 120, 130, 140 cm |
| frame height: H = 25 cm |

⑬ Telescopic loft ladders → ⑤ – ⑧