

2.2.5 STAIRWAYS

2.2.5.1 MULTI-STOREY CONSTRUCTION

GENERAL DESCRIPTION

Stairways which incorporate stair walls and stair flights (including landings) can be simply designed in precast concrete. Precasting provides an elegant solution to the problem of stairflight construction on multi-storey or repetitive jobs (see *Typical Arrangement*).

The traditional formwork, propping, steel fixing and concrete placing followed by topping of the stairs later is replaced with two simple crane lifts per floor followed by alignment and grouting at the bearing points. Stair nosings, or non-slip surfaces and strips are more easily added on site, although rebates or rounded arises at the nose can be incorporated by the precaster.

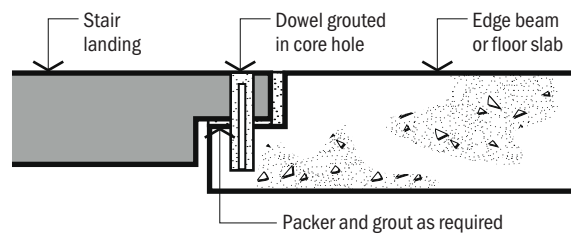
Often, precast manufacturers have a range of standard stair moulds, while a special mould can be produced to take care of an unusual configuration. However, a certain number of units have to be manufactured from the special mould to make production economically feasible.

Structurally, the stair walls can be treated the same as service cores (see 2.2.3.1.)

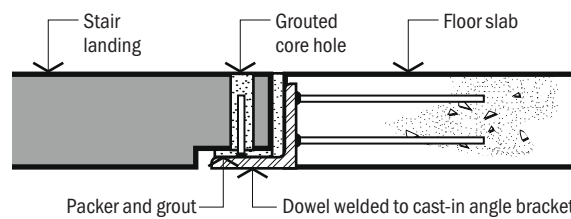
The geometry of stairways is often determined by access, crane size and requirement for landings after 18 risers, which leads to a range of possible configurations of precast stair walls, viz:

- flat panels;
- 'U'-shaped in plan (see *Typical Arrangement*);
- full-storey height;
- part-storey height (see *Typical Arrangement*).

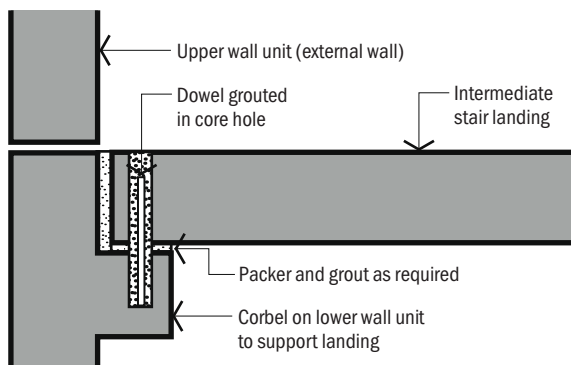
TYPICAL CONNECTIONS



(a) Landing at Edge Beams and Thicker Slabs

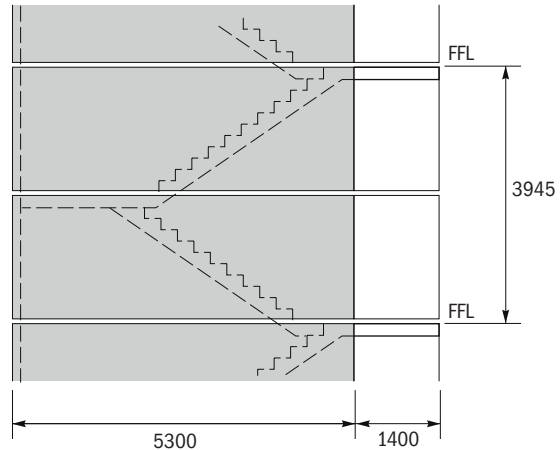


(b) Landing at Thinner Slabs

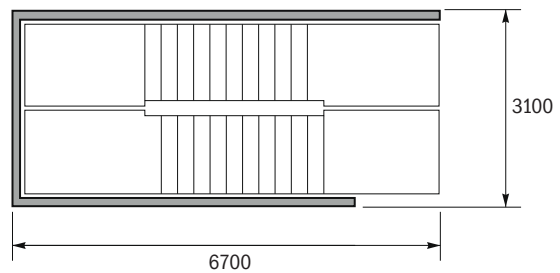


(c) Intermediate Landings at External Walls

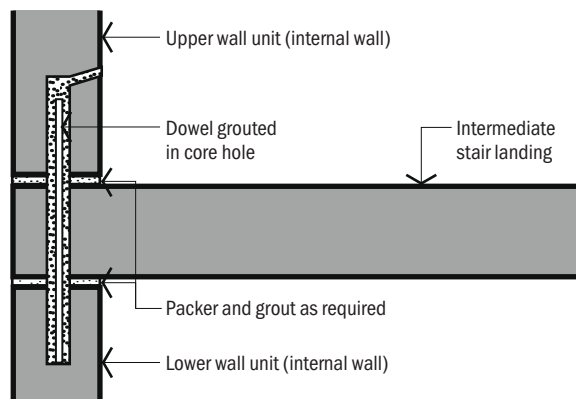
TYPICAL ARRANGEMENT



Elevation



Plan



(d) Intermediate Landings at Internal Walls