

B-3.2. ABOVE-GRADE WALLS

Concrete walls constructed with the Armopanel™ formwork can be part of any structural system, for example moment resisting frame, ductile wall system etc.

The thickness of the concrete walls and the reinforcement should be checked by a professional structural engineer for all applicable forces and moments based on the static calculations of the building's structure.

The data in the tables is related to the walls of the residential low-rise buildings (one or two above-grade floors) with wall thickness from 100mm to 200mm (3.5" , 5.5", 7.5").

Interface between the walls and the foundation is provided by means of dowels, which are inserted into the foundation. For projection of the dowels inside the concrete wall see (CAN STANDARD A23.3-94; ACI 318-99, §12.2; §12.5.1). Thus providing continuity of vertical reinforcement.

Interface between cast in place walls in the vertical direction is achieved by splicing of the vertical reinforcement.

The interface between concrete walls and the last concrete slabs or roof can be fixed or hinged. In the first case, the moment connection will be achieved by using proper splicing of reinforcement in accordance with the local building code. In the second case, hinge connection can be achieved by means of anchor bolts embedded in the wall. The size of the bolts and the distance between them shall be in accordance with local building codes.

There are three options for using Armopanel™ system in low-rise residential buildings. The summaries of these three options are presented in basement wall tables below.

1. **Armopanel™** basement wall supporting one-storey wood framing.
2. **Armopanel™** basement wall supporting two-storey:
The first storey – concrete floor, and
The second storey – wood framing.
3. **Armopanel™** basement wall supporting two-storey:
The first storey – concrete floor,
The second storey – concrete floor, concrete wall and roof.

Each table of the above grade walls includes reinforcement for all the above conditions.

The design criteria assumed for each of these three construction conditions are shown in this section. The above-grade wall tables reflect the reinforcement required for the specified conditions only.

Any other conditions are not covered by the tables below and require special attention from the structural engineer of the specific project.

Specific project information and design criteria should be used to properly design the wall. Deflection criterion is $L/240$, where L is the height of the wall storey.

The "Detailed Drawings" section describes the different connections between elements in the building constructed using the Armopanel System.

