Section 9.16. Floors-on-Ground

9.16.1. Scope

9.16.1.1. Application

1) This Section applies to floors supported on ground or on granular *fill* that do not provide structural support for the superstructure.

9.16.1.2. Structural Floors

1) Floors-on-ground that support loads from the superstructure shall be designed in conformance with Part 4.

9.16.1.3. Required Floors-on-Ground

1) All spaces within *dwelling units*, except crawl spaces, shall be provided with a floor-on-ground, where

a) access is provided to the space, and

b) a floor supported by the structure is not provided.

9.16.1.4. Dampproofing and Waterproofing

1) Dampproofing and waterproofing shall conform to Section 9.13.

9.16.2. Material beneath Floors

9.16.2.1. Required Installation of Granular Material

1) Except as provided in Sentence (2), a drainage layer shall be installed beneath floors-on-ground. (See Note A-9.16.2.1.(1) and see also Subsection 9.13.4. and Note A-9.13.4.)

2) The drainage layer required in Sentence (1) need not be installed beneath

a) slabs in garages, carports or accessory *buildings*,

b) *buildings* of *industrial occupancy* where the nature of the process contained therein permits or requires the use of large openings in the *building* envelope even during the winter.

9.16.2.2. Support of Floors

1) Material that is susceptible to changes in volume due to variations in moisture content or chemical-microbiological oxidation shall not be used as *fill* beneath floors-on-ground in a concentration that will damage the *building* to a degree that would adversely affect its stability or the performance of assemblies. (See also Article 9.4.4.4. and Note A-9.4.4.4.(1).)

2) Material that is susceptible to changes in volume due to freezing shall not be used as *fill* beneath floors-on-ground that will be subjected to freezing temperatures. (See also Article 9.4.4.4. and Note A-9.4.4.4.(1).)

3) Except as provided in Sentence (4), *fill* beneath floors-on-ground shall be compacted.

4) *Fill* beneath floors-on-ground need not be compacted where the material is coarse clean granular material containing not more than 10% of material that will pass a 4 mm sieve.

9.16.3. Drainage

9.16.3.1. Control of Water Ingress

1) Except as provided in Article 9.16.3.2. or where it can be shown to be unnecessary, ingress of water underneath a floor-on-ground shall be prevented by grading or drainage.

9.16.3.2. Hydrostatic Pressure

1) Where *groundwater levels* may cause hydrostatic pressure beneath a floor-on-ground, the floor-on-ground shall be

a) a poured concrete slab, and

b) designed to resist such pressures.

9.16.3.3. Floor Drains

1) When floor drains are required (see Section 9.31.), the floor surface shall be sloped so that no water can accumulate.

9.16.4. Concrete

9.16.4.1. Surface Finish

1) The finished surface of concrete floor slabs shall be trowelled smooth and even.

2) Dry cement shall not be added to the floor surfaces to absorb surplus water.

9.16.4.2. Topping Course

1) When a topping course is provided for a concrete floor slab, it shall consist of 1 part cement to 2.5 parts clean, well graded sand by volume, with a water/cement ratio approximately equal to that of the base slab.

2) When concrete topping is provided, it shall not be less than 20 mm thick.

9.16.4.3. Thickness

1) Concrete slabs shall not be less than 75 mm thick exclusive of concrete topping.

9.16.4.4. Bond Break

1) A bond-breaking material shall be placed between the slab and footings or *rock*.

9.16.5. Wood

9.16.5.1. Wood-Frame Floors

1) Floors-on-ground constructed of wood shall conform to CSA S406, "Permanent Wood Foundations for Housing and Small Buildings."