Section 9.12. Excavation

9.12.1. General

9.12.1.1. Removal of Topsoil and Organic Matter

1) The topsoil and vegetable matter in all unexcavated areas under a *building* shall be removed.

2) In localities where termite infestation is known to be a problem, all stumps, roots and other wood debris shall be removed from the *soil* to a depth of not less than 300 mm in unexcavated areas under a *building*.

3) The bottom of every *excavation* shall be free of all organic material.

9.12.1.2. Standing Water

1) *Excavations* shall be kept free of standing water.

9.12.1.3. Protection from Freezing

1) The bottom of *excavations* shall be kept from freezing throughout the entire construction period.

9.12.2. Depth

9.12.2.1. Excavation to Undisturbed Soil

1) *Excavations* for *foundations* shall extend to undisturbed *soil*.

9.12.2.2. Minimum Depth of Foundations

1) Except as provided in Sentences (4) to (7), the minimum depth of *foundations* below finished ground level shall conform to Table 9.12.2.2.

Table 9.12.2.2.
Minimum Depths of Foundations
Forming Part of Sentence 9.12.2.2.(1)

Type of *Soil*	Minimum Depth of *Foundation* Containing Heated *Basement* or Crawl Space[1]		Minimum Depth of *Foundation* Containing No Heated Space[2]	
	Good *Soil* Drainage	Poor *Soil* Drainage	Good *Soil* Drainage	*Poor Soil Drainage*
Rock	No limit	No limit	No limit	No limit
Coarse grained *soils*	No limit	No limit	No limit	Below the depth of frost penetration
Silt	No limit	No limit	Below the depth of frost penetration[3]	Below the depth of frost penetration
Clay or *soils* not clearly defined[4]	1.2 m[3]	1.2 m	1.2 m but not less than the depth of frost penetration[3]	1.2 m but not less than the depth of frost penetration

Notes to Table 9.12.2.2.:

(1) *Foundation* not insulated to reduce heat loss through the footings.

(2) Including *foundations* insulated to reduce heat loss through the footings.

(3) Good *soil* drainage to not less than the depth of frost penetration.

(4) See Note A-Table 9.12.2.2.

2) Where a *foundation* is insulated in a manner that will reduce heat flow to the *soil* beneath the footings, the *foundation* depth shall conform to that required for *foundations* containing no heated space. (See Note A-9.12.2.2.(2).)

3) The minimum depth of *foundations* for exterior concrete steps with more than 2 risers shall conform to Sentences (1), (2) and (5).

4) Concrete steps with 1 and 2 risers are permitted to be laid on ground level.

5) The *foundation* depths required in Sentence (1) are permitted to be decreased where experience with local *soil* conditions shows that lesser depths are satisfactory, or where the *foundation* is designed for lesser depths.

6) The *foundation* depths required by Sentence (1) do not apply to *foundations* for

a) *buildings*

i) that are not of masonry or masonry veneer construction, and

ii) whose superstructure conforms to the requirements of the deformation resistance test in CSA Z240.2.1, "Structural Requirements for Manufactured Homes," or

b) accessory *buildings*

i) that are not of masonry or masonry veneer construction,

ii) not more than 1 *storey* in height,

iii) not more than 55 m^2 in *building area*, and

iv) where the distance from finished ground to the underside of the floor joists is not more than 600 mm.

7) The *foundation* depths required by Sentence (1) do not apply to *foundations* for decks and other accessible exterior platforms

a) of not more than 1 *storey*,

b) not more than 55 m^2 in area,

c) where the distance from finished ground to the underside of the joists is not more than 600 mm,

d) not supporting a roof, and

e) not attached to another structure, unless it can be demonstrated that differential movement will not adversely affect the performance of that structure.

8) Where decks or other accessible exterior platforms are supported on surface *foundations* supported on other than coarse-grained *soil* with good drainage or *rock*, access to the *foundation* positions to permit re-levelling of the platform shall be provided

a) by passageways with a clear height under the platform of not less than 600 mm and a width of not less than 600 mm, or

b) by installing the decking in a manner that allows easy removal.

9.12.3. Backfill

9.12.3.1. Placement of Backfill

1) Backfill shall be placed to avoid damaging the *foundation* wall, the drainage tile, externally applied thermal insulation and waterproofing or dampproofing of the wall.

9.12.3.2. Grading of Backfill

1) Backfill shall be *graded* to prevent drainage towards the *foundation* after settling.

9.12.3.3. Deleterious Debris and Boulders

1) Backfill that is within 600 mm of the *foundation* shall be free of deleterious debris and boulders larger than 250 mm diam. (See Note A-9.12.3.3.(1).)

2) Except as provided in Sentence (3), backfill shall not contain pyritic material or material that is susceptible to ice lensing in concentrations that will damage the *building* to a degree that would adversely affect its stability or the performance of assemblies. (See Note A-9.4.4.4.(1).)

3) Backfill with material of any concentration that is susceptible to ice lensing is permitted where *foundation* walls are

a) cast-in-place concrete,

b) concrete block insulated on the exterior, or

c) concrete block protected from the backfill by a material that serves as a slip plane.

(See Note A-9.4.4.4.(1).)

9.12.4. Trenches beneath Footings

9.12.4.1. Support of Footings

1) The *soil* in trenches beneath footings for sewers and watermains shall be compacted by tamping up to the level of the footing base, or shall be filled with concrete having a strength not less than 10 MPa to support the footing.