

# Appendix A

## Explanatory Material for the National Farm Building Code 1995

**A-1.1.1.3.(1) Application.** Notwithstanding Subsection 2.1.5. of the National Building Code of Canada 1995, farm buildings are required to conform to the appropriate requirements in the National Building Code except as specifically amended or exempted by provisions of this Code. Part 9 of the National Building Code provides detailed requirements for the construction of small buildings up to 600 m<sup>2</sup> per floor and 3 storeys in height which apply to all occupancies except assembly, institutional and high hazard industrial. All other buildings must be designed to satisfy the requirements in the remainder of the National Building Code of Canada 1995. Section 2.5. of the National Building Code provides for equivalent design and performance criteria. This may apply where the design of a farm building or component is supported by evidence of sound engineering principles.

The acceptance of structures which have been designed to other design standards would require the designer to prove to the appropriate authority that the structure provides the required level of safety and performance. The equivalence of safety can only be established by analyzing the structure for the loads and load factors set out in Section 4.1. of the National Building Code and demonstrating that the structure at least meets the requirements of the design standards listed in Sections 4.3. and 4.4. of the National Building Code.

**A-1.2.1.2.(1) Definition of Farm Buildings.** Farm buildings as defined in Article 1.2.1.2. include but are not limited to produce storage and packing facilities, livestock and poultry housing, milking centres, manure storage facilities, grain bins, silos, feed preparation centres, farm workshops, greenhouses, farm retail centres, and horse riding, exercise and training facilities. Farm buildings may be classed as low or high human occupancy depending on the normal human occupant load.

Examples of farm buildings likely to be classed as low human occupancy as defined in Article 1.2.1.2.

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The Appendix to this document is included for explanatory purposes only and does not form part of the requirements. The reference numbers that introduce each item apply to the requirements in the Code.

are livestock and poultry housing, manure and machinery storage facilities and horse exercise and training facilities where no bleachers or viewing area are provided.

Examples of buildings that would be classed as other than low human occupancy include farm retail centres for feeds, horticultural and livestock produce, auction barns and show areas where bleachers or other public facilities are provided. Farm work centres where the number of workers frequently exceeds the limit for low human occupancy will also be in this category.

It is possible to have areas of both high and low human occupancy in the same building provided that the structural safety and fire separation requirements for high human occupancy are met in the part thus designated.

**A-Table 2.2.1.1. Minimum Specified Live Loads Due to Use.** Chicken cage manufacturers should be consulted for information on the type and spacing of supports (floor stand or suspended type).

Bird mass is based on eight 1.8 kg birds for each 300 mm length of deck. On this basis a 3-deck cage row has 24 birds in 300 mm of cage row length.

Dropping boards used to prevent soiling of the lower level cages are assumed to accumulate 50 mm of wet manure between cleaning operations.

**A-2.2.1.5.(1) Floors Supporting Stored Products.** Densities of agricultural materials are given in Table A-2.2.1.14. under the explanation for Article 2.2.1.14. in this Appendix.

**A-2.2.1.8.(2) Deflection Limitation of Reinforced Concrete Slats and Slat Grids.** The deflection limitation of 1/360 has been specified to minimize cracking and thereby reduce the exposure of reinforcing steel to the corrosive effects of manure gases and solutions. Other methods of protecting the steel such as epoxy coatings may also be effective.

**A-2.2.1.9.(1) Floor Loads Due to Feeding Equipment.** In the absence of specific information,



# Part 1

## Application and Definitions

### Section 1.1. Application

#### 1.1.1. General

##### 1.1.1.1. Scope

1) This Code covers structural sufficiency, fire safety and health requirements for the protection of persons in *farm buildings*.

##### 1.1.1.2. Administrative Requirements

1) This Code shall be administered in conformance with the appropriate provincial, territorial or municipal regulations or, in the absence of such regulations, in conformance with the "Administrative Requirements for Use with the National Building Code 1995."

##### 1.1.1.3. Conformance to National Building Code

1) *Farm buildings* shall conform to the appropriate requirements in the National Building Code of Canada 1995 except as specifically amended or exempted by the provisions of this Code. (See Appendix A.)

### Section 1.2. Definitions and Abbreviations

#### 1.2.1. Definitions

##### 1.2.1.1. Non-Defined Words and Phrases

1) Words and phrases used in this Code which are not included in Article 1.2.1.2. shall have the meanings which are commonly assigned to them in the context in which they are used, taking into account the specialized use of terms with the various trades and professions to which the terminology applies.

##### 1.2.1.2. Defined Words and Phrases

1) The words and terms in italics in this Code have the following meanings:

*Access to exit* means that part of a *means of egress* within a *floor area* that provides access to an *exit* serving the *floor area*.

*Appliance* means a device to convert fuel into energy and includes all components, controls, wiring and piping required to be part of the device by the applicable standard referred to in this Code.

*Building* means any structure used or intended for supporting or sheltering any use or *occupancy*.

*Building area* means the greatest horizontal area of a *building* above *grade* within the outside surface of exterior walls or within the outside surface of exterior walls and the centre line of *firewalls*.

*Building height* (in *storeys*) means the number of *storeys* contained between the roof and the floor of the *first storey*.

*Business and personal services occupancy* means the *occupancy* or use of a *building* or part thereof for the transaction of business or the rendering or receiving of professional or personal services.

*Combustible construction* means that type of construction that does not meet the requirements for *noncombustible construction*.

*Dead load* means the weight of all permanent structural and nonstructural components of a *building*.

*Dwelling unit* means a *suite* operated as a house-keeping unit, used or intended to be used as a domicile by one or more persons and usually containing cooking, eating, living, sleeping and sanitary facilities.

*Exit* means that part of a *means of egress*, including doorways, that leads from the *floor area* it serves, to a separate *building*, an open public thoroughfare, or an exterior open space protected from fire exposure from the *building* and having access to an open public thoroughfare.

*Exposing building face* means that part of the exterior wall of a *building* which faces one direction and is located between ground level and the ceiling of its top *storey*, or where a *building* is divided into *fire compartments*, the exterior wall of a *fire compartment* which faces one direction. (See Appendix A, Sentence 3.1.2.1.(1).)

*Farm building* means a *building* or part thereof which does not contain a *residential occupancy* and which



## 1.2.1.2.

is associated with and located on land devoted to the practice of farming, and used essentially for the housing of equipment or livestock, or the production, storage or processing of agricultural and horticultural produce or feeds. (See Appendix A.)

*Fire compartment* means an enclosed space in a *building* that is separated from all other parts of the *building* by enclosing construction providing a *fire separation* having a required *fire-resistance rating*.

*Fire-resistance rating* means the time in hours or fraction thereof that a material or assembly of materials will withstand the passage of flame and the transmission of heat when exposed to fire under specified conditions of test and performance criteria, or as determined by extension or interpretation of information derived therefrom as prescribed in this Code.

*Fire separation* means a construction assembly that acts as a barrier against the spread of fire.

*Firewall* means a type of *fire separation* of *noncombustible construction* which subdivides a *building* or separates adjoining *buildings* to resist the spread of fire and which has a *fire-resistance rating* as prescribed in this Code and has structural stability to remain intact under fire conditions for the required fire-rated time.

*First storey* means the uppermost *storey* having its floor level not more than 2 m above *grade*.

*Floor area* means the space on any *storey* of a *building* between exterior walls and required *firewalls*, including the space occupied by interior walls and *partitions*, but not including *exits*, vertical *service spaces*, and their enclosing assemblies.

*Foundation* means a system or arrangement of *foundation units* through which the loads from a *building* are transferred to supporting *soil* or *rock*.

*Foundation unit* means one of the structural members of the *foundation* of a *building* such as a footing, raft or pile.

*Grade* (as applying to the determination of *building height*) means the lowest of the average levels of finished ground adjoining each exterior wall of a *building*, except that localized depressions such as for vehicle or pedestrian entrances need not be considered in the determination of average levels of finished ground. (See *First storey*.)

*High hazard industrial occupancy* (Group F, Division 1) means an *industrial occupancy* containing sufficient quantities of highly combustible and flammable or explosive materials which, because of their inherent characteristics, constitute a special fire hazard.

*Industrial occupancy* means the *occupancy* or use of a *building* or part thereof for the assembling, fabricating, manufacturing, processing, repairing or storing of goods and materials.

*Live load* means the load other than *dead load* to be assumed in the design of the structural members of a *building*. It includes loads resulting from snow, rain, wind, earthquake and those due to *occupancy*.

*Loadbearing* (as applying to a building element) means subjected to or designed to carry loads in addition to its own *dead load*, excepting a wall element subjected only to wind or earthquake loads in addition to its own *dead load*.

*Low human occupancy* (as applying to *farm buildings*) means an *occupancy* having an *occupant load* of not more than one person per 40 m<sup>2</sup> of *floor area* during normal use.

*Means of egress* means a continuous path of travel provided for the escape of persons from any point in a *building* or contained open space to a separate *building*, an open public thoroughfare, or an exterior open space protected from fire exposure from the *building* and having access to an open public thoroughfare. *Means of egress* includes *exits* and *access to exits*.

*Medium hazard industrial occupancy* (Group F, Division 2) means an *industrial occupancy* in which the combustible content is more than 50 kg/m<sup>2</sup> or 1 200 MJ/m<sup>2</sup> of *floor area* and not classified as *high hazard industrial occupancy*.

*Noncombustible* means that a material meets the acceptance criteria of CAN4-S114, "Standard Method of Test for Determination of Non-Combustibility in Building Materials."

*Noncombustible construction* means that type of construction in which a degree of fire safety is attained by the use of *noncombustible* materials for structural members and other building assemblies.

*Occupancy* means the use or intended use of a *building* or part thereof for the shelter or support of persons, animals or property.

*Occupant load* means the number of persons for which a *building* or part thereof is designed.

*Partition* means an interior wall 1 *storey* or part-*storey* in height that is not *loadbearing*.

*Residential occupancy* means the *occupancy* or use of a *building* or part thereof by persons for whom sleeping accommodation is provided but who are not harboured or detained to receive medical care or treatment or are not involuntarily detained.

*Rock* means that portion of the earth's crust which is consolidated, coherent and relatively hard and is a naturally formed, solidly bonded, mass of mineral matter which cannot readily be broken by hand.

*Service room* means a room provided in a *building* to contain equipment associated with *building services*.