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*Fire Protection and Prevention:
To Protect and Preserve
Communities' Buildings*

by

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Agenda

- 🍁 Fire Protection Services to First Nations
- 🍁 Design and Construction Requirements
- 🍁 Maintenance Requirements
- 🍁 Common Deficiencies

Fire Protection Services to First Nations

- ❖ Fire Protection Engineering Services
 - Project plan reviews and inspections of major public access buildings: new buildings, addition or modifications (include change of use) to existing buildings
- ❖ Fire Inspections
 - Inspection of existing major public access buildings
- ❖ http://www.hrsdc.gc.ca/eng/labour/fire_protection/services/first_nations.shtml

Fire Protection Services

Major Public Access Buildings

	INAC Asset Codes	Building Description
1	A1A	Office
2	A3A	School
3	A3B	Day Care Centre
4	A3H	Fire Station
5	A4I	Student Residence
6	A4L	Teacherage
7	A6A	Community/Recreation/Hall/Cultural Centre
8	A6B	Arena
9	A6C	Gymnasium
10	A6D	Indoor Swimming Pool
11	A6E	Youth Centre/Senior Citizens/Drop In

Project Plan Reviews and Inspections

- ❖ Change of Use – For example, a building is one storey and has a building area of 400 m²
 - Office building converted to Day Care Centre
 - Part 9 to Part 3 in NBC Division B
 - Requires professional designers
 - Fire alarm system may be required based on occupant load and type of occupants

Project Plan Reviews and Inspections

- 🍁 Buildings to meet
 - National Building Code current edition
 - National Fire Code current edition
 - Referenced Standards in the Codes, i.e. fire alarm standard

Project Plan Reviews

- ❖ Plan review submissions
 - Preliminary, 66% and tender stage
 - National Building Code Analysis
 - Drawings and Specifications – make reference to the latest edition of codes and standards

Project Plan Reviews *(continued)*

- ❖ Common deficiencies during the design stage
 - Wrong classification of building
 - Construction requirements not met
 - Doors swing at wrong direction
 - Sprinkler system and/or fire alarm systems not provided where it is required
 - Wrong location of fire hydrants

Project Plan Reviews *(continued)*

- ❖ Common deficiencies (cont'd)
 - Fire separations (FS) missing
 - FS do not have correct fire-resistance rating
 - Fire dampers missing
 - Stairs have incorrect dimensions of rise and run
 - Handrails and guards have incorrect dimensions
 - Insufficient number of exit doorways
 - Travel distance to exits exceeding permitted

Project Inspections

- ❖ Common deficiencies during project inspection:
 - Fire-rated doors and hardware missing labels
 - Wrong type or thickness of gypsum wallboards for the construction of fire separations
 - Fire stopping missing
 - Integrity of FS not maintained

Project Inspections *(continued)*

- ❖ Common deficiencies during project inspection:
 - Fire dampers incorrectly installed
 - Wrong door hardware
 - Incorrect sprinkler type and/or rating
 - Insufficient sprinkler protection
 - Fire detectors installed at wrong location
 - Fire extinguishers not provided

Project Plan Reviews and Inspections *(continued)*

- ❖ Records for life of the building:
 - As-built drawings
 - Verification Certificate AND Report for Fire Alarm System
 - Hydraulic design and calculations for sprinkler system
 - Contractor's Material and Test Certificate for Aboveground Piping
 - Contractor's Material and Test Certificate for Underground Piping

Fire Separations

- ❖ Fire-resistance rating – Use Appendix D not Table A-9.10.3.1.A. for Part 3 buildings
- ❖ Continuity
- ❖ Protection of Openings by closures, e.g.
 - Fire dampers
 - Fire-rated doors
- ❖ Fire Stopping penetrations by building services

Fire Inspections

National Fire Code

- Means of Egress
- Control and eliminate fire hazards
- Fire safety plan
- Inspection, testing and maintenance of fire protection equipment
- Records

Exits and Access to Exits

- ❖ Fire separation of exits
- ❖ Integrity of Exits
- ❖ Exit and egress doors readily openable
- ❖ Exit width

Fire Extinguishers

- 🍁 NFPA 10, “Portable Fire Extinguishers”
- 🍁 Locations
- 🍁 Types

Sprinkler Systems

- ❖ NFPA 13, “Installation of Sprinkler Systems”
- ❖ NFPS 25, “Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems”
- ❖ Storage too close to sprinklers
- ❖ Damaged deflectors
- ❖ Wrong rating
- ❖ Pendant sprinkler used as Upright or vice versa

Fire Alarm Systems

- ❖ ULC S536, “Inspection and Testing of Fire Alarm Systems”
- ❖ Smoke detectors covered
- ❖ Wrong location
- ❖ Detectors missing – e.g. Storage Room in non-sprinklered buildings

Exit Signs

- ❖ Not illuminated
- ❖ Not correct location
- ❖ No emergency power supply
- ❖ Missing or incorrect directional exit sign
- ❖ Insufficient exit signage

Emergency Lighting

- ❖ Light bulbs missing
- ❖ Insufficient illumination level
- ❖ Not tested regularly
- ❖ Emergency power supply is not sufficient

Combustible Materials

- ❖ Section 2.10.3. Combustible Materials in Day Care Centres
 - Combustible materials attached to walls not exceed 20%
 - Waste receptacles – made of noncombustible materials

Flammable and Combustible Liquids

- 🇨🇦 NFC, Division B, Part 4 Flammable and Combustible Liquids
- 🇨🇦 Subsection 4.2.6. applicable to educational occupancies
- 🇨🇦 Fire separated room or storage cabinet
- 🇨🇦 Storage cabinet is required to be ULC and cUL listed and labelled

Fire Safety Plan

- ❖ NFC, Division B, Section 2.8. Emergency Planning
- ❖ Article 2.8.3.2. Fire Drill Frequency
 - Day care centres - every month
 - Schools – at least 3 times each school term
- ❖ Audit of fire protection equipment
- ❖ Reviewed by local fire department

Inspection, Maintenance and Testing

- ❖ NFC, Division B, Part 6 Fire Protection Equipment
 - NFPA 10, “Portable Fire Extinguishers”
 - CAN/ULC-S536, “Inspection and Testing of Fire Alarm Systems”
 - NFPA 25, “Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems”

❖ RECORDS

Daily Visual Inspection List

1. Fire doors wedged and blocked open
2. Obstructed aisles, corridors, or exits
3. Self-closers, self-latching hardware not operating properly
4. Exit doors that do not readily open or are blocked

Daily Visual Inspection List

(continued)

5. Accumulation of combustibles
6. Fire extinguishers obstructed
7. Sprinklers obstructed
8. Exit signs not illuminated
9. Pull Stations obstructed

Common Deficiencies

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Fire Prevention Week (FPW) October 3-9



Fire Prevention Week • October 2010

Smoke Alarms:
A sound you can live with



The banner features a red background. On the left, there is a graphic of a white smoke alarm with red sound waves and the word 'BEEP!' in yellow. Below this, the words 'BEEP!' are repeated in a larger, bold, yellow font. To the right of the graphic, the text 'Fire Prevention Week • October 2010' is written in white. Below that, the main title 'Smoke Alarms:' is in a large, bold, yellow font, followed by the subtitle 'A sound you can live with' in white. On the far right is the NFPA logo, which consists of a white square containing a red flame icon and the letters 'NFPA' in white below it.

Questions?