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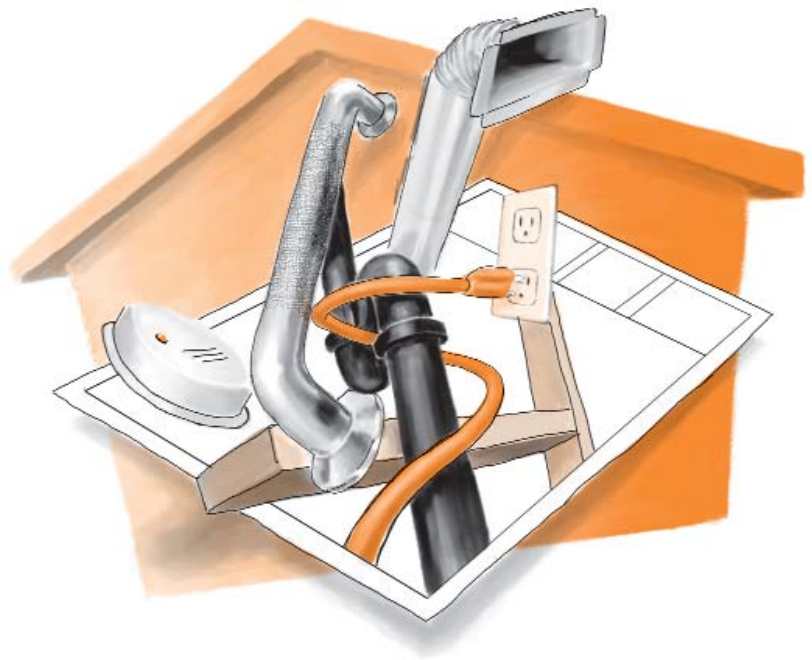
REHABILITATION

ASSISTANCE PROGRAM

RENTAL AND ROOMING HOUSE

## Standards for Rehabilitation

*A Guide for RRAP Inspectors  
and Delivery Agents*



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RENTAL AND ROOMING HOUSE

**Standards for Rehabilitation**  
*A Guide for RRAP Inspectors and Delivery Agents*

Canada Mortgage and Housing Corporation  
Ottawa, Ontario  
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Cette publication est aussi disponible en français sous le titre  
*Programme d'aide à la remise en état des logements*  
*Logements locatifs et maisons de chambres - Normes de remise en état*  
*Guide pour les inspecteurs et les agents d'administration du PAREL, 61287*

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# TABLE OF CONTENTS

- Document Purpose ..... 1
- Definitions ..... 3
- Section 1 - General ..... 6
- Section 2 - Site Planning and Improvement ..... 7
- Section 3 - Rooms and Spaces ..... 8
- Section 4 - Fire Protection ..... 10
- Section 5 - Building Envelope and Structure ..... 12
- Section 6 - Energy Conservation and Ventilation ..... 15
- Section 7 - Finishes ..... 17
- Section 8 - Heating ..... 18
- Section 9 - Plumbing ..... 20
- Section 10 - Electrical ..... 21
- Section 11 - Elevators ..... 21
- Section 12 - Environmental Concerns ..... 22
- Appendix A - Explanatory Notes ..... 24
- Appendix B - Publications Referenced ..... 32

# DOCUMENT PURPOSE

**Standards for the Rehabilitation of Rental and Rooming House Properties** (RRAP Standards) identifies the type and extent of work that is eligible for funding under the Rental and Rooming House Residential Rehabilitation Assistance Programs (RRAP).

## Assistance Available Under RRAP

Rental RRAP and Rooming House RRAP provide financial assistance to owners of existing rental accommodation that needs major repair. Assistance is for mandatory repairs to bring the dwelling up to a **minimum level of health and safety**. The nature and quality of the mandatory repair work is expected to permit a further 15 years of useful life of the dwelling, assuming normal maintenance by the owner.

## Categories of Repair and General Guidelines

To be eligible for Rental and Rooming House RRAP, the project must be deficient and require qualifying repair, or lack basic facilities, in one of the following categories:

1. **Structural soundness**
2. **Electrical system**
3. **Plumbing system**
4. **Heating system**
5. **Fire safety**

### Qualifying Repairs

Qualifying repairs are mandatory repairs that are required to correct deficiencies that threaten the health or safety of the occupants or the structural integrity of the building. The cost of repairs without assistance from Rental and Rooming House RRAP would require an increase in rent. An inspection identifies major repairs, and program delivery staff decide whether the cost of completing the repairs would represent a substantial burden for the property owner. (See Appendix A, p. 24.)

### Mandatory Repairs

Mandatory repairs are those required for a minimum level of health and safety for residents and to permit an extended useful life for the building. RRAP funding

will only be granted if all mandatory health and safety repairs are undertaken. Mandatory items are indicated in this document by the use of the word **shall**, in bold print.

### Minimum Level of Health and Safety

All work required to bring the dwelling up to a minimum level of health and safety must be undertaken. For RRAP purposes, “minimum level of health and safety” means a reasonable quality of structural soundness, fire safety along with reasonable heating, plumbing and electrical quality where these systems exist or are required by the authority having jurisdiction. “Reasonable quality” shall be as determined by the authority having jurisdiction.

### Eligible Repairs

Eligible repairs are those identified in italics under section 6.1 and 6.2 intended for improving energy efficiency within the building. Limited assistance is available for eligible work provided all mandatory work items are addressed first.

**Note: Eligible work cannot be used as a qualifying repair.**

### Replacement of Functioning but Deteriorated Components

The extended useful life guideline **does not authorize** replacement of components having a life expectancy of less than 15 years, **if they are performing in an acceptable manner.**

If there is sufficient evidence available to indicate that failure is expected within a reasonably short period of time and where failure would result in damage to other building components, repair or replacement using RRAP funding may be considered.

**Note: The repair or replacement of functioning components shall not be considered a qualifying repair for RRAP funding, but can be considered mandatory for a property that otherwise qualifies for funding.**

#### Authority Having Jurisdiction

Throughout this document, reference is made to the requirements of the “authority having jurisdiction.” Canada Mortgage and Housing Corporation shall not be considered the authority having jurisdiction.

In the absence of local authorities having jurisdiction, the requirements of the most current National Building Code of Canada (NBC) shall apply. In all cases, where local requirements exist, the more restrictive requirement takes precedence.

**Note: It is the property owner’s responsibility to ensure that local requirements are met. Applicants must be made aware of this responsibility and where applicable, must submit certificates of acceptability prior to the release of RRAP funds.**

#### “Best Buy” Principle

The principle of “best buy” shall govern all aspects of rehabilitation, including the decision to repair or replace components and the selection of materials. Components shall not be replaced if repairs can be made at a lesser cost.

#### Acceptance of Existing Components

In many older buildings, while an item or component may not conform to the requirements for new construction, its condition and performance is acceptable and it does not represent a hazard to the health and safety of the occupants. In such cases, the item may be considered acceptable and its repair or replacement will not be required under RRAP. However, where there is a question of risk to health and safety, the authority having jurisdiction is to be consulted and repairs or replacement shall be carried out in accordance with its requirements. (See Appendix A, p. 24.)

# DEFINITIONS

## **Add-on unit (heating)**

An auxiliary heating device, usually solid-fuel-burning, sharing a flue, plenum or other exhaust or hot air distribution system with the primary heating unit.

## **Air barrier**

A material or combination of materials used as a system in the house envelope to retard the passage of air from the interior of a building into the insulated space. Usually the vapour barrier is intended to retard air as well as vapour but, in fact, the most air-tight element of the envelope acts as the air barrier.

## **Ancillary building**

A permanent building separate from the dwelling unit but related in use.

## **Attic (roof space)**

The space between the top floor ceiling and the roof, or between a dwarf wall and a sloping roof.

## **Bed unit**

A bed within a rooming house rented to an occupant unrelated to the owner, and located in an area which meets the minimum space standards for bed units as outlined in this document.

## **Carbon monoxide detectors**

A device with an audible alarm for sensing the presence of carbon monoxide.

## **Chimney**

A structure of brick, stone, concrete, metal or other non-combustible material providing a housing for one or more flues which carry off products of combustion to the outdoors.

## **Chimney flue**

See flue.

## **Cistern**

A reservoir, usually a tank, (underground or above grade) for storing rainwater.

## **Common space**

A floor area within a building that is available for use by all occupants. Examples are corridors, stairs, landings and vestibules.

## **Concealed space**

Space in a building created by installation of a suspended ceiling, furred-out wall, soffit or other construction that is not easily accessible and that joins dwelling units or areas within the same dwelling unit.

## **Crawl space**

A shallow space between the lowest floor of a house and the ground beneath.

## **Dampproofing**

A material used to resist the passage of moisture through a below-grade wall or floor where hydrostatic pressure does not exist.

## **Dead load**

The aggregate weight of all structural and nonstructural components, the fixtures and permanently attached equipment of a building and its foundation.

## **Designating authority**

The body responsible for determining the heritage value of buildings and for formulating regulations for the rehabilitation of designated buildings.

## **Dilapidated structures**

Buildings, fences, walls and other structures within the boundaries of the building site that require major repairs for restoration to a usable condition.

## **Disposal field**

An area next to a septic tank in which an underground network of perforated pipes distributes effluent from the septic tank into the soil.

## **Eave protection**

A waterproof membrane laid over roof sheathing, parallel to the eaves and extending some distance (usually 300 mm) over the heated space.

**Fire separation**

A wall, ceiling or floor assembly that acts as a barrier against the spread of fire between dwelling units or other spaces within a building.

**Fire stop**

A draft-tight barrier within or between construction assemblies that acts to retard the passage of smoke or flame.

**Flue (chimney flue)**

A passage housed in a chimney through which combustion products are carried from a fuel-burning appliance to the exterior.

**Flue pipe (also known as smoke pipe)**

A pipe that conveys combustion products from a solid or liquid-fuel-fired appliance to a chimney flue.

**General storage space**

Storage space inside or outside a dwelling unit set aside for use by a building's occupants. General storage space may consist, partly, of space used in common by occupants.

**Grade beam**

A structural member, usually of cast-in-place concrete, installed around the perimeter of a building and supported on piles or a strip footing. The grade beam is of lesser depth than a basement wall and supports the structure of the building.

**Guard**

A safety barrier around openings in floors or at the open sides of stairs, landings, balconies, mezzanines, galleries, raised walkways, or other locations to prevent accidental falls from one level to another.

**Habitable room**

A room or space intended primarily for human occupancy.

**Kitchen facilities**

Cabinets, countertops, and plumbing and electrical fixtures for a kitchen. Does not include the space required for these facilities.

**Live load**

The aggregate weight of the movable articles in a building or dwelling, such as furniture, appliances, built-in equipment to which a structure is subjected. Also includes the weight of people or occupants.

**Means of egress**

A continuous path of travel, provided by a doorway, hallway, corridor, exterior passageway, balcony, lobby, stair, ramp, or other egress facility or combination thereof, for the escape of persons from any point in a building, floor area, room or contained open space to a public thoroughfare or other acceptable space. Includes exits and access to exits.

**Mudsill**

Timber placed horizontally on the ground as a foundation for a structure.

**National Building Code of Canada**

The most recent issue of the publication by the Canadian Commission on Building and Fire Codes including the publication Supplement to the National Building Code of Canada.

**Pier**

An above-ground column, usually of masonry and resting on a footing, which supports the primary structural elements of a building.

**Pile**

A slender, deep foundation unit of concrete, wood or steel placed by driving, jacking, jetting, screwing or casting in place to support the primary structural elements of a building.

**Potable water**

Water certified by health authorities as being safe for human consumption.



**Riser (stair)**

The distance, measured vertically, from the top of a stair tread to the top of the next tread above or below.

**Roof space**

See attic.

**Rooming house**

For program purposes, a property containing in excess of three bed units rented or intended to be rented to occupants not related to the owner. The beds must be rented at least on a weekly or monthly basis and serve as permanent accommodation.

**Septic tank**

A sewage-settling tank intended to retain solids for sufficient time to ensure satisfactory decomposition by bacterial action.

**Smoke alarm**

A safety device designed to issue a warning upon detecting the presence of smoke.

**Smoke detector**

A device for sensing the presence of visible or invisible particles produced by combustion and automatically initiating a signal indicating their presence.

**Sump**

A watertight tank or pit that receives the discharge of drainage water from a subdrain or foundation drain and from which the discharge flows or is ejected into drainage piping by plumbing.

**Supplementary heating equipment**

Heating equipment installed to augment existing equipment that is either incapable of heating the entire building or uneconomical to operate as the sole source of heat.

**Undue deflection**

An amount of deflection of a structural member causing the failure of finish material, the failure or binding of other elements such as doors and windows, or other noticeable detrimental condition in the building.

**Vapour barrier**

A material used in a building envelope to retard the diffusion of water vapour through the interior surface materials of a structure into the insulated space.

**Vent (gas)**

A pipe connected to a gas-burning appliance to conduct the products of combustion to the exterior.

**Waterproofing**

A membrane, often in several layers, applied to foundation walls and basement floors to counteract hydrostatic pressure.

**Waterproof wall finish**

A finish material of ceramic, plastic or metal tile, sheet vinyl, tempered hardboard, laminated, thermosetting decorative sheets, or linoleum installed to protect the wall surrounding a bath tub or shower area.

These definitions are based on those found in the National Building Code of Canada or the CMHC publication **Glossary of Housing Terms, 60939**. Definitions have, in most cases, been adapted for use in **RRAP Standards**.

# SECTION 1 - GENERAL

## I. Specifications, Permits, Fees and Drawings

(1) Work to be funded under RRAP **shall** be described clearly in a work write-up to ensure that contractors consistently understand the work required. Where applicable and where possible, reasonable quantities, dimensions, drawings and other explanatory material should be provided. (See Appendix A, p. 25.)

(2) Building permits, occupancy permits and building services certificates of acceptability **shall** be obtained where required by the authority having jurisdiction. (See Appendix A, p. 25.)

(3) Architectural drawings, shop drawings and specifications, and related professional supervision costs, where required by an authority having jurisdiction, **shall** be obtained. (See Appendix A, p. 25.)

(4) An independent assessment of the dwelling units by a professional Indoor Air Quality Investigator is not eligible **except** to identify and prioritize remediation measures related to moisture and mold problems. The fee for this service and air testing is eligible up to \$1,000. The fee for multiple unit buildings must be approved by CMHC.

## 2. Architecturally or Historically Significant Buildings

(1) Work carried out on buildings designated as architecturally or historically significant **shall** be carried out in a manner consistent with the objectives of the designating authority.

**Note: Only that portion of the work designated elsewhere in this document as eligible for RRAP funding shall be carried out with RRAP assistance. (See Appendix A, p. 25.)**

## 3. Protection Against Termites and Other Pest Infestation

(1) Where the presence of insects, rodents or other pests damaging to the building or the health of the occupants is evident or suspected, appropriate measures **shall** be taken to repair the damage, exterminate or remove the pests, and protect the building against reinfestation.

# SECTION 2 - SITE PLANNING AND IMPROVEMENT

## I. Dilapidated Structures

(1) Except as permitted in (3), the replacement of dilapidated fences, ancillary buildings or other structures **is not eligible for RRAP funding**. (See Appendix A, p. 25.)

(2) Dilapidated structures that constitute a fire or safety hazard **shall** be repaired or removed from the site. (See Appendix A, p. 25.)

(3) Ancillary storage buildings **shall** be replaced where replacement is more economical than repair, and where general storage space is required by the authority having jurisdiction and is not available within the dwelling units. (See Appendix A, p. 25.)

## 2. Walkways, Driveways and Parking Structures

(1) Walkways, driveways and parking structures that constitute a significant safety hazard **shall** be repaired. Only parking structures to provide the number of spaces required by the authority having jurisdiction are eligible. (See Appendix A, p. 26.)

(2) A new walkway **shall** be installed where the lack of a walkway constitutes a significant safety hazard.

## 3. Site Grading and Improvement

Surface drainage

(1) Adequate surface water drainage **shall** be provided over the building site and suitable measures **shall** be taken for its disposal without erosion. (See Appendix A, p. 26.)

Retaining walls

(2) Slope stabilization **shall** be undertaken where required to protect the buildings and surrounding property to a reasonable distance from the building. The construction of retaining walls **is not eligible for RRAP funding** except where other methods, such as sodding, ground cover, shrub planting or rip-rap installation, are not practical. (See Appendix A, p. 26.)

# SECTION 3 - ROOMS AND SPACES

## I. Food Preparation and Eating Space

(1) Dwellings **shall** be provided with adequate food preparation and eating space. In rooming houses, hostels and dormitory-type accommodations, this space can be communal; where permitted it can be within the room. Space requirements **shall** be in accordance with the authority having jurisdiction.

(2) When providing space in dwelling units for food preparation where none previously existed, it **shall** not exceed 5.3 m<sup>2</sup> (57 sq. ft.), including the area occupied by the base cabinets; for bachelor units, it **shall** not exceed 4.6 m<sup>2</sup> (50 sq. ft.).

(3) Deteriorated food preparation work surfaces **shall** be repaired or replaced if repair would be more costly.

(4) Base kitchen cabinets **shall** provide adequate support for the work surface. New base cabinets **shall** only be provided where none previously existed or where the existing cabinets no longer provide adequate support for the work surface and where replacement is more economical than repair. Where required, they **shall** not exceed 2.3 m (8 ft.) in length and **shall** not exceed 1.7 m<sup>2</sup> (18 sq. ft.) of work surface, including the area occupied by the sink.

(5) Where food storage space is required, shelving **shall** be provided and **shall** not exceed 2.5 m<sup>2</sup> (27 sq. ft.) of shelf area; for bachelor units, it **shall** not exceed 1.23 m<sup>2</sup> (13 sq. ft.).

**Note: Replacement of cabinets and counter tops for the purpose of modernization is not eligible for RRAP funding.**

## 2. Bathrooms and Toilet Rooms

(1) Adequate bathroom space **shall** be provided within dwelling units. In rooming houses, hostels and dormitory-type accommodation, this space can be allocated on a shared basis in accordance with the authority having jurisdiction.

(2) Bathroom space and the installation of new facilities where none previously existed, **shall** be installed in accordance with the requirements of the authority having jurisdiction; in the absence of such requirements, sufficient floor space **shall** be provided to accommodate a bathtub, toilet and lavatory.

(3) Bathrooms and toilet rooms in rooming houses, hostels and other dormitory-type accommodation **shall** be located within the building and provide for privacy. Where the bathroom or toilet room is for the use of more than one occupant, the entrance **shall** be from a corridor or other space used in common by occupants. The minimum number of fixtures **shall** be in accordance with the authority having jurisdiction.

### 3. Sleeping Rooms in Rooming House and Hostel Accommodation

(1) Areas for sleeping rooms in rooming house, hostel or other dormitory-type accommodation, including additional areas for cooking facilities where these are provided in the rooms, **shall** be in accordance with the local authority having jurisdiction.

(2) In the absence of local requirements, rooms without cooking and eating facilities **shall** not be less than 7 m<sup>2</sup> per person for single occupancy and not less than 4.6 m<sup>2</sup> per person for multiple occupancy. The minimum dimension within the required area **shall** be 2 m<sup>2</sup>. Where cooking and eating areas are provided in the rooms, total areas **shall** be not less than 10 m<sup>2</sup> for one-bed units, 17 m<sup>2</sup> for two-bed units, 24 m<sup>2</sup> for three-bed units and 31 m<sup>2</sup> for four-bed units.

### 4. Appliances

(1) The provision or repair of household appliances **is not eligible for RRAP funding.**

### 5. Garbage Disposal Space

(1) Adequate space for the storage of garbage containers **shall** be provided. (See Appendix A, p. 26.)

### 6. Building Services

(1) Where insufficient, additional space to accommodate building services required by the authority having jurisdiction **shall** be provided and **shall** be limited to that required for the services.

# SECTION 4 - FIRE PROTECTION

## I. General

(1) Each dwelling unit and common space **shall** be provided with fire protection in accordance with the requirements of the authority having jurisdiction. (See Appendix A, p. 26.)

(2) For fire protection requirements not highlighted in this section, the authority having jurisdiction must be consulted.

### Certified equipment

(3) Smoke alarms, heat detectors, fire extinguishers, carbon monoxide detectors and other fire detection and control devices and communication equipment, where required by the authority having jurisdiction, **shall** be certified, labeled and listed under one of the following three appropriate Canadian standards:

- Underwriter's Laboratories of Canada
- Canadian Standards Association
- Warnock-Hersey Professional Services Ltd.

Installation and maintenance **shall** be in accordance with the manufacturer's printed instructions.

**Note: In the absence of a local fire authority, the requirements of the provincial or national fire code shall apply.**

## 2. Fire Protection

(1) Dwelling units **shall** be separated from adjacent rooms and dwellings by a fire separation as required by the authority having jurisdiction.

## 3. Smoke Alarms

(1) Each dwelling unit and rooming house or hostel room not within a dwelling **shall** be equipped with smoke alarms in accordance with the authority having jurisdiction.

## 4. Fire Stopping

(1) Concealed spaces that could provide a passage for the spread of smoke and flame between dwelling units, between storeys within a dwelling unit, or between a storey and a roof space **shall** be fire stopped.

(2) Fire stopping **shall** be provided in accordance with the authority having jurisdiction.

## 5. Means of Egress

(1) Means of egress for multiple unit buildings, including emergency lighting, signage, exterior stairs and openings **shall** be provided in accordance with the requirements of the authority having jurisdiction.

(2) Entrance doors to dwellings in multiple-unit buildings and in rooming houses requiring fire separations between units and doors to rooms used for sleeping purposes **shall** be in accordance with the authority having jurisdiction. This includes related hardware such as automatic self-closing and locking devices.

## 6. Spatial Separation Between Buildings

(1) Spatial separation between buildings and related requirements **shall** be in accordance with the requirements of the authority having jurisdiction.

## 7. Equivalencies

(1) Equivalencies and alternatives to fire protection requirements can be considered where allowed by and in accordance with the authority having jurisdiction.

# SECTION 5 - BUILDING ENVELOPE AND STRUCTURE

## I. General

Size of structural components	(1) Structural components of buildings <b>shall</b> be sized so as to be capable of supporting the loads imposed on them without failure or undue deflection. (See Appendix A, p. 27.)
Anchoring and bracing	(2) All members <b>shall</b> be framed, anchored, fastened, tied and braced to provide the necessary strength and rigidity.
Replacement of members	(3) Structural members which are sufficiently deteriorated to compromise their load-carrying capacity <b>shall</b> be repaired or replaced.
Seismic upgrading	(4) Where required, seismic upgrading <b>shall</b> be undertaken in accordance with the requirements by the authority having jurisdiction.

## 2. Stairs and Landings

Stairs, landings and balconies	(1) Interior and exterior stairs, landings, balconies, porches or verandahs and related porches and verandahs handrails and guards <b>shall</b> be repaired, restored or replaced if they are deteriorated and present a significant safety hazard.  (2) Stairs and landings <b>shall</b> be provided where required to meet egress requirements of the authority having jurisdiction.  (3) Where exterior doors do not have stairs or landings, and the exit is not required as an egress or service entrance, if deemed unsafe it <b>shall</b> be secured shut by the installation of a structural bar. (See Appendix A, p. 27.)
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**Note: The rebuilding of decks is not eligible for RRAP funding. (See Appendix A, p. 27.)**



### 3. Foundations

- Dampproofing and waterproofing (1) Foundations **shall** be repaired or replaced, as necessary, so as to be capable of supporting the loads imposed. (See Appendix A, p. 27.)
- (2) Where water penetration has caused or will cause structural damage or is a threat to building services or living areas contained in the space, foundation walls **shall** be repaired, dampproofed or waterproofed and adequate drainage **shall** be provided.
- Access hatches (3) Crawl spaces **shall** be provided with access hatches.

### 4. Foundations For Mobile Homes

- Mobile homes (1) Foundations for mobile homes built with integral longitudinal beams **shall** be of supporting loads imposed on them without failure or undue deflection. Requirements of the provincial or municipal authority having jurisdiction or manufacturer's specifications **shall** be met. In the absence of such requirements the CAN/CSA-Z240.10.1-94, **Site Preparation, Foundation and Anchorage for Mobile Home, shall** be used. (See Appendix A, p. 27.)
- Manufactured housing (2) Factory-built housing with other than the longitudinal beam system **shall** meet all applicable requirements outlined in this section.

### 5. Walls

- Cladding (1) Exterior walls **shall** prevent the entry of water, **shall** be reasonably durable and **shall** be of a type and material acceptable to the authority having jurisdiction. The replacement of wall cladding, **is not eligible for RRAP funding** except where replacement is more economical than repair. (See Appendix A, p. 28.)
- Caulking (2) The junctions of exterior finish materials and window and door frames, exhaust fan outlets and other penetrations **shall** be caulked or flashed as required to prevent the entry of water into the building envelope.

## 6. Roofs and Roof Spaces

- (1) Roof components **shall** be capable of supporting the dead and live loads imposed and provide a suitable surface for the fastening of roofing materials.
- Roof covering (2) Roof covering **shall** be capable of preventing the entry of rain and snow into the roof space. Replacement of the entire roof covering **is not eligible for RRAP funding** except where repair or partial replacement is not practical or cost-effective. (See Appendix A, p. 28.)
- Mobile homes (3) Where the construction of a sloped roof is being considered because it is more cost-effective than the repair of the original flat roof, the manufacturer's specifications **shall** be reviewed to determine if the existing structure can support the additional loads imposed by a new wood-frame roof; if such specifications are not available, an engineer's certificate certifying such a modification **shall** be obtained.
- Ventilation (4) Where there is evidence that attic condensation is occurring, ensure air leakage from the dwelling unit is addressed with a proper continuous air barrier system. Venting of roof and attic spaces to the exterior may provide some additional relief for moisture problems. Refer to section 6.2.(1), path of air leaking from interior of the dwelling unit (See Appendix A, p. 28.)

## 7. Floors

- (1) Floor assemblies **shall** be capable of supporting the loads imposed without undue deflection and **shall** provide a surface suitable for the installation of floor covering materials in all habitable areas.
- Basement floor slabs (2) Basement floor slabs **shall** be repaired where heaving or buckling has caused a significant safety hazard. (See Appendix A, p. 28.)
- (3) Where evidence of substantial dampness exists, measures **shall** be undertaken to prevent or reduce the entry of moisture through the basement or crawl space floor.
- Sloping wood floors (4) The leveling of sloping or sagging wood floor systems **shall** be undertaken where the slope constitutes a significant hazard.

# SECTION 6 - ENERGY CONSERVATION AND VENTILATION

## I. Thermal Insulation

(1) Where RRAP mandatory repairs result in the exposure of areas containing little or no insulation and where the cost to increase thermal values is reasonable, insulation **shall** be provided in accordance with the requirements of the authority having jurisdiction.

**Note: The removal or replacement of interior or exterior wall cladding solely to facilitate installation of insulation is not eligible for RRAP funding.**

*(2) Where no or very little insulation currently exists, the installation of thermal insulation in accessible areas of the building envelope to current acceptable levels is eligible for funding. The requirements of the authority having jurisdiction apply. (See Appendix A, p. 28.)*

**Note: Full height insulating of basement walls and insulating for sound proofing purposes is not eligible for funding.**

## 2. Air Barriers and Vapour Barriers

Caulking and sealing

(1) Paths of air leakage from the interior of the dwelling unit into insulated wall, ceiling or floor assemblies **shall** be sealed to the extent that accessibility and practicality allow. (See Appendix A, p. 28.)

(2) Where interior or exterior wall finish is necessarily being removed and replaced because of mandatory work, an effective air barrier or vapour barrier **shall** be provided. (See Appendix A, p. 28.)

Draft proofing

*(3) Where deemed reasonable draft proofing, weather stripping and air sealing measures for the sole purpose of energy savings is eligible for funding.*

## 3. Ventilation

(1) Ventilation **shall** be provided in accordance with the authority having jurisdiction. (See Appendix A, p. 29.)

**Note: The installation of a heat recovery ventilator (HRV) solely to improve energy efficiency is not eligible for RRAP funding. (See Appendix A, p. 29.)**

## 4. Windows and Doors

Retention of existing windows and doors

(1) Existing windows and doors, including hardware, **shall** be replaced only where the degree of damage or deterioration is such that repair is not practical or is more costly than replacement. New windows installed **shall** meet or exceed the requirements of CSA A440 (See Appendix A, p. 29.)

Repairs

(2) Where windows or doors are to be retained, all repairs necessary to restore adequate operation, including replacement of insect screening, **shall** be carried out.

Painting

(3) Wood components of windows and doors **shall** be painted or otherwise protected to prevent deterioration.

# SECTION 7 - FINISHES

## 1. Exterior Finish

Painting

(1) Exterior cladding and trim susceptible to deterioration if unprotected **shall** be painted or otherwise suitably treated. (See also Section 5.5(1) and Appendix A. p. 27.)

## 2. Interior Finish

Waterproof wall finish

(1) A waterproof wall finish **shall** be provided around bathtubs to a height of not less than 1,200 mm (46 in.) above the rim of bathtubs equipped with showers and 400 mm (16 in.) above the rim of bathtubs not equipped with showers.

(2) A waterproof wall finish **shall** be provided in shower stalls to a height of not less than 1,800 mm (6 ft.) above the floor.

Inappropriate finishes

(3) Finish materials on walls and ceilings deemed inappropriate for high-moisture areas and showing signs of significant damage **shall** be replaced. (See Appendix A, p. 29.)

Painting

(4) Where interior finishes are installed as a result of RRAP mandatory work, a protective coating such as paint **shall** be applied.

Crack repair

**Note:** Except as stated in 7.2(4) the repair of cracks and other defects, and the painting of walls and ceilings **is not eligible for RRAP funding.**

## 3. Interior Stairs

Handrails

(1) Handrails and guards **shall** be provided in accordance with the authority having jurisdiction.

## 4. Floors

Floor finish

(1) Floors in bathrooms, shower rooms, toilet rooms and laundry rooms **shall** be covered with a flooring material impervious to water and providing reasonable wear resistance.

(2) Floor or stair finishes deteriorated to the point of presenting a significant safety hazard **shall** be replaced or repaired.

# SECTION 8 - HEATING

## I. General

Capacity of system	(1) Buildings <b>shall</b> be equipped with a heating system capable of maintaining a temperature of 22°C in habitable rooms, with a high degree of safety for occupants. Supplementary heating equipment can be considered as a cost-effective alternative.  (2) Upgrading or conversion of heating equipment solely to improve energy efficiency <b>is not eligible for RRAP funding</b> . (See Appendix A, p. 30.)
Certified equipment	(3) New heating equipment, including oil-burning, gas-burning, electric and solid-fuel-burning furnaces, stoves, heaters, add-on units and factory-built chimneys <b>shall</b> be certified, listed and labeled, under the appropriate Canadian standards, by one of the following agencies: <ul style="list-style-type: none"><li>• Canadian Standards Association</li><li>• Warnock-Hersey Professional Services Ltd.</li><li>• Underwriters' Laboratories of Canada</li></ul>
Replacement	Note: Deteriorated or deficient heating equipment <b>shall</b> be replaced if the cost of repair exceeds the cost of replacement.
Fireplace repairs	(4) Existing fireplaces and chimneys deemed to be a fire hazard <b>shall</b> be sealed off or repaired. The purchase or installation of fireplaces or fireplace inserts <b>is not eligible for RRAP funding</b> .

## 2. Installation

Installation	(1) Installation of new heating equipment (other than solid-fuel-burning appliances), including provision for mounting, clearances and air supply, <b>shall</b> conform to appropriate provincial or municipal requirements or, in their absence, to the latest requirements of the following standards: <ul style="list-style-type: none"><li>• CAN/CSA B139-00, <b>Installation Code for Oil Burning Equipment</b></li><li>• CAN/CGA-B149.1-00, <b>Natural Gas and Propane Installation Code</b></li><li>• CSA C22.1-98, <b>Canadian Electrical Code, Part I</b></li></ul> (2) Installation of certified, solid-fuel-burning appliances <b>shall</b> conform to the installation requirements attached to the appliance.  (3) Installation of existing, uncertified solid-fuel-burning appliances <b>shall</b> conform to CAN/CSA-B365-M91(R1998), <b>Installation Code for Solid-Fuel-Burning Appliances and Equipment</b> .
Combustion air supply	(4) Combustion air to fuel-burning equipment <b>shall</b> meet with the requirements of the authority having jurisdiction.

### 3. Smoke Pipes and Chimneys

Smoke pipes

(1) Flue pipes, chimney components and connectors, and vents **shall** be replaced if the existing pipes are deteriorated to the point of being unsafe.

(2) Smoke pipes and vent connectors **shall** be as short and straight as possible, fitted with dampers and supported by a sufficient number of hangers to avoid sagging. Galvanized iron smoke pipes **shall** not be used for solid-fuel-burning appliances.

(3) Smoke pipes, vent connectors, vents and flues **shall** be sized in accordance with the specifications of the manufacturer of the heating equipment.

Factory-built chimneys

(4) Badly deteriorated masonry chimneys **shall** be replaced by a suitable factory-built chimney provided the cost of purchase and installation does not exceed the cost of repair or installation of a masonry chimney.

Liners

(5) New liners for existing masonry chimneys **shall** be certified, listed and labeled for the particular use by Underwriters' Laboratories of Canada and be installed in accordance with the manufacturer's recommendations and the authority having jurisdiction. (See Appendix A, p. 30.)

### 4. Protection of Combustible Surfaces

(1) Where retained, existing solid-fuel-fired stoves, ranges or space heaters supported on combustible flooring material **shall** be mounted on legs that provide a clear space of at least 100 mm (4 in.) in height and **shall** be of a type in which flames or hot gases do not come in contact with its base.

(2) Combustible flooring material beneath solid-fuel-burning heating equipment **shall** be protected by an acceptable underlayment as required by CAN/CSA- B365 M91 (R1998), **Installation Code for Solid-Fuel-Burning Appliances and Equipment** or as required by the manufacturer's specifications or the authority having jurisdiction.

Clearance to combustibles

(3) Existing fuel-burning appliances, including chimneys and other components of fuel-burning appliances carrying flue gases from the appliance to the exterior, **shall** have sufficient clearance throughout their length to prevent overheating of adjacent combustible construction.

(4) Shielding to reduce clearances to combustible construction **shall** conform to CAN/CSA- B365-M91 (R1998), **Installation Code for Solid-Fuel-Burning Appliances and Equipment**.

# SECTION 9 - PLUMBING

## I. Water Supply

Water supply

(1) Dwelling units **shall** be provided with an adequate source of potable water in accordance with the requirements of the authority having jurisdiction. (See Appendix A, p. 30.)

Storage tanks

(2) Leaking water-storage tanks **shall** be repaired or replaced as necessary.

## 2. Pipes and Fixtures

Pipes and fixtures

(1) Defective plumbing pipes and broken or inoperative fixtures **shall** be restored to working order or replaced where more cost-effective than repair. (See Appendix A, p. 30.)

(2) Plumbing pipes and fixtures **shall** be adequately supported and protected from freezing.

Galvanized water piping

(3) Galvanized steel pipe used as water supply lines **shall** be replaced with copper tubing or other acceptable systems in accordance with the requirements of the authority having jurisdiction or, in the absence of local regulations, with the requirements of the Canadian Plumbing Code.

## 3. Sewage Disposal

(1) Dwelling units **shall** be provided with adequate facilities for sewage disposal in accordance with the requirements of the provincial or municipal authority having jurisdiction. In absence of local requirements, community norms can be considered, provided that, in the opinion of the RRAP inspector, the health of the occupants and the community is not jeopardized.

Septic tanks and disposal fields

(2) Where municipal sewer services are not available, the installation, replacement, or repair of septic tanks and disposal fields **shall** be in accordance with the authority having jurisdiction.



# SECTION 10 - ELECTRICAL

## I. General

### Standards

(1) Electrical installations, including the service capacity and the number and distribution of circuits, **shall** meet the requirements of the local authority having jurisdiction. In the absence of local requirements, electrical installations **shall** conform to the Canadian Electrical Code.

# SECTION 11 - ELEVATORS

## I. General

(1) Elevators **shall** comply with the requirements of the authority having jurisdiction.

# SECTION 12 - ENVIRONMENTAL CONCERNS

## 1. Flood Protection Measures

Dwellings in flood fringe areas (1) Dwellings located in the fringe area of a designated two-zone flood plain **shall** conform to the flood-proofing measures of the authority having jurisdiction. Measures to reduce flood vulnerability are restricted to those that do not involve substantial structural alterations or relocation of the dwelling. (See Appendix A, p. 31.)

**Note: Dwellings located in a floodway area are not eligible for RRAP funding.**

## 2. Lead-Based Paint

Testing (1) Determining the presence of lead-based paint is the responsibility of the property owner.

Precautionary measures (2) Where lead-based paint confirmed by acceptable means of testing is necessarily being disturbed by RRAP mandatory repairs, or represents a health concern to occupants, special precautionary measures and cleanup **shall** be undertaken. These include the cost of materials and contracted labour, and the rental but not the purchase of specialty equipment required for precautionary measures and cleanup, such as ventilation fans, specialty respirators, and high-efficiency particle accumulators. (See Appendix A, p. 31.)

**Note: The cost of the removal of lead-based paint and lead precautionary measures (lead abatement), other than those associated with RRAP mandatory repairs, is not eligible for RRAP funding.**

## 3. Asbestos

(1) Precautionary measures in accordance with the authority having jurisdiction **shall** be undertaken for the removal of asbestos where it is necessarily being disturbed because of RRAP mandatory repairs, or its existing condition represents a health concern to occupants.

## 4. Contamination

(1) Where a property qualifies for RRAP under one of the five major categories, and where the presence of an environmental hazard has been confirmed by an acceptable means of testing and the hazard poses an immediate threat to the health and safety of the occupants, remedial measures **shall** be carried out in accordance with the authority having jurisdiction. (See Appendix A, p. 31.)

## 5. Moisture and Mold Problems

(1) Where moisture resulting in major mold problems exists, the determination of appropriate remediation measures can be complex and beyond the experience and knowledge of the inspector. The services of a professional Indoor Air Quality (IAQ) Investigator **shall** then be required to determine appropriate remediation measures and to supervise the undertaking of the remediation work.

**Note: The consultation fee for this service is eligible to a maximum of \$1,000. The fee for multiple residential unit buildings shall be approved by CMHC.**

(2) All remediation work including cleanup directly related to deficiencies with the building design, structure, envelope, finishes or systems are eligible. (See Appendix A, p. 31.)

**Note: Refinishing of mold-affected basements and attics. (See Homeowner Standards, Section 12, p. 24.)**

**The owners must assume the risk of re-contamination if they decide to refinish the basement or attic by their own means.**

**Removal and replacement of furnishings and belongings (e.g. furniture, clothes, appliances) are not eligible for RRAP funding. (See Appendix A, p. 31.)**

**Cleanup procedures deemed regular household maintenance are not eligible for RRAP funding.**

**NOTE: If the assessment of the building indicates that a mold problem may necessitate extensive work, the proposed renovation should be reviewed to determine whether it is cost effective and if it will remediate the mold problem for the long term.**

# APPENDIX A - EXPLANATORY NOTES

**(The Section titles and numbers in this appendix correspond to the appropriate sections of the foregoing Guide.)**

## Document Purpose

### Eligibility

The first step in qualifying a property is to determine if a major mandatory repair is required, or if the property lacks a basic facility.

When inspecting a project for Rental and Rooming House RRAP, it is important to remember that the entire project, unassisted as well as assisted units must be inspected and that all mandatory repairs must be corrected. However, for unassisted units in rental projects, mandatory repairs can be restricted to those that are an immediate threat to health and safety and might improve the adequacy and acceptability of fire separations or means of egress, or eliminate major structural deficiencies. Repairs that are considered mandatory in these Standards but would not qualify the property would not necessarily be required for the unassisted units.

### Qualifying Repair

A qualifying repair is a mandatory repair required to correct a serious deficiency in one of the five categories (structural, electrical, plumbing, heating and fire safety). A serious deficiency is the defective integrity of a structural component or building service or system that is obvious to the RRAP inspector or other expert or authority having jurisdiction. The deficiency is causing or will certainly cause further damage to the deficient component and adjacent or related components or jeopardize the health and safety of the occupants if it is not repaired.

### Maintenance

Basic and standard maintenance items are not qualifying repairs and are not eligible for RRAP funding. Examples are a leaking roof that requires minor repair or patching of flashing and shingles but not replacement, a furnace that requires cleaning and adjustment of burners, and a leaking faucet that requires repair or replacement. The same applies if electrical fixtures, such as outlets or light fixtures, require repair or replacement. Doors or windows with cracked panes of glass or damaged or

deteriorated sills but with components in reasonable condition would not qualify the property. A combination of several maintenance items would not qualify the property even though the combination of work and cost may be high.

### Acceptance of Existing Conditions

Older buildings can inherit certain conditions related to design that would be deemed unacceptable if built today. Common areas include electrical system, stairways and handrails when built at that time were considered acceptable, can have some heritage qualities and still be found in good condition today. Electrical systems in older homes often do not have enough outlets in bedrooms however the wiring and circuits maybe in good condition and acceptable to the electrical authority. The RRAP program is not intended to update older homes to meet current code requirements unless a significant health and safety concern is being addressed. Discretion is required on behalf of the RRAP inspector and the homeowner to determine if a safety concern is present.

### Structural Soundness

Structural issues exist when damage to building components, load bearing or non load bearing affects the integrity of the material resulting in a possible threat to health and safety. Examples include wood framing members exposed to moisture that will cause rot. Wood paneling, plywood, drywall, gypsum, plaster walls and ceilings exposed to excessive moisture can result in accelerated deterioration and mold growth.

### Finishes

Siding, vinyl flooring, ceramic tiles, paint and sealers are considered finishes designed to protect the structural integrity of materials that are susceptible to damage from moisture.

### Reasonable Quality

Reasonable quality of work is that which is acceptable in the construction industry. This is the minimum acceptable level for purposes of the disbursement of RRAP funds.

## Replacement of Functioning but Deteriorated Components

Examples of functioning but deteriorated components that should be considered for replacement are masonry chimneys with deteriorated and missing mortar and roof membranes not leaking but with evidence of previous failure and substantial patching and repair. Replacement should also be considered for major components of a heating system, such as the fire box and heat exchanger, that may still be functioning but which have had substantial repair. Repairs to the motor and controls, however, are considered normal maintenance.

### Section 1 - General

- 1.1(1) After the initial inspection, the inspector's findings should be reviewed with the applicant to ensure an understanding of the scope of required or mandatory work.

The work write-up should be a complete list of repairs but is not a true "specification." It is not a contract but viewed as a list of work items and repairs for program funding purposes. The owner should be advised to have an appropriate contract signed with the contractor, tradesperson or supplier.

- 1.1(2) The Report RRAP Work Description, 60187 or other form of acceptable work write-up must also include a list of inspection reports from applicable authorities having jurisdiction that may be required to determine the condition of any of the building services, such as the electrical system or heating system and fire marshall's report. The cost of acquiring these certificates can be included in the cost of work. The applicant must, however, be informed that RRAP covers these fees only if the loan is approved and that advances will only be issued upon receipt of the certificate of acceptability from the appropriate authority having jurisdiction.

Other eligible items include building and occupancy permits.

All "Qualifying" and "Mandatory" items must be completed.

- 1.1(3) If the work is too complex to be described adequately on the work write-up, other contract documents must be attached. In this case, a list of these documents must be indicated on the work write-up. Work write-ups must be as precise and unambiguous as possible, with the location and extent of repairs clearly described. Drawings are required only when the work cannot be described adequately in the work write-up.
- 1.2(1) In some rehabilitation areas, certain residential buildings may have been designated as historical or heritage buildings. Careful judgment and consideration will be required when dealing with these buildings, the objectives of both the heritage authorities and RRAP should be respected.

### Section 2 - Site Planning and Improvement

- 2.1(1) A major problem when rehabilitating a structure is to decide whether an ancillary building or other structure should be repaired or removed. As a general rule, where a structure presents a fire or safety hazard, it should be removed. Where the structure is required for storage, repair should be considered.

Where replacement would be more economical than repair, necessary storage structures should be replaced. Where a garage forms part of the storage structure and the garage is not required by an authority (to provide the required number of parking spaces), the cost of replacing the garage is not eligible.

Porches and other structures that provide protection from the elements should be retained. Where these are deteriorated, damaged elements only should be replaced and not the entire structure.

- 2.2(1) For Rental and Rooming House RRAP, eligible walkways include only those required by the authority having jurisdiction to meet egress requirements. Walkways and driveways in park or recreation areas of the property are not eligible.

The need to restore deteriorated walkways does not qualify a property for RRAP funding.

Walkways shall be reasonably leveled where necessary and restored to a safe condition where they present a safety hazard. The intention is to restore to the original condition and to avoid upgrading. Only work necessary to correct the deficiency is eligible. An example of a non allowable cost is the resurfacing of a gravel driveway with asphalt or concrete. Ruts and depressions in driveways should be repaired or dressed with gravel, stone, asphalt or concrete to provide a sound, usable surface. Topping the entire driveway with asphalt or asphaltic coating is not eligible.

- 2.3(1) Adequate surface drainage of building sites is important to prevent drainage of water into basements and crawl spaces. Always consider drainage when undertaking other work that may be affected by groundwater. Desirable trees, shrubs, lawn areas and other site improvement elements should be retained where practical.

The building site as defined by this requirement will usually be evident, but site work shall be considered only to a reasonable distance from the building. In no case are park or recreation areas within the site eligible.

- 2.3(2) Retaining walls should be constructed only where the failure of the slope would threaten building or ancillary structures. The high cost of retaining wall construction must be weighed against the advantages to be achieved.

## Section 3 - Rooms and Spaces

In general, alterations to the dimensions of rooms to correct structural deficiencies or to provide required basic facilities are eligible for funding. Additions and extensions to provide space for basic facilities shall be considered only where they are more practical and cost-effective than other alternatives.

- 3.5(1) Garbage storage space is an eligible RRAP item. This eligibility is not restricted to rural areas. The purchase of garbage containers is not eligible for RRAP funding.

Where the required garbage storage space cannot be provided because of space restrictions, alternative arrangements, such as more frequent pick-up, can be considered if acceptable to the authority having jurisdiction. The cost of this arrangement is not an eligible cost.

## Section 4 - Fire Protection

- 4.1(1) Determining the effectiveness of an existing fire separation between dwelling units can be difficult. In row housing, the RRAP inspector does not usually have access to both sides of a fire separation and cannot know its condition or construction with any certainty. When a fire separation is constructed on a property line, as in the case of individually owned row-houses, the problem is compounded. RRAP funds cannot be used for work on adjoining properties, even if the separation is shared with other units.

In some cases, there are horizontal fire separations between stacked units. In such situations, work to upgrade fire separations must be approached with a full understanding of the implications. It is usually best to consult local fire safety officials or the fire marshall's office if there is any indication that a fire separation might be inadequate. For example, if it is found that the roof space in a

row-house project has not been fire-stopped or that a required fire separation has not been installed, units adjacent to the subject property are at risk. The situation cannot be remedied by repairs to one unit. Local fire authorities should be advised of the situation in writing and asked to discuss the problem with all affected owners.

It should be made clear that work under the RRAP program is limited to the subject property and that, while repairs to one property could improve the situation somewhat, resolving it fully would require attention to adjoining properties.

However, where ownership covers the entire building and the inspector has access to all areas, all aspects of the fire safety must be brought up to standard in assisted and unassisted units and common areas.

## **Section 5 - Building Envelope and Structure**

5.1(1) The restoration of the structural integrity of buildings is essential. One of the objectives of RRAP is to extend the useful life of buildings, and attention should be directed toward repairs that, if not carried out, would result in continued deterioration and damage and higher costs of repair. Where problems are noted, the cause should be determined. The deterioration of structural members by rot could be caused by water leakage, a lack of ventilation, or a combination of both. Replacing damaged elements without determining and eliminating the cause may result in recurrence of the problem.

5.2(3) Where doors exist that are not a required means of egress however would provide a valuable emergency exit, the inspector can choose not to secure the door. This condition should be considered when addressing, for example, mobile homes that have a second door at the rear of the home near the bedrooms and the furnace is located in the hallway. In such a case the door must have safe access (landing, stair and handrails) that conforms to the authority having jurisdiction. The cost to construct new or repair existing landings in such cases is eligible for RRAP.

Repairs to sundecks shall not exceed the cost of replacement with a stair and landing meeting the means of egress requirements only.

5.3(1) Where extensive foundation damage has occurred as a result of settlement, heaving, leaking or other causes, a report from a professional engineer detailing necessary remedial measures might be advisable.

5.3(2) Cracked foundation walls showing no evidence of leaking or structural problems should require no action. If leaking has occurred, it may be necessary to excavate at the location of the crack and point, parge and dampproof or waterproof. Leaking from tie holes require grouting or patching with an asphaltic compound.

5.4(1) The structure in older mobile homes not certified to the CAN/CSA-Z240 MH Series-92 series of standards might not be stiff enough to accommodate the seasonal movement of individual surface foundation units. The manufacturer's set-up instructions should be followed. If there is doubt about the unit's ability to resist the stresses imposed by heaving or sinking of individual surface foundation units, a foundation system supported below the level of frost penetration shall be specified; if the soil beneath the unit is free-draining and not susceptible to frost action, surface foundations may be considered as per CAN/CSA-Z240 MH Series-92 set-up requirements.

- 5.5(1) The replacement of siding in good condition is not eligible.

Wall-cladding materials that have demonstrated the ability to meet the requirements of the appropriate Canadian standard are listed in the Canadian Construction Material Centre (CCMC) Manual of Building Materials Evaluation Reports.

Other siding material not listed by CCMC, such as wood siding, is acceptable providing it meets the requirements of the National Building Code (Section 9.27, Cladding).

- 5.6(2) The condition of roof covering and flashing should be determined. Replacement should be considered when there is evidence of failure within a short period of time.

Where shingles are replaced, it is important to install eave protection in accordance with the NBC Section 9.26. This is of particular importance in regions with frequent freezing and thawing, such as the east coast.

- 5.6(4) Where there is evidence that attic condensation is occurring, reduce air leakage from the dwelling unit to the attic by ensuring the continuity of the air barrier system especially around attic hatches, plumbing, electrical and ventilation penetrations, chimneys and partition walls.

- 5.7(2) Basement floor slabs should not be replaced or resurfaced to correct minor problems, such as roughness, cracking, dusting or spalling.

## Section 6 - Energy Conservation and Ventilation

- 6.1(1) CCMC's Manual of Building Materials Evaluation Reports lists many insulation materials and outlines appropriate uses. Materials listed in this manual should be specified for RRAP work.

- 6.1(3) Insulating in accessible areas such as attics, crawlspaces and basements to 2'0" below grade only can be included as eligible work. When adding insulation to accessible areas consideration to air sealing must be included as allowing moist air to enter an insulated assembly can accelerate mold and rot damage in the assembly. Ensure a proper vapour barrier is present and air seal around all penetrations including attic hatches and light fixtures in attics. Insulating to required R-values as dictated by the local authority having jurisdiction is acceptable however, existing conditions may limit the ability to increase thermal values to this level.

- 6.2(1) It is important to limit the amount of moist air entering an insulated assembly from the interior of a dwelling unit. Easily accessible points of potential leakage, such as at electrical outlets, light fixtures and exhaust fan housings, should be treated as a matter of course. Draft-stop gaskets are available for this purpose. More difficult areas, such as around window and door frames, where sealing involves the removal of casing, and points where plumbing vent stacks penetrate the top plate, should be considered carefully before specifying what could be high-cost work.

- 6.2(2) Where thermal resistance is increased, effective air barriers and vapour barriers are extremely important. With increased thermal resistance, the temperature of the cavity is substantially lowered during cold weather and the possibility of water condensation from air leaking into the space is increased. Every effort should be made to seal potential paths of air leakage from the interior of the building into the insulated space. The amount of water vapour entering the insulated space by air leakage through small openings such as electrical outlets and under the bottom plate is far greater than that passing through the surface of the interior finish. The air barrier, therefore, is much more critical than the vapour barrier.



For existing construction, where no formal vapour barrier exists, two coats of latex paint is acceptable.

- 6.3(1) Dwelling units, including basements and crawl spaces, must be provided with adequate ventilation either by natural means or by mechanical. If by mechanical means, applicable local or NBC requirements must be met. There is the risk of negative pressure in the building when a mechanical exhaust fan is in operation. This can cause air to be drawn down chimneys and vents for gas-fired furnaces, and can in turn cause the movement of combustion products into the building when the furnace starts. To forestall this potential danger, the NBC requires a source of “make-up” air in addition to any combustion air for fuel-burning appliances. It is therefore important to consider all air-consuming appliances in a building and to ensure that danger does not result from one system.

When dealing with isolated moisture damage to interior finishes resulting from a lack of ventilation, the installation of a mechanical exhaust fan located close to the source of moisture (showers and stoves) can be very effective. Exhaust fans wired to a dehumidistat control provide automatic operation at times of high humidity in the building.

Mechanical Systems must meet requirements of the NBC or local jurisdiction including some ratings and installation procedures.

The use of electronic devices to create intermittent use of furnace fans for improved air circulation are available at reasonable costs. The continuous running of a furnace fan can generate high energy costs.

Ventilation requirements for some multiple unit buildings can be complex. Providing adequate air changes for dwelling units, pressurizing corridors and providing make up air for unbalanced exhaust equipment may require the knowledge and experience of a professional mechanical

consultant. The cost for this service would be eligible for RRAP funding.

Installation of a heat recovery ventilator (HRV) is only critical in buildings with a tight envelope, low air change rates, or very high occupancy. A balanced ventilation system, like an HRV, can be safely used in buildings with chimneys, and should not cause backdrafting or spillage. Older buildings are generally drafty. If you suspect that a building is tight, and are considering the installation of an HRV, have the building tested in accordance with CGSB-149.10-M86 (Determination of the Airtightness of Building Envelopes by the Fan Depressurization Method) or an EnerGuide for Houses inspection.

- 6.4(1) When replacing existing deteriorated units with new windows or exterior doors consideration shall be given towards performance with regards to energy conservation. It is encouraged to install windows that have the following characteristics: double-glazing, low-emissive coatings, inert gas fill, and an insulated spacer. It is mandatory that the installation be done in accordance with CSA-A440.4-98 to ensure units are installed in an effective manner such that the performance is not compromised. Ensure that the windows and doors are properly air sealed around the interior frame and properly flashed to avoid water penetrating into the building envelope. Where available it is strongly recommended to use only industry recognized or certified installers and products (i.e. The Window Wise Certification Program and ENERGY STAR® rated windows).

## Section 7 - Finishes

- 7.2(3) Finishes deemed inappropriate in high moisture areas (washrooms, shower areas, laundry, basements) can include wood paneling, wallpaper and inappropriate paint. Signs of significant mold growth would be an indication that materials are not capable of handling high moisture.

## Section 8 - Heating

- 8.1(1) When dealing with inadequate heat, consider cost-effective alternatives, such as improving ducting, sealing air leakage around openings and installing supplementary heating.
- 8.1(3) When replacing older deteriorated heating systems with new consideration towards installing high efficient appliances is strongly encouraged. Consideration towards heating demands, chimney use and flue sharing must be considered and addressed if systems are being altered.
- 8.2(3) Uncertified solid-fuel-burning appliances in good condition may be retained if they are acceptable to the local authority having jurisdiction and protection and clearances are maintained as outlined in CAN/CSA-B365-M91(R1998), Installation Code for Solid-Fuel-Burning Appliances and Equipment. In the absence of guidance from local building or fire authorities, a careful examination of the design, construction and condition of the appliance will be necessary. Local knowledge of satisfactory performance of similar appliances will be invaluable in determining acceptability. The clearances and protection required in the CAN/CSA-B365-M91(R1998) standard are based on an assumption of worst-case conditions and must be respected when uncertified appliances are retained.
- 8.3(5) A certified metal flue liner may be installed as a cost-effective alternative where the existing chimney has insufficient clearance from combustible materials and has an oversized flue. No reduction in clearances should be allowed with a metal flue liner even when it is surrounded with insulation. Data available at this time does not indicate any benefit from insulation.

For certified appliances, the manufacturer's instructions will permit a safe installation.

## Section 9 - Plumbing

### Potable Water

- 9.1(1) Water quality must meet local/provincial/territorial health or environmental authority, or in the absence of such standards, Health Canada's Guide on Drinking Water Standards (most recent edition). These standards are consistent with CMHC's Underwriting Policy.

Testing requirements would follow the applicable standard and, it is the clients' responsibility to obtain a professional opinion, from a private lab or other, on the quality of their water. In all cases CMHC shall refrain from providing an opinion on the potability of the water.

The purpose of the CMHC loan and any increase thereof is to provide financial assistance in the attempt to obtain potable water. CMHC has no control over the success or failure of efforts made.

- 9.2(1) When defective fixtures are being replaced with new fixtures, water conservation is encouraged. The use of low-flow toilets (6-litre flush), shower heads (9.5 L/min or less) and faucet aerators (except on utility sinks) is strongly recommended.

### Sections - 8, 9 and 10

It should be kept in mind that Band Councils are the authority having jurisdiction over band owned units on Indian Reserves. The Band Council is therefore responsible for requesting inspections, obtaining written requirements from the various agencies covering such aspects as sewage disposal, certificates accepting an installation of a building service or an existing service.

## Section 11 - Elevators

- 11.1(1) Eligibility is limited to major repairs to existing elevators or the replacement of the elevator where replacement is more economical than repair. Routine, ongoing maintenance is not eligible.

## Section 12 - Environmental Concerns

- 12.1(1) Buildings in flood risk areas as mapped by the authority having jurisdiction may be eligible for RRAP funding. The local requirements for this property may include some flood proofing measures or flood plain by-laws including flood construction levels, and setbacks from rivers, lakes and streams as dictated by the provincial or municipal authority. This also includes the definition of further undertakings that can restrict eligible repairs or additional construction measures for the property. Most of the provinces have entered into the National Flood Damage Reduction Program which dictates such requirements. Provinces that have not entered into this agreement shall adhere to the municipal or provincial requirements which ever applies to the area. More information about flood mapping and agreements specific to provinces can be found at Environment Canada.

- 12.2(1) Lead-based paint found in good condition to (2) generally does not constitute a health hazard to occupants. If areas that contain lead-based paint will be disturbed while the RRAP work is carried out, or are found to be in a poor condition (flaking or chalking), the costs of remediation are eligible for funding. The responsibility rests with the property owner for arranging for testing of paint. Where testing confirms that the lead content in the paint exceeds guidelines, property owners should follow, or direct contractors to follow, the advice in the CMHC publication Lead In Your Home (61941) on appropriate precautionary and cleanup measures.

Precautionary measures include, but are not limited to, isolating the area being renovated, isolating the ducts, providing adequate ventilation, and removing and re-installing furniture, draperies, carpets and books. If items cannot be removed, they should be sealed in plastic bags and lead dust should be thoroughly cleaned from the area when renovations are complete.

- 12.4(1) Where a human-made or naturally occurring environmental hazard is confirmed by recognized means, testing procedures or the authority having jurisdiction as threatening the health and safety of the occupant, remedial measures are eligible.

The owner may be requested to obtain an environmental site assessment (ESA). The CMHC publication An Introduction to Environmental Site Assessments, 62102, can help determine the process and stages involved in ESAs.

### Moisture and Mold

- 12.5(2) Identifying when mold growth results in a problem beyond the scope of regular maintenance, occupant neglect or house cleaning is the first step to ensuring a proper remediation. CMHC has numerous publications that provide valuable information in this regard. Identifying and addressing the cause of moisture and resulting mold problem is the key to a complete and successful remediation. When moisture/mold growth is directly related to mandatory repairs such as water damage caused by leaks from plumbing pipes, roofs, walls or foundations, the corrective measures shall include remediation and cleanup of all related damage. Where identifying the sources of moisture and related mold growth is beyond the experience and knowledge of the RRAP inspector, the services of a professional Indoor Air Quality (IAQ) investigator must be employed. Based on the findings of the IAQ professional, remediation measures related to mandatory work items and cleanup procedures beyond the scope of regular maintenance and house cleaning are eligible for RRAP funding. Mold resulting from a lack of house cleaning or occupant neglect is not eligible for RRAP funding.

# APPENDIX B - PUBLICATIONS REFERENCED

## **1. CMHC publications available from:**

Publications

Canada Mortgage and Housing Corporation

700 Montreal Road

Ottawa, Ontario

K1A 0P7

Or

Visit our website at [www.cmhc.ca](http://www.cmhc.ca)

## **2. National Building Code of Canada and the Supplement to the National Building Code of Canada**

**Available at a price from:**

National Research Council of Canada

1200 Montreal Road

Ottawa, Ontario

K1A 0R6

[www.irc.nrc-cnrc.gc.ca](http://www.irc.nrc-cnrc.gc.ca)

## **3. Canadian Standards Association - Standards**

**Available at a price from:**

Canadian Standards Association

5060 Spectrum Way

Mississauga, Ontario

L4W 5N6

[www.csa.ca](http://www.csa.ca)

## **4. Underwriters' Laboratories of Canada - Standards and lists of certified equipment and systems**

**Available at a price from:**

Underwriters' Laboratories of Canada

7 Underwriters Road

Toronto, Ontario

M1R 3B4

[www.ulc.ca](http://www.ulc.ca)

## **5. Warnock-Hersey Professional Services Ltd. - List of certified equipment and systems**

**Available at a price from:**

Warnock-Hersey Professional Services Ltd.

3210 American Drive

Mississauga, Ontario

L4V 1B3

[www.warnockhersey.com](http://www.warnockhersey.com)

## **6. Evaluation Listings and Evaluation Reports Canadian Construction Materials Centre (product and materials evaluations):**

**Available from:**

Institute for Research in Construction

National Research Council Canada

Building M-24, 1500 Montreal Road

Ottawa, Ontario

K1A 0R6

[www.ir.nrc-cnrc.gc.ca/ccmc](http://www.ir.nrc-cnrc.gc.ca/ccmc)

## **7. Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI)**

5045 Orbitor Drive

Building 11, Suite 300

Mississauga, Ontario

L4W 4Y4

[www.hrai.ca](http://www.hrai.ca)

## **8. Wood Energy Technology Transfer (WETT)**

365 Bloor Street East, Suite 1807

Toronto, Ontario

M4W 3L4

[www.wettinc.ca](http://www.wettinc.ca)

## **9. Home Ventilating Institute (HVI)**

1000 N Rand Road

Suite 214

Wauconda, IL

60084 U.S.A.

[www.hvi.org](http://www.hvi.org)

Visit our home page at [www.cmhc.ca](http://www.cmhc.ca)

