**703.10.2 (IPC 1303.10.2) Inlets.** Storage tank inlets shall be designed to introduce collected rainwater into the tank with minimum turbulence, and shall be located and designed to avoid agitating the contents of the storage tank.

**703.10.3 (IPC 1303.10.3) Outlets.** Outlets shall be located at least 4 inches (102 mm) above the bottom of the storage tank and shall not skim water from the surface.

**703.11 (IPC 1303.11) Valves.** Valves shall be supplied on rainwater collection and conveyance systems in accordance with Section 703.11.1 (IPC 1303.11.1).

**703.11.1 (IPC 1303.11.1) Backwater valve.** Backwater valves shall be installed on each overflow and tank drain pipe. Backwater valves shall be in accordance with Section (IPC 715).

**703.12 (IPC 1303.12) Pumping and control system.** Mechanical equipment including pumps, valves and filters shall be easily accessible and removable in order to perform repair, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be appropriate for the application and in accordance with Section (IPC 604).

**703.13 (IPC 1303.13) Water pressure-reducing valve or regulator.** Where the water pressure supplied by the pumping system exceeds 80 psi (552 kPa) static, a pressure-reducing valve shall be installed to reduce the pressure in the rainwater distribution system piping to 80 psi (552 kPa) static or less. Pressure-reducing valves shall be specified and installed in accordance with Section (IPC 604.8).

**703.14 (IPC 1303.14) Distribution pipe.** Distribution piping utilized in rainwater collection and conveyance systems shall comply with Sections 703.14.1 (IPC 1303.14.1) through 703.14.3 (IPC 1303.14.3).

**Exception:** Irrigation piping located outside of the building and downstream of a backflow preventer.

**703.14.1 (IPC 1303.14.1) Materials, joints and connections.** Distribution piping shall conform to the standards and require-ments specified in Section (IPC 605) for nonpotable water.

**703.14.2 (IPC 1303.14.2) Design.** Distribution piping systems shall be designed and sized in accordance with Section (IPC 604) for the intended application.

**703.14.3 (IPC 1303.14.3) Marking.** Nonpotable rainwater distribution piping labeling and marking shall comply with Section (IPC 608.8).

**703.15 (IPC 1303.15) Tests and inspections.** Tests and inspections shall be performed in accordance with Sections 703.15.1 (IPC 1303.15.1) through 703.15.8 (IPC 1303.15.8).

**703.15.1 (IPC 1303.15.1) Roof gutter inspection and test.** Roof gutters shall be inspected to verify that the installation and slope is in accordance with Section 703.5.1 (IPC 1303.5.1). Gutters shall be tested by pouring not less than 1 gallon (3.8 L) of water into the end of the gutter opposite the collection point. The gutter being tested shall not leak and shall not retain standing water.

**703.15.2 (IPC 1303.15.2) Roofwasher test.** Roofwashers shall be tested by introducing water into the gutters. Proper diversion of the first quantity of water in accordance with the requirements of Section 703.4 (IPC 1303.4) shall be verified.

**703.15.3 (IPC 1303.15.3) Collection pipe and vent test.** Drain, waste and vent piping used for rainwater collection and conveyance systems shall be tested in accordance with Section (IPC 312).

**703.15.4 (IPC 1303.15.4) Storage tank test.** Storage tanks shall be tested in accordance with Section 701.9.11 (IPC 1301.9.11).

**703.15.5 (IPC 1303.15.5) Water supply system test.** The testing of makeup water supply piping and distribution piping shall be conducted in accordance with Section (IPC 312.5).

**703.15.6 (IPC 1303.15.6) Inspection and testing of backflow prevention assemblies.** The testing of backflow preventers and backwater valves shall be conducted in accordance with Section (IPC 312.10).

**703.15.7 (IPC 1303.15.7) Inspection of vermin and insect protection.** Inlets and vents to the system shall be inspected to verify that each is protected to prevent the entrance of insects and vermin into the storage tank and piping systems in accordance with Section 701.7 (IPC 1301.7).

**703.15.8 (IPC 1303.15.8) Water quality test.** The quality of the water for the intended application shall be verified at the point of use in accordance with the requirements of the jurisdiction. Except where site conditions as specified in ASTM E2727 affect the rainwater, collected rainwater shall be considered to have the parameters indicated in Table 703.15.8 (IPC Table 1303.15.8).

**703.16 (IPC 1303.16) Operation and maintenance manuals.** Operation and maintenance manuals shall be supplied with rainwater collection and conveyance systems in accordance with Sections 703.16.1 (IPC 1303.16.1) through 703.16.4 (IPC 1303.16.4).

**703.16.1 (IPC 1303.16.1) Manual.** A detailed operations and maintenance manual shall be supplied in hardcopy form with all systems.

**703.16.2 (IPC 1303.16.2) Schematics.** The manual shall include a detailed system schematic, and locations and a list of all system components, including manufacturer and model number.

**703.16.3 (IPC 1303.16.3) Maintenance procedures.** The manual shall provide a maintenance schedule and procedures for all system components requiring periodic maintenance. Consumable parts, including filters, shall be noted along with part numbers.

**703.16.4 (IPC 1303.16.4) Operations procedures.** The manual shall include system startup and shutdown procedures, as well as detailed operating procedures.

## SECTION 704 (IPC 1304)
## RECLAIMED WATER SYSTEMS

**704.1 (IPC 1304.1) General.** The provisions of this section shall govern the construction, installation, alteration and repair of systems supplying nonpotable reclaimed water.

**704.2 (IPC 1304.2) Water pressure-reducing valve or regulator.** Where the reclaimed water pressure supplied to the building exceeds 80 psi (552 kPa) static, a pressure-reducing valve shall be installed to reduce the pressure in the reclaimed water distribution system piping to 80 psi (552 kPa) static or less. Pressure-reducing valves shall be specified and installed in accordance with Section (IPC 604.8).

**704.3 (IPC 1304.3) Reclaimed water systems.** The design of the reclaimed water systems shall conform to ASTM E2635 and *accepted engineering practice*.

**704.3.1 (IPC 1304.3.1) Distribution pipe.** Distribution piping shall comply with Sections 704.3.1.1 (IPC 1304.3.1.1) through 704.3.1.3 (IPC 1304.3.1.3).

**Exception:** Irrigation piping located outside of the building and downstream of a backflow preventer.

**704.3.1.1 (IPC 1304.3.1.1) Materials, joints and connections.** Distribution piping conveying reclaimed water shall conform to standards and requirements specified in Section (IPC 605) for nonpotable water.

**704.3.1.2 (IPC 1304.3.1.2) Design.** Distribution piping systems shall be designed and sized in accordance with Section (IPC 604) for the intended application.

**704.3.1.3 (IPC 1304.3.1.3) Labeling and marking.** Nonpotable rainwater distribution piping labeling and marking shall comply with Section (IPC 608.8).

**704.4 (IPC 1304.4) Tests and inspections.** Tests and inspections shall be performed in accordance with Sections 704.4.1 (IPC 1304.4.1) and 704.4.2 (IPC 1304.4.2).

**704.4.1 (IPC 1304.4.1) Water supply system test.** The testing of makeup water supply piping and reclaimed water distribution piping shall be conducted in accordance with Section (IPC 312.5).

**704.4.2 (IPC 1304.4.2) Inspection and testing of backflow prevention assemblies.** The testing of backflow preventers shall be conducted in accordance with Section (IPC 312.10).

**TABLE 703.15.8 (IPC TABLE 1303.15.8)**
**RAINWATER QUALITY**

| PARAMETER | VALUE |
|---|---|
| pH | 6.0-7.0 |
| BOD | Not greater than 10 mg/L |
| NTU | Not greater than 2 |
| Fecal coliform | No detectable fecal coli in 100 mL |
| Sodium | No detectable sodium in 100 mL |
| Chlorine | No detectable chlorine in 100 mL |
| Enteroviruses | No detectable enteroviruses in 100 mL |

# CHAPTER 8

# COMMISSIONING, INSPECTIONS, OPERATION AND MAINTENANCE

## SECTION 801 (IgCC 901) GENERAL

**801.1 (IgCC 901.1) Scope.** The provisions of this chapter contain pre-certificate of occupancy commissioning, inspection, special inspection, operation and maintenance requirements for buildings and building sites, including information for building owners and maintenance personnel with regard to related best operating and maintenance requirements.

**801.2 (IgCC 901.2) Operations and maintenance.** Buildings, structures and building sites and parts thereof shall be operated and maintained in accordance with the code applicable at the time of construction. The requirements of this chapter shall not provide the basis for removal or abrogation of fire protection or safety systems and devices in existing buildings or structures or on existing building sites.

## SECTION 802 (IgCC 902) SPECIAL INSPECTION AND COMMISSIONING

**802.1 (IgCC 902.1) General.** The construction documents shall indicate that the registered design professional in responsible charge or approved agency shall perform special inspection and commissioning during construction and after issuance of the certificate of occupancy as required by this code and Tables 802.1 (IgCC Table 902.1) and 802.2 (IgCC Table 902.2). Where a table specifies that special inspection or commissioning is to be done on a periodic post-certificate of occupancy basis, the registered design professional in responsible charge shall provide a schedule with the construction documents.

**802.1.1 (IgCC 902.1.1) Approved agencies.** Approved agencies shall comply with Sections 802.1.1.1 (IgCC 902.1.1.1) through 802.1.1.4 (IgCC 902.1.1.4).

**802.1.1.1 (IgCC 902.1.1.1) Qualification of approved agencies.** An approved agency shall be qualified, demonstrate competence and provide all of the information necessary for the *code official* to determine that the agency meets the applicable requirements. The code official is permitted to be the approved agency. The registered design professional in responsible charge and the engineers of record involved in the design of the project shall be permitted to act as the approved agency provided those personnel meet the qualification requirements of this section to the satisfaction of the code official.

**802.1.1.2 (IgCC 902.1.1.2) Independence.** Approved agencies shall be objective, competent and independent from the contractor responsible for the work being inspected. The agency shall also disclose possible conflicts of interest so that objectivity can be confirmed.

**802.1.1.3 (IgCC 902.1.1.3) Equipment.** Approved agencies shall have adequate equipment to perform the required commissioning. The equipment shall be periodically calibrated in accordance with the manufacturer's specifications.

**802.1.1.4 (IgCC 902.1.1.4) Personnel.** Approved agencies shall employ experienced personnel educated in conducting, supervising and evaluating tests, inspections and commissioning.

**802.2 (IgCC 902.2) The commissioning process.** The commissioning process shall consist of a sequence of activities,

**TABLE 802.1 (IgCC TABLE 902.1)**
**COMMISSIONING AND INSPECTION PLAN REQUIREMENTS**

| CONSTRUCTION OR SYSTEM REQUIRING VERIFICATION | METHOD | OCCURRENCE | SECTION/ REFERENCED STANDARD |
|---|---|---|---|
| **Chapter 4: Site Development and Land Use** | | | |
| Stormwater management system operation | Field inspection and report | During construction | 401.1 (IgCC 403.1) |
| **Chapter 5 (IgCC Chapter 6): Energy Conservation, Efficiency and $CO_2e$ Emission Reduction** | | | |
| Energy consumption, monitoring, targeting and reporting | | | |
| a. Monitoring system | Commissioning, inspection, verification and report | During construction and prior to occupancy | IgCC 603 |
| Mechanical systems completion – all buildings | | | |
| b. Hydronic system balancing – provide a means for system balancing | Commissioning, inspection and report | During construction and prior to occupancy | IgCC 611.7.1 and 611.7.2, and through reference to IECC |

For SI: 1 square foot = 0.0929 $m^2$.

**TABLE 802.2 (IgCC TABLE 902.2)**
**REQUIRED SPECIAL INSPECTIONS**

| CONSTRUCTION OR SYSTEM REQUIRING SPECIAL INSPECTION | METHOD AND FREQUENCY | SECTION |
|---|---|---|
| Landscape irrigation systems | Periodic inspection during installation | 402.1 (IgCC 404.1) and IgCC 405.1.1 |

each with acceptance criteria as applicable, and shall conform to industry commissioning standards.

**802.3 (IgCC 902.3) The commissioning plan.** A commissioning plan shall be developed by a registered design professional or approved agency for all systems to be commissioned or inspected and shall include all of the following:

1. An overview of the commissioning process developed specifically for the project.
2. The roles and responsibilities for the commissioning and inspection providers throughout the project. The responsibilities shall delineate the duties of the commissioning providers, inspectors and other agencies.
3. Documentation of communication channels including the distribution of the commissioning plan, logs and reports during the design and construction process.
4. A detailed description of commissioning process activities, a schedule of activities, and the list of operations, systems and assemblies that will be commissioned or inspected. Performance criteria shall be included where not shown on the construction documents.
5. Project design documentation and submittal review procedures and reports.
6. Inspection checklists and testing forms, issues and resolution log, and commissioning and inspection process information.
7. The procedures to follow where commissioning evaluation does not meet the project requirements.
8. Required reports including format, approvals and distribution.

**802.4 (IgCC 902.4) Pre-certificate of occupancy report requirement.** The approved agency shall keep records of the pre-certificate of occupancy special inspection and commissioning required by Tables 802.1 (IgCC Table 902.1) and 802.2 (IgCC Table 902.2). The approved agency shall issue logs and reports to the owner or the owner's agent and the registered design professional in responsible charge and, upon request, to the *code official*. Reports shall indicate that work was or was not completed in conformance to *approved* construction documents. Discrepancies shall be brought to the attention of the contractor for correction. Where discrepancies are not corrected, they shall be brought to the attention of the owner or the owner's authorized agent, to the registered design professional in responsible charge and, where requested, to the code official, prior to the completion of that phase of the work. Prior to the issuance of a Certificate of Occupancy, a pre-certificate of occupancy report shall be submitted to and accepted by the building owner or the owner's authorized agent and, where requested, to the *code official*.

**802.4.1 (IgCC 902.4.1) Pre-certificate of occupancy commissioning report.** The pre-certificate of occupancy commissioning report shall include the following:

1. Performance of commissioned operations, equipment, systems and assemblies.
2. Issue logs including itemization of deficiencies found during testing and commissioning required by this section that has not been corrected at the time of the preparation of this report.
3. Deferred tests that cannot be performed at the time of report preparation because of climatic or other conditions.
4. Climatic and other conditions required for performance of the deferred tests and a plan for their completion.

**802.5 (IgCC 902.5) Final commissioning report.** The commissioning activities included in the commissioning plan, including delayed testing, shall be accomplished and documented before project completion. Equipment, systems and assemblies repaired or replaced and adjustments to calibration and settings, shall be documented in final sequence of operation and in the systems manual. This documentation shall be provided to and accepted by the building owner or the owner's authorized agent and shall be made available to the *code official* upon request.

**802.5.1 (IgCC 902.5.1) Final commissioning report.** A final commissioning report shall be submitted to the owner or the owners authorized agent prior to project completion and shall include the following:

1. A copy of the final commissioning plan, including functional and performance test procedures used during the commissioning process and measurable criteria for test acceptance.
2. A copy of the final *owner's project requirements*, *basis of design*, and design and submittal reviews as required by the commissioning plan.
3. The results of all evaluations, start-up data, functional and performance tests, and reports by suppliers, contractors, inspectors, and commissioning providers. Reports demonstrating compliance with the requirements of Table 802.1 (IgCC Table 902.1) shall be included.
4. Issue logs and disposition of all deficiencies found during testing, including details of corrective measures used or proposed.
5. A resolution plan approved by the owner or the owner's authorized agent identifying the issues that are unresolved or incomplete at the end of the project.

**802.6 (IgCC 902.6) Systems manual.** A complete systems manual shall be submitted to the owner or the owner's authorized agent prior to project completion. Materials in Item 1 to Section 802.6.2 (IgCC 902.6.2), except final record documents that are not yet available, and materials in Items 2 and 3 to Section 802.6.2 (IgCC 902.6.2), shall be provided. At least one copy of the systems manual shall be in the possession of the owner or the owner's authorized agent and at least one additional copy shall remain with the building throughout the life of the facility.

**802.6.1 (IgCC 902.6.1) Updates.** The systems manual shall be updated and maintained by the owner or the owner's authorized agent for the life of the building such that the building information is current.

**802.6.2 (IgCC 902.6.2) Required information.** The cover sheet for the systems manual shall indicate that at least one copy of the manual shall be in the possession of the owner or the owner's authorized agent and at least one copy shall remain with the building throughout the life of the facility. The systems manual shall include the following:

1. Facility design and construction, including:
    1.1. Owners project requirements or current facility requirements and basis of design available for the project.
    1.2. Construction record documents in accordance with Section 802.7 (IgCC 902.7), including specifications and approved submittals.
2. Facility, systems and assemblies information including:
    2.1. Manufacturer's operation and maintenance data for installed equipment systems and assemblies.
    2.2. Warranties and certificate of occupancy.
    2.3. Contractor and supplier listing and contact information.
3. A facility operations guide, including an operating plan, building and equipment operating schedules, setpoints and ranges, sequences of operation, system and equipment limitations and emergency procedures.
4. Where training is provided, training plans, materials and records shall be provided.
5. A final commissioning report in accordance with Section 802.5.1 (IgCC 902.5.1).

**802.7 (IgCC 902.7) Record documents.** The cover sheet of the record documents for the project shall clearly indicate that at least one copy of the record documents shall be in the possession of the owner or the owner's authorized agent and at least one copy shall remain in the building. The building owner shall file a letter with the code official at the completion of the project certifying the receipt of the record documents, the building systems manual and the commissioning documents. The record documents shall include all of the following:

1. Copies of the approved construction documents, including plans and specifications.
2. Record plans, specifications, approved submittals and coordination drawings indicating the actual locations of equipment, systems and assemblies such as piping, ductwork, valves, controls, equipment, access panels, electrical equipment, plumbing equipment, lighting and other operating components and systems where they are visible or concealed, or are installed in locations other than those indicated on the approved construction documents.
3. For sites that have previously been a brownfield or that have required environmental corrective action, remediation or restoration at the federal, state or local level, copies of engineering and institutional control information shall be provided.
4. Building operations and maintenance documents in accordance with Section 803 (IgCC 903).

## SECTION 803 (IgCC 903)
## BUILDING OPERATIONS AND MAINTENANCE DOCUMENTATION

**803.1 (IgCC 903.1) Building operations and maintenance documents.** The building operations and maintenance documents shall consist of manufacturer's information, specifications and recommendations, programming procedures and data points, narratives, and other means of illustrating to the owner how the building, site, equipment and systems are intended to be installed, maintained and operated.

**803.2 (IgCC 903.2) Required information.** The following information shall be included in the materials, as applicable to the specific project:

1. Operations and maintenance manuals for equipment, products and systems installed under or related to the provisions of Chapter 4 (IgCC Chapter 4), including, but not limited to, the following, as applicable:
    1.1. Natural resource protections and setbacks.
    1.2. Landscape or tree management plans.
2. Operations and maintenance documents for materials, products, assemblies and systems installed under or related to the provisions of this code for material resource conservation in accordance with (IgCC Chapter 5), including, but not limited to, the following, as applicable:
    2.1. Care and maintenance instructions and recommended replacement schedule for flooring, including, but not limited to, carpeting, walk-off mats and tile.
    2.2. Care and maintenance instructions for natural materials including, but not limited to, wood, bio-based materials and stone.
    2.3. Available manufacturer's instructions on maintenance for:
        2.3.1. Exterior wall finishes.

2.3.2. Exterior doors, windows and skylights.

2.4. Information and recommended schedule for required routine maintenance measures, including, but not limited to, painting and refinishing.

3. Operations and maintenance documents for equipment, products and systems installed under or related to the provisions of this code for energy conservation in accordance with Chapter 5 (IgCC Chapter 6), including, but not limited to, the following:

3.1. Heating, ventilating and air-conditioning systems including:

3.1.1. Recommended equipment maintenance schedule and procedures.

3.1.2. Air filters and fluid filters, including recommended replacement schedule and materials.

3.2. Domestic hot water systems including performance criteria and controls.

3.3. *Building thermal envelope* systems including:

3.3.1. Glazing systems inspection schedule.

3.3.2. Performance criteria for replacements and repairs.

3.3.3. Information and recommended schedule on required routine maintenance measures, including, but not limited to, sealants, mortar joints and screens.

3.3.4. Roof covering inspection schedule.

3.4. Electrical and lighting systems including:

3.4.1. Luminaire maintenance and cleaning plan.

3.4.2. Lamp schedule, recommended relamping plan, and lamp disposal information.

3.5. Solar photovoltaic systems.

4. Operations and maintenance documents for equipment, products and systems installed under or related to the provisions of this code for water conservation in accordance with Chapter 6 (IgCC Chapter 7), including, but not limited to water-regulating devices including faucets and valves, and water-heating systems maintenance procedures.

5. Operations and maintenance documents for equipment products and systems under or related to the provisions of this code for indoor environmental quality in accordance with (IgCC Chapter 8), including, but not limited to, the following:

5.1. Humidification/dehumidification systems maintenance.

5.2. Green cleaning products, procedures and techniques.

# CHAPTER 9
# EXISTING BUILDINGS

## SECTION 901 (IgCC 1001) GENERAL

**901.1 (IgCC 1001.1) Scope.** The provisions of this chapter shall control the alteration, repair, addition, maintenance and operation and change of occupancy of existing buildings and structures. Relocated existing buildings shall comply with Chapters 4 (IgCC Chapter 4) and 9 (IgCC Chapter 10). Existing building sites shall comply with Chapter (IgCC 11).

**901.2 (IgCC 1001.2) Building operation and maintenance.** Previously commissioned buildings and parts thereof, shall be operated and maintained in conformance to the code edition applicable at the time of construction. The owner shall be responsible for the operation and maintenance of existing buildings. The requirements of this chapter shall not provide the basis for removal or abrogation of fire protection and safety systems and devices in existing structures.

**901.3 (IgCC 1001.3) Compliance.** Alterations, repairs, additions and changes of occupancy to existing structures shall comply with the provisions of this chapter. Where such permitted work other than a change of occupancy is undertaken, compliance with Sections (IgCC 1001.3.1), 901.3.1 (IgCC 1001.3.2) and 901.3.2 (IgCC 1001.3.3) shall be required.

**Exceptions:**

1. Where the application of the requirements of Sections (IgCC 1001.3.1), 901.3.1 (IgCC 1001.3.2) and 901.3.2 (IgCC 1001.3.3) to the unaltered spaces are determined by the code official to be infeasible based upon the existing configuration of spaces.
2. Materials, assemblies and components regulated by Sections (IgCC 1001.3.1), 901.3.1 (IgCC 1001.3.2) and 901.3.2 (IgCC 1001.3.3) that are dependent upon properties of other concealed materials, assemblies or system components to function properly and where the properties of the concealed materials, assemblies or components are unknown or insufficient and will not be revealed during construction.
3. Where a tenant in a multi-tenant building does not have control within that tenant space of a complete system or item, compliance for that complete system or item shall not be required.

**901.3.1 (IgCC 1001.3.2) Service water systems.** Defective hot and cold water piping and equipment within service water systems shall be repaired or replaced as follows:

1. The water supply shall meet the minimum flow and temperature requirements of the *International Plumbing Code* or the code in force at the time the building was constructed.
2. Leaking pipes, valves and equipment shall be repaired or replaced.

**901.3.2 (IgCC 1001.3.3) Motor-driven equipment.** Leaking equipment in compressed air or pumped water systems shall be repaired or replaced.

**901.4 (IgCC 1001.4) Existing materials, assemblies, configurations and systems.** Materials, assemblies, configurations and systems already in use that conform to requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the *code official* to be dangerous to the environment, life, health or safety. Where such conditions are determined to be dangerous to the environment, life, health or safety, they shall be mitigated or made safe.

## SECTION 902 (IgCC 1002) ADDITIONS

**902.1 (IgCC 1002.1) General.** Additions to any site-built building or structure shall comply with the requirements of this code for new construction. Any addition to a modular building that is relocated within or into a jurisdiction that is in compliance with requirements or approvals in effect at the time of its construction shall comply with Section 902 (IgCC 1002) of this code.

## SECTION 903 (IgCC 1003) ALTERATIONS TO EXISTING BUILDINGS

**903.1 (IgCC 1003.1) General.** Alterations to existing buildings and building systems shall be in accordance with the provisions of this code for those assemblies, systems and components being altered. Unaltered portions, components and systems of the building, including relocated modular buildings, shall be in accordance with the provisions of the code in force at the time of their construction. Alterations shall not be made to an existing building or structure that will cause the existing building or structure to be in violation of any provisions of this code.

**903.2 (IgCC 1003.2) Requirements for alterations.** Alterations of portions or components of buildings shall comply with Sections 903.1 (IgCC 1001.3) and 903.2.1 (IgCC 1003.2.1), (IgCC 1003.2.2), 903.2.2 (IgCC 1003.2.3), (IgCC 1003.2.4), 903.2.3 (IgCC 1003.2.5), and (IgCC 1003.2.6 and IgCC 1003.2.7).

**Exceptions:**

1. The total cost of improvements required by Sections 903.2.1 (IgCC 1003.2.1), (IgCC 1003.2.2), 903.2.2 (IgCC 1003.2.3), (IgCC 1003.2.4), 903.2.3 (IgCC 1003.2.5), and (IgCC 1003.2.6 and IgCC 1003.2.7) shall not be required to exceed 10 percent of the costs of the alterations exclusive of land and building site improvements. The costs of alterations shall

include costs related to Section 901.3 (IgCC 1001.3), but shall not limit its application.

2. This section shall not require compliance that exceeds that required for systems regulated by Chapters 5 (IgCC Chapter 6), 6 (IgCC Chapter 7) and 7 (IgCC Chapter 8).
3. Materials, assemblies and components are not required to comply with Sections 903.2.1 (IgCC 1003.2.1), (IgCC 1003.2.2), 903.2.2 (IgCC 1003.2.3), (IgCC 1003.2.4), 903.2.3 (IgCC 1003.2.5), and (IgCC 1003.2.6 and IgCC 1003.2.7) where they are dependent upon properties of other concealed materials, assemblies or system components to function properly and where the materials, assemblies or components will not be revealed during construction.
4. Alterations are not required to comply with the requirements of Sections 903.2.1 (IgCC 1003.2.1), (IgCC 1003.2.2), 903.2.2 (IgCC 1003.2.3), (IgCC 1003.2.4), 903.2.3 (IgCC 1003.2.5), and (IgCC 1003.2.6 and IgCC 1003.2.7) where the *code official* determines the alterations to be *infeasible* based upon the existing configuration of spaces, unless those spaces or portions thereof will be reconfigured as part of the alteration project.
5. Where a tenant in a multi-tenant building does not have control within that tenant space of a complete system or item, compliance for that complete system or item shall not be required.
6. Where the total cost of the alteration to the existing building is less than the percent of the value of the building as indicated in Table 1003.2, compliance with Sections 903.2.1 (IgCC 1003.2.1), (IgCC 1003.2.2), 903.2.2 (IgCC 1003.2.3), (IgCC 1003.2.4), 903.2.3 (IgCC 1003.2.5), and (IgCC 1003.2.6 and IgCC 1003.2.7) shall not be required. The percent value of the building shall be determined by the original construction cost plus completed improvement costs of the building.

**TABLE 903.2 (IgCC TABLE 1003.2)**
**MINIMUM VALUES FOR ADDITIONAL REQUIREMENTS TO ALTERATIONS**

| BUILDING SIZE (square feet) | PERCENT OF BUILDING VALUE |
|---|---|
| Less than 5,000 | 20 |
| 5,000 – 50,000 | 10 |
| 50,001 – 500,000 | 1 |
| Over 500,000 | 0 |

For SI: 1 square foot = 0.0929 $m^2$.

**903.2.1 (IgCC 1003.2.1) Metering devices.** Dedicated individual utility or private metering devices that measure and verify energy or water use within the building or space shall be provided for at least one of the following for each type of energy used in the building:

1. Water consumption for individual tenant spaces.
2. Water consumption for landscape irrigation.
3. Water consumption for heating and cooling equipment.
4. Water consumption for building process systems and equipment.

**Exception:** Metering devices are not required for buildings that are less than 25,000 square feet (2323 $m^2$) in *total building floor area*.

**903.2.2 (IgCC 1003.2.3) Service water systems.** Service water systems and equipment shall be in accordance with the following:

1. Water heater and hot water storage tanks shall have a combined minimum total of external and internal insulation value of R-16.
2. Showerhead, toilet, urinal and faucet flow rates shall be in accordance with this code.

**903.2.3 (IgCC 1003.2.5) Swimming pools and spas.** Swimming pools and spas and their equipment shall be in accordance with the following:

1. Outdoor heated pools and outdoor permanent spas shall be provided with a vapor retardant cover or other approved vapor retardant means in accordance with Section 105.1 (IgCC [A] 105.1).

   **Exception:** Where more than 70 percent of the energy for heating, computed over an operating season, is from site-recovered energy such as from a heat pump or solar energy source, covers or other vapor retardant means shall not be required.
2. Backwash systems shall be based on pressure drop and shall not be based on a timer.
3. Pool and spa recirculation pumps shall be under timeclock control.

   **Exception:** Filtration pumps where the public health standard requires 24-hour pump operation.
4. Heaters shall have been cleaned and tuned for efficiency within one year prior to the alteration. Where this has not been done, the heaters shall be cleaned and tuned as part of the alteration work.

## SECTION 904 (IgCC 1004)
## CHANGE OF OCCUPANCY

**904.1 (IgCC 1004.1) Change of occupancy.** Where a change in occupancy of a building or tenant space places it in a different group of the same occupancy classification or in a different occupancy classification, as determined in accordance with the provisions of the *International Building Code*, compliance with Sections (IgCC 1001.3.1), 901.3.1 (IgCC 1001.3.2) and 901.3.2 (IgCC 1001.3.3) shall be required.

**Exception:** Historic buildings in accordance with Section 905 (IgCC 1005) shall not be required to comply with Section 904 (IgCC 1004).

## SECTION 905 (IgCC 1005)
## HISTORIC BUILDINGS

**905.1 (IgCC 1005.1) Historic buildings.** Provisions of this code relating to the construction, repair, alteration, restoration and movement of structures, and change of occupancy, shall not be mandatory for historic buildings provided that a report has been submitted to the code official and signed by a registered design professional, or a representative of the State Historic Preservation Office or the historic preservation authority having jurisdiction, demonstrating that compliance with that provision would threaten, degrade or destroy the historic form, fabric or function of the building.