



## Fire Inspector I & II

### CHAPTER ONE INTRODUCTION



<b>Slide 1</b>	<p>Welcome to the Fire Inspector 1 and 2 Course. This program was developed by FireWise Consulting and <b><i>meets or exceeds the job performance requirements (JPR) of the National Fire Protection Association (NFPA) 1031 Fire Inspector levels 1 &amp; 2.</i></b> We decided to offer fire inspector 1 &amp; 2 in one training program because the Job Performance Requirements (JPR), skills and knowledge required by the two levels contain a significant degree of crossover and can easily be combined into one training program.</p> <p>The resources used in the development of this program are: Jones and Bartlett’s, Fire Inspector, Principles and Practices, First Edition Revised, IFSTA, Fire Inspector and Code Enforcement, Eighth Edition, the National Fire Code of Canada, 2020 Edition, the National Building Code of Canada 2020 Edition, Building and Fire Codes adopted by the Provinces in Canada and various publications referenced in the Canadian codes.</p>
<b>Slide 2</b>	<p>Why do we do inspections? You should already be aware of and appreciate the value of an effective Fire Prevention Program. As part of the Fire Prevention Program, fire inspections can result in fewer fires, fewer fire injuries and deaths, and a significant reduction in property losses due to fires.</p> <p>They make your community a safer place to live, work and play. Prevention Programs should also make firefighting operations safer should a fire occur, by identifying and eliminating fire hazards and minimizing the spread of fire.</p> <p>Fire inspectors provide a valuable service to their department, the building owners and occupiers, and the community. Imagine a community with a single major employer like a manufacturing plant. If that plant burns down what happens to the community?</p>
<b>Slide 3</b>	<p>What is a fire inspection?</p> <p>A fire inspection is a visual inspection of a building and property to determine if it complies with the regulations, codes and standards of the jurisdiction. The policy of most jurisdictions is one where not all buildings must meet current code standards, but they must provide an acceptable level of fire and life safety as determined by a competent fire official.</p> <p>On a daily basis, fire inspectors visit public buildings like apartments, condominiums, office buildings, malls, and commercial business to ensure they are safe from fire, and that any fire protection systems installed are kept up to date, and serviced regularly. Public buildings also include other occupancies such as warehouses, factories, mills, schools, hospitals, theaters, churches, community halls, or any building other than a private dwelling.</p>

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<p><b>Slide 4</b></p>	<p>To achieve this, each inspector is required to have a working knowledge of the current editions of the applicable fire and building codes and other documents reference in those codes as well as local bylaws and policies.</p> <p>Inspections are performed on complaint or as a regular service to identify and correct fire hazards and to educate building owners and occupants about fire safety. Many communities are required by legislation or local policy to provide a regular system of fire safety inspections of public buildings in their jurisdiction. In most cases the responsibility to provide the inspection service is delegated to the fire department.</p>
<p><b>Slide 5</b></p>	<p>As well as ensure that the building is safe for the occupants, employees and the public, fire inspections provide an opportunity to educate business owners on how to best protect their property, employees and customers.</p> <p>Fire prevention is much cheaper than responding to real emergencies. Inspections also provide the opportunity to update information about the building such as after hour emergency contacts, changes in use and any special hazards a building may have.</p> <p>Usually dwelling units are excluded from fire inspection programs. The National Fire Code defines a dwelling unit as <i>“a suite operated as a housekeeping unit, used or intended to be used by one or more persons and usually containing cooking, eating, living, sleeping and sanitary facilities”</i>.</p>
<p><b>Slide 6</b></p>	<p>Fire inspection training programs often refer to the three “E’s” of fire prevention: Education, Engineering and Enforcement.</p> <p>The first objective of this program is to provide the knowledge and skills to adequately assess the fire safety of a building. Once you have completed this program you will be capable and confident to conduct a fire safety Inspection of buildings in your community and/or know when to pass the inspection on to more qualified and experienced fire prevention specialists.</p> <p>A second but equally important objective of this course is to provide you with the knowledge and resources required to educate building owners and occupants about their responsibilities for the fire safety of their buildings. By helping building owners meet their responsibilities, you are serving the whole community.</p>
<p><b>Slide 7</b></p>	<p>Now let's take a closer look at the three E's.</p> <p>Education can influence human behavior by raising awareness, providing information and knowledge and encouraging the desired behavior. If people</p>

	<p>know what fire hazards are and how to reduce or eliminate them, the community will be safer.</p> <p>Engineering involves changes in the physical environment. It could involve changes to the design of the building caused by maintenance, repair or renovations, or changes in safety systems such as fire alarm systems, sprinklers, or fire separations. This will be discussed in much greater details as we go through the program.</p> <p>Enforcement is usually considered a last resort when the building owner won't or can't provide an acceptable level of fire safety in the building. However, code enforcement is just another tool in the toolbox for the fire inspector to use in appropriate circumstances. For example, you come across an older building that has multiple fire safety deficiencies and the owner is at a loss as to where to start in trying to provide an acceptable level of life safety. The building is small and does not require a sprinkler system by code, but you think that installing a sprinkler may provide the level of protection you seek. You could issue an Order against the building to bring it to current code standard and encourage the owner to Appeal the Order. In that way, the Appeal Decision by the authority having jurisdiction will dictate what is required for the building to meet an acceptable level of fire and life safety.</p>
<b>Slide 8</b>	<p>For example, you come across an older building that has multiple fire safety deficiencies and the owner is at a loss as to where to start in trying to provide an acceptable level of life safety. The building is small and does not require a sprinkler system by code, but you think that installing a sprinkler may provide the level of protection you seek. You could issue an Order against the building to bring it to current code standard and encourage the owner to Appeal the Order. In that way, the Appeal Decision by the authority having jurisdiction will dictate what is required for the building to meet an acceptable level of fire and life safety.</p>
<b>Slide 9</b>	<p>The size and resources of the community dictate the delivery model for fire prevention programs. As approximately 80 percent of all fire departments are volunteer or paid on call, many of them don't have the human resources to deliver fire prevention programs. For these departments, some limited programs may be delivered by department members or in some cases fire prevention programs and services are delivered by other employees like building inspectors or bylaw enforcement staff or the service may be contracted out to third parties.</p>

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	<p>Larger departments may have full time fire prevention and public education folks that deliver these programs. In some communities with career firefighters, Company Inspections are performed by the on-duty crews. These usually target low-risk, low-occupant load buildings that make up about 70% of the public buildings in the community.</p> <p>In the end, the local governing body responsible for fire protection ultimately decides on the level and type of service provided to the community based on available resources.</p>
<b>Slide 10</b>	<p>Fire inspectors may take on a variety of roles as they work through their careers. For example, many jurisdictions have Chief Fire Prevention Officers or Fire Marshals. These people usually oversee the operations of the fire prevention branch which may have multiple employees. They may also be responsible for fire investigations to determine the origin and cause of fires that occur in their jurisdiction. Some departments also employ fire and life safety educators whose role it is to educate the public about fire safety and prevention. Some larger departments may also employ fire protection engineers to review plans, and work with building officials and building owners to ensure that the building and its fire protection systems meet code and function appropriately.</p>
<b>Slide 11</b>	<p>Fire prevention programs often start with Company Inspections and progress to Fire Code and Building Code Compliance Inspections. Company Inspections are usually done by firefighters who can do basic inspections but Fire Code Compliance Inspections can be very technical and complicated so they should be performed by a qualified fire inspector.</p> <p>Company Inspections are usually completed on low occupant load, low risk commercial, multi-residential and some assembly occupancy buildings to assist the building owner or occupant to ensure that the appropriate fire safety equipment and fire and life safety conditions are maintained throughout the building. Where voluntary compliance cannot be achieved through company inspections and education, the issue should be referred to a qualified fire inspector for further review and action which may include enforcement procedures such as licensing, tickets, orders to remedy conditions and legal action.</p>

<b>Slide 12</b>	<p>The Job Performance Requirements, often referred to as JPR's, for fire inspectors are defined in NFPA 1031, the Standard for Professional Qualification for Fire Inspector and Plans Examiner.</p> <p>NFPA describes JPR's as "A statement that describes a specific job or task, lists the items necessary to complete the task, and defines measurable or observable outcomes and evaluation areas for the specific task." NFPA 1031 identifies the JPR for Fire Inspector 1 &amp; 2.</p> <p>The JPR's for Fire Inspector 1 include:</p> <ul style="list-style-type: none"><li>• Inspecting structures and writing reports</li><li>• Identifying the need for, and method to obtain permits</li><li>• Recognize the need for plan approvals</li><li>• Investigate common complaints and resolve compliance issues</li><li>• Identify code and standards requirements</li><li>• Participate in legal proceedings and provide testimony as required</li><li>• Identify occupancy classification of a single use facility</li><li>• Calculate the occupant load for a single use facility and post an occupant load sign</li><li>• Take corrective action when overcrowding occurs.</li></ul>
<b>Slide 13</b>	<ul style="list-style-type: none"><li>• Evaluate exiting to ensure the building can be safely evacuated in an emergency</li><li>• Identify the various types of construction</li><li>• Inspect existing fire protection systems for required inspection, testing and maintenance and current operational readiness, e.g. portable fire extinguishers, fire alarm systems, emergency lights, sprinkler systems etc.</li><li>• Recognize hazardous conditions involving operations and processes</li><li>• Compare an approved plan with as-built conditions and identify and act upon deficiencies</li><li>• Verify emergency planning and preparedness measures are in place and practiced</li><li>• Inspect and verify fire department access to the property</li><li>• Verify proper storage and use of hazardous substances or operations</li><li>• Recognize fire growth potential in a building or space</li><li>• Verify water supply for fire fighting.</li></ul>

<p><b>Slide 14</b></p>	<p>Most fire inspections are conducted by Fire inspector 2's so in addition to the duties required of a fire inspector 1 the fire inspector 2 is also required to:</p> <ul style="list-style-type: none"> <li>• Process a permit application and plan review applications</li> <li>• Conduct a site visit to verify compliance with approved plans for exiting, fire protection systems, fire safety plans,</li> <li>• Investigate complex complaints and bring resolution to the issue</li> <li>• identify occupancy classifications and calculate the allowable occupant load of <u>multi-use occupancy</u></li> <li>• Recommend modifications to codes and standards of the jurisdiction based on a fire safety issue</li> <li>• Determine the buildings height and construction type by examining plans, construction features or by description</li> <li>• Evaluate hazardous conditions involving equipment process and operations</li> <li>• Verify code compliance for storage and handling of hazardous materials</li> <li>• Review the proposed installation of fire protection systems based on shop drawings and system specifications and ensure that system is code compliant and installed as per the drawing</li> </ul>
<p><b>Slide 15</b></p>	<p>Codes are the regulatory documents that provide guidance for the construction and ongoing operation of buildings. The two main Codes in Canada are the Building Code and the Fire Code.</p> <p>The Building Code establishes the regulations that govern how new construction, building alterations, repairs, and demolitions are completed. The building code also establishes minimum requirements for safety, health, accessibility, fire and structural protection of buildings and energy and water efficiency.</p> <p>The fire code which is considered a maintenance document, generally applies to the ongoing use and maintenance of existing buildings and facilities. It sets minimum requirements for health, safety, and fire protection of buildings and facilities in use. The Canadian building and fire codes are considered companion documents and work together to provide for the safety of the occupants and the public.</p>
<p><b>Slide 16</b></p>	<p>The National Building Code, 2020 edition complements the National Fire Code of Canada 2020, and both are indispensable reference materials for fire inspectors. The codes are available for purchase but there is also a free downloadable, offline access PDF file. In addition there is also a free, single user, online access subscription which allows users to view the publications online from any computer connected to the Internet.</p>

<b>Slide 17</b>	<p>Standards are a documented way of doing something. Standards contain technical specifications or other precise criteria designed to be used consistently as a rule, guideline, or definition. Standards are not enforceable unless they are referenced by a code, but they are considered industry best practices and provide guidance. For example, the Fire Code references NFPA 96, Ventilation Control and Fire Protection of Commercial Cooking Operations and says that the use, inspection and maintenance of commercial cooking equipment exhaust and fire protection systems shall be in conformance with NFPA 96, So in this case, the NFPA 96 becomes part of the code and is enforceable.</p> <p>So, a code is a rule or law and a standard is a document containing best practices or performance measures which only become law if they are adopted by code.</p> <p>The standard may not be legally mandated but is considered an industry best practice to follow.</p> <p>Reference NBCC Div B Article 1.3.1.2 NFCC Div B Article 2.6.1.9</p>
<b>Slide 18</b>	<p>A model code is a code that is developed and maintained by a standards organization independent of the jurisdiction responsible for enacting the code. Examples of model code organizations are the National Research Council of Canada, CSA, ULC, and NFPA. These organizations all develop model codes that can be adopted by the AHJ.</p> <p>Provincial and local governments normally choose to adopt a model code as its own because most jurisdictions don't have the expertise or resources to develop their own codes.</p>



<p><b>Slide 19</b></p>	<p>In many cases the provinces have historically amended the codes to meet local jurisdictional conditions.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Alberta, BC, Ontario, and Quebec publish their own codes based on the national codes with some variations that are primarily additions.</li> <li>• Ontario adopts the codes Province wide but with significant variations in content and scope. The Ontario Fire Code, in particular, is significantly different from the National Fire Code. Ontario also references the National Energy Code for Buildings in its building code.</li> <li>• Quebec adopts building and plumbing codes that are substantially the same as the National Building Code and National Plumbing Code, but with variations that are primarily additions. Major municipalities in Quebec may adopt the National Fire Code</li> </ul>
<p><b>Slide 20</b></p>	<ul style="list-style-type: none"> <li>• Manitoba, New Brunswick, Nova Scotia, Newfoundland and Labrador, the Northwest Territories, Nunavut, Saskatchewan and the Yukon have Province-wide adoption of the National Building Code and National Fire Code with some modifications and additions.</li> <li>• Prince Edward Island has not adopted the national codes. They have a province wide fire code which is not based on the National Code. Major municipalities may adopt the National Building Code.</li> </ul> <p>An important change to code enforcement is in the process of being implemented. A Construction Codes Reconciliation Agreement is in the process of being ratified and implemented nationwide. The agreement supports the harmonization of building, plumbing, fire, and other construction codes across Canada. The harmonization of the construction codes will remove the differing requirements between the provincial and territorial construction codes, will help to decrease construction costs, and reduce barriers related to manufacturing, operation, inspection, education, and training.</p> <p>More information can be found on the Construction Codes Reconciliation Agreement website.</p>
<p><b>Slide 21</b></p>	<p>In Canada , the National Research Council develops the National Building and National Fire Codes with input from code committees. Code committees are</p>

	<p>often made up of representatives from interested parties such as the fire service, insurance industry, equipment manufacturers and contractors. The various members of the committee are responsible to provide a balanced perspective in development of the code or standard.</p> <p>There are two types of codes, prescriptive and performance based. A prescriptive code requires that each component be built a certain way. For example, a prescriptive code may require a wall to be of 2’X4” construction. A performance code on the other hand would specify that the building as a whole must perform to a certain standard and the designer has some flexibility into how that is achieved. So, in the example of the code requiring 2” X 4” construction, the designer may decide that steel studs are an equivalent and submit that to the building authority having jurisdiction for approval.</p> <p>Performance based codes can be more difficult to enforce because they are dependant on the supporting technical information of registered professionals like architects and engineers.</p>
<p><b>Slide 22</b></p>	<p>The National Research Council develops new model building and fire codes on a five-year cycle.</p> <ul style="list-style-type: none"> <li>• Modifications to the current code are proposed based on user input</li> <li>• Technical review is performed</li> <li>• The revised code is presented to elected officials</li> <li>• Code revisions are presented for public comment</li> <li>• Provincial bodies review and make changes to the codes based on local conditions</li> <li>• Provincial bodies adopt the codes in whole or in part</li> </ul> <p>The adoption of the provincial and territorial codes usually lags behind the National code cycle. For example, Alberta adopted the 2015 National Fire Code and called it the National Fire Code - 2019 Alberta edition.</p>
<p><b>Slide 23</b></p>	<p>Who is responsible for compliance with Codes and Standards?</p> <p>The National Building and Fire Codes of Canada and the Provincial Codes say that “Unless otherwise specified, the owner or the owner’s authorized agent shall be responsible for carrying out the provisions of this Code” In other words the owner is responsible for the fire safety of their building, but fire inspectors can help them utilizing their knowledge and experience. Most building owners want to have safe buildings and want to maintain their investment in those buildings but often lack knowledge about fire safety in general and the fire protection systems built into their buildings.</p>

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	<p>Once a deficiency is pointed out, most owners will take corrective action. On those occasions where voluntary action is not forthcoming, enforcement action may be required. It is very important that a fire inspector understand their authority to take enforcement action as it will vary between jurisdictions. The first step in the enforcement process would normally be to notify the responsible party in writing of the violations found.</p>
<p><b>Slide 24</b></p>	<p>The authority to conduct fire inspections comes from the authority having jurisdiction or AHJ as it is more commonly referred to. Canadian building and fire codes define it as “Authority having jurisdiction means the governmental body responsible for the enforcement of any part of this Code or the official or agency designated by that body to exercise such a function.</p> <p>In most cases the authority to conduct inspections comes from a Provincial Act or Regulation or from local government bylaw which says something like a duly appointed fire inspector has the right to enter any premise for the purpose of conducting a fire inspection at all reasonable times. In Ontario Part 6 of the Fire Prevention and Protection Act states “An inspector may, without a warrant, enter and inspect land and premises for the purposes of assessing fire safety.”</p> <p>References BCFC Div A Article 1.4.1.2. Ontario FPPA article 19</p>
<p><b>Slide 25</b></p>	<p>In BC the Fire Services Act requires municipalities to conduct a regular system of inspection of public buildings which includes almost every building except private dwellings. In Alberta, municipalities can apply to the Safety Codes Council to become an accredited agency and fire inspections may form part of their Quality Management Plan. In Ontario the Office of the Fire Marshal (OFM) requires fire departments to conduct annual fire drills in some care facilities.</p> <p>As a fire inspector you will need to clearly understand the authority you have to conduct fire inspections and your right to enter as the process may vary from community to community. To perform the job properly, you must understand your assigned duties, know the applicable building and fire codes and how they relate to one another before engaging in fire inspection and code enforcement activities.</p>
<p><b>Slide 26</b></p>	<p>Fire inspectors are occasionally asked to participate in legal proceedings.</p> <p>Perhaps a building owner failed to comply with corrective actions, a fire occurred that resulted in a death or injury and now there is a court case. These proceedings can be criminal or civil. You may be asked to verify your training</p>

	<p>and expertise and describe the local procedures used in conducting fire inspections in your jurisdiction.</p> <p>An important part of the inspection process is to write and retain accurate and thorough notes of the inspection. Accurate record-keeping is not only important for an efficient program, but these notes and photographs may someday be needed as evidence in a trial.</p> <p>Before you become involved in a legal proceeding you are well advised to become familiar with the legal process. Many courses are available that would meet this need including a chapter from FireWise’s fire investigation program that you are welcome to review. To access the FireWise online chapter please contact us: <a href="mailto:info@firewiseconsulting.com">info@firewiseconsulting.com</a>.</p>
<p><b>Slide 27</b></p>	<p>Often fire inspectors are asked to be part of a permit review process. Your signature may be required on a use and occupancy permit to allow a building to be occupied or it could be a special occasion permit for a gathering such as a wedding or party. The objective of the permit is to notify your department of the event and to make certain that the building is safe for the public.</p> <p>As an inspector, you will need to be familiar with the permit application process in your jurisdiction.</p>
<p><b>Slide 28</b></p>	<p>In any work place and life in general, ethics play a role. As a fire inspector you not only represent your fire department or organization you work for, you are also in a position of holding the public’s trust. Its imperative that you display appropriate and ethical behaviour at all times on the job. You may want to ask yourself some of these questions:</p> <ul style="list-style-type: none"> <li>• Are there regulations, rules, or policies that restrict your choice of action?</li> <li>• Are the rules being complied with?</li> <li>• Could your decision be perceived as unethical?</li> <li>• How would your decision look if it were reported on the news or in another public forum?</li> </ul> <p>Make sure to know, understand, and follow your organizations code of ethics and the outcome will reflect positively on you.</p>
<p><b>Slide 29</b></p>	<p>At the end of each chapter, we provide a Chapter Review and a Quiz. We hope these will help you learn the material and identify areas you may not be certain of. They are also designed to help you prepare for the exam at the end of the course.</p>
<p><b>Slide 30</b></p>	<p>In the introduction we discussed:</p>

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	<ul style="list-style-type: none"> <li>• That this program meets or exceed the JPR for NFPA 1031 Fire Inspector 1 and 2</li> <li>• The resources used to develop this program</li> <li>• That inspectors should be aware of and appreciate the value of an effective Fire Prevention Program</li> <li>• Prevention Programs make firefighting operations safer</li> <li>• That fire inspections are visual inspection to determine compliance with regulations, codes and standards</li> <li>• Inspection are performed on complaint or as part of regular service</li> <li>• The 3 E's of fire prevention Education Engineering Enforcement</li> </ul>
<p><b>Slide 31</b></p>	<ul style="list-style-type: none"> <li>• The roles and responsibilities of the fire inspector</li> <li>• Their authority to conduct the inspection</li> <li>• That codes are regulatory documents and Standards are not always legally mandated but are best practices</li> <li>• That the National Research Council produces the National Building and Fire Codes</li> <li>• There are two types of codes, prescriptive and performance based.</li> <li>• The owner or the owner's authorized agent is responsible to comply with the codes</li> <li>• Legal proceedings and the right to enter property to conduct the inspection and</li> <li>• The fire inspector's ethics.</li> </ul>
<p><b>Slide 32</b></p>	<p>Chapter quiz.</p>
<p><b>Slide 33</b></p>	<p>That's the end of chapter one.</p> <p>You are now ready to move on to Chapter Two which deals with <b>Building Construction</b> but please complete the Chapter Quiz first.</p> <p>If you have any questions now is a good time to contact your instructor.        We hope you enjoy your journey with us through fire prevention inspections.</p>