



Fire Inspector I & II

CHAPTER FIVE PERFORMING THE INSPECTION

Part 1



<p>Slide 1</p>	<p>Welcome to Chapter Five “Performing the Inspection”. Due to the size of this chapter, it has been divided into three parts.</p> <p>In part one we will discuss:</p> <ul style="list-style-type: none"> • Types of Inspections • Frequency of Inspections • When to inspect • The pre-inspection processes • Construction and occupancy classifications • The relationship between the building and fire codes • Tools and equipment required to conduct an inspection • Standard inspection forms • Presenting yourself and building rapport • What to look for on the outside of the building. <p>We will not look at fire alarm and detection systems, fire sprinkler systems, or heating ventilation and air conditioning (HVAC) systems as they will be covered in greater detail in other chapters in this course.</p>
<p>Slide 2</p>	<p>The six most common inspections are the Annual or Regular Scheduled Inspection, Reinspection, Complaint Inspection, Construction or Final Occupancy Inspection, Business License or Change of Occupancy Inspection, and the Self-Inspection.</p> <p>Annual or regular scheduled inspections are performed based on the inspection schedule implemented by the Authority Having Jurisdiction. Schedules may vary from community to community but basically these buildings are inspected because it is their turn. Often annual inspections of buildings that have a history of compliance or only minor deficiencies fall under a Company Inspection program. That is where on-shift firefighters perform regular inspections of low-risk buildings and report any issues to a qualified fire inspector.</p>
<p>Slide 3</p>	<p>In some cases, the frequency of inspections is mandated in Provincial or State legislation but more often it is determined by the policy of the Authority Having Jurisdiction. Inspection priorities are normally determined by the historical or foreseeable outcome of a significant fire event. Usually the policy of the AHJ identifies inspection priorities in the following order; multi-family residential Group C, Institutional Group B, Assembly Group A, Industrial Group F, then the mercantile and business and personal services Groups D&E.</p> <p>Group D and E occupancies are considered low risk but often make up a large portion of the inspections performed by the AHJ so the time frame between</p>

	<p>inspections is often extended. A review of historical inspection records usually shows that these types of occupancies (D&E) do not have significant fire safety and life safety deficiencies.</p> <p>A new Major Occupancy Classification, Large Farm Buildings Group G, has been added to the 2020 Edition of the National Building Code. This change will likely involve some considerations on the part of the Local Authorities with respect to how to prioritize these inspections.</p>
Slide 4	<p>Reinspections are performed when code violations have been noted during an initial inspection and you return to ensure the violation has been corrected. Reinspections can be generated by finding code violations on any type of initial inspection like a regular scheduled, complaint, or construction inspection. Many jurisdictions charge fees for reinspection as a method of encouraging compliance and penalizing property owners that fail to comply. Check your jurisdictions policies on inspection fees which are probably included in your fire department bylaw.</p> <p>Complaint Inspections are performed any time someone registers a concern in regard to a possible code violation. The validity of the complaint must be investigated with the urgency determined by the type of complaint. For example, a locked or blocked exit door in an assembly occupancy where large groups gather would be investigated immediately while the same urgency would not be present to investigate an out-of-date portable fire extinguisher.</p>
Slide 5	<p>Construction or Final Occupancy Inspections are performed during and after construction or renovation with the goal of ensuring compliance with the Building and Fire Codes. Depending on the fire protection systems in the building this may be referred to as a Commissioning Inspection.</p> <p>From the fire inspectors' point of view, building commissioning is the process of verifying the required fire and life safety systems have been installed and are working as designed by the building architects and engineers. While the practice of building commissioning is still fairly new it has quickly become common practice. Building commissioning is a quality-focused process that provides assurance that the systems are installed and function as designed. NFPA 3 is the Standard for Commissioning of Fire Protection and Life Safety Systems and provides procedures, methods and documentation for the commissioning of active and passive fire protection systems. A building Commissioning inspection document is available in the additional materials section of this Chapter. It can be easily modified to meet the code requirements of your jurisdiction.</p>

<p>Slide 6</p>	<p>Business License or Change of Occupancy Inspections are performed prior to granting a Business License and/or Occupancy Permit to a business. It is important that the building is in compliance with the Fire and Building Codes for the new type of business wanting to occupy the building. Even if the occupancy classification does not change, the hazard level may, which could require fire protection systems to be installed or upgraded.</p> <p>A good example is a warehouse that falls within Group F Division 2. One tenant moves out and another is about to move in. The original tenant stored commodities classified as Ordinary Hazard Group 2 where the quantity and combustibility of the contents was moderate to high. The new tenant is planning on storing products classified as Extra Hazard Group 1 which could mean a fire would develop and spread rapidly. The occupancy classification of the building remains Group F Division 2 but the hazard level has increased which may necessitate changes to the fire protection systems.</p>
<p>Slide 7</p>	<p>Studies have shown that about 70% of buildings in most communities are low risk, low occupant load buildings that have a history of fire safety compliance or only minor fire safety deficiencies have been identified through the inspection process.</p> <p>It is also fair to say that most jurisdictions do not have the resources to conduct regular fire safety inspections of all building in their communities. For this reason, some communities require building owners or occupants of low-risk buildings to perform inspections or self-assessments of their properties.</p>
<p>Slide 8</p>	<p>Self-inspections are more appropriately called self-assessments because they are done by the building owner or occupant who is not a qualified fire inspector. These programs are delivered in a variety of ways, but the process usually involves the AHJ sending a notice for assessment to the building owner who completes the form and returns it to the AHJ. An audit system is incorporated into most self-assessment programs that randomly, or on complaint, initiates an inspection by a qualified fire inspector.</p> <p>The idea behind self-assessments is that the building owner is responsible to comply with the fire and building code and the time saved through self-assessment will allow fire inspectors to concentrate on the other 30% of the buildings in the community that require their attention.</p> <p>Fire Inspectors will continue to perform regular inspections of all buildings, but the time between inspections may be increased.</p>

Slide 9	<p>When a building is under construction the building inspector is usually the authority having jurisdiction but the earlier the fire inspector becomes involved the better for everyone. Fire Code requirements are much easier to meet during construction rather than trying to correct violations after construction is completed. Working with the owner or their representatives during the planning phase will ensure a much smoother transition from building completion to building occupancy.</p> <p>Part of the permit application process should involve the fire inspector to ensure fire safety issues are addressed but this will be covered in more detail in Chapter 6, Reading Plans.</p>
Slide 10	<p>In order to conduct a successful inspection, you should familiarize yourself with the site to be inspected. You should gather and review any available information on the property such as:</p> <ul style="list-style-type: none">• The file on the building. This should contain all the available documentation including previous fire inspection reports. These can identify existing issues with the building and or occupants. For example, a deficiency that has been noted in previous inspections but still exists should be discussed with the property representative to find out why it has not been addressed. Reasons could include, not knowing how to fix it, the cost to fix it or simply unwillingness on behalf of the owner to comply. Further action can be determined based on the outcome of this discussion and the severity of the violation.• Any correspondence on file regarding the building should be reviewed prior to your inspection. Agreements may have been made that deal with deficiencies that you should be aware of prior to the site visit.

<p>Slide 11</p>	<ul style="list-style-type: none">• Any building plans and specifications that are available. The Building Code establishes a satisfactory standard of fire, life and health safety for the design and construction and alteration of buildings. The Fire Code establishes an acceptable standard for fire and life safety for buildings in use. <p>The two codes are intended to be complementary and coordinated companion documents which reduce the possibility of conflict in their respective contents. The Fire Code should not conflict with or supersede the requirements in the Building Code. For example, occupant loads determined under the two codes will likely be different since they are determined for different reasons. They should not be seen as conflicting.</p> <ul style="list-style-type: none">• An added or removed wall or room may affect the structural integrity of the building, fire separations, or the operation of fire protection systems like sprinklers or alarms.• Records of building modifications or renovations should be available from the building department along with any building permit applications approved or denied. <p>If the inspector is not familiar with the use of the building, they should review codes and standards that apply to that specific occupancy classification. For example, if the building is used as a wastepaper processing plant, a single stage fire alarm system is required when the occupant load is more than 25.</p>
<p>Slide 12</p>	<p>The type of building construction is important to a fire inspector as different construction types require structural components to have specific fire ratings. These components and their required ratings were discussed in detail in Chapter 2 Building Construction so we will only mention them here. The Building Code refers to four types of construction: combustible, non-combustible, heavy timber, and Encapsulated Mass Timber Construction or (EMTC).</p> <p>EMTC is a new type of construction introduced in the 2020 Edition of the National Building Code. EMTC is a type of construction in which a degree of fire safety is attained by using encapsulated mass timber elements, with an encapsulation rating, and minimum required dimensions for structural members and other building assemblies.</p>

Slide 13	<p>Occupancy Classifications are based on what use the building was designed for and subsequently what the building is being used for. These classifications are usually designated by the building and fire codes. A proper occupancy classification is very important to a fire inspector as inspection and code requirements change throughout the differing classifications. For example, a restaurant has different life safety requirements than a corner grocery store or a bank. For more information about occupancy classification please refer to Chapter 3.</p>
Slide 14	<p>Relationship between the Building & Fire Codes: The Building Code establishes a satisfactory standard of fire, life and health safety for the design and construction and alteration of buildings. The Fire Code establishes an acceptable standard for fire and life safety for buildings in use.</p> <p>The two codes are intended to be complementary and coordinated companion documents which reduce the possibility of conflict in their respective contents. The Fire Code should not conflict with or supersede the requirements in the Building Code. For example, occupant loads determined under the two codes will likely be different since they are determined for different reasons. They should not be seen as conflicting.</p>
Slide 15	<p>Local jurisdictions normally adopt codes and standards through “enabling legislation”. This enabling legislation is most common in the form of a local bylaw that sets out the authority to inspect as well as the authority to enforce the correction of any noted violations.</p> <p>Fire inspectors can only enforce codes and standards that are referenced in their legislation or bylaws. For example, the fire code references NFPA 10 “Standard for Portable Fire Extinguishers”. The most recent edition published by NFPA is the 2022 edition, but Canadian fire codes identify the 2013 edition of NFPA 10 as being in effect. Referenced documents are listed in Division B Section 1.3 of the fire code. So, you can only enforce the 2013 edition of NFPA 10 even though there is a newer edition available. Without changing the enabling legislation you cannot enforce a newer edition of a code or standard, but you can refer to it as a best practice.</p>

<p>Slide 16</p>	<p>It is important for fire inspectors to know the application of the codes they are enforcing. This can usually be found at the beginning of the code. For example, the National Building Code of Canada and related Provincial Building and Fire Codes are divided into Divisions A, B and C. Division A Section One of the fire code states “This code applies to new and existing buildings and facilities, and to building construction, renovation or demolition sites.</p> <p>It goes on to say See Note A-1.1.1.1. It is important to realise that Notes to the codes are there for explanatory purposes only and have no legal effect.</p>
<p>Slide 17</p>	<p>Every inspector requires a basic set of tools and equipment available to them to perform a fire inspection. Typical tools and equipment required are:</p> <ul style="list-style-type: none"> • Writing Tools - which include pens, pencils and a clipboard or other writing surface. • Inspection Forms – an adequate supply of all forms used by your organization should be available during every inspection as different forms may be needed depending on the situation. • You should have a flashlight to illuminate rooms or areas with inadequate or no lighting. • A measuring device which can be used to determine exit width, storage heights, occupant loads, etc. • A small ladder may help access or view areas not accessible from floor level. • A calculator may come in handy for any calculations such as room size or occupant load.
<p>Slide 18</p>	<p>Camera – Photographs of violations are very helpful for the building owner and for the inspector conducting the re-inspection. Photos of deficiencies are also a great training tool for inspectors and suppression crews. Some departments are also taking photographs of all four sides of buildings to attach to the buildings Pre-Incident Plan.</p> <p>Safety Gear – Construction sites or industrial properties will require differing levels of personal protection for everybody on site. An inspector may require a hard hat, safety goggles, gloves, hearing protection, safety boots, and/or a high visibility vest prior to entering a site.</p> <p>Electronic Devices – Rather than using paper inspection forms, some fire inspectors use handheld computers or tablets to document inspections. These devices can be connected directly to the departments data base and also be used for referencing codes and regulations.</p> <p>Coveralls – Used to protect the inspector’s uniform or clothing when inspecting areas with heavy dirt, dust, grease etc.</p> <p>Pitot Tube – A device used to measure the amount of water available from a fire hydrant. The local water department should be informed before any hydrant</p>

	testing is performed.
Slide 19	<p>The number, style, and type of inspection forms will vary from department to department, but it is important that inspectors within an agency use the same standard forms.</p> <p>Inspection Forms are used to document information in regard to the building, building systems, building owners, property representatives as well as to document any violations noted during the inspection</p>
Slide 20	<p>The two primary styles of inspection forms are forms with blank lines for filling in information on violations or forms with checklists for violations. Whichever style is used, the basic information that should be included on any inspection form is:</p> <ul style="list-style-type: none"> • Business or building name, address, and phone number. • Date of inspection. • Building or area being inspected if property or complex is large. • Code violations with specific details and code references if applicable • Reinspection Date if required • A signature block where the inspector signs. <p>If adding a legal statement describing the authority to inspect, the statement should be reviewed by your agency’s legal department.</p>
Slide 21	<p>Checklists are a good tool to use when conducting inspections. They can be a specific form, for example the one in this photo is for commercial kitchen inspections, or they can be a general inspection form like this one which covers off your complete inspection.</p> <p>Checklists assist you and the building owner to ensure the system is properly installed and maintained. If your department does not already use checklists, some are provided in the additional materials section of this Unit.</p>

<p>Slide 22</p>	<p>If a department uses a separate Complaint Inspection Form, that form should have sections to describe in detail the complaint lodged, date and steps of investigation process, name of complainant with contact information, corrective action required and date the complaint was closed.</p> <p>A Final or Construction Inspection Form is used when inspecting systems such as fire alarm, sprinkler, hood and duct suppression systems as well as other types of construction phase inspections. Some agencies use the standard inspection form for these inspections and other agencies use separate building commissioning forms to show they are not a routine fire inspection.</p> <p>A Stop Work Order should be used when contractors do not have the required permissions to perform the work, or the work does not conform to the requirements of the building code. Stop Work Orders are normally issued by the building official having jurisdiction who may discuss the issues with their supervisors and the fire inspector prior to issuing.</p>
<p>Slide 23</p>	<p>Inspections can be initiated by either scheduling a date and time with the building or business owner, or by attending the building or business without prior notification or scheduling. Both methods have pros and cons.</p> <p>Scheduled inspections show your respect for the busy schedule of your clients and allows them some flexibility in making an appointment with you. Scheduled inspections allow the inspector to conduct a full inspection as the owner will have put aside the time to assist with the inspection.</p> <p>Scheduled inspections also will allow the owner to time to have annual maintenance done if needed prior to your arrival. They may also correct any previously noted deficiencies still outstanding prior to the inspection. There are many online software products that allow your clients to make appointments with you online.</p>
<p>Slide 24</p>	<p>Making appointments can be very time consuming but there are a number of computer programs that can simplify the process.</p> <p>Calendly is one example where an email is sent to single or multiple building representatives advising them that it is time for the fire inspection, what the inspector will be looking for and asking them to make an appointment online. You set the times that you are available then you share the link to your Calendly page, and the building representatives can schedule their own appointments. You can add, delete, or change the appointment time and Calendly notifies the building representative automatically.</p>

	<p>There are probably many other similar programs, but we have found this free version simple to use and effective.</p>
<p>Slide 25</p>	<p>With an unscheduled inspection there is always the risk of not being able to perform the inspection because you can't gain access to the building. There may be time constraints of the owner or occupant, ongoing daily activity that would hinder the inspection, or the lack of authority of employees to allow you entry.</p> <p>Unannounced inspections do allow inspectors to view the business as it normally operates, and more violations may be noted.</p> <p>When dealing with a complaint, and depending on the nature of the complaint, it may be best to conduct the inspection unannounced. For example, a complaint about a continuously blocked or locked exit door may be corrected if they know you are coming but might revert to a problem once you have left.</p>
<p>Slide 26</p>	<p>It is important to remember that even though you have the authority to inspect, you must still obtain permission from the owner, manager, or other individual with the authority to allow access to the property. This is usually as simple as entering the building, introducing yourself, and asking permission to do a fire inspection.</p> <p>If you are denied entry don't overreact by getting into a quarrel with the person who refused you entry. Explain to them that you have the right to enter to perform a fire safety inspection and explain what legislation or bylaw provides the authority. If they still refuse entry, leave the property and then determine what further action should be taken. Normally, the next step would be to formally notify the building owner in writing of the refusal and your authority to inspect the property. Asking if there is a convenient time to do the inspection may solve the issue but if you are still refused entry, legal action may be required.</p>
<p>Slide 27</p>	<p>Once permission to conduct the inspection has been granted, seek someone in authority like the owner or manager to accompany you on the inspection. They will be able to gain access to all areas of the building and explain various building or operational functions to you. Having a building representative with you provides the opportunity to build rapport and lessens the possibility of you being falsely accused of any inappropriate action.</p> <p>If you are inspecting an industrial plant, the building representative should be familiar with all of the processes taking place and the safety precautions you need to adhere to. Having a knowledgeable person accompany you provides</p>

	<p>the opportunity for you to about the process and safety features that you will be able to include in any pre-incident plans.</p>
<p>Slide 28</p>	<p>Individual Fire Inspections will vary based on the occupancy classification being inspected but the Fire Inspection Process should be standard for every occupancy classification.</p> <p>The inspection process consists of:</p> <ol style="list-style-type: none"> 1. Presentation 2. Exterior Inspection 3. Interior Inspection 4. Preplan Sketch 5. New Construction Considerations, and 6. Remodeling Considerations 7. Post Inspection Meeting 8. Documentation
<p>Slide 29</p>	<p>Whether you wear a uniform or not, as a fire inspector you are in a position of authority, and it is important that you present a professional image and attitude.</p> <p>Remember, first impressions count and, as you may be requiring the owner to spend time and money to correct violations, you will be judged on your appearance, attitude, and the way you interact. Always be polite, speak clearly using plain language, ask permission to inspect the premise and thank people for their time and assistance.</p> <p>It is important to look professional at all times. Well-kept professional attire looks better than an unkept uniform.</p> <p>Even when wearing a uniform, it is important to be able to identify yourself with government issued identification if requested by the building or business owner.</p> <p>Acting professionally at all times is very important. There are times during an inspection that owners may become agitated or hostile with what is being said to them. It is critical that the inspector does not engage in an argument. If necessary, the inspection can be terminated, rescheduled, or assigned to another inspector or supervisor.</p>
<p>Slide 30</p>	<p>If possible, build a rapport with the property rep by asking questions about the building and their role. If the business involves complex processes and safety hazards, like the pulp mill in this photograph, the person you are with probably knows a lot more about it than you do. Listen carefully to what they have to say and ask questions. You may want to talk to someone from their worksite</p>

	<p>safety committee to see if they have issues that you should be addressing. Remember you cannot be expected to know everything about complex processes so do not hesitate to ask for help and guidance from experts.</p> <p>This also provides the opportunity to share some of your fire safety knowledge with them.</p>
<p>Slide 31</p>	<p>Many fires start on the outside of buildings and spread to the building. Therefore, your inspection should start on the outside of the building but if this is done prior to meeting the owner, building personnel should be notified of your presence and intentions before walking the property.</p> <p>In the next few slides, we will discuss the importance of addresses, storage of combustibles around the outside of buildings, fire department access to the building, water supplies for firefighting, exterior lighting, utilities, structural stability and building openings.</p>
<p>Slide 32</p>	<p>Is the address clearly visible so responders can locate it quickly?</p> <p>The address should be posted on a sign with a minimum of 4-inch letters and be visible when traveling in any direction. It should also be reflective so it can be seen easily in the dark.</p> <p>The address should be mounted high enough to avoid snow in the winter or plants during the summer. The address should not be obscured by bushes, flowers or branches.</p> <p>Although addresses are not a requirement of the fire or building code requirement, many jurisdictions have Street Address Bylaws which requires the address to be conspicuously located near the front entrance to the building. The bylaw may also require a duplicate address be post near the street if the building address is concealed or not clearly visible from the street.</p> <p>Remind the owner that if someone is available during an emergency, they should go to the street to meet the first responders.</p>
<p>Slide 33</p>	<p>Keep combustible debris in and around buildings to a minimum. Many injuries and fires result from poor housekeeping, improper storage of materials, and general clutter.</p> <p>It is a good fire safety practice to properly store unused materials and dispose of rubbish.</p>

	<p>Vandalism is the leading cause of arson fires and often is a crime of opportunity. If garbage is allowed to accumulate it can become an easy target for fire setters.</p>
Slide 34	<p>Where is the garbage kept? Is there a better place to keep this dumpster? In this case it was located under the second floor of the building. The Fire Code requires that outdoor storage receptacles such as dumpsters be located so that they do not create an undue fire hazard to surrounding buildings.</p> <p>Garbage containers, especially plastic, should be kept in a secure location outside the building.</p>
Slide 35	<p>Video.</p>
Slide 36	<p>To provide effective service, fire departments must be able to gain reasonable access to all buildings. Fire department access can be by way of roadways, fire lanes, parking lots or a combination thereof. Streets that provide access, must always be maintained and ready for use. No parking signs should be posted where needed to ensure the fire department vehicles have access to at least one building face.</p>
Slide 37	<p>Modern fire apparatus is large and needs room to maneuver. Have any changes taken place since the last fire inspection? New gates or fences can create access problems for the fire department. Has there been any changes to vehicle parking that could affect access?</p> <p>When a dead-end access route exceeds 90 meters in length, an approved turnaround area should be provided. Access must always be available for use by fire trucks and must be at least 20 feet or 6 meters wide.</p> <p><i>Reference:</i> <i>NFC 3.2.5.6.1</i> <i>BCBC 3.2.5.6. Access Route Design</i></p>
Slide 38	<p>Ready access to a water supply is crucial for effective firefighting. Look for the fire hydrants closest to the building and make sure they are visible, not blocked or overgrown by vegetation in the summer or snow in the winter and are readily available for use by the fire department. A three-foot area around the hydrant should be kept clear at all times. This may be done by public works, or it may be the responsibility of the owner if it is a private fire hydrant.</p> <p>Hydrants need to be inspected every 6 months and after each use and be flushed annually. Records of the inspection and flushing must be retained for 2 years and be made available on request.</p>
Slide 39	<p>If the building has an automatic sprinkler system or a standpipe and hose system, there should be a Fire Department Connection on the outside of the</p>

	<p>building. When a fire occurs, water is discharged from the sprinkler heads to suppress and extinguish the fire. The fire department connection is used by the fire department to supplement the water supply to the sprinkler or standpipe and hose system.</p> <p>The Fire Department Connection should be protected with proper fitting caps. Caps are used to keep dirt, dust, and debris out and prevent foreign objects from entering the fire suppression water supply system.</p> <p>If a building is equipped with an automatic sprinkler system, it must have a fire department connection.</p> <p>Fire Department Connections should have proper signs that clearly identify them for the fire department to access in the event of a fire.</p> <p>The fire department connection should be located on the street side of the building and be fully visible to ensure immediate access. It should be located so the fire engine and its hose lines do not obstruct access to the building for other apparatus when connected to the FDC.</p>
<p>Slide 40</p>	<p>What’s wrong with these pictures?</p> <p>The connection on the left is broken to the point that the fire department would not be able to connect to it.</p> <p>The vegetation on the right will quickly grow and obscure the connection from sight. Landscaping changes over time and vegetation can grow to obscure the connection from view or obstruct access to the connection.</p> <p>It is very important to check the compatibility of the fire departments hose threads with those on the FDC. Especially when commissioning a new building or alterations have been made to the FDC. Too many times the wrong connections have been provided on the FDC.</p>
<p>Slide 41</p>	<p>Many fire departments rely on a security key lock box system to enter property quickly and safely during an emergency response. The property owner purchases the Lock Box and mounts it near the main building entrance. Lock boxes should never contain keys other than for the main lobby entrance, common areas, roof access, stairwells, firefighters’ elevator, or other ‘public’ areas in the building. You should check to see that the appropriate keys are in the lock box and that the fire department has the access they need to the building.</p>

<p>Slide 42</p>	<p>The main reason to use these devices is for rapid, secure access to be provided to the Fire Department; a secondary benefit is that the Fire Department does not damage the property by forcing doors or windows in an emergency. In many cases the lock box pays for itself the first time it is used.</p> <ul style="list-style-type: none"> • They provide immediate emergency entry in case of fire, medical, or other type of emergency. • They prevent costly forced entry damage to doors or windows. • Undamaged doors can be re-secured after the emergency without the response of building managers or private security personnel. • It allows faster Fire Department entry which reduces the potential damages because of a fire. • It allows first responders to enter if a building occupant is unable to open the door. • It ensures the security of the building.
<p>Slide 43</p>	<p>Many Fire Department’s preferred lockbox is the Abloy cylinder which is utilized for holding entry keys to buildings and is typically located adjacent to the main entrance. The sleeve is made from steel and the lock assembly is made from hardened steel. The sleeve is cored into concrete or solid wood completely flush. The lock assembly then slides into the sleeve. At least 8” of material is required for the sleeve. The sleeve is required to be mechanically secured in place with the installation tabs. It is also recommended that the sleeve is epoxied in place. If an epoxy is utilized ensure that the epoxy does not seep into the sleeve. Any epoxy on the inside of the sleeve will prevent the lock assembly from sliding in.</p> <p>The sleeve is designed to hold 2-4 keys but will not hold access cards.</p>
<p>Slide 44</p>	<p>A 4” Steel Lockbox is recommended for holding access cards, multiple sets of keys, or for installation at locked entry gates. The box should be made from high quality steel with a recessed lid for added security. It is recommended that the box be installed flush to minimize the possibility of theft. If surface mounted the box should be welded to a steel structure. For security reasons, lockboxes should not be secured with lag screws, or bolts.</p> <p>Although it is not a National Fire or Building Code requirement to have lock boxes some jurisdictions have modified their fire codes to require them. For example, the NFC 2019 Alberta Edition Sentence 2.5.1.3.(2) states “A fire department key box shall be installed and provided with keys and devices in conformance with Sentence (1) in a building equipped with:</p> <p>a) A fire alarm system whose control features, including those for emergency voice communication systems, are located behind a locked panel.</p>

	<p>b) A fire alarm system in which manually operated devices require a key or device in order to be reset.</p> <p>In other jurisdictions lock boxes are often required by a local bylaw.</p>
Slide 45	<p>All external exits and stairs should be equipped with adequate lighting for safe and quick evacuation of the building. The lights should be illuminated when the building is occupied.</p> <p>Exterior lights also provide an additional security measure. They are not part of the emergency lighting package however, so they do not need to be connected to an emergency power supply.</p> <p>Is there enough light for people to safely navigate around walkways and parking areas at night?</p>
Slide 46	<p>Check exit routes. Is there an unobstructed path to a place of safety? If there are gates used to provide security, they should be locked in the open position when the building or area is occupied. If a gate or fence obstructs the exit it must be treated as part of the exit and must open freely outward in the direction of exit travel without the use of keys or special devices.</p>
Slide 47	<p>It is important to walk all the way around the outside of the building looking for fire and life safety issues. Look for all types of hazards such as potential trip and fall hazards that could affect exiting. Is vegetation such that a fire starting on the outside of the building would easily transition into the building?</p>
Slide 48	<p>Identify the location of the utility connections such as gas and electric meters. Most jurisdictions require tamper seals on both gas and electric meters to ensure that they have not been tampered with. They are made of nylon monofilament line at least 0.644 mm or a metal 14 gage wire. Check to make sure that tamper seals are in place and not broken.</p>
Slide 49	<p>Check to make sure there is adequate collision protection for utility connections. Metering and regulating equipment must be protected from potential physical damage. Where there is potential for vehicular damage including forklifts and other moveable equipment, a vehicle barrier or fencing should be provided.</p> <p>The meter area must be in a location that is free from falling ice or snow hazards. Snow must not be piled directly in front of or on the meter set. Also, record the location of the shut off devices so they can be easily located in an emergency.</p>
Slide 50	<p>Look at the electrical mast for signs of damage. In the picture on the left why is the wire hanging down? It is better to identify and fix the problem now rather than waiting for an emergency.</p>

	<p>Many buildings are equipped with emergency power generators. Often these are located on the outside of the building. In this case the exhaust outlet is to close the tree branch. The branch should be cut back so as not to present a hazard.</p>
Slide 51	<p>Look for electrical installations on the outside of the building to see if they appear to be properly installed. In this case a sub-panel has been added on the outside of the building which does not meet electrical code requirements.</p>
Slide 52	<p>Look for electrical wires and extension cords on the outside of the building. Extension cords should not be used in the place of permanent wiring, and they should never be allowed to penetrate a wall or be permanently fastened to structures with nails or staples.</p> <p>When extension cords are used temporarily outdoors, they should be approved for outdoor use and be the correct size to carry the intended load. Any time an extension cord shows signs of wear, like cracks in the insulation cover, they should be replaced immediately.</p>
Slide 53	<p>Visually assess the structural stability of fire escapes, decks, railings, stairs, and handrails. Fire escapes are no longer allowed for new construction, but they provided an alternate means of egress for older buildings. In many cases fire escapes are very old and have not been inspected for many years. Wooden structures should be checked for rot while metal fire escapes should not show visible signs of rust and should be painted.</p> <p>Check them carefully because the next time you need to use them may be in an emergency. If you are unsure about the integrity of a fire escape you should request verification of its condition from a structural engineer or other qualified person.</p>
Slide 54	<p>Look at the vent outlets on the exterior of the building to make sure they are in good repair. They should be equipped with a cover to prevent foreign material from entering and blocking the vent. Check to see if there is any buildup of combustible products such as lint from clothes dryers. If lint is visible at the outlets, it can be assumed that the vent needs cleaning. A clogged vent can result in a dryer fire.</p>
Slide 55	<p>Another concern on the outside of buildings is the use of shipping containers or Sea-Cans for storage. In 2011 a Fire Officer was fatally injured as the result of an explosion in a metal storage container which was being used to store a limited number of gasoline-fuelled tools. The locked container was exposed to direct fire impingement and radiant heat caused by a wood frame building burning directly onto three sides of the container. The resulting heat transferred to the container caused combustible material inside the storage unit to ignite and fuel tanks on some of the gas-powered tools to fail allowing</p>

	<p>gasoline to escape to the atmosphere. At some point after that the gasoline-to-air mixture reached the explosive range and ignited. The explosion caused the container to catastrophically fail, severing both doors and depositing them over 40 meters away from the storage container. One of the doors came into contact with the fire officer causing fatal injuries.</p>
<p>Slide 56</p>	<p>The explosion occurred well into the incident, an estimated 2 hours after the arrival of the fire department. Inadequate ventilation of the sea-can was identified as a major contributing factor. A document prepared by the Fire Chiefs Association of BC, which is included in the Additional Materials of this Unit notes that “The standard environmental vents normally built into shipping containers ARE NOT ACCEPTABLE as ventilation openings for land-based storage applications. These were designed for air movement based upon atmospheric weather changes only, and do not provide adequate air flow.</p> <p>WorkSafe BC and the Office of the Fire Commissioner investigated the incident. Documents from WorkSafe BC, the Office of the Fire commissioner and an Operational Guideline from Surrey Fire Department are also included in the Additional Materials section of this unit.</p>
<p>Slide 57</p>	<p>That’s the end of part one of Performing an Inspection. In this part we discussed:</p> <ul style="list-style-type: none"> • Types of Inspections including annual or regular inspections, re-inspections to make sure deficiencies are corrected, inspections on complaint, business licensing inspections and self-inspections by the building owner or manager. • We also talked about the frequency of Inspections, when to inspect and the pre-inspection process • Construction types and occupancy classifications. • The relationship between the building and fire codes and that they are companion documents • Tools and equipment required to conduct an inspection • Standard inspection forms • Scheduling appointments • Presenting yourself as a professional and the importance of building rapport with the building representative • What to do if you are denied entry to conduct the inspection • What to look for on the outside of the building. <p>Please move on to Part two</p>