

STATE OF
COLORADO

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DFPC Fire & Life Safety Fall Newsletter

1 message

Colorado Division of Fire Prevention & Control FLS <chris.brunette@state.co.us>

Mon, Oct 19, 2020 at 2:00 PM

To: "chris.brunette@state.co.us" <chris.brunette@state.co.us>



Partners, The Fire & Life Safety Section within the Colorado Division of Fire Prevention & Control manages a variety of programs, including fire suppression system oversight and certification; fire investigations; public school and junior college, healthcare facilities, limited gaming facilities, and waste tire facilities construction and inspections; fireworks; reduced ignition propensity cigarettes (safe cigarettes); and the professional development of inspectors and plan reviewers. These programs ensure that fewer institutional fires burn in Colorado, and when they do, the people of Colorado are safer from that threat. Fire and Life Safety section staff can be found throughout the State, working to ensure that our healthcare facilities and school buildings, among others, are safe for all our Colorado's residents. FLS members provide guidance and expertise in code implementation, code enforcement, fire investigation, and professional development. The Section consists of 18 plan reviewers and inspectors, a lead fire investigator, who is supported by several other section staff who are also trained experts in the field, 3 professional development educators, 6 unit chiefs, 2 branch chiefs, 2 administrative assistants, and a certified permit technician. We are proud to have the opportunity to serve our Colorado communities and want to share with you all what we've been up to this last quarter.

Sincerely,

Chris Brunette
DFPC Fire and Life Safety Section Chief



White Papers

[Fire Drill Guidance During COVID](#)
[Physical Environment Guidance During COVID](#)

Fire Prevention Week 2020

Written By: Kyle Parag

This year's theme, "Serve Up Fire Safety in the Kitchen" was well received and provided the opportunity for some creative ideas and examples. Fire Prevention Week commemorates the Great Chicago Fire of 1871, which burned from October 8th to October 10th of 1871. Devastating fires like these spurred the development of our modern building codes, reinforcing the powerful work inspectors do on a daily basis. Please join us in understanding and sharing the messages Fire Prevention Week means for our communities.

For Fire Prevention Week, DFPC's Fire and Life Safety Section demonstrated two common fire occurrences in the home, a common grease fire on a residential cooking appliance and a residential sprinkler activation courtesy NFSA. The demonstrations illustrated the importance of not only the fire prevention techniques, but also the importance of proper suppression techniques. Comprehensive fire prevention begins with education and ends with suppression. More now than ever, fire prevention includes building systems and equipment. Fire extinguishers, sprinkler systems, rated walls and alarm systems are just some of the many aspects that are designed to function after the ignition has already occurred, and all are important aspects of modern fire prevention.

Learn More at:
[DFPC Facebook](#)
[NFPA Facebook](#)

Professional Development Unit

Written by: Chuck Altvater

The Professional Development Unit in the Fire and Life Safety Section is really beginning to hit its stride as we end the first year of its existence. In this last year we started as the "Professional Standards Unit" and when Dawn Tollis moved over to become the Lead Investigator for DFPC, we changed the name to Professional Development Unit to better reflect the mission of the Unit. We are the training and education arm of the FLSS, providing one-on-one professional development with Fire and Building Inspectors and Plans Reviewers, hosting and developing classes and taking the lead on our Community Risk Reduction program, known as Fire Safe Colorado.

We have two full-time staff and two who rotate into the unit from the Fire Prevention Branch and the Building Code Branch for six-month tours of duty. Currently, the PDU is beginning a weekly class, open to all Fire Inspectors across the state by remote connection, covering the Fire, Life safety, or Building code requirements in the built environment. For more information, or to request a class, contact Chuck Altvater at chuck.altvater@state.co.us

Fire Safe Colorado is the state-wide CRR effort, which members of DFPC have been spearheading. FSC is aiming to assist Fire Departments and other agencies and organizations to identify and prioritize risks in their communities, and help them with the coordinated application of resources to minimize the probability or occurrence and/or the impact of unfortunate events.

Simply put FSC is here to assist and coordinate communities' own efforts to reduce risks to their residents and to get ahead of emergencies to save lives, save money, and make their communities better places to live, visit, and work. We're organizing 14 regions across Colorado, and each faces its own risks, while they all face some of the same dangers to people, and creating a network where they can share data, share messaging, and coordinate their efforts. For more info, or to find out when FSC is coming to your region, please visit www.firesafecolorado.com

Building Code Branch

Written By: Dee Stevens and Joellen Thiel

After over 12 years of service to the State of Colorado, Jo Opl retired at the end of September. She will be missed by all!

It Was a Very Busy Spring and Summer!

The 2020 construction season was very busy. Thanks to everyone for their patience as the queue time grew to 16 weeks due to the quantity and scope of projects submitted. The Building Code Branch completed 1,064 plan reviews, 1,063 inspections, and issued 545 permits from January - September. This was an approximately 50% increase over the number of permits issued during the 2019 season. Currently the queue time is down to 4 weeks.

Pre-Submittal Meetings Have Resumed

The Building Code Branch is again holding pre-submittal meetings for projects in the DD or CD phase. These meetings will be held by video conference on Wednesdays at 9:00, 10:00, 11:00, 1:00 and 2:00. Please contact Joellen Thiel at joellen.thiel@state.co.us to schedule an electronic meeting. If your project is not complex, a meeting is not required. Please use discretion when scheduling these meetings.

Common Errors and Omissions on the Drawings

Safety Glazing:

On the door and frame elevations be sure to indicate the glazing types. It is especially important to note the safety glazing in the hazardous locations. This includes glazing in doors per IBC 2406.4.1, glazing adjacent to doors per IBC 2406.4.2, and glazing in windows per IBC 2406.4.3. Remember a glazing panel may be considered to be in a hazardous location even if it is not in the same frame as the door, depending on where that frame is located relative to the door. DFPC requires this information be located on the drawings.

Correct Adopted Codes:

Note that DORA has adopted a different series of codes than DFPC.

The current codes adopted by DFPC are the:
2015 International Building Code
2015 International Existing Building Code

2015 International Fire Code
 2015 International Mechanical Code
 2015 International Energy Code
 ICC A117.1-2009 (Standard adopted by reference in the IBC)

The current codes adopted by DORA are the:
 2018 Colorado Plumbing Code
 2018 International Fuel Gas Code
 2020 National Electric Code

Sprinklered or Non-Sprinklered:

In addition to including the occupancy group and construction type on your code sheet, be sure to include if the building is fully sprinklered or non-sprinklered. This is required on all projects because it is information included on the permit card and the Certificate of Occupancy.

Voice Evacuation, CO Detection, and Elevator Recall

Remember to include on your code plan or in your code data if Voice Evacuation (IBC 907.5.2.2), Carbon Monoxide Detection (IBC 915), and Elevator Two-Way Communication (IBC 1009.8) will be a part of the project scope.

Calculating Occupant Load in a Gym

DFPC calculates the gym occupant load by combining the number of bleacher seats with the number of potential chair seats on the gym floor. Bleachers are counted at 1 occupant per 18" and floor seating is counted at 1 occupant per 7 SF for the main playing court area. Remember, if there is bleacher seating, it is considered an A-4 occupancy and the fixture count requirements increase over the A-3 requirements.

Calculating Occupant Load on a Platform or Stage

Per IBC Table 1004.1.2, the occupant load of a platform is counted at 1 occupant per 15 SF. Even if the space is being used as a classroom during the day, this occupant load calculation must be used for exiting purposes and night time use fixture counts.

Special Inspections

There are four things that you may be required to include in your submittal package relative to special inspections:

Statement of Special Inspections from the Structural Engineer

This statement must comply with 1704.3 and 1704.3.1. A list of special inspections is not sufficient. The content of the statement must cover the five items required in IBC 1704.3.1. Reference IBC 1705.2-1705.13 for additional information. Statement of Special Inspections from the Architect/Design Professional in Responsible Charge. This is required when there is fire rated construction in a Risk Category III building. It is also required when there is smoke control, EIFS, sprayed fire-resistant materials and mastic and intumescent fire-resistant coatings. Reference IBC 1705.14-1705.18 for additional information.

Letter of Acknowledgement from the Contractor

Per IBC 1704.4, when the contractor is responsible for construction of a main wind- or seismic force-resisting system, designated seismic system or a wind- or seismic force-resisting component listed in the statement of special inspections, a statement of responsibility is required. DFPC requires this statement be provided prior to issuing the permit.

Special Inspector Resumes

It is important to note that these are resumes for special inspectors used for the IBC Chapter 17 inspections, not the inspections from Chapter 1. Providing the name of the company being used is not sufficient. It must be the resumes of the individuals being used. The plans examiner compares the resumes to those approved on file. If the applicant is new or desires to be qualified for a new special inspection type, the resume is then reviewed by the Chief Building Official to make sure the minimum qualifications are met. This can take some time, so submitting this with the initial package is important.

Membrane Structure Code Requirements

Many school districts have started using tents to help deal with the Covid-19 distancing requirements. In the IBC, these are considered "Membrane Structures". There are very specific code requirements in both the 2015 International Building Code (IBC) and the 2015 International Fire Code (IFC) regarding the construction and use of membrane structures.

With any structure housing humans there are minimum requirements for structural stability, fire safety, accessibility, exit access, and ventilation. We do not want the membrane structure to fall down, burn down, trap someone inside, or make someone sick. We want people, and in this case children, to be safe.

Below are some of the minimum requirements that must be met when applying for a membrane structure permit:

- Provide plans of the membrane structure showing the dimensions of the structure and the location of any furnishings or implements within it.
- Provide the occupant load. Provide a short narrative of the intended use.
- Provide the locations of fire extinguishers. If furnishings are provided within the structure, a clearance of 3 feet is required between items within the structure and the walls.
- Show locations of the exits including details of the opening size and method of operation. There are specific requirements related to the exits. Many of the applications received are not utilizing walls or openings and avoid those requirements.

Provide a structural analysis by an engineer which includes the wind loads and snow loads. These vary by location. This is required to confirm the structure, the fabric, and the ground anchors can bear the imposed loads.

Provide a site plan showing the location of the membrane structure in relation to any adjacent buildings and property lines. A 20-foot clearance is required between the structure and the property line, other buildings, parked cars, or internal combustion engines. Support ropes and guy wires are considered part of the membrane structure. The distance to the nearest accessible restroom group and other accessible buildings and features located on the site must also be shown. Indicate the locations of the fire truck access and fire hydrants.

Provide manufacturer's data showing the membrane structure's material is fire retardant treated, compliant with NFPA 701.

Certification of the membrane structure is required to be posted with the following information:

- Name and address of the owners
 - Date the fabric was treated with flame retardant solution
 - Trade name or kind of chemical used in treatment
 - Name of person or firm that treated the material
 - Name of testing agency and test standard by which the fabric was tested
 - If mechanical equipment is provided, the requirements of the 2015 International Mechanical Code (IMC) must be followed.
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Ew, What's That Smell?!?

Written by: Dawn Tollis

Recently there has been a lot in the news about home explosions attributed to natural gas. Earlier this year, it was reported that the largest fine in Colorado history was issued over a 2017 explosion in a Firestone home that claimed the lives of two people and injured others. In a 2018 NFPA Research report, "Natural Gas and Propane Fires, Explosions and Leaks Estimates and Incident Descriptions," natural gas leaks were the leading factors contributing to home structure fires per year.

The report stated that 54% of the fires involved cooking equipment, with heating equipment involved in 25%. It is estimated that an average of 4,200 home structure fires per year started with the ignition of natural gas. So, what can we do as residents to try and protect ourselves from being one of these casualties?

First, it is important to know that natural gas when it is extracted from the ground is colorless and odorless. That rotten odor you smell that is associated with natural gas is actually mercaptan and is intentionally added in order to signal its presence. So, when someone comes to you and says, "Ew, what's that smell? It smells like rotten eggs!", you should pay close attention and take the proper measures to keep everyone safe!

What are the do's and don'ts:

DO follow general prevention guidelines – regularly have your gas appliances (including fireplaces and tankless water heaters) inspected, do not keep combustibles stored around your gas fired appliances

DO always check with utility companies to locate and/or confirm gas line locations before digging

IF YOU SMELL GAS, LEAVE IMMEDIATELY AND CALL 911

DON'T investigate the source of the leak! The combination of natural gas and oxygen can produce carbon monoxide and can lead to poisoning!

DON'T depend strictly on your carbon monoxide detector!

DON'T ignore physical symptoms of carbon monoxide poisoning! These symptoms include dull headache, weakness, dizziness, nausea and/or vomiting, shortness of breath, confusion, blurred vision, and loss of consciousness.

DON'T turn on or off any electrical switches! Even flipping a switch to the off position can and will produce a spark!

DON'T use the garage door opener!

DON'T open windows to ventilate! Natural gas is normally not volatile, but when it is mixed with oxygen it brings explosion limits to a level where it can and will ignite!

Recently I have participated in investigations where lives were saved by following these guidelines, and lives were lost when they weren't. One of my duties and driving force in performing investigations is to learn and pass on information that could possibly save lives. Hopefully this information will be thought about and we will be able to save one more life, and that could be our own or those we love.

Reporting Fires in Health Care Facilities and Schools

Written by: Rob Sontag

Did you know there is responsibility for schools and State licensed health facilities to report any fire that occurs within their facilities to the Colorado Division of Fire Prevention & Control?

Specifically the verbiage in the current rules for health facilities (8 CCR 1507-31) says: 9.2.4 The Business Entity shall report or cause to be reported in the manner and method required by the Division all fires that occur within any Health Facility subject to regulation by the Division in the State of Colorado. This requirement shall be met anytime a fire occurs that causes any one of the following conditions:

- Activates one of the fire and life safety systems installed in the building or structure (e.g. – fire alarm system, fire suppression system, etc.).
- Causes a response from the Fire Department
- Causes the evacuation of any occupants located in the building or structure.
- Results in the deployment and use of a fire extinguisher

And the current rules for Schools (8 CCR 1507-30) says:

9.2.4 The Board shall report or cause to be reported in the manner and method required by the Division all fires that occur within any property, building, and/or structure owned or operated by a school or school district subject to regulation by the Division in the State of Colorado. This requirement shall be met anytime a fire occurs that causes any one of the following conditions:

- Activates one of the fire and life safety systems installed in the building or structure (e.g. – fire alarm system, fire suppression system, etc.).
- Causes a response from the Fire Department
- Causes the evacuation of any occupants located in the building or structure.
- Results in the deployment and use of a fire extinguisher.

Why is it important to understand our fire problem in these facilities?

For the period of 2014 to 2018 there were an average of 4,763 fires per year in schools and 6,719 fire per year in health care type properties in the United States. These fires led to an average of 50 injuries and 1 death per year in schools and 156 injuries and 5 deaths in health facility type properties (NFPA website “US fire problem”). The fire prevention and suppression community has shown some success in lowering fire injuries and fatalities over the past 50 years but these numbers are still too high.

So what will DFPC do with this information?

As part of our community risk reduction efforts and participation in the Fire Safe Colorado collaborative DFPC hopes to be able to better understand the root causes and challenges of the fire problem in our regulated facilities. By analysis of the numbers of fires, where they are occurring, and the common elements as to cause and participants the Division hopes to better target its efforts to reduce fires in Schools and Health Facilities.

How can I help DFPC to look at this problem?

Make sure the administrators of the schools and health facilities in your community have access to the link to the Division’s fire watch and reporting website by [clicking here!](#)

Once there they simply need to click the link to “Report a Fire in a Healthcare Facility or School” and complete the form.

This form will collect the basic information about the fire event for the Division.

The division may reach out after the form is submitted for some follow-up but the basic information will also assist the Division to reduce the fire threat in these facilities.

Remember “Fire is everyone’s fight”

Modified Plan Review Fees and Construction Inspections

Written By: Shane Kakavas

On August 14, 2020 plan review fees and the allotted amount of inspections per permit was updated. In order to simplify the fees everything is based on a “Total Project Valuation” (TPV) for all construction types and programs where DFPC requires a construction permit. The fees are comprised of a base fee and a multiplier of the TPV. The fee calculator for each program type is the same for a new building, addition, remodel, renovation, system(s) modification or a full system(s) replacement.

Refer back to each set of rules for the type of permit you are applying for (i.e. Health Care Facilities, Public Schools or Suppression programs) Included below is a link to our website so you can visit the rules and see the current fee structure.

As for the amount of construction inspections those are limited based on the type of construction taking place (new, addition or renovation). You will receive a set number of inspections based on the type of construction taking place and square footage of the

project. You can use those allotted onsite inspections as you see fit. After the allotted amount has been reached, additional fees will be charged to the permit applicant for each additional inspection. Please refer to the rules for specifics.

Fee Calculator location as follows:

Health Care Facilities – 8CCR 1507-31

Public Schools – 8CCR 1507-30

Suppression Systems – 8CCR 1507-11

