



Post Indicator

Quarterly Newsletter June, 2009



President's Message – Kip LaMotte

FMAM Members,

As I sit here and write this, summer is upon us. Well, it's supposed to be but I'm still wearing sweatshirts and not shorts.

I'm honored to be writing my first President's Message. I'm excited about the endeavor and I'll try to be the strongest leader I can be. At our last Board meeting I asked the other board members how we can make FMAM more attractive to current members and new members, how can we make FMAM more value oriented, and how can we make members feel like getting involved more.

While I know these are million dollar questions, my goal is to get more members involved. My theory is an organization; any organization, is only as good as its members. We have a great group with a lot of knowledge and experience. I'd like to see us capitalize on our strength as a group. We, as a board, are reviewing committee assignments and will continue to "re-invest" in our members. If you are interested in serving our membership on special committees or have special interest in getting involved more, please notify me or any other board member. We will welcome any suggestions and review them as a board.

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I'm proud of this group and it's members and I'll show it at the NFPA Conference when I give our chapter report to the International Fire Marshals Association (IFMA) Chapter Presidents meeting June 7th in Chicago. I'll listen while other Chapter Presidents or IFMA chapter representatives give their reports to see if I can learn and pick up any good ideas for our group. Jon Nisja is Immediate Past President of IFMA and will also be there for the meeting. He and I will both be representing FMAM and our state with pride as we talk about our group.

At our last board meeting, we also discussed training needs and ideas as a group and now I'm asking the members for training suggestions and ideas for what we should get here. What do you need? What do you want to learn? One of our main missions as FMAM is to provide members with the opportunity to attend the training needed to do their jobs expertly and efficiently.

While saying this, we realize there are budget woes for everyone and some cities may not have the resources to "justify the means". We are considering training ideas like webinars among others and encourage all members with other ideas to let us know. With other technologies out there, we're trying to think out side the box as they say and see if we can make FMAM more valuable to the members.

Stay tuned as we see what FMAM has in store for each of us in the future. As always, if there are any suggestions or ideas, please share them with the board.

Yours in Prevention and Safety,

Kip LaMotte

Treasurer's Report

No Treasurer's Report was received by the time this edition of the Post Indicator was published. The following are the current balances:

Balances:

Savings- \$26,454.22

Checking- \$6,763.28

Fire Marshal's Association of Minnesota MEMBERSHIP MEETING Meeting Minutes – March 11, 2009

CALL TO ORDER

President Phil Owens called the meeting to order at 12:20pm at the Bloomington Fire Station. President Owens thanked Brain Ranney, from Accurex for the educational portion. We hope that everyone enjoyed the lunch catered by Famous Dave's, thank you John Powers for taking care of that.

A change in the order on the agenda and we will be holding the elections first thing.

ELECTION OF OFFICERS

Office of President will be done first. Kip LaMotte put his name in for consideration. Nominations were opened and asked if any from the floor. After three calls for nominations and none received, a call for a white ballot for Kip LaMotte as the new President for a two-year term, motion by Tom Pitschneider and Mike Urmann, motion passed unanimously.

Kip has left a one-year term on his Vice-President, Robbie Bartholomew and Angie Leitner have put their names in for consideration. Nominations were opened and asked if any from the floor. No other nominations. Ballots were counted and Robbie Bartholomew will be the Vice-President for a one-year term. Motion to have ballots destroyed by Jerry Rosendahl and 2nd by Gary Schroeder, motion passed unanimously.

The 2-year Board Seat open for election, Roy Kingsley is the incumbent, nominations were opened and asked if any from the floor. After three calls for nominations and none received, a call for a white ballot for Roy Kingsley as board member for a two-year term, motion by Wayne Anderson and

2nd by Thierry Chevallier, motion passed unanimously.

The two-year Secretary position open for election, Joe Berg has expressed his intention for running for this position. Nominations were opened and asked if any from the floor, after three calls for nominations and none received, a call for a white ballot for Joe Berg as secretary for a two-year term, motion by Rick Breezee and 2nd by Gary Schroeder, motion passed unanimously.

State Fire Marshal Jerry Rosendahl presented President Phil Owens with a certificate for his dedication and service to Fire Prevention and Safety in Minnesota from 1988 to 2009. He expressed his gratitude to Phil for his many years of services not only in St. Paul but also as either a Committee Representative, Board Member or Officer of FMAM for all these years.

SPECIAL GUEST REPORTS

Russ Sanders from NFPA is with us today to inform us of NFPA's initiative to support and promote residential sprinklers in one and two family dwellings. 84% of all fires occur in residential homes. 8 people die everyday from fires in their homes. NFPA's website is www.firesprinklerinitiative.org, the site has many forms, templates, sample ordinances, statistics, etc. available to promote the installation of residential sprinklers, get ordinances passed, and to educate the public.

Currently in Kentucky there is a lawsuit City vs. State, where a City Council had adopted residential sprinkler regulations more stringent than the Building Code adopted by the State. The State took action because the City did not adhere to the mini-maxi requirement. We'll keep you informed of the courts decision. The outcome could create an extreme impact nationwide.

Russ also talked about "Fire Compliant Cigarettes". State Fire Marshal Rosendahl reminded members that these cigarettes are not fire safe and we must refrain from using that term, it will give the public the wrong impression. These are manufactured to meet certain criteria for self-extinguishing we not being smoked. However, cigarettes will still start paper and other untreated material on fire, unlike pajamas, bedding, and upholstery that a fire resistant rating.

Tom Presniak from UL informed the members that UL has a newly formed website that was intended to be user friendly for especially for the fire service testing results. This area is located at <http://www.ul.com/global/eng/pages/offerings/perspectives/regulator/fireandbuilding/>. You will be able to find out information on Fire Alarm Certification, Contractors within the state and their web sites, and links to those company web site. While your there sign up to receive UL notifications.

Greg Johnson from ICC reported to the members that the NAHB lost their appeal to the ICC regarding the process. There have been some policy changes and are posted on the ICC web site, www.iccsafe.org. The changes can be seen and commented on at <http://www.iccsafe.org/membership/feedback-PAC.html>. Code development will be changing the 3-year cycle to 2-12 month on and 12 months off instead of the 2-18 month cycle.

Bob Imholte for Peg Bohn of the NFSA wanted to inform all the members of upcoming training and a code forum. Peg also wanted members to be sure to send her information on sprinkler safes. Code Forum on March 24th at the Mermaid Event Center on Residential Sprinklers. This should be a very interesting forum.

March 31- April 3 – NFSA Sprinkler Classes at the Fire Museum.

Sprinkler saves: please make sure that if you have a sprinkler save in your community to get the information to Peg Bohn. We're also trying to get the forms electronically to make it easier. There are copies of the form on the back table.

STATE FIRE MARSHAL'S REPORT

State Fire Marshal Jerry Rosendahl thanked his staff for their excellent work. Jerry thanked Dan Kaiser for his continuing hard work on the Quick Response newsletter; it's a wonderful way of getting knowledge and information out.

There were 65 applicants for the Public Educator position; we will be going through those applications to determine which of those meet the needed qualification to be sent onto the next step of the interview process. We are still looking at the hiring of a Fire Code Development & Training person and a Juvenile Fire Setter Specialist.

Bob Rexeisen will be on the Health Care Team;

Andrea Wenzlaff is now the fire investigator for the northwestern region and will be working out of Thief River Falls.

2009 Fire Deaths: Two fire deaths have occurred in the past week, bringing the 2009 total to 10. That is compared to 8 last year at this time.

MFIRS: As of this morning, there are 68 fire departments that have not submitted any data to us from 2008. Our participation rate is 91%, which is down from last year's 95%.

Fire Training Reimbursement: Over \$1.8 million in grant requests were received by the MN Board of Firefighter Training & Education by the March 2 deadline. The MBFTE only has approximately \$850,000 to grant to these departments, so the analysis of each request has started and they will announce the results next week as I understand it.

Fire Standard Compliant Cigarettes: Update – there are now 825 brand-styles of FSC cigarettes certified for sale in Minnesota! Please remember not to call these fire-safe cigarettes, since the standard they are tested to does not guarantee perfection. Please also remember that we are asking for a report from you (beyond the MFIRS) for any cigarette-caused fires.

Law Enforcement Fire Training: I recently attended a city council meeting where several law enforcement officers were being honored for their actions to rescue a person from an apartment building that was on fire. The officers were banging on doors and helping people evacuate when they encountered a door knob that was being turned part-way by a person inside the apartment, but the door wouldn't open.

There was smoke and heat in the hallway where the officers were. What do they do? They have no protective clothing or SCBA. They don't have a charged hose line. Many firefighters have a problem with the personal safety decision made by these and other officers who enter burning buildings without the "proper gear".

My purpose in bringing this up is to ask you a question – what amount of fire training have you provided your local law enforcement personnel? What is your role in doing that – if any? These officers made a decision based on risk and what was to be gained – just like you would do. Are they

wrong? Let's not forget that they arrived first, and are sworn to protect and serve. And maybe the fire service can improve the personal safety risk to those officers by providing some training on techniques they can use to reduce the risk?

Heat Recovery Ventilators: I was contacted by Maple Grove Fire Marshal Marilyn Arnlund about a fire problem with certain heat recovery ventilators. She was inquiring if we had seen similar incidents in other areas of the state. Venmar Ventilation, Inc. has recalled several brands and models of these ventilators made between October 2006 and August 2007.

The ventilator's "end of life" indicators are heat, smoke and sometimes fire. Marilyn has assembled lots of data on the recall and the incidents that have occurred. For more information and to provide facts about any fire calls that you've had related to this, please contact Marilyn Arnlund directly at marnlund@ci.maple-grove.mn.us

The State Fire Marshal update can be viewed on the State Fire Marshal's Web site at <http://www.dps.state.mn.us/fmarshal/fmarshal.html>.

Information is also disseminated through the list server for more information about the list server contact Bob Dahm at <http://www.dps.state.mn.us/fmarshal/ListServer.html>.

MEETING MINUTES

Approval of the December 10, 2008 membership meeting minutes as published in the March Post Indicator by Gary Schroeder and 2nd by Mike Urmann, motion passed unanimously.

TREASURER'S REPORT

FMAM's current balance is \$33,668.17 with \$7,272.62 in checking and \$26,415.55 in savings as published in the March Post Indicator. John stated that we have not received a bill from MnFac, Phil will check on that.

We currently have 147 paid members for 2009 with renewal still coming in. This may be in part to the economy. Another notice will be sent out as a reminder.

REPORTS

Public Education Committee: Connie Forster wasn't able to attend today's meeting but sent a report:

Carbon Monoxide Alarms: The MN Safety Council has partnered with Kidde to purchase CO alarms at a reduced rate. Departments can order the Nighthawk alarm for \$30 each. These are the digital readout, electric with battery backup. Contact Erin Peterson at 651-228-7314 for more information. She has some examples on how to start an awareness campaign in the community.

Bicycle Safety Course: Liberty Mutual has an interactive bike safety course for children and would be willing to work with departments for safety camp. Amy Miller at 763-420-4407- ext 59570 is the contact.

NFPA & Dominos Pizza Team Up on Fire Safety: Announced it's sprinkler fire safety campaign to encourage customers to focus on the home safety, especially in the kitchen. Messages of cooking fire prevention on the boxes March 8.

MSFCA Public Education Survey: Thanks to those folks who have already turned in the survey. If you haven't already done so, please fill it out and send it in.

Training: The NFSA Fire Sprinkler Training as stated earlier will be March 31, April 1-3 at the Fire Museum. Jon Nisja stated that we would like to get Art Black for a Fire Alarm class, 2-day basic and 1-day plan review. We'll work on trying to keep all the cost at a minimum due to the economic times.

Bob Rexeisen will be holding a Pyrotechnics class, registration is done on the State Fire Marshal website. The class was held in Owatonna and we've received very good feedback.

Fire Code: We will not be adopting the new code as stated in the joint press release from DOLI, the State Building Department and the State Fire Marshal's Division.

Governor's Council On Fire Prevention And Control: Jeff Schadegg reported the Governor's Council is working on a White Paper for Residential Sprinklers. The group was involved at the Fire Day at the Capitol. They will continue with the Fire Day at the Fair.

Certification Report: Phil Owens reported that the Inspector I and II tests need to be reevaluated for IFSAC. NFPA has a draft on the requirements for

Fire Marshal; it's very interesting and should be looked at.

Legislation: Phil reported that they are monitoring the process. Legislative updates are available via email through the lobbyist, Capital Hill Associates. Sherry Munyon has done an excellent job for the Fire Service and has represented us very well.

Merchandise: Kip has sent the DVDs to Lori Streich, she will be sending them from her shop. Orders for clothing can be done on line and just state that you want our logo on the merchandise.

ADJOURN

Motion to adjourn at 2:30pm by Wayne Anderson and 2nd by Gary Schroeder, motion passed unanimously.

Respectfully submitted,
Robbie Bartholomew, Interim Secretary

Fire Marshal's Association of Minnesota BOARD MEETING May 13, 2009

CALL TO ORDER

Meeting was called to order by LaMotte at 9:15 am. The following members were present: President Kip LaMotte; Vice President Robbie Bartholomew; Secretary Joe Berg; Treasurer John Powers; Directors Roy Kingsley, Tom Pitschneider, and Angie Leitner; Public Education Chair Connie Forster; Past President Phil Owens; and State Fire Marshal Jerry Rosendahl.

- Motion to approve the February 11, 2009 Board Meeting Minutes as published in the March Post Indicator. Motion John Powers, Second Phil Owens, Motion passed.

Kip LaMotte suggested that breaks during Board meeting will be at approximately at 10:30 am.

TREASURER'S REPORT

Financial Report:

- Account Balances:
 1. Checking - \$5,558.28
 2. Savings - \$26,454.22
- Expenses:
 1. Meetings - \$58.00
 2. MN Fire Chiefs - \$2,000

3. Others – Famous Dave's, Streich Design

Outstanding membership renewals and dues – Minneapolis Fire and a few other stragglers; there are 184 members as of today, in 2008 we had 238 so we are down 54 from last year.

The 2009 Budget has been finalized.

FMAM authorized credit card holders are: Kip LaMotte, John Powers, and Jon Nisja.

MERCHANDISE

The Association purchased \$4,473 leather padfolios that were made available for members at the March General Membership meeting. Additional padfolios are available for those members who were unable to attend the meeting.

Kip will talk to Lori Streich regarding tracking on-line sales data and storage arrangement of FMAM merchandise.

REPORTS

Public Safety Education – Connie Forster:

- Sprinkler coalition meeting is at SBM FD on May 28; 12-2 pm.
- NFPA has a new "After the Fire" free kit available on-line.
- Chief's Public Education Committee is working on goal setting and Fire Department group purchasing.
- Looking at partnering with MNSCU for Public Education training.
- The MN Brainstorming Group, a coalition of metro area fire prevention departments, is considering a merger with the MNFCA.

Training & Education – Robbie Bartholomew:

- June's General Membership training will include Commercial Kitchen Hood Cleaning by Enviromatic Corp. Still working on training for September.
- Another training opportunity being considered is a 1 or 2 day Fire Alarm Testing offered by Art Black
- It was suggested that we should also look for training that was "unique" in nature such as hazardous materials and occupancy issues.
- ICC offers Webinar Programs. Robbie will look into costs and feasibility.
- The March Post Indicator will include a recap of the previous years training and contact hours

for the purpose of helping those who need to keep track of Continuing Education hours for certification purposes.

- A new survey will be sent out to all members asking for their input as to what training they would like to see in the future.

Legislation (MnFAC) – Jerry Rosendahl:

- The Firefighter Licensing Bill is on hold at this time.
- The Omnibus Bill has yet to be approved. The impact to the Fire Safety Account is unknown at this time.

Residential Sprinkler Task Force – Connie Forster:

- Four sub-groups are looking for input on how to educate the public AND firefighters about residential fire sprinklers.

Greater Minnesota needs help with fire code training and enforcement. Jerry Rosendahl suggested that FMAM could help with the SFM Office on this issue.

OLD BUSINESS

Appointments – See Item 6 in New Business

The Board was asked by Kip to think of ways FMAM can be more attractive to current and past members.

- Quality of training
- Free/cost of training
- Define the value of belonging to FMAM

FMAM General Meetings for 2009:

- June – New Brighton
- September – Bloomington
- December – Bloomington

Board to create a list of members who have left the association and find out why they left.

NEW BUSINESS

1. FMAM review of the Association
2. New Brighton Public Safety Director Bob Jacobson was given a plaque in appreciation for supporting FMAM by hosting General Membership meetings and Board meetings.

3. Social Events for 2009 – Discussion about having another FMAM social event. The following Board offered to assist:

- Tom P. – Valley Fair
- Angie L. - Aamodt's Apple Farm
- Kip L. – Dinner Cruise on Lake Minnetonka

4. Future Budget Needs

- Continue to establish a yearly budget
- Look for quality educational programs that will generate revenue and at an affordable cost.

5. Membership Needs - Survey members for ideas

6. FMAM Appointments – Phil O. will forward to Kip a list of current FMAM appointments. Let Kip know if any Board member is interested in volunteering for a specific appointment or would like to step down from a current appointment. Kip will review current appointments and make adjustments by next Board meeting.

GOOD & WELFARE

FMAM Stipend Policy - FMAM may pay a stipend up to \$500 when requested in writing to the FMAM Board, one time per calendar year, for FMAM members who are attending a conference or seminar, representing FMAM or an association that FMAM is affiliated with, where the member's employer cannot fund the expenses, and must be able to show that there is a benefit to the Association.

- Motion - Phil Owens
- Second - Robbie Bartholomew
- Motion unanimously carried.

The Board discussed and agreed that the Web Designer/Communications Coordinator should attend all future Board meetings.

ADJOURN

Motion to adjourn at 12:20 pm. Motion made by Tom P. Second by Angie L. Motion Passed

Respectfully submitted,

Joe Berg, Secretary

Leitner Appointed by the ICC to the IFC Committee

by: Steve Zaccard – St. Paul Fire Marshal

Saint Paul is pleased to announce the appointment by the International Code Council (ICC) of Angie Leitner to the ICC's Fire Code Committee for the upcoming 2009/2010 code cycle. In this position Angie will have a direct impact on fire protection for the future of Minnesota.

Angie has been the fire protection engineer for the City of Saint Paul since 2005. She is a graduate of Purdue University with a degree in mechanical engineering. More recently she has earned a Master's Degree in Public Administration from Hamline University in Saint Paul. She is a Board Member of the Fire Marshal's Association of Minnesota and she is active in the Residential Fire Sprinkler Coalition. She's also a member of the Minnesota Fire Chief's Association's Code Committee.

June FMAM Meeting

The June FMAM Meeting will be held on Wednesday, June 10, 2009 at the New Brighton Public Safety Training Center. The educational portion begins at 1:00 pm and features Don Pfeleiderer of enVIROmatic Corporation of America, Inc. on Commercial Kitchen Hood Cleaning.

The business meeting will follow the educational program.

A Call to Join the Sprinkler Fight

By: James Shannon, NFPA President
NFPA Journal®, *May/June 2009*

When NFPA recently announced its initiative to gain adoption of residential sprinkler requirements in new one- and two-family homes, we knew that we were beginning a tough battle that would take a massive effort by us, the fire service, and safety advocates over several years.



But we also knew that the payoff in lives saved, firefighter safety, and property protection would justify that commitment. Widespread use of residential sprinklers is essential in improving fire safety for everyone.

The adoption of residential sprinkler requirements, first by NFPA and recently by the International Code Council (ICC), will allow us to make real headway in wider adoption of residential sprinkler laws. Because of the severe economic problems we face, home building has stalled, but when the economy turns around, the pent-up demand for housing will likely lead to millions of homes being built in the coming years. If we can begin to make progress in our campaign, it will help educate the public about sprinklers' affordability and efficacy. It will also demystify sprinkler technology, and will rebut the spurious arguments that have stood in the way of sprinkler use.

It makes sense to launch this campaign now. The United States still has one of the worst fire death rates in the industrialized world. While we have made great progress in the last generation, we still lose about 3,000 lives every year in residential fires. Our push for fire-safe cigarettes will, we believe, significantly lower those numbers, but, even after that law is fully effective, the fire death rate will leave the United States with a record nobody should be proud of.

We have shown that residential sprinklers are affordable. A study conducted by the Fire Protection Research Foundation of 10 communities that have adopted residential sprinkler ordinances places the cost at \$1.61 per sprinklered square foot. In places such as Montgomery and Prince George's Counties, Maryland, home building continued to flourish after sprinkler advances were adopted.

But a new threat to this campaign has emerged. Home builders in at least 16 states have found sponsors for legislation that would prevent communities from adopting residential sprinkler requirements. These proposals would effectively preclude the adoption of the provisions approved by NFPA and the ICC. This brazen tactic is unprecedented in our history of developing safety codes, and it is essential that we do all we can to prevent this special interest from succeeding.

The fire service in particular should be concerned, because if the home builders succeed, this tactic will be used again by other interest groups to prevent advances in staffing, equipment improvements, and other resources achieved through code adoptions. NFPA is aggressively fighting these dangerous proposals. We have succeeded in knocking down efforts to block residential sprinklers in Illinois, Maine, and Ohio, but our opponents won't quit.

As we found in other advocacy efforts, politicians pay attention when the fire service speaks about fire safety, especially when it speaks with one voice. If we expect our progress saving lives from fire to continue, it is important that all of us, especially members of the fire service, get involved in this campaign now.

Go to www.firesprinklerinitiative.org to learn how you can help us defeat these deadly legislative proposals. Now is the time to join the fight to save lives through residential sprinklers.

Sprinkler Inspection Training

The State Fire Marshal is hosting a series of one-day seminars on sprinkler inspections. These seminars are geared toward jobsite inspections of fire sprinkler installations. Learn step-by-step inspection procedures that contribute to optimal system performance and compliance with NFPA standards and the Minnesota State Fire Code. This course is intended to identify some of the most commonly missed or misused sprinkler installation rules and to highlight some of the "tricks of the trade" in field installations.

If you are a fire marshal, fire code inspector, building official, property loss control specialist or other authority that reviews or evaluates automatic sprinkler installations, this course is for you.

The seminars will be held on the following dates at these locations:

- Wednesday, July 15 at Duluth ARFF facility
- Wednesday, July 22 at Owatonna Fire Station
- Tuesday, July 28 at Oakdale Fire Station #1
- Thursday, July 30 at Burnsville City Hall
- Wednesday, August 5 at Waite Park City Hall
- Wednesday, August 12 at Fergus Falls Fire Station

- Wednesday, August 19 at Redwood Falls Community Center

All sessions are from 8:00 am – 4:30 pm. There is no fee for this training, however, persons must pre-register. On-line registration only at the Minnesota State Fire Marshal web-site www.fire.state.mn.us. Click on *Course Registration System* (blue box).

Obstructions to Sprinkler Discharge Pattern Development

By: Dan Kaiser, Deputy State Fire Marshal

Obstructions to sprinkler spray come in all shapes and sizes. They can range from architectural features, rectangular or round ducts to mesh fabric privacy curtains. They can be found attached directly to or suspended down from a roof or ceiling. Obstructions may also be located against a wall. Floor mounted vertical obstructions such as freestanding partitions or room dividers, must also be evaluated. Obstructions can be continuous or non-continuous.

Sprinkler discharge spray patterns vary greatly depending on the type of sprinkler. Standard spray, extended coverage spray, residential, large drop, and ESFR sprinklers each have their own unique spray patterns. As such, obstructions affect each type of sprinkler differently.

Performance Objectives

When evaluating the impact of obstructions on sprinkler discharge development it is important to consider the basic performance objectives of a sprinkler.

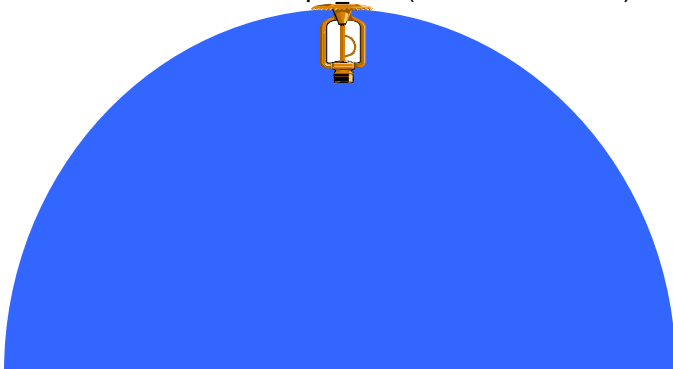
- **Activation of the sprinkler.** Sprinklers must be properly positioned so they activate in a timely manner. If a sprinkler does not activate it serves no purpose regardless if it is obstructed or not. This is why "heat collectors" are strictly forbidden under any circumstances. Pie plates or other small items intended to collect heat above the sprinkler do not work. It has been shown they push the fire plume away from the sprinkler.
- **Ability to quickly control a fire.** The key word here is *control*. Since the inception of the first sprinkler system in the 1870s, the focus of most sprinkler systems has been to control a fire rather than extinguish it. Although sprinkler systems have extinguished numerous fires, generally they are designed to limit the size of a

developing fire and prevent it from growing. In some cases fires are shielded from sprinkler discharge which makes complete extinguishment difficult. If the sprinkler system is able to control the fire until the fire department arrives to finish extinguishment, it is performing as intended.

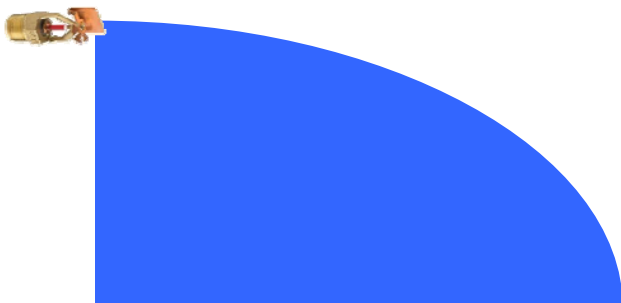
- **Keep the upper layer cool.** The water droplets from an activated sprinkler absorb heat thus cooling the upper layer air gas temperatures. Part of the objective for cooling the upper layer is to avoid excessive heating of the building structure thus avoiding collapse of the building.
- **Prevent flashover.** A critical, though not emphasized function of sprinkler discharge is that it prevents flashover, which is the most destructive phase of a fire's life.
- **Floor wetting.** A common misconception is that the entire floor is to be directly wetted by an activated sprinkler. However, the intent of NFPA 13 for providing protection throughout the area is satisfied without covering every square inch of floor area. Keep in mind that the sprinkler discharge will not be cleanly cut-off at the corner of an obstruction (like a ray of light) due to the turbulent flow of the water droplets.

Typical Sprinkler Spray Patterns

Upright and pendent sprinklers spray water in the characteristic umbrella pattern (as shown below).



Sidewall sprinklers have a slightly different discharge pattern. It is similar to a half-umbrella pattern (as shown below).



Categorizing Obstructions

NFPA 13 addresses general areas of concern in regard to obstructions. These concerns are based on the obstruction's proximity to the sprinkler.

The first concern is to ensure a **sufficient amount of water** reaches the hazard. These obstructions have all or part of the obstruction located above the elevation of the deflector. These types of obstructions are the greatest concern because they will not only obstruct the sprinkler discharge but will also impede heat flow to the sprinkler, resulting in delayed activation.



Photo 1 – Obstruction to proper sprinkler operation



Photo 2 – A beam installed directly in front of this sprinkler obstructs its proper operation

Beams, top chord members, and ducts tight to the ceiling are some examples. The positioning criteria as it relates to these types of obstructions are commonly known as the "Beam Rule". This criteria

relates to the sprinkler's ability to throw water under the obstruction.

The next concern deals with the **obstruction to discharge pattern development**. These obstructions have all of the obstruction located below the elevation of the deflector and all or part of the obstruction is within 18 inches of the sprinkler deflector.

These obstructions are less critical because they do not significantly impede heat flow to the sprinkler and do not significantly impede water distribution in the upper air layers of the room or area. Common examples of these types of obstructions would be suspended lighting and piping.



Photo 3 – Shows the obstruction pattern posed by a light fixture (note the “shadowed” area beyond the light).



Photo 4 – Shows a sprinkler obstructed by a ceiling-mounted ventilator

The positioning criteria as it relates to these types of obstructions is commonly known as the “Three Times Rule” (for extended coverage and residential sprinklers, the “Four Times Rule”). This criteria relates to the ability of the sprinkler to get water on both sides of the obstruction without allowing a significant dry shadow on the other side of the obstruction.

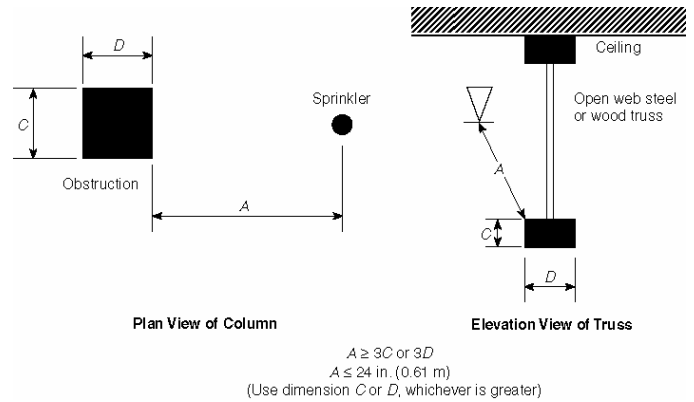


Figure 1 - NFPA 13 Minimum Distance from Obstructions

The three times rule also applies to sprinkler placement in relationship to building columns. There is some confusion presented by a section in NFPA 13 which states that in light and ordinary hazard occupancies that only structural members have to be considered obstructions to sprinkler discharge pattern development when applying the three times rule.

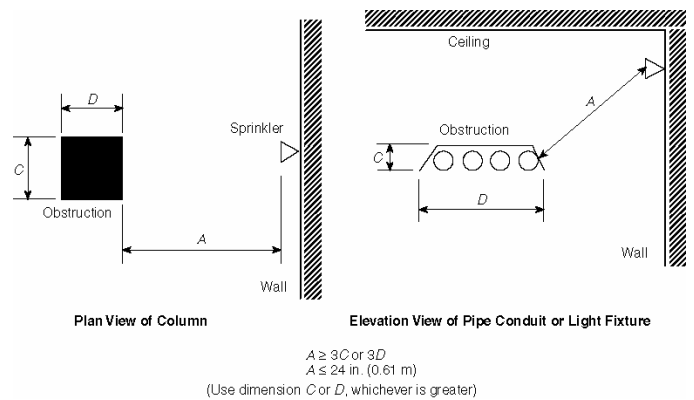


Figure 2 - NFPA 13 - Sidewall Sprinkler Obstructions

Many try to use this statement to completely ignore non-structural obstructions to sprinklers in light and ordinary hazard occupancies. As explained in the annex, this cannot be done. It is the intent of this section to exempt non-structural elements in light and ordinary hazard occupancies from the “Three Times Rule” obstruction criteria. However, the other obstruction rules including the “Beam Rule” and the “Wide Obstruction Rule” still apply.

An additional area of concern relates to obstructions that **prevent sprinkler discharge from reaching the hazard** below them. The positioning criteria as it relates to these types of obstructions is commonly known as the “Wide Obstruction Rule”. The size at which an obstruction

becomes too large is typically four feet. This width is less for large drop and ESFR sprinklers.

This is the least critical concern because it does not significantly impede heat flow to the sprinkler and sprinkler discharge to the upper air layers, nor does it impede the sprinkler discharge pattern from fully developing. These obstructions, depending on size, can keep the sprinkler discharge from directly reaching large portions of its designated floor area. But, this can be tolerated since fire control is the objective, not fire extinguishment. Overhead doors and large ducts are examples of such obstructions. These types of obstructions require sprinklers to be located both above and below the obstruction.

Positioning criteria also exists for **obstructions located against walls**. Items that can occur along a wall are soffits, cable trays, ductwork, cabinets and similar projections. Since the most common obstruction against a wall is a soffit, the positioning criteria is commonly known as the "Soffit Rule".

The "Soffit Rule" is similar in nature to the "Beam Rule". The advantage that the "Soffit Rule" over the "Beam Rule" is the "Soffit Rule" allows you to locate a sprinkler closer to the wall than what would be allowed by the use of the "Beam Rule". Confusion can exist between applying the requirements of obstruction against walls ("Soffit Rule") and the obstructions to sprinkler discharge ("Beam Rule").

The "Soffit Rule" applies to soffits up to and including 30-inches in width and can not be used for soffits that are wider than that. A note on soffits that must be addressed is that to qualify as a soffit; it must have a solid bottom plate. You cannot apply the soffit application to a valance, which will not be enclosed at the bottom plane. This is one of the reasons why the "Soffit Rule" is not allowed to be applied to soffits that exceed 30-inches in width.

If a sprinkler cannot meet either rule, an additional sprinkler will have to be installed beneath the soffit.

Privacy curtains, free standing partitions, room dividers and similar obstructions are known as **suspended or floor-mounted vertical obstructions**. NFPA 13 provides criteria for proper placement of sprinklers in relation to these types of obstructions. The criteria is similar in nature to the "Beam Rule".

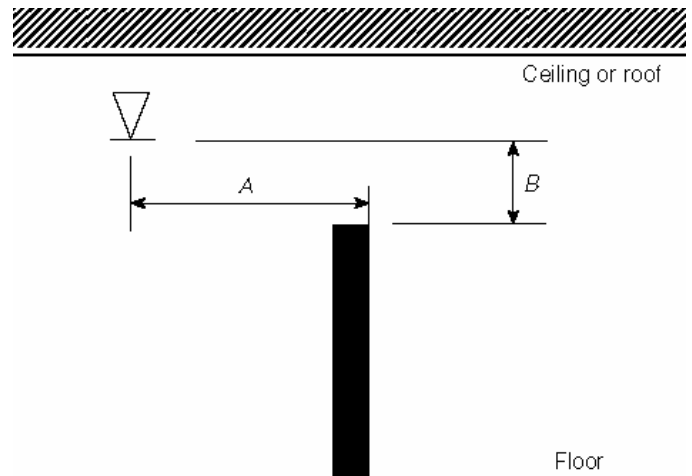


Figure 3 - NFPA 13 Floor Mounted Obstructions

Sprinkler system components may also be potential obstructions. For example, the sprinkler's frame arm and the sprinkler piping below the sprinkler can obstruct the water distribution pattern. As such, an upright sprinkler is to be installed with its frame parallel to the piping. Additionally, upright sprinklers are not permitted to be directly attached to piping three inch or larger in diameter. Head guards are also potential obstructions.

Other potential obstructions to sprinkler spray pattern are open gratings, and open-grid (egg crate) ceilings.

Obstructions are especially challenging and meeting 100% of the obstruction rules is sometimes impossible and often excessive from a performance standpoint. The standard cannot cover all possible situations. Some cases require judgment based on the application of the basic principles discussed. First and foremost, will the sprinkler activate and control the fire?

One common sense approach for applying sprinkler obstruction rules would be to require a person to stand in that area and allow someone else to activate the sprinkler. If the person standing there would likely get wet from the sprinklers, a severe obstruction problem does not exist. Please note that this "common sense" approach is theoretical; I don't recommend actually doing it but I have found that it often ends the debate about whether something is an obstruction to sprinkler spray or not.

Public Education Report

By: Connie Forster

Home Safety Month June 2009

Most fires and injuries happen in the home. There are many things you can do in your community to make people safer in the place they feel most secure. Consider conducting home safety surveys or at a minimum give out home safety check lists at events. Focus messages on the areas of greatest risk to residents of your community. Create your own check list or there are several on the web to download.

Go to www.homesafetycouncil.org/homesafetyguide to create a safety checklist for your family to get you started. The NFPA has also produced fact sheets that can be printed from the web site on grilling safety and fireworks to hand out to residents.

Contact Erin Petersen with MN Safety Council for information on getting a CO alarm program in your community. Think outside the box to make your residents safer. Consider starting a Fire Corps Program, inviting retirees, asking people on shift or your woman's association to conduct the home safety surveys and safety presentations. Help reduce the number of residential fires and injuries in your community.

Other News:

- The NFPA has announced the Fire Prevention Week Theme for 2009: Stay Fire Smart, Don't Get Burned. Fire Prevention Week is October 4-10, 2009. Go to their website for downloadable materials to use in your community. See more information in the next column.
- The next MNSFCA Public Education Committee meeting is July 23rd at 10:00 at Edina Fire. Contact Marty Scheerer or Connie Forster if interested in joining this group.
- The Sprinkler Task Force has been working hard on getting information together about residential fire sprinklers. Task force members created presentations and plans for educating the public, the trades, the fire service and consistent enforcement. Contact Nyle Zikmund at nzikmund@sbfmfire.com if you would like to work with the task force in any of the educational areas.
- The NFPA has announced a scholarship opportunity to attend training for the

Remembering When Program for older adults. This conference scholarship is valued at more than \$4,000 and includes a training workshop in Boston on November 15-17, 2009. It covers travel, meals and hotel expenses. Deadline is August 3, 2009. Log on to the NFPA web site for more information.

NFPA Announces Theme for Fire Prevention Week - 2009

Stay Fire Smart! Don't Get Burned



June 4, 2009 — Each October since 1922, the National Fire Protection Association (NFPA) has sponsored a fire prevention campaign to raise awareness about the importance of fire safety and fire safety education. Fire Prevention Week is October 4-10, 2009 and today NFPA announced its theme: **Stay Fire Smart! Don't Get Burned.**

U.S. fire departments responded to 399,000 home fires in 2007. These home fires killed almost 2,900 - roughly eight people every day.

This year's fire prevention campaign, **Stay Fire Smart! Don't Get Burned** focuses on ways to prevent fires, and the deaths, injuries, and property loss they cause. Eighty-four percent of all fire deaths were attributed to a home fire. By providing valuable information on fire and burn prevention and safety tips, the campaign aims to help the public keep their homes and its occupants safe from fire and burns.

Fire Prevention Week commemorates the Great Chicago Fire of 1871. That fire, which lasted for two days, killed more than 250 people, left 100,000 people homeless, and destroyed more than 17,000 buildings.

NFPA's newly launched Fire Prevention Week Web site offers an abundance of safety tips, statistical information, and other resources that can be used by fire departments, teachers, families, and anyone else interested in learning about fire prevention or teaching others about it.

Leading causes of fires in the home include cooking, heating, and electrical. Smoking is the leading cause of home fire deaths. The leading injuries resulting from fires in the home are burns. Burns are painful and can result in serious scarring and even death. The most common types of burn are contact burns, scalds, and burns from fire or flame.

Someone was injured in a home fire every 39 minutes in 2007 and a fire department responded to a home fire every 70 seconds. By implementing simple safety measures many home fires and home fire injuries can be prevented.

Health and Safety Advocates Advise Against Consumer Fireworks

June 4, 2009 – The National Fire Protection Association (NFPA) is releasing a series of video Public Service Announcements (PSAs) today to highlight the dangers associated with consumer fireworks. NFPA is the coordinator and co-founder of the Alliance to Stop Consumer Fireworks, a national group of health and safety organizations that have joined together to take a stand against the use of consumer fireworks.

The videos are available at www.nfpa.org/fireworks.

Prerecorded audio is available and Lorraine Carli is available for interviews.

The three PSAs feature voices of victims whose lives have been tragically altered due to fireworks, including individuals who have personally sustained life-changing injuries and a couple who experienced the loss of a child. In addition to visual demonstrations showcasing the types of injuries that commonly occur when consumer fireworks are used, the videos include commentary by fire and police officials who deal with similar real-life situations in their communities, and healthcare professionals who are called upon to treat these senseless fireworks injuries.

“Consumer fireworks are too dangerous and simply can’t be used safely,” said James M. Shannon, president of NFPA. “Each year, around 10,000 people are treated in emergency rooms because of consumer fireworks, a product that is used legally in most states across the country. We hope that these public service announcements will remind

people of the devastating consequences that can be associated with consumer fireworks and persuade them to celebrate the holiday by attending public displays put on by trained professionals.”

According to a newly-released NFPA report, in 2006 fireworks caused an estimated 32,600 reported fires, including 1,700 total structure fires, 600 vehicle fires, and 30,300 outdoor and other fires.

“Bottle rockets aren’t the only things we don’t want to see soaring on Independence Day – we also don’t want to see the number of fires climbing,” said Massachusetts State Fire Marshal Stephen Coan who is featured in the PSAs. “Nationally, there are typically more fires reported on Independence Day than on any other day of the year, and half of these fires are caused by fireworks. This puts civilians and firefighters at greater risk of death and injury and there is no excuse for it.”

Massachusetts is one of only five states that bans all consumer fireworks. The others are Delaware, New Jersey, New York and Rhode Island.

About the Alliance:

NFPA along with the American Academy of Pediatrics (AAP), founded the Alliance to Stop Consumer Fireworks to warn individuals about the dangers of consumer fireworks. Other members include American Academy of Family Physicians, American Academy of Ophthalmology, American Association for Hand Surgery, American Society of Plastic Surgeons, American Society for Reconstructive Microsurgery, Center for Injury Research & Policy, Emergency Nurses Association, Fire Department Safety Officers Association, International Association of Arson Investigators, International Association of Fire Chiefs, International Association of Fire Fighters, International Fire Marshals Association, Metropolitan Fire Chiefs, National Association of Pediatric Nurse Practitioners, National Association of School Nurses, National Association of State Fire Marshals, and Prevent Blindness America.

Interior Finish & Decorations

By: Jon Nisja

Many people, including fire marshals, inspectors, building officials, and persons selling the materials used in construction, are confused and tend to misapply the requirements for interior finish and decorative materials. Requirements for interior finish and decorative materials can be found in the model building, fire, and life safety codes.

Oftentimes the terminology and requirements are used interchangeably; this is an inappropriate application of the requirements and can lead to disastrous results. A study of most large life loss fires shows that improper flame spread ratings of interior finish and flame propagation of decorative materials are often the contributing factors to rapid fire spread and subsequent loss of life.

In order to properly apply the requirements of the model codes dealing with interior finish and decorative materials one must understand the terminology used and how the various codes address those issues.

Understanding Basic Terminology:

One of the most difficult parts of understanding, interpreting, and applying interior finish and decorative materials provisions of the codes is to first get through all of the confusing terminology.

The fire code official must know the difference between flame resistant (used for decorative materials), fire retardant (used for construction materials), flame spread ratings (used for interior finish), and fire resistant ratings (used for fire-rated walls, barriers, and enclosures).

These terms are remarkably similar and horribly confusing. Then you add terms like flame proof, flame propagation, and flame retardant and things seem even worse.

On top of that some of these terms are used by one code but not the others. Other terms are used but not defined. Are you ready to pull your hair out yet?

Here is an attempt to sort out some of the confusion.

A **combustible material**¹ is one that will ignite and burn. Examples of common combustible materials are items made of wood, paper, fabrics, and plastics.

Although the term combustible and its companion term "non-combustible" are used throughout many of the codes and standards, some of the model codes don't provide a definition. It is probably assumed that all users would understand the meaning of those terms. Unfortunately that may not be an accurate assumption.

These terms are often used to classify building construction type but they can also describe the combustibility characteristics of decorative materials. The National Fire Protection Association (NFPA) further defines a combustible material as one that does not meet the definition of noncombustible or limited combustible.

Many of the traditional combustible materials, such as wood, paper, cardboard, and natural fabrics - such as cotton - burn at a rate of about 8000 BTUs per pound. By contrast many flammable liquids and burn at a rate of about 12,000 BTUs per pound. Many structural components and decorative materials manufactured from synthetic and plastic materials burn at a rate very similar to flammable liquids (12,000 BTUs per pound).

A **noncombustible material**² is one that will not ignite, burn, support combustion, or release flammable vapors when exposed to fire or heat. Examples of common noncombustible materials include steel, concrete or masonry products, and ceramic materials. The basic premise is that noncombustible materials will not add to the fuel load or burning rate in a fire.

A **limited combustible material** is one that does not meet the definition of noncombustible but has limited heat output (less than 3500 BTUs per pound)³. Examples of limited combustible materials include mineral board, fiberglass insulation, and painted gypsum wallboard.

While terms such as combustible, noncombustible, and limited combustible are often used to refer to

¹ Source: NFPA 101:3.3.29

² Source: NFPA 101:3.3.331

³ Source: NFPA 101: 3.3.118

structural materials, the term **flame resistant** refers to a process of making combustible materials, such as textiles and films, resistant to charring and decomposition⁴. Flame resistant should never be used when referencing structural materials. Flame resistance can refer to a chemical treatment, process, paints, coatings, or the inherent properties of the material to resist ignition or to inhibit the propagation of flames. The term flame resistant is often used interchangeably with the term **flame retardant**; they essentially mean the same thing. Remember: flame resistant or flame retardant refers to treatments for decorative materials.

A **fire resistance rating** refers to a fire rating given in hours or minutes. Fire resistance ratings are based on ASTM Test E-117, also referred to as the time-temperature curve. Fire resistance ratings are often used in the model codes to designate a higher level of fire resistant construction to protect buildings or portions of buildings.

Fire retardant is a term that refers to chemical, paints, coatings, and other treatments used to make combustible building materials resistant to burning. An example of a fire retardant would be fire retardant treated (FRT) lumber. Remember: fire retardant refers to treatments for construction materials.

If someone uses a term **fireproof** or **flameproof** you can pretty much discount what they say as these terms have no practical or useful application. The closest thing to a fireproof material would be something that is noncombustible.

A **flame spread index** or **flame spread rating** is the relative measure of flame propagation over the surface of Wall or ceiling materials. Wall and ceiling materials are also known as Interior finish. The flame spread index or flame spread rating is determined by a test conducted in accordance with ASTM E-84. This test is conducted in apparatus known to and as the Steiner Tunnel.

Test Differences:

The Steiner Tunnel Test apparatus has been around for several decades. It was originally designed to test flame propagation of wood-based materials.



Photo 1 - Steiner Tunnel Test Apparatus

Over the years our use of interior finishes have transitioned to synthetic materials, especially plastics and foams; questions have surfaced as to whether the Steiner Tunnel Test provided accurate ratings for materials that tend to melt and drip.

In the Steiner Tunnel Test, the wall or ceiling material is placed horizontally on top of a 25 foot long tunnel. A burner at one end injects a flame into the "tunnel" and a technician observes how far down the tunnel the flame travels.

As can likely be understood, a plastic or foam material suspended from the top of this tunnel can melt, drip, and fall away. Technically, this would pass the ASTM E-84 test since the flame is no longer spreading across the material as it is no longer there. People soon begin to recognize that melting, dripping plastics or foams are not a desirable fire condition regardless of their ability to pass a test that never contemplated their use.

Some of the model codes are moving towards either requiring a **Room Corner Test** or allowing it in lieu of the ASTM E-84 test. This test method is outlined in NFPA 286; materials are mounted on three walls of a compartment (excluding the wall that contains the door) and the ceiling.

A gas burner is placed in one corner flush against both walls and they are exposed to pre-established heat release rates for designated periods of time. The test apparatus collects the fire effluents and measures oxygen concentrations in the exhaust duct. These are used to determine total heat release and smoke release from burning material.

⁴ Source: NFPA 701, Appendix D-1.1

The Room Corner Test increases the levels of fire exposure in order to represent a growing fire. The second or higher exposure provides a more intense fire situation and the failing criteria relates to the prevention of flashover conditions. There is also a failure when the total smoke production reaches a certain level. The Room Corner Test is generally considered to be a more conservative test than the Steiner Tunnel Test (ASTM E-84) and is considered by many fire experts to provide a more realistic indicator of how materials will burn, especially synthetics, plastics, and foams.

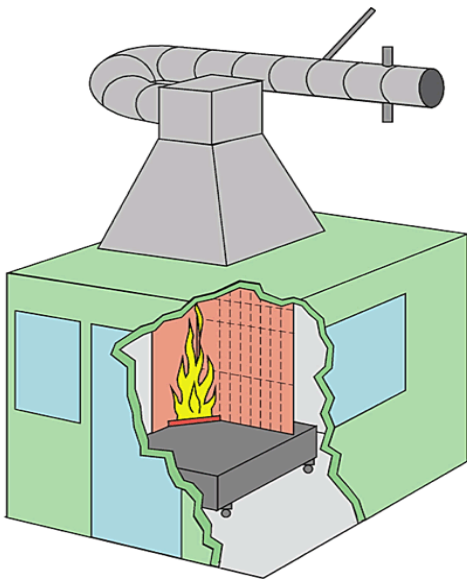


Figure 1 – Room Corner Test

Interior Finish:

Materials placed on the walls or ceilings inside a room or compartment are considered interior finish. In addition some of the model codes require that the following materials be considered interior finish if they cover 10% or more of the wall or ceiling area; this is an exception to their normal treatment as decorative materials or furnishings:

- Fixed or mobile walls and partitions,
- Paneling,
- Wall pads or crash pads, applied to the structure or used for decoration, acoustics, insulation, or other purposes.

An example of a material that would be required to meet the Interior finish in flame spread rating requirements of the code would be the fabric coated office cubicles.

Some of the model fire codes require that certain types of materials undergo the more rigorous Room Corner Test, such as:

- Expanded vinyl or textiles in non-sprinklered buildings or
- Non-Class A textiles in sprinklered buildings

Decorative Materials & Furnishings:

For decorative materials such as curtains, drapes, hangings, or similar materials suspended from a wall or ceiling, most of the model fire codes require that the materials be flame resistant in accordance with NFPA 701 or that they be noncombustible. Most of the codes allow relatively small quantities of these decorative materials (typically less than 10 or 20%) without having to undergo flame resistant test or treatments. The requirements for flame resistant treatments of decorative materials will vary based on the type of occupancy with more restrictive requirements found for assembly, educational, and institutional occupancies.

Flame resistant treatments can be applied in paints and varnishes, by submersion or soaking, applied through a spraying technique, or as an intumescent coating that swells up when exposed to heat or flames to protect the material it is covering. Flame resistant treatments applied by way of submerging, soaking, impregnating, or spraying work best on cellulosic materials; in other words materials that were once alive (such as wood, paper, cotton, and wool).

These methods of flame retardant treatments do not work on synthetic materials, such as plastics, synthetic fabrics, and foams, as they are not capable of absorbing the flame retardant treatments. Synthetic materials, however, can be made flame resistant by adding chemicals during their manufacturing process.

Some flame retardant treatments require renewals or re-treatments at certain intervals of time or when the material has been exposed to harsh conditions such as laundering or very high or low humidity conditions.

Structural Materials:

Certain wood products can undergo fire retardant treatments through a pressure impregnation process which often occurs during manufacturing. Some of the model codes allow fire retardant treated wood to be used in situations that would normally dictate noncombustible materials.

Changing Environment:

Fire code officials must be aware of the changing materials that are being used as decorations, trim, and interior finish in buildings today. Even much of the trim used for baseboards and ceilings are no longer wood but are manufactured from plastic materials that have the appearance of wood. Obviously, these materials will behave quite differently in fire conditions.

Another area of concern is the use of expanded foams and carpeting on walls or ceilings. The presence of these materials should be a "red flag" to any fire inspector. Most of the model fire codes require evidence of the interior finish (i.e. flame spread rating) or a certificate of flame retardant treatments for decorative materials.

The fire code official should also be very wary of manufacturers who purport being able to make a combustible material into a noncombustible material. At the present time we lack the technology and ability to do this. In other words there is no way to make combustible materials incapable of burning. There are, however, methods to make these materials more resistant to ignition or burning.

The fire code official should also pay particular attention to how "after-market" flame retardant treatments and coatings are applied. Remember that treatments that work by immersion or impregnation only work with materials that can soak up or absorb the treatments. Basically this limits you to materials that were once living. Synthetic materials must be made flame retardant either in their manufacturing or through the application of a coating or intumescent material.

Another red flag for the code official should be a manufacturer who claims that they can apply a chemical or treatment by spraying, brushing, or through roller application that will make normal wood products into fire retardant treated (FRT) wood. FRT wood requires treatment through pressure impregnation during the manufacturing process. This is especially dangerous when the manufacturer claims that the application of its product makes the installation of fire sprinklers unnecessary as the wood can no longer burn.

Applying the Fire Codes "In the Field":

This section is intended to provide a fire code official with some guidance on how to apply the fire

code requirements to the interior finish and combustible decorations and trim. Although there is no direct correlation between combustible materials, limited combustible materials, and noncombustible materials and flame spread ratings, as a general rule, noncombustible and limited combustible materials will often meet the requirements for flame spread ratings also.

As another general rule of thumb, materials that are made of wood and are smooth, such as good quality paneling or wainscoting, will likely also meet the appropriate flame spread ratings that apply to rooms and similar areas. These types of materials may not be allowed in more critical egress areas from the building.

Wood materials that are rough, however, such as unsanded plywood or oriented strand board (OSB) likely do not meet the appropriate flame spread ratings. As a quick "in the field" application of this: If you were to run your hand across the material and there is a risk that you'll get a sliver, the material probably does not meet the appropriate flame spread ratings.

For synthetic, plastic, and foam materials, no general rules of thumb or "in the field" tests exist. When dealing with any material where there is any doubt concerning whether or not it meets the appropriate flame spread ratings, the code official should require documentation for the material, additional testing, or have it removed or covered.

One other red flag for the fire official should be the use of pyroxylin plastics, which are also known as cellulose nitrate. Pyroxylin plastics are very hazardous because they will begin decomposition at temperatures around 300° F. They have the potential to develop almost explosive conditions with very high rates of heat release once ignited.

Pyroxylin plastics or cellulose nitrate are considered somewhat unstable; as such their use has generally declined over time. For example the use of cellulose nitrate for motion picture films was discontinued in 1951. Occasionally, however, fire inspectors will come across buildings that still contain some pyroxylin plastics or cellulose nitrate. This can be found in buildings that contain motion picture archives or some types of film, such as old x-rays in medical buildings.

FMAM Meeting Notice & Calendar

Wednesday, June 10, 2009

New Brighton Public Safety Training Center – 785 Old Highway 8
1:00 p.m. – Education Program – Commercial Kitchen Hood Cleaning
2:00 p.m. – Business Meeting

Other Important Dates (2009):

Wednesday, September 9, 2009 – Quarterly Meeting – Bloomington Fire Station #1

Wednesday, December 9, 2009 – Quarterly Meeting – Bloomington Fire Station #1

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