

CAFC Survey Relating to Foamed Plastics

Question: Please describe how the use of foamed plastics used as **Sprayed Foam Insulation** has created a fire challenge for your fire service.

Question: Please describe how the use of foamed plastics used as **ICF's (Insulating Concrete Forms)** has created a fire challenge for your fire service.

Question: Please describe how the use of foamed plastics used as **SIP's (Structural Insulated Panels)** has created a fire challenge for your fire service.

Question: Please describe how the use of foamed plastics used as **exterior cladding** has created a fire challenge for your fire service.

Answers:

Denys Prevost, Chief, Welland Fire and Emergency Services Department.

"About 6 years ago we had a fire in a large bungalow that had a back walk-out. Essentially a 2 story home, about 1500 sq ft per floor. The owner had been a spray foam insulation contractor and had spray insulated all walls of his home, including internal walls – for sound deadening. The fire started in the lower floor inside-garage. Because of the foam insulation the home was a total loss – in fact it almost completely burned up. It was a very stubborn fire and we thought it had been torched all over with flammable liquids. We noticed very unusual burning patterns when we did the investigation the following day. There was no clear origin; instead what looked like multiple origins due to drop down and pool fires from the foam, everywhere. It was so interesting that we had the OFM come in to see it, and their investigator had never seen anything like it either. Granted this was an unusual application of spray foam insulation. But similar type patterns are observable on less extreme cases."

Dave Potts, Fire Prevention Officer, City of Sarnia

"I was asked to do an inspection of a commercial building which was a Quonset hut building built under building code.

I found out during the process (which I won't get into due to legal issues) that the owners of this building applied for a building permit but did not have inspections of the foundation, building etc.

What I saw when I entered the Quonset building was that it had been completely covered in spray foam insulation on the inside and the contractor had sprayed on an intumescent paint coating.

As I haven't had much experience with either spray foam or intumescent paint I did some research.

The building code states that spray foam insulation must be covered with a fire resistant covering. Article 3.1.5.12.

The intumescent paint coating is supposed to char under fire conditions providing a level of fire resistance to the foam.

My concern was twofold. One, I am not comfortable with intumescent paint being used to provide a fire resistant coating to foam because how well the foam burns during a fire.

Two, how can someone say that this paint coating is going to protect a foam coating from the normal abuse like abrasion and impact of the foam by something to break the coating.

To summarize, I do not want to have foam insulation allowed in the building code as in interior application unless it is covered with 12.7mm thick drywall.”

Larry Brassard, Deputy Chief – Operations, Waterloo Fire Rescue

“Hi Brian;

Excellent Initiative!!!

While I/we don’t have any direct fire experience yet (and hence the lack of use of the survey questionnaire), I wanted to provide some comment for whatever use it might be.

I am very concerned about the use of these materials in building construction. Real world experience in Las Vegas 9and other U.S. communities) with respect to the use of foamed plastics for exterior cladding has shown to be an almost insurmountable fire problem. I’m sure you have the case studies, but in one case a brand new multi story high rise was completely destroyed because of the inability to control the vertical spread of a fire on the exterior of the involved building.

SIP’s would seem to pose a **huge** threat to firefighter safety, and while I’m not a fire protection engineer, I do have 35 years of street schooling in the fire service and common sense alone dictates that these will be problematic at least in the form of the potential for fire spread in the concealed space formed by the panel. Several months ago, I posed a question about SIP’s to a large group of grass roots level fire service practitioners from throughout the U.S. and Canada through a web based network I am involved in – and surprisingly NO ONE had any experience with these in ‘real world’ fire conditions. Again, I think we need to add the word ‘yet’ to this equation.

I brought concerns about both of these specific issues to our local CBO and General Manager of Planning about 6 months ago (and shared the case studies from the U.S. with them). I went so far as to ask for a list of premises/addresses where SIP’s had been used here in Waterloo, but other than confirming that they HAD been used, the CBO has not provided this information to us (I wanted to add a CAD ‘Caution Notice’ for our suppressions crews”. He quipped that the use of SIP’s and been ‘approved’ in Canada and seemed to shrug my concerns off as baseless.

In any event, I hope these comments are of some value even though they don’t represent any direct experiences – yet...”

Dave Forfar, Deputy Fire Chief , City of Barrie

“Hi Brian,

I am not sure what ‘challenges’ the survey is specifically targeting but I could not answer the questions. We do know if the smoke is pitch black then we have a petroleum based product burning and it is probably of a highly toxic nature. Evacuation of the areas affected everyone on scene wearing PPE and the use of foam to fight the fire would be considerations at this type of fire. We are doing pre-plans and we are trying to identify specific hazards in buildings. Obviously, identifying these types of insulating and foamed plastics would be critical for future firefighting tactics. I will pass the survey and this memo on to our pre-plan coordinator to ensure we start to identify these plastics.

If I can be of further assistance please let me know. In the meantime, I apologize for not having more useful information for you.”

Andy Thiessen, Fire Chief, Morden Fire & Rescue

“Hello Brian,

It is nice to see this type of survey. I am very interested in the results that you will be tabulating. The reason being our dept. has not to this point had any experience with these products in a fire situation. I know there are a lot of these products being used in construction in my community but ‘knock on wood’ nothing has been involved in fire. I just wanted to encourage you in this project and look forward to seeing the results which will help us to respond more effectively and safer when that time comes for us. Unfortunately it will at some point. Thanks again and take care.”

Greg Van Tigham, Director of Emergency Services , Municipality of Jasper

“Hello Brian,

In regards to the CAFC survey on Foamed Plastics.

Our jurisdiction has not experienced any challenges to date, however we do have at least two recent residential buildings which use foamed plastic in their foundation construction and one presently under construction which has incorporated Foamed Plastics in the roof construction.

I would be interested in the results of the survey.

Thank you very much.”