

New York Combustion Toxicity Data Bank Nears Approval

By a vote of 8-0, with one abstention, the New York State Uniform Fire Prevention and Building Code Council Toxicity Subcommittee sent a proposal calling for a combustion toxicity testing/data bank to the full Council for passage. If the proposal is passed, and SPI spokesmen say it's likely to, New York will become the first state to collect information on the combustion toxicity of construction materials used in buildings. And while not explicitly targeted on banning plastic materials, such as PVC pipe and conduit, one of the perceived purposes of the data bank is to allow architects and designers of buildings to choose "safe" construction materials. Implicit in this thinking is that failure to select "safe" materials, as determined by a rating system, could be construed as negligence in the design of a building. Where PVC pipe and conduit might fall in the ratings compared with metal pipe and conduit seems a foregone conclusion.

What the code's passage means to you Assuming the proposal is passed, it will become part of the New York state

building-code law. The new code would require all manufacturers or sellers of building products in New York to have combustion toxicity testing performed on their products, using the University of Pittsburgh small-scale test, and submit the findings of those tests to Albany, where a data base would be maintained. By "building products" the new code means pipe, conduit, flooring, panels, walls, materials between walls, and carpeting; however, the new code does not include furnishings. SPI estimates each such test would cost manufacturers or sellers \$2500.

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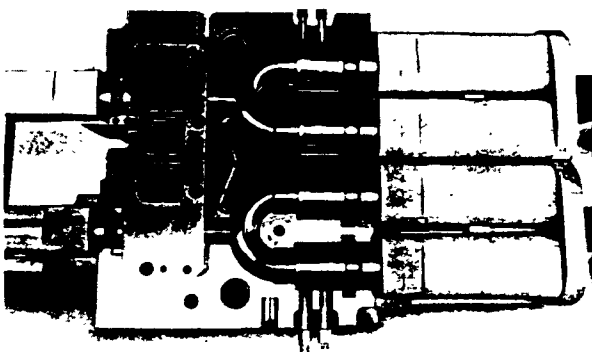
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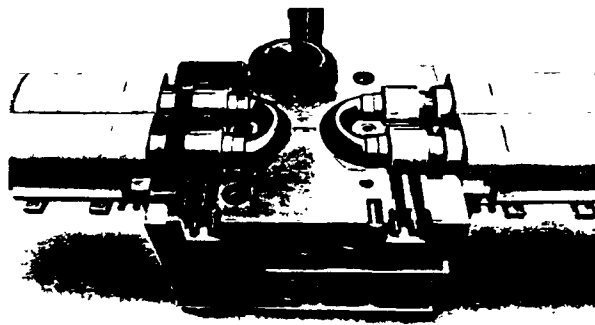
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Regulatory Update

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After testing and submitting data, suppliers will have met their obligation—there is no toxicity standard that a material or product could pass or fail, a fact that particularly rankles SPI, considering that an estimated \$325 million worth of testing will be required just to create a data base. Within that data base, each material will then be assigned a "lethal concentration" number, based on how the products of combustion affect lab mice. That number would, effectively, rank the material's toxicity against other building materials.

SPI's objections Roger Bernstein, SPI director of state government affairs, notes several fundamental problems with the proposed code. For one, since it does not include furnishings, it eliminates from consideration the major component of the "fire-load" that generates much of the fire and smoke in the first place. Second, some plastic materials will be unfairly rated highly toxic, despite the fact that they may withstand very high temperatures before combustion. "Fluoropolymers are some of the most fire-safe plastics around," Bernstein says, "but if you can get them to burn—at somewhere over 1300 F—they would have a high toxicity rating."

Another concern is the relevance of data on combustion toxicity alone. According to Bernstein, such tests do not tell the whole fire-safety story since they overlook such factors

as the amount of smoke and heat a material generates upon combustion, as well as the flammability of a given material. In fact, the National Fire Protection Association (NFPA), Boston, a voluntary standards-making organization, has found that no current tests of combustion toxicity are adequate for regulatory purposes. Furthermore, many states, including California, Arizona, Oklahoma, Maryland, Massachusetts, Indiana, and Maine, have "considered legislation that would call for toxicity testing," says Bernstein, "but haven't moved any further because no test has scientific credibility." Despite that, New York has adopted the University of Pittsburgh test protocol based in part on a recommendation from Arthur D. Little, Inc., Cambridge, Mass., which also happens to be one of only two independent laboratories (the other, is Southwest Research Institute (SWRI) in San Antonio, Texas) equipped with apparatus to run the test. SPI has questioned the validity of the University of Pittsburgh test claiming that, among other reasons, results are not reproducible, it does not represent actual fire exposures, and that the test is methodologically unsound.

Familiar antagonists The iron and steel industry is far from a disinterested observer at the Council Code hearings. One of the companies said to be working behind the scenes to push the proposed code into law is Allied Tube & Conduit Corp., Harvey, Ill., reportedly the nation's largest manufacturer of steel electrical conduit. This is the same company that last year was found guilty of engaging in anti-trust activities in an effort to exclude PVC conduit from NFPA's National Elec-

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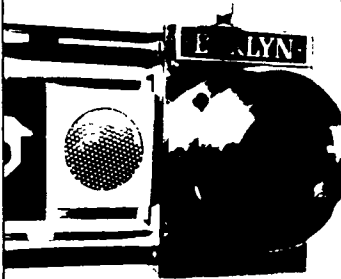
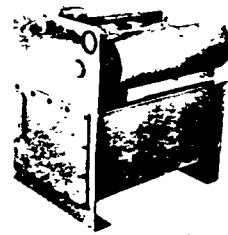
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trical Code (see *PT*, June '85, p. 135). Now, according to Bernstein, Allied Tube has successfully interested firefighters, who are perceived as "more credible and formidable proponents of toxicity testing" to "take the lead" in the New York Code Council hearings. Firefighters have their motives too, says Bernstein. "If they can prove that the firefighting environment is more dangerous now than 10 or 25 years ago, they could get more health and wage benefits. So it also becomes a union issue." Finally, New York Governor Mario Cuomo reportedly is another proponent of the new code.

What's next? A Code Council meeting to promulgate the law was scheduled for August 20, with an alternative date of September 17 set if a quorum could not be assembled. In the meantime, suppliers of plastic building products in New York can only brace themselves against the predictable backlash of objections to the use of plastics in buildings by suppliers of competing products should the proposed code become law.

Other notes: New York has added PVC to a "toxic tort" bill, which allows lawsuits for personal injury and property damage to be filed up to three years from the initial discovery of harmful exposure to certain substances or materials—as opposed to the date of actual exposure. According to SPI,

PVC was added to a list that also contains tungsten carbide, asbestos, and the pesticide chlordane at the urging of firefighters, who claim that health problems have surfaced as a result of fighting a Bell Telephone Co. switching fire in New York City in the mid-seventies.

Meanwhile, on the plus side, SWRI has released the results of a study on the behavior of hydrogen chloride (HCl) gas in a fire environment. According to the study, HCl, which is released as a byproduct of PVC combustion, and suspected by firefighters and others as being particularly harmful, decays quickly in fire environments by adsorbing onto nearby surfaces. Thus, the substance behaves unlike other combustion gases, such as carbon monoxide, that instead escape to other portions of the building away from the fire, and thereby place persons on floors uninvolved in the fire in jeopardy.

In particular, the SWRI study found that three variables affect the rate of HCl decay: air circulation, humidity, and surface area. In general, increasing each variable will increase the rate of HCl decay. Therefore, according to SWRI, fires between walls will have low HCl content, since there is a greater amount of surface area in proportion to the volume of air. Also, in a plenum ceiling, according to the Vinyl Institute (V.I.), Wayne, N.J., "thermal stirring" of the fire gases brings HCl in contact with a large amount of surface area, again in proportion to the volume of air. Furthermore, the ceiling acts as a "filter," which, according to V.I., decreases "the likelihood of incapacitation or unconsciousness caused by inhalation of HCl."

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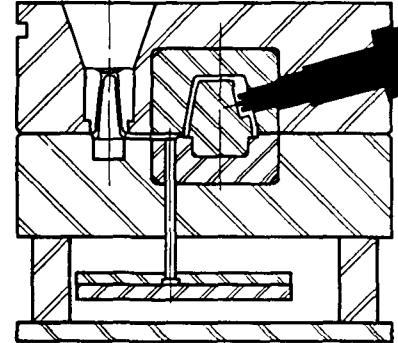


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