



The Carpet and Rug Institute
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November 2, 2000

Ms. Penny Bonda
U. S. Green Building Council
Suite 805
1015 18th Street, NW
Washington, DC 20036

Dear Penny:

Penny, please find attached CRI's comments pursuant to your request on our perspective of PVC in the carpet industry. We have attempted to address what we believe the features and benefits are of PVC to our industry and, in addition, we have attempted to provide our perspective on some of the environmental and health allegations that have been leveled against PVC.

With respect to this latter point, we feel at somewhat of a disadvantage since we have never heard from the U. S. Green Building Council what, if any, concerns you have about PVC. If you have additional concerns that we have not addressed in this submission, we would welcome the opportunity to address these in a supplemental submission.

Let me say that we appreciate the opportunity to work with you on this issue since we believe that PVC is a valuable and safe raw material for our industry. I know Ken McIntosh is planning to attend the pre-charette and is looking forward to a fruitful discussion.

If there is any other way I can be of assistance, please don't hesitate to give me a call.

Sincerely,

Werner H. Braun

Werner H. Braun
President

WHB/pup
Attachment

PVC Features and Benefits and Allegations from Carpet Industry Perspective

PVC is a versatile and nontoxic material that has a distinct advantage in many product applications and in the marketplace. PVC is flame retardant, which is why PVC is used in many construction and furnishing applications.

Like all plastics, PVC is made by a series of processing reactions that convert hydrocarbon materials (petroleum, natural gas or coal) into chemicals called polymers. PVC is unusual because 56% of its base polymer is chlorine derived from common salt, an inexpensive, renewable resource. PVC is much less dependent on petroleum supplies than are many other materials and preferred in many applications to those that deplete forests or ore reserves.

If PVC water pipes were to be replaced with iron piping, the emissions from the iron pipe manufacture could cause more serious environmental problems than are caused by emissions from PVC pipe production. PVC provides non-corroding, lead-free pipes and connections for potable water supplies at reduced municipal costs.

PVC is an ideal replacement material for wood and aluminum, particularly in the siding and window frame markets. The manufacture of PVC produces far less air and water pollution than does the manufacture of products derived from metal ores or wood.

PVC yields a semi-hard backing for carpet products that demonstrates outstanding performance from the standpoint of wearability, dimensional stability, and impermeability to water and moisture damage.

Allegations Related to PVC-backed Carpets

- 1. PVC-backed carpet is alleged to be highly flammable and produces toxic gas by-products in building fires.*

The presence of chlorine in PVC makes it inherently flame retardant. It is true that HCL is a combustion product of PVC. However, inhalation studies involving primates conducted at Southwest Research Institute demonstrated that the toxicity of HCL is approximately equivalent to that of carbon monoxide. Work in simulated fires noted that HCL does not persist in the fire atmosphere; rather, it condenses on surfaces. Also in this period, samples of real fire atmospheres were taken by firefighters working in those fires. Very seldom was HCL found in the fire atmosphere.

It is well known that carbon monoxide, lack of oxygen, and heat are the three most important factors in causing fire deaths. Carbon monoxide is a colorless, odorless gas that persists in the fire atmosphere.

House fires, whether PVC is present or not, generate some dioxin. A recent study estimated that there is about 20-50 times as much wood in homes than PVC-containing materials. Assuming that when the house burns completely and consumes all the combustible materials, the absolute amount of dioxin generated from each of the PVC and wood materials consumed by burning is on the order of 1-5 grams.

Office construction is significantly different in that the major sources of vinyl, siding and windows, are typically not present. In addition, much of the office space in commercial buildings is sprinklered, reducing the potential for fire in the first place.

All carpet floor coverings are required to pass the Federal Flammability test, DOC FF I-70, which ensures that carpet floor coverings will not propagate burning from a small ignition source. Carpet placed in public access areas of commercial buildings is typically regulated by the radiant panel flame spread test, ASTM E-648. PVC-backed carpet typically has a flame spread rating that will not propagate burning unless subjected to a large external fire source, such as when a fire reaches extremely high "flashover" temperature conditions.

Room fire tests conducted by Southwest Research Institute during the mid 1980s supported the fact that carpet, including carpet with PVC backing material, would not burn and spread flames until the room reached flashover temperature. Fire hazard assessment studies have shown that after a fire has reached flashover, the temperatures and concentrations of toxic gases in a room would be lethal long before there would be any effect from the combustion of carpet or PVC-backed carpet.

The combustion toxicity of floor covering products is determined when evaluated by the ASTM Standard *Pittsburgh Combustion Toxicity Test Protocol*. This method analyzes the toxic make-up of the combustion gases emitted when a product is burned and compares them to known or suspected toxic chemicals. PVC-backed carpet products have been tested according to the Pittsburgh Protocol, and all products tested are less toxic when burning than red oak (the basic standard).

2. *VOC emissions from PVC-backed carpet are alleged to be high and contaminate the indoor air environment.*

VOC emissions from new carpet, including PVC-backed carpet, is below the not-to-exceed VOC emissions level established by the Carpet and Rug Institute and reviewed by various organizations that participated in the 1990-91 EPA carpet dialogue. Risk assessments by three independent research organizations confirmed that the exposure to the extremely low levels of new carpet emissions should not create a health concern.

- 3. It is alleged that emissions from phthalate-type plasticizers that might be used in PVC carpet backing materials contaminate the indoor air and create a health hazard.*

Plasticizer emissions from PVC-backed carpet products are extremely low and dissipate over a short period of time after being installed. The VOC emission levels are below the not-to-exceed criteria level standard in the CRI Indoor Air Quality Testing and Labeling Program. As stated in item #2, independent risk assessments indicate that exposure to the extremely low level of emissions from carpet products should not create a safety concern.

- 4. It is alleged that PVC-backed carpet products can be difficult to recycle and, therefore, this material should not be used.*

In 1998, a major PVC-backed carpet manufacturer ended 29 years of using virgin PVC in the backing of its modular carpet tiles. Today, PVC-backed carpet manufacturers have the option to collect used PVC-backed carpet, pulverize, and recycle into PVC backing for new carpet production. The costs of collecting, sorting, dismantling, and extruding into a 100% recycled content PVC backing product is commercially viable today.