



A Division of The Society of The Plastics Industry, Inc.

Electrical Materials Council!



**EMC Meeting Minutes
Market Advisory Panel**

Atlanta Airport Hilton
Atlanta, Georgia
September 24, 1992

1. Rick Smith opened the meeting with self introductions. He explained the purpose of the meeting was to hear and discuss the strengths, weaknesses, opportunities and challenges facing vinyl in electrical applications. He assured the Panel that the Electrical Materials Council was prepared to commit financial and other resources to address same, as was the case following a similar meeting in 1990 in Chicago.
2. Wayne Hilgers began discussion by listing the issues participants raised in surveys they had completed prior to the meeting. These included:
 - Lifecycle analysis
 - Future of PVC in automotive applications
 - Recycling
 - Disposal
 - Electrical properties
 - Developing specifier and end user efforts
 - EPA and OSHA impact
 - Lead free PVC compound developments
 - Flammability and fire performance
 - PVC plenum formulations
 - Status of alternate polymers
 - Status of UL/CSA evaluations
 - Smoke toxicity regulations and legislation
3. The Panel brainstormed the strengths and/or advantages of vinyl in the electrical market. These included:
 - Cost
 - Wide formulation range
 - Processability
 - Inherent flame retardancy
 - Excellent insulation quality
 - Colorability

CTL007823

- Reasonable strength
 - Good flexibility
 - Long term retention of properties
 - Long history of performance
 - Ability to be formulated for a wide temperature range
 - Corrosion resistance
 - Weather resistance
 - Chemical resistance
 - Minimal ozone impact
 - Recyclability
 - Low molded temperature requirements
 - Availability
 - High inorganic content
4. The Panel brainstormed the weaknesses and/or disadvantages of vinyl in the electrical market. These included:
- Perception that plastics are "cheap"
 - Lead stabilization
 - Limited electrical properties
 - Low heat distortion temperature
 - Low temperature brittleness
 - Halogen content
 - Release of corrosive gasses when burned
 - High smoke emission
 - Processing near decomposition temperature
 - Disposability
 - Additive requirements for flexibility
 - Subject to inferior compounding
 - Recycling not as well established as other plastics
 - Corrosive effect on tooling
 - Thermoplastic instead of thermoset
 - Consumer emotion: smoke, fire, halogen
 - European dislike
 - Code, building, fire official misconceptions
 - Price instability
 - Presence of PBB and PBBO in some formulations
5. Panel members were divided into two breakout groups which were asked to prioritize vinyl's strengths and weaknesses in electrical applications and to develop programs to address same.
- A. One group chose to concentrate on weaknesses and recommended programs to share information about recycling, lead content and/or disposability and corrosion.

B. The other group prioritized strengths as follows:

- Processibility
- Electrical properties
- Cost
- Recyclability
- Easy availability
- Long history

It prioritized weaknesses as follows:

- Perceptions/Emotions
- Recycling/Disposal
- Price instability
- Electrical properties
- Processibility

To address vinyl's weaknesses relating to perceptions and/or emotions, this group recommended the following:

- Make certain that existing communications are aimed at correct audiences, i.e. designers, architects, code officials, specifiers.
- Launch additional communications programs to reach groups and organizations that are large and national as well as those that are small and local.
- Take action to offset inaccurate national media coverage.
- Develop new test methods that more accurately measure the total hazard of a material in a real fire.
- Promote safety and proactive efforts to deal with the fire issue, i.e. the use of sprinklers in plenums.
- Consider an industry effort to audit U.L. test methods for consistency and their ability to reflect real world conditions.

To address vinyl's weaknesses relating to recycling and/or disposal, this group recommended the following:

- Complete a lifecycle analysis pertaining to wire and cable, and communicate results.
- Reach industry consensus on the most cost effective way to separate and recycle vinyl in electrical applications.

- ▶ Find a cost effective way to replace lead and cadmium in vinyl formulations without losing the performance properties these materials bring to electrical applications.
6. The Panel agreed that it was necessary to discuss the challenges and opportunities facing vinyl in the electrical market before attempting to reach consensus on programs to address its strengths and weaknesses.
7. Panel members brainstormed the challenges facing vinyl in the electrical market. These included:
- ▶ Use of fiber optics
 - ▶ New electronics impacting "pairing"
 - ▶ Competitive materials, i.e. PE
 - ▶ Miniaturization
 - ▶ Product disposal
 - ▶ Environmental impacts
 - ▶ Growth of nonhalogenated materials
 - ▶ Present plenum standards
 - ▶ Growth of wireless electronics
 - ▶ Anti-PVC standards
 - ▶ Corrosivity concerns
 - ▶ Low heat distortion temperatures
 - ▶ Need to improve specifier perceptions
 - ▶ Increased temperature demands
 - ▶ Increased regulation including unduly restrictive codes
 - ▶ Test methods not being realistic
 - ▶ Company vs industry product market development
 - ▶ Proper identification of customers
8. By a voice vote, and using the vinyl industry's ability to impact the issue among their criteria, Panel members prioritized these challenges as follows:
- ▶ Environmental/Disposal/Recycling
 - ▶ Regulatory/Codes/Standards/Test Methods
 - ▶ Improving specifier perceptions
 - ▶ Competitive materials
 - ▶ Identification of customer needs
 - ▶ Overall performance properties

9. Panel members brainstormed the opportunities facing vinyl in the electrical market. These included:
 - Expanding world markets
 - New electronics in the home, i.e. smart house
 - Expanding automotive applications
 - Expansion of data management
 - Replacement of other flexible raw materials, i.e. rubber
 - PVC based alloys
 - Products from recycled vinyl
 - New flame retardant PVC products
10. As with challenges, Panel members prioritized these opportunities as follows:
 - New products
 - PVC based alloys
 - New products from recycled vinyl
 - New end uses
 - Expanded existing markets
11. The Panel summarized and prioritized all of the day's conclusions as follows:

Strengths:

 - Processibility
 - Properties
 - Cost
 - Recyclability

Weaknesses:

 - Perceptions/Emotions
 - Recycling/Disposal/Environmental

Challenges:

 - Recycling/Disposal/Environmental
 - Regulatory/Codes/Standards/Testing
 - Improving specifier perceptions

Opportunities:

 - New products
 - PVC based alloys
 - New products from recycled PVC

CTL007827

12. The Panel agreed to concentrate its remaining efforts on programs addressing vinyl's challenges in the electrical market.
13. On the challenge of Recycling/Disposal/Environmental:
 - ▶ Mr. D'Amico recommended basic industry research to develop nontoxic stabilizers to replace lead and cadmium.
 - ▶ Mr. Wadhera recommended lifecycle analysis concentrating on electrical materials including wire and cable, boxes, etc.
 - ▶ Mr. D'Amico recommended the vinyl industry develop a method to safely dispose, presumably in a landfill, the toxic byproducts of wire chopping.
 - ▶ Mr. Tyler recommended developing a list of companies that use recycled vinyl wire and cable, plus information about their products.
 - ▶ Mr. Wadhera recommended establishing a data bank on PVC returned from the field.
 - ▶ Mr. Harris recommended funding academic or institute research on wire and cable recycling technology.
 - ▶ Mr. Coffee recommended developing and disseminating technical background about vinyl's limited impact on ozone depletion.
 - ▶ Mr. Wadhera recommended broadly disseminating information about relevant regulatory and legislative matters.
 - ▶ Mr. Wadhera recommended coordinating research, development and communications efforts with other organizations with an interest in electrical materials including the Computer & Business Equipment Manufacturers' Assn., the National Electrical Manufacturers' Association, etc.
14. On the challenge of Regulatory/Codes/Standards/Testing:
 - ▶ Mr. Forsberg recommended expanding communications efforts to reach code and building officials at both national and local chapter levels with existing materials.
 - ▶ Mr. Ouellette recommended expanding the industry's efforts to develop improved standards through IEC, CSA, NIST, ASTM, etc.

- Mr. Wadhera recommended increasing participation in various standards bodies, including NEC Panel 12 & 16.
- Mr. Forsberg recommended developing stronger liaison with other industry associations, including CMA and IEEE, regarding support and involvement with various code panels.

15 On the challenge of improving specifier perceptions:

- Mr. Forsberg recommended carefully defining and targeting key audiences. For conduit, these would include electrical engineers, architects, contractors and building owners and developers. For wire and cable, these would include design engineers, contractors and data communications managers. For automotive and other applications, these would include design engineers and material engineers
- Mr. Forsberg recommended developing and widely disseminating information about vinyl's total installation costs.
- Mr. Wadhera recommended reaching industry opinion leaders through presentations at local and national meetings of the American Institute of Architects, IEEE, NECA, IECA and NFPA.
- Mr. Forsberg recommended detailing vinyl's benefits and features in a very broad based fashion and providing same to suppliers to, in turn, share with customers.
- In group discussion, various Panel members recommended that if the industry chooses to utilize advertising in its communications program, the advertising should be very targeted, very frequent and very nontraditional, i.e. deck cards rather than full page ads.
- Also in group discussion, various Panel members recommended conducting Market Advisory Panel meetings with specifiers, code body members and other specific target audiences.

16. Mr. Smith adjourned the meeting by thanking Panel members for their participation. He promised to share these minutes from same and promised to provide other Vinyl Institute information and materials not included in the kit that was distributed to members prior to the meeting. He pledged that the Electrical Materials Council would take action on the issues raised during the meeting and would keep Panel members informed of progress.