

INTER OFFICE MEMO



TO Dr. A. E. Ardis AT Assonet DATE June 2, 1970

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SUBJECT POLYVINYL CHLORIDE - CURRENT AWARENESS
NHTIS 70-8 Supplement 97 to NHTIS 69-15
Project 8625-001

We are attaching the following items on the above subject:

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Please advise if you wish copies of the abstracted articles and we will obtain them for you.

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4676 - DUNE BUGGIES REVIEW

The dune buggy has developed into a sizeable market for RP molders. More than 70,000 are now in use throughout the U.S., and it is estimated that the potential market may reach 100,000 units per year in the foreseeable future. Based on an average of about 120 lb. of RP per vehicle, this total would represent an annual market of 12 million lb. of reinforced polyester.

Some dune buggies are bought completely assembled, but the big volume is in "do-it-yourself" conversion kits available from an estimated 200 suppliers and parts fabricators.

RP and PVC have profited most from the dune buggy boom, with RP as bodies and body components and PVC as upholstery fabric coatings, convertible roofs, etc. There is also some use of textured ABS sheet stock for instrument panels and consoles.

Terra-Buggy (near Crawfordsville, Ind.) has a typical production technique which primarily involves sprayup. Other leading dune buggy producers, such as the Fiberfab Div., Velocidad Inc., Santa Clara, Cal., also report that the bulk of their production is by the chopper gun sprayup technique. Berry Mini-T Corp., Long Beach, Cal., lays up one layer by hand and applies the inside layer by chopper gun.

While it would appear that some of the thermoformable sheet materials (such as ABS) widely used in campers and trailers would also find favor in this new market, very little penetration seems to have taken place to date. (H, P)
(Modern Plastics, 4-70, p 98)

4680 - NBS: PVC WIRE A HAZARD IN FIRES?

The National Bureau of Standards recently issued a warning to firemen in which it claimed that HCl vapor released by heated PVC wire coating "presents a potentially hazardous situation".

The Bureau's conclusion was based on a single non-flaming exposure test procedure on 6.5-sq. m. sections of black PVC cable insulation in an 18 cu. ft. smoke-density chamber. The samples were irradiated with 2.5 w./sq. cm. of heat energy. Concentrations of HCl in the test chamber reportedly reached 1600 p.p.m. whereas a concentration of 1000 to 2000 p.p.m. is considered dangerous on short exposure.

Plastics industry sources have objected. Their main point of disagreement with this test procedure is that heating a sample of PVC, without flame, in a test chamber, does not approximate conditions in burning buildings. (H)
(Modern Plastics, 4-70, p 97)

4687 - JAPAN - EXPO '70: PLASTICS REVIEW

Expo '70 is a vast showcase for the capabilities of polymers in the building construction field. Close to 1 million lb. of it are used at the fair.

The favored material is GRP, particularly in the domes that seem to dominate the fair scape. In non-dome applications, polyester-glass turned up in the walls of the Mitsubishi Group Pavilion. About 700 rectangular facing panels cover an area of more than 38,000 sq. ft. The Swiss and Furukawa Industrial Group pavilions are roofed with RP panels.

Some miscellaneous applications for RP are 9250 flower boxes in the West German pavilion; over 1000 benches; two 134-ft. children's slides; 8.2-ft.-diameter spheres on top of the traffic control towers for the Japan Automobile Industry's mini-cars.

One of the most publicized vinyl applications has been the glass-reinforced PVC of the U.S. pavilion. PVC "soft" structure is represented by the Fuji pavilion. This is a "tent" composed of 16 inflated tubes that are bent into arches and sewed and bolted to adjoining structural beams to form a building that resembles the canopy of a giant covered wagon.

Laminations of PVC film to PVA fiber sheet form the roofs of several other structures. An ingenious application of PVC is the copper-colored facade of the Scandinavian pavilion, which is really pipe cut in half lengthwise.

Acrylics are also very much in evidence. Over 22 tons of thermoformed sheet were used to produce the panels for three domes on the Sumitomo Group pavilion. They consist of 550 triangular sections, 0.12 in. thick. To reduce the sun's heat without impairing the transparency of the domes, a mesh pattern of aluminum ink was silk-screened onto the acrylic dome panels. Sumitomo Chemical has applied for patents on this innovative process.

The deck of this pavilion consists of 2500 panels of 0.15-in. thermoformed acrylic sheet in hexagonal, diamond and triangular shapes.

Elevated moving sidewalks that stretch for 2-1/2 miles through the Expo site are covered with strongly curved convex sections of clear acrylic sheet. (H, P)
(Modern Plastics, 4-70, p 91)

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