

August 17, 2000

Mr. James W. Havens
President
Millennium Plastic Wood, LLC
3434 W. Harry
Wichita, Kansas 67213

Refer to : HSA-B71

Dear Mr. Havens:

In your July 26 letter to Mr. Richard Powers, you requested the Federal Highway Administration (FHWA) acceptance of your Millennium Plastic Wood guardrail offset block for use with strong post, metal beam guardrail on the National Highway System (NHS).

You indicated that offset blocks of two different compositions were tested - one consisting of 25 per cent dried wheat straw and one containing 50 per cent dried wheat straw. In both blocks the remaining material was comprised of 70 percent polyethylene, 10 percent polypropylene, 10 percent polystyrene, 4 percent color concentrate with UV protection, 3 percent cellulose fiber, 1 percent foaming agent and 2 percent miscellaneous plastics. The dimensions of the tested Millennium blocks were nominally 165 mm wide x 160 mm deep x 370 mm high (6.5 inches x 6.25 inches x 14.5 inches) with a 127-mm (5.0-inch) wide x 9.5-mm (3/8-inch) deep routing on the back side to fit against the flange of the steel support post. Because of manufacturing tolerances in the width of the steel flange, the minimum recommended width of the routing is 110 mm (4.33 inches) and its maximum width is 116 mm (4.57 inches). Therefore, as discussed with Mr. Powers by telephone on August 11, the routing width of your production blocks should fall within this tolerance. One 20-mm (3/4-inch) diameter bolt hole, located 30 mm (1.2 inches) from the vertical centerline at the midpoint of the block, is drilled in each block.

To demonstrate the impact-resistance of both block compositions, two tests were run by E-TECH Testing Services, Inc., in which an 820 kg pendulum was dropped through 4.8 meters into a fixed steel guardrail post with an attached Millennium Plastic block and a simulated section of w-beam rail. In both tests, the posts failed at ground line and the blocks remained intact. The videotape you provided documented this performance.

Based on our review of the information you provided, the Millennium Plastic block may be considered acceptable for use on the NHS when molded to the same dimensions (except for the narrower route, as discussed above) and composed of the same materials as the tested blocks. As with all other recycled blocks we have reviewed, FHWA acceptance is based solely on the reported impact behavior of your product and does not address the long-term performance or durability of the product. Since the Millennium Plastic block is proprietary, its use on Federal-aid projects, except exempt, non-NHS projects, is subject to the conditions listed in Title 23, Code of

Federal Regulations, Section 635.411.

A copy of this regulation is enclosed for your ready reference. If you have any questions, please call Mr. Richard Powers at (202) 366-1320.

Sincerely yours,

(Original signed on 8/17/00 by Suzanne J. Stack)

for Frederick G. Wright, Jr.
Program Manager, Safety

Enclosure

Sec. 635.411 Material or product selection.

(a) Federal funds shall not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

(1) Such patented or proprietary item is purchased or obtained through competitive bidding with equally suitable unpatented items; or

(2) The State highway agency certifies either that such patented or proprietary item is essential for synchronization with existing highway facilities, or that no equally suitable alternate exists; or

(3) Such patented or proprietary item is used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes.

(b) When there is available for purchase more than one nonpatented, nonproprietary material, semifinished or finished article or product that will fulfill the requirements for an item of work of a project and these available materials or products are judged to be of satisfactory quality and equally acceptable on the basis of engineering analysis and the anticipated prices for the related item(s) of work are estimated to be approximately the same, the PS&E for the project shall either contain or include by reference the specifications for each such material or product that is considered acceptable for incorporation in the work. If the State highway agency wishes to substitute some other acceptable material or product for the material or product designated by the successful bidder or bid as the lowest alternate, and such substitution results in an increase in costs, there will not be Federal-aid participation in any increase in costs.

(c) A State highway agency may require a specific material or product when there are other acceptable materials and products, when such specific choice is approved by the Division Administrator as being in the public interest. When the Division Administrator's approval is not obtained, the item will be nonparticipating unless bidding procedures are used that establish the unit price of each acceptable alternative. In this case Federal-aid participation will be based on the lowest price so established.

(d) Appendix A sets forth the FHWA requirements regarding (1) the specification of alternative types of culvert pipes, and (2) the number and types of such alternatives which must be set forth in the specifications for various types of drainage installations.

(e) Reference in specifications and on plans to single trade name materials will not be approved on Federal-aid contracts.