

November 21, 2001

Mr. Dale E. Kamarata
General Manager
Imperial Laminators
P.O. Box 2008
Eager, Arizona 85925

HSA-10/B92

Dear Mr. Kamarata:

Due to the continuing moratorium on U.S. mail delivery in Washington, Mr. Richard Powers of my staff has yet to receive your original letter requesting formal acceptance of your Glu-Laminated Guard rail Post and Blockout, but he does have your e-mailed copy of that letter as well as your November 11 letter delivered by courier. That correspondence included a copy of the crash test video and the Texas Transportation Institute's October 2001 test report entitled "NCHRP REPORT 350 TEST 3-11 ON W-BEAM GUARDRAIL WITH IMPERIAL 5-LAM GLU-LAMINATED POSTS AND BLOCKOUTS," and a copy of the crash test video tape. I can, therefore, respond to your request without further delay.

The tested posts and offset blocks were fabricated from five glu-laminated ponderosa pine timbers each with a nominal thickness of 40 mm. Post dimensions were 150 mm by 200 mm x 1625 mm long. The offset blocks were 150 mm x 200 mm x 355 mm long. The posts were installed on 1905 mm centers with the laminations parallel to the w-beam guardrail in the 45.7-m long w-beam test installation.

The glu-laminated posts and blocks were tested with a 2000-kg pickup truck impacting at 102.8 km/h and at a nominal impact angle of 25 degrees. As noted in the test summary sheet, the test vehicle was contained and redirected upright. Maximum occupant impact velocity was reported to be 5.5 m/s and the subsequent ridedown acceleration was 7.6 g's, both values being below the preferred limits of 9 m/s and 15 g's and well below the maximums allowable. The vehicle roll angle was slightly over 20 degrees. The dynamic deflection of the barrier system was 790 mm or approximately 31 inches. We agree with the researchers' contention that the Report 350 occupant severity test with the 820-kg car may be waived in light of the barrier's performance with the pickup truck.

Based on the information you provided, I agree that Imperial Laminator's glu-laminated guardrail post and block as described above, may be considered acceptable for use on the National Highway System as a substitute for the standard wood post and offset block currently used in the G4(2W) barrier system, or any other barrier system that currently uses solid 150 mm x 200 mm posts and blocks, when such use is requested by the contracting highway agency. Additionally, the offset blocks alone may be used with strong steel post w-beam and Thrie-beam guardrails when a 110-mm wide by 7-mm deep routing is added to the flange side of the block.

Please note that this acceptance is only for the use of these posts in the barrier proper. They cannot be used in any of the guardrail terminals that require weakened or modified wood posts unless specifically tested for that application. Please note also that this acceptance is based on the reported crash performance of your posts and blocks and is not intended to address their long-term durability. Since your post is a proprietary design, the provisions of Section 635.411 (Material or product selection) of Title 23, Code of Federal Regulations apply. A copy of this regulation is provided for your ready reference.

Please do not hesitate to call Mr. Powers at (202) 366-1320 if you have any questions regarding this acceptance of your product.

Sincerely yours,

(original signed by Michael Halliday)

Michael Halliday
Acting 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.