

Previous concurrence valid  
December 15, 1999

Refer to: HMHS-SS-86

Mr. Don Kain  
Woodguard Lumber Corporation  
4872 Topanga Canyon Boulevard  
Suite 410  
Woodland Hills, California 91364

Dear Mr. Kain:

Thank you for your June 13 letter requesting acceptance of the Woodguard Lumber Corporation Post as a breakaway support for use on the National Highway System (NHS). Accompanying your letter was a report of crash testing done at Texas Transportation Institute dated January 1999.

Testing of the supports was in compliance with the guidelines contained in the National Cooperative Highway Research Program (NCHRP) Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features. Requirements for breakaway supports are those in the American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

The test article consisted of a single 89 mm x 89 mm x 4270 mm green lumber post with a 3 mm polyethylene coating embedded 1200 mm into standard soil. A wooden sign panel was mounted 2.1 m above the ground using two 51-mm lag screws.

A summary of the crash test is presented in the following table.

Test #	4000001-ALC P1
NCHRP 350 Designation	3-60 (pendulum)
Vehicle Mass	839 kg (pendulum)
Vehicle Impact Speed	35.8 km/h (pendulum)
Soil Type	standard
Impact Angle	0 degrees
Occupant Impact Speed	No Contact

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Vehicle Velocity Change	0.50 m/s
Estimated 100 km/h Velocity Change	0.16 m/s
Stub Height	(see note # 1)

Note No. 1. The portion of the post between the break at the ground line and the break at the bumper height was pushed to the ground by the vehicle and remained in place after the vehicle passed over it. Because the plastic coating or wood fibers remained connected to the embedded portion, that stub may have rebounded. However, this remnant is not considered substantial, and would have a maximum height of 94 mm (wood plus plastic coatings on top and bottom surfaces) when laying on the ground.

The tested support met the change in velocity and stub height requirements of the AASHTO Standard Specifications and the NCHRP Report 350. Therefore, the Woodguard Lumber Corp. 89-mm polyethylene coated sign post will be acceptable when installed in standard soil on the NHS, when requested by a State. To prevent misunderstanding by others, this letter of acceptance, numbered SS-86, shall not be reproduced except in full.

Our acceptance is limited to the breakaway characteristics of the support and does not cover the structural features. Presumably, you will provide users with sufficient information on structural design and installation requirements to ensure proper performance of your supports and provide certification to transportation agencies that the posts furnished will have essentially the same mechanical properties and geometry as the post used in the tests, considering the natural variability of wood, and that they will meet Federal Highway Administration change in velocity requirements.

Your company's polyethylene coated wood supports are "proprietary" products. To be used in Federal-aid projects, except exempt, non-NHS projects, proprietary products: a) must be supplied through competitive bidding with equally suitable unpatented items, or b) the highway agency must certify that they are essential for synchronization with existing highway facilities or that no equally suitable alternative exists, or c) they must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411, a copy of which is enclosed.

Sincerely yours,

Dwight A. Horne

Dwight A. Horne  
Director, Office of Highway Safety Infrastructure

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.

ENCLOSURE