



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

JAN 4 1993

400 Seventh St., S.W.  
Washington, D.C. 20590

Refer to: HNG-14

Mr. Robert A. Seavey  
Business Development Manager  
Composite Products Division  
P.O. Box 5445  
Norwalk, Connecticut 06856

Dear Mr. Seavey:

Thank you for your letter of November 19 to Mr. Thomas O. Willett requesting the Federal Highway Administration's (FHWA) acceptance of "Timbrex" composite material blockouts for use in strong steel post w-beam guardrail. Our letter of September 1 granted acceptance for Timbrex blockouts for use in strong-wood-post guardrail only. At our recommendation, you had two full-scale crash tests conducted by Southwest Research Institute to assess blockout performance when used on steel posts. Your letter transmitted the two crash-test reports dated November 1992, and 16-mm films of the tests, as well as a drawing of the blockouts. A copy of the drawing is enclosed.

The test results are summarized here:

Test Number	MC-2	MC-3
Vehicle Mass, kg (wt, lbs.)	2041 (4500)	830 (1830)
Impact Speed, KM/h (mph)	97.7 (60.7)	100.4 (62.4)
Angle, degrees	25.3	19.5
Occupant Impact Velocity, m/s (fps) (average of film and accelerometer data)		
Forward	5.3 (17.2)	3.3 (10.8)
Lateral	5.6 (18.3)	6.2 (20.6)
Occupant Ridedown Acceleration (g's)		
Forward	3.3	3.6
Lateral	7.9	7.6
Maximum Rail Deflection, mm (in)	100 (40.8)	30 (13)

The results meet the velocity, acceleration, and post-impact trajectory requirements of National Cooperative Highway Research Program Report 230. Therefore, 152-mm x 152-mm (6-inch x 6-inch) Timbrex blockouts as a one-for-one substitute for blockouts on G4(1S) guardrail are acceptable for use on Federal-aid projects, within the range of conditions tested, if proposed by a State.

The w-beam backup plates that are normally required at non-splice posts were omitted from the tested system. These plates prevent tearing of the w-beam when contacting a steel blockout. The tested w-beam showed no evidence of shearing in the area of the intermediate posts, therefore, use of backup plates is not considered necessary when using Timbrex blockouts.

This letter removes the restriction contained in our September 1 letter against using Timbrex blockouts on steel post systems. All other conditions in that letter, including proprietary restrictions and the proscription against using Timbrex posts unless fully tested, remain applicable. Our field offices are being informed of this action via a copy of this letter.

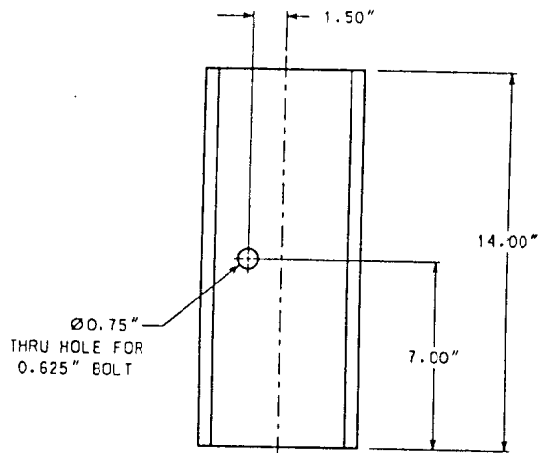
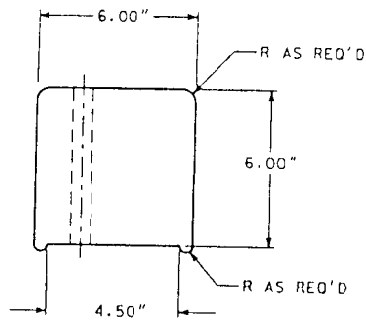
Sincerely yours,



Lawrence A. Staron  
Chief, Federal-Aid and Design Division

Enclosure

Supplement to Geometric and Roadside Design Acceptance Letter B-20



## SPECIFICATIONS

Blocks shall be made from Timbrex™ by Mobil Chemical Company. Minimum specific gravity shall be .950. Minimum compressive strength in the lateral dimension shall be 1600 PSI. Testing shall be in accordance with CPD 101 & CPD 201. The size tolerance in the direction of the bolt hole shall not be more than  $\pm 1/4$  inch.

Dimension tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance and accepted manufacturing practices.

## INTENDED USE

This block is used in standard "W" beam guardrail, "W" beam medium barrier, thri beam, "w" beam terminal end ...

**NOTE:** Some barrier systems call for "W" beam stiffener plates located at posts where guardrail sections are not overlapped. The use of these plates may not be necessary with this block.

MOBIL CHEMICAL COMPANY  
COMPOSITE PRODUCTS DIVISION  
800 CONNECTICUT AVENUE  
NORWALK, CT 06856

GUARDRAIL OFFSET BLOCKOUT FOR USE WITH W 6 X 9 STEEL POSTS