

October 30, 1996

Refer to: HNG-14

Mr. Don H. Johnson  
President  
Syro, Inc.  
2525 Stemmons Freeway  
Dallas, Texas 75356-8887

Dear Mr. Johnson:

My June 12, 1996 letter to you accepted the MPS 350 truck-mounted attenuator (TMA) as a test level 2 (TL-2) device under the National Cooperative Highway Research Program (NCHRP) Report 350 criteria.

Your October 4 letter to Mr. Gerald L. Eller presented additional data and formally requested acceptance of a modified MPS 350 at test level 3 (TL-3). These modifications included a total weight reduction of the MPS 350 of 108 kg (40 kg from the frame and 68 kg from the bracket assembly), and a reduction of the cutting force required in the early stages of activation (achieved by adding slots to two layers of 16 gauge plate steel in the beam assemblies). These changes are highlighted in Enclosure 1 (eight sheets).

The modified TMA was subjected to the NCHRP Report 350 test 3-50, an 820-kg car impacting head-on at 100 km/h. As indicated in Southwest Research Institute's October 1996 report, titled "Full-Scale Crash Evaluation of a Truck-Mounted Attenuator," the resultant occupant impact velocity was 9.9 m/s and the subsequent 10-millisecond ride down deceleration was 19.3 g's. The support vehicle was blocked to prevent forward movement in the test.

You also presented an analysis of the modified MPS 350 under test 3-51 conditions and showed that the occupant impact velocity would be reduced from the previous 8.4 m/s to approximately 8.3 m/s and that 323 mm of stroke would be left in the system after a head-on impact with the 2000-kg pickup truck at 100 km/h. Based on our review of this analysis and the pickup truck test (NCHRP Report 350 test 3-51) conducted on the original design, we concur that test 3-51 need not be rerun on the final design.

Accordingly, the MPS 350, modified as noted above, is acceptable for use on the National Highway System (NHS) as a TL-3 TMA when such use is requested by a highway agency. The conditions under which a proprietary product may be used on the NHS as noted in Title 23, Code of Federal Regulations, Section 635.411, remain in effect.

Sincerely yours,

(original signed by James H. Hatton, Jr.)

*for* Seppo I. Sillan, Acting Chief

Federal-Aid and Design Division

Enclosure

Acceptance Letter CC-34A

**MR DON H JOHNSON**  
**PRESIDENT**  
**SYRO STEEL INC**  
**2525 STEMMONS FREEWAY**  
**DALLAS TEXAS 75356-8887**