



Gibraltar
4303 Innovation Loop
Marble Falls, TX 78654

Attention: Bill Neusch

Date: 01/12/17

Mr. Neusch,

Based upon the test performed on Tuesday, May 14, 2013 at KARCO Engineering, LLC., the as-tested configuration of the Gibraltar M50 P1 14'6" Wedge Barrier has received an impact rating of P1 at the M50 test level, based on the ASTM F 2656-07 standard test method. This test evaluated the M50 P1 14'6" Wedge Barrier for an impact to the center of the blocking width.

The M50 test level of the ASTM F 2656-07 is evaluated using a 6,800 kg test vehicle traveling at a nominal velocity of 80 km/h. The P1 penetration rating is given when penetration beyond the protected side of the barrier is less than 1.0 meter at lower leading edge of the test vehicle's cargo bed.

The M50 P1 14'6" Wedge Barrier completely disabled the test vehicle causing severe damage to the occupant compartment and drivetrain. The maximum penetration was measured dynamically on the passenger's side of the vehicle and was -1.1 m.

The impact caused damage to the M50 P1 14'6" Wedge Barrier along its blocking width with most of the damage occurring between the two inner I-beam posts. The concrete foundation cracked around the corners of the frame and shifted toward the protected side 263 mm on the left side and 283 mm on the right side. The test article was not operational after the impact but the opening remained blocked.

Complete information relating to the test can be found in report number TR-P33070-01-NC and CD serial number 2016-3815 from KARCO Engineering, LLC., including test conditions, test vehicle information, test article specifications, manufacturer drawings and any deviations from the drawings in the as-tested configuration. This letter should not be considered complete documentation of this test without consideration of the test report and deliverable CD.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Frank D. Richardson".

Frank D. Richardson
President
KARCO Engineering, LLC.