



50 years

Testing Engineers & Consultants, Inc.

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Engineering Client Success

TEC Report Number: 56607-001 ENM
Date Issued: March 23, 2016

Mr. Loren Venegas
Ideal Shield® L.L.C.
2525 Clark Street
Detroit, MI 48209

Re: On site Structural Testing of the
Ideal Shield® Protective Guard Rail System

Dear Mr. Venegas:

On March 16, 2016, Testing Engineers and Consultants, Inc. (TEC) witnessed the successful on site testing of the Ideal Shield® Protective Guard Rail Wall System Model Nos. YL-3-120-096P (8 ft. high) and YL-3-120-144P (12 ft. high) which are more fully described in the following catalog pages.

The testing was designed to exceed conditions that might normally be expected in an industrial, manufacturing, warehouse and/or plant environment. The vertical guardrail posts are six inch diameter scheduled 40 pipe each with a ¾ inch by 12 inch by 12 inch base plate welded to the bottom. Each base plate is fastened to the concrete floor with four ¾ inch diameter by 6 ¼ inch long bolts.

A fork lift truck was then driven into the end post of each assembly. The total weight of the truck with driver was 14000 pounds. Using distance and time measurements, the velocity and acceleration for each of the three impacts was calculated. With that data, the force of the impact was calculated. Our calculations are summarized below:

<u>Model No.</u>	<u>Velocity</u>	<u>Force</u>	<u>Comments</u>
YL-3-120-096P	6.7 mph	1039 pounds	Post dented but no displacement
YL-3-120-144P	6.7 mph	1066 pounds	Post dented but no displacement

All of the Ideal Shield® Guard Rail Systems were successful in stopping the forward motion of the forklift in all three systems.

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All services undertaken are subject to the following policy. Reports are submitted for exclusive use of the clients to whom they are addressed. Their significance is subject to the adequacy and representative character of the samples and the comprehensiveness of the tests, examinations and surveys made. No quotation from reports or use of TEC's name is permitted except as expressly authorized by TEC in writing.

CONSULTING ENGINEERS & FULL-SERVICE PROFESSIONAL TESTING AND INSPECTION
OFFICES IN ANN ARBOR, DETROIT, AND TROY
FOUNDED IN 1966

Testing Engineers & Consultants, Inc.

Mr. Loren Venegas
Ideal Shield® L.L.C.
March 23, 2016

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We at TEC were very pleased with the test results and would like to thank you for this opportunity to be of service. Please feel free to call should there be questions.

Respectfully submitted,

TESTING ENGINEERS & CONSULTANTS, INC.

Donald L. Malinowski P.E.

Donald L. Malinowski, PE
Senior Project Engineers

Ruben E. Ramos

Ruben E. Ramos, PE
Vice President
Engineering & Construction Services

DLM/RER/da

