

Request 11:

11. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, “actions”) that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted, are being conducted, are planned, or are being planned by, or for, Thor. For each such action, provide the following information:

- a. Action title or identifier;
- b. The actual or planned start date;
- c. The actual or expected end date;
- d. Brief summary of the subject and objective of the action;
- e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
- f. A brief summary of the findings and/or conclusions resulting from the action.

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

Response:

Thor Motor Coach, Inc.’s actions, chronologically, were:

- 1) TMC project TAE16-0047 chassis extension testing, in which the hitch was vertically loaded to 4300 lbs. per SAE J684-- November 2016.
 - a. TAE16-0047
 - b. November 2016
 - c. 11/22/16
 - d. Test a vertically loaded hitch to 4300 lbs. per SAE J684 where the hitch is attached to C-channel frame extensions and compare against a reinforced C-channel frame extension with gusset (plate) welded to end of extension inside the C-channel.
 - e. Thor Motor Coach Engineering Department.
 - f. The added gusset decreases the deflection and strengthens the C-channel frame extension. Test Report TAE16-0047 is included in Appendix 1.

- 2) Tensile testing was performed at Progressive Engineering on a failed steel frame extension. December 2016.
 - a. PEI project No. 2016-2213
 - b. December 2016.
 - c. 12/21/16
 - d. Lab tensile testing of steel samples of a rear frame extension, removed from a customer’s motorhome. The objective was to verify the physical properties of the steel used to make the frame extensions.
 - e. Progressive Engineering, Inc. Goshen Indiana.

- f. The four samples exceeded the specifications for 36 ksi steel. However, there was a noticeable difference in Yield Strength and Ultimate Strength between the Left frame extension and the Right frame extension.

Test Results PEI 2016-2213 are included in Appendix 2.

- 3) Materials analysis was performed at Progressive Engineering to determine the chemical composition of the steel. June 2019
 - a. PEI Project No. 2019-6174
 - b. May 2019
 - c. June 2019
 - d. Chemical test analysis of steel samples from a failed Lippert hitch to determine steel composition.
 - e. Progressive Engineering, Inc. Goshen Indiana and Element Materials Technology Daleville, Indiana
 - f. Determined steel samples were similar to 1010 Steel per UNS G10100.

Test results PEI 2019-6174 are include in Appendix 3.

- 4) TMC project TAE22-0029 involving a failed hitch receiver from an Outlaw motorhome that was flat-towing a Chevy Equinox; the failed hitch receiver was sent to a metallurgist for analysis. April 2022.
 - a. TAE22-0029 and QA Lab Report No 7190.
 - b. April 2022.
 - c. 5/9/22
 - d. A hitch receiver that had broken into three pieces was sent to a Metallurgist for analysis. To determine the mode of breakage and the cause.
 - e. Quality Associates – Metallurgical Services. Niles, MI.
 - f. The steel met ASTM A1011, CS Type B steel specifications. No metallurgical cause for breakage was found. Breakage is attributed to overloading.

Test Report TAE22-0029 is included in Appendix 4.

Source: TMC Engineering

This information was gathered on October 10, 2024.