

Sub-Standard Parts

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4 Pages

Engineer's Corner

by Dick Klein, PE

There have been several documented reports of sub-standard parts being imported into the U.S. market at prices below the materials costs of domestic-made brands. The first report comes from a major maker of couplers. Over the last 18 months, it has tested samples of imported couplers that imitate domestic brands such as Fulton, Atwood, Dutton-Lainson and Shelby. It reports that a majority of the foreign couplers failed the functionality tests defined in SAE Standard J684. In fact, it reports it has yet to evaluate a Class 4 coupler that functions properly, *i.e.* in conformity with SAE J684. There have also been reports of imports of counterfeit couplers, using the U.S. manufacturer's name. In one such case, the coupler failed on the highway by cracking, and the U.S. OEM was faced with a warranty claim for a coupler it did not manufacture.

The second report comes from another major U.S. supplier of actuators and couplers. It states that it has tested couplers, both foreign and domestic, which do not meet the requirements and intent of SAE J684. In fact, it found several imported couplers that it would have to de-rate by 50% of their "stamped" rating. In one such example, the coupler could only meet the SAE Standard if the secondary safety pin was installed. This U.S. coupler supplier (as well as myself) does not believe using the secondary pins is consistent with the original intent of the SAE Standard. Those tests, I believe, should be conducted with only the coupler's primary locking device. The SAE J684 sub-committee, of which I am a member, is currently evaluating this issue.

The third report comes from a major domestic supplier of trailer parts: a foreign manufacturer's leaf springs, when metallurgically tested, were found to have virtually no ductility and, therefore, should never have been used for spring stock. There are published specifications for leaf springs,

e.g. SAE HS J788, "Manual on Design and Application of Leaf Springs", which, if followed, would assure the manufacture of a good compliant spring.

The bottom line here is that a lot of sub-standard parts, both foreign and domestic in origin, have been foisted off on the trailer manufacturing industry. Some may pose a significant safety risk or hazard to the general public that purchase your trailer products. One precaution trailer manufacturers may wish to consider taking to protect themselves is to request the parts manufacturer or supplier to provide an independent certification of the part(s)' compliance with recognized, accepted industry standards such as SAE J684 or applicable federal motor vehicle standards (FMVSS). We routinely do this for safety chains because there is very little that may be learned by visually checking this item. Almost always all critical parts — couplers, actuators, leaf springs, etc. — have SAE, ANSI, or FMVSS standards that apply and that may be made the subject of parts-manufacturer certifications. For those parts that don't have applicable federal or industry standards, you may wish to consider requesting other types of quality assurances, such as copies of test results.

The following is a correction from October/November TRUCKS Engineer's Corner. Under the heading 'Speed Rating,' the first two sentences should read: "Another little known tire 'fact' is that all ST and LT tires have a speed rating of 65 mph. As of October 20, 2006, the Tire and Rim Association has approved a speed increase of up to 75 mph for these tires, with a 10 psi increase in inflation pressure."

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