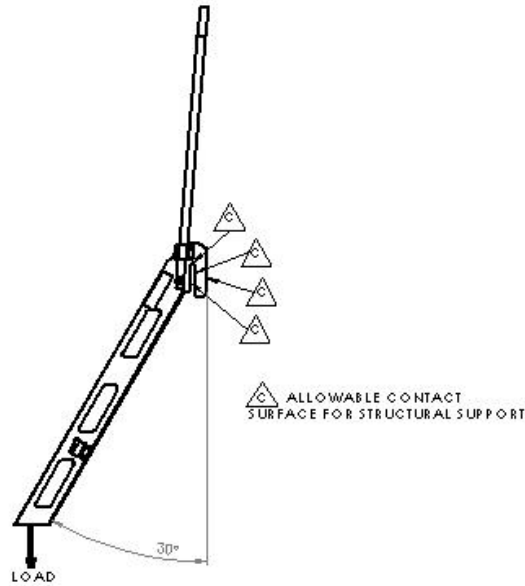


1. **Document Title:** TLM00001-TS
2. **Revision:** March, 12, 2012
3. **Scope:** Functional design validation test specification for Tra-Lor-Mate Inc. “Skate-Mate”- 3 and 4 step portable ladders intended as attachment for rub rail systems on commercial flat-bed trailers.
4. **Document Status:** Approved Standard
5. **Document Owner:** Tra-Lor-Mate Inc.
PO Box 385
Salem, MO 65560
6. **Test documents:** A Certificate of Conformance supplied with customer product indicates successful design validation as described within the scope of this document.
7. **Test Case:** Skate Mate 500 lb Static Load Test
 - I. Purpose
 - a. The purpose of this test is to apply a localized stress concentration on the step of the ladder system as a means of verifying the capability of the system to withstand such loading. The 500 lb weight suspended from the ladder system when fixed in the proposed arrangement will simulate the system’s ability to meet a 450 lb load requirement applied in a “worst case” scenario with additional Factor of Safety (FOS).
 - II. Pre-Conditions
 - a. The ladder system should be fixed to a structural frame rail designed to reflect the intended mounting on the side of a commercial flatbed trailer. The structural frame rail should allow for the vertical attachment of the ladder head support slot. Clearance must be allowed for the steps and side rails to sweep outward away from the frame rail at an approximate angle of 30° as necessary for intended usage. The frame rail structure and ladder must be lifted vertically in unison to apply the entire load to the ladder without any other supports or points of contact to the ladder system besides the frame rail itself. The intended arrangement is depicted in *IMG-1*.



IMG-1.

III. Measurement Standard

- a. Manufacturer: Rice Lake Weighing Systems
- b. Model: 500 lb.
- c. Serial Number: 3SH5
- d. Internal Identifier: CAL00007

IV. Test Steps

- a. Center the 500 lb. weight directly below the lower step on the ladder.
- b. Using an appropriately rated single nylon tie strap of not more than 1.5" thickness, attach the 500 lb. load to the bottom step of the ladder system as is shown in *IMG-2*.
- c. Center the tie strap in the middle of the bottom step.
- d. Measure the resting condition at the base of both side rails of the ladder system relative to a fixed location plane as is shown in *IMG-3*.
- e. Slowly raise the support structure so that the entire 500 lb. weight is supported by the ladder system as in shown in *IMG-4*.
- f. Allow the weight to hang from the ladder system for a minimum of 5 minutes.
- g. Visually inspect the entire unit for any cracks, buckling, separation of individual components, or other defects.
- h. Measure the loaded deflection at the base of both side rails of the ladder system relative to a fixed location plane as is shown in *IMG-5*.
- i. Gently lower the frame rail structure until the 500 lb. weight is no longer applied to the ladder system.
- j. Once again visually inspect the entire unit for any cracks, buckling, separation of individual components, or other defects.



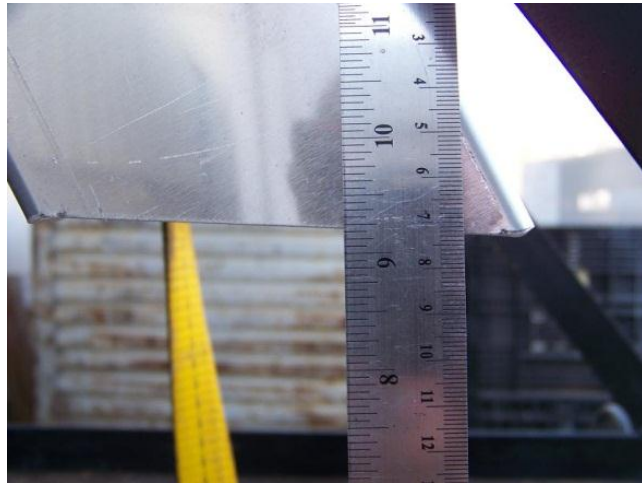
IMG-2



IMG-3



IMG-4



IMG-5

V. Post Conditions

- a. With the weight completely removed and the ladder system returned to the pretest conditions no signs of permanent deformation should be present.

VI. Pass Criteria

- a. Structure is not allowed to collapse after suspension of described load.
- b. No more than 1.5" deflection from resting pre-load condition measured at the bottom of each side rail.
- c. No visible cracks or other defects allowed as a result of the load test.
- d. No permanent deformation of structure is allowed after release of load.

8. Test Results

I. 500 lb. static load

- a. Pass/Fail: **Pass**
- b. Duration(mm:ss): **07:30**



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II. Deflection (measured with certified steel rule)

- a. Right side rail (in): 1.188
- b. Left side rail (in): 1.125

III. Permanent Deformation:

- a. Pass/Fail: Pass


IV. Visual Inspection

- a. Pass/ Fail: Pass

9. Certification

NOTES: NONE

Test Performed by: Nikolaus A. Kassler Date of Test: March 12, 2012

I , hereby certify that the designated test specification was conducted as prescribed by this document without any alteration to test specification unless clearly identified on this document. The results derived from execution of the aforementioned test specification are accurately documented to the best of my knowledge and understanding as a duly appointed representative of Tra-Lor-Mate Inc.