

Safety Chain of Full Trailers or Converter Dollies — SAE J697 JUN84

SAE Recommended Practice
Completely Revised June 1984

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SAE Recommended Practice

Report of the Truck and Bus Technical Committee, approved May 1958, completely revised by the Truck and Bus Chassis Committee June 1984.

This SAE Recommended Practice is intended as a guide for manufacturers and users of trailers, full trailer(s) and/or converter dollies. Its inclusion in state, federal, or any laws or regulations where flexibility of revision is lacking is discouraged.

Emergency safety is the basis of this recommendation.

Scope—This SAE Recommended Practice covers the number, location, and method of attachment of safety chains for full trailers and/or converter dollies.

Definition—A safety chain is the chain from the front of a trailer, full trailer and/or converter dolly to rear of the towing vehicle for purpose of retaining connection between towing and towed vehicles and of controlling direction of travel of the towed vehicle(s) in the event of failure of drawbar or connection on rear of towing vehicle.

NOTE: A single chain or two chains, or single cable or two cables, or a bridle arrangement of a single chain or cable, may be used if all requirements are met.

Installation—The safety chain shall be attached by suitable means to the frame of the trailer or converter dolly to which the hinged drawbar is attached and to the frame of the towing vehicle. Converter dollies with solid tongues and without hinged tow bars may have chain attached to solid tongue. The connection or coupling device shall not be used as a means of attaching safety chain to the towing vehicle frame. The safety chain shall be so installed as to support the drawbar and prevent it from dropping to the ground in the event of failure of the drawbar or connection on the rear of towing vehicles.

The safety chain shall be attached and installed so as to keep the trailer in a straight line back of the towing vehicle insofar as practicable in the event of failure of the drawbar, connection, or coupling device.

The safety chain shall have no more slack, when in use, than is necessary to permit proper turning of the vehicles.

NOTE: Two cables, when used, may be attached to the full trailer's front axle and/or converter dolly axle near the wheels in lieu of this attachment. The means of attachment shall have an ultimate strength of not less than the gross weight of the vehicle or vehicles being towed.

Capacity—The safety chain and the means of attaching to the towed and towing vehicles may have an ultimate strength of not less than the TVW (towed vehicle weight) of vehicle or vehicles being towed.

For the purpose of this recommended practice, the safety chain capacity should be the published break test load or the ultimate strength by actual test. The safety cable capacity should be the published breaking strength or the ultimate strength by actual test.

NOTE: When two chains or two cables are used, each chain or cable and its attachment shall have a capacity equal to the TVW (towed vehicle weight) of vehicle or vehicles being towed.

Breaking strengths are given in Table 1.

TABLE 1

| Type | Published Breaking Strength lbf (kN) |
|---|---|
| Alloy Steel Chain, in Per ASTM A-391 | |
| 1/2 (12.7) | 32 500 (144.6) |
| 3/4 (15.9) | 50 000 (222.4) |
| 1 (19.1) | 69 500 (309.1) |
| Wire Rope Fed. Spec. RR-W-410a Type 1, Class 2, 6 x 19 Improved Plow Steel with Independent Wire Rope Core | |
| 1/2 (12.7) | 23 000 (102.3) |
| 3/4 (14.3) | 29 000 (129.0) |
| 1 (15.9) | 35 800 (159.2) |
| 1 1/4 (19.1) | 51 200 (227.8) |
| 1 1/2 (22.2) | 69 200 (307.8) |
| Extra Improved Plow Steel with Independent Wire Rope Core | |
| 1/2 (12.7) | 26 600 (118.3) |
| 3/4 (14.3) | 33 600 (149.5) |
| 1 (15.9) | 41 200 (183.3) |
| 1 1/4 (19.1) | 58 800 (261.6) |
| 1 1/2 (22.2) | 79 600 (354.1) |

The φ symbol is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. If the symbol is next to the report title, it indicates a complete revision of the report.