Boxcar Inspection

CN Standard Operating Procedure (SOP)

March 2021

Standard Operating Procedure (SOP) Boxcar inspection

This document outlines the requirements for boxcar inspections prior to loading all merchandise in carload service. **All requirements are based on the most current version of the Association of American Railroad (AAR) Circular 42 General Rules and CCLG including, but not limited to, parts 1 thru 10. Please ensure that you review all AAR loading documents related to the specific commodities that you are shipping.**

Reference: AAR Circular 42 – Section B General Rules:

1. Inspection and selection of cars
    a) Cars must be inspected by the shipper at loading point to verify that cars are in suitable condition for loading. Car interiors must have, but are not limited to, sound roofs, sides, floors and end walls; and operable, snug-fitting doors. Any exception is cause for the car to be rejected. See Rule 9, Opening and closing of doors, for further information on railcar doors. See UFC 6000-M, Rule 27, for further information.
    b) The shipper should check the boxcar to verify that the floors and supporting structure are in good condition. If the shipper has any doubts concerning the condition of the car, the serving railroad should be contacted.

Please refer to the following link for more information: **http://www.aar.com/standards/damage-publications.php**

Standard Operating Procedure (SOP) Boxcar inspection

Upon inspection, should the shipper inspect and deem the railcar unsuitable for loading or if a defect is found, the area of concern or defect must be reported to the serving rail carrier. Whenever possible, use the online tools for your serving carrier to report rejected railcars. The area(s) of concern observed must be clearly and timely reported to the serving rail carrier and, if possible, physically highlighted during the preload inspection process using paint or chalk in order to pinpoint the location of the defect or concern.

The liability of loss for damage or delay to commodities may be restricted if it is discovered that the customer or their loading agent failed to follow these minimum rules and recommendations. The customer is responsible for ensuring their own compliance as well as that of their agents or contractors with all applicable CN policies, procedures, and other requirements, including but not limited to adherence to CN's Customer Safety Handbook and the American Association of Railway - AAR rules.

Primary Rule – AAR Circular 42 Section B Rule 1A

"Cars must be inspected by shipper at loading point to verify that cars are in suitable condition. Car interiors must have, but are not limited to, sound roofs, sides, floors and end walls; and operable, snug-fitting doors. Any exception is cause for the car to be rejected. See Rule 9, Opening and closing of doors, for further information on railcar doors. See UFC 6000-M, Rule 27, for further information."

Caution: Use extreme care when opening any type of railcar door to protect against injury, validating that the door is operating properly before fully opening.

Areas of inspection prior to loading

Areas of inspection prior to loading include, but are not limited to:

1. **Doors**
    a) Safe and operable doors: (Appendix 1 - Boxcar safety poster)
    b) Validate that all door hardware (opening/closing/locking mechanism, door cams) are intact and the door rest normal on the door track prior to railcar doors being opened.
    c) Validate the door tracks to make sure they are equipped with door safety stops.
    d) For plug doors, review door rollers, related hardware as well as the top safety arm to open doors safely.
    e) Use extreme care when opening any type of rail car door to protect against injury.
    f) Validate the condition and function of railcar door seals as unimpeded and in sound condition, removing any foreign material taped upon or throughout the doorway.

2. **Roof**
    a) Look for new or recent water entry to the railcar. Observe for evidence of rust concentrations or water entry along roof sheets, roof seam and immediate upper wall area.
    b) Rust does not necessarily indicate a hole. Inspecting in an open area, with natural light or the use of a high lumen (bright) spot light is recommended for the observation and detection of light/water entry points.

3. **Floor and walls**
    a) Inspect the railcar interior surface wall and floor areas for protrusions, rough, broken, bent surfaces or holes that could cause damage to commodities including water damage.
    b) Check the floor for water or rust stains when signs of railcar roof indicate water entry.
    c) Railcars should be clean and free from debris (nails, brads, staples, fragments of steel) or dunnage material.

Customer checklist

All customers should create a checklist and maintain it electronically for review should something happen. (Appendix 2 and 3)

Examples of defects and areas of inspection to be validated and performed by the shipper include but are not limited to (Appendix 4)

1. Door:
    a) Improperly locked and secured
    b) Damaged door caused by forklift
    c) Bent or damaged door edge.

2. Door seals:
    a) Defective, missing or out of place
    b) Impeded door seal

3. Roof:
    a) Compromised, holes
    b) Leaking.

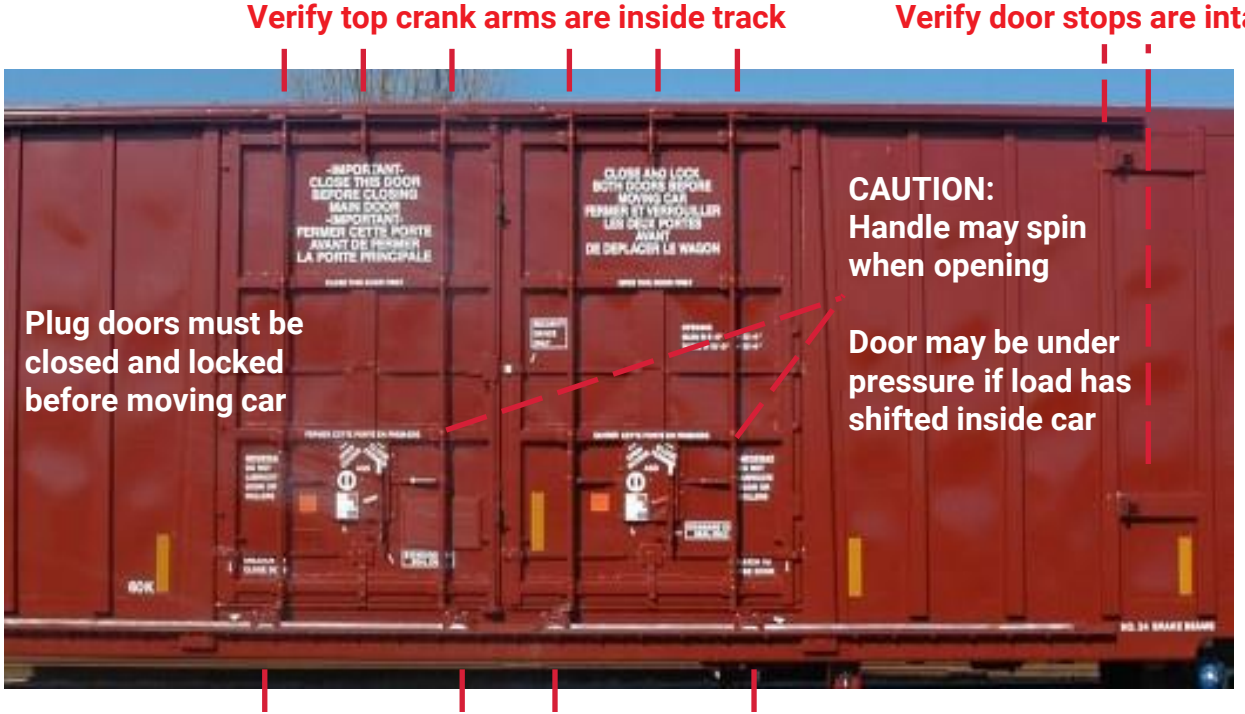
4. Walls:
    a) Compromised, holes
    b) Leaking

5. Floor:
    a) Compromised, holes
    b) Water pooling - check roof and walls for holes
    c) Contaminated/dirty

Note: The customer checklist provided in this document shall be considered as a reference guide only. The shipper must ensure compliance to AAR Rule Circular 42 Section B Rule 1A concerning the suitability of a railcar to transport under load commodities (lading) from origin to destination location.

Inspection and safety for plug door boxcar

PRIOR to opening or closing plug doors closely inspect door, tracks, retainers, stops and operating mechanisms
Applicable to single or double door boxcar



Inspection and safety for plug door boxcar

Top of door

- Observe the upper track and retainer for any indication of damage or distortion, which would permit the rollers to become disengaged.
- Make sure the upper crank arms are not bent or broken.
- Upper crank arm shafts must have their fasteners in place and properly secured.
- Upper crank arms must be properly adjusted to ensure the bottom of the roller does not extend below the bottom of the vertical flange of the top retainer and that clearance is maintained for the full length of the top retainer.

Bottom of door

- Inspect the bottom door track for straightness and proper position of cam locks. Make sure the track is not bent or broken.
- Inspect the bottom of roller housing to ensure that safety lugs are in place and not bent or broken.

Crank area

- Check each crank to see that it is properly positioned in the roller housing and not distorted.
- Make sure that the pipe retaining brackets are properly secured to the door.

Operating shafts and connection pipes

- Bent or broken shafts or pipes may cause the door to fall, jam, or the handle to spin without warning.
- Front and rear door stops must be inspected.

Inspection and safety for plug door boxcar

Interior / Exterior Repairs
Roofing cement or silver/rubber seam tape are acceptable repair methods

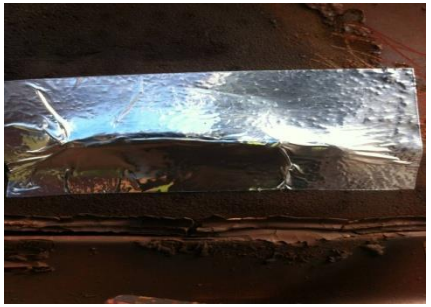
Caution
Prior to opening
At all times, use extreme caution prior to opening a plug door and keep hands, arms and body parts clear of door handles and/or levers as they can spin or spring open suddenly due to force.

Opening of door handles and/or levers
At all times, opening must be initiated with a tool (i.e. bar or hammer) until you are sure the door and/or door mechanism is not under pressure. Then grip the door handle or levers firmly to open the door.

NEVER allow the cars to move with open doors.

NEVER use a forklift or similar machine to apply direct pressure to open or close a boxcar door. This force damages the door and tracks and can result in the door falling out of its track.

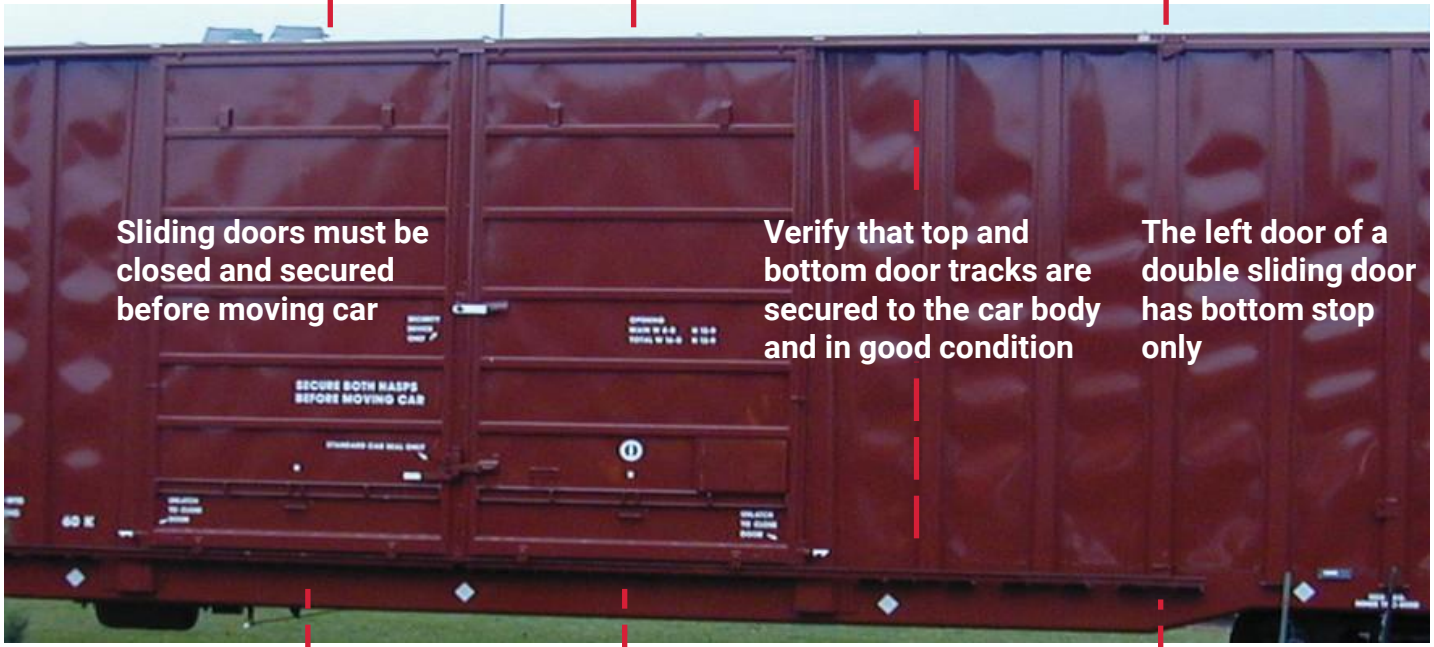

Roofing cement repair


Silver/rubber seam tape repair

Inspection and safety for sliding door boxcar

PRIOR to opening or closing doors closely inspect door, tracks, retainers and stops

Applicable to single or double door boxcar



Inspection and safety for sliding door boxcar

Top of door

- Observe the top track and retainer for any indication of damage or distortion which would permit the door to become disengaged.
- Make sure the door lip is in place inside the top track.

Bottom of door

- Inspect the bottom door track for straightness.
- Make sure the area is not bent or broken.
- Check to see that the door is not off the track and that the door lip is behind the bottom track.

NEVER use a forklift or similar machine to apply direct pressure to open or close a boxcar door. This force damages the door and tracks resulting in the door falling out of its track.

Interior / Exterior Repairs
Roofing cement or silver/ rubber seam tape are acceptable repair methods.

Roofing cement repair

Silver/rubber seam tape repair

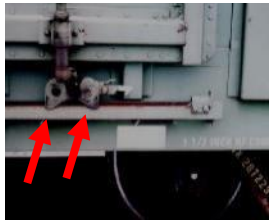
Caution
Prior to opening

- Ensure that top and bottom door stops are in place and in good condition
- Ensure door is on top and bottom tracks

Note – double sliding doors are equipped with top and bottom stops on the right hand door and only a bottom stop on the left hand door.

Boxcar inspection checklist – Appendix 2

Exterior – Check to ensure the following are not bent, broken or missing.

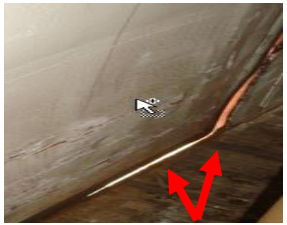


☐ Door track and wheels

☐ Top doorkeepers

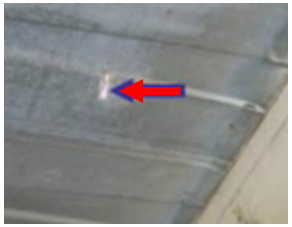
☐ Doors close and seal tightly

Interior – Look for defects that could cause damage to product.
If not suitable for loading, reject car.



☐ Gap in door or floor

☐ Holes in wall



☐ Holes in ceiling

Interior – Look for defects that could cause damage to product.
If not suitable for loading, reject car.

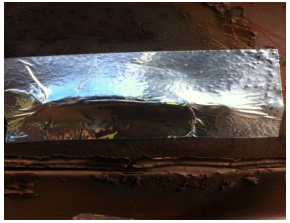
☐ Missing door seals

☐ Cut or damaged door seals

☐ Rust or light entry

Interior / Exterior repairs – Roofing cement or silver/rubber seam tape are acceptable repair methods.

☐ Acceptable method of side wall repair



☐ Acceptable method of side wall repair

Circular 42

"Car must also be inspected by shipper at loading point to see that they are in suitable condition to carry load safely to destination. Cars must have sound roofs, sides, floors and end walls, and operable, snug fitting doors. If the shipper has any doubts concerning the condition of the car, the serving railroad should be contacted."

Railcar and Intermodal inspection report – Appendix 3

The following form is available electronically. You can fill it out **here** and receive a copy for your records

Company Name	
Mill Name/Location	
Warehouse Name/Location	
Inspection Date	
Verified by	
Carrier	
Vehicle Number	

Insert Photos	

Floor		**Ceiling**	
Rough		Holes	
Metal floor frame lifted		Condensation	
Wet		Water seepage	
Weak			
Holes			
Contaminated			
Walls		**Doors**	
Rough		Water seepage	
Bowed		Difficult to open/close	
Holes		Closing mechanism	
Uneven seams			
Boards lifted			
Action Taken			
Refused			
Repair requested			
Protection applied			

Improperly locked/Secured plug door – Appendix 4

- **Inspect door hardware and application:** This defect will impede or prevent the door – Plug (flush) door from seating properly in the door pocket and the rubber door seals from sealing the doorway area. If railcar door locks are not fully engaged into the doorway receiving slots, the railcar door is not secured, and it can potentially open in transit. Inspect pre as well as post loading, and prior to loaded release.

- **Resulting in:** The door could open and product could fall out while in transit (safety concern) and it can potentially lead to water leaking into the car causing damage to the lading.

Damaged door caused by forklift

- **Inspect door seal:** This defect will impede or prevent the door – Plug (flush) door from seating properly in the door pocket and the rubber door seals from sealing the doorway area. If railcar door is defective, the potential exists for the railcar door not to be secured and to open in transit. Inspect pre as well as post loading, and prior to loaded release.

- **Resulting in:** The door may not close fully and could come open in transit (safety concern) and it can potentially lead to water leaking into the car causing damage to the lading.

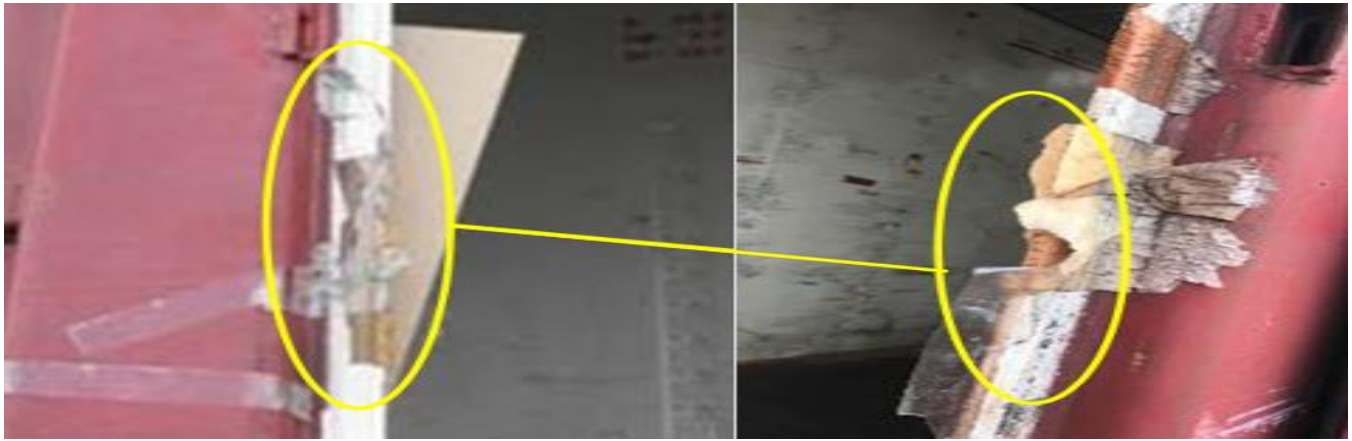
Damaged door: Bent edge and gaps

- **Inspect door seal:** This defect will impede or prevent the plug door from seating properly (flush) in the door pocket and the rubber door seals from sealing the doorway area.
- **Resulting in:** It can potentially lead to water leaking into the car causing damage to the lading.

Defective door seal: Missing, damaged and out of place

- **Inspect door seal:** This defect will impede the door seals from securing the doorway from water leakage. Oftentimes, light can be observed where the seal is misaligned, damaged or missing.
- **Resulting in:** It can potentially lead to water leaking into the car causing damage to the lading.

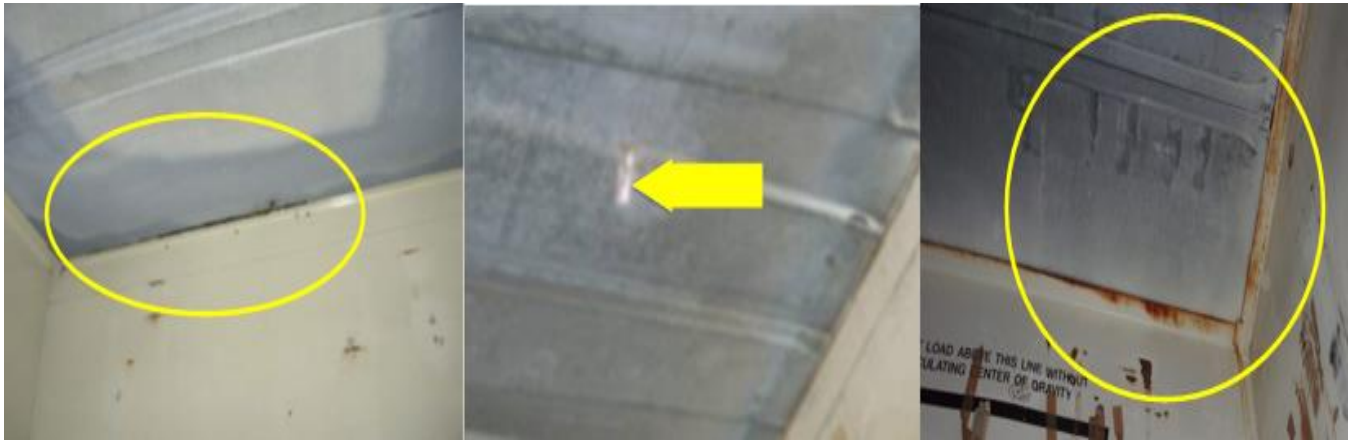
Impeded door seal - Packing tape applied to door seal



- **Inspect door seal:** This defect will impede the door seals from fully securing the doorway from water leakage. The tape, when wrapped from the outside to the inside of the door, around the door edge, compresses the rubber door seal compromising its functionality and allowing water entry.

- **Resulting in:** It can potentially lead to water leaking into the car causing damage to the lading.

Damaged roof: Holes, panels and seams



- **Inspect the roof:** For holes, seams defects, watermarks down the railcar sidewalls and rust concentrations keeping in mind, rust does not necessarily indicate a hole. Look for daylight. Observe the corners where the roof seams meet the sidewalls for signs of water. Use a spot light assists in validation of sound roof and roof seams.

- **Resulting in:** It can potentially lead to water leaking into the car causing damage to the lading.

Damaged roof: Leaking water observed on floor

- **Inspect the roof:** Observe railcar floor for signs of water – pools or areas of discoloration associated to water. If pools of water are found on the floor, a defect in the roof or roof seam may exist.
- **Resulting in:** It can potentially lead to water leaking into the car causing damage to the lading.

Floor and walls: Damage or defects

- **Inspect floor and walls:** Inspect for protrusions, rough, broken, bent surfaces or holes that could cause damage to commodities including water damage. Check the floor for water or rust stains when signs of railcar roof indicate water entry. Railcar should be clean and free from debris (nails, brads, staples, fragments of steel) or dunnage material.

- **Resulting in:** It can potentially lead to water or debris entering the car causing damage to the lading.

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