

9. APTA PR-IM-S-009-98

Standard for Passenger Car Tread Brake Shoe and Disc Brake Pad Periodic Inspection and Maintenance

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APTA PRESS Task Force

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APTA Commuter Rail Executive Committee

Abstract: This standard covers the basic procedures for the periodic inspection and maintenance of the tread brake shoes and disc brake pads of passenger cars, with emphasis on the maintenance of safety appliances and other safety critical systems.

Keywords: brake system, brake system maintenance, brake system periodic inspection and maintenance, disc brake pads, disc brake pad maintenance, tread brake shoe and disc brake pad periodic inspection and maintenance, tread brake shoes, tread brake shoe maintenance

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Introduction

(This introduction is not a part of APTA PR-IM-S-009-98, Standard for Passenger Car Tread Brake Shoe and Disc Brake Pad Periodic Inspection and Maintenance.)

This introduction provides some background on the rationale used to develop this standard. It is meant to aid in the understanding and application of this standard.

This standard describes the basic maintenance and inspection functions for friction brake material on passenger cars. It is intended for the following:

- a) Individuals or organizations that maintain tread brake shoes and disc brake pads on passenger cars;
- b) Individuals or organizations that contract with others for the maintenance of tread brake shoes and disc brake pads on passenger cars; and
- c) Individuals or organizations that influence how tread brake shoes and disc brake pads are maintained on passenger cars.

Participants

The American Public Transportation Association (APTA) greatly appreciates the contributions of the following individual(s), who provided the primary effort in the drafting of the *Standard for Passenger Car Tread Brake Shoe and Disc Brake Pad Periodic Inspection and Maintenance*:

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APTA PR-IM-S-009-98

Standard for Passenger Car Tread Brake Shoe and Disc Brake Pad Periodic Inspection and Maintenance

1. Overview

This document establishes a standard for the tread brake shoe and disc brake pad inspection and maintenance of passenger cars.

1.1 Scope

This standard for tread brake shoe and disc brake pad inspection and maintenance applies to all passenger cars. Periodic inspection and maintenance of passenger locomotive brake systems remains governed by *49 CFR, Part 229, Railroad Locomotive Safety Standards*¹. However, railroads may wish to use some of the procedures in this standard to supplement the federal requirements.

The passenger rail industry phased this standard into practice over the six-month period from July 1 to December 31, 1999. The standard took effect January 1, 2000.

1.2 Purpose

This standard is intended for railroads in order to apply basic procedures for periodic inspection and maintenance of tread brake shoes and disc brake pads of passenger cars, with emphasis on maintenance of safety critical systems.

These systems (if applicable) are essential in the safe operation of passenger cars.

2. References

This standard shall be used in conjunction with the following publications. When the following standards are superseded by an approved revision, the revision shall apply.

APTA PR-IM-S-013-99, Rev 1, Standard for Passenger Car Periodic Inspection and Maintenance.

49 CFR, Part 229, Railroad Locomotive Safety Standards, October 2000.

3. Definitions, abbreviations, and acronyms

3.1 Definitions

For the purpose of this recommended practice, the following terms and definitions apply:

¹ For references in Italics, see Section 2.

3.1.1 periodic maintenance: The performance of selected inspection and maintenance actions on systems or sub-systems. Regulatory agencies or the railroad may set the frequency of these actions. The frequency may be expressed as a function of time (i.e. days, weeks, or months) or of utilization (i.e., mileage, cycles, etc.).

3.2 Abbreviations and acronyms

APTA	American Public Transportation Association
CFR	Code of Federal Regulations
PRESS	Passenger Rail Equipment Safety Standards

4. Frequency of conduct

The frequency of conduct of this task shall be as specified in and in compliance with the requirements of Section 4 of *APTA PR-IM-S-013-99, Rev. 1, Standard for Passenger Car Periodic Inspection and Maintenance*².

5. Tread brake shoes and disc brake pads inspection and maintenance requirements

5.1 Tools/materials

Standard tools carried by maintenance personnel are sufficient for this inspection task. No specific materials are required.

5.2 Safety/personal protective equipment

Personal protective equipment, as required by the operating property, shall be worn at all times in the performance of this maintenance task.

5.3 Training requirements

Railroads and their contractors shall develop and execute training programs that equip employees with the knowledge and skills necessary to safely and effectively perform the tasks outlined in this standard.

6. Inspection and maintenance procedures

CAUTION--Safety hazard
Ensure that equipment is secured against uncontrolled movement before commencing inspection and maintenance procedures.

² For references in Italics, see Section 2.

6.1 Tread brake shoes

The inspection and maintenance procedure for tread brake shoes consists of the following steps:

- a) Visually inspect the thickness of the brake shoes. Renew the brake shoe if remaining wear material is less than the railroad practice requires. Make sure that the brake shoe key is fully inserted through the brake shoe key slot.

NOTE-Because of taper of the wheel tread, care must be taken to insure that the inspection is performed at the thinnest point of the brake shoe.

- b) Visually inspect the brake shoes for broken or missing parts per Figure B.1–Tread Brake Shoe Condemning Limits in Annex B. Renew the brake shoe if it is found condemnable.
- c) Visually inspect for missing brake shoes. Renew missing brake shoes.
- d) During brake shoe renewal, the brake shoe key is to be visually inspected and replaced if it is broken, worn, or damaged in removal. Ensure that the brake shoe key replacements are secure and in place.

6.2 Disc brake pads

The inspection and maintenance procedure for disc brake pads consists of the following steps:

- a) Visually inspect the thickness of the brake pads. Renew the brake pad if remaining wear material is less than the railroad practice requires. Ensure that the brake pad is properly latched and secured.

NOTE -Because of taper wear, care must be taken to insure that the inspection is performed at the thinnest point of the brake pad.

- b) Visually inspect the brake pad for broken or parts missing per Figure B.2–disc brake pad condemning limits in Annex B. If the brake pad is found to be condemnable, renew the brake pad making sure that it is properly secured.
- c) Visually inspect for missing brake pads. Renew missing brake pads.
- d) During brake pad renewal, the brake pad securing mechanism is to be visually inspected and replaced if it is broken, worn, or damaged.

Annex A
(informative)

Bibliography

[B1] Field Manual of the Association of American Railroads Interchange Rules, Rule 12.

Annex B

(informative)

Figures of condemning limits

B.1 Tread brake shoe

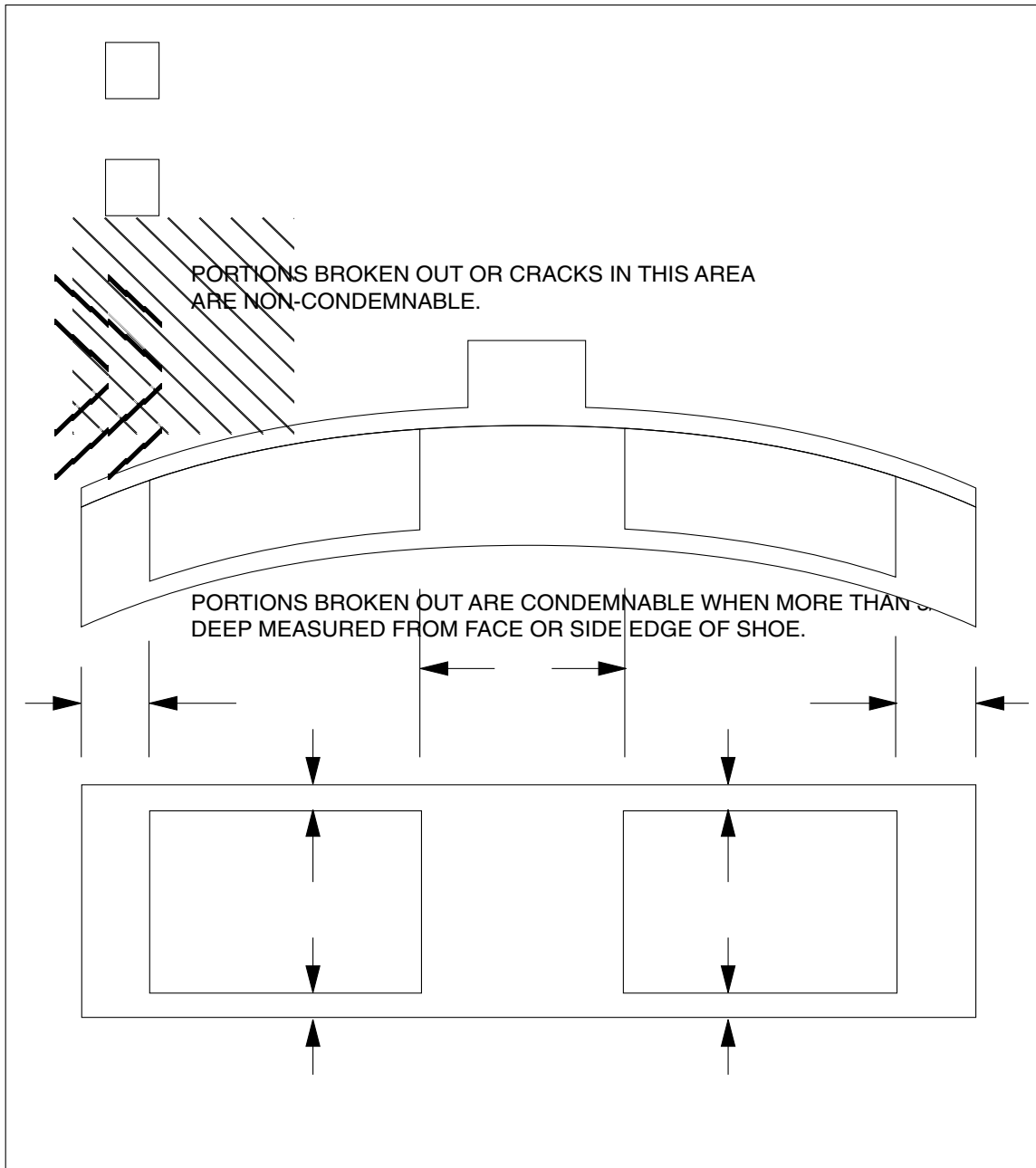


Figure B.1—Tread brake shoe condemning limits

B.2 Disc brake pad

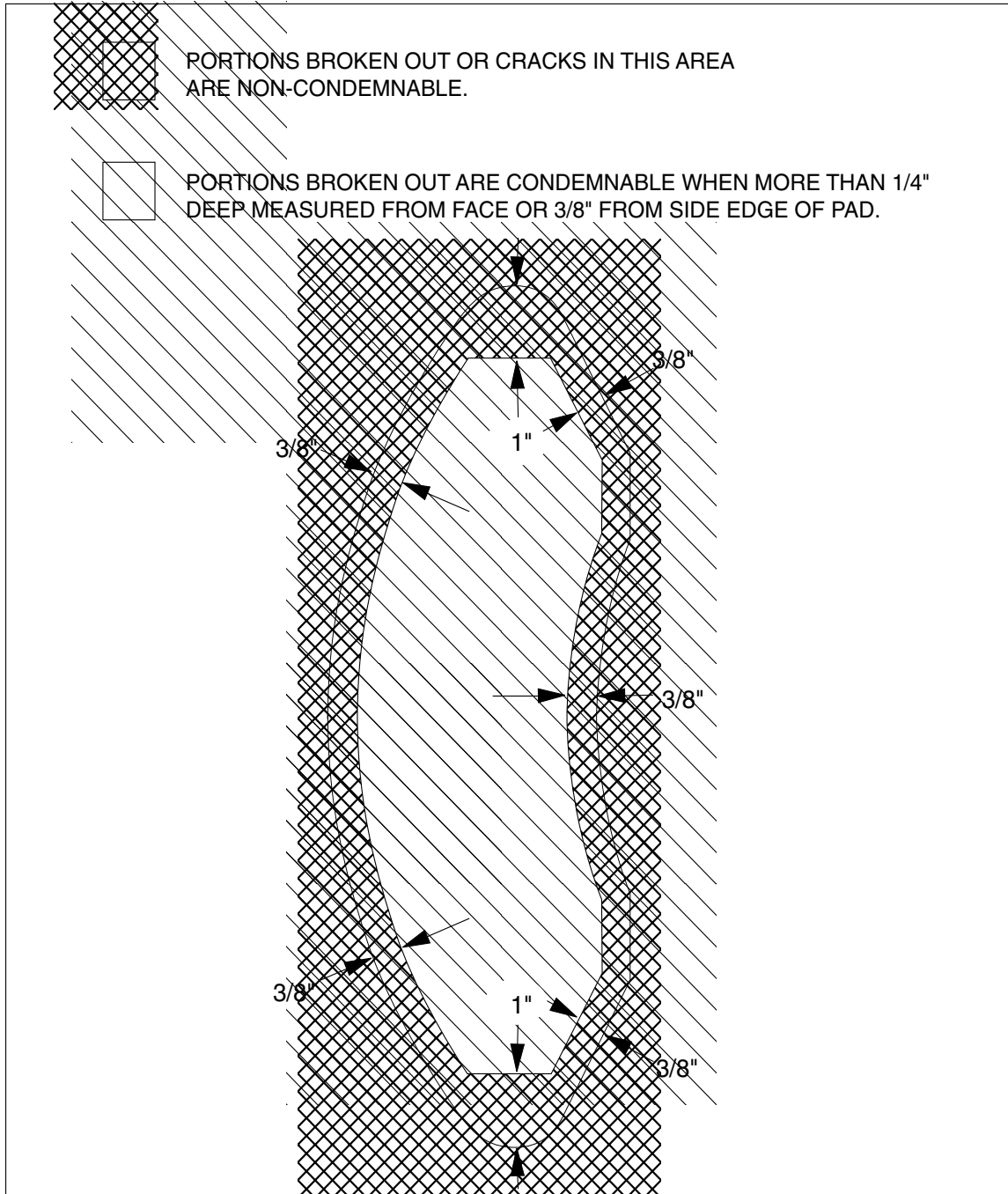


Figure B.2—Disc brake pad condemning limits