American Public Transportation Association

Manual of Standards and Recommended Practices for Passenger Rail Equipment

Volume II

Construction and Structural Standards and Recommended Practices

Second Edition-2004

Compiled under the direction of the Passenger Rail Equipment Safety Standards Task Force

Volume 2
Introduction

This is the second volume of a six volume set comprising the American Public Transportation Association Manual of Standards and Recommended Practices for Passenger Rail Equipment. The standards and recommended practices contained in this manual were developed through a consensus process and represent a common viewpoint of those parties concerned with its provisions, namely: passenger railroads, rail labor, manufacturers and suppliers, consultants, government agencies and general interest groups.

The design and operating standards and recommended practices contained in this Manual were developed under the sponsorship of passenger railroads in the United States to improve safety, reliability and operating efficiency of passenger rail equipment.

This volume contains the construction and structural standards and recommended practices. These documents cover the structural design and construction of passenger rail equipment.

To assist railroads and car builders used to using former Association of American Railroads (AAR) standards for the construction of rail passenger equipment, several APTA construction and structural standards were combined into a single document—APTA SS-C&S-034-99 Rev. 1, Standard for the Design and Construction of Passenger Railroad Rolling Stock. This document parallels and replaces AAR S-034. The following APTA construction and structural standards are incorporated in their entirety into APTA SS-C&S-034-99 Rev. 1:

- APTA SS-C&S-002-98, Standard for the Attachment of Major Equipment to the Car Body Structure of Passenger Railroad Equipment;
- APTA SS-C&S-005-98, Standard for Car Body End Strength for Railroad Passenger Vehicles;
- APTA SS-C&S-008-98, Standard for Truck to Car Body Attachment Strength;
- APTA SS-C&S-010-98, Standard for Car Body Roof Strength;
- APTA SS-C&S-013-99, Standard for Corner Post Structural Requirements for Railroad Passenger Equipment;
- APTA SS-C&S-014-99, Standard for Collision Post Structural Requirements for Railroad Passenger Equipment;
- APTA SS-C&S-018-99, Standard for Car Body Side Strength for Railroad Passenger Equipment.

In addition to incorporating the APTA standards given above in their entirety, APTA SS-C&S-034-99 Rev. 1 addresses the following new subjects:

- Low Alloy, High Tensile Steel;

- End Frame Sheathing and Horizontal Members;
- Climb, Bypass and Overturn Resistance;
- Truck Rotation Stops;
- Structural Connections;
- Crash Energy Management;
- Structural Analysis; and
- Structural Tests.

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