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# CHAPTER 30

## TIES AND FASTENERS<sup>1</sup>

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Chapter 30 is a combination of the former  
 Chapter 3, “Ties & Wood Preservation,” and Chapter 10, “Concrete Ties.”

### TABLE OF CONTENTS

Part/Section	Description	Page
<b>1</b>	<b>General Considerations</b> .....	<b>30-1-1</b>
1.1	Introduction .....	30-1-3
1.2	Load Environment .....	30-1-3
1.3	Vertical Loads .....	30-1-6
1.4	Lateral Loads .....	30-1-8
1.5	Longitudinal Load .....	30-1-9
1.6	Rail .....	30-1-10
1.7	Fastenings .....	30-1-10
1.8	Resilient Track Components .....	30-1-14
<b>2</b>	<b>Evaluative Tests for Tie Systems</b> .....	<b>30-2-1</b>
2.1	Tie Performance Test Descriptions .....	30-2-3
2.2	Bending .....	30-2-3
2.3	Test 2: Rail/Plate Area Compression .....	30-2-9
2.4	Ability to Resist .....	30-2-10
2.5	Rail Pad .....	30-2-12
2.6	Fastener .....	30-2-20
2.7	Test 6: Tie and Fastener System Wear/Deterioration Test .....	30-2-27
2.8	Test 7: Fastener Electrical Impedance Test .....	30-2-34
2.9	Test 8: Single Tie Lateral Push .....	30-2-35
2.10	Resilient Track Components .....	30-2-36
<b>3</b>	<b>Solid Sawn Timber Ties</b> .....	<b>30-3-1</b>
3.1	Timber Cross Ties .....	30-3-3
3.2	Timber Switch Ties .....	30-3-12

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<sup>1</sup> The material in this and other chapters in the *AREMA Manual for Railway Engineering* is published as recommended practice to railroads and others concerned with the engineering, design and construction of railroad fixed properties (except signals and communications), and allied services and facilities. For the purpose of this Manual, RECOMMENDED PRACTICE is defined as material, device, design, plan, specification, principle or practice recommended to the railways for use as required, either exactly as presented or with such modifications as may be necessary or desirable to meet the needs of individual railways, but in either event, with a view to promoting efficiency and economy in the location, construction, operation or maintenance of railways. It is not intended to imply that other practices may not be equally acceptable.

## TABLE OF CONTENTS (CONT)

Section/Article	Description	Page
3.3	Tie Tests and the Economics of Service Life .....	30-3-15
3.4	Substitute Timber Ties .....	30-3-19
3.5	The Handling of Ties from the Tree into the Track .....	30-3-21
3.6	Wood Preserving .....	30-3-30
3.7	Specifications for Treatment .....	30-3-38
3.8	Recommended Practice for the Manufacture of Two-Piece Steel Doweled Laminated Cross Ties (TPSDLC) .....	30-3-44
3.9	Specifications for Timber Industrial Grade Cross Ties .....	30-3-48
<b>4</b>	<b>Concrete Ties .....</b>	<b>30-4-1</b>
4.1	General Considerations .....	30-4-4
4.2	Material .....	30-4-11
4.3	Tie Dimensions, Configuration and Weight .....	30-4-22
4.4	Flexural Strength of Prestressed Mono-block Ties .....	30-4-25
4.5	Flexural Strength of Two-Block Ties (2022) .....	30-4-32
4.6	Longitudinal Rail Restraint .....	30-4-32
4.7	Lateral Rail Restraint .....	30-4-32
4.8	Electrical Properties .....	30-4-33
4.9	Testing of Monoblock Ties .....	30-4-33
4.10	Testing of Two-Block Ties (2022) .....	30-4-41
4.11	Recommended Practices For Shipping, Handling, Application and Use .....	30-4-41
4.12	Ballast .....	30-4-44
4.13	Ties for Turnouts .....	30-4-44
4.14	Ties for Grade Crossing Panels .....	30-4-50
4.15	Cast-In and Post-Installed Inserts for Concrete Ties .....	30-4-51
4.16	Concrete Tie Repair .....	30-4-52
	Commentary (2022) .....	30-4-53
<b>5</b>	<b>Engineered Composite Ties .....</b>	<b>30-5-1</b>
5.1	General Considerations .....	30-5-2
5.2	Material .....	30-5-4
5.3	Physical and Mechanical Properties .....	30-5-5
5.4	Special Considerations .....	30-5-12
5.5	Quality Control, Inspection, and Identification .....	30-5-15
5.6	Engineered Composite Ties for Open Deck Bridges .....	30-5-17
<b>6</b>	<b>Steel Ties .....</b>	<b>30-6-1</b>
6.1	General Considerations .....	30-6-1
6.2	Physical & Mechanical Properties .....	30-6-1
6.3	Steel Switch Ties, Steel Grade Crossing Ties & Other Specialty Steel Ties .....	30-6-2
6.4	Ballast & Sub-Grade Requirement for Steel Ties .....	30-6-2
6.5	Tamping & Compaction of Ballast in Steel Tie Track & Switches .....	30-6-3
6.6	Steel Tie Identification, Marking of Tie, Inspection and Quality Control .....	30-6-3
<b>Chapter 30 Glossary .....</b>		<b>30-G-1</b>
<b>References .....</b>		<b>30-R-1</b>
<b>Appendix .....</b>		<b>30-A-1</b>

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## INTRODUCTION

The Chapters of the AREMA Manual are divided into numbered Parts, each comprised of related documents (specifications, recommended practices, plans, etc.). Individual Parts are divided into Sections by centered headings set in capital letters and identified by a Section number. These Sections are subdivided into Articles designated by numbered side headings.

**Page Numbers** – In the page numbering of the Manual (30-2-1, for example) the first numeral designates the Chapter number, the second denotes the Part number in the Chapter, and the third numeral designates the page number in the Part. Thus, 30-2-1 means Chapter 30, Part 2, page 1.

In the Glossary and References, the Part number is replaced by either a “G” for Glossary or “R” for References.

**Document Dates** – The bold type date (Document Date) at the beginning of each document (Part) applies to the document as a whole and designates the year in which revisions were last made somewhere in the document, unless an attached footnote indicates that the document was adopted, reapproved, or rewritten in that year.

**Article Dates** – Each Article shows the date (in parenthesis) of the last time that Article was modified.

**Revision Marks** – All current year revisions (changes and additions) which have been incorporated into the document are identified by a vertical line along the outside margin of the page, directly beside the modified information.

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