American Railway Engineering and Maintenance of Way Association
Letter Ballot

1. **Committee and Subcommittee:** Committee 30 – Subcommittee 4

2. **Letter Ballot Number:** 30-22-17

3. **Assignment:** To review and update every section of the manual.

4. **Ballot Item:** The subcommittee has reviewed section 4.9.2 and put forth proposed updates.

5. **Rationale:** The proposed updates are in-line with industry practices and propose recommendations that focus on selecting ties for testing from different forms every day, so that ties from every form are checked on a regular basis.

4.9.2 PRODUCTION QUALITY CONTROL OF MONOBLOCK TIES (~~1993~~2023)

After tie and rail fastening system have passed the tests in Article 4.9.1 and have been approved by the engineer, further production of these items may proceed without further design testing. During production of such an approved design, quality-control tests must be performed to assure a uniform, high-quality product.

4.9.2.1 Daily Production Quality-Control Tests

The following production quality-control tests ~~shall~~ should be performed prior to delivery on one tie ~~selected at random~~ from every 200 ties or fraction thereof produced each day. Ties should be selected from a different form every day, cycling through the forms so that ties from every form are checked on a regular basis.

a. The tie dimensions and ~~rail seat~~ configuration ~~and inset location~~ ~~shall~~ should be verified for compliance with the requirements of Article 4.3.2.

b. The Rail Seat Vertical Positive Load Test, Article 4.9.1.4, ~~shall~~ should be performed. The load ~~shall~~ should be ~~applied at a rate of least 5 kips (22 kN) per minute and be~~ held for at least 1 minute.

c. The Fastening Insert Test, Article 4.9.1.9, ~~shall~~ should be performed on all inserts per tie when the instant demolding process is used.

4.9.2.2 Additional Quality-Control Tests

To assure the production of cross ties and rail fastenings which comply with these specifications, the manufacturer ~~shall~~ should institute whatever additional quality-control tests, including concrete compressive strength tests (see Article 4.2.2), deemed necessary.

4.9.2.3 Failure to Pass Production Quality-Control Tests

Should any test tie fail the tests required by Article 4.9.2.1, two additional ties from that same 200-tie lot ~~shall~~ should be tested. In the event either of these ties fails, 100% of the remainder of the 200-tie lot ~~shall~~ should be either tested or rejected.

4.9.2.4 Disposition of Test Ties

A tie cracked (not structurally as defined in Figure 30-4-11)~~under Definition 19)~~ and otherwise undamaged after testing, ~~will~~ should be considered acceptable for use in track unless ~~non-structural cracks are~~ specifically rejected by the engineer prior to testing.

4.9.2.5 Bond Development or Tendon Anchorage Quality-Control Test

One tie selected ~~at random~~ from every 2,000 ties produced ~~shall~~ should be subjected to the Bond Development or Tendon Anchorage Test described in Article 4.9.1.8. ~~A load rate exceeding 5 kips (22.25 kN) per minute may be applied.~~ If the tie does not meet the requirements of Article 4.9.1.8 three additional ties ~~shall~~ should be tested, and if any of the three ties do not meet the requirements of Article 4.9.1.8, the entire lot may be rejected at the option of the engineer.

4.9.2.6 Location for Inspection and Quality-Control Testing

Quality-control testing of production ties may be performed at any test facility, including such facilities at the manufacturer's plant, provided they meet the approval of the engineer. Testing may be observed by the engineer or ~~his~~ their designated representative if ~~he~~ they so elects. ~~Two copies of the~~The results of all

such tests ~~shall~~ should be submitted to the engineer ~~within 7 days of the performance of the tests~~.