Guardrail/Guiderail Technical Committee
Technical Committee Meeting Agenda
Working Session #1
Monday April 23, 2018 10:00AM – 11:00AM

1) 10:00AM-10:05AM: Call to Order and Introductions – Justin Morris (LA) called the meeting to order.

2) 10:05AM-10:10AM: Review of Current Technical Committee Members (Insert membership list from NTPEP website) - New members are always welcome.

3) 10:10AM-10:20AM: Brief summary of the technical committee (for those states who do not participate in quarterly calls or who are new to NTPEP) -
   a) Audit documentation including traceability of materials. Verify that they are able to keep up with traceability documentation requirements. Random lots traced back to raw materials.
   b) Sample testing includes tensile, elongation and other testing as per work plan on a sample of the steel coil. If coil is uncoated, a galvanized backup plate sample may be obtained and used for analysis of the coating.
   c) Random lots of bolts, nuts, washers, backup plates and other components are selected and checked for traceability.
   d) Posts aren’t included in M180. Industry stated that 80% of posts used are 6 foot length. End section posts vary depending on individual state requirements.
   e) Regarding “Domestic origin” requirements, so far auditors haven’t found any manufacturers using foreign material.

4) 10:20AM – 10:25AM: Leadership changes - Chair Brad Rotherham has stepped down and Justin Morris (LA) is the new Chair. He needs a Vice Chair.
   a) States are encouraged to join the TC. Quarterly conference calls are where decisions are made.
5) 10:25AM-10:30AM: Audit Updates
   a) **Summary of first year** - There were 6 audits in the first year. Manufacturers thought that the first audit went well though it was more thorough than any state audit they’ve had. Manufacturers stated that they think the audit has a lot of value because it pushed them. Another manufacturer said they do multiple audits during the year so the NTPEP audit wasn’t a problem for them. In line with AISC. They think NTPEP does a good job. Manufacturers feel that the value will come when more states participate.
   
   b) **Current Audit Year** - There are 7 facilities participating in the current year. The window for applying for an audit is September thru December. There will no audits conducted in December and January because of the need to have testing completed in time for states to populate their QPL for the next year. It was stressed that NTPEP says “compliant” not pass/fail. Acceptance is by the DOTs. In general, auditing has yielded good results with quality manuals in pretty good shape. The audit checks to see that things in quality manual are being done. For most part all of the pieces are in place. Mock audits helped show manufacturers what was going to happen. Testing and inspection were being covered well.

6) 10:30AM-10:40AM: Items looking to address in the future
   a) **Sampling the rail instead of the coil** - Sampling completed rail vs sampling the coil. Sampling completed rail leaves a remainder of rail and also requires sample prep.
   
   b) **How is information on DataMine used by the states?** - DataMine – Are people accessing info. Traceability report can be seen by contacting NTPEP and it is not in DataMine report. DataMine has audit report, testing info, quality manual and COC. Random sample to see if it meets spec rather than comparison sampling. Wisconsin downloads reports to have on file for NTPEP audit programs.
   
   c) **Traceability documents** - NTPEP likes to see that manufacturers organize traceability documents either from raw materials to finish product or vice versus.

7) 10:40AM-10:45AM: Including posts in the program
   a) **Former Chair contacted NCHRP regarding M180 and posts** – Brad sent comments to NCHRP PROBLEM NUMBER 2019-D-08 regarding modifications to AASHTO M 180 (See attached). He suggested including standard material requirements for posts. There are 5 guardrail manufacturers in this country. They all make the major steel components including posts in-house. They may outsource composite blocks and some welded components.
   
   b) NTPEP would like to get steel posts included in M180 so that they can become part of this audit.
8) **10:45AM – 10:50AM: Identification markings** - Will be looking at the need for additional identification markings with respect to traceability.

9) **10:50AM-11:00AM: Industry Concerns / Open Discussion**
   a) **Coil vs finished product sampling.** Industry feels best is to sample from coil.
   b) **Colorado asked about NTPEP helping with MASH approvals.** The NTPEP guardrail program is an audit program and not a product performance evaluation.
   c) **There are 3 – TC3 courses related to Guardrail.**
I. PROBLEM NUMBER

2019-D-08

II. PROBLEM TITLE

Update to AASHTO M180 and Associated Material Specifications

III. RESEARCH PROBLEM STATEMENT

Many states use AASHTO and ASTM specifications for their guardrail components. A number of changes to the state of practice and material standards have generated a need to update AASHTO M180 as well as some associated materials specifications.

A lack of a consistent standard can increase fabrication costs for hardware suppliers and ultimately transportation agencies. A manufacturer can spend a significant amount of resources matching one state’s standards only to start completely over to match another state’s standards. Consistency will also help to increase competition; allowing for the possibility for lower hardware costs for transportation agencies.

In recent years, there has been an increased focus on roadside hardware. Making sure that transportation agencies are using the correct materials in a barrier system has become more important.

IV. LITERATURE SEARCH SUMMARY

Some examples of changes in the state of practice and material that are not currently addressed are:

- Asymmetrical W-Beam to Thrie-Beam Transition section in use for a number of years but not currently in ASTM M180;
- Inconsistency in steel grade for thrie beam terminal connectors;
- Use of high-strength steel bolts connecting thrie beam terminal connectors to rigid barrier;
- Different slot patterns for thrie beam terminal connectors, thrie beam, and W-beam rails;
- Lack of consistent marking on manufacturers’ hardware;
- Changes in ASTM bolt standards;
- Steel industry is moving away from A36 steel;
• No guidance for shop bent beam guard or thrie beam (e.g., radius marking, radius tolerances, etc.);
• Tolerances for holes in steel posts;
• Cable breaking strength for most roadside applications exceeds the standards that currently available; and
• Lack of a standard for swage fittings.

V. RESEARCH OBJECTIVE

Research objective is to review existing material requirements for guardrail. To do this effort, a research team will need to review existing state specifications, standard drawings, crash test reports, and material standards (e.g. AASHTO, ASTM, etc.). Research team is then to identify gaps in material standards, inconsistencies in material standards, and updates to material standards.

VI. ESTIMATE OF PROBLEM FUNDING AND RESEARCH PERIOD

Recommended Funding:

$200,000

Research Period:

24 months

VII. URGENCY AND POTENTIAL BENEFITS

Roadside hardware has been under increased scrutiny nationally. Lack of referencing the proper standard, using an outdated standard, and/or no existing standard may exist; material issues can expose an agency to additional risk. Many transportation agencies are pressed for funds and staff time to determine what is the proper material standard.

Having updated national guidance or standards will help researchers, manufacturers and transportation agencies reduce time and overall costs.

A number of transportation agencies directly reference AASHTO M180 in their specifications or standard drawings. Changes to this document will directly lead to implementation of the research.

Individual states can adopt the recommendation of this research in their standards and drawings. This will save the states the time in reviewing multiple sources of information.

Crash Testing facilities will be able to reference the correct materials information in crash testing documentation. This will lead to states adopting the correct materials when new devices are developed.

VIII. IMPLEMENTATION PLANNING

2018 Annual NTPEP Meeting
Norfolk Waterside Marriott
Norfolk, Virginia
Target groups for this research are AASHTO Technical Committee on Roadside Design, Highway Subcommittee on Materials, individual state standard development engineers, individual state specification engineers, individual state materials engineers, crash test facilities, researchers, and material manufacturers.

IX. PERSON(S) DEVELOPING THE PROBLEM STATEMENT

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X. AASHTO MONITOR

For each project selected for the NCHRP, an AASHTO Monitor will be assigned to help ensure that the research meets the needs of state DOTs and to facilitate implementation of the results. The AASHTO Monitor should be an employee of a state DOT, and typically will have been one of the authors of the problem statement. The AASHTO Monitor will be assigned by staff, but if you wish to nominate an individual for this role, please provide their specifics (name, title, affiliation, address, telephone number, e-mail address).

XI. SUBMITTED BY

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Please submit completed problem statement at:


Questions on the process can be directed to lsundstrom@nas.edu.