



# Test Documentation and Reporting

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AASHTO Task Force 13

Subcommittee 7 Laboratory Accreditation

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Subcommittee co-chairpersons:

Ronald K. Faller, Ph.D, P.E. and John F. LaTurner, P.E.

Presenter: Jeffery W. Sankey, P.E.



# Test Documentation and Reporting

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- Purpose: Present a summary of comments from test laboratories on the Oct. 05 draft of NCHRP 350 Chapter 6, Test Documentation
- Goal: Reach consensus on feedback to provide to the NCHRP 350 update team relative to standardizing the content of crash test reporting.
- Completed report review comments document will be submitted to the NCHRP 350 update team.



# Test Documentation and Reporting

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- Comments received to date from the following participating test laboratories:
  - E-TECH Testing Services, Inc.
  - Karco Engineering L.L.C.
  - Midwest Roadside Safety Facility
  - Transportation Research Center Inc.
  - TRL Ltd.



# Test Documentation and Reporting

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## General Comments



## 6.1.3 Findings Presentation Formats

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- Europe is developing templates for European test laboratories to use for EN1317 tests for:
  - guardrails
  - terminals
  - transitions
- Current EN1317 template drafts for guardrails and crash cushions are available and were provided
  - Consider adopting the EN 1317 reporting format by removing sections which do not apply and by adding sections missing from the 350 update draft
  - Consider complete harmonization with EN 1317 by adding sections missing from the 350 update draft

## 6.1.3 Findings Presentation Formats, continued



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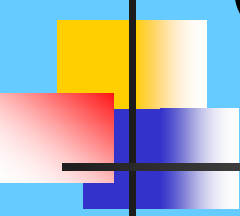
- Consider complying with the “Reporting the results” requirements of Section 5.10 of ISO 17025-2005.
- Consider including a requirement that measurement uncertainties be calculated and reported
- Consider specifying the significant digits to which measurements are to be reported
- Consider including the “Suggested Evaluation Factors” and terminology recommended by FHWA in Appendix D of their July 25, 1997 memorandum
- Consider specifying the polarity to which measurements are to be reported, such as SAE J211



# Test Documentation and Reporting

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Detailed Comments



# Chapter 6 Strengths

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- Assessment Summary Page for each test of a series
- Plot/table of the profile of the permanent test article deformation
- Include an ample number of photographs of the pre-test, test and post-test conditions





## 6.1.1 General Information

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- Require Technical Report Documentation Page
  - consider making it a requirement, not optional

## 6.1.2 Report Contents, System Details



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- Design changes or discrepancies between the as-tested and final production design
  - consider requiring sufficient detail to build the identical system
- Soil properties as measured at the time of the test
  - soil strength is important
  - lack consensus on test day measurement, consider other alternatives
  - review soil strength reporting format following consensus on soil testing procedures
  - Consider including a discussion of soil strength testing

## 6.1.2 Report Contents, Conclusions and Recommendations



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- Conclusions and recommendations
  - are not offered by all test laboratories
  - Differences between research and proprietary test purposes and research and production test laboratories



## 6.1.2 Report Contents, References

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- Consider adding a requirement to reference any previous testing of the system.
- Consider adding a requirement to reference testing of similar devices used to justify elimination of tests in the matrix.



## 6.1.2 Report Contents

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- Consider adding a Literature Review section



## 6.1.3 Findings Presentation Formats

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- summary page item 6 Soil conditions:
  - lack consensus on measuring soil strength at the time of the crash test as previously discussed
- summary page item 8 Impact conditions:  
clarify reported angle
  - consider specifying that the reported angle be the actual vector angle as determined from motion picture images
  - consider including heading angle and/or target angle

## 6.1.3 Findings Presentation Formats, continued



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- summary page items 9 Exit conditions and 10 Post-impact trajectory: both items require exit box criteria
  - redundant; consider listing only once
  - Exit box criteria is not included in Figure 6.2, an example of a longitudinal barrier test for which it would be applicable; consider including it so that the example is more complete

## 6.1.3 Findings Presentation Formats, continued



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- summary page item 13 Test article deflections:
  - Consider discussing, and adding examples for, additional test article types since working width for terminals and crash cushions should be a box containing the major components of the system and the vehicle; the only example, Figure 6.2, an example of a longitudinal barrier test, reports working width as a single number



## 6.1.3 Findings Presentation Formats, continued



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- summary page item 13 Test article deflections: States the height of the maximum working width should be reported, preferably in graphical form
  - Figure 6.2, an example of a longitudinal barrier test doesn't include height of the working width; consider including the height so that the example is more complete and consistent with item 13 text
  - Consider including examples of the recommended graphical forms

## 6.1.3 Findings Presentation Formats, continued



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- summary page item 14 Vehicle damage:
  - suggest including windshield damage in this item with the other occupant compartment numbers
  - Europe uses Vehicle Cockpit Deformation Index and recommends the use of paint marks instead of target stickers to indicate points
  - UK encourages measurement of a footwell deformation grid before and after the test

## 6.1.3 Findings Presentation Formats, continued



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- summary page item 15 EDR Data:
  - Comment, no revision suggested: EDR data is not currently collected by all test laboratories but the data can be collected with the use of a remote battery as discussed in the draft Sec. 4.2.1
  - item 15 is not shown on Figures 6-1 and 6-2, but should be if listed as recommended data

## 6.1.3 Findings Presentation Formats, continued



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- summary page:
  - consider adding a 16<sup>th</sup> item to the summary page: the maximum roll, pitch and yaw angles, if adopted as requirements in the 350 update's evaluation criteria



# Table 6.1, Recommended Table of Contents

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- Appendix B, Appendix C:
  - consider adding a section for reporting of soil strength testing



# Figures 6.1 and 6.2, Recommended Summary Sheet

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- consider adding windshield damage to item 14, as previously discussed
- consider adding a 16<sup>th</sup> item, maximum vehicle roll, pitch and yaw angles, as previously discussed
- consider illustrating both figures in the same number/bullet format to promote standardization



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Remaining Discussion