Pipeline and Hazardous Materials Safety Administration

PHMSA Guidelines for Integrity Assessment of Cased Pipe

Public Workshop

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Pipeline and Hazardous Materials Safety Administration

Uncased Crossings

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Uncased Crossings

- **Best Practices Review for obtaining approval for uncased crossings:**
  - **RR Crossings**
  - **Transit or Light Rail Crossings**
  - **Road Crossings**
    - **Federal**
    - **State or County**

Uncased Crossings

- **How can authorities that have jurisdiction over railroad, highway and road crossings be persuaded that uncased pipeline crossings are safer?**

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Uncased Crossings

- **Can PHMSA help?**
- **How?**
  - **Contact State DOT**
  - **Contact Railroads**
  - **Issue Advisory Bulletin**
  - **Other**

Uncased Crossings

- **What has been approved by jurisdictional authorities for uncased pipeline crossings?**

Uncased Crossings

- **What has been design code used for uncased pipe crossing roadways?**
  - **AREMA**
    - **American Railway Engineering and Maintenance-of-Way Association**
  - **State DOT requirements**
  - **County requirements**
  - **49 CFR Parts 192 and 195**
  - **ASME B31.4 and B31.8**

Uncased Crossings

- **What should be in an uncased crossing best practice?**
  - **Design**
  - **Depth of Cover**
  - **Girth Weld NDT**
  - **Coatings**
  - **Crossing angle**
  - **Hydrostatic test**
  - **Other**

Uncased Crossings

- **Design**
  - **Higher class location design factor:**
    - **In Class 1 and 2 areas – DF 0.50,**
    - **In Class 3 areas –**
      - **DF 0.40 or 0.50 less loads**
- **Calculate live and passive loads**
  - **Fully loaded trains**
  - **Highway with all fully loaded trucks**

Uncased Crossings

- **Depth of Cover**
  - **Min. 10 feet under railroad tracks**
    - **6 feet in other right-of-way areas**
  - **Min. 6 feet for under road crossings**
    - **5 feet in other right-of-way areas**

Uncased Crossings

- **Girth Weld NDE**
  - **100% NDE of Girth Welds in Crossing Right-of-Way**

Uncased Crossings

- **Coatings**
  - **Main coating**
  - **Abrasive resistant coating**

Uncased Crossings

- **Crossing Angle**
  - **Between 90 degrees to 45 degrees**

Uncased Crossings

- **Hydrostatic Test**
  - **Hydrotest to be at min. of 1.5 X MAOP and for 8 hours**
  - **Perform hydrotest prior to and after installation**
  - **Pre-installation pressures (+50 psi) over post-installation test pressure**
  - **Post-installation test**

Uncased Crossings

- **Other**
  - **Boring Technique**
    - **Grout slurry backfill of within bore ID**
  - **Cathodic Protection**
    - **Test site at crossing**

Uncased Crossings

- **Enhancements help justify the approval of uncased crossings**
- **Lessens chance for damage**
  - **Lessens chance for impact**
  - **Make more damage resistant in case of impact**
  - **Additional load carrying capability**
  - **Minimize damage to road/RR due to settling**

Questions?

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Please Email any additional comments or questions to:

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PHMSA – links

- **Pipeline Safety Guidance – Advisory Bulletins, Low Strength Pipe Guidelines, MAOP Rule FAQs**
  - http://www.phmsa.dot.gov/pipeline/guidance
- **Construction Workshop**
  - http://primis.phmsa.dot.gov/construction/index.htm
- **MAOP Rule – FAQs**
  - http://primis.phmsa.dot.gov/maop/index.htm
- **Special Permits – FAQs**
  - http://primis.phmsa.dot.gov/classloc/faqs.htm

QUESTIONS