



# Pictures of Pipeline Material and Construction Quality Issues

**PHMSA**  
**June 15, 2012**



# Fittings - low strength

- Coating is cracking due to expansion of fitting during testing





# Fittings – pressure test failure

**Hydrotest failure  
at 80% of test  
pressure**





# Hot Bend – bevel alignment

- Welding, NDT, Transitions, & Alignment
- Cut Induction Bends





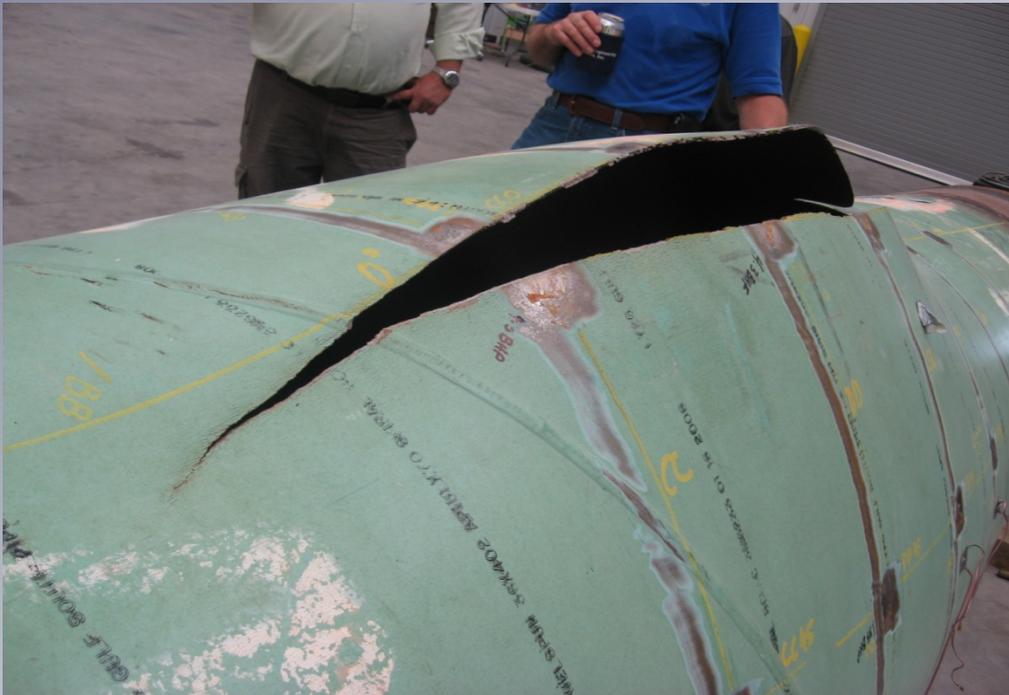
# Pipe – low strength

- **Low strength pipe**
  - **Inconsistent mechanical properties**
  - **PHMSA Advisory Bulletin (PHMSA 2009-1048)**





# Pipe – low strength



- Low strength pipe



# Coatings – application & handling



- **Poor Factory Application of Fusion Bonded Epoxy (FBE) coating**
- **199 jeeps on pipe joint**



# Coating - application

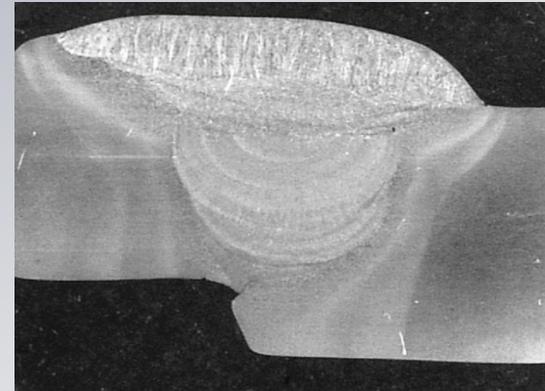
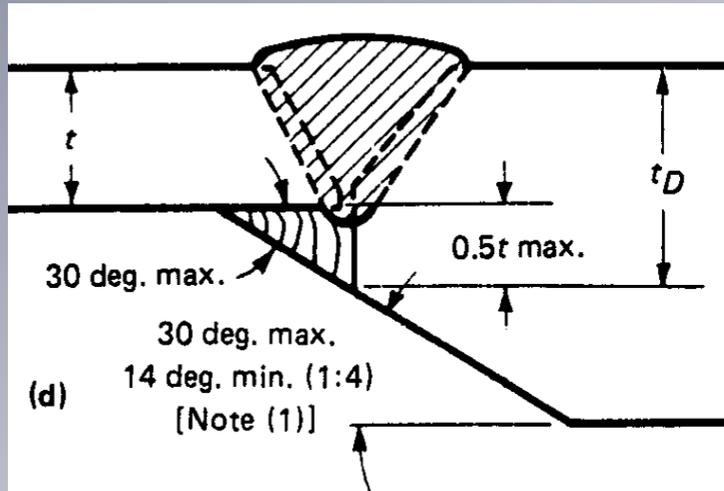
- **Coating Disbondment**





# Pipe – bevel alignment

- Weld Transitions





# Pipe – bevel alignment

- **Weld misalignment (high-low)**





# Pipe – flat spot on bevel

- Pipe bevel ends and alignment – high/low
- Flat spot on pipe at girth weld bevel





# Construction Issues

- **Pipe Alignment – does it meet standards for API 1104**





# Girth Welds - Recent Incidents

