

E85 Equipment Issues – Updates

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Topics Covered

- E85 considerations
- Information gathering efforts
- Certification requirements and status
- Model code considerations



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E85 Properties

- Polar solvent
- Conducts electricity
- Can increase galvanic corrosion between dissimilar metals
- May chemically react with elastomers used in gasoline environment



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Partnering with the D.O.E.

- Jointly held an E85 technical forum
- Member of UL's Technical Committee
- Proposed joint messaging
- Developed code proposals



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Information Gathering

Gathered information from external sources

- Held technical forum
 - Manufacturers, AHJs, governmental agencies, automotive industry, etc.
- Developed External Ethanol Technical Committee



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Information Gathering

E85 refueling station survey objectives:

- Review initial AHJ approval process
- Identify equipment used
- Identify maintenance and inspection processes
- Document equipment related problems
- Document leak detection methods
- Conduct visual examinations of equipment

<http://www.ul.com/regulators/e85.cfm>



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Information Gathering

Brazilian ethanol research initiative

- Conduct visual examination of equipment
- Harvest field samples for examination
- Compare ethanol verses gasoline and diesel equipment condition

Findings are also posted on UL website



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Certification Requirements

- Gasket and seals for use with E85 must comply with UL 157
- Requirements based on fuel compatibility research
- Initial acceptance of product submittals - August 2007



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Certification Requirements

Final dispenser component requirements are found in Subject 87A:

- Published in October 2007
- Developed to address permitted blends



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Certification Requirements

Systems approach to testing products:

- Static testing of dispensing systems
- Metallic and non-metallic components
- 2500-hr accelerated life testing
- Test fluid at 60 C
- Followed by safety performance tests



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Certification Requirements

Subject 87A requirements include:

- Markings:
 - Clearly specify Listing
 - Identify equipment used
 - What blend, (E85)
- To address galvanic action:
 - Permitted combination of subassemblies with metallic interfaces will be specified as part of the certification



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Certification Status

- We are currently investigating E85 dispensing components
- No equipment currently Listed to new requirements



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Model Code Considerations

Codes that apply to E85 equipment

- Model fire codes
 - Uniform Fire Code
 - International Fire Code
- Product and installation specific
 - NFPA 30A



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International Fire Code

Code proposal covering inspections

Flammable and combustible liquid fuel dispensing and containment equipment shall be periodically inspected to:

- Verify that it is in proper working order, and
- Is not subject to leakage



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International Fire Code Proposal

The fire code official is authorized to:

Require damaged or unsafe containment and dispensing equipment to be repaired or serviced, including any that shows signs of:

- Physical damage
- Internal and external corrosion
- Leakage, brittleness
- Aging or undue wear and tear



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Questions and Discussion



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