



Innovation for Our Energy Future

E85 UL Listed Equipment



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Background

- Existing E85 stations in the U.S. were permitted with a waiver from a local Authority having jurisdiction (AHJ)
- Existing E85 station dispensers were retrofitted for E85
- E85 has different chemical properties than gasoline; it is more corrosive requiring specialized metals and other materials that are compatible with both ethanol and gasoline
- No testing protocol was available for E85 when stations first began selling the fuel; this is important for fire codes and OSHA
- Dispenser manufacturers produced products for E85 and needed a way to certify the equipment

Underwriters Laboratory

- UL provides product safety certification for fuel dispensing equipment
- UL developed testing protocol Subject 87A in 2007 with input from industry
- Subject 87A is a rigorous test with a 15 week conditioning phase at 60°C followed by performance testing
- Three UL test protocols for fuels with ethanol content:
 - UL Standard 87-certification for up to E10
 - UL Subject 87A-E25-certification for up to E25
 - UL Subject 87A-E85-certification for up to E85 (uses two test fluids: E25 and E85)

E85 Listed Equipment

- Entire E85 dispensing system certified in June 2010
- Dispensers
 - **Gilbarco***: Encore Series 300, 500, 550
 - **Dresser Wayne***: G520, G610, G620, Ovation Model E
- **Hose**: Veyance Flexsteel Futura Ethan-all
- **Nozzle**: OPW 21GE and 21GE-A
- **Swivel**: OPW 241TPS-0492
- **Breakaway**: OPW 66V-0492
- **Shear Valves**: OPW 10P-0152E85 and 10P-4152E85
- **Submersible Turbine Pump**: FE Petro all AG models
- * Specific dispenser model numbers are available from the manufacturer and will be published in the latest version of the Handbook for Handling, Storing, and Dispensing E85 in July 2010.



Other Ethanol Listed Equipment

- Both Gilbarco and Dresser Wayne have certified dispensers for E25
- Veyance has a hose certified for E25
- Dresser Wayne certified a blender pump dispenser last week
- Equipment certified for E85 can be used with E0-E85

E10 vs. E85 Dispensers

- Gasoline dispenser (certified for use with E10) cost range is \$10,000- \$18,000
 - Conventional materials and gaskets (e.g. mild steel, cork)
- E85 dispenser cost range is \$20,000- \$25,000
 - Premium materials and gaskets (e.g. stainless steel, viton)
 - Low volume (~2000 nationwide)
 - Cost expected to be slightly more expensive than existing equipment as volume increases
 - E85 dispensers could be used with E0-E85 (including E15)