

Modern Custom Fabrication Fresno, California

SUPERVAULT ENGINEERING MEMORANDUM

Subject: SuperVault MH
Multi-Hazard Rated Insulated and Protected Tank
Assembly

Multi-Hazard testing of the SuperVault MH was conducted by Southwest Research Institute in January, 1996. This testing encompassed requirements for both the cylindrical and rectangular styles for all sizes of the SuperVault MH product line. Additionally, the SuperVault MH was tested for Multi-Hazard exposure in accordance with SwRI Test Standard 95-03. Southwest tested the SuperVault MH tanks for resistance to a high intensity liquid pool fire exposure, hose stream resistance, impact (crash) resistance, and projectile resistance in accordance with three Industry Standards: UFC Standard A-II-F-1 (formerly known as UFC Standard 79-7), SwRI Standard 93-01, and UL 2085. Additionally, the tank structure is designed, constructed and listed for conformance with UL Standard 142.

The fire exposure tests were conducted using the oven method because it requires a much higher heat input than the liquid pool fire method. The higher heat input, uniform exposure to all surfaces of the tank, and the consistent oven environment provide the most conservative results and, as a result, safer fuel storage facilities. The other tests were conducted on the same tank which had undergone the fire testing. Then the tank was subjected to an additional 2000 degree F, 2-hour fire exposure and easily met all acceptance criteria. This proves that the SuperVault MH possess and maintain their protection and can be recertified for use after exposure to fire, puncture and impact.

In addition to tank testing, a Quality Control review was conducted by Southwest Research Institute to establish a product listing program. As part of the listing program Southwest Research Institute performs surprise quality inspections of our manufacturing plants at least once each quarter. We are authorized to apply labels to the MH Series tanks indicating that they are listed by Southwest Research Institute.

The SuperVault tanks are the first fully listed Multi-Hazard Insulated and Protected Aboveground Fuel Storage Tanks with a 4-hour Fire Rating. In addition the SuperVault MH is the first protected aboveground fuel storage tank to pass not only the minimum UL 2085 testing requirements but also the very stringent test requirements of both SwRI 93-01 and UFC Standard 79-7.

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The SuperVault MH Cylindrical tanks and SuperVault Rectangular tanks are fully listed to the following:

- Insulated Aboveground Tank
- Protected Aboveground Tank
- Hose Stream Resistance (on fire tested tank)
- Crash Resistance (on fire tested tank)
- Projectile Resistance (on fire tested tank)
- 4-Hour Fire Rating

ALL SuperVault MH TANKS, BOTH CYLINDRICAL AND RECTANGULAR, ARE LISTED TO:

- SwRI 95-03
- SwRI 93-01
- UFC A-II-F-1
- UL 2085
- UL 142

Evidence of listing in accordance with all of these standards is attached. To verify our listing contact:

Certification and Product Services
Southwest Research Institute, Department of Fire
Technology, (210) 522-3038