

MODIFIED ASTM E814/UL 14379  
FIRE RESISTANCE  
FOR  
FEDERAL CONSERVATION INC.  
ON  
AIRKRETE WALL PANEL  
TESTED: February 21, 2008  
VTEC #100-2862

February 22, 2008

**Client:** Federal Conservation Inc.  
2 Bayview Lane  
Amityville, NY 11701

**Attn:** Mr. Joseph Jacinto

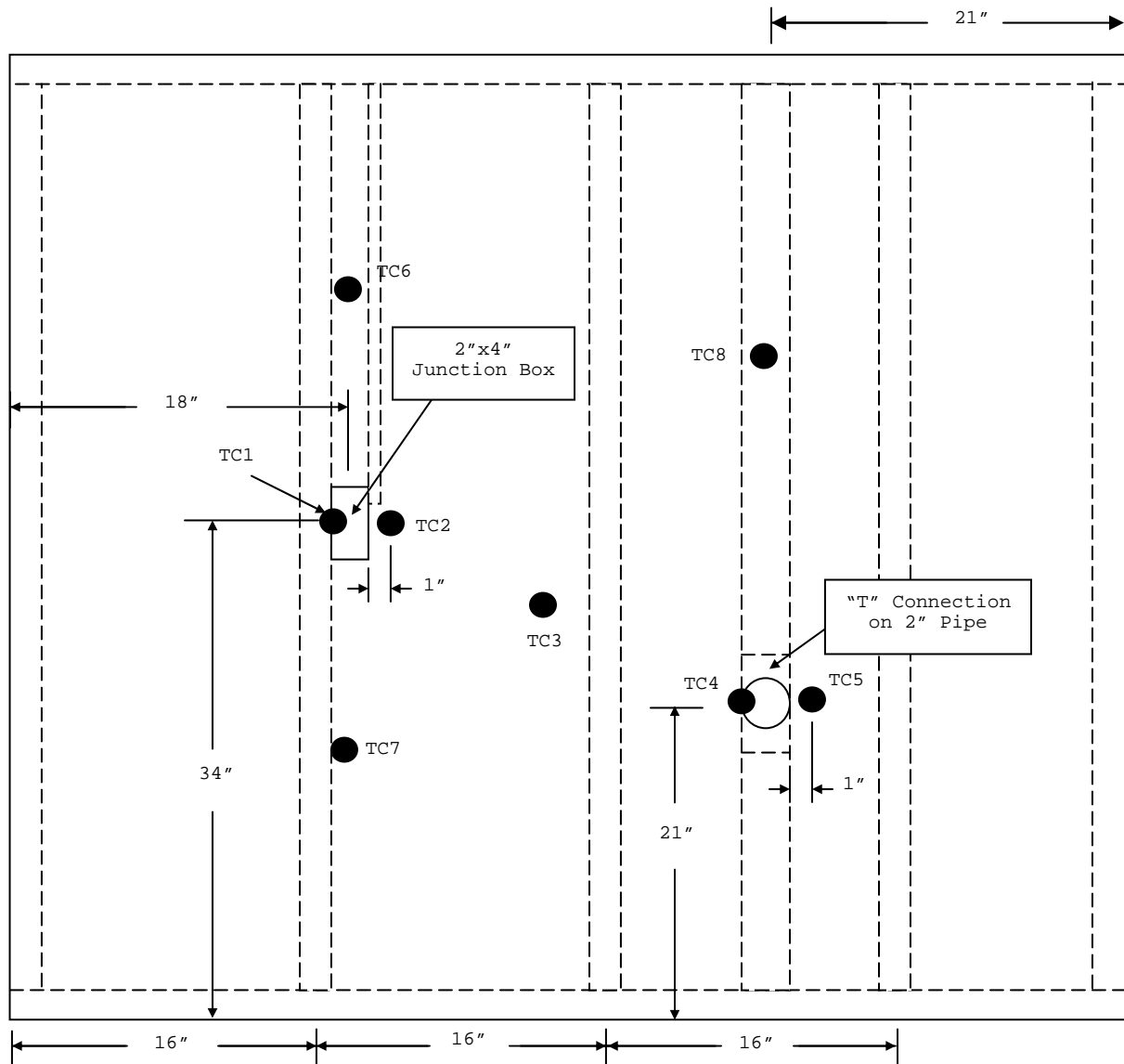
**Subject:** Fire Tests of Through-Penetration Fire Stops According to Modified ASTM E814/UL 1479 Specifications.

**SAMPLE DESCRIPTION:** Aircrete Wall Panel

The 60"x60"x3.75" thick Aircrete Wall Panel was fabricated by Federal Conservation Group and provided to VTEC Laboratories Inc. for ASTM E 814/UL 1479 fire endurance testing. The wall was made up of 7 pieces of 2x4 studs, 4 pieces forming a 60"x60" square frame and the other 3 pieces were placed inside the frame spaced 16" O.C. One layer of 60"x60"x5/8" Type X gypsum boards was attached to each side of the frame using gypsum board screws. A 2"x4" junction box was located 34" high and 19" from the side. Conduit pipe ran from the top to the junction box and from the junction box to the bottom of the panel. A hole was cut in the gypsum board exposing the opening of the junction box. The junction box was left uncovered. A 2" pipe ran vertically through the frame, 21" from the side. It had a "T" Connection 21" high. A hole was cut in the gypsum board exposing the opening of the "T" connection. The cavity between the gypsum board was filled with Aircrete. The side opposite the opening of the junction box and "T" connection was exposed to the furnace.

**DISCLAIMER:** This test should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazards or fire risks of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment, which takes into account all of the factors which are pertinent to an assessment of fire hazard of a particular end use.

**Notice:** VTEC Laboratories Inc. will not be liable for any loss or damage resulting from the use of the data in this report, in excess of the invoice. This report pertains to the sample tested only. Such report shall not be interpreted to be a warranty, either expressed or implied as to the suitability or fitness of said sample for such uses or applications, as the party contracting for the report may apply such sample.

**SAMPLE DIAGRAM:****THERMOCOUPLE LOCATIONS:**

The temperature on the unexposed side of the sample was monitored by eight thermocouples in the following locations:

- 1 - On junction box
- 2 - 1" from Junction box on gypsum board
- 3 - Centered between the junction box and "T" Connection on gypsum board
- 4 - On "T" Connection
- 5 - 1" from "T" Connection on gypsum board
- 6 - Centered between the junction box and the sample top on gypsum board
- 7 - Centered between the junction box and the sample bottom on gypsum board
- 8 - Centered between the "T" Connection and the sample top on gypsum board

**PROCEDURE:**

The furnace used in this test measures 5ft x 5ft. The outside construction is steel and the furnace is lined with a ceramic refractory insulation. A single burner is centered vertically in the wall opposite the sample. This burner is rated for 1.5 million Btu/hr and is of the flat flame or non-impinging flame design. Furnace conditions are monitored by three Inconel-sheathed chromel-alumel thermocouples. These thermocouples are positioned 6" from the face of the sample.

The sample was oriented vertically in the front opening of the furnace. The unexposed surface temperature of the sample was monitored by eight, 20 gauge type K, fiberglass sheathed thermocouples. An insulating pad was placed over each of the six thermocouples on the gypsum board.

The fire test was run following the ASTM E814/UL 1479 time-temperature curve.

The hose stream test was performed using a 2-1/2 inch diameter hose and National Standard Playpipe equipped with a 1-1/8 inch discharge tip at distance of 20 ft from the sample. The hose stream test was performed after the fire test on the exposed side of the sample. The hose stream was applied to the sample for 24 seconds based on a 16 sq. ft exposed area.

**RATING CRITERIA:**

F Rating:

Fire Test: The Fire stops shall not permit the passage of flame through the openings or allow any flaming on the unexposed side.

Hose Stream Test: The fire stops shall not develop any openings that would permit projection of water beyond the unexposed side.

**RESULTS:**

The initial ambient temperature was 57°F.

Hose Stream Test: No holes formed in the unexposed side of the sample after being exposed to the hose stream for 24 seconds.

F Rating: 120 minutes

The sample met the acceptance criteria of the "F Rating" for 120 minutes per ASTM E814/UL 1479 specifications.

The time-temperature data are contained on the following pages.

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Neil Schultz  
Executive Director

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Amirudin Rahim  
Technical Director