



HURRICANE TEST LABORATORY, INC.

Windows • Doors • Store-Fronts • Curtain Walls • Shutters • EIFS • Metal Building Systems

MISSILE IMPACT & CYCLIC LOAD TEST REPORT - WALL PANEL

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Specimen #: 2

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stud was secured to the top and bottom "END" angle member using one (1), #8 x 1/2-in. Pan Head, Phillips Drive, self-drilling screw, self tapping screw. It should be noted that all of the vertical members used in this interior frame were oriented with their broader dimension parallel to the exterior surface of the wall panel.

- 5.3.3 **Modified Expanded Polystyrene (EPS) Installation:** The void between the interior and exterior metal frames in each wall panel was filled with Modified Expandable Polystyrene produced by a variety of manufacturers such as ARCO Chemical Company. The EPS used herein had a nominal density of 1.0 pcf.

6.0 SPECIMEN CONSTRUCTION:

- 6.1 **Individual Composite Wall Panel Assembly:** The exterior and interior steel stud frames were coated with SLOCUM V-4917 cross linked heat activated adhesive and then loaded into a clam shell mold and held in place with permanent magnets. Please note that the adhesive was applied on all surfaces of the interior and exterior frame that come in contact with the EPS. Pre-Expanded Polystyrene beads are injected into the mold to fill all voids and thereby form the profile of the shiplapped panel. Live steam is then injected into the mold which causes the EPS to expand further and fill all the voids and bond to itself and the steel - thereby creating a composite structural panel. Water is then injected into the mold to cool the composite panel and air is used to eject the panel from the mold. It should be noted that the resulting structural panel has a complete thermal break between the interior and exterior steel frames.
- 6.2 **Adjacent Wall Panel Attachment:** Each wall panel was attached to the other via a ship lap. The panels were also mechanically fastened to each other at this ship lap joint using a single row of #8 x 1/2-in. Pan Head, Phillips Drive, self-drilling, self tapping screws located 1-in. from the top and bottom of each panel and 12-in. on center thereafter.
- 6.3 **Wall Panel Installation:** Each wall panel was attached to the top and bottom metal tracks using a single row of #8 x 1/2-in. Pan Head, Phillips Drive, self-drilling, self tapping screws located 1-in. from each end of each panel and 16-in. on center thereafter. This row of fasteners was utilized on the interior and exterior side of each wall panel.

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