**Farabaugh Engineering and Testing, Inc.**

Project No. T166-01

Report Date: June 6, 2001

PERFORMANCE TEST STUDY

TITE-LOC STANDING SEAM ROOF PANEL
24 GA / 16" WIDE

STANDARD TEST METHOD FOR STRUCTURAL PERFORMANCE OF SSMRS BY UNIFORM STATIC AIR PRESSURE DIFFERENCE

FOR

PETERSEN ALUMINUM CORP.
1005 TONNE RD.
ELK GROVE VILLAGE, IL 60007

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**Purpose:**

The purpose of this performance test study is to evaluate the Petersen Aluminum Tite-Loc Standing Seam Roof Panel with respect to Metal Building Components, Inc.(MBCI) Battenlok Standing Seam Roof Panel as an extension of the referenced tests performed. Petersen Aluminum Corp. is licensed by MBCI to produce the MBCI Battenlok Panel (see attached letter in Appendix). Petersen Aluminum Corp. produces this panel under the name Tite-Loc.

**Panel and Clip Data:**

Panel - Tite-Loc Standing Seam Metal Roof Panel
Panel Width - 16"
Panel Thickness - 24 ga
Panel Clip – Tite-Loc Two Piece Sliding Clip
Panel Joint Sealant – 3/16" bead RoboFoam Factory Applied Hot Melt Mastic, by Q'SO Inc.

**Manufacturer:**

Petersen Aluminum Corp.
1005 Tonne Road
Elk Grove Village, IL 60007

**Panel Analysis:**

Tite-Loc Standing Seam Roof Panels were manufactured and submitted for analysis and comparison to the detail drawings as provided in this report. Profiles submitted for review were the 24ga Tite-Loc Panels, 16" wide. A cross section of the panels were measured and compared to the MBCI Battenlok Panel detail drawings.

**Referenced Testing:**

The referenced testing for this report (attached to the Appendix) is Standard Test Method for Structural Performance of SSMRS by Uniform Static Air Pressure Difference on Battenlok 16" wide, 24 ga standing seam roof panel.

The summary of this referenced testing is as follows:

***Standard Test Method for Structural Performance of SSMRS by Uniform Static Air Pressure Difference***

| Description | Max. Test Load |
|---|---|
| 16" w x 24 ga Battenlok (3 Spans @ 5' oc) | 51.2 psf |
| 16" w x 24 ga Battenlok (6 Spans @ 2'-6" oc) | 71.5 psf |
| 16' w x 24 ga Battenlok w/reinf. seams (6 Spans @ 2'-6" oc) | 115.7 psf |

**Conclusion :**

Review of the Tite-Loc panel cross-section as compared to the Battenlok detail drawings indicated actual dimensions within the tolerances shown. Petersen Aluminum has submitted documentation indicating that all tooling is identical and by the same manufacturer as MBCI (see letters in Appendix). See appendix for referenced test reports on the MBCI Battenlok panel.

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TEST RESULTS FOR 24GA. BATTENLOK (6) SPANS @ 2'-6" WITH REINFORCMENT

LOAD VS. DEFLECTION

| TEST PRESSURE PSF | DEFLECTION DIAL READINGS (INCHES) DIAL 1 | DIAL 2 | DIAL 3 | DIAL 4 | DIAL 5 | DIAL 6 | DURATION SEC. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1.2 | .000 | .000 | .000 | .000 | .000 | .000 | 60. | PANEL WT. |
| 6.4 | .377 | .051 | .409 | .033 | .025 | .390 | 60 | |
| 1.2 | .031 | .008 | .011 | .009 | .010 | .005 | 60 | PANEL WT. |
| 11.6 | .832 | .132 | .890 | .146 | .117 | .811 | 60 | |
| 1.2 | .044 | .010 | .020 | .009 | .011 | .005 | 60 | PANEL WT. |
| 6.4 | .379 | .055 | .429 | .034 | .026 | .402 | 60 | |
| 16.8 | 1.470 | .144 | 1.359 | .179 | .170 | 1.402 | 60 | |
| 1.2 | .049 | .012 | .035 | .008 | .015 | .007 | 60 | PANEL WT. |
| 6.4 | .388 | .055 | .441 | .033 | .038 | .416 | 60 | |
| 22.0 | 1.655 | .179 | 1.799 | .204 | .198 | 1.742 | 60 | |
| 1.2 | .061 | .011 | .039 | .009 | .016 | .008 | 60 | PANEL WT. |
| 6.4 | .394 | .059 | .455 | .047 | .044 | .422 | 60 | |
| 27.2 | 2.113 | .233 | 2.148 | .246 | .302 | 2.031 | 60 | |
| 1.2 | .062 | .015 | .041 | .012 | .021 | .045 | 60 | PANEL WT. |
| 6.4 | .399 | .062 | .487 | .064 | .072 | .425 | 60 | |
| 32.4 | 2.366 | .264 | 2.498 | .306 | .355 | 2.299 | 60 | |
| 1.2 | .087 | .022 | .047 | .012 | .033 | .043 | 60 | PANEL WT. |
| 6.4 | .436 | .112 | .522 | .075 | .099 | .425 | 60 | |
| 37.6 | 2.745 | .330 | 2.844 | .369 | .402 | 2.599 | 60 | |
| 1.2 | .101 | .056 | .087 | .125 | .092 | .075 | 60 | PANEL WT. |
| 6.4 | .441 | .145 | .613 | .232 | .145 | .502 | 60 | |
| 58.5 | 3.161 | .489 | 3.204 | .511 | .531 | 2.951 | 60 | |

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LOAD VS. DEFLECTION

| TEST PRESSURE | DEFLECTION DIAL READINGS (INCHES) | | | | | | DURATION | REMARKS |
|---|---|---|---|---|---|---|---|---|
| PSF | DIAL 1 | DIAL 2 | DIAL 3 | DIAL 4 | DIAL 5 | DIAL 6 | SEC. | |
| 1.2 | .912 | .447 | 1.136 | .380 | .405 | 1.214 | 60. | PANEL WT. |
| 6.4 | 1.469 | .574 | 1.588 | .588 | .665 | 1.487 | 60 | |
| 78.25 | | | | | | | 60 | PANEL DEFORMATION |
| 1.2 | 2.162 | 1.331 | 2.244 | 1.250 | .945 | 2.048 | 60 | PANEL WT. |
| 6.4 | 2.664 | 1.511 | 2.841 | 1.424 | 1.245 | 2.489 | 60 | |
| 115.7 | | | | | | | 30 | SIDEJOINT DISENGAGEMENT BETWEEN SUPPORTS |

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