



**Central Coast:**  
684 Clarion Court  
San Luis Obispo, CA 93401  
(805)547.2000  
(805)547.2001 fax  
(800)579.3881

**Southern California:**  
1276 E. Colorado Blvd.  
Suite 201  
Pasadena, CA 91106  
(626)793.7438  
(626)793.7439 fax

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## Structural Memo

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Date: November 07, 2014  
To: John Hudson, Vice-President  
Renusol America, Inc.  
From: Amy Maskal  
Taylor & Syfan Consulting Engineers, Inc.  
Project: Renusol VS-R & VS-C Rail 2014 Packets  
T&S Job No.: 14286

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Subject: 60-Cell & 72-Cell Module Orientation

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This Structural Memo is an addendum to the "Structural Calculations, Specifications, & Summary" calculation packets prepared by Taylor & Syfan in 2014 (Note: a variety of general design documents have been released by Taylor & Syfan during 2014—the applicability of this Structural Memo should be reviewed for the respective project prior to construction). The requirements and specifications from the applicable structural engineering design packet prepared by Taylor & Syfan shall apply to any project that references this Structural Memo.

At the request of Renusol, Taylor & Syfan has reviewed the possibility of a rotated panel orientation. Currently, the panels are designed to be installed with the long dimension of the panel oriented perpendicular to the installed railing ("portrait" format), as shown in Figure 1 below. Reference Figure 1 for the maximum allowed dimensions for the clamps (by Others) that fasten the panel to the rails.

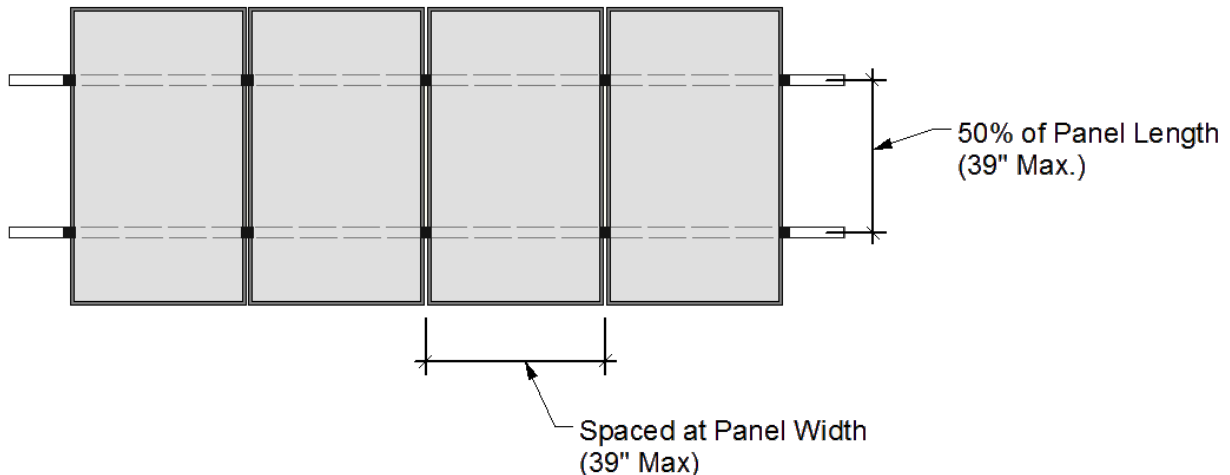
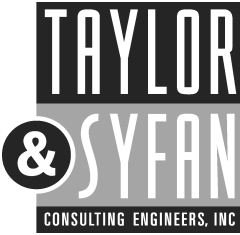


Figure 1 – Currently-Designed Panel Orientation



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Renusol has requested allowance for the panels to be rotated 90-degrees from the current designed orientation, such that the long edge of the panels would be oriented parallel with the installed rail ("landscape" format and clamped on long edge). The proposed rotation can be seen in Figure 2 below.

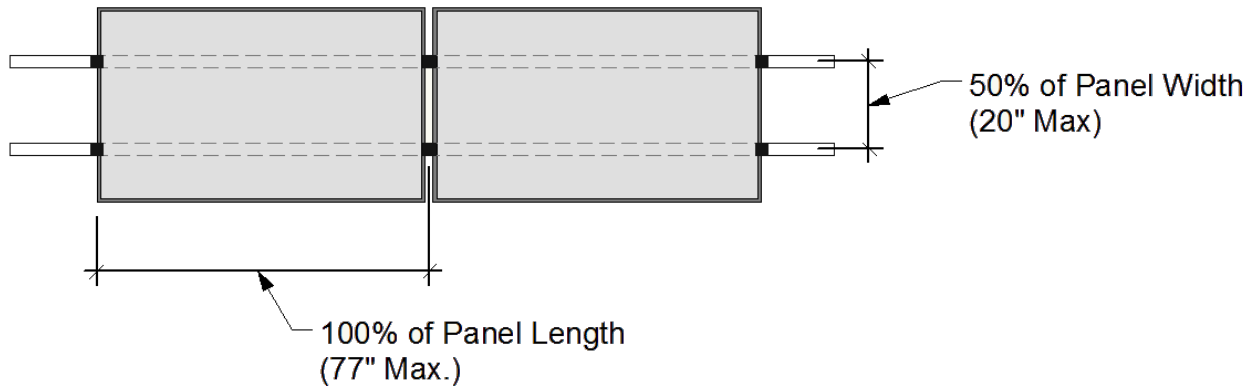


Figure 2 – Proposed Rotated Panel Orientation

Taylor & Syfan takes no exception to this panel orientation; however, the suitability of the clamps and panel performance to accommodate this orientation must be confirmed by the panel Manufacturer and Others. Note that the proposed "landscape" orientation provides the panels with less structural support than the original orientation. Because of this, note that the applied loading (including a combination of wind and snow forces calculated and factored in accordance with applicable building codes) should not exceed the Manufacturers' specified and tested loading limits (typically 30 psf or less) or a UL Certified Report, whichever is more restrictive.

Taylor & Syfan may be contacted for questions pertaining to this Structural Memo or its applicability to a specific installation.

Sincerely,  
**Taylor & Syfan Consulting Engineers, Inc.**

Amy Maskal, P.E.  
Senior Engineer