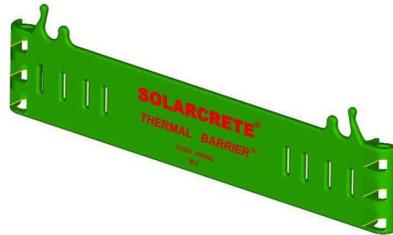


Data Sheet: **The New Solarcrete Composite Shear Tie**

*Note: The new Solarcrete shear ties replace the 12 ga. Galvanized steel ties that have been in use for the last 30 years. Any specifications or references to the steel ties that remain shall be interpreted to refer to the composite shear ties, due to the fact that all existing printed information, including specifications and drawings, is currently in the process of being edited and updated. This data sheet shall be referenced until all existing literature has been replaced or updated.



Composition, Use and Benefits:

The new shear ties are composed of and precisely molded from a reinforced impact resistant polymer alloy containing a proprietary blend of non-conductive materials that transfers virtually no heat through the wall.

Its unique design holds the vertical steel reinforcement bars (#3, Grade 60 rebar) at the proper distance from the insulation core to provide proper embedment of the vertical rebar in the center of the shotcrete. The vertical steel rebar is spaced at 24" apart center to center on both sides of the wall, and is held out from the foam so that it is placed directly in the center of each of the two concrete layers. Reinforced polyester strapping ("banding") passes through the shear tie banding slots to hold the panel together tightly during shipping, handling and erection at the jobsite.

The Solarcrete composite wall shear tie holds the two concrete (4000 psi shotcrete) wythes together securely. They are designed to provide the shear strength between the concrete faces. Although the EPS foam separates the two layers of concrete, the wall tie permits them act in unison with virtually no differential movement. The tie connection between the two sides is in addition to the bond between the shotcrete and the EPS foam. This bond is so tenacious that you cannot separate the two without breaking the foam

Shear tie material properties:

	<u>(English)</u>	<u>Nominal Values</u>
Tensile Strength @ Yield	22,500psi	<u>Test Method</u> ASTM D638
Flexural Modulus (2.00 in Span)	1,200,000psi	ASTM D790
Flexural Strength @ Yield (2.00 in Span)	36,000psi	ASTM D790

Testing and Code Approvals:

- Panel Structural Tests: ASTM E72-77 "Standard Methods of Conducting Strength Tests of Panels for Building Construction" tested by Construction Technology Laboratories-A division of the Portland Cement Association
- "Compressive Strength Tests on Cubes", tested by Construction Technology Laboratories
- "Windsor Probe Test", tested by G.J. Thelen, P.S.C.
- ASTM E119-79 "Standard Methods of Fire Test of Building Construction and Materials", tested by the Building Research Laboratory of Ohio State University.
- University of Cincinnati structural wall tests.
- Solarcrete walls have received approval from BOCA, ICBO, SBCCI, UBC, and IBC; and has received the Wisconsin DILHR Building Material Approval, No. 810402. Conversion to the ICC-ES International code is currently in process.
- Solarcrete walls meet requirements for resistance to wind borne debris, and have been approved by the State of Florida where wind borne debris is a recurring event and is therefore an item of strict code requirement.

The Test of Time:

Solarcrete walls are backed by over 30 years of R&D, field use, engineering, and lab testing. Solarcrete has always been successful at receiving approval for use in every US State where it has been used, from Alaska to Florida and from Maine to California. Although the majority of Solarcrete buildings are in the Midwest, Solarcrete has been used in most of the 50 States.