Thru-wall solar oven door sizing for cookware options

Thru-wall solar oven unglazed reflector box shape options under grill: a pyramid; b ridged

HOUSE Thru-wall solar kitchen studies
Joel H. Goodman
Thru-wall unglazed reflector box

The unglazed reflector box has mirror glass segments glued to a mass produced substrate (bio-plastic, etc.). The mirror box at the site is inverted and the bolt-posts are cast into the center part of the box. After the small amount of concrete is set the mirror box is set on a masonry base and mortar and masonry are filled in under the box to perimeter masonry walls are completed.

Inverted nonimaging reflector box with cast in bolt-post.
Thru wall solar oven door (wood) ferrocement frame form for CSEB walls. Screw plugs for hinges can be replaced, and a metal strip drip extends as a ledge for the glass mirror tile above the door.

JH Goodman Dec 11, 2014
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Nonimaging reflector concentrator thru-wall solar kitchen studies

Joel H. Goodman        July 7, 2014
Thru-wall solar cooker prefabricated parts

Two prefabricated parts that fit together are: a thru wall door frame CSEB masonry form; and an unglazed reflector box with cookware support grill. An intention is for large quantity production with bio-plastics and in-shop mirror tiling. An aim is to produce prototypes with ferrocement or other suitable prototype materials. Cookware sizes determine door clearance dimensions. A nonimaging solar concentrator may work well enough for a few cookware volumetric targets, for example, three HotPots TM in a line and two all-glass ~4”x 1m evacuated tubes. Dimension E is tall enough for upward door swing clearance. A thru-wall solar cooker has significant house plan and site design solar access factors, complicating house cluster and multi-story design.

JH Goodman  Dec.18, 2014