

TIME STUDY OF ADHERED STONE VENEER BASE SYSTEMS

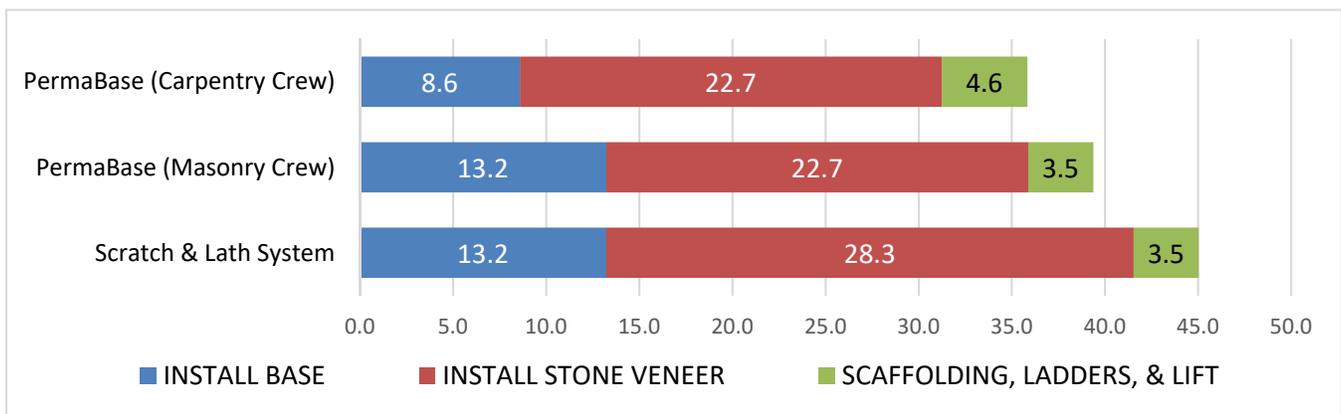
Home Innovation Research Labs conducted an installation time study on behalf National Gypsum and co-sponsors Eldorado Stone and LATICRETE International, Inc.. This study objectively compared the installation of two adhered masonry veneer systems: 1) National Gypsum’s PermaBase® system with LATICRETE® Masonry Veneer Installation Systems (MVIS™) adhesive mortar; and 2) a traditional lath and cement mortar base. Eldorado’s Stacked Stone veneer, a "tight-fitted" manufactured stone, was installed on each of two identical facades of Home Innovation’s test house.



The initial installation was a traditional scratch-and-lath base with Eldorado Stacked Stone veneer, attached with a polymer-modified mortar adhesive. The second installation was National Gypsum’s PermaBase® cement board with Eldorado Stacked Stone veneer attached using LATICRETE® MVIS Veneer Mortar.

Home Innovation researchers used Group Timing Technique, a fixed short-interval work sampling procedure, to record worker activities at predetermined intervals and the following observations were made:

- A masonry crew installed PermaBase® and the adhered stone veneer in 39.4 man-hours on the test house; the same crew installed a scratch-and-lath system plus stone veneer in 45.0 man-hours
- A carpentry crew then installed the PermaBase® cement board on the same house and saved an estimated 3.5 man-hours compared to the masonry crew installation of PermaBase®



This study demonstrated that using PermaBase with LATICRETE® MVIS Veneer Mortar has the potential of saving 14% to 20% on the total installation time of homes.

The researchers noted that the installation speed and uniformity of the PermaBase® veneer base, combined with the adhesive nature of the LATICRETE® MVIS Veneer Mortar, was key to the time savings.

Neither the masonry crew nor the carpentry crew that participated in this study had any prior experience installing cement board as a base for adhered masonry veneers on home or building exteriors.



The carpentry crew time savings is related to its members' greater mastery of measuring, cutting, and attaching the cement board (from their experience working with panel products), which suggests that a carpentry crew installing PermaBase® for an adhered veneer base is the most efficient choice.

TOTAL INSTALLED COST COMPARISON

Using PermaBase® with LATICRETE® MVIS Veneer Mortar, despite having a higher initial materials cost, can reduce the total installed cost of an adhered stone veneer. This cost analysis represents a typical two-story residential installation with gables and stone corner returns. Finished area was 275 net square feet (excludes windows) plus full 4-inch stone returns on all outside corners. Actual installation costs will vary by job, depending upon the skill of installers and the local materials and labor prices.

OTHER BENEFITS OF USING PERMABASE® WITH LATICRETE® MVIS™ VENEER MORTAR SHOWN BY THE RESEARCH

- The PermaBase® and LATICRETE® MVIS Veneer Mortar installation resulted in a quicker jobsite cleanup due to less mortar spilling.
- PermaBase® with LATICRETE® MVIS Veneer Mortar has the potential to reduce skill requirements for installing an adhered veneer finish base because workers inexperienced with cement board installed PermaBase® as fast as masons or faster than carpenters installing a traditional scratch-and-lath veneer base.
- Because stone veneer can be installed on the same day as PermaBase®, its use could save trips to the jobsite, thereby further reducing cost and cycle time. Common practice is to allow the scratch coat to harden or "cure" for 24 hours.

	Scratch & Lath Base	PermaBase® (Mason-Installed Base)	PermaBase® (Carpenter-Installed Base)
Total Materials (includes stone veneer)	\$ 2,446	\$ 2,752	\$ 2,752
Installation Labor @ \$65/hour	\$ 3,220	\$ 2,816	\$ 2,563
Total Installed Cost	\$ 5,666	\$ 5,568	\$ 5,314
Cost/SF	\$ 20.61	\$ 20.25	\$ 19.32