

Material & Estimating Guidelines

A – Glen-Gery Thin Tech® Masonry Support Panels

48 in. x 48 in. nominal
 Weight – 16 lbs. each
 Packaging – As needed

Support Tie Spacing Options

Unit Height	Support Spacing	Elite Panel Size*	Classic Panel Size*	Support Tie length
2-1/4 in.	3 courses = 8 in.	48 in. x 48 in.	48 in. x 48 in.	3/8 in. (5/8 in. special order)
2-1/4 in.	2-5/8 in.	47-1/4 in. x 48 in. (special order)	47-1/4 in. x 48 in. (special order)	3/8 in. (5/8 in. special order)
2-3/4 in.	5 courses = 16 in.	48 in. x 48 in.	48 in. x 48 in.	3/8 in. (5/8 in. special order)
3-5/8 in.	4 in.	48 in. x 48 in.	48 in. x 48 in.	3/8 in. or 5/8 in.
7-3/8 in.	8 in.	48 in. x 48 in.	48 in. x 48 in. (special order)	5/8 in.
11-5/8 in.	12 in.	48 in. x 48 in.	48 in. x 48 in. (special order)	5/8 in.
15-5/8 in.	16 in.	48 in. x 48 in.	48 in. x 48 in. (special order)	5/8 in.
23-5/8 in.	24 in.	48 in. x 48 in.	48 in. x 48 in. (special order)	5/8 in.

* Nominal dimensions actual dimensions may vary by ±1/8 in.

- Calculate square footage of wall area to be covered by each Thin Tech flat panel size (omit large openings and area covered by corner panels) and divide by 16 for the number of support panels needed. Add a minimum of 2% for waste/unplanned usage.

B – Pre-Bent Corner Panels

48 in. x 32 in. nominal with 16 in. left hand return (Right and left panels are available for panels with 2-5/8 in. and 3 course to 8 in. support spacing only.)
 Weight –16 lbs. each
 Packaging – As needed

- Calculate the total height (in linear ft.) of all corners and divide that number by 4 to obtain the number of corner panels. Divide the total number by 2 to obtain the correct number of left and right corners.

C – Fasteners

Self-tapping, #10, pan head, corrosion resistant fasteners
 Weight and Packaging varies by length and type of fastener required
 24 fasteners per panel typically recommended (minimum 1 per sq. ft.)

- Multiply number of panels that use each fastener length and type (wood/masonry or steel) by 24 and add at least 5% for waste/unplanned usage.

Note: Use of fasteners other than those supplied or approved by Glen-Gery will void the system warranty.

D – Adhesive (For brick application only – contact Glen-Gery for adhesives for other material)

28 oz. tubes
 Weight – 2 lbs. 8 oz. per tube
 Packaging – 12 tubes per case

Number of (28 oz.) tubes of thin brick adhesive approximately equal to number of Thin Tech panels. 15 sq. ft. per tube for Thin Brick flats (two dabs per flat). Corner brick will require 50% more adhesive (one added dab on return). Use of alternate adhesive will void warranty.

E – Mortar

Field Mix Formulas
 Option 1 – 1 bag Glen-Gery Color Mortar Blend - pre-mixed Portland Cement/Lime; 2-1/4 parts sand

Option 2 – 1 part Portland Cement Type 1; 1 part hydrated lime; 2-1/4 parts sand

Option 3 – 1 80 lb. bag of Mortar Mix Type N or S; 2-1/4 parts sand

Weight per bag – 80 lbs.

Number of bags required (assuming 1/2 in. modular size brick) mixed with 2-1/4 parts sand equals veneer sq. ft. divided by 112. Add a min 5% for waste/unplanned usage.

F – Starter Angle

10 ft. length

Weight per length – 4 lbs. each

Available in 26-gauge stainless steel

Packaging – As needed

Add the length (in ft.) of wall to be covered by Thin Tech system to the width of all doors, windows and other openings for each story.

Divide by 9 for the approximate number of the starter angles required.

An additional minimum 10% waste/unplanned usage factor is recommended.

Note: Sheathing, flashings, trims, felt paper, caulk or sealants, fasteners must be compatible with Glen-Gery Thin Tech thin veneer system (see specifications).

G – Glen-Gery Thin Tech Air Vent

4 ft. length

Weight per length – 0.063 lbs. each (16 - 4 ft. pieces = 1 lb.)

Packaging – As needed

Elite Panel – Linear feet of Air Vent should be equal to the linear feet of Starter Angle.

Classic Panel – Optional – Cut Air Vent into 2-1/4 in. weeps to be placed vertically in head joint. 21 weeps per 4 ft. length. Minimum 5% for waste/unplanned usage recommended.

H – Glen-Gery Thin Brick

Glen-Gery offers thin brick in the widest variety of colors, textures and overall appearance for endless design possibilities. Thickness may be 1/2 in. to 1 in. depending on thin brick product specified.

Number of flat units of each color and size equals wall area (in sq. ft.) to be covered with flats divided by the number of brick per sq. ft. Minimum 5% waste factor recommended. Modular corner brick, multiply the linear footage by 4-1/2 in. brick.

Note: Protect materials from contamination, moisture, freezing, overheating or other damage in accordance with manufacturer's instructions. Keep all materials covered with a non-staining waterproof membrane material when necessary to protect from elements. Panels and accessories should be covered at all times prior to installation.

Additional Materials, Tools & Equipment:

- Personal Protective Equipment as needed
- Screw gun, hammer, drill, or nail gun
- Coated or galvanized screws or nails
- Traditional level or laser level
- Safety glasses
- Extension cords
- Chalk line
- Utility knife
- Quart size caulking gun
- Tin snips or power shears
- Circular saw or wet saw for cutting brick or stone
- Ladders, scaffold, or jacks (OSHA approved)
- Mortar bag and tip or mortar gun, and whip
- Acid brushes
- Striker joint
- Screen with 1/4 in. opening to sift mortar if necessary
- Water buckets
- Sawhorse and support planks
- Brick or stone cleaner
- Mortar scoop
- Template for cutting or holding brick
- Two gallon water pail with quart measurements
- Wheelbarrow
- Shovels and hoes
- Cleaning brushes for tools only

Estimating Labor

Labor Estimating Guidelines Are For Thin Tech Thin Masonry Veneer Only

- One story applications up to 10 ft., using power driven nails or screws. Allow 125 sq. ft. per man per day to install panels, brick, mortar, and clean down.
- Allow extra man hours for flashings, trims, angles and moisture barrier installations.
- Add 10% for every story there above.
- Allow extra time for predrilling when using masonry fasteners.
- Calculations are based on a 3-man crew.

Installation Instructions

Preparation

- Apply only to structurally sound wall, plumb walls meeting all local building code requirements designed for a maximum deflection of $l/360$; if in doubt, obtain owner or engineers approval prior to installation.
- Veneer surface will follow the contour of the wall. Substrate (i.e., sheathing, masonry, concrete or insulation) variation from plane must not exceed 1/4 in. in 10 feet. Sheathing shall be approved type for installation and installed per manufacturers recommendations and specifications.
- Code approved flashing materials must be properly installed at all terminations, penetrations and material transitions.
- Water-resistive barriers, drainage mats, starter angles, flashings and trims must be installed as per detail drawings and in accordance with code requirements prior to installation of Thin Tech panels.

Layout

Starter Angle

- The starter angle directs water away from walls; it must be installed at the base of the wall, above all doors and windows and above horizontal movement joints.
- Fasten to substrate behind the WRB and any rigid insulation. If liquid applied WRB is used, transition tape must be installed over the top of the vertical leg of starter angle.
- Lowest common corner of the building is typically the starting point. Starter angle at base of the wall must be placed a minimum of 4 in. above earth or 2 in. above paved areas or roofs. Adjust starter angle if possible, so a full course fits under or over openings. If a full course is not possible, consider rowlocks, soldiers, or trim pieces. Ensure starter angle is level before fastening. Lap or seal continuous starter angles to prevent moisture penetration.
- Starter angles over openings should extend a minimum of 4 in. beyond both sides of the opening.

Thin Tech Panels

- Position panels on the first row so that the bottom edge rests on top of the starter angle and, in framed applications, the vertical panel edges align 1/16 in. from the centerline of the stud.
- Optional: For classic panel applications, first row panels may be trimmed 1/16 in. above the bottom of the support tie to omit the joint below the first course of brick. For Elite panel applications, the bottoms of panels may be trimmed at conditions such as punched openings and weep holes used in lieu of the continuous air vent, however air flow and ventilation performance may be impacted.
- Fasteners are typically installed in pre-punched holes 8 in. vertically and 16 in. horizontally (with fasteners embedded in studs for framed

applications) resulting in 24 fasteners per full panel. A minimum of one fastener per sq. ft. is required for concrete/masonry backing or if an alternate stud/girt spacing is used.

- Fasten each panel from the center and work toward the edges to help prevent oil canning (bulging). Install additional screws as necessary to ensure uniform panel installation and attachment. Fasten Classic Panels in areas to receive mortar. Do not fasten behind masonry units. Fasteners are designed to be installed in the channels of the Elite Panel.
- Screws shall extend at least 1 in. into wood studs or masonry substrates, or penetrate the thickness of metal studs a minimum of 3 threads.
- Complete the first row of support panels working from the corner to the opposite end of the wall, leaving a 1/16 in. - 1/8 in. gap between the vertical edges of the adjacent panels to allow for expansion and ensuring each panel is level.
- Rest the second row of panels on top of the first row. Stagger vertical panel joints between rows while ensuring each panel ends on a stud in framed walls.
- Panel may be cut with snips, power shears, or table saw with metal cutting blade. Always use protective eye wear and gloves when cutting panel.
- Stop panel and veneer at least 3/8 in. from inside corners, openings and other dissimilar materials.
- Install Thin Tech Shims to support vertical cut edges of Elite panels that extend more than 2 in. beyond a channel. Align edge of Thin Tech Shim beneath cut edge of panel (with channel open to the exterior) and fasten to wall (fasten to stud in framed applications). Fasten edge of panel to wall every 8 in. vertically through the channel of the shim.

Movement Joints

- The spacing of vertical movement joints should not exceed the length to height ratio of 1.5 for a particular wall, or portion of a wall, with a maximum movement joint spacing of 24 ft. Such spacing includes the distance from one control joint to the next around a corner with at least one movement joint 2 ft.- 4 ft. from each outside corner.
- In addition, movement joints should be placed where stresses related to volume changes are expected, including changes in wall height or thickness, at changes in building materials (such as where stone meets other siding), at movement joints in foundation, at inside corners, within 4 ft. of outside corners, at openings.
- Horizontal movement joints must be placed below all starter angles above the base of the wall, with no less than one horizontal movement joint per story (above the first) and the distance between horizontal movement joints not to exceed 18 ft.
- Movement joints should be 3/8 in. wide. Larger movement joints may be required to accommodate building movement and should be located as required by the architect or engineer.

- Movement joints must be placed between wall panels and any other material including windows, doors, and other materials anchored to the substrate.

Masonry Veneer Units/Adhesive

- Layout first course of veneer units from corner to corner without adhesive to establish bond patterns with uniform joint thicknesses. Space units to reduce cutting at openings, movement joints, returns, and offsets. Cut multiple units within the length of the wall if necessary to prevent the installation of less than half size units.
- Begin with the bottom course and continue up the wall. Install the corner units at each end of the wall first, alternating the short and long ends of corners at each course, for half running bond.
- Veneer units should be selected from 2 - 3 boxes or skids at one time to achieve a uniform distribution of normal variations in color range.
- Ensure that panels and veneer units are dry and free of any dirt, dust or any other film or residue that may reduce bond, prior to application of adhesive and installation of veneer units.
- Apply quarter-sized (1 in. diameter) dabs of thin brick adhesive not less than 2 in. from each end of the brick and no more than 6 in. apart for brick over 12 in. long. Apply an additional dab of adhesive to the head of corner units.
- Position the brick so that they rest securely on the support ties and press firmly to adhere the brick to the support panel. Leave approximately 3/8 in. - 1/2 in. space between adjacent brick for the mortar joints.
- Too much adhesive will cause the brick to push forward away from the wall. Vent the adhesive by pulling the brick away from the panel for a few seconds. Then push the brick back in place. This allows solvent to escape faster and the adhesive to become tackier.
- Install cut units with uncut/finished edges exposed to view. Unfinished or cut faces should not be visible upon completion.
- To create a soldier course, flatten rows of support ties that will be behind (but not above and below) the soldier course so that the brick can lie flat against the support panel and install brick vertically following procedure described above.

Mortar Installation

- Polymer additives may be added to mortar as a means improving plastic or hardened properties of mortar.
- Glen-Gery does not recommend the use of accelerators or set-retarding additives. When temperatures are below 40°F or above 90°F follow the cold or hot weather provisions of TMS 602. Keep brick or stone as clean as possible. This will reduce the time needed for the cleaning process.
- Mix 2-1/4 in. parts sand meeting the requirements of ASTM C144 to 1 part Glen-Gery Color Mortar Blend. Screen mortar mix dry, through 1/4 in. screen cloth to reduce lumps or stones from plugging the tip of the grout bag or gun.

- Mix mortar with the maximum amount of water that produces a workable consistency following product mixing instructions. The mix should have a smooth, creamy appearance. Mortar that is too dry will be difficult to push through a grout bag. Mortar that is too wet may sag out of the joints making striking and cleanup difficult.
- It is often helpful to install mortar in a pyramid fashion filling head (vertical) joints after every 3 or 4 bed joints.
- Over-fill the joint with mortar to ensure full joints after striking. As the mortar dries, it shrinks due to water volume loss.
- Do not fill joints to receive weeps, vents or caulking for movement joints.
- Discard mortar after two hours or when too stiff to work. Retempering within two hours is permitted, but may contribute to mortar color variation.
- Upon initial set, brush excess mortar out of brick or stone face if necessary with a flat natural bristle brush. Be careful not to drag mortar out of joint or smear wet mortar onto masonry surface.
- When mortar becomes thumbprint dry to the touch, strike the joint with a slicker or jointer tool to pack the mortar in the joint. Struck mortar should be dry enough to fall away clean and tooled to a dull, gritty finish, not wet and shiny. Voids found during striking may be filled with damp mortar previously struck from wall.
- Setting time will depend on drying conditions. In very hot weather, dampen brick or stone to prevent rapid absorption of moisture from mortar.

Note: Thin hairline cracks can occur in mortar joints for several reasons including early striking, excess water in the mortar mix, not enough sand in the mix (cement rich), rapid mortar curing in extremely hot, dry weather, and movement of the substrate. These small cracks do not typically affect the performance of the product and can be minimized by striking at the appropriate time, using a proper mortar mix, and in weather above 90°F, fogging joints daily for several days following mortar installation to extend the curing process. Avoid subjecting walls to impact from within due to drywall or cabinet installation for one week after grouting/mortar installation. Allow prefabricated walls systems to set after mortar installation for a minimum of one week prior to shipment.

Weepholes/Air Vents

- For Classic Panels, install weepholes through mortar. Place weepholes 24 in. (or no more than two stretcher units) on center at the base of the wall and above all openings. Glen-Gery air vents may be cut into 2-1/4 in. pieces and placed vertically in head joints. Place a small dab of adhesive at the top of the back of the vent to hold it in place. Ensure the bottom 1/3 of the vent is not coated with adhesive after installation.
- For the Elite Panels, install Glen-Gery Thin Tech Air Vent where the panel meets the starter angle open for proper water drainage and

ventilation. Adhere the back of the air vent to the panel with 3 dabs of supplied adhesive (center and near both ends).

Cleaning

CAUTION: Please use the recommended cleaner and procedure as per the brick manufacturer's specifications and in accordance with the cleaning product manufacturer's instructions. Do not use muriatic or hydrofluoric acid.

- When the mortar is dry on the surface, lightly brush the wall diagonally with a non-metallic, long bristle brush to remove excess mortar. This is often done before lunch and at the end of the day or prior to moving scaffolding—if mortar is smearing on the face of the brick or on the brush then wait longer before brushing the wall.

- If additional cleaning is needed, follow brick/stone manufacturer's cleaning instructions. Glen-Gery recommends cleaning brick or stone between 7 and 10 days. BIA Technical Note #20 offers additional cleaning guidelines for masonry products.

For any questions or concerns please call 800-854-4780.

- All manufacturer approved components of the Glen-Gery Thin Tech System must be purchased through an authorized dealer and installed according to Glen-Gery's installation instructions to receive a Thin Tech Warranty. See Thin Tech warranty application for addition terms and conditions.