

# SUBSTRATE PREPARATION GUIDE

## Overview of Substrates

American Clay must be applied over solid, well-bonded wall surfaces with even suction rates. Ninety percent of all wall surfaces will be new drywall with joint compound or painted or sealed surfaces, requiring General Preparation (basic cleaning and masking), followed by a coat of an \*approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand additive. See below for a list of primers that have been approved in our test applications.

A few other substrates will need a brown coat to level and/or strengthen the wall system (including cement block, straw bale, adobe, rastra, etc).

A few other substrates are not suitable for American Clay application and must be removed or covered with drywall or other suitable surface prior to plastering. They include: OSB, plywood, paneling, wallpaper, ceramic tile, foam insulation or foam (poly) surfaces.

Below is a list of substrates and the preparation required for each substrate. Following this list is a description of General Preparation Steps required for all walls, and priming instructions for those substrates that need it. ***If you have any questions about substrates not covered here, please call American Clay at 1-866-404-1634 for a further discussion.***

**The following is a list of primers that have been approved in our test applications. *You must use a primer from the list below.***

- AFM Safecoat® New Wallboard Prime Coat HPV (Low-VOC)
- AFM Safecoat® Transitional Primer (Low-VOC)
- BEHR® Multi-Surface Stain-Blocking Primer & Sealer (Low-VOC)
- Benjamin Moore® Fresh Start® High-Hiding All Purpose Primer (Low-VOC)
- Clark+Kensington® Paint + Primer In One; Premium Interior Flat, Ceiling White (Low-VOC)
- Dunn-Edwards® ULTRA-GRIP® Premium Interior/Exterior Multi-Surface Primer (Low-VOC)
- Dunn-Edwards® ULTRA-GRIP® Select Interior/Exterior Multi-Surface Primer (Zero-VOC)
- KILZ® 2 All-Purpose Interior/Exterior Primer (Low-VOC)
- KILZ® 3 Premium Interior/Exterior Primer (Zero-VOC)
- ROMABIO® MediumGrip Primer (w/ Aggregate) (Zero-VOC)
  - *Diluted per manufacturers recommendations to a paint-like consistency. American Clay Primer Sand additive not required, product already has an appropriate aggregate pre-mixed.*
- ROMAN® PRO-999 Rx-35® Problem Solving Sealer/Primer for Porous Surfaces (Low-VOC)
- Sherwin-Williams® Multi-Purpose™ Interior/Exterior Latex Primer/Sealer (Low-VOC)

*(list continued on next page)*

- Sherwin-Williams® ProMar® 200 Interior Latex Primer (Zero-VOC)
- Valspar® Multi-Surface Interior Primer / Sealer (Zero-VOC)
- Zinsser® Bulls Eye 1-2-3® Water-Base Primer (Conventional)
- Zinsser® Bulls Eye Zero™ Primer (Zero-VOC)
- Zinsser® GARDZ® Problem Surface Sealer (Conventional)
  - *Product has a loose consistency and will require remixing often to keep sand properly suspended. An additional unit of Primer Sand per gallon may be used to provide better integration. After use, excess sand will be left on the bottom of the pail unused.*
  
- Dulux® Gripper® Universal Acrylic Primer-Sealer, Interior & Exterior (Low-VOC)
  - *Product available in Canada.*

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**WARNING:**

*If you scrape, sand, or remove old paint, you may release lead dust. Lead is toxic. Exposure to lead dust can cause serious illness, such as brain damage, especially in children. Pregnant women should also avoid exposure. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at: 1-800-424-LEAD OR [www.epa.gov/lead](http://www.epa.gov/lead)*

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## **Adobe – sun-baked or pressed-block, unplastered**

Adobe needs to be plastered with an appropriate brown coat of earth plaster, gypsum plaster, lime plaster or cement plaster to level the surface prior to American Clay application. Follow manufacturer's specifications for brown coat product used.

Check preparation requirements for the new substrate.

## **Aerated, Autoclaved Concrete Block (e.g. Hebel, E-Crete, SafeCrete)**

Check the AAC mortar joints. If they are more than 1/16" (1.5 mm) deep, the AAC will need a brown coat of fibered cement, gypsum plaster or lime plaster. Brown coats of cement or lime do not need to be primed prior to American Clay application. Brown coats of gypsum will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.) Follow manufacturer's specifications for brown coat product used. Check preparation requirements for the new substrate.

If the mortar joints are relatively clean and less than 1/16" (1.5 mm) deep, you can use the base coat of American Clay plaster to level the surface. Do all General Preparation steps first. Priming of AAC is not required. Caution: If you use American Clay plaster to level the surface, mortar joints may show (as highlights) in hard troweled finishes. To prevent highlights, either choose a different brown coat, choose a different finish coat, or do a second base coat of American Clay plaster before the finish coat.

## **Blueboard – see Wallboard**

## **Brick**

Brick—sealed, unsealed or painted—needs to be plastered with an appropriate brown coat of gypsum plaster, lime plaster or fibered-cement plaster or it needs drywall or other sheathing to level the surface prior to American Clay application. Brown coats of cement or lime do not need to be primed prior to American Clay application. Brown coats of gypsum will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.)

Follow manufacturer's specifications for brown coat product used. Check preparation requirements for the new substrate.

## **Cement Board (e.g. Durock®, Hardiebacker®)**

There are many types of cement board available to use, however, American Clay recommends using HardieBacker® cement board. Durock® cement board can be used, although, the propensity for this

board to crack over time may cause issues with the clay plaster after installation and/or will require further preparation prior to clay installation. *American Clay strongly recommends against using Durock® cement board for these reasons.*

Once the cement board has been installed onto the wall, follow the manufacturers guidelines (below) for taping and bedding the joints and seams:

**HardieBacker®, JamesHardie Manufacturers Guidelines:**

Fill all joints with mortar (Latex or acrylic modified thin-set or Type 1 mastic) and immediately embed 2 inch wide high-strength alkali-resistant fiberglass tape in the mortar and level.

Alternatively: American Clay also recommends using setting-type joint compound (also known as "hot mud") with fiberglass tape to tape and bed joints and seams. All purpose, pre-mixed joint compounds are not suitable. Examples of setting-type joint compounds are: "Durabond® 90", "Sheetrock® Easy Sand 45 (or 90) Minute Setting-type Joint Compound", and "Rapid Set® OnePass® Wall Repair Material and Joint Compound". Setting-type joint compounds come in a dry powder form and are mixed with water upon application.

**Durock®, USG Manufacturers Guidelines:**

***\*Please note: even with these guidelines, American Clay cannot guarantee that the Durock® cement board will not crack over time and show through the plaster coat. Warranty of the product will be voided.***

Fill all joints with latex-fortified mortar or Type 1 organic adhesive and immediately embed 2 inch wide high-strength alkali-resistant fiberglass tape in the mortar and level. Let dry completely.

Additionally: Using the same mortar or adhesive, completely coat the entire board. Let dry completely.

After the above guidelines have been completed to prepare the cement board: prime the entire surface with a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.) This will also help to even out any suction variations between the joint compound and the cement board.

## **Cement plasters / Cement stucco**

Do all General Preparation steps required to bring the stucco to a level, dust-free surface.

Unpainted, unsealed cement plaster preparation depends upon the smoothness of the cement. (See "Painted Surfaces" or "Sealed Surfaces" if appropriate.) Smooth cement plasters need a coat of an

approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall. (\*See "Overview of Substrates" for a list of approved primers.) Cement brown coats do not need to be primed.

On rough surfaces (texture more than 1/16" or 1.5 mm deep) we recommend scraping off as much of the texture as possible in order to save on materials costs. (The deeper the texture, the more material required to cover it). If scraping cannot reduce the texture to 1/16" (1.5 mm) deep, we recommend applying a cement brown coat. Follow manufacturer's specifications for brown coat product used.

## **Clay Plaster – see *Earth Plaster***

### **Cob, unplastered**

Unplastered cob needs to be plastered with an appropriate brown coat of earth plaster, gypsum plaster, lime plaster or fibered-cement plaster to level the surface prior to American Clay application. Follow manufacturer's specifications for brown coat product used.

Check preparation requirements for the new substrate.

## **Compressed Earth Block – see *Adobe***

### **Concrete, unsealed monolithic (poured)**

The condition of the walls will dictate the preparation needed.

Very smooth walls (like tilt-slab walls) will need to coat the entire wall with an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand. (\*See "Overview of Substrates" for a list of approved primers.) Apply a second coat on all outside corners. This will prepare the walls for the Traditional System.

If the walls have a consistent sand-paper texture less than 1/16" (1.5 mm) deep then American Clay will adhere to the wall. Any smooth areas within the textured areas must be primed.

If the walls have significant texture (more than 1/16" or 1.5 mm deep) you have a couple of options:

- Apply a cementitious brown coat to level the walls. Fibered cement products work best. A "brown" coat means that the plaster is rubbed with a sponge float before it dries to give it a sand-paper-like texture. No primer is needed prior to American Clay application. This is the least expensive option for materials and labor costs.
- Apply a gypsum-based (e.g. Structo-Lite®, Gypsolite, Imperial®, Diamond®, Kal-Kote®, Plaster of Paris and Red Top®) brown coat to level the concrete. (Some applicators prefer gypsum because it is lighter than cement, but it can be more difficult to use because it "sets" faster than cement.)

Gypsum plasters must receive a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with America Clay Primer Sand prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.)

Follow manufacturer's specifications for brown coat product used. Check preparation requirements for the new substrate.

### **Concrete block, sealed, unsealed or painted**

For painted concrete block, also review the instructions for painted surfaces.

Check the mortar joints. If they are more than 1/16" (1.5 mm) deep, the Concrete Block will need a brown coat of fibered cement, gypsum plaster or lime plaster. Follow manufacturer's specifications for brown coat product used. Brown coats of cement or lime do not need to be primed prior to American Clay application. Brown coats of gypsum will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.) Check preparation requirements for the new substrate.

If the mortar joints are relatively clean and less than 1/16" (1.5 mm) deep, you can use the base coat of American Clay plaster to level the surface. Caution: If you use American Clay plaster to level the surface, mortar joints may show. This is particularly true in hard troweled finishes. To prevent highlights, either choose a different brown coat, choose a different finish coat, or do a second base coat of American Clay plaster before the finish coat.

**Diamond® Plaster (a.k.a. Diamond® Finish) – see *Gypsum Plasters***

**Drywall – see *Wallboard***

**Drywall mud – see *Joint Compound***

### **Durisol®**

Durisol® needs to be plastered with an appropriate brown coat of earth plaster, gypsum plaster, lime plaster or cement plaster to level the surface prior to American Clay application. Follow manufacturer's specifications for brown coat product used. Brown coats of cement, earth, or lime do not need to be primed prior to American Clay application. Brown coats of gypsum will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied

to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.) Check preparation requirements for the new substrate.

## **Earth Plasters, unsealed**

Unsealed earthen plasters do not need to be primed. (If the surface has been sealed, water drops splashed on the plaster will sit on the surface instead of soaking in immediately. If that is the case, see "Sealed Surfaces".)

Do all General Preparation steps required to bring the plaster to a level, dust-free surface. Dusty earth plasters need some attention prior to American Clay application. Attempt to remove dust with a vacuum or a barely damp sponge. If dusting continues, American Clay will have a hard time bonding to the earth plaster. We recommend painting the wall with a lime wash at a ratio of 1 part Lime Putty to 10 parts water prior to American Clay application.

## **E-Crete – see *Aerated Autoclaved Concrete Blocks***

## **Foam Building Form Blocks, a.k.a. Insulated Concrete Forms (e.g. Poly-Steel®)**

These surfaces require a brown coat of fibered cement or drywall or other sheathing recommended by the manufacturer to level and/or strengthen the surface (by providing impact resistance). Follow manufacturer's specifications. Check preparation requirements for the new substrate.

## **Gypsolite – see *Gypsum Plasters***

## **Gypsum Plasters (e.g. Structo-Lite®, Gypsolite, Imperial®, Diamond®, Kal-Kote®, Plaster of Paris and Red Top®)**

Check to see if the wall has been sealed. (Mist wall lightly. If water beads on surface, the wall is sealed. If the water quickly soaks into the wall surface, the wall is not sealed.) If the wall is sealed, see instructions for "Sealed Surfaces".

For unsealed gypsum plasters, complete any General Preparation steps needed to bring the gypsum to a level, dust-free surface. All unsealed gypsum plasters will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to Traditional System application. (\*See "Overview of Substrates" for a list of approved primers.)

## **Hardboard (a.k.a. Medium Density Fiberboard or MDF)**

MDF surfaces must be covered with wallboard or other sheathing prior to any American Clay application. Follow manufacturer's specifications for product used. Check preparation requirements for the new substrate.

**Hardwood** – *see Tongue and Groove*

**Hebel** – *see Aerated Autoclaved Concrete Blocks*

**Imperial® Plaster** – *see Gypsum Plasters*

**Insulated Concrete Forms (ICF)** – *see Foam Building Form Blocks*

**Joint Compound (a.k.a. drywall mud)** – *see Wallboard with Joint Compound*

## **Lime Plaster – unsealed**

Check to see if the plaster is sealed (mist lightly—if plaster has been sealed the water will sit on the surface instead of soaking in immediately). If it is sealed, see the instructions for "Sealed Surfaces". If the lime plaster was sealed with a soap (Tadelakt plaster), contact American Clay for more information.

Brown coats of lime plaster do not need to be primed prior to American Clay application.

Slick or polished lime plasters will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to Traditional System application. (\*See "Overview of Substrates" for a list of approved primers.)

## **Magnesium Oxide (MgO) Board**

We have found inconsistent results working with Magnesium Oxide boards over time. Results have been dependent on numerous aspects, sometimes outside the control of known factors. We highly recommend consulting with the manufacturer of the specific board you are using - being sure to follow all guidelines for installation and seam preparation.



Once prepped according to the manufacturer, the surface will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.)

- Note: we have had best results, and would recommend, using the ROMA BioGrip Medium primer.

## **Medium Density Fiberboard (MDF) – see Hardboard**

## **OSB (Oriented Strand Board, a.k.a. “chip board”)**

OSB must be covered with wallboard or other sheathing prior to any American Clay application. Follow manufacturer’s specifications for product used. Check preparation required for new substrate.

## **Painted Surfaces**

Painted surfaces need to be stable and dust free. Do the adhesion test for paint (below) and complete all General Preparation steps, then apply a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand to the entire wall. (\*See "Overview of Substrates" for a list of approved primers.) Apply a second coat on all outside corners.

- **Adhesion Test for Paint:** For both newly painted walls and walls with many layers of paint, it is good to check the paint adhesion. This simple test could save you labor by identifying potential substrate weakness early in the process. Using a utility knife, make several light cuts in the paint three to five inches apart, then apply a strip of white masking tape perpendicular to the cuts. Press the tape firmly and then peel it off. The paint should remain firmly attached to the wall. If it does not, check with your local paint supplier for recommendations on making the surface sound. Testing on areas where seams exist is recommended.
- **Remodel considerations:** surfaces need to be stable and dust free. Remove all flaking paint. If you have any concerns about the stability of the wall, wash it down with very warm water. If any bubbling or delaminating develops, remove those layers of paint. If the wall is dusting, wash the wall with a 25% water based acrylic masonry sealer – 75% water solution. Be sure to do all appropriate General Preparation steps listed in the instructions. (*OKON W-2 Concrete and Masonry Water-Repellent Sealer is an example of an appropriate sealer*)
- **Highly textured walls:** On walls with significant texture (more than 1/16” or 1.5 mm), American Clay’s coverage will drop dramatically, making the application more expensive. To reduce costs, remove as much texture as possible with a scraper, and/or fill texture with an appropriate material. (Joint compound is an inexpensive filler—see Joint Compound Substrate section for suggestions on appropriate types of joint compound).

- **New construction:** Some new homes receive no primer and only one coat of paint directly over the wallboard. When plastering these walls it is common to see one or two small sections of plaster peel off the wall as the second coat dries. This is because the paint does not have as solid a bond to the wallboard (the paint will be sticking to the plaster, leaving raw drywall exposed). It is hard to prevent, but can be fixed.

## **Paneling**

Paneling must be covered with wallboard or other sheathing prior to any American Clay application. Follow manufacturer's specifications for product used. Check preparation steps required for new substrate.

**Perform Wall®** – *see Rastra®*

**Plaster of Paris** – *See Gypsum Plasters*

**Plasterboard** – *see Wallboard*

## **Plywood**

Plywood must be covered with wallboard or other sheathing prior to any American Clay application. Follow manufacturer's specifications for product used. Check preparation steps required for new substrate.

**Poly-Steel®** – *see Foam Building Form Blocks*

## **Porous Stone (e.g. cleft stone), unsealed**

Porous stone does not need to be primed prior to application. Complete all General Preparation steps needed to bring this substrate to a stable, dust-free surface.

## **Rammed earth, unplastered**

Rammed earth walls need to be plastered with an appropriate brown coat of earth plaster, gypsum plaster, lime plaster or cement plaster to level the surface prior to American Clay application. Follow manufacturer's specifications for brown coat product used.

Brown coats of cement, earth, or lime do not need to be primed prior to American Clay application. Brown coats of gypsum will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.) Check preparation requirements for the new substrate.

## **Rastra® or Perform Wall®**

Rastra® or PerformWall® needs to be plastered with an appropriate brown coat of earth plaster, gypsum plaster, lime plaster or cement plaster to level and strengthen the surface prior to American Clay application. Follow manufacturer's specifications for brown coat product used.

Brown coats of cement, earth, or lime do not need to be primed prior to American Clay application. Brown coats of gypsum will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.) Check preparation requirements for the new substrate.

## **Red Top™ – see *Gypsum Plasters***

## **SafeCrete – see *Aerated Autoclaved Concrete***

## **Sealed American Clay surface**

To apply a new finish coat of American Clay over an acrylic-sealed finish coat of American Clay, you have several options:

1. Sand off the sealer and apply a new finish coat of American Clay plaster. Clean all dust and wipe down wall thoroughly prior to applying new coat of American Clay plaster.
2. Use a 10% Ammonia - 90% water solution and wash the walls vigorously with a sponge, to break down and remove the sealer. Let the wall dry completely. Then apply a new finish coat of American Clay plaster.
  - Note: if all of the sealer is not removed from the surface, the newly installed coat of American Clay plaster can peel from the wall. Oftentimes, the safer choice is to use option 3 below.

3. Treat the wall as a sealed surface and follow guidelines recommended below – See “Sealed Surfaces”

### **Sealed Surfaces – any surface sealed with an acrylic sealer**

If the surface has been sealed with wax – See "Waxed Surfaces".

Sealed surfaces need to be stable and dust free. Complete all General Preparation steps, including the sanding of any glossy sealed surface. Sand lightly with 150 grit sand paper—not to remove the sealer, but to scratch the surface so that the an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand can bond to it. Plaster over un-sanded glossy sealer tends to peel off as it dries. Be sure to sand every square inch and remove all dust from the surface with a vacuum or a damp cloth.

Coat the entire wall with an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.) Apply a second coat on all outside corners.

### **Sheetrock® – see Wallboard**

### **Slick Surfaces (polished plasters and cements; and, smooth or polished stone)**

Check to see if the plaster is sealed (mist lightly—if plaster has been sealed the water will sit on the surface instead of soaking in immediately). If it is sealed, see the instructions for "Sealed Surfaces".

For unsealed surfaces, follow all General Preparation steps needed to create a stable, dust-free surface. Smooth troweled cement, lime and gypsum plasters, as well as smooth stone/polished stone all need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.)

- Note: for highly slick surfaces, sand lightly with 150 grit sand paper to scratch the surface so that the an approved paint primer can bond to it. Plaster over un-sanded highly slick surfaces may peel off as it dries. Be sure to sand every square inch and remove all dust from the surface with a vacuum or a damp cloth.

### **Stone – see Porous Stone or Slick Surfaces as appropriate**

## **Straw Bale, unplastered**

Unplastered straw bale needs to be plastered with one or more coats of earth plaster, gypsum plaster, lime plaster or fibered-cement plaster to level and strengthen the surface prior to American Clay application. The last coat should be a brown coat. Brown coats are rubbed with a float to give them a sand paper texture which helps the American Clay finish coats adhere to the surface.

Follow manufacturer's specifications for brown coat product used.

Brown coats of cement, earth, or lime do not need to be primed prior to American Clay application. Brown coats of gypsum will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.) Check preparation requirements for the new substrate.

## **Straw Clay (a.k.a. Light Clay), unplastered**

Unplastered light clay needs to be plastered with an appropriate brown coat of earth plaster, gypsum plaster, lime plaster or fibered-cement plaster to level the surface prior to American Clay application. Follow manufacturer's specifications for brown coat product used.

Brown coats of cement, earth, or lime do not need to be primed prior to American Clay application. Brown coats of gypsum will need a coat of an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand applied to the entire wall prior to American Clay application. (\*See "Overview of Substrates" for a list of approved primers.) Check preparation requirements for the new substrate.

## **Structolite® - see Gypsum Plasters**

## **Tile**

Tile must be removed and the wall repaired, or covered with wallboard or other sheathing prior to any American Clay application. Check preparation requirements for the new substrate.

## **Tongue and Groove Wood**

Tongue and Groove must be covered with wallboard or other sheathing prior to any American Clay application. Check preparation requirements for the new substrate.

## **Wallboard with Joint Compound (a.k.a. drywall, plasterboard, Sheetrock®, Cement Board, paperless drywall, etc.)**

Wallboard is commonly referred to as drywall, plasterboard, Sheetrock®, Gyprock®, gypsum board, blue board, green board, Fiberock® and Quietrock®. Paperless drywall is treated the same as paper-faced drywall.

### **Preparation Instructions:**

1. Wallboard seams must be taped and mudded with joint compound (see below for Recommended Joint Compounds and Joint Compound Application).
2. Complete any General Preparation steps needed to bring this to a level, dust-free surface.
3. **Coat the entire wall with an approved multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand.** (\*See "Overview of Substrates" for a list of approved primers.) Apply a second coat on all outside corners. (This provides the texture necessary for the clay to bond to the wall.)
4. Proceed with the plaster application.

### **Recommended Joint Compounds:**

Follow wallboard or joint-compound manufacturer's recommendations for the appropriate products to be used in conjunction with veneer topped plasters.

### *Discussion:*

- Manufacturers typically recommend setting joint compounds for bedding tape under veneer plaster systems. (Examples of setting joint compounds are Durabond® 90 and Easy Sand 45 Light Weight Setting Joint Compound. Setting joint compounds are also known as "hot muds".)
- Setting joint compounds are stronger than a multipurpose joint compound. However, they absorb more water from the plaster than does the wallboard. This can cause variations in color, typically referred to as "ghosting". Ghosting occurs when the pigment migrates away from the surface as water is taken into the setting type joint compound.
- For this reason, we recommend coating the entire wall with American Clay Primer Sand mixed with an approved multi-purpose, transitional or stain-blocking primer. This step provides the texture necessary for the clay to bond to the wall. Apply an additional coat on all protruding corners or vulnerable areas. Then, proceed with the application of American Clay plasters for your project.
- When pre-mixed (lightweight or all purpose), topping, and thinned compounds are used to achieve a Level 4 or Level 5 finish, the surface may require additional preparation to avoid peeling and delamination. A sealing primer, like Zinsser® GARDZ®, ROMAN® PRO-999 Rx-35®, or Draw-Tite™ would be used.
- Use new joint compounds. Failure is more likely on old, opened joint compounds which have sat around waiting to be used. Do not use joint compounds which have been frozen or been left out in the heat. Fresh, new joint compounds are preferred.

- Use setting-type joint compounds (45 minute version or longer). Quicker setting-type joint compounds can dry rapidly leaving a surface that requires further preparation to ensure bonding with the primer.
- For chemically sensitive clients it has been suggested to us that Murco® HA-100 joint compound be used. To avoid ghosting, pre-seal or pre-prime as recommended. As sensitivities to materials vary from person to person, all materials should be tested for reactions prior to use.
  - Note: Murco® HA-100 joint compound has typically lead to great success when used in conjunction with American Clay plasters and recommended installation procedures. However, we are not able to guarantee a result and appropriate testing should be done to ensure proper performance.
  - Mucro® M-100 joint compound is not recommended and has offered poor results.

### **Joint Compound Application:**

Wallboard seams must be taped and mudded with joint compound according to the recommended level for walls that will receive conventional texture treatments (Level 2 for most American Clay plasters; Level 3 for smoother finishes like Porcelina, Lomalina, and Forte White). This is the minimum recommendation. If a higher level of quality is required, please proceed as needed for your project.

#### *General Guidelines:*

- Fasteners and screws DO NOT require joint compound.
- Seams DO need tape and joint compound.
- Extra passes may be needed at corner bead or where additional leveling is necessary.
- Joint compound SHOULD NEVER be sanded but high points DO need to be scraped off.
- Slight ridges and depressions (+/- 1/32" or .8 mm) are acceptable for most American Clay plasters; for smoother finishes like Porcelina, Lomalina, and Forte White a more level finish may be required.
  - On a polished Porcelina finish, any substrate texture (+/- 1/32" or .8 mm) may show through. We recommend, at a minimum, a level 3 taping job for Porcelina. (Tape, top, and skim for a level joint. Remove points higher than 1/32" or .8 mm.)
- If you use paper tape, be sure the work is well done and that no air is trapped behind the paper, as it will cause the plaster to delaminate as it dries.

### **Avoiding Potential Issues:**

- The walls must be dust-free prior to coating the entire wall with a multipurpose, transitional or stain-blocking paint primer mixed with American Clay Primer Sand, prior to application. Failure to remove dust can cause the plaster to delaminate as it dries. If dust has been produced anywhere in the house that may have coated the walls, remove dust with a vacuum or wash the wall with a 25% vinegar / 75% water solution. This step would come first and then be followed by the recommended primer application as described above.

- Use a joint compound that is an appropriate consistency. Do not ‘thin’ or add additional water to pre-mixed joint compound. Add only the recommended amount of water to powdered joint compounds.
- Fill all gaps between wallboards. Failure to fill the gaps can cause cracking to appear on the seams as the plaster dries.
- Taper the butt joints (cut edges of sheet rock) to a 45-degree angle, removing all loose and torn paper before hanging. Fill joint with joint compound and bed and tape the joint. This helps ensure that the cut ends are isolated and that water cannot migrate into the paper, which can cause swelling, and eventually a crack at the seam.

## Wallpaper

There are two options with wallpaper:

1. It can be removed completely (the wall beneath it must be completely stable and dust-free). Check substrate preparation requirements for whatever substrate is revealed once the wallpaper has been removed.
2. It can be covered with wallboard. Follow manufacturer’s specifications if using wallboard, and also check substrate preparation requirements for Wallboard above.

## Walls with a Combination of Materials

In many remodel situations, you can have multiple substrates that exist, repairs that have been performed and new construction that has different materials. If any repairs have been accomplished with a fast setting repair material (5 minute patch), brush or roll an initial coat of primer. Once this has dried, prime the surface utilizing one of the approved primers with the American Clay Primer Sand additive mixed in. (\*See "Overview of Substrates" for a list of approved primers.)

## Waxed Surfaces

No new material—including American Clay—can be put over wax. Wax must be removed completely by sanding the surface. Once the wax has been sanded off, remove all dust from the surface. If surface remains dusty, wash the surface with a 25% vinegar / 75% water solution.

- Note: oftentimes with waxed surfaces, no matter how well sanding is done the wax cannot be completely removed. This causes the American Clay plaster to peel as it dries. In many cases, the safer choice is to cover the wall with a more appropriate surface prior to plastering.