



**AMERICAN CLAY**  
Naturally Beautiful Walls

# Traditional Substrates Preparation for American Clay Earth Plasters

## *Table of Contents*

Adobe – sun-baked or pressed-block, unplastered .....	2
Aerated, Autoclaved Concrete Block (e.g. Hebel, E-Crete, SafeCrete).....	2
Blueboard - see Wallboard.....	2
Brick.....	2
Cement Board (e.g. Durock®, Hardiebacker™) – see Wallboard.....	2
Cement plasters / Cement stucco .....	3
Clay Plaster – see Earth Plaster .....	3
Cob, unplastered.....	3
Compressed Earth Block – see Adobe .....	3
Concrete, unsealed monolithic (poured).....	3
Concrete block—sealed, unsealed, painted or unpainted .....	4
Diamond® Plaster (a.k.a Diamond® Finish) - see Gypsum plasters .....	4
Drywall – see Wallboard .....	4
Drywall mud – see Joint Compound .....	4
Earth Plasters, unsealed .....	4
E-Crete – see Aerated Autoclaved Concrete Blocks .....	4
Foam Building Form Blocks – see Insulated Concrete Forms.....	4
Gypsolite - see Gypsum Plasters.....	4
Gypsum Plasters (e.g. Structo-Lite®, Gypsolite, Imperial®, Diamond®).....	4
Hardboard (a.k.a. Medium Density Fiberboard or MDF).....	5
Hardwood – see Tongue and Groove .....	5
Hebel – see Aerated Autoclaved Concrete Blocks .....	5
Imperial® Plaster – see Gypsum Plasters .....	5
Insulated Concrete Forms (ICF), a.k.a. Foam Building Form Blocks .....	5
Joint Compound (a.k.a. drywall mud) – unsealed, unpainted.....	5
Lime Plaster – unsealed.....	5
Medium Density Fiberboard (MDF) – see Hardboard .....	5
OSB (Oriented Strand Board, a.k.a. “chip board”).....	5
Painted Surfaces .....	5
Paneling .....	6
PerformWall® - see Rastra® .....	6
Plaster of Paris – See Gypsum Plasters .....	6
Plasterboard – see Wallboard.....	6
Plywood.....	6
Poly-Steel® – see Foam Building Form Blocks .....	6
Porous Stone (e.g. cleft stone), unsealed.....	6
Rammed earth, unplastered.....	6
Rastra® or Perform Wall® .....	7
Red Top® – see Gypsum Plasters .....	7
SafeCrete – see Aerated Autoclaved Concrete .....	7
Sealed American Clay Surface .....	7
Sealed Surfaces – any surface sealed with an acrylic sealer.....	7
Sheetrock® – see Wallboard .....	8
Slick Surfaces (polished plasters, cements, smooth or polished stone).....	8
Stone – see Porous Stone or Slick Surfaces as appropriate .....	8
Straw Bale, unplastered .....	8

Straw Clay (a.k.a. Light Clay), unplastered.....	8
Structolite® - see Gypsum Plasters .....	9
Tile.....	9
Tongue and Groove Wood.....	9
Wallboard with Joint Compound (a.k.a. drywall, Sheetrock®, Cement Board) .....	9
Wallpaper .....	10
Walls with a Combination of Materials .....	10
Waxed Surfaces .....	10

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

Adobes 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. (A “brown coat” is a coat of plaster used to strengthen and/or level a wall surface. It is rubbed with a float to give it a sand paper texture which helps the American Clay finish coats adhere to the surface).

Follow manufacturer’s specifications for brown coat product used.

A site-soil earth plaster is the least expensive option and allows the adobe wall to breathe, which is important for the overall health of the wall. It is extremely helpful to work or consult with a contractor who has experience with earth plasters. No Sanded Primer Elite is required over earth plaster, but if the plaster is dusty, it may need to be stabilized with a natural binder prior to American Clay application. (See Earth Plaster substrate instructions for more information).

Gypsum plasters (e.g. Structo-Lite®, Gypsolite, Imperial®, Diamond®, Kal-Kote®, Plaster of Paris and Red Top®) also allow the wall to breathe, and it is fairly easy to find contractors familiar with gypsum plasters. American Clay Sanded Primer Elite must be applied over the gypsum brown coat prior to American Clay Application.

Lime plasters also allow the adobe to breathe, however, experience is essential in working with 100% lime plasters and experienced contractors are rare (but growing in number). No Sanded Primer Elite is needed over a lime brown coat.

Conventional cement plasters tend to trap moisture in adobe walls, and we do not generally recommend them over adobe for that reason. No Sanded Primer Elite is needed over a cement brown coat.

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

Check the AAC mortar joints. If they are more than 1/16 inch (1.5mm) deep, the AAC will need a brown coat of fibered cement, gypsum or lime. Brown coats of cement or lime will not need Sanded Primer. Brown coats of gypsum will need a coat of American Clay Sanded Primer Elite prior to American Clay application.

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

If the mortar joints are relatively clean and less than 1/16 inch (1.5mm) deep, you can use the base coat of Loma to level the surface.

Do all General Preparation steps first. AAC requires no Sanded Primer Elite.

Caution: If you use Loma to level the surface, mortar joints will show (as highlights) in polished Porcelina finishes. To avoid the highlights apply a brown coat first, or choose a different finish coat, or do a second coat of Loma before the Porcelina 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 will not need a coat of Sanded Primer Elite. Brown coats of gypsum will need a coat of American Clay Sanded Primer Elite prior to Traditional or Dos Manos application.

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

## **Cement Board (e.g. Durock®, Hardiebacker™) – see Wallboard**

## Cement plasters / Cement stucco

Unpainted, unsealed cement plaster preparation depends upon the smoothness of the cement. (See substrate preparation for Painted Surfaces or Sealed Surfaces, if appropriate).

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

**Smooth** cement plasters need a full coat of American Clay Sanded Primer Elite.

Cement **brown coats** do not need any Sanded Primer Elite.

On **rough** surfaces (texture more than 1/16 inch - 1.5mm - 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 inch – 1/5mm – 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. (A “**brown coat**” is a coat of plaster used to strengthen and/or level a wall surface. It is rubbed with a float to give it a sandpaper texture which helps the American Clay finish coats adhere to the surface).

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

A site-soil earth plaster is the least expensive option and allows the cob wall to breathe, which is important for the overall health of the wall. It is extremely helpful to work with or consult with a contractor who has experience with earth plasters.

No Sanded Primer Elite is required over earth plaster, but if the plaster is dusty, it may need to be stabilized with a natural binder such as our Mud Glue™ solution prior to American Clay application. (See Earth Plaster substrate preparation, next page, for more information.)

Gypsum (e.g. Structo-Lite®, Gypsolite, Imperial®, Diamond®, Kal-Kote®, Plaster of Paris and Red Top®) also allows the wall to breathe, and it is fairly easy to find contractors familiar with gypsum plasters. American Clay Sanded Primer Elite must be applied over the gypsum brown coat prior to Traditional and Dos Manos American Clay applications.

Lime plasters also allow the cob to breathe, however, experience is essential in working with 100% lime plasters and experienced contractors are rare (but growing in number). No Sanded Primer Elite is needed over a lime brown coat.

Conventional cement plasters tend to trap moisture in cob walls, and we do not generally recommend them over cob for that reason. No Sanded Primer Elite is needed over a cement brown coat.

## 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 a coat of American Clay Sanded Primer Elite to prepare them for Traditional System plaster.

If the walls have a consistent sand-paper texture less than 1/16 inch (1.5mm) deep, no Sanded Primer Elite is needed for American Clay to adhere. (Any smooth areas within the textured areas must be primed).

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

1. 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.
2. 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 Sanded Primer Elite prior to American Clay application.

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

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

Check the mortar joints. If they are more than 1/16 inch (1.5mm) deep, the concrete block will need a brown coat of fibered cement, gypsum or lime. Brown coats of cement or lime will not need Sanded Primer. Brown coats of gypsum will need a coat of American Clay Sanded Primer Elite prior to American Clay application. Follow manufacturer's specifications for brown coat product used. Check the 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 Loma to level the surface. Sealed and painted block will first need an application of American Clay Sanded Primer Elite. Unsealed block will not need Sanded Primer Elite.

Caution: If you use Loma to level the surface, mortar joints may show. This is particularly true in polished Porcelina finishes. To better hide the mortar joints, apply a brown coat first, choose a different finish coat, or do a second coat of Loma before the Porcelina finish coat.

## **Diamond® Plaster (a.k.a. Diamond® Finish) - see Gypsum plasters**

### **Drywall – see Wallboard**

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

### **Earth Plasters, unsealed**

*Unsealed* earth plasters do not require a coat of American Clay Sanded Primer Elite. (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 substrate preparation for 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 or misting the wall with a natural binder such as our Mud Glue™ solution prior to American Clay application.

#### **To make a Mud Glue solution:**

Wear a mask and protective goggles and clothing: dry Mud Glue™ and the Mud Glue™ solution are highly alkaline.

1. Add 1 gallon (4 L) clean, cool water to a 5-gallon (20 L) bucket.
2. While agitating the water, empty one bag of American Clay Mud Glue™ into the water.
3. Continue mixing for two minutes.
4. Add an additional 4 gallons (16L) of water and mix briefly.

Paint or mist this solution on the earth plaster wall and let dry prior to American Clay application.

If you are in the process of creating the earthen plaster substrate and you suspect the mix you are using will be dusty, you may use the Mud Glue™ solution – instead of straight water – to mix the plaster. Mud Glue's natural binders will strengthen the plaster and prevent dusting.

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

### **Foam Building Form Blocks – see Insulated Concrete Forms**

### **Gypsolite - see Gypsum Plasters**

## **Gypsum Plasters (e.g. Structo-Lite®, Gypsolite, Imperial®, Diamond®)**

Gypsum plasters also include 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 substrate instructions for sealed surfaces.

For unsealed gypsum plasters, complete any General Preparation steps needed to bring your surface to a level, dust-free surface.

All unsealed gypsum plasters need a coat of American Clay Sanded Primer Elite prior to Traditional System American Clay application.

## **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 the 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), a.k.a. Foam Building Form Blocks (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 for product used. Check the preparation requirements for the new substrate.

## **Joint Compound (a.k.a. drywall mud) – unsealed, unpainted**

**See Wallboard substrate information when Joint Compound is combined with any type of wallboard.**

Joint compound can be used as an inexpensive filler to smooth out textured wall surfaces. Follow manufacturer's specifications for product used.

All joint compounds must be primed with a conventional No-VOC primer or sprayed with one coat of American Clay Penetrating Sealer (diluted 1:1 with water). When dry, follow with a full coat of Sanded Primer Elite, which provides the texture needed for the clay to stick to the wall. Then Traditional System plasters may be applied.

Note: We do recommend Murco M-100 joint compound for chemically sensitive clients. Follow instructions above. **Test all materials for sensitivity prior to use.**

## **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 substrate instructions for sealed surfaces. If the lime plaster was sealed with a soap (Tadelakt), contact American Clay for more information.

Brown coats of unsealed lime plaster need no Sanded Primer Elite prior to Traditional System American Clay application.

Slick or polished lime plasters do need a coat of American Clay Sanded Primer Elite prior to Traditional System American Clay application.

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

These surfaces 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.

## **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.

Complete all General Preparation steps.

Apply a full coat of American Clay Sanded Primer Elite to the substrate.

**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% Penetrating Sealer – 75% water solution. Be sure to do all appropriate “General Preparation” steps listed in the instructions.

**On walls with significant texture** (more than 1/16" deep), American Clay's coverage will drop dramatically—from approximately 200 sq. ft. per bag to as low as 85 sq. ft. per bag, making the application more expensive. (In metric terms, texture more than 1.5 mm deep can drop coverage from 18.5 sq. m. to 8 sq. m. per bag.) To reduce costs, remove as much texture as possible with a scraper, and/or fill texture with an appropriate material. Follow manufacturer's specifications for product used. Check preparation required for new substrate.

**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 easy to fix—check [americanclay.com](http://americanclay.com) for our Maintenance Manual (found under Product Application).

## 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

Complete all General Preparation steps needed for this substrate to a stable, dust-free surface. Porous stone needs no American Clay Sanded Primer Elite for Traditional or Dos Manos applications.

## 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. (A "brown coat" is a coat of plaster used to strengthen and/or level a wall surface. It is rubbed with a float to give it a sandpaper texture which helps the American Clay finish coats adhere to the surface). Follow manufacturer's specifications for product used. Check preparation required for new substrate.

A site-soil earth plaster is the least expensive option and allows the rammed earth wall to breathe, which is important for the overall health of the wall. It is extremely helpful to work or consult with a contractor who has experience with earth plasters. No Sanded Primer Elite is required over earth plaster, but if the plaster is dusty, it may need to be stabilized with a natural binder prior to American Clay application. (See substrate instructions for earth plasters).

Gypsum plasters (e.g. Structo-Lite®, Gypsolite, Imperial®, Diamond®, Kal-Kote®, Plaster of Paris and Red Top®) also allow the wall to breathe, and it is fairly easy to find contractors familiar with gypsum plasters. American Clay Sanded Primer Elite must be applied over the gypsum brown coat prior to Traditional and Dos Manos American Clay application.

Lime plasters also allow the adobe to breathe, however, experience is essential in working with 100% lime plasters and experienced contractors are rare (but growing in number). No Sanded Primer Elite is needed over a lime brown coat.

Conventional cement plasters tend to trap moisture in adobe walls, and we do not generally recommend them over rammed earth walls for that reason. No Sanded Primer Elite is needed over a cement brown coat.

## **Rastra® or PerformWall®**

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. (A “brown coat” is a coat of plaster used to strengthen and/or level a wall surface. It is rubbed with a float to give it a sand paper texture which helps the American Clay finish coats adhere to the surface). Follow manufacturer’s specifications for product used. Check preparation required for new substrate.

A site-soil earth plaster is the least expensive. It is extremely helpful to work or consult with a contractor who has experience with earth plasters. No Sanded Primer Elite is required over earth plaster, but if the plaster is dusty, it may need to be stabilized with a natural binder prior to American Clay application. (See substrate instructions for earth plasters for more information).

Gypsum plasters include Structo-Lite®, Gypsolite, Imperial®, Diamond®, Kal-Kote®, Plaster of Paris and Red Top®. It is fairly easy to find contractors familiar with gypsum plasters. American Clay Sanded Primer Elite must be applied over the gypsum brown coat prior to Traditional and Dos Manos American Clay application. Experience is essential in working with 100% lime plasters and experienced contractors are rare (but growing in number). No Sanded Primer Elite is needed over a lime brown coat.

Conventional fibered-cement plasters also work well over these walls. No Sanded Primer Elite is needed over a cement brown coat.

## **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 acrylic finish coat of American Clay, you have several options:

- Sand off the sealer and apply a new finish coat of Traditional or Dos Manos. or
- 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 Traditional or Dos Manos. or
- Apply one coat of American Clay Dos Manos with Add-Mix directly over the sealed surface. Use 1 gallon (4L) of Add-Mix per bag of American Clay (for mixing instructions, see [americanclay.com](http://americanclay.com), click on “Product Application”, then click on Condensed Instructions - Dos Manos Classic American Clay Application. Use Add-Mix instructions). or
- Apply one coat of American Clay Dos Manos with Mud Glue™ directly over the sealed wall.
- 

One way to apply a new coat without removing the sealer is to use Add-Mix. The acrylic in the Add-Mix will bond to the acrylic in the sealer more easily than the Mud Glue™ will bond to the sealer. The Mud Glue™ will work, but if too much water or too much pressure is used, it may delaminate during application or compression. If you use Add-Mix, you need to compress the walls when they are leather hard (like a setting plaster). Then after it is dry you can re-wet and “polish” or clean up the walls.

When using Mud Glue™ or Add-Mix, avoid using too much water too soon. When using American Clay it is always better to let it dry a little than to use too much water.

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

If the surface has been sealed with **wax**, see substrate instructions for 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 (.08 mm) sand paper—not to remove the sealer, but to scratch the surface so that the Sanded Primer Elite 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.

Apply American Clay Sanded Primer Elite to the substrate.

**On walls with significant texture** (more than 1/16” deep), American Clay’s coverage will drop dramatically—from approximately 200 sq. ft. per bag to as low as 85 sq. ft. per bag, making the application more expensive. (In metric terms, texture more than 1.5 mm deep can drop coverage from 18.5 sq. m. to 8 sq. m. per bag.) To reduce costs, remove as much texture as possible with a scraper, and/or fill texture with an

appropriate material. Follow manufacturer's specifications for product used. Check preparation required for new substrate.

## **Sheetrock® – see Wallboard**

## **Slick Surfaces (polished plasters, cements, 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 substrate instructions for sealed surfaces. For unsealed surfaces, follow all General Preparation steps needed to create a stable, dust-free surface. Apply a coat of American Clay Sanded Primer Elite prior to Traditional American Clay application.

## **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 product used.

A site-soil earth plaster is the least expensive option in terms of materials costs and allows the straw bale wall to breathe, which is important for the overall health of the wall. It is extremely helpful to work or consult with a contractor who has experience with earth plasters. No Sanded Primer Elite is required over earth plaster, but if the plaster is dusty, it may need to be stabilized with a natural binder prior to American Clay application. (See substrate instructions for earth plasters for more information).

Gypsum plasters (e.g. Structo-Lite®, Gypsolite, Imperial®, Diamond®, Kal-Kote®, Plaster of Paris and Red Top®) also allow the wall to breathe, and it is fairly easy to find contractors familiar with gypsum plasters. American Clay Sanded Primer Elite must be applied over the gypsum brown coat prior to Traditional or Dos Manos American Clay Application.

Lime plasters also allow the straw bale to breathe, however, experience is essential in working with 100% lime plasters and experienced contractors are rare (but growing in number). No Sanded Primer Elite is needed over a lime brown coat.

Conventional cement plasters tend to trap moisture in straw bale walls, and we do not generally recommend them over straw bales for that reason. No Sanded Primer Elite is needed over a cement brown coat.

## **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. (A “brown coat” is a coat of plaster used to strengthen and/or level a wall surface. It is rubbed with a float to give it a sand paper texture which helps the American Clay finish coats adhere to the surface). Follow manufacturer's specifications for product used.

A site-soil earth plaster is the least expensive option in terms of materials costs and allows the cob wall to breathe, which is important for the overall health of the wall. It is extremely helpful to work or consult with a contractor who has experience with earth plasters. No Sanded Primer Elite is required over earth plaster, but if the plaster is dusty, it may need to be stabilized with a natural binder prior to American Clay application. (See substrate instructions for earth plasters for more information).

Gypsum plasters (e.g. Structo-Lite®, Gypsolite, Imperial®, Diamond®, Kal-Kote®, Plaster of Paris and Red Top®) also allow the wall to breathe, and it is fairly easy to find contractors familiar with gypsum plasters. American Clay Sanded Primer Elite must be applied over the gypsum brown coat prior to Traditional or Dos Manos American Clay application.

Lime plasters also allow the light clay to breathe, however, experience is essential in working with 100% lime plasters and experienced contractors are rare (but growing in number). No Sanded Primer Elite is needed over a lime brown coat.

Conventional cement plasters tend to trap moisture in light clay walls, and we do not generally recommend them over light clay for that reason. No Sanded Primer Elite is needed over a cement brown coat.



## Structolite® - see Gypsum Plasters

### Tile

Tile must be covered with wallboard or other sheathing prior to any American Clay application.

### Tongue and Groove Wood

Tongue and Groove must be covered with wallboard or other sheathing prior to any American Clay application.

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

Other common names for wallboard are plaster board, Gyprock®, gypsum board, blue board, green board, Fiberock®, QuietRock®, Durock®, and Hardiebacker™. Paperless drywall is treated the same as drywall with a paper surface.

#### Instructions:

1. **Wallboard seams must be taped and mudded with joint compound** (see *Recommended Joint Compounds* and *Joint Compound Application* below).
2. **Complete any “General Preparation” steps** needed to bring this to a level, dust-free surface, **including the last step (coating joint compound** with a conventional No-VOC primer or sealing with American Clay Penetrating sealer diluted 1:1 with water).
3. **The wallboard and joint compound will then need a full coat of American Clay Sanded Primer Elite** prior to American Clay Application.

### **Recommended Joint Compounds**

Follow manufacturer’s recommendations for joint compound that will be topped by veneer 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 Setting Joint Compound. Setting joint compounds are also known as “hot muds”.)

Setting joint compounds are stronger than multipurpose joint compounds. However, they absorb more water from the plaster than the wallboard does. This can cause variations in color (called ghosting) because the pigment goes where the water goes.

For this reason, we recommend sealing or priming the dry joint compound (or the entire wall) with American Clay Penetrating Sealer (diluted 1:1 with water) or a conventional No-VOC primer.

This is followed by a full coat of American Clay Sanded Primer Elite (a breathable primer that will not even out suction rates, but it does provide the texture necessary for the clay to bond to the wall). Then the two coats of Traditional System plaster may be applied.

We suggest Murco M-100 joint compound for chemically sensitive clients. To avoid ghosting, pre-seal or pre-prime as recommended. Test all materials for sensitivity prior to use.

### **Joint Compound Application**

Wallboard seams must be taped and mudded with joint compound to a level usually used for walls that will receive conventional texture treatments (level 2 for Loma and Marittimo, level 3 for Porcelina). In other words:

- Fasteners **do not** need 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 **does not** need to be sanded but high points **do** need to be scraped off:
- Slight ridges and depressions (+/- 1/16” or 1.5mm) are acceptable for Loma and Marittimo finish coats.
- On a polished Porcelina finish, any substrate texture (+/- 1/32” or .8mm) may show through. We recommend a level 3 taping job for Porcelina. (Tape, top, and skim for a level joint. Remove points higher than 1/32” or .8mm.)

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.

### **Potential Issues**

**The walls must be dust free** prior to Sanded Primer Elite and American Clay application or plaster could delaminate as it dries. If dust has been produced anywhere in the house that may have coated the walls,

*Traditional Substrates Preparation for American Clay Earth Plasters*

remove dust with a vacuum or wash the wall with a 25% American Clay Penetrating Sealer / 75% water solution.

**Use a joint compound that is appropriately thick.** Do not add additional water to pre-mixed joint compound, and add only the recommended amount of water to powdered joint compounds. Loose or wet joint compound can cause the seam to crack (air check).

**Fill all gaps between wallboards.** Failing 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 then tape and bed joint. This ensures that the cut ends are fully isolated and that water cannot migrate into the joint, causing air checking.

## Wallpaper

Wallpaper should be covered with wallboard or it should be removed completely (the wall beneath it must be completely stable and dust-free). Follow manufacturer's specifications if using wallboard (see also Wallboard substrate information).

## Walls with a Combination of Materials

Because American Clay's Sanded Primer Elite is a breathable primer that lets moisture pass through it, and because the pigment goes where the water goes, different absorption (back suction) rates in the substrate can result in color variations called ghosting, particularly with the deeper colors. For example, when a cement wall has been patched with a gypsum product, an American Clay Earth Plaster over the gypsum patch may be lighter in color than the rest of the plaster over cement.

"Hot mud" (any powdered, quick-setting drywall mud) can be a problem, as it absorbs more moisture than the drywall it is used to patch. In new construction, it is not uncommon to have a combination of regular and hot mud.

When different suction rates exist or are suspected, we recommend priming the wall with a conventional primer (PVA works well), or spraying on American Clay Penetrating Sealer diluted 1:1 with water. Both options will even out the back suction. This is followed by a coat of American Clay Sanded Primer Elite.

Follow manufacturer's specifications for product used.

## 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% acrylic sealer / 75% water solution. Apply American Clay Sanded Primer Elite.