Module 05.05b

ADHESIVES, BASE COAT AND FINISHES

Robert J. Kudder, S.E.

Raths, Raths & Johnson, inc.

Willowbrook, Illinois

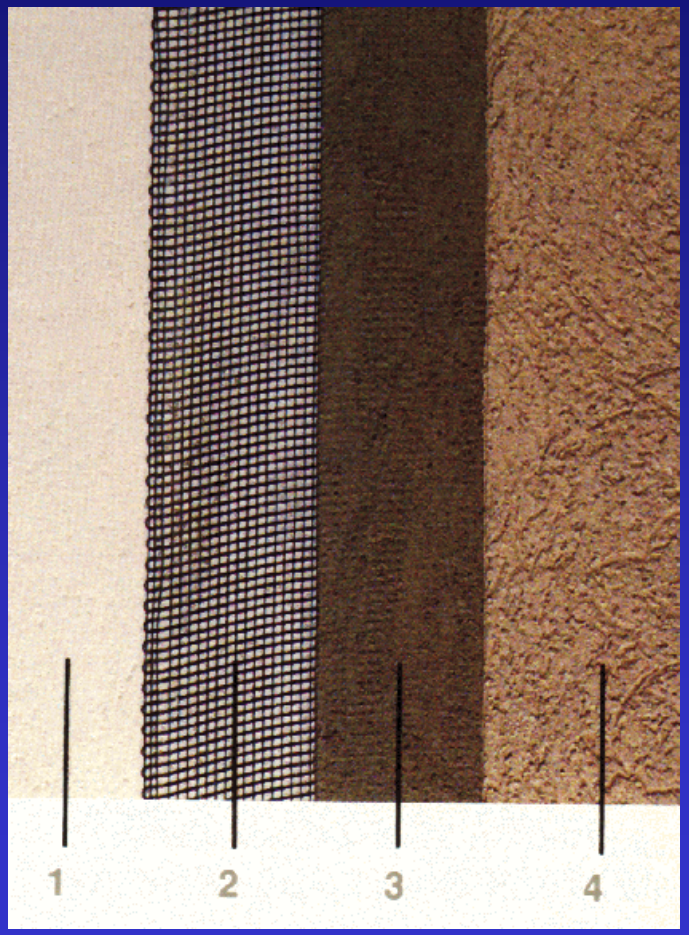
Illustrations reproduced from manufacturers' literature

Adhesives, Base Coat and Finishes

The "wet" components of the EIFS lamina

- **The system is not complete without insulation board and reinforcing mesh.**
- **Adhesives are typically used with Class PB barrier systems and mechanical fasteners are usually used with Class PM barrier systems. Drainage systems can use either adhesives or mechanical fasteners.**
- **Adhesives, base coat and finish materials MUST come from the same manufacturer and be parts of a recognized system; they CANNOT be mixed and matched.**

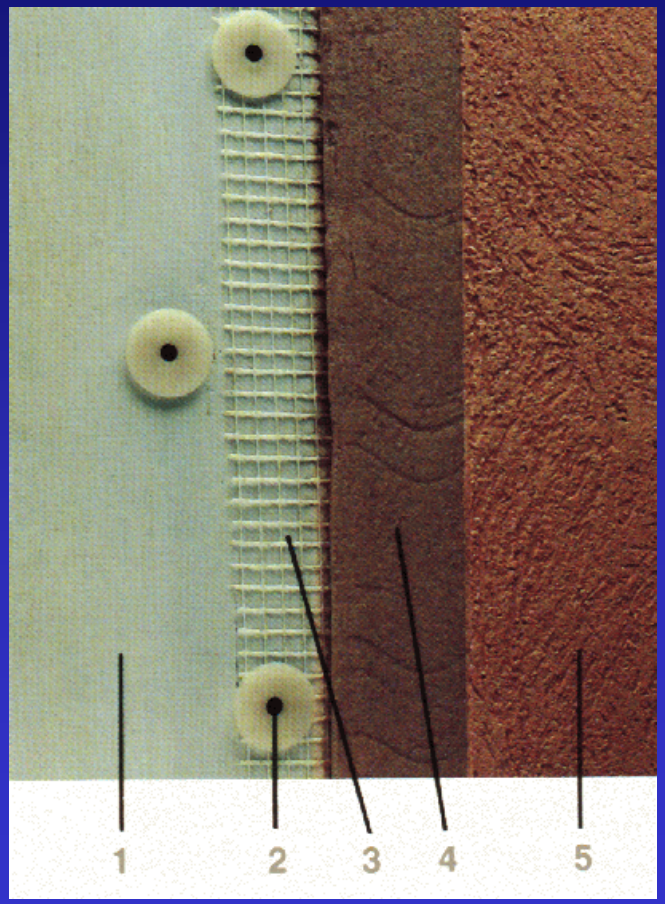
Typical Class PB System



1. EPS Insulation
2. Reinforcing Mesh
3. Base Coat
4. Finish Coat

Adhesive or Mechanical Fasteners

Typical Class PM System

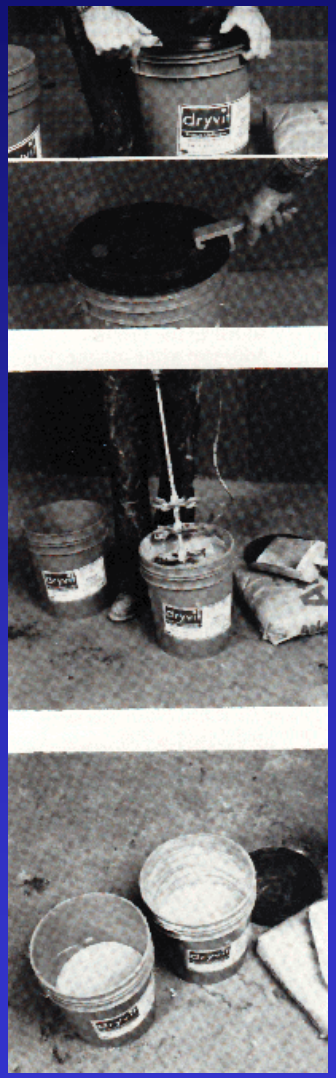


1. XEPS Insulation
2. Mechanical Fasteners
3. Reinforcing Mesh
4. Base Coat
5. Finish Coat

Class PB Adhesives - Cementitious

- **Pail or wet product**
  - **Mixed with Type I, I-II or II cement**
  - **Small amount of water can be added**
- **Dry or bagged blend**
  - **Dry powder which requires addition of potable water only**
- **Cure by chemical reaction of water, cement and polymers (hydration and polymerization)**
- **No additives added on site.**

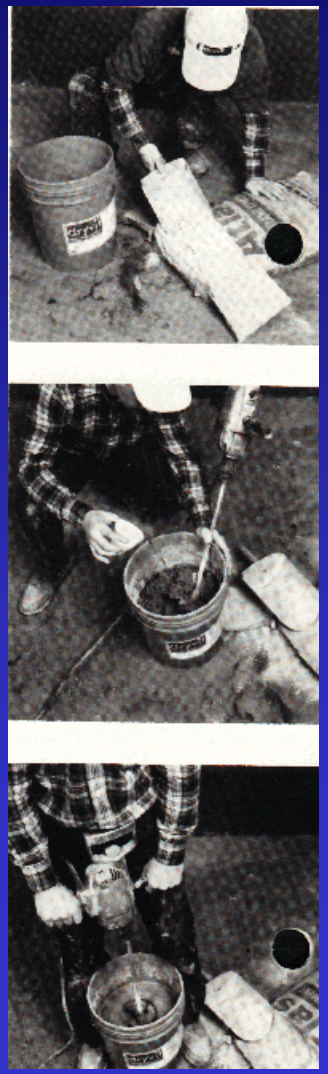
Mixing Cementitious Adhesives



1. Open

2. Mix

3. Divide



4. Add cement

5. Add water

6. Mix, wait, remix

Class PB Adhesive - Synthetic

- **Adhesive / Base Coat**
  - **Ready mixed 100% polymer binder w/fillers**
  - **Used straight from the pail**
  - **Use as an adhesive and base coat**
- **Adhesive only**
  - **Used as adhesive only**
  - **Ready mixed; used straight from the pail**
- **Usually required for adhered installation on wood-based sheathing**
- **Cures by drying and therefore affected by temperature and humidity.**

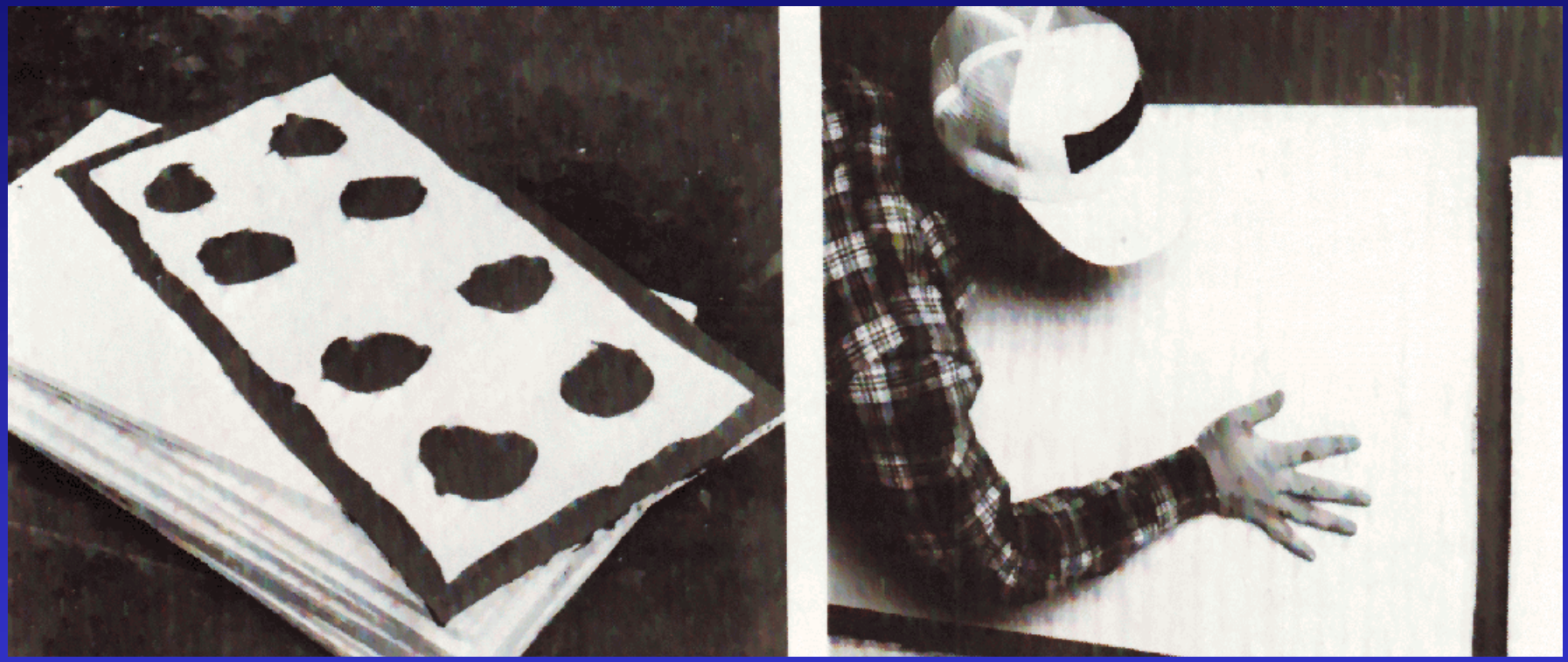
Matching Adhesive to Substrate

SENERFLEX PRODUCT \ TYPE OF APPLICATION	ADHERE EPS to GYPSUM SHEATHING	ADHERE EPS to UNPAINTED & UNGLAZED UNIT MASONRY or CONCRETE	ADHERE EPS to GEORGIA-PACIFIC DENS-GLASS GOLD GYPSUM SHEATHING	ADHERE EPS to NEW, UNTREATED PLYWOOD SHEATHING (Min. grade C-D)	ADHERE EPS to EPS	EMBED FLEXGUARD 4, 6, 10, 15, 20 or CORNER GRID
STANDARD, ALPHA or ALPHA DRY BASE COAT ADHESIVE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE PROVIDED DENS-GLASS GOLD IS CONDITIONED WITH SENERPRIME	ACCEPTABLE PROVIDED SHEATHING IS CONDITIONED WITH SENERPRIME	ACCEPTABLE	ACCEPTABLE
NC-II BASE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE PROVIDED DENS-GLASS GOLD IS CONDITIONED WITH SENERPRIME	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
SENERQUICK ADHESIVE	NOT ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE	NOT ACCEPTABLE	NOT ACCEPTABLE

Accepting the Substrate

- **Proceeding with installation of EIFS implies acceptance of the substrate:**
  - **Appropriate type**
  - **Properly prepared: leveled, smooth, patched**
  - **Sound condition: no deterioration, nothing loose**
  - **Correctly applied: orientation, spacing, layout**
  - **Correctly fastened: spacing, type, seating**
  - **Clean: no contaminants, oil, dirt, dust, spatter**
  - **Dry: no water or frost**

Adhesive Application – Ribbon + Dab



Best for masonry substrates
Spacing, size, thickness per manufacturer

Adhesive Application – Notched Trowel

Notch size, spacing, shape, direction per manufacturer

Base Coat Functions

- Primary weather barrier of the system
- Provides tensile strength and impact resistance
- Protects and encapsulates the reinforcing mesh
- Must adhere to the insulation board and serve as a substrate for the finish coat

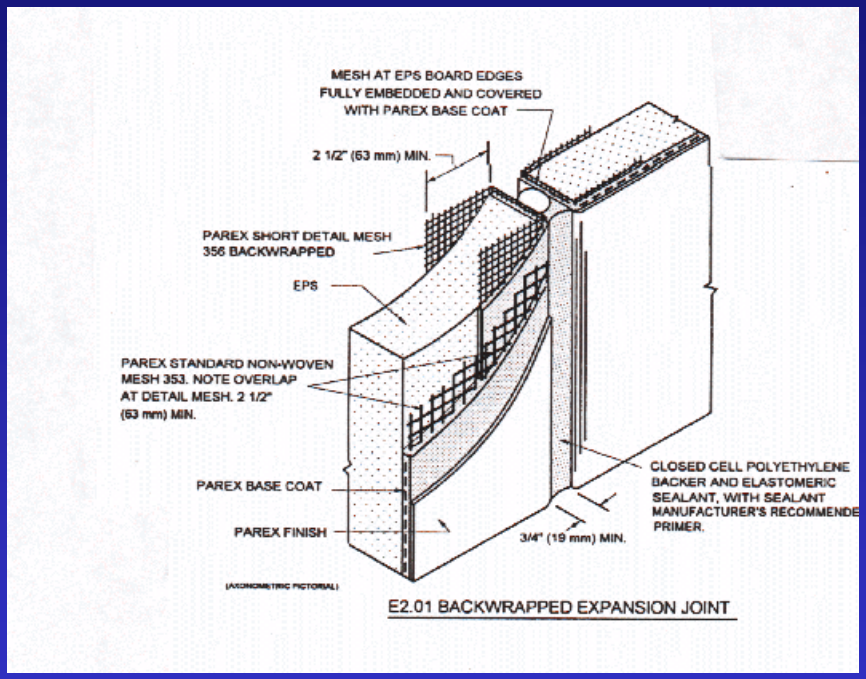
Types of Base Coat – Class PB

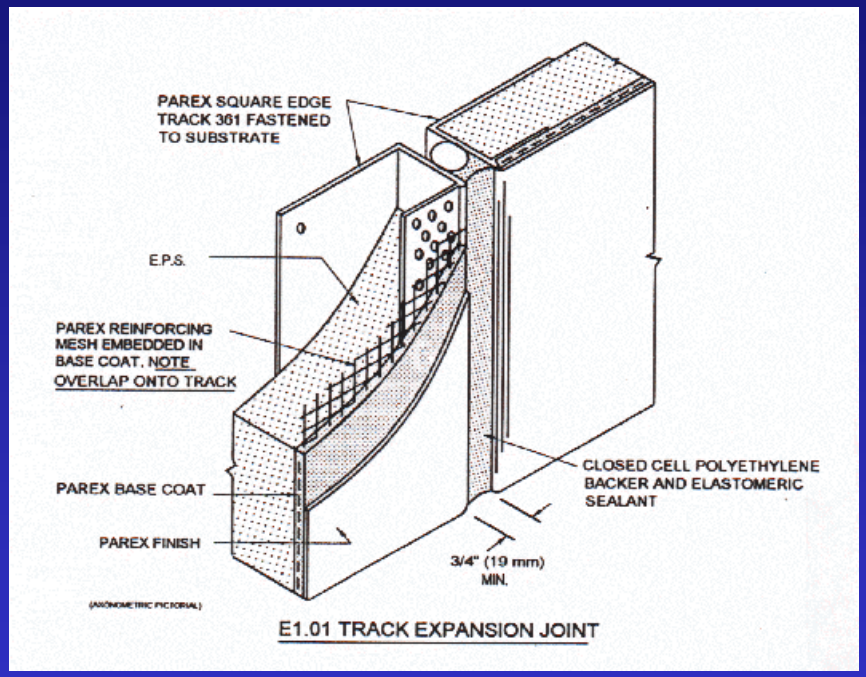
- **Cementitious: pail or "wet"**
  - Mixed with cement proportioned by weight or volume per manufacture's direction
  - Workability is important for a good application, so water can be added in small amounts
- **Cementitious: dry or bagged**
  - Factory blend of dry materials
  - Add only potable water
- **Synthetic**
  - Factory blend of 100% polymers and fillers
  - No cement added
  - Ready to use directly from the pail
- **May be the same material as the adhesive**

Base Coat Application

1. EPS gaps filled with slivers
2. Board is rasped
3. Terminations (back wrapping, trim) are in place
4. Corners, grooves and butterflys are installed
5. Environmental conditions are acceptable
6. Project is properly coordinated

Terminations – Interface and Edges



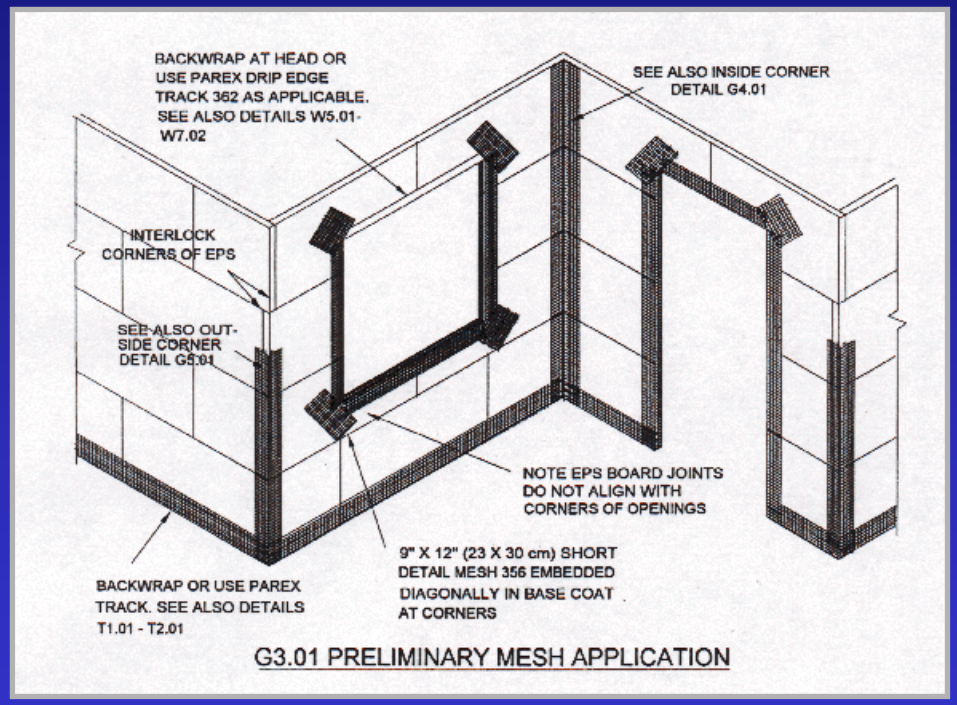


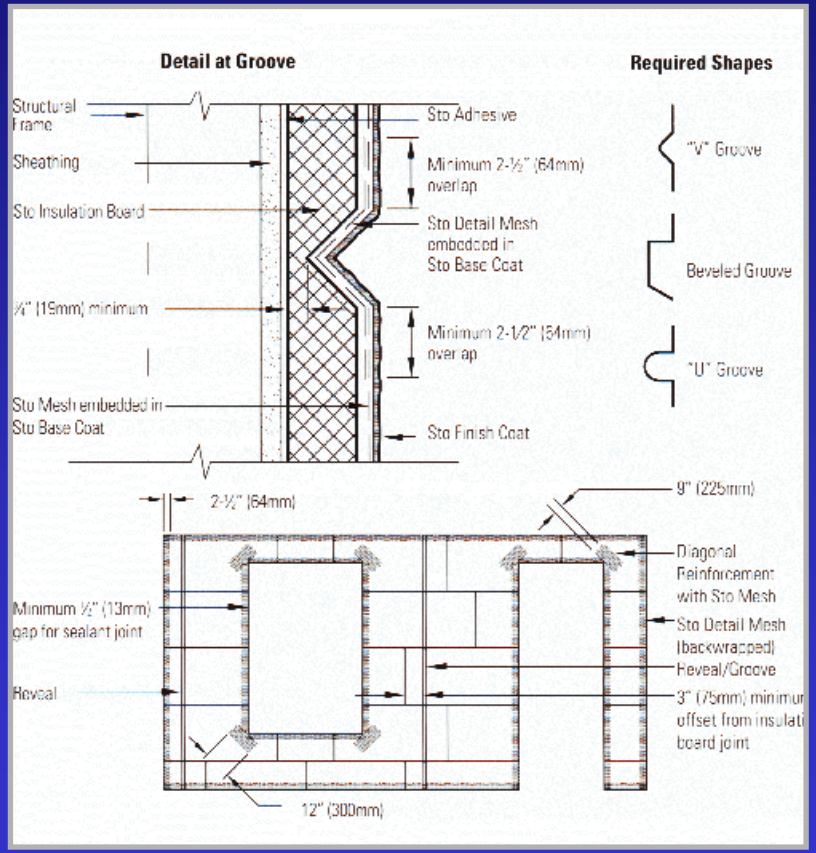
Back wrapping

Trim

Pre-meshing

Preliminary mesh application before overall base coat





Typical Procedures – Class PB

- Spread using a stainless steel trowel
  - Even layers
  - Area slightly larger than width of mesh
  - Thickness 1/16” to 3/32”; Thicker for multiple or heavy mesh
- Immediately place mesh in wet base coat
  - Trowel from center to the edges
- If mesh color is still visible, apply a second coat. Some manufacturers require that mesh pattern not be visible.

(continued)

- Overlap work area
- Lap standard mesh a minimum of 2½” at all meeting edges and ends
- Workmanship
  - Smooth
  - Uniform thickness
  - Free of trowel flashes
  - No visible mesh color
  - No visible mesh texture (per manufacturer)
- Cure for a minimum of 24 hours or longer, depending on weather conditions, before finish coat is applied

Typical Procedures – Class PM

- PM base coat is cementitious, with polymer binders, cement, fillers and fibers
- Mix according to manufacturers' instructions
- Spread using a stainless steel trowel
  - Even layers
  - First layer 1/16" to 1/8" over mechanically fastened insulation board and mesh
  - Immediately apply second layer for a full final thickness from 3/16" to ¼"
- Base coat should be dry and hard before finish coat is applied

Finish Coat – Class PB and PM

- Aesthetic component of EIFS (what you see)
- Trowelable or sprayable ready-to-use material with integral color
  - Primer may be required for cementitious base coat
- Thickness is determined by largest aggregate
  - Aggregate serves as a screed, and is often pulled through the finish
- Properties
  - Water, mildew and UV resistant
  - Vapor permeable
  - Stable color and minimal efflorescence
  - Resist dirt pick-up

Finish Coat Application

- Based coat has cured a minimum of 24 hours and all irregularities have been corrected
- Finish is applied continuously, maintaining a wet edge until a natural boundary is reached
- Direct sunlight, wind, temperature and humidity can affect cure of the finish coat
- Not applied to sealant bonding surfaces

Texture

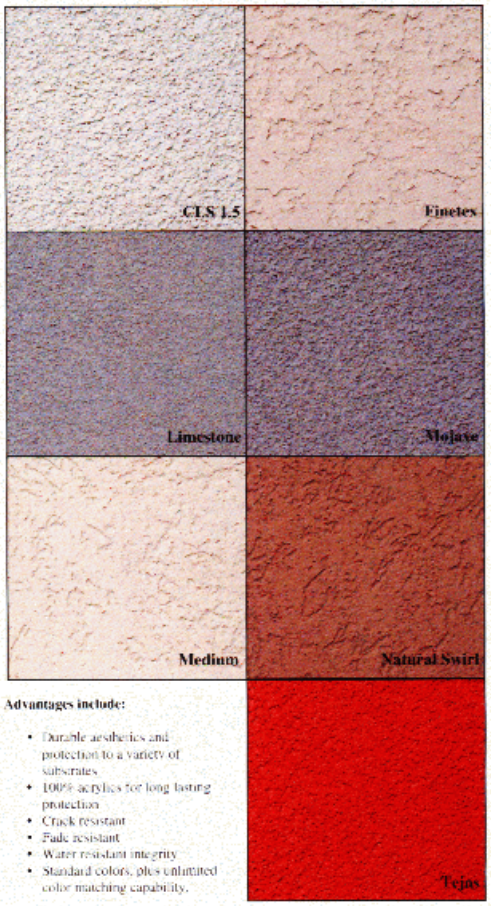
- Texture is achieved in a two-step process
- A layer of finish coat is applied with light pressure so that the trowel rides on the aggregate
- Second step produces texture by pulling aggregate through the wet finish coat with heavy trowel pressure.

Texture - Examples

FINESTONE

FINESTONE Pebbletex™ Finishes

FINESTONE FINISHES are acrylic based textured wall coatings. All are 100% pure acrylic polymer based, factory mixed, integrally pigmented and formulated for specific textures.



Advantages include:

- Durable aesthetics and protection to a variety of substrates
- 100% acrylics for long lasting protection
- Crack resistant
- Fade resistant
- Water resistant integrity
- Standard colors, plus unlimited color matching capability.

Simplex Products Division
An Anthony Industries company

P.O. Box 10
Adrian, MI 49221-0010
(800) 545-6555
Fax (517) 263-2835

HIGH PERFORMANCE FINISHES AND COATINGS

More and more architects, contractors and building owners around the world are relying on Dryvit finishes and coatings to deliver high performance protection and lasting beauty they demand. Whatever the building type, new construction or remodeling, there is a Dryvit product that provides the durability they are looking for. And, Dryvit Systems, Inc. is certified to ISO 9001 standards, the worldwide common denominator for product consistency and excellence. This certification helps identify Dryvit as the recognized leader in finishes and coatings technology.

What's more, Dryvit's standard, specialty and elastomeric finishes, as well as coatings, offer low maintenance advantages such as DPR (Dirt Pickup Resistance) and PMR™ (Proven Mildew Resistance). Dryvit presents a wide range of custom colors and textures for any architectural style on new or retrofit projects — all with the written Dryvit materials warranty.

For Application over a Range of Substrates

Dryvit finishes are ideally suited to provide a protective and decorative coating over masonry, stucco, concrete, CMU and EPS substrates. A variety of textural effects may be specified depending on the Dryvit finish selected and the application technique employed.

Cover:
Sutter Medical Plaza
Orangevale, CA
Silvis Strang Architects

STANDARD

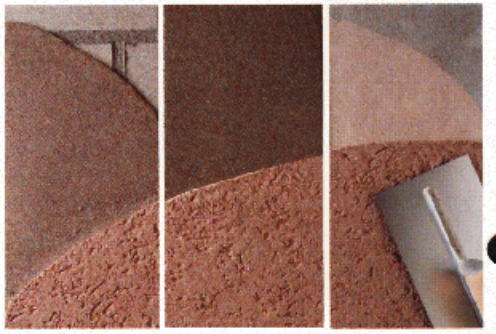

Quartzpuz®


Sandpebble®

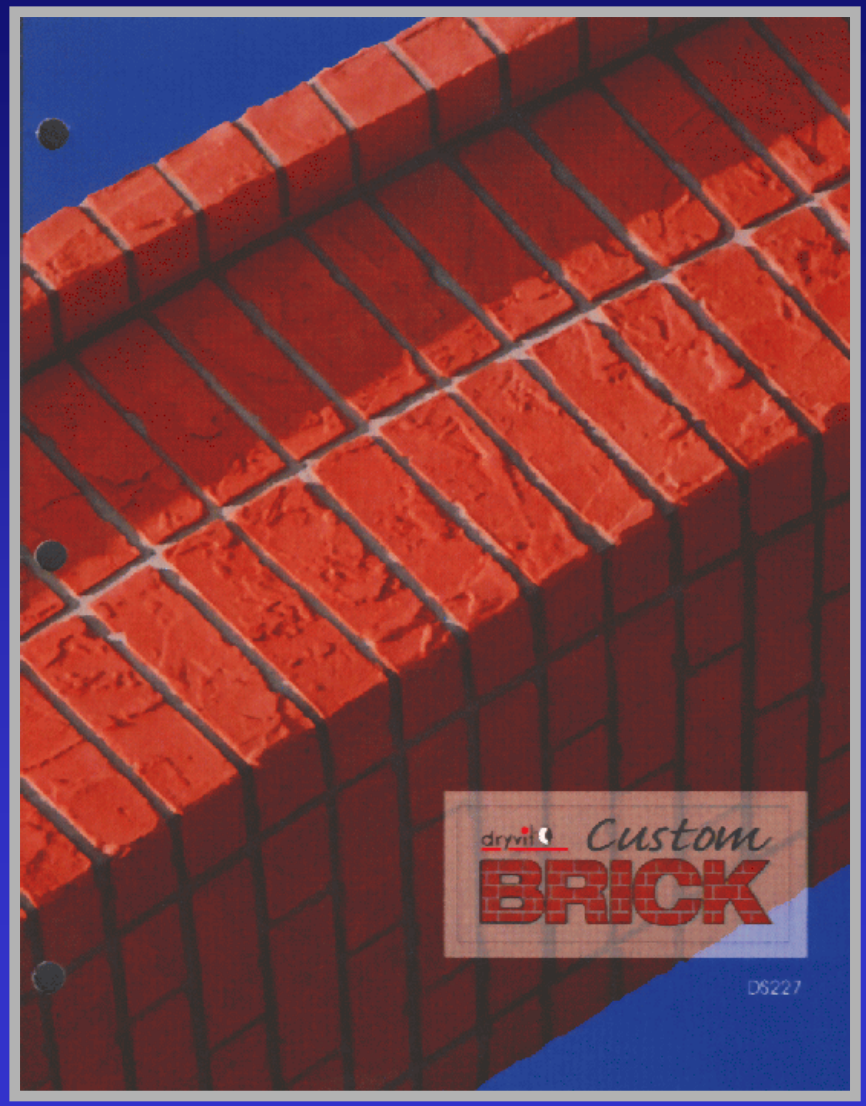

Sandblast®


Sandpebble Fine™


Freestyle®



Texture - Custom



Color Range - Example

Darker colors may chaulk or fade more than light colors