

**Senergy**<sup>®</sup>

System Overview

## **Senergy**<sup>®</sup> Surfacing Systems for Insulating Concrete Forms

Weather resistant surfacing system using a mesh-reinforced base coat and 100% acrylic polymer exterior finish



 **BASF**

The Chemical Company

## DESCRIPTION

Senergy Surfacing Systems for ICFs provide the desirable stucco look and aesthetic appeal over a variety of expanded polystyrene insulating forms. The Senergy Surfacing Systems are comprised of a reinforced base coat, optional primer and a 100% acrylic polymer finish. Depending upon the construction and composition of the form, the Senergy Surfacing Systems might include additional expanded polystyrene insulation boards and an adhesive.

Senergy architectural coatings and finishes have passed rigorous tests for resistance against abrasion, fading, chalking, cracking and peeling. Finishes are available in a limitless color selection and offer performance enhancement options including increased resistance to dirt pick-up and mildew. Senergy Surfacing Systems feature exceptional durability and low maintenance.

## USES

For exterior walls in residential, commercial and institutional ICF construction when a weather resistant, low maintenance "Stucco Look" wall finish is desired.

## ADVANTAGES

- Insulation and thermal mass of ICFs reduce energy cost
- Economical architectural detailing
- Does not require control joints
- Fade-, crack-, abrasion- and dirt-resistant finishes
- Multiple options for impact resistance improve functional design, ease of maintenance
- Wide selection of finish textures, 128 standard colors and unlimited custom colors

## DESIGN CONSIDERATIONS

### General

- Consult the ICF manufacturer for design and application considerations.
- Density of the forms shall not exceed two pounds per cubic foot.
- Surfacing Systems shall not serve as the foundation damp-proofing.
- Use high impact mesh for ground floor applications in high traffic areas.
- EPS special shapes such as moldings, cornices, quoins, ogees, etc. can be used to enhance design aesthetics. These can be integrated into the Surfacing System. They must be reinforced with Senergy Base Coat and Reinforcing Mesh prior to application of the TINTED PRIMER and Finish.
- (Optional) EPS board size is limited to 2' x 4'. The minimum thickness of EPS at any point on the wall can not be less than 3/4". Consider this when designing and installing reveals.

### Sealants, Backer Rod, Flashing

- Approved sealant installed with approved backer rod or bond breaker tape shall be used at all transitions between ICF and other elements such as windows, doors, vents, penetrations, transitions to dissimilar elements, etc.
- Flashing at windows, doors, chimneys, transitions between walls and roof and at other points specified shall be installed in accordance with component manufacturer's instructions.

## BEST PRACTICES FOR INSTALLERS

### General

- Do not run Surfacing Systems below grade; Surfacing Systems must terminate a minimum of eight inches above grade.
- Pail components must be kept at a minimum of 4°C (40°F) during shipping and storage. A minimum temperature of 4°C (40°F) is required during application of all components and until completely dried.
- Protect dry (bagged) products from moisture. EPS insulation boards should be stored flat, out of direct sunlight.
- No additives are permitted to any components.
- Repair any dings, dents and damaged form areas with the appropriate expanded insulation prior to the application of the Surfacing Systems. Do not fill damaged areas with base coat or cementitious products.
- Do not apply the Surfacing Systems directly to dimensional framing lumber/ blocking which might occur at window and door bucks, etc.
- Install the Surfacing Systems after the concrete has been cured for a minimum of seven (7) days.
- Follow the application instructions for each component.
- All substrates must be clean, dry and sound without planar irregularities greater than 1/4" in 10'.
- Form ties, furring strips, or other materials external of the form shall be flush and planar with the surface of the form. Forms with exposed ties will require the use of installation board over the forms.
- Prior to installation of the base coat, entire wall must be completely rasped to remove high and low spots and to remove dust from the surface of the EPS.

### Insulation Boards

ADHESION EVALUATION: If EPS insulation board is required over forms, evaluate adhesion prior to start of project as follows:

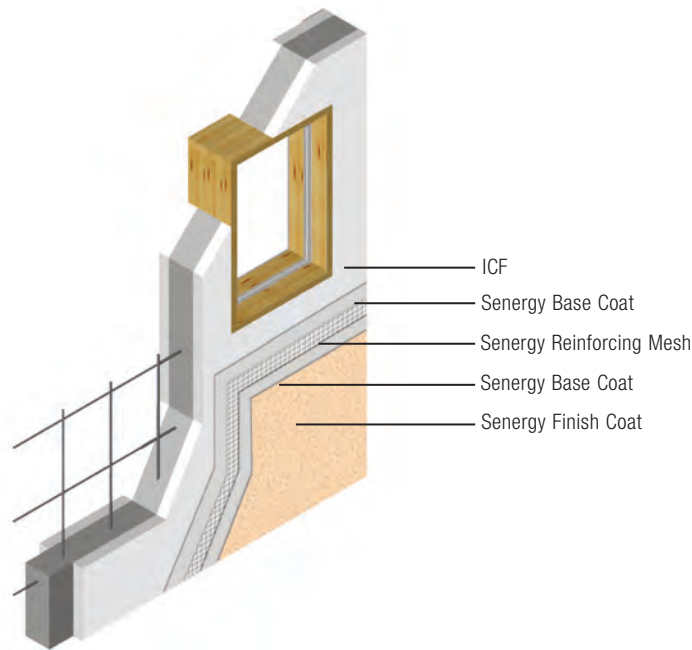
- Using the appropriate Senergy adhesive/base coat, apply a 3/4" thick x 3" x 3" sample of expanded polystyrene insulation board to the ICF on representative area(s) of forms including ties/furring strips.
- Allow the sample(s) to cure for a minimum of three (3) days prior to evaluation.
- Commercially available tensile test equipment such as the Comten Model 302N (813-823-7806) is available to remove and determine adhesion of the sample to the substrate. Remove the insulation board from the ICF and observe failure mode.
- The failure must occur cohesively within the expanded polystyrene insulation board sample for adhesion to be deemed acceptable.

### EPS SHAPES AND REVEALS:

- EPS board size is limited to 2' x 4'. The thickness of the board must be 3/4" to 4".
- Do not break Reinforcing Mesh in reveals; offset 4–6" minimum. Do not align reveals with insulation board joints; offset 4–6" minimum.
- To avoid waste or insufficient adhesion, use the proper sized notched trowel to apply adhesive to back of insulation boards.

### Reinforced Base Coat

- Reinforcing Mesh Flexguard 4/Intermediate 6/Intermediate 12 mesh must overlap a minimum of 2 1/2".
- Use Strong 15/Hi-Impact 20 at ground floor and on other locations where high traffic is expected. Strong 15/Hi-Impact 20 must not overlap; butt edges together. After Strong 15/Hi-Impact 20 are embedded in base coat, that layer must be covered by a second layer of Reinforcing Mesh 4 and base coat.



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- Install “butterflies” of Reinforcing Mesh at corners of all windows, doors and other penetrations.
- Install a second layer of Reinforcing Mesh a minimum of 4" on both sides of inside and outside corners.
- Mesh color or prominent mesh pattern should never be visible through the base coat.
- Special shapes must also be reinforced with base coat and Reinforcing Mesh.
- Textured Acrylic Surfacing Systems are not designed for horizontal applications. Always maintain a minimum slope of 1:2 up to a maximum width of 12".
- Protect work from precipitation for a minimum of 24 hours.

### Finish

- Use only stainless steel trowels.
- Avoid working in direct sunlight.
- Finishes should be applied with adequate man power, tools and staging to keep a wet edge.
- A primer tinted to the color of the finish is recommended prior to application of rilled finishes.
- Do not run finish into joints.
- Do not quit in the middle of a wall; run to natural breaks.
- Do not use different batches of finish on the same elevation.
- Protect from precipitation for a minimum of 24 hours.
- Use only sealants that are acceptable for use with this system. Acceptable sealants and backer rods or bond breakers must be installed at all transitions between this system and other wall assembly elements such as windows, doors, vents, transitions to dissimilar materials, A/C cases, and other penetrations.
- Do not apply finish over sealants.

### KEY UPGRADES AVAILABLE

System upgrades can include the addition of high-impact resistant reinforcing mesh, specialty finishes, silicone enhanced textured finishes to improve dirt pick up and mildew resistance, and tinted primers to enhance final aesthetics.

### PRODUCT DATA—SIZES & PACKAGING

EXPANDED POLYSTYRENE INSULATION BOARD: 0.6 m x 1.22 m (2' x 4'), minimum density of 14.41 k/m<sup>3</sup> (0.9 lb/ft<sup>3</sup>) and thickness minimum 25 mm (1") meeting Senergy specifications.

FLEXGUARD 4, standard-weight Reinforcing Mesh at approximately 4.5 oz/yc<sup>2</sup> is available in 96.5 cm x 45.7 m (38" x 150') rolls. For wall system areas not expected to receive abnormal traffic or abuse.

INTERMEDIATE 6, standard-weight Reinforcing Mesh at approximately 5.6 oz/yc<sup>2</sup> is available in 96.5 cm x 45.7 m (38" x 150') rolls. For wall system areas not expected to receive abnormal traffic or abuse.

INTERMEDIATE 12, intermediate-weight Reinforcing Mesh at approximately 11 oz/yc<sup>2</sup> is available in 96.5 cm x 22.8 m (38" x 75') rolls. For use either alone or with FLEXGUARD 4 or INTERMEDIATE 6 to provide added impact resistance at specific areas such as around doors and walkways.

STRONG 15, medium-heavy weight Reinforcing Mesh at approximately 15 oz/yc<sup>2</sup> is available in 96.5 cm x 22.8 m (38" x 75') rolls. For wall system areas expected to receive traffic and abuse.

HI-IMPACT 20, heavy-weight Reinforcing Mesh at approximately 20 oz/yc<sup>2</sup> is available in 99.0 cm x 22.8 m (39" x 75') rolls. For wall system areas expected to receive a high degree of traffic and abuse.

CORNER MESH, intermediate-weight mesh at approximately 9.1 oz/yd<sup>2</sup> for use at exterior corners, is available in 22.9 cm x 45.7 m (9" x 150') rolls.

Approximate coverage rate for NC-II BASE to embed FLEXGUARD 4 is 13.9 m<sup>2</sup> (150 ft<sup>2</sup>) per 27.2-kg, 19-liter pail (60-pound, 5-gallon).

Approximate coverage rate for ALPHA GENIE BASE COAT, ALPHA BASE COAT, STANDARD BASE COAT, and XTRA-STOP BASE COAT to embed FLEXGUARD 4 is 26 m<sup>2</sup> (280 ft<sup>2</sup>) per 27.2-kg, 19-liter (60-pound, 5-gallon) pail.

Approximate coverage rate for ALPHA DRY BASE COAT to embed FLEXGUARD 4 is 11.1 m<sup>2</sup> (120 ft<sup>2</sup>) per 22.6-kg (50-pound) bag.

Approximate coverage rate for TINTED PRIMER is 69.6–116.1 m<sup>2</sup> (750–1,250 ft<sup>2</sup>) per 24.9-kg, 19-liter (55-pound, 5-gallon) pail.

SENERFLEX® and SILCOAT Finishes are packaged in 31.7-kg, 19-liter (70-pound, 5-gallon) pails. Approximate coverages per pail for various textures are: BELGIAN LACE [14.8 m<sup>2</sup> (160 ft<sup>2</sup>)], CLASSIC [13 m<sup>2</sup> (140 ft<sup>2</sup>)], COARSE [8.3 m<sup>2</sup> (90 ft<sup>2</sup>)], FINE [13 m<sup>2</sup> (140 ft<sup>2</sup>)], SAHARA [11.1 m<sup>2</sup> (120 ft<sup>2</sup>)], TEXTURE (coverage varies depending upon application).

Specialty Finishes are packed in 31.7-kg, 19-liter (70-pound, 5-gallon) pails. Approximate coverages per pail for various textures are: TC-100 [6.5–9.2 m<sup>2</sup> (70–100 ft<sup>2</sup>)], AURORA STONE [6.5 m<sup>2</sup> (70 ft<sup>2</sup>)], ALUMINA [8.4–9.2 m<sup>2</sup> (90–100 ft<sup>2</sup>)].

ANTICOGLAZE is packaged in 18.14 kg, 19-liter (40-pound, 5-gallon) pails and in 7.25 kg, 7.6 liter (16-pound, 2-gallon) pails. Coverage varies according to application technique. For estimation guidelines, consider using a coverage rate of 2500 ft<sup>2</sup> per 5-gallon pail or 1000 per 2-gallon pail.

## TECHNICAL SUPPORT

For further details, specifications, questions, specific recommendations, or the most recent product information, please consult our Technical Services Department: Toll-free 800-221-9255 or our website, [www.senergy.basf.com](http://www.senergy.basf.com).

## WARRANTY

Five year limited warranty. Extended warranties are available, please consult the BASF Wall Systems Technical Services for requirements.

## HEALTH & SAFETY

Follow good safety and industrial hygiene practices during handling and installing products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.

### Note

BASF Wall Systems is an operating unit of BASF Corporation (herein referred to as "BASF Wall Systems")

### Residential Policy

Apply wall systems in accordance with local building codes in force at the time of construction. On one and two-family residential framed construction, BASF Wall Systems requires that the wall system selected be one that includes provisions for moisture drainage. Please view the Senergy Residential Policy Bulletin on the Senergy website for a more detailed discussion of this topic.

### Disclaimer

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