

TOTAL TUFF ICF □ CLASS ICF □ Section 07240
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ICF Coating System

AMERICA'S EIFS AND STUCCO COMPANY!

1. PRODUCT NAME

Total Tuff ICF

Direct Applied Exterior Finish System (DEFS) on Insulated Concrete Form

2. MANUFACTURER

Total Wall, Inc.
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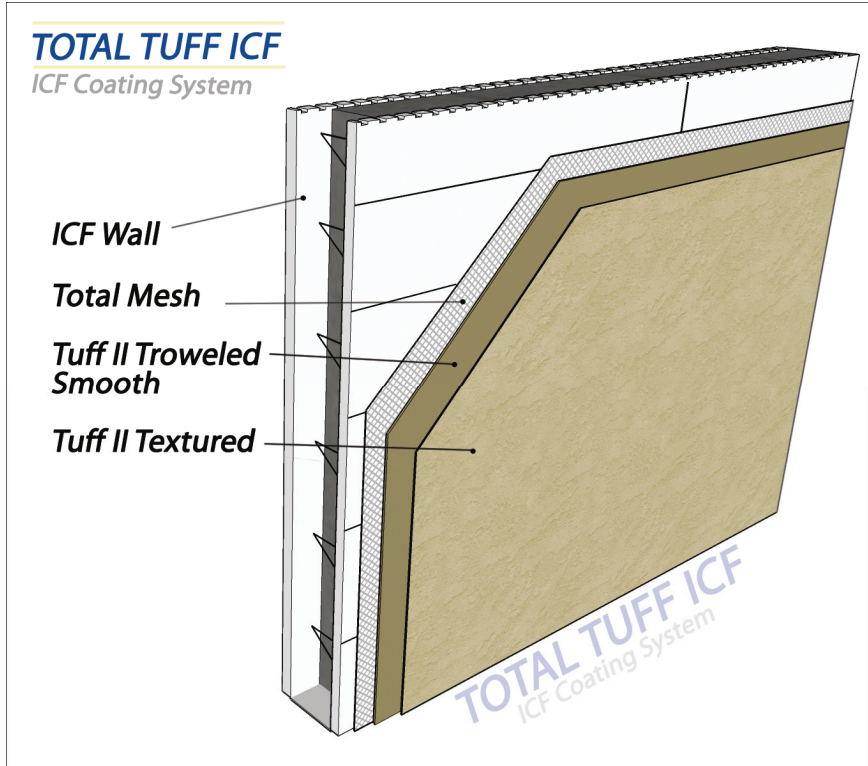
3. DESCRIPTION

Total Tuff ICF Exterior Finish is a non-bearing exterior cladding for commercial and residential structures constructed of polystyrene insulated concrete forms. This system is used to weatherproof, protect and beautify any ICF structure. The advantages of this exterior cladding system are:

- It is light weight and will not stress the design structure
- It is a relatively low cost yet highly durable cladding
- The cladding will provide impact resistance, ultraviolet protection and weather protection to the polystyrene ICF surface
- The structure is easily accessorized with architectural enhancements made of the same materials as the wall system (arches, quoins, etc)

Limitations:

Total Wall products must be applied in temperatures of 40° F or higher. The freshly applied products must be protected from precipitation and the temperature must be maintained at 40° F or greater for 24 hours. Stored products must be covered, and protected from sun and freezing conditions.



Total Wall products must be installed by certified Total Wall registered applicators. Only registered applicator installations are eligible for a System Warranty. Total Wall reserves the right to use certified inspectors on any phase of installation.

Materials:

- Total Wall ICF Systems consist of 3 layers or constituents:
1. ICF Substrate
 2. Base coat / Reinforcing mesh
 3. Finish coat

Layer 1 - ICF Substrate

Approved ICF materials as manufactured by:

- Reward Wall
- Arxx
- Polysteel
- Dow Chemical
- Keeva
- Owens Corning
- BuildBlock

- Amvic
- EcoBlock
- Or others, as approved, in writing, by Total Wall, Inc.

Layer 2 - Base Coat and Reinforcing Mesh

The entire surface of the foam block is covered with reinforcing mesh embedded with Total Wall Tuff II. This product is used as both the base coat and the finish coat. To use Total Wall Tuff II as the finish layer, be sure the base coat layer is tinted to a similar color. Texture may be controlled by either floating to achieve a sand texture or by adding additional finish with a skip-trowel technique to achieve a freestyle texture.

Total Wall Tuff II (Acrylic Base Coat and Finish)

This product is available in 5 gallon pails at 65 pounds per pail. Tuff II is a fully synthetic, all acrylic base coat that is ready to use right out of the pail. Mix Tuff II for 30 seconds with a low speed mixer before use. Product may be thinned by adding 4 - 6 ounces of water per 5 gallon pail of Tuff II while mixing. Tuff II is available in grey and white plus a selection of standard colors and custom colors.

Reinforcing Mesh:

1. Standard Self-Sticking Reinforcing Mesh

A polymer-coated, alkali-resistant woven fiberglass mesh with a weight of ~ 4 ounces per yard. One face of the mesh is pretreated with an adhesive for attachment to the foam block substrate.

2. Self-Sticking Detail Mesh

A polymer-coated, alkali-resistant woven fiberglass mesh with a weight of ~ 4 ounces per yard. One face of the mesh is pretreated with an adhesive for attachment to the foam block substrate.

Layer 3 - Finish Coat

The Tuff II Finish Coat is the outer coating that gives color and texture to the system. The finish coat also provides protection against weather, mildew and pollution. Tuff II is 100% acrylic based, giving it superior durability.

Applicable Standards:

Total Wall has had extensive testing performed on each individual system component and on the assembled system by certified and code approved independent testing laboratories:

- International Code Council (ICC)
- International Building Code (IBC)
- National Evaluation Services (NES)

- Uniform Building Code
- National Building Code
- Standard Building Code
- International Residential Code

Professional Affiliations:

Total Wall maintains memberships and involvement with these organizations:

- Exterior Design Institute (EDI)
- American Society for Testing and Materials (ASTM)
- Federation of Societies for Coatings and Technology (FSCT)
- Association of the Wall and Ceiling Industries (AWCI)
- Northwest Walls and Ceilings Bureau (NWCB)

4. TECHNICAL DATA

Polymer modified Portland cement with microfibers or fully synthetic 100% acrylic with patented dirt resistance and mildew resistance
Flame Spread < 5 ASTM E84
Weight* ~ 1.0 - 1.3 lb
*lamina only per ft²

5. INSTALLATION

A. Substrate Preparation and Inspection

- ✓ The ICF surface must be clean and in sound condition. Any deteriorated, damaged or pocked areas must be repaired before proceeding.
- ✓ The wall must be uniform. Planar irregularities greater than 1/4" in 10' must be addressed prior to installation.
- ✓ Window corners, door corners and other natural stress points should be inspected for splits in the foam. Any splits or breaks should be repaired with low expanding approved foam such as EnerFoam, or equivalent. These areas will receive a 9" by 12" butterfly of detail mesh embedded in Base Coat and placed at a 45° angle to the corner.
- ✓ Expansion joints should be placed at all through wall joints and at intersections with dissimilar substrate materials.

- ✓ Any accessories may be attached with either grip-rite plastic nails or galvanized nails.

B. Minimum Tools and Equipment

- ✓ Drill mixer 1/2" and jiffy mix-blade
- ✓ Drill and appropriate bits and tips
- ✓ Razor knife
- ✓ Tape measure
- ✓ Level
- ✓ Hammer
- ✓ Bucket brush
- ✓ Chalk line
- ✓ Caulk gun
- ✓ Finishing tool
- ✓ Stainless steel trowel
- ✓ Margin trowel
- ✓ Appropriate floats
- ✓ Fine-toothed saw for cutting accessories

C. Applying Base Coat and Mesh

- Using either Self-Stick or Standard Detail mesh, embed 9"x12" sections of detail mesh in base coat at a 45° angle at the corners of doors and windows and other high stress points. The Self-Stick mesh is applied directly to the ICF surface before the Tuff II is applied. Press the mesh onto the surface using a trowel or other suitable tool. Avoid sags or bulges. For larger area overlaps, such as at corners, apply Tuff II to the first layer before applying the second layer of mesh.
- Using a steel trowel, apply base coat mix to the entire ICF surface in a 1/8" skim coat. The fabric pattern and ICF joints must no longer be visible. The reinforcing mesh and Tuff II must cover the entire surface and overlap the flanges of any accessories. To achieve the proper thickness, this may require two passes of Tuff II.
- Allow the Tuff II base coat to cure for a minimum of 18 hours while protecting from freezing and precipitation.
- Remove any trowel marks by rubbing a pumice stone over the surface.

e) An optional layer of Total Wall primer may be applied to the base coat to assure finish coat color consistency. It is highly recommended to apply a primer before applying any vibrant finish color.

D. Applying the Finish

a) Apply the Tuff II Finish of choice directly out of the bucket onto the cured base coat using a stainless steel trowel.

b) Textures may be smooth, brush, freestyle, knock down or spatter. Tuff II may also be spray applied with a hopper gun to achieve a greater variety of appearances.

c) Allow the finish to cure by protecting from freezing and precipitation for 24 hours.

E. Installing Sealant

With the exception of esthetic joints, all isolation joints must be a minimum width of 1/2" and all expansion joints must be a minimum of 3/4" or 4 times the expected movement, whichever is greater.

A non-absorbing backer rod and approved sealant is required. Optionally, isolation joints or terminations may be sealed with fillet beads of approved sealant.

Joint depth minimums are established by the sealant manufacturer and can be obtained from their literature or by calling Total Wall Technical Services.

All ICF terminations, such as windows and doors penetrations, ground terminations and expansion joints, may be made with PVC or zinc accessories.

Apply a primer when recommended by the sealant manufacturer.

Insert a proper diameter backer rod to allow for its compression into the joint at a uniform depth. The depth is to allow for the desired thickness caulk bead.

The backer rod must be a closed cell polyethylene material or an extruded polyolefin with a non-absorbing skin.

Prepare the sealant according to the manufacturer's instructions. Apply the sealant with pressure gun and properly sized nozzle.

Fill the surface of the prepared joint with a smooth, solid, even bead of sealant. The bead must be free of sags, voids and wrinkles. Tool the joint to eliminate air pockets and force contact with the joint surfaces.

F. Architectural Enhancements

Architectural shapes such as quoins, corners, arches, and cornices can be added after the base coat has cured. Foam shapes can be mounted using Total Wall Blue Mastic Adhesive or EnerFoam and temporary or permanent mechanical attachment as applicable. These shapes are then base coated and finished to match the flat wall application described above. Alternatively, completely finished shapes which match or accent the flat wall system can be mounted to the base coated or finished system. The quoins may be made at the job site, or can be ordered, as well as any architectural enhancement, from Total Wall, Inc. Architectural enhancements are prefabricated and ready to mount to the wall.

G. Precautions

The system must be constructed to prevent water intrusion. Therefore, all details must be properly constructed. These details include: all caulking details, kick outs, flashings, terminations, and utility penetrations.

6. AVAILABILITY

Total Wall materials are manufactured in Wisconsin, and are purchased by Registered Applicators through Total Wall Distributors. Contact your local distributor for a list of Registered Applicators or call Total Wall, Inc. (888-702-9915) customer service for assistance.

7. WARRANTY

Total Wall warrants its system against delamination or material defects when properly installed by a Registered Total Wall Applicator according to current Total Wall and job specifications in force at the time of installation.

No warranty stated herein must be effective until the goods and labor subject to said warranty have been paid for in full. Total Wall makes no other express warranty or warranty of merchantability. Further, Total Wall makes no warranty that the products of its manufacture are fit for any particular purpose.

Defects caused by misuse, improper storage, mishandling or improper application must not be warranted.

Total Wall is not responsible for damage or injury for materials not manufactured by Total Wall, acts of God, structural movement, or defective materials or their application on the warranted structure.