1.01 DESCRIPTION

A. Provide all labor, materials and equipment necessary to install the ENERGEX Water Management with Drainage Wrap system. The System consists of ENERGEX, approved Expanded Polystyrene Insulation Board, reinforcing fabric, ENERGEX base coat, Finish coat, Energex Waterproof Adhesive membrane and accessories as recommended by ENERGEX.

B. Related work specified elsewhere:

1. Light gauge metals section 05400.
2. Sheathing section 06100.
3. Unit Masonry section 04200.
4. Concrete section 03300.
5. Sealants section 07900.

C. Terms and Definitions:

1. ENERGEX Water Management with Drainage Wrap system
Expanded Polystyrene (EPS) Board with an average density of 1.0 pcf, a flame spread rating of less than 25 and a smoke developed index of less than 450, and an R value of 3.85 per inch at 75 degrees F, must conform to ASTM C 578 Class A and be manufactured under a third party inspection program as approved by ENERGEX

2. ENERGEX insulation board must be a minimum of 3/4" in thickness, and is chamfered 1/2" on the bottom edge. The board rests in the PVC starter track to facilitate lateral drainage.

3. Secondary Weather Barrier: The secondary weather barrier over the approved wood substrate consists of a single layer of drainable building wrap in conjunction with a rubberized, self-sticking waterproof membrane Grade A or B for windows, doors, penetrations, outside & inside corners and for the termination of the system at the bottom edge of the wall.

4. Board Attachment: Energex approved/supplied mechanical fasteners are used to fasten the EPS Board to the substrate. See Detail for recommended fastening pattern, minimum one fastener per square foot of EPS insulation board. Before applying the Energex base coat, cover or spot fill each fastener depression with Base coat and let dry before applying base coat over entire surface of EPS board.

5. Reinforcing Fabric Balanced open weave fiberglass mesh, treated for compatibility with other materials of the system shall not be less than 4.3 oz (+/- 10%) per square yard.

2960 Woodbridge Avenue
Edison, New Jersey 08837
Office (888) 343-7462
Fax (718) 932-6710

EIF systems are classified in accordance with their impact resistance per EIMA Standard 101.86. Impact

Standard Impact Resistance	25-49 in-lbs
Medium Impact Resistance	50-89 in-lbs
High Impact Resistance	90-1 50 in-lbs
Ultra High Impact Resistance	Over 150 in-lbs

standards are as listed below:
High Impact Resistant System (Recommended for first floors, high traffic areas, and areas subject to abuse.) High Impact and Ultra High Impact requires incorporation of Energex Enermite 20oz Mesh prior to Energex standard mesh being installed.

This system consists of an additional layer of Enermite (20 oz.) Mesh or Enermite (15 oz.) mesh embedded in Energex Base coat.

The heavier mesh is always installed under the lighter mesh. In no case should the Enermite 20oz or 15oz mesh be used without the regular mesh (4.3 oz) as the final layer.

6 . Base Coat - Provides the weather protection component of ENERGEX Water Management with Drainage Wrap system, by bonding the fiberglass mesh with the EPS Insulation. Any of the following base coats may be used:

a) ENERGEX Enermix Dry Adhesive/Base Coat: Polymer modified base coat that only requires the addition of potable water at a rate of 1 1/2 to 2 gallons per 55 Lb. bag.

b) ENERGEX Enermix Adhesive/Base Coat: Polymer based acrylic admixture that is blended with Type I or Type II Portland Cement in a 1:1 ratio by weight.

c) ENERGEX Enermix Plus Base Coat: Polymer based admixture that is blended with Type I or Type II Portland Cement in a 1:1 ratio by weight. Thick Base Coat is utilized to achieve 1116” thickness in one pass.

7. Finish Coat - ENERGEX Finish functions as the decorative and protective textured weathering surface. ENERGEX Finish is manufactured in a variety of textures, colors and performance categories.

8. Accessories - Accessories such as PVC starter track, weep screed and expansion joints are to be used in conjunction with the ENERGEX Water Management with Drainage Wrap system.

2960 Woodbridge Avenue
Edison, New Jersey 08837
Office (888) 343-7462
Fax (718) 932-6710

1.02 QUALITY ASSURANCE

A. Applicator Requirements

1. Application of the system must be by an applicator who has received instructions in ENERGEX application requirements and is acceptable to a ENERGEX manufacturer as a applicator in good standing.

B. Approvals

1. The system shall be recognized for the intended use by the applicable building codes.

C. Details

1. Conform with the ENERGEX current published suggested details and specific recommendations for the project.

1.03 SUBMITTALS

A. The applicator shall submit evidence with the bid, that he has received instructions in ENERGEX application requirements and is acceptable to the ENERGEX manufacturer. The ENERGEX Water Management with Drainage Wrap system manufacturer will provide documentation of acceptance to the applicator.

B. Samples

1. The applicator shall, before the project commences, provide the owner or the architect, a sample of suitable size of each color and texture as specified for the project for the purpose of obtaining approvals.

2. Each sample shall be prepared using the same tools and techniques as required for the actual application as to provide a benchmark for the installation.

3. An approved sample shall be available and maintained at the job site.

1.04 PRODUCT, DELIVERY, STORAGE AND HANDLING

A. Deliver all material supplied by the manufacturer in original, unopened packages with legible manufacturer's identification and labels intact.

B. Store all product supplied by ENERGEX manufacturer in a cool dry place, out of direct sunlight, protected from weather and other damage. In addition, the materials shall be stored in tightly sealed containers at a temperature of not less than 40 degrees F

2960 Woodbridge Avenue
Edison, New Jersey 08837
Office (888) 343-7462
Fax (718) 932-6710

1.05 JOB CONDITIONS

A. Weather and Environmental Conditions

Application of the ENERGEX Water Management with Drainage Wrap system shall not take place during inclement weather unless appropriate protection is employed to protect all work.

The system shall be protected during and after work ceases to insure full performance of the ENERGEX Water Management with Drainage Wrap system. Each temperature sensitive component shall be protected against freezing temperatures, high humidity, and rain or water splash for a period of at least 48 hours. The job should be tented and a heat source provided, if there is a projected drop in temperature below 40 degrees F during the first 24 hours after application of Base coat or Finish coat.

1.06 COORDINATION AND SCHEDULING

A. The work in this section requires close coordination with related sections and trades.

B. The parapets of all walls must immediately be protected to prevent water infiltration behind the system. The Cap flashing should be installed immediately after the Finish coat has been applied or provisions made for protection from backside water infiltration.

C. ENERGEX approved sealant (where required) shall be installed in a timely manner.

2.01 MANUFACTURERS

All products shall be obtained from ENERGEX, as manufacturer, or its approved supplier or distributor. Any substitutions must be approved in writing by the manufacturer.

2.02 MATERIALS

A. Insulation Board

Expanded Polystyrene (EPS Board) with an average density of 1.0 pcf, a flame spread rating of less than 25, a smoke developed index of less than 450 and an R value of 3.85 per inch at 75 degrees F. It must conform to ASTM C578, Class A and be manufactured under a third party inspection program approved by ENERGEX

B. Weather Resistive Barrier

The secondary weather barrier over the approved wood substrate consists of a single layer of Drainage building wrap, in conjunction with a rubberized, self-sticking waterproof membrane Grade A or B for windows, doors, penetrations, outside & inside corners and for the termination of the system at the bottom edge of the wall.

2960 Woodbridge Avenue
Edison, New Jersey 08837
Office (888) 343-7462
Fax (718) 932-6710

C. Rubberized Waterproof Membrane Perimeter Flashing

An approved rubberized, self adhering, waterproof membrane material provided by ENERGEX, or approved third party manufacturer. Minimum 40 mil thickness of Flexible Waterproof flashing required for all penetrations, windows, doors, protrusions and termination of Energex Water Management with Drainage Wrap system at starter track.

D. Reinforcing Fabric

1. Balanced open weave fiberglass mesh, treated for compatibility with other system components. The fabric shall not be less than 4.3 oz. (+/- 10%) per square yard. EIF systems are classified in accordance with their impact resistance per EIMA 101.86:

Standard Impact Resistance 25-49 in-lbs Regular 4.3 oz. Mesh Medium Impact Resistance 50-89 in-lbs Intermediate 5.3 to 12 oz Mesh High Impact Resistance 90-150 in-lbs Light Armor plus Regular Mesh Ultra High Impact Resistance Over 150 in-lbs Armor Mesh plus Regular Mesh

NOTE: By incorporating optional types, and weights of ENERGEX fiberglass mesh, varying degrees of impact resistance are obtainable.

E. Base Coat - Any of the following may be used:

a) ENERGEX Enermix Dry Adhesive/Base Coat: Polymer modified base coat that only requires the addition of potable water at a rate of 1 1/2 to 2 gallons per bag.

b) ENERGEX Enermix Adhesive/Base Coat: Polymer based acrylic admixture that is blended with Type I or Type II Portland Cement in a 1:1 ratio by weight.

c) ENERGEX Enermix Plus Base Coat: Polymer based admixture that is blended with Type I or Type II Portland Cement in a 1:1 ratio by weight. Thick Base Coat is utilized to achieve 1/16” or more thickness in one pass.

F. Finish

The Finish coat shall be one of ENERGEX’S ready mixed, 100% acrylic polymer based Finishes as manufactured by a ENERGEX manufacturer. Specific colors, finishes and textures shall be indicated in drawings and approved by the architect or the owner.

2960 Woodbridge Avenue
Edison, New Jersey 08837
Office (888) 343-7462
Fax (718) 932-6710

G. Accessories

Components such as PVC Starter Track, Expansion Joint, and special duty mesh, that may be required and used in conjunction with the ENERGEX Water Management with Drainage Wrap system.

H. Water - Shall be clean and potable.

2.03 SYSTEM PROPERTIES

A. The system shall have been tested or qualified by the following test standards:

R-value (resistance to heat flow), ft2 × h × °F (m2 × K/W) at 49°F (9°C)	R-3.85 (0.68)	R-3.85 (0.68)
Full-scale multi-story, UBC 17-6 fire test with additions	Complies with all acceptance criteria	Complies with all acceptance criteria
Wind driven rain, Federal Standard TT-C-555B	No dampness on rear of panel	No dampness on rear of panel
Negative wind load resistance, ASTM E330	150 psf (7182 Pa)	150 psf (7182 Pa)
Impact resistance, ASTM E72	Passes	Passes
Structural performance, ASTM E330	Negative presssure 195 psf (9337 Pa) Positive pressure 175 psf (8379 Pa)	Negative presssure 195 psf (9337 Pa) Positive pressure 175 psf (8379 Pa)
Tensile bond strength, ASTM D897 Concrete masonry	2556.8 psf (122,420 Pa), passed	2556.8 psf (122,420 Pa), passed
Structural clay tile block	3298 psf (157,909 Pa), passed	3298 psf (157,909 Pa), passed
Cement board	260 psf (12,449 Pa), passed	260 psf (12,449 Pa), passed
Plaster	2600 psf (124,489 Pa), passed	2600 psf (124,489 Pa), passed
Foam blocks	2727 psf (130,569 Pa), passed	2727 psf (130,569 Pa), passed
Plywood sheathing	3001 psf (143,688 Pa)	3001 psf (143,688 Pa)
Humidity resistance, Federal Test Method Standard 141, Method 6201	No change	No change
Accelerated weathering, ASTM G23 and ASTM G53	Passed 2000 hours	Passed 2000 hours
Water vapor transmission, ASTM E96	Exceeds requirements	Exceeds requirements
Salt spray/fog resistance, ASTM B117	300 hours, no deleterious effects	300 hours, no deleterious effects
Toxicity, UPITT test	Exceeds requirements	Exceeds requirements
Water penetration, ASTM E331 No water penetration on substrate plane		No water penetration on substrate plane
Impact load, New York State Impact Load Test Complies with requirements		Complies with requirements
Heat value, oxygen bomb specimen, UBC 17-2 (NFPA Std 259) 15,272.46 Btu/lb		15,272.46 Btu/lb
Heat of combustion, ASTM D2015 17,894 BTu/lb		17,894 BTu/lb

2960 Woodbridge Avenue
Edison, New Jersey 08837
Office (888) 343-7462
Fax (718) 932-6710

PART 3 - EXECUTION

3.0 1 INSPECTION

A. Project Inspection - Prior to work of this section, carefully inspect preparatory and installed work of other trades and verify that such work is completed to the point where this installation may properly proceed.

B. Acceptable substrates for application of ENERGEX Water Management with Drainage Wrap system:

1. Exterior plywood, OSB board (type I, exterior), and other substrates (Dens Glass, Exterior Gypsum Sheathing) with prior approval from the manufacturer. The substrate shall have no planar irregularities greater than 114 inch.

Notifications - The General Contractor and the Architect shall be advised of any discrepancies. Work shall not proceed until all unsatisfactory conditions are corrected and the substrate is acceptable, clean and free of any contaminants.

3.02 INSTALLATION

A. Rubberized Flexible Waterproof Membrane Flashing is installed in the following locations, over the approved substrate, prior to windows or doors being installed:

1. Inside corners, outside corners, termination of system, at rim joist, window & door sills, jambs, headers, penetrations and construction openings.
2. Peel and stick the rubberized membrane to the substrate in a neat, flat and workmanlike manner. Non-corrosive staples can be incorporated for ease of application. A 6”, 9” or 12” inch wide membrane is to be used, depending upon application. Minimum overlap of surfaces is 2”.
3. Rubberized flexible membrane should overlap any adjacent surface or substrate a minimum of 2”. All window and door jambs will receive a continuous wrap of the inside framing lumber, spliced and overlapped in the corners, where necessary.
4. Rubberized flexible membrane installed prior to the starter weep screed on at the bottom of the wood sheathing. Starter weep screed will be fastened onto, and the nails or screws will be through the membrane.

B. The secondary weather barrier over the approved wood substrate consists of a single layer of drainable building wrap, in conjunction with a rubberized, self-sticking waterproof membrane Grade A or B for windows, doors, penetrations, outside & inside corners and for the termination of the system at the bottom edge of the wall.

C. PVC Starter Track Weep Screed is nailed, or screwed onto, and through the bottom starter piece of the rubberized waterproof membrane. The Starter weep screed provides a straight, self draining track to protect the bottom edge of the EPS foam

2960 Woodbridge Avenue
Edison, New Jersey 08837
Office (888) 343-7462
Fax (718) 932-6710

D. Insulation Board is installed first at all doors, windows and protrusions. Butt all joints tightly to ensure a flat, flush and level surface. Use straight edge as needed to align EPS. Fill up all gaps and between boards with slivers of EPS or approved

1. Installation details at roof lines, windows, sills, and joints with other materials, refer to standard ENERGEX details in this manual. Window sills, parapets and tops of walls must have a slope of 4/12. For applications which do not meet 4112 requirement. PVC two part expansion joint must be installed on wood frame construction at the floor lines in multi-story construction.

2. Any irregularity of the insulation surfaces greater than 1/16 inch must be sanded flush, and the entire EPS surface will be rasped to ensure a flat, prepared surface.

E. Base Coat and Reinforcing Fabric

1. Apply ENERGEX Enermix Adhesive/Base coat or Enermix Dry Base coat - Use a stainless steel trowel to apply Base coat to the entire surface of the insulation board.

2. Install Reinforcing Fabric
Immediately place the reinforcing fabric against the wet Base coat and by troweling from the center to the edges, embed the fabric into the Base coat.

The reinforcing fabric must be continuous, free of wrinkles and be fully embedded in the Base coat. The base coat shall show no sign of mesh color after drying. All corners and overlaps shall be at least 3 inches.

Door, window and other openings, require additional “butterfly” strips of 8” x 12” regular reinforcing mesh embedded within the Base coat at a 45 degree angle at each corner during base coat application. See Detail.

Allow at least 24 hours drying time. Additional time may be required at low temperatures or with high humidity conditions.

Where shown on plans, the ENERGEX High Impact System is to be installed as follows: ENERGEX Enermite 15 or 20 oz Mesh is first embedded into the ENERGEX Base coat. The Base coat is allowed to dry for 24 hours. Then another coat of ENERGEX Base coat is applied over the first application to embed the regular reinforcing mesh as in D.2.a and D.2.b.

2960 Woodbridge Avenue
Edison, New Jersey 08837
Office (888) 343-7462
Fax (718) 932-6710

3.03 Finish Coat

1. Thoroughly mix the ENERGEX factory finish coat. Use a high speed mixer and stir until a uniform consistency is obtained. If necessary, add small amounts of clean, potable water (not to exceed 10 oz. per pail) to adjust workability.

2. Use Finish color and texture as it conforms to previously submitted and approved sample.

3. Use clean stainless steel trowels to apply Finish coat directly over the Base coat. (Some Finishes may be spray applied--please consult your ENERGEX manufacturer).

4. Special texture and grain effects are attained by troweling. Consistent troweling techniques by all mechanics on the job must be used to achieve uniformity of appearance.

5. Protect all work from inclement weather as per our printed guidelines for a period of 24 hours.

3.4 JOB SITE CLEAN-UP

A. All excess ENERGEX wall system materials shall be removed from the job site by the ENERGEX Applicator.

B. All surrounding areas where the ENERGEX system has been applied shall be left free of debris and foreign substances.

END OF SECTION

2960 Woodbridge Avenue
Edison, New Jersey 08837
Office (888) 343-7462
Fax (718) 932-6710