

NEWBRICK® CI

Lightweight, Insulated Brick Veneer
Applied Over Continuous Insulation

NEWBRICK®

NB300

NewBrick CI Specifications

**MANUFACTURER'S SPECIFICATION
CSI MASTERFORMAT SECTION 04 80 10
NEWBRICK CI
LIGHTWEIGHT INSULATED BRICK VENEER**

PART I GENERAL**1.01 SUMMARY**

- A. This document is to be used in preparing specifications for projects utilizing NewBrick CI lightweight insulated brick veneer. For complete product description and usage refer to:
1. NewBrick CI Data Sheet, NB100
 2. NewBrick CI Application Instructions, NB200
 3. NewBrick CI Installation Details, NB400
- B. Related Sections
1. Unit Masonry – Section 04 20 00
 2. Concrete – Sections 03 00 00
 3. Cold-Formed Metal Framing – Section 05 40 00
 4. Wood Framing – Section 06 11 00
 5. Joint Protection – Section 07 90 00
 6. Flashing – Section 07 60 00
 7. Water-Resistive Barriers – Section 07 25 00
 8. Vapor Retarders – 07 26 13
 9. Air Barriers – 07 27 26

1.02 DEFINITIONS

- A. Base Coat: Material used to encapsulate one or more layers of reinforcing mesh fully embedded that is applied to the outside surface of the EPS.
- B. Building Expansion Joint: A joint through the entire building structure designed to accommodate structural movement.
- C. Contractor: The contractor that installs NewBrick CI.
- D. Expansion Joint: A discontinuity in the NewBrick CI.
- E. Insulation Board: Expanded polystyrene (EPS) insulation board, which is affixed to the substrate and creates a layer of continuous insulation.
- F. NewBrick: A lightweight insulated brick.
- G. Mortar: Polymer modified mortar meeting ASTM C 270 Type N or S.
- H. Panel Erector: The contractor who installs the panelized NewBrick CI.
- I. Panel Fabricator: The contractor who fabricates the panelized NewBrick CI.
- J. Reinforcing Mesh: Glass fiber mesh used to reinforce the base coat.
- K. Sheathing: A substrate in sheet form.
- L. Substrate: The material to which NewBrick CI is applied.
- M. Substrate System: The wall assembly to which the NewBrick CI is applied.

1.03 SYSTEM DESCRIPTION

- A. General: NewBrick CI is an exterior building cladding consisting of an air/water-resistive barrier, an adhesive, expanded polystyrene insulation board, base coat, reinforcing mesh and NewBrick veneer.
- B. Methods of Installation:
1. Field Applied: NewBrick CI - applied to the substrate system in place.
 2. Panelized: NewBrick CI - shop-applied to the prefabricated wall panels.
- C. Design Requirements:
1. Acceptable substrates for NewBrick CI include:
 - a. Exterior sheathing having a water-resistant core with fiberglass mat facers meeting ASTM C 1177.
 - b. Exterior fiber reinforced cement or calcium silicate boards meeting ASTM C 1325.
 - c. APA Exterior or Exposure 1 Rated Plywood, Grade C-D or better, nominal 7/16 in (11.1 mm) minimum, installed with the C face out.
 - d. APA Exterior or Exposure 1 Fire Retardant Treated (FRT) Plywood, Grade C-D or better, nominal 7/16 in (11.1 mm) minimum, installed with the C face out.
 - e. APA Exposure 1 Rated Oriented Strand Board (OSB) nominal 7/16 in (11.1 mm) minimum.
 - f. Unglazed brick, cement plaster, concrete or masonry.
 - g. Pre-engineered metal building panels covered with an acceptable substrate as noted in Section 1.04.C.1.a through e.

2. Deflection of the substrate systems shall not exceed 1/240 times the span.
 3. The substrate shall be flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.
 4. NewBrick units are designed for use on exterior vertical wall surfaces.
 5. Expansion Joints:
 - a. Design and location of expansion joints in NewBrick CI is the responsibility of the project designer and shall be noted on the project drawings. As a minimum, expansion joints in the NewBrick CI shall be placed at the following locations:
 - 1) Where expansion joints occur in the substrate system
 - 2) Where building expansion joints occur
 - 3) At floor lines in wood frame construction
 - 4) At floor lines of non-wood framed buildings where significant movement is expected
 - 5) Where NewBrick CI abuts dissimilar materials
 - 6) Where the substrate type changes
 - 7) Where prefabricated panels abut one another
 - 8) Where significant structural movement occurs, such as changes in roof line, building shape or structural system
 - 9) Expansion joints in the CI System at intervals not exceeding 75 ft. (23m)
 - 10) Expansion joints in the NewBrick veneer shall be placed at intervals not exceeding 30 ft (9.1 m).
 6. Terminations:
 - a. NewBrick CI shall be held back from adjoining materials around openings and penetrations such as windows, doors, and mechanical equipment a minimum of 3/4 in (19 mm) for sealant application. See NewBrick CI Installation Details, NB400.
 - b. Terminate NewBrick CI a minimum of 6 in (152 mm) above softscape and 2 in (51 mm) above hardscape.
 - c. Sealants
 - 1) Shall meet ASTM C 920 specification and be compatible with NewBrick CI materials
 - 2) The sealant backer rod shall be closed cell.
 7. Flashing: Shall be provided at all roof-wall intersections, windows, doors, chimneys, decks, balconies and other areas as necessary to prevent water from entering behind NewBrick CI.
 8. Site coated shapes, bands and starter boards: Shall be coated on site utilizing the same materials (insulation, base coat, reinforcing mesh, and finish) as specified for the project.
 9. Shop coated shapes, bands and starter boards: Shall be supplied by Acrocore® or other supplier approved by the NewBrick CI manufacturer.
 10. The maximum service temperature of NewBrick CI is 165 °F (74°C). Uses near hot surfaces such as combustion exhaust vents should be evaluated by the designer and provide adequate separation to ensure the product's maximum service temperature is not exceeded.
- D. Performance Requirements:
1. NewBrick CI shall have been tested as follows:
 - a. NewBrick AWB Air/Water-Resistive Barrier Coating: Shall meet ASTM E 2570.

TEST	TEST METHOD	CRITERIA	RESULTS
Tensile Bond	ASTM C 297/E 2134	Minimum 15 psi (104 kPa)	Substrate: Minimum 19 psi (131 kPa) Flashing: Minimum 431 psi (2970 kPa)
Freeze-thaw	ASTM E 2485 Method B	No deleterious effects after 10 cycles	Passed
Water Resistance	ASTM D 2247	No deleterious effects after 14 days exposure	Passed
Water Vapor Transmission	ASTM E 96 Proc. B	Vapor Permeable	Vapor Permeable
Air Leakage	ASTM E 283	0.04 cfm/sq ft @ 1.57 psf (0.2 l/s/sq m @ 75Pa)	0.002 cfm/ft ² (0.01 l/sec/m ²)
Air Permeance	ASTM E 2178	0.004 cfm/sq ft @ 1.57 psf (0.02 l/s/sq m @ 75Pa)	1.2x10 ⁻⁴ cfm/ft ² @ 1.6 psf (0.0006 l/s/m ² @ 75 Pa)
Air Barrier Assembly	ASTM E 2357	0.04 cfm/sq ft @ 1.57 psf (0.2 l/s/sq m @ 75Pa)	<0.001 cfm/ft ² @ 6.24 psf (0.05 l/sec m ² @300 Pa)
Nail Sealability	ASTM D 1970	No water leakage	Passed
Structural Performance	ASTM E 1233 Proc. A	No cracking @ L/240 deflection	Passed
Racking	ASTM E 72	No cracking @ 1/8 in (3 mm) net deflection	Passed

Restrained Environmental	ICC-ES Procedure	5 cycles; No cracking	Passed
Water Penetration	ASTM E 331	No water penetration after 15 minutes at 2.86 psf (137 Pa)	Passed
Weathering: UV Exposure Accelerated Aging	ASTM D 2898 Method B ICC-ES Procedure	210 hours exposure 25 cycles of wetting and drying	Passed Passed
Hydrostatic Pressure Test	AATCC 127	21.6 in (549 mm) water column for 5 hours	Passed
Surface Burning Characteristics	ASTM E 84	Flame Spread < 25 Smoke Developed < 450	Passed

b. Durability – Shall comply with ASTM E 2568

TEST	TEST METHOD	CRITERIA	RESULTS
Abrasion Resistance	ASTM D 968	No deleterious effects after 528 quarts (500 liters)	Passed - 1056 quarts - (1000 liters)
Accelerated Weathering	ASTM G 155 Cycle 1	No deleterious effects after 2000 hours	Passed - 5000 hours
	ASTM G 154 Cycle 1 (QUV)		Passed - 5000 hours
Freeze-Thaw	ASTM E 2485 Method A	No deleterious effects after 60 cycles	Passed - 90 cycles
	ASTM C 67	No deleterious effects after 60 cycles	Passed
	ASTM E 2485 Method B	No deleterious effects after 10 cycles	Passed
Mildew Resistance	ASTM D 3273	No growth during 28 day exposure period	No growth
Water Resistance	ASTM D 2247	No deleterious effects after 14 days exposure	Passed - 42 days exposure
Taber Abrasion	ASTM D 4060	N/A	Passed - 1000 cycles
Salt Spray Resistance	ASTM B 117	No deleterious effects after 300 hours exposure	Passed
Water Penetration	ASTM E 331	No water penetration after 2 hours at 6.24 psf (299 Pa)	Passed
Water Vapor Transmission	ASTM E 96 Procedure B	Vapor permeable	EPS 5 perm-inch Base Coat 40 Perms Finish 40 Perms
Drainage Efficiency	ASTM E 2273	Minimum Drainage Efficiency of 90%	Passed
NewBrick Reinforcing Mesh Tensile Strength	ASTM D 5035	N/A	150 lbs/in (27 kg/cm)
NewBrick Reinforcing Mesh Alkali Resistance	ASTM E 2098	Min 120 pli (21dN/cm)	Passed

c. Structural – Shall comply with ASTM E 2568

TEST	TEST METHOD	CRITERIA	RESULTS
Tensile Bond	ASTM C 297/E 2134	Minimum 15 psi (104 kPa) – substrate or insulation failure	Minimum 31 psi (213.6 kPa)
Transverse Wind Load	ASTM E 330	Withstand positive and negative wind loads as specified by the building code	Minimum 90 psf (4.3 kPa) 16 in o-c framing, 1/2 in sheathing screw attached at 8 in (203 mm) o-c Contact NewBrick if higher loads are required for the project

d. Fire performance – Shall meet ASTM E2568

TEST	TEST METHOD	CRITERIA	RESULTS
Fire Resistance	ASTM E 119	No reduction to the fire resistance of a rated wall assembly	¹ Passed 1 hr: non-load bearing
			¹ Passed 2-hr: load bearing over wood framing
Ignitability	NFPA 268	No ignition at 12.5 kw/m ² at 20 minutes	² Passed
Fire Propagation	NFPA 285	1. Resist flame propagation over the exterior surface 2. Resist vertical spread of flame within combustible core/component of panel from one story to the next 3. Resist vertical spread of flame over the interior surface from one story to the next 4. Resist lateral spread of flame from the compartment of fire origin to adjacent spaces	² Passed
Surface Burning Characteristics	ASTM E 84	Flame Spread ≤ 25 Smoke Developed ≤ 450	Passed
1. CI insulation thickness limited to 2 1/4 in (57 mm) 2. CI insulation thickness limited to 4 in (101.6 mm)			

e. Insulation Board Physical Properties- Shall meet ASTM E 2430

TEST	TEST METHOD	CRITERIA	RESULTS
Density	ASTM C 303, D 1622	0.95-1.25 lb/ft ³ (15.2-20.0 kg/m ³)	Passed
Thermal Resistance	ASTM C 177, C 518	4.0 @ 40 °F (4.4 °C)	Passed
		3.6 @ 75 °F (23.9 °C)	Passed
Water Absorption	ASTM C 272	2.5 % max. by volume	Passed
Oxygen Index	ASTM D 2863	24% min. by volume	Passed
Compressive Strength	ASTM D 1621 Proc. A	10 psi (69 kPa) min.	Passed
Flexural Strength	ASTM C 203	25 psi (172 kPa) min.	Passed
Flame Spread Smoke Developed	ASTM E 84	25 max.	Passed
	ASTM E 84	450 max.	Passed

1.04 SUBMITTALS

- A. Product Data: The contractor shall submit to the owner/architect the manufacturer’s product data sheets describing products, which will be used on this project.
- B. Shop Drawings for Panelized Construction: The panel fabricator shall prepare and submit to the owner/architect complete drawings showing: wall layout, connections, details, expansion joints, and installation sequence.
- C. Samples: The contractor shall submit to the owner/architect two (2) samples of NewBrick CI for each texture, color and effect to be used on the project. Samples shall be of sufficient size to accurately represent the product(s) being used on the project.

1.05 QUALITY ASSURANCE

- A. Qualifications
 - 1. All NewBrick CI materials shall be purchased from an authorized NewBrick distributor.
 - 2. Contractor: Shall be knowledgeable in the proper installation of NewBrick CI.
 - 3. Insulation Board Manufacturer: Shall be capable of producing insulation boards in accordance with the current Specification for Insulation Board, ASTM E2430.
 - 4. Panel Fabricator: Shall be a contractor experienced and competent in the fabrication of architectural wall panels
 - 5. Panel Erector: Shall be experienced and competent in the installation of architectural wall panel systems
 - 6. Factory coated shapes, bands and starter boards: Shall be supplied by Acrocore or other manufacturer approved by NewBrick.

- B. Regulatory Requirements:
 - 1. The insulation board shall be separated from the interior of the building by a minimum 15-minute thermal barrier.
 - 2. The use and maximum thickness of insulation shall be in accordance with NewBrick recommendations and comply with applicable building code(s).
- C. Mock-Up
 - 1. The contractor shall provide the owner/architect with a mock-up for approval.
 - 2. The mock-up shall be of suitable size as required to accurately represent the products being installed, as well as each color and texture to be utilized on the project.
 - 3. The approved mock-up shall be available and maintained at the jobsite.
 - 4. For panelized construction, the mock-up shall be available and maintained at the panel fabrication location.
 - 5. The approved mock up becomes the standard for approval of the finished installation.

1.06 DELIVERY, STORAGE AND HANDLING

- A. All NewBrick materials shall be delivered to the job site in the original, unopened packages with labels intact.
- B. Upon arrival, materials shall be inspected for physical damage, freezing or overheating. Questionable materials shall not be used.
 - 1. Materials shall be stored in a cool, dry location, out of direct sunlight, protected from weather and other sources of damage.
 - 2. Materials shall be stored at temperature between 40 °F (4 °C) and 100 °F (38 °C).
- C. Protect all products from inclement weather and direct sunlight.

1.07 PROJECT CONDITIONS

- A. Environmental Requirements
 - 1. Application of wet materials shall not take place during inclement weather unless appropriate protection is provided. Protect materials from inclement weather until they are completely dry.
 - 2. Install materials out of direct sunlight. Air and wall surface temperatures shall be from 40 °F (4 °C) minimum to 100 °F (38 °C) maximum.
 - 3. These temperatures shall be maintained with adequate air ventilation and circulation for a minimum of 24 hours thereafter, or until the products are completely dry. Refer to published product data sheets for more specific information.
- B. Existing Conditions: The contractor shall have access to electric power, clean water and a clean work area at the location where the NewBrick materials are to be applied.

1.08 SEQUENCING AND SCHEDULING

- A. Installation of NewBrick CI shall be coordinated with other construction trades.

1.9 WARRANTY

- A. A written moisture drainage and limited materials warranty against defective material is available upon written request. Full details are available from NewBrick.
- B. The applicator shall warrant workmanship separately.

1.10 DESIGN RESPONSIBILITY

- A. It is the responsibility of both the specifier and the purchaser to determine if a product is suitable for its intended use. The designer selected by the purchaser shall be responsible for all decisions pertaining to design, detail, structural capability, attachment details, shop drawings and the like. NewBrick has prepared guidelines in the form of specifications, installation details, and product data sheets to facilitate the design process only. Newbrick is not liable for any errors or omissions in design, detail, structural capability, attachment details, shop drawings, or the like, whether based upon the information prepared by Newbrick or otherwise, or for any changes which purchasers, specifiers, designers, or their appointed representatives may make to NewBrick's published comments.

1.11 MAINTENANCE

- A. Maintenance and repair shall follow the procedures noted in NewBrick CI Application Instructions, NB200.
- B. All NewBrick products are designed to require minimal maintenance. However, as with all building products, depending on location, some cleaning may be required. See NewBrick CI Application Instructions NB200.
- C. Mortar, sealants and flashings shall be inspected on a regular basis and repairs made as necessary to maintain a weathertight exterior enclosure.

PART II PRODUCTS**2.01 MANUFACTURER**

- A. All components of NewBrick CI shall be supplied or obtained from an authorized NewBrick distributor. Substitutions or additions of materials other than specified will void the warranty.

2.02 MATERIALS

- A. Mortar: shall be polymer modified, cement-based mortar meeting ASTM C 270 Type N or S.
B. Water: shall be clear and potable.

2.03 COMPONENTS

- A. Air/Water-Resistive Barrier Components:
1. NewBrick AWB: A liquid applied, flexible, polymer-based water-resistive and air barrier coating.
 2. NewBrick AWB Joint Filler: A flexible, polymer-based material used for bridging sheathing joints.
 3. NewBrick AWB Joint Reinforcement: A self-adhesive, open weave fiberglass mesh tape used at sheathing joints.
 4. NewBrick Flashing Membrane: A two component waterproof transition membrane used to bridge across building joints and material changes, consisting of NewBrick Flashing Liquid and NewBrick Flashing Fabric
- B. NewBrick Base and Adhesive: Polymer based cement adhesive used to adhere the insulation board to the air/water-resistive barrier and adhere the NewBrick to the basecoat.
- C. Insulation Board: Expanded Polystyrene meeting ASTM E 2430.
1. Thickness of insulation board shall be minimum 1 in (25 mm).
 2. The insulation board shall be manufactured by a board supplier listed by NewBrick.
- D. NewBrick Shapes, Bands and Starter Boards: Shall be supplied by Acrocore® or other manufacturer approved by NewBrick.
- E. NewBrick Reinforcing Mesh: A balanced, open weave, glass fiber fabric treated for compatibility with other system materials.
- F. NewBrick: A lightweight, insulated brick product.

PART III EXECUTION**3.01 EXAMINATION**

- A. Prior to installation of NewBrick CI, the contractor shall verify that the substrate:
1. Is of a type listed in Section 1.04.C.1.
 2. Is flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.
 3. Is clean, sound, dry, connections are tight; has no surface voids, projections, or other conditions that may interfere with NewBrick CI installation or performance.
- B. Prior to installation of NewBrick CI, the architect or general contractor shall insure that all needed flashings and other waterproofing details have been completed, as required prior to the NewBrick CI application. Additionally, the contractor shall ensure that:
1. Metal roof flashing has been installed in accordance with the manufacturer's requirements, Asphalt Roofing Manufacturers Association (ARMA) Standards and NewBrick Installation Details, NB400, or as otherwise necessary to maintain a watertight enclosure.
 2. Openings are flashed in accordance with NewBrick CI Installation Details, NB400, or as otherwise necessary to prevent water penetration.
 3. Chimneys, balconies and decks have been properly flashed.
 4. Windows, doors, etc. are installed and flashed per manufacturer's requirements and NewBrick CI Installation Details, NB400.
- C. The contractor shall notify the general contractor, and/or architect, and/or owner of all discrepancies.

3.02 PREPARATION

- A. All materials shall be protected by permanent or temporary means from inclement weather and other sources of damage prior to, during, and following application until completely dry.
- B. Protect adjoining work and property.
- C. The substrate shall be prepared as to be free of foreign materials, such as oil, dust, dirt, form-release agents, efflorescence, paint, wax, water repellants, moisture, frost, and any other condition that may inhibit adhesion.

3.03 INSTALLATION

A. Install NewBrick CI in accordance with contract drawings and NewBrick CI Application Instructions, NB200.

3.04 FIELD QUALITY CONTROL

A. The contractor shall be responsible for the proper handling, storage and application of the NewBrick CI materials.
B. NewBrick assumes no responsibility for on-site inspections or application of its products.

3.05 CLEANING

A. All excess NewBrick CI materials shall be removed from the job site by the contractor in accordance with contract provisions and as required by applicable law.
B. All surrounding areas, where NewBrick CI has been applied, shall be left free of debris and foreign substances resulting from the contractor's work.

3.06 PROTECTION

A. NewBrick CI materials shall be protected from inclement weather and other sources of damage until dry and permanent protection in the form of flashings, sealants, etc. are installed.

DISCLAIMER

Information contained in this specification conforms to standard detail and product recommendations for the installation of the NewBrick CI materials as of the date of publication of this document and is presented in good faith. NewBrick assumes no liability, expressed or implied, as to the architecture, engineering or workmanship of any project. To ensure that you are using the latest, most complete information, visit our website at www.newbrick.com or contact NewBrick at:

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