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Purpose: This bulletin establishes acceptance criteria for stay-in-place, foam plastic insulating concrete form (ICF) systems as alternative materials to the 2008 NYC Construction Codes.

Related Code Section(s):

BC	803.2.2	BC	1805.5
BC	1404.11	BC	1901.2
BC	1604	BC	2603.4
BC	1704	BC	2603.5.6

Subject(s): Concrete, Concrete form, Stay-in-place, Insulating Concrete Form; Thermal Insulation, Foam Plastic Insulation, Insulating Concrete Form

Description: Insulating Concrete Form (ICF) is an insulating stay-in-place concrete forming system, used for constructing cast-in-place, solid concrete walls.

Evaluation Scope: 2008 NYC Construction Codes

Evaluation Criteria: Pursuant to AC 28-113, the Office of Technical Certification and Research recognizes flat wall ICF systems tested and evaluated in accordance with ICC-ES AC353 "*Acceptance Criteria for Stay-in-Place, Foam Plastic Insulating Concrete Form (ICF) Systems for Solid Concrete Walls*"[1]. Acceptable flat wall ICF systems shall have an ICC-ES Evaluation Service Report ("ESR") issued in accordance with AC353 and shall comply with the conditions of this bulletin.

Exception:
ICF systems with ICC-ES Evaluation Service Reports (ESR's) issued in accordance with both AC12 "*Foam Plastic Insulation*"[2] and AC15 "*Concrete Floor, Roof and Wall Systems and Concrete Masonry Wall Systems*"[3] may be accepted in lieu of an evaluation performed in accordance with AC353. The qualification testing performed with AC12 and AC15 shall include qualification testing for plastic and steel cross-ties.

Uses: Only acceptable flat wall ICF systems shall be used to construct walls and foundation systems in buildings. Waffle-grid ICF systems, including those that are evaluated and tested in accordance with AC353 shall not be permitted as per section BC 1805.5.

Conditions of Acceptance:

Flat wall ICF systems shall be designed and installed in accordance with the 2008 NYC Construction Codes and other applicable provisions including but not limited to the following:

A. Design

1. Evaluation to ICC-ES AC353 (or AC12 and AC15) does not include the structural adequacy of flat wall ICF systems. The structural adequacy of a flat wall ICF system remains subject to the 2008 NYC Construction Codes and shall be certified by a registered design professional for compliance. Design of flat wall ICF systems shall be in accordance with the following:

    a. Flat wall ICF systems installed as wall systems shall be designed in accordance with the requirements of sections BC 1604 and 1901.2, and

    b. Flat wall ICF systems installed as footings and foundations shall be designed in accordance with section BC 1805.5.

2. The manufacturer's recommended practice shall be followed for size, span, and fastenings. The registered design professional who specifies the use of stay-in-place forms shall consider in the structural analysis, the construction loads (dead and live) on the form, the structure's stability during construction, and the form's performance (thermo conductivity and fire resistance) in the finished structure.

3. Flat wall ICF systems shall be separated from the interior of building by an approved thermal barrier as per section BC 2603.4.

4. Interior finishing for ICF systems shall comply with section BC 803.

5. Exterior Insulation Finishing System (EIFS) used for covering exterior wall ICF systems shall be in accordance with section BC 1404.11.

B. Installation Requirements

1. Installation requirements shall be in accordance with the manufacturer's instructions, the ICC-ES ESR issued for the installed product, and the conditions of this bulletin.

2. Pursuant to section BC 1704.13, installation of ICF systems shall be subject to special inspection requirements of Chapter 17 of the Building Code and 1 RCNY section 101-06. Special inspection for concrete operations shall be in accordance with 1 RCNY section 101-06, Appendix A. Special Inspectors of ICF systems shall:

    a. Maintain the same qualification requirements for the "Exterior Insulation Finish System (EIFS)" category as defined in 1 RCNY section 101-06, Appendix A.

    b. Have duties and responsibilities in accordance with, but not limited to, the ICC-ES ESR issued for the installed product, and

    c. Complete the statement of special inspection by referencing this Bulletin under the Special Inspection Item for "Alternative Materials" in section 3.0 of the TR1 form.

3. Flat wall ICF systems shall be labeled as per section BC 2603.5.6. All shipments and deliveries of materials shall be accompanied by a certificate or label certifying that the materials shipped or delivered are equivalent to those tested and approved.

4. Forms shall be substantial and sufficiently tight to prevent leakage of mortar.

Referenced Standards:

1. ICC-ES AC353 "*Acceptance Criteria for Stay-in-Place, Foam Plastic Insulating Concrete Form (ICF) Systems for Solid Concrete Walls*", dated November 2007 (http://www.icc-es.org/)
2. ICC-ES AC12 "*Foam Plastic Insulation*", dated July 2009 (http://www.icc-es.org/)
3. ICC-ES AC15 "*Concrete Floor, Roof and Wall Systems and Concrete Masonry Wall Systems*", dated July 2008 (http://www.icc-es.org/)