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February 01, 2013.

To: ALL CANADIAN NUDURA DISTRIBUTORS, INSTALLERS, ARCHITECTS, ENGINEERS,
BUILDING OFFICIALS AND BUILDING & DESIGN PROFESSIONALS

Re: **NUDURA CORPORATION BECOMES FIRST ICF MANUFACTURER TO
BE CERTIFIED TO CANADA'S NATIONAL ICF MANUFACTURING
STANDARD – CAN/ULC S717.1 “STANDARD FOR FLAT WALL
INSULATING CONCRETE FORM UNITS”**

NUDURA Technical Services is proud to announce that effect January 18, 2013, NUDURA Corporation has become the first Insulated Concrete Form Manufacturer in either Canadian or American Industry to achieve formal certification compliance with Canada's National “Standard for Manufacture of Insulating Concrete Form Units” - CAN/ULC S-717.1.

This achievement has been almost 8 years in the making, starting with the initiation of the North American ICF Industry's collaborative work in the development of the world's first national manufacturing standard for Insulating Concrete Forms in 2005 (ASTM E2634) which was first adopted for use in the USA in 2008 and was officially adopted into the USA's national code for housing construction (International Residential Code (IRC)) in March of 2012. This same technical group (of which NUDURA Corporation has been participant in since 2006) was responsible for the creation of the Canadian Insulating Concrete Form Standard Task Group (CISTG) under the guidance of the Ready Mix Concrete Association of Ontario (RMCAO) in 2008. The task group's collective efforts for the next 3 years were concentrated on studying the performance requirements of the E2634 standard as well as the performance and compliance requirements of the CCMC's "Technical Guide for the Evaluation of Modular Expanded Polystyrene Concrete Forms" to assure the final specifications and requirements for CAN/ULC S717.1 would be consistent with all currently applicable Canadian Standards and not in conflict with National Building Code of Canada Sections and References. As part of the Standards creation/review process, editorial input and guidance was also significantly contributed by all of the members of "ULC Standards Committee on Thermal Insulation Materials and Systems for Canada" in Ottawa. This process eventually guided the final language of the Standard to ULC Standards requirements, which led to formal vote and adoption by the ULC Standards Committee on November 16, 2011 and formal approval by the Standards Council of Canada in January 2012. (**Attachment 1**).

Canada's formal adoption of this Standard was the next logical progression in the Canadian ICF Industry's gradual move away from the long reliance on seeking technical evaluation opinion from the Canadian Construction Material Centre which started with the introduction of ICF Technology into Part 9 of the National Building Code of Canada in 2005.

With CAN/ULC S717.1 now in place, all manufacturer's of Insulating Concrete Forms that meet or exceed S717.1's specific performance requirements, now have the option to seek formal certification to the dictates of the standard under the authority of a Standards Council of Canada Accredited Testing Laboratory that is INDEPENDENT of the CCMC. In fact, once an ICF Manufacturer's CCMC Report expires, CCMC's own policy dictates that should a manufacturer elect to continue listing with the CCMC, the CCMC is required to base evaluation of their product on the recognized standard for that product as opposed to their own criteria. Explanation of this policy is provided at CCMC's website at:

http://www.nrc-cnrc.gc.ca/eng/solutions/advisory/ccmc/evaluation_process.html

Scroll down to the Section entitled "Standardized Product".

NUDURA's Certification to S717.1 and other applicable Canadian and American testing Standards is provided by Intertek Testing Services North America Inc. at their SpecDirect Listing website link at:

https://spec-direct.com/Pages/BP_Search.aspx

For convenience, a copy of NUDURA's SpecDirect listing is provided with this communication (**Attachment 2**)

The ULC Standards Committee has already applied to the NBCC National Codes Committee towards adoption of the S717.1 Standard under Sections 9.15 and 9.20 for inclusion in the 2015 NBC.

Ontario users may have additional questions regarding this change, especially with respect to the once required practice of the Ministry of Municipal Affairs and Housing issuing Ontario Minister Rulings adopting CCMC Reports for their applicability within the Province of Ontario. Refer to **Attachment 3**, which is copy of a formal decision communicated to NUDURA Corporation in August 2012, confirming the Ontario Building's Branch's formal decision that since ICF Technologies are now specified within Sections 9.15.4.5 and 9.20.17, ICF systems able to demonstrate compliance to these parts of the code are no longer deemed to be innovative materials, and therefore specific rulings with respect to ICF CCMC Reports are NOW no longer required.

Should questions arise with respect to reference of these documents, CCMC's policies with respect to recognized standards or if any additional information is required, the reader is encouraged to direct their calls to NUDURA Technical Services at:

1 866-468-6299 or by email at:

info@nudura.com

Ruling of the Minister
Ministry of Municipal Affairs
and Housing
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August 31, 2012

Mr. Keven Rector
Technical Services Manager
NUDURA Corporation
27 Hooper Road, Unit 10
Barrie, Ontario L4N 9S3

Dear Mr. Rector:

Re: Minister's Ruling File 12-36: NUDURA® INTEGRATED BUILDING TECHNOLOGY

This letter confirms that we have reviewed your request for a Minister's Ruling under Section 29 of the *Building Code Act, 1992* (the "Act"), to authorize the use of "NUDURA® Integrated Building Technology" as an insulated concrete form in accordance with Canadian Construction Materials Centre (the "CCMC") Evaluation Report No. 13063-R.

Clause 29.(1)(a) of the *Building Code Act, 1992* ("the Act"), provides that Minister's Rulings may be made for innovative materials, systems or building designs.

The Canadian Construction Materials Centre (CCMC) Evaluation Report 13063-R states that "NUDURA® Integrated Building Technology", when used as an insulated concrete form in accordance with the condition and limitations stated in Section 3 of the Report complies with the National Building Code 2010.

Our review has determined that your product is not considered innovative for the purpose of issuing a Minister's Ruling under Clause 29.(1)(a).

Requirements for flat insulating concrete form foundation walls are included in Sections 9.15. and 9.20. of Division B of Ontario's 2006 Building Code. Applications for a Minister's Ruling that can demonstrate conformance to these acceptable solutions are not considered innovative, and therefore are not eligible for a Ruling under clause 29.(1)(a).

Therefore, your request is outside the jurisdiction and need of a Ruling by the Minister.

If you have any questions or require further information relating to this matter (A2012-36), please contact Sally England-Bizjak, Coordinator, Building Innovation at 416 585-6503.

Yours truly,

A handwritten signature in black ink, appearing to read 'Brenda Lewis', is written over a faint, larger version of the same signature.

Brenda Lewis
Director, Building and Development Branch

fc: Alphonse Caouette, CCMC (613) 952-0268



File: S717.1
ULC G5.2

30 January, 2012

STANDARDS BULLETIN 2012-02

First Edition CAN/ULC-S717.1-12

STANDARD FOR FLAT WALL INSULATING CONCRETE FORM (ICF) UNITS

ULC Standards is pleased to announce the publication of CAN/ULC-S717.1-12, the First Edition of Standard for Flat Wall Insulating Concrete Form (ICF) Units. This Standard has been approved by the ULC Standards Committee on Thermal Insulation Materials and Systems (S700A), and has been published with the date of February 2012.

This Standard specifies the requirements for stay in place, modular expanded polystyrene (EPS) Insulating Concrete Form (ICF) units. Once filled with concrete, the ICF units remain in place as the thermal insulation for the resulting cast-in-place concrete wall of uniform cross-section and thickness. This Standard is restricted to ICFs that enclose uniform monolithic concrete walls.

This Standard provides requirements for products that consist of moulded expanded polystyrene (EPS) insulation panels that are connected by cross ties to form the ICF and for the performance of cross tie flanges as a substrate for the attachment of interior and exterior finishes. This Standard sets performance requirements for the ICF unit in its primary function as a stay-in-place concrete form and for the materials that make up the form unit, along with the test methods to determine compliance with the performance requirements.

The fire performance of the ICF unit material falls within the scopes of documents published by Authorities Having Jurisdiction, such as, but not limited to, Building Codes. The structural performance and the design of the concrete within the ICF unit fall within the scopes of CSA Standards CSA A23.1/A23.2 and CAN/CSA A23.3 or ACI Standard ACI 318.

Structural performance design methods for ICF units are not described in this Standard. Users are referred to engineering calculations or tests which establish that the ICF unit provides sufficient strength to contain concrete during placement and to resist the forces created by the fluid pressure of fresh concrete.

If you require any additional information, please contact John Wade at 613-755-2729, ext. 61426 or by email at: John.Wade@ul.com.

This standard can be ordered for \$193.00 CAN (Hardcopy) from the ULC website (www.ulc.ca) ULC online store.

Yours truly,

ULC STANDARDS

G. Rae Dulmage
Director, ULC Standards



ENGINEERING EVALUATION

REPORT NUMBER: 100862922COQ-002b
ORIGINAL ISSUE DATE: September 28, 2012
REVISION DATE: January 07, 2013

EVALUATION CENTER:

Intertek Testing Services NA Ltd.
1500 Brigantine Drive
Coquitlam, BC V3K 7C1
Canada

RENDERED TO

NUDURA CORPORATION
27 HOOPER ROAD, UNIT 10
BARRIER, ON, L4N 9S3

PRODUCT EVALUATED: Nudura Integrated Building
Technology™ Insulating Concrete Form
(ICF)

EVALUATION PROPERTY: Physical Testing

Engineering Evaluation of Nudura Integrated Building Technology™ Insulating Concrete Form (ICF) for compliance with the applicable requirements of the following criteria: CAN/ULC S717.1 “Standard For Flat Wall Insulating Concrete Form” approved on February 2012.

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

1 Table of Contents

1	Table of Contents	2
2	Introduction.....	3
3	Product and Assembly Description	3
3.1.	Product and/or Assembly Description	3
3.2.	Product and/or Assembly Traceability	3
3.3.	Product and/or Assembly Certification	3
4	Reference Documents.....	4
5	Evaluation Method.....	4
6	Conclusion.....	7
7	LAST PAGE AND REVISION SUMMARY	8

2 Introduction

Intertek Testing Services NA Ltd. (Intertek) is conducting an engineering evaluation for Nudura Corporation on their Nudura Integrated Building Technology™ Insulating Concrete Form (ICF) to determine if the product meets the requirements of CAN/ULC S717.1, “*Standard For Flat Wall Insulating Concrete Form*” approved on February 2012. The evaluation involves reviewing past test data to determine whether more testing is required for the product to show compliance with CAN/ULC S717.1.

3 Product and Assembly Description

3.1. Product and/or Assembly Description

Nudura Integrated Building Technology™ Insulating Concrete Form (ICF) product consist of two parallel Type 2 Expanded Polystyrene (EPS) panels reinforced with plastic cross-ties. The EPS panels and cross-ties are molded with preformed reversible interlock and vertical clip-locking mechanisms on their top and bottom edges to facilitate stacking and vertical interlocking of the form units. Nudura standard form panels and hinged panels are available in a standard length of 96 in. (2438 mm) and a standard height of 18 in. (457 mm). The forms are available in 4, 6, 8, 10, and 12 in. (102, 152, 203, 254, and 305 mm) core widths. Filled with concrete, they create a monolithic wall with thermal resistance.

3.2. Product and/or Assembly Traceability

If further testing is required of the ICF product to show conformance to CAN/ULC S717.1, an accredited third party inspection agency will be required to sample the product for testing. An Intertek engineer can be used for this task.

3.3. Product and/or Assembly Certification

Nudura Integrated Building Technology™ Insulating Concrete Form (ICF) is currently under Intertek certification and ongoing follow-up inspections and verification. For complete details see Intertek Spec ID #28233.

Authorities Having Jurisdiction (AHJ) should be consulted in all cases as to the particular requirements covering the installation and use of Intertek certified products, equipment, systems, devices and materials. The AHJ should be consulted before construction. Fire resistance assemblies and products are developed by the design submitter and have been investigated by Intertek for compliance with specific requirements. The published information (product and design listings) cannot always address every construction nuance encountered in the field. When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the test standard referenced for each Intertek certified product. The test standard includes specifics concerning alternate materials and alternate methods of construction. Only products which bear Intertek's Mark are considered as certified. The appearance of a company's name or product in Intertek Directory of Listed Building Products does not in itself assure that products so identified have been manufactured under Intertek's Follow-Up Service. Only those products bearing the Intertek Mark should be considered to be Listed and covered under Intertek's Follow-Up Service. Always verify the Mark on the product before using it.

4 Reference Documents

As part of this evaluation, Intertek has directly or indirectly used the following referenced documents:

- CAN/ULC S717.1, "Standard For Flat Wall Insulating Concrete Form" Approved on February 2012
- CAN/ULC S701, "Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering" approved in (2005)
- ICC-ES AC353, "Acceptance Criteria for Stay-In-Place, Foam Plastic Insulating Concrete Form (ICF) Systems for Solid Concrete Walls", approved in 2007
- ASTM C578, "Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation" approved in 2011
- ICC-ESR 1798, Nova Chemicals Inc. Evaluation Report, reissued November 1, 2010
- ULC BTLIC.R4775, Nova Chemicals Inc. Listing Report, issued July 1, 2008
- ICC-ESR 2092, Nudura Corporation Evaluation Report, reissued November 1, 2011
- Intertek Certification Spec ID #28233
- Intertek Quality Control Manual 100170042COQ-001B, revised March 30, 2012
- Intertek Quality Control Manual 100170042COQ-001A, revised March 30, 2012.
- Intertek Test Report 3052410, revised January 15, 2004
- Intertek Test Report 100565568COQ-003, dated December 20, 2011
- Intertek Test Report 3193927TOR-003, dated December 18, 2009.
- Intertek Test Report 3016348, dated March 26, 2002
- Intertek Letter Report 3193072COQ-001, revised September 19, 2012.

5 Evaluation Method

The scope of this evaluation involves reviewing the requirements of CAN/ULC S717.1 and past test data to determine whether more testing is required for the product to show compliance with the above standard.

This evaluation is being conducted solely for the above referenced project or use or both. Due to the variables that exist from project to project and the fact that each evaluation requires review of the most current existing data and information, this evaluation is not to be used as justification for any other opinion nor used for any other project, without the express written consent of Intertek. This report should serve as Intertek's opinion regarding the use of the certified product in the conditions described herein. The materials used on the project, which are applied in compliance with Intertek Design Listings, must bear the Intertek listing mark. All certified products must be installed in accordance with the details contained in Intertek's Directory of Listed Building Products.

Nudura ICF is currently certified under Intertek Warnock Heresy certification program for CAN/ULC S701, ICC-ES AC 353, and ASTM C578 using Type 2 EPS panels and polypropylene cross ties. Refer to Nudura Corporation's Listing Report located in Intertek's on-line Directory of Building Products (http://whdirectory.intertek.com/Pages/DLP_Search.aspx) for further details. Nudura Corporation has also recently obtained their ICC-ES ESR-2092 Evaluation Report in compliance with ICC-ES AC 353 for Type II EPS panels and plastic cross ties

Intertek has reviewed all of the general requirements per CAN/ULC S717.1 for ICF blocks. The requirements of this standard apply to ICF's that act as permanent framework for cast-in-place reinforced concrete beams; lintels; exterior and interior, above and below grade, loading-bearing and non load-bearing walls, foundations; and retaining walls. Also, the standard is restricted to ICF's that enclose uniform monolithic concrete walls.

The qualification standards and corresponding requirements for each test procedures that apply to Nudura ICFs have been summarized in the following table:

Table 1. General CAN/ULC S717.1 Requirements

TEST	TEST METHOD STANDARDS	REQUIREMENTS
EPS Panel Test Methods¹		
Flexural Strength	ASTM C 203	Minimum value per CAN/ULC S701: 240 kPa
Compressive Strength	ASTM D 1621 or ASTM C 165	Minimum value per CAN/ULC S701: 110 kPa
Density	ASTM D1622	Report Value
Surface Burning Characteristics	CAN/ULC S102.2	Report Value
Cross Tie Test Methods		
Rate of Burning	ASTM D 635	Minimum CC2 Classification Maximum rate should be 1.06 or less
Spontaneous Ignition Temperature	ASTM D1929	Minimum ignition temperature 350°C
Cross Tie Tensile Strength	ASTM D 638	Minimum value of 32.3 kN/m ²
Plastic Cross Tie Shear Strength (kN/m²)	ASTM D 732	Minimum value of 2.0 kN/m ²
Fastener Capacity Test Methods		
Allowable Lateral Load for Plastic Cross Ties	The allowable lateral strength of the connection shall not exceed 75 percent of the average proportional limit load, or the average ultimate load divided by a factor of 3.2, whichever is lower.	Report Value
Allowable Withdrawal Load	The allowable withdrawal load of the cross tie flange shall be determined based on the average ultimate load divided by a safety factor of 5.	Report Value

¹ For EPS qualification, when the resin supplier provides sufficient test data in compliance with the requirements of Thermal Resistance, Water Vapour Permeance, Dimensional Stability, Water Absorption, Limiting Oxygen Index, Length Tolerance, Height Tolerance, and Panel Warping for each resin grade and for each CAN/ULC S701 type intended for application use, the ICF unit owner shall provide reports of tests to demonstrate full compliance with Clause 4.2.1.1 for each CAN/ULC S701 type intended for application use at one manufacturing location.

Intertek has already conducted confirmatory testing on Type 2 EPS 35 MB bead resins supplied by Nova Chemicals Inc. for Density, Flexural Strength, and Compressive Strength properties. The results from all three tests showed conformance in accordance with CAN/ULC S701. Nova Chemicals has conducted the full scope of testing per CAN/ULC S701, therefore confirmatory test program was permitted by Intertek for certification. For full test results and details, refer to Intertek test report 3052410. Nova Chemicals has also certified 35 MB beads for its surface burning characteristics in accordance with CAN/ULC S102.2 under ULC Listing (ULC BTLIC.R4775).

According to Nudura's Quality Control Manual maintained at ICFORM Inc. manufacturing facility, Polypropylene (PP) and High Impact Polystyrene (HIPS) cross ties are either manufactured or are received as finished products from Nudura's other manufacturing plant, Polymax. The received finished cross ties are tested upon arrival for Weight, Tensile Strength, and Dimensional properties. The same in-house tests are conducted for manufactured cross ties with the same specifications/tolerance once they have cooled down from mold cavities. The same internal quality control tests have also been observed at Polymax.

Intertek has previously conducted all of the required tests per Table 1, for plastic cross ties manufactured at Polymax with satisfactory results. Due to the fact that the cross ties have equivalent performance at both facilities, any tests conducted on the ties can be representative of both facilities.

After reviewing CAN/ULC S717.1 specifications and comparing the requirements with results of previous tests conducted on Nudura ICF product, it can be concluded that no further testing is required for Nudura ICF products to comply with CAN/ULC S717.1.

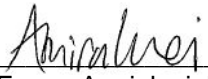
6 Conclusion

Intertek has conducted an engineering evaluation for Nudura Corporation on their Nudura Integrated Building Technology™ Insulating Concrete Form (ICF) to determine if the product meets the requirements of CAN/ULC S717.1, “*Standard For Flat Wall Insulating Concrete Form*” approved on February 2012. The evaluation involved reviewing past test data to determine whether more testing would be required for the product to show compliance with CAN/ULC S717.1.

Based on the information contained and referenced herein, it is Intertek’s professional judgment based on sound engineering principles that the following is true:

- Nudura Integrated Building Technology™ Insulating Concrete Forms comply with CAN/ULC S717.1.
- Listing report will need to be updated to reflect the changes discussed in this report.

INTERTEK TESTING SERVICES NA LTD.

Reported by: 
Emma Amrialaei, EIT
Engineer- Building Products

Reviewed by: 
Kal Kooner, P. Eng.
Manager- Building Products

7 LAST PAGE AND REVISION SUMMARY

DATE	SUMMARY
September 28, 2012	Original
January 07, 2013	Updated the report to indicate that no further testing is required for Nudura ICF products to comply with CAN/ULC S717.1 due to equivalent performance of cross ties at both manufacturing facilities.