

Building Has Evolved.™



architect
builder/developer
contractor
design professional



Norton Pediatric Center



Buildings today demand reliable, energy efficient building envelopes that provide superior performance benefits to minimize energy costs, reduce carbon emissions, and maximize property value. NUDURA structures offer superior strength, storm, sound, and fire resistance and are why the design community, developers and contractors across the world continue to choose NUDURA's Integrated Building Technology as a proven alternative to traditional building methods.

Our Insulated Concrete Forms provide design professionals, architects, home owners and contractors the freedom and versatility to design and build a structure the way it was envisioned. Building with NUDURA gives you the opportunity to build faster and more efficient, while offering your clients an eco-friendly structure with substantial benefits that contribute to long-term energy savings.

NUDURA is committed to leading the industry in product innovation and is unmatched by any other insulated concrete form. We are strongly committed to improving the building process to support environmental issues, reduce energy consumption, and to save our valuable environmental resources for future generations. When specifying NUDURA you can assure your customers that you are using the best building solution available today.

The 70,040 square foot Norton Pediatric Center was built to hospital standards using NUDURA Insulated Concrete Forms. Energy usage is approximately 112.8 kBtu/Sq.ft./mth compared to the average Center (without NUDURA and other energy efficient construction materials) at 400.0 kBtu/Sq.ft./mth.

For more information on projects or to view our photo gallery visit nudura.com.

building has evolved.TM

the principle is simple.

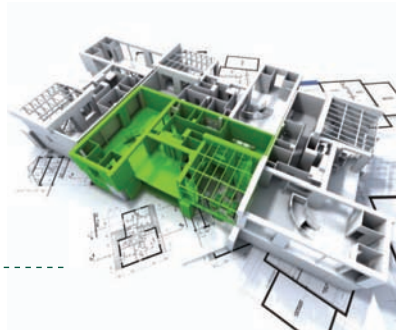
NUDURA Insulated Concrete Forms offer a variety of superior benefits when building your structure. NUDURA Forms consist of two panels of Expanded Polystyrene (EPS) that are 2 5/8" in thickness and connected together with our patented web system that is made of 100% recycled material. NUDURA Forms are stacked, steel reinforced and filled with concrete, which completes the building envelope of your commercial or residential structure in one building step. NUDURA Forms are available in a variety of shapes and sizes to accommodate all types of building requirements and designs.

eco-friendly building.

NUDURA Insulated Concrete Forms provide greater energy solutions for any structure providing Performance Values up to R-50, resulting in energy savings of up to 70% when compared to traditional wood building methods. The superior Performance Value of NUDURA comes from the stable thermal mass that the concrete provides. NUDURA offers form sizes that provide a solid concrete core of up to 12", providing you maximum energy efficiency, strength and comfort.

what you can expect from NUDURA.

NUDURA has an extensive Authorized Distributor network worldwide that can provide you with assistance from concept to completion of installation with a NUDURA Trained Installer. NUDURA prides itself on providing you the best support from a strong, reputable businesses within your local geographic areas to represent our products.



sustainable building starts with nudura.



energy efficiency

superior strength

eco-friendly

long-term value

speed of construction

extreme weather

The performance of a NUDURA® Wall System is designed to withstand some of Mother Nature's worst and have been used for commercial and residential structures throughout North America, saving building owners from having to rebuild their homes and businesses. With NUDURA you can be sure that your building will withstand high winds, fire, seasonal elements and the test of time. The strength of NUDURA comes from the steel reinforced solid concrete core, resulting in greater impact resistance. NUDURA structures can withstand winds up to 250 mph (402 km/h) ensuring that your client's business or family home is safe and secure in almost any situation.

In 2004, a home, built with NUDURA Insulated Concrete Forms, survived the severe storm in Florida while other wood-frame built homes in the neighborhood did not.

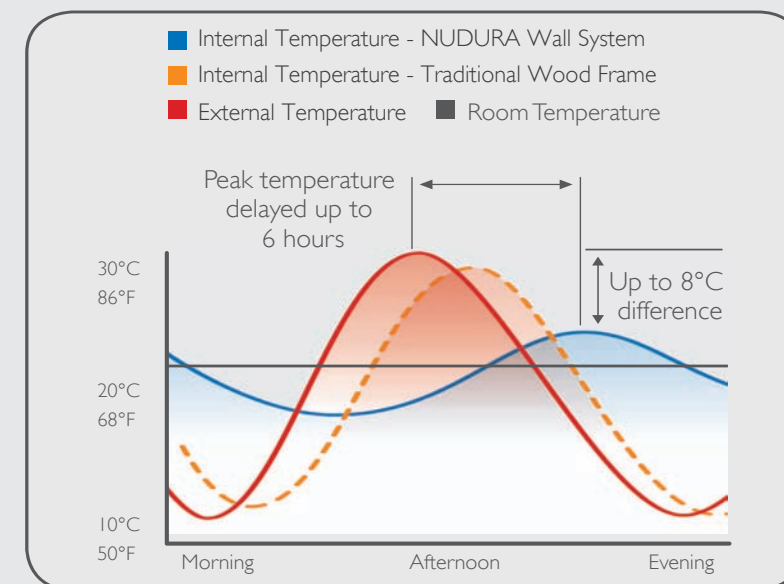


thermal mass

The solid mass of the NUDURA wall has some very unique qualities. The monolithic concrete is layered between two continuous pieces of 2 5/8" EPS foam, which isolates the concrete and significantly reduces the flow of heat through the wall.

Since NUDURA walls have a high storage capacity with low thermal conductivity, it provides the most useful level of Thermal Mass. This helps to stabilize the internal temperature from day to night temperature fluctuations and provides a largely self-regulating environment. The result is less energy consumption, reducing the need for mechanical heating and cooling, and greater cost savings throughout the year.

Stabilizing effect of thermal mass on internal temperature.



Based on no additional mechanical heating or cooling. For more information visit nudura.com

NUDURA Performance Values Meet & Exceed 2012 Building Codes.

maximum energy efficiency.

A NUDURA structure can provide Performance Values as high as R-50, saving building owners up to 70% in annual energy costs. The energy performance that comes from a NUDURA form is the combination of thermal mass and airtightness. Building with NUDURA reduces a building's operational energy demands, and as a result, the structure's carbon footprint on the environment.

greater sound, fire & impact resistance.

NUDURA forms act as an effective sound barrier by dampening sound vibrations from unwanted outside noise, ideal for both residential and commercial construction, providing STC (Sound Transmission Class) ratings as high as *STC 50.

The strength of NUDURA comes from the solid concrete core. NUDURA walls are built with steel reinforced concrete and a non-toxic fire retardant expanded polystyrene foam, providing a fire protection rating of up to 4 hours. NUDURA also provides greater impact resistance and will withstand winds of up to 250 mph (402 km/h) ensuring that the occupants of the building or home are safe and secure in almost any situation. Our concrete embedded multi-purpose roof/truss anchor system provides greater resistance to wind uplift forces than most other conventional hurricane strap anchor systems.

long-term value.

A NUDURA structure is built to last and retains its value longer. The main structural element in a NUDURA building is reinforced concrete, which offers substantially better durability and requires less maintenance and repair over its lifetime.

*STC 50 rating based on minimum 6" (152 mm) NUDURA form and concrete core thickness or larger installed with code compliant finishes mounted both side of wall assembly in accordance with NUDURA Installation procedures.





NUDURA forms are manufactured with industry leading patented technologies that are exclusive to NUDURA, offering you a full line of innovative products designed to provide superior energy efficiency, greater strength, and sound resistance. Our Building envelope provides an affordable eco-friendly building solution that allows you to build faster, more efficiently and offers substantial benefits over traditional construction.

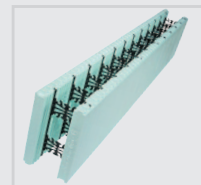
innovation makes a difference.



• **DURALOK Technology™** - securely locks forms into place with a triple tooth interlock eliminating the need to wire or glue forms, resulting in reduced labor costs during installation. Once the forms are stacked together a continuous full height-fastening strip ensures the wall becomes one unit, making it the strongest in the industry.



• **DURAFOLD Technology™** - allows the entire NUDURA form line up to be shipped flat, allowing for 40% more product on a truck compared to other Insulated Concrete Form products. NUDURA forms are packaged securely to protect the transport of product to the site. Once on-site, contractors simply unfold and stack. This unique technology eliminates onsite assembly and the cost of shipping air.



• **DURAMAX Technology™** - largest standard form on the market (8' x 18") creates 60% fewer joints in the wall compared to other wall systems and allows installers the ability to place 12 sq ft of wall area with one block.



• **4-WAY REVERSIBLE System** - The patented foam interlock allows the form to be 4 way reversible, almost eliminating waste. Eliminates left and right corners, which allow NUDURA forms to be used in twice as many scenarios as non reversible forms. The innovative technology speeds up the building process as installers don't have to distinguish between top and bottom or left and right corners.

designed for optimal performance.

integrated building technology.

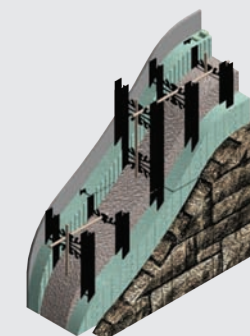
Commercial and residential structures require the use of building materials that can work in conjunction with each other to provide a structure that offers owners maximum energy efficiency. Improving the thermal performance of the walls is one of the most immediate and cost-effective ways to reduce running energy costs.

WALL SYSTEM

The NUDURA® Wall System completes six building steps with one product:

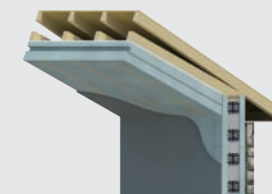
1. Form system
2. Wall structure
3. Insulation
4. Air barrier
5. Vapor barrier
6. Interior & exterior finish anchorage

NUDURA offers a form line up that includes 90°, 45°, T Forms, Radius forms, Straight (standard) forms, Brick Ledges along with a variety of other form combinations to meet the requirements of any design. To meet any building requirement NUDURA Forms are offered in 4, 6, 8, 10, and 12-inch concrete core widths.



CEILING TECHNOLOGY

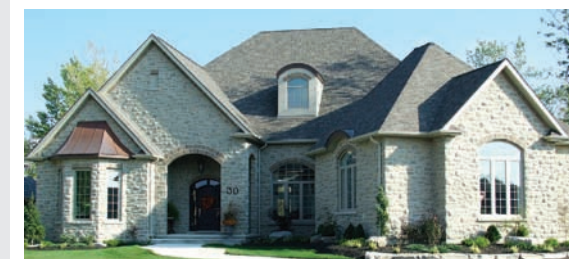
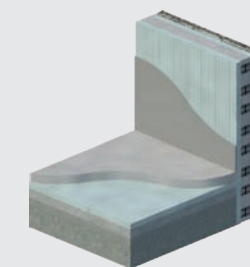
- Reduces air filtration efficiently so that no other vapor barrier is required.
- Used in a double layer, it further reduces thermal bridging, increasing energy efficiency and comfort.
- EPS Foam does not contain CFC's or HCFC's.



FLOOR TECHNOLOGY

The floor of a residential or commercial building is often the most ignored surface when it comes to insulation. The floor when insulated with NUDURA® Floor Technology, completes the building envelope and increases comfort and energy efficiency. NUDURA® Floor Technology provides:

- A cost effective layer of protection against transference from the ground.
- An effective base for radiant floor heating.



EXTERIOR FINISHES

When designing with NUDURA, building finish options are virtually limitless. NUDURA forms can have a variety of wall finishes applied to them to match any desired look and style. Interior finishes are no different. Standard Gypsum board or trowel-applied plaster materials can be easily applied directly to the NUDURA® Wall System using our fastening strips that are embedded within the EPS foam panels at 8" (203 mm) centers.

Exterior Finish Examples





The combination of rising energy requirements and fuel costs means that we need to make the most of building technology to heat and cool commercial structures and homes. NUDURA Insulated Concrete Forms are an energy efficient solution that can provide up to 70% in energy savings compared to traditional building methods.

NUDURA Energy Efficient Construction Materials Contribute to LEED®

NUDURA is committed to supporting green rating systems such as LEED®. Specification of systems and materials that work together are key to achieving LEED® certifications. Visit Nudura.com for full LEED® credit guide that will provide all of the required information with the construction of NUDURA Insulated Concrete Forms.

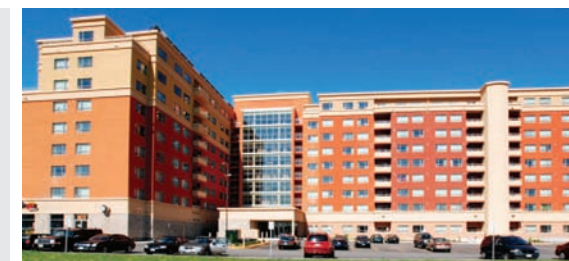
Contributions to LEED®: EA – Energy & Atmosphere MR – Materials & Resources IEQ – Indoor Environmental Quality

we'll LEED® you to eco-friendly solutions.

building a better future.

- **RECYCLED MATERIALS** - NUDURA forms are manufactured from EPS (Expanded Polystyrene). NUDURA's unique folding web design is manufactured from 100% recycled polypropylene and steel.
- **BUILDING DURABILITY** - NUDURA forms offer a structure built out of concrete, one of the most durable building materials which result in buildings that stand the test of time. Building with NUDURA also offers maximum safety in high wind areas due to its high impact resistance.
- **WASTE REDUCTION** - The unique 4-Way reversible system from NUDURA creates less waste during the construction process, sending less waste to our landfills. *All waste is 100% recyclable.
- **MOLD RESISTANT** - NUDURA forms have been laboratory tested and will not support mold growth unlike traditional wood frame structures providing healthier indoor living and working environments.
- **ENERGY PERFORMANCE** - NUDURA forms combined with other energy efficient construction methods significantly reduce the amount of carbon emissions, due to the structure's high energy efficiency levels, reducing the amount of fossil fuels needed for heating and cooling. The result is energy savings of up to 70% and a reduction of the structure's carbon footprint.
- **IMPROVED INDOOR AIR QUALITY** - The end result is an airtight structure that enables building mechanical systems to heat, cool and ventilate the structure more efficiently, creating a healthier living or working environment. NUDURA forms do not emit CFC's or HCFC's thereby improving indoor air quality.

*Subject to local recycling programs.



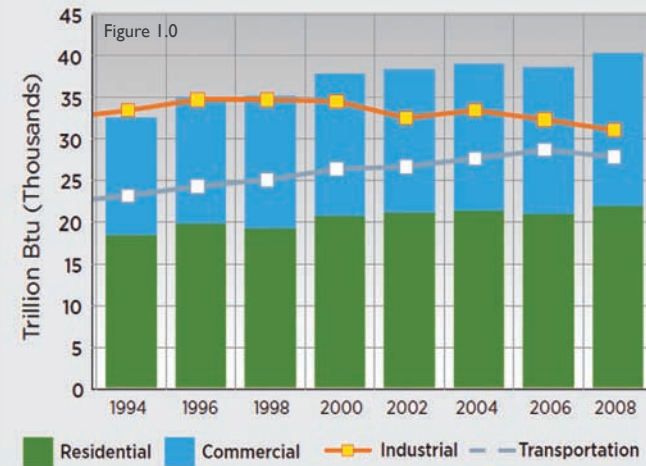


Buildings have a significant impact on energy use and the environment. Commercial and residential buildings account for 40% of the primary energy and approximately 70% of the electricity in the U.S. In fact, the construction industry consumes more energy than the industrial or transportation sectors (Figure 1.0). The U.S. is responsible for 20% of the world's carbon dioxide emissions, with U.S. buildings' energy use responsible for 8% (U.S. DOE 2009).

Once thought of as building of the future, has now arrived. Buildings are now being constructed to a new standard, and that standard is Net-Zero. Net-zero structures maximize the use of on-site renewable energy, thereby producing more energy than they consume over the course of a year. Net-zero buildings built with NUDURA Insulated Concrete Forms can play a critical role in allowing a Net-Zero structure to maximize its use of energy. Our superior building envelope is a key element in Net-Zero construction creating an airtight structure that significantly reduces the flow of heat through the wall due to Thermal Mass advantage NUDURA provides. A NUDURA® Wall System allows mechanical equipment to run at optimal levels, which provides maximum energy performance achieving greater cost savings throughout the year.

Projects specifying NUDURA Insulated Concrete Forms provide much greater potential for saving valuable environmental resources, reducing energy consumption and CO2 emissions, a few key factors facing today's commercial and residential buildings. NUDURA forms do not emit CFC's or HCFC's and provides Performance Values up to R-50.

Growth in Building Energy Use Relative to Other Sectors



U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, 2009 Buildings Energy Data Book

residential



commercial



multi-story & hotels



medical & educational facilities



service is our foundation for customer satisfaction.



code approvals & evaluation.

NUDURA distributors provide the information needed to make sure your structure is built with proven installation methods and provide necessary information about local, provincial and state building codes.

NUDURA Products (when installed per Code requirements) have been designed, tested and approved to comply (i.e. meet or exceed minimum compliance benchmarks) by all the following applicable Codes Standards and Evaluation Criteria for the use in both combustible and non-combustible construction for all types of building occupancies and construction types:

Please visit our Technical Centre at Nudura.com for Testing Standards Compliance and Code Compliance Evaluations.

basic installation training & AIA courses.

If you are thinking of building with NUDURA Insulated Concrete Forms, we encourage you to take one of our Installation Training Courses. This one-day training seminar provides builders & installers with basic NUDURA Insulated Concrete Form installation skills to ensure that you get the knowledge you need to get the job done with efficiency and confidence.

We invite contractors, architects, engineers and design professionals to register today to learn more about the benefits of building with NUDURA. **For more information or to find training courses in your area visit Nudura.com.**

NUDURA has created a variety of Insulated Concrete Forms - ICF courses for the architectural community that keep you up-to-date with changing industry standards for a variety of building types. NUDURA is a registered provider with the AIA Continuing Education System.

Visit Nudura.com for a list of registered AIA Continuing Education Programs that qualify for credits and Learning Units (LU).



quality assurance.

NUDURA forms are manufactured in-house to allow full control over the manufacturing process, ensuring our forms are manufactured to the highest standards. NUDURA is audited quarterly by Warnock/Hersey which conducts regular plant inspections to ensure all aspects of NUDURA® products are consistent. Our forms undergo rigorous testing everyday to ensure the quality is the same for every NUDURA® product.



technical support & customer service.

NUDURA's manufacturing team has been producing ICF forms for over 30 years and continues to play a leading role in developing the industry and in ICF technology. NUDURA aligns itself with the best companies in local geographic areas to provide you extensive technical support and service. Distributors can offer installation recommendations to maximize efficiency and cost savings, provide up-to-date code compliance advice for local, regional, and national building codes, as well as product information and installation applications. Call **866-468-6299** for customer assistance.

professional online tools & resources.

NUDURA makes the design process with the NUDURA® Wall System as easy and efficient as possible. Our website provides valuable design tools and resources for homeowners, contractors, architects, and design professionals. We have a full BIM Object Library, Design Specification Guide, installation manuals and videos, a vast project photo gallery, and much more. Have access to industry leading technical and informational support from NUDURA and our Authorized Distributors.

When specifying NUDURA, register online at Nudura.com and gain full access to our complete Design Specification Guide and BIM Library.



NUDURA Products (when installed per Code requirements) have been designed, tested and approved to comply (i.e. meet or exceed minimum compliance benchmarks) set by all the following applicable Codes Standards and Evaluation Criteria for the use in both combustible and non-combustible construction for all types of building occupancies and construction types.

code compliance evaluations.

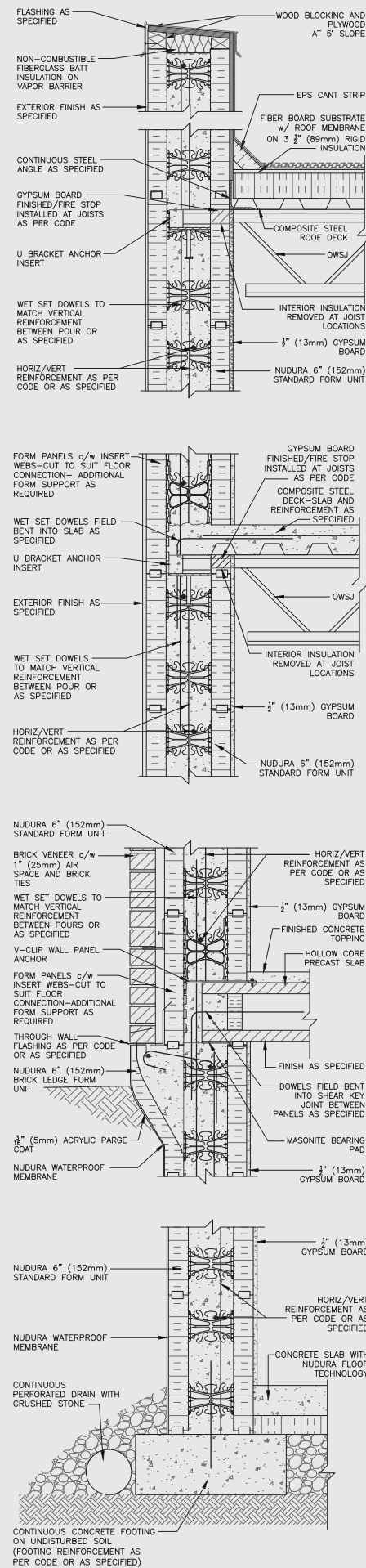
Canada:	National – CCMC:	13063-R
	Ontario – MMAH:	04-13-117 (13063-R)
	New Brunswick –NBFMO:	File: 3955 –Compliance to 82-20
Europe:	European Union (BBA):	ETA-07/0034
USA:	National – ICC-ES:	ESR-2092
	Florida –BCO	FL1585-R
	Miami Dade County-BCCO:	NOA No. 05-0330.02
	Wisconsin –DOC S&BD:	200427-1
	New York City: – OTCR:	complies with BB 2009-020
	Los Angeles:	RR25595

testing standards and compliances.

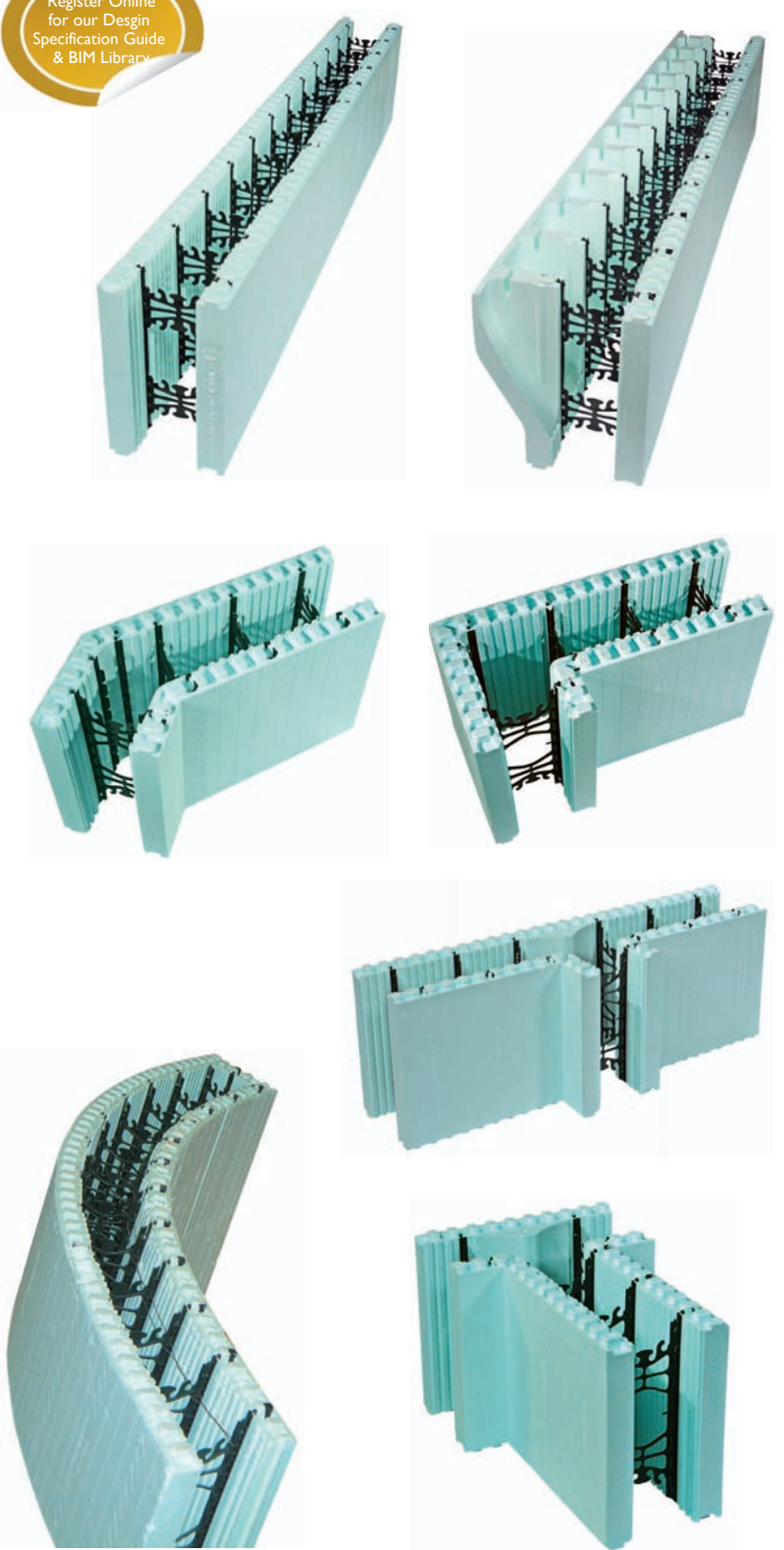
- **Form EPS Foam** certified to meet ALL requirements of Type II foam per ASTM C578 (USA) / CAN/ULC S-701 (CAN)
- **Structural Design** NUDURA forms structurally reinforced flat uniform thickness monolithic concrete walls:
 - **Engineered Design:** USA: per ACI 318, CAN: per CAN/CSA A23.3
 - **Prescriptive Design:** USA per R404, R611 IRC 2006/2009, PCA/EB 118 / PCA-100-2007
 - : CAN: per NBC 2005, Section 9.17 and 9.20
 - : NUDURA Installation Manual Structural Tables per Appendix D&E
- **Fire Resistance Testing** per UL-263 (USA) (=ASTM E-119) and CAN/ULC S-101 (CAN)
 - 6 inch (152 mm) Core & above : 4 Hours
 - 4 inch (102 mm) Core : 2 Hours
 - UL Classified: BXUV.U930 (USA) / UL Listed: BXUVC.WO12 (CAN)
- **Assembled Thermal Resistance/Conductance**
 - R 23.59 (RSI 3.94) /U Value : 0.2538 W/m2.K
 - Based on Std Finished 6 inch (152 mm) Core Form calculated to ASHRAE Handbook of Stds. and confirmatory testing of EPS to ASTM C518 (USA & CAN) & ISO 8301 (EUR)
- **Wall Assembly Sound Transmission Classification**
 - STC 50 (RW 50) min. for Finished 6 inch (152 mm) Core Walls and above
 - (Testing per ASTM E336 (USA/CAN)/ ISO 140-4 (EUR))
- **Wall Assembly Vapor Permeance**
 - Inner or Outer Panel (EPS) Foam qualifies as a vapor barrier when tested to ASTM E-96
 - 0.624 Perm-Inch (36 Ng/Pa.s.m2) for 2 5/8-inch (66.7mm) thickness of EPS Foam
- **Thermal Barrier Protection Testing**
 - Std. 1/2-inch (12.7 mm) Gypsum qualifies as Thermal Barrier as per code requirements
 - **Gigacrete Plastimax coatings qualify as Thermal Barriers per listings as spec'd by Gigacrete (USA only)
 - Tested/Comply (with NFPA 286 (UBC 26-3) (USA) & CAN/ULC S-101 & CAN4-S124 (CAN))
- **Fastener Withdrawal and Shear Resistance**
 - Various screw fasteners tested for both Lateral Pullout Withdrawal and Vertical Shear
 - Testing conducted per ASTM D-1761 (Test results available from www.nudura.com)
- **Flash Ignition/Self Ignition Testing – EPS Foam**
 - Flash Ignition Temperature = 698 ° F (340 ° C)
 - Self Ignition Temperature = 806 ° F (430 ° C) Tested per ASTM D-1929
- **Flame Spread and Smoke Developed Indices –EPS Foam**
 - Flame Spread Index 10* (USA) 140** (CAN)
 - Smoke Developed Index 300* (USA) over 380** (CAN)

• **NUDURA System Approved for Types I through V Construction (USA)* and for Non-Combustible Construction (Part 3 Design)(CAN)***

*When exterior EPS foam finished with approved non-combustible finishes (consult NUDURA for details)



Register Online for our Design Specification Guide & BIM Library

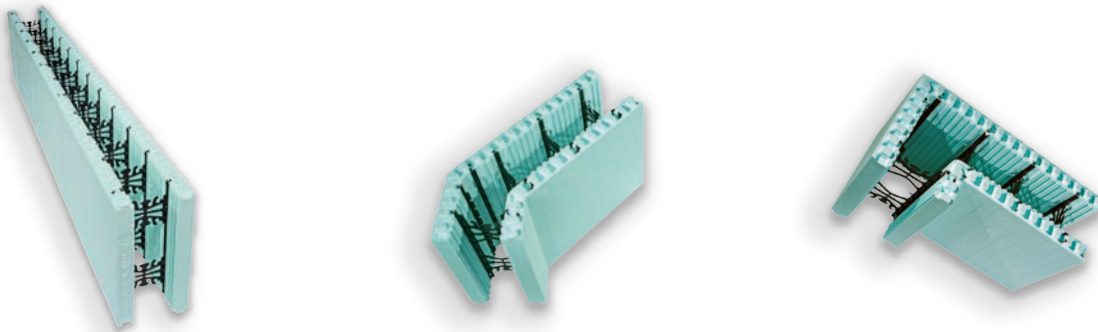


For the full line of NUDURA products and accessories visit Nudura.com and download our product catalog.



Over 50 years of building experience.

By using NUDURA Insulated Concrete Forms to build your next structure you can ensure you are choosing the best building solution available today.



The performance claims referred to in this Brochure are based on a comparison between a typical 8' high NUDURA wall with a 6" core, properly built to the National Building Code of Canada (NBC) and installed in accordance with NUDURA Corporation's specifications and a typical 8' high 2"x 6" wood-framed wall insulated with R20 batt insulation, properly built to NBC and with regard to "fire resistance" on ratings listed in the NBC, with regard to "sound resistance" on ratings listed in the NBC and in the study "Insulating Concrete Forms, with regard to "durable" and "comfort" on an independent analysis and with regards to "energy efficiency" in the study "Energy Consumption of Concrete Homes Versus Wood Frame Homes" published by the Portland Cement Association. Such performance claims may vary depending on certain atmospheric conditions and geographic locations. STC Ratings are based on a 6" (152mm) core form and greater. Note: 4" (102mm) form is not to be used as a suite or corridor separation wall, except as specified by NUDURA. For further details or questions please contact NUDURA.