



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

List of potential products supplied by NUDURA Distributors:

- NUDURA® Insulated Concrete Form System (Specification Section 03 11 19)
- NUDURA® Brand Polyurethane Spray Foam Adhesive (Specification Section 03 11 19)

List of LEED® Assessment Categories potentially contributed to or affected by these products:

Category Code	Assessment/Element	Credit Designation	Possible Points
EA	Energy & Atmosphere •Optimize Energy Performance	Credit 1	1-19
MR	Materials & Resources •Construction Waste Management •Recycled Content •Regional Materials	Credit 2 Credit 4 Credit 5	1-2 1-2 1-2
IEQ	Indoor Environmental Air Quality •Low-Emitting Materials: Adhesives and Sealants	Credit 4.1	1

Relevant Information for LEED® Credit Assessment:

- EA Energy & Atmosphere
•Optimize Energy Performance - Credit 1
- Calculated finished R-Value of NUDURA Wall (per ASHRAE Standards) = R23.59
(Download a copy of the NUDURA Whole Wall Thermal Resistance Report)
- MR Materials & Resources
•Construction Waste Management - Credit 2
- Post-Use Waste Recycle Stream Data:
 - EPS Foam = 6
 - High Density Polypropylene Web Materials = 5



Relevant Information for LEED® Credit Assessment: *Continued...*

MR

Materials & Resources

•Recycled Content - Credit 4

Form Recycle Content (based on imperial or U.S. standard measure)

- 8" core x 8' x 18" NUDURA Form weight = 15.68 lbs
- Equivalent weight/gross wall area = 1.307 lbs/ft² = 100.0%
- % Content Virgin Material (EPS Foam Panels) = 42.6%
- % Content Recycled Polypropylene (PP) Webs = 57.4%
- Equivalent weight/gross wall area = 0.750 lbs/ft²
- Post Consumer Content of PP Webs/Total Form weight = 17.2%
- Equivalent weight/gross wall area = 0.255 lbs/ft²
- Pre Consumer Content of PP Webs/Total Form weight = 40.2%
- Equivalent weight/gross wall area = 0.525 lbs/ft²

Form Recycle Content (based on SI [metric] measure)

- 203 mm core x 2.44 m x 457 mm NUDURA Form weight = 7.112 kg
- Equivalent weight/gross wall area = 6.382 kg/m² = 100.0 %
- % Content Virgin Material (EPS Foam Panels) = 42.6 %
- % Content Recycled Polypropylene (PP) Webs = 57.4 %
- Equivalent weight/gross wall area = 3.662 kg/m²
- Post Consumer Content of PP Webs /Total Form weight = 17.2 %
- Equivalent weight/gross wall area = 1.099 kg/m²
- Pre Consumer Content of PP Webs /Total Form weight = 40.2 %
- Equivalent weight/gross wall area = 2.563 kg/m²

Summary of Materials and Recycle Content contained in Typical NUDURA Formed Reinforced Concrete Walls

Based on NUDURA 8 Inch (203mm) Core Standard Form

Material	Weights based on - Form Only						Weights based on - All Materials Used in the Wall					
	Weight/Form		%	Wt/Face Unit Wall Area		%	Weight/Form		%	Wt/Face Unit Wall Area		%
	lbs	kg		lbs/ft ²	kg/m ²		lbs	kg		lbs/ft ²	kg/m ²	
EPS Foam	6.680	3.030	42.6%	0.557	2.718	42.6%	6.680	3.030	0.5%	0.557	2.718	0.5%
% Recycled - Post-Consumer	0.000	0.000	0.0%	0.000	0.000	0.0%	0.000	0.000	0.0%	0.000	0.000	0.0%
% Recycled - Pre-Consumer	0.000	0.000	0.0%	0.000	0.000	0.0%	0.000	0.000	0.0%	0.000	0.000	0.0%
Polypropylene Webs	9.000	4.082	57.4%	0.750	3.662	57.4%	9.000	4.082	0.7%	0.750	3.662	0.7%
% Recycled - Post-Consumer	2.700	1.225	17.2%	0.225	1.099	17.2%	2.700	1.225	0.2%	0.225	1.099	0.2%
% Recycled - Pre-Consumer	6.300	2.858	40.2%	0.525	2.563	40.2%	6.300	2.858	0.5%	0.525	2.563	0.5%
Reinforcing Steel							22.908	10.391	1.8%	1.909	9.321	1.8%
% Recycled - Post-Consumer							12.966	5.881	1.0%	1.080	5.275	1.0%
% Recycled - Pre-Consumer							7.491	3.398	0.6%	0.624	3.048	0.6%
Concrete							1200.000	544.316	96.9%	100.000	488.240	96.9%
% Recycled - Post-Consumer							300.000	136.079	24.2%	25.000	122.060	24.2%
% Recycled - Pre-Consumer							300.000	136.079	24.2%	25.000	122.060	24.2%
Total	15.680	7.112	100.0%	1.307	6.380	100.0%	1238.588	561.820	100.0%	103.216	503.940	100.0%
% Recycled - Post-Consumer	2.700	1.225	17.2%	0.225	1.099	17.2%	315.666	143.185	25.5%	26.305	128.434	25.5%
% Recycled - Pre-Consumer	6.300	2.858	40.2%	0.525	2.563	40.2%	313.791	142.335	25.3%	26.149	127.671	25.3%

NOTES

- CD06: EPS panel weight is based on Polymax/IC Form QC Manuals specified dry weight of 8ft (2.44m) long NUDURA Std less web/fastening strips weight
- CD10: Web weights are based on 2010 QC Manual weights for 8-inch (203mm) hinge pin web/fastening strips considering a total of 12 webs per form for total weight of 9.0 lbs (4.082 kg).
- IJ 15: LF of steel reinforcement in wall is based on No. 5 verticals installed @ 16" o/c = 0.75 LF/SF of wall
- IJ 15: LF of steel reinforcement in wall is also based on No. 4 horizontals installed @ 18" o/c = 0.75 LF/SF of wall
- L15: Calculation is as follows: No. 5 bar = 1.502 X .75 = 1.127 lbs/ft²; No 4 bar = 1.043 x.75 = 0.782 lbs/ft² TOTAL = 1.909 lbs/ft²
- I16&I17: Post Consumer and Pre-Consumer Recycle Contents based on publications from the American Steel Recycling Institute confirming 56.6% of all steel comes from post consumer sources
- I20&I21: Though breakdown is low, calculation assumes that 50% of concrete is recycled content with an even split between post and preconsumer sources (Lafarge)

Note: To calculate total relative weight of NUDURA materials for project – multiply total form area supplied to job by weight given above per unit wall area.

Relevant Information for LEED® Credit Assessment: *Continued...*

MR

Materials & Resources

•Regional Materials - Credit 5

Primary NUDURA Raw Material Manufacturing/Collecting Sites - For Southern USA Plant

- EPS Resin/Styrene Monomer • NOVA Chemical Corporation, 786 Hardy Road, Painesville, Ohio 44077-4524
• GPS: Lat: 41°45'34" N : Lon: 81°13'50" W
- High Density Polypropylene • Entec Polymers, 405 Parktower Road, Manchester Tennessee 37355
• GPS: Lat: 35°26'12" N : Lon: 86° 01'30" W

NUDURA Form Fabrication: Southern USA

- IC Form Inc. • 4554 Cargo Drive, Columbus, Georgia , 31901
• GPS: Lat: 32°30'24"N : Lon: 84°52'16" W

Primary NUDURA Raw Material Manufacturing/Collection Sites – For Northern USA/Canada Plant

- EPS Resin/Styrene Monomer • NOVA Chemical Corporation, 786 Hardy Road, Painesville, Ohio 44077-4524
• GPS: Lat: 41°45'34" N : Lon: 81°13'50" W
- High Density Polypropylene • Aaron Industries Corp., 20 Mohawk Drive, Leominster, MA 01453
• GPS: Lat: 42°31'40" N : Lon: 71°44'03" W

NUDURA Form Fabrication: Northern USA & Canada

- Polymax Inc. • 877 Industrial Boulevard, Granby, Quebec, J2J 1A6
• GPS: Lat: 45°22'59"N : Lon: 72°45'48" W

Note: Refer to regional material summary sheets at the end of this document for more information.

Comparative Weights to Concrete and Steel Contained within NUDURA Wall Forms

Material Weight (Mass)	Weight (Mass) Per Unit Wall Area	% of Overall Wall Per Unit Wall Area
NUDURA Form:	1.307 lbs/ft ² - (6.382 kg/m ²)	1.27%
Typical Reinforcing Steel Grid:	1.909 lbs/ft ² - (9.321 kg/m ²)	1.85%
Concrete (8-inch/203mm):	100.000 lbs/ft ² - (288.243 kg/m ²)	96.88%

IEQ

Indoor Environmental Quality

•Low Emitting Materials - Adhesives & Sealants - Credit 4.1

Product Name: NUDURA® Brand Polyurethane Spray Foam Adhesive

- Manufacturer/Supplier: NUDURA Corporation
- Manufacture Location: 866 Horan Drive, Fenton, Missouri 63026

VOC Content = 154 (grams /liter) less water

Complies with South Coast Air Quality Management District (SCAQMD) Rule No. 1168. under Specialty Applications Section as: Special Purpose Contact Adhesive : < 250 gram/liter (less water)

Note: Refer to the Materials Documentation Sheet on NUDURA Brand Low Expansion Spray Foam.

For additional LEED® Compliant data pertaining to NUDURA ICF Products please contact your local NUDURA Distributor.

Please contact us for assistance: **866.468.6299** or visit **nudura.com**

**Recycled Content & Manufacturing Location
for the NUDURA Insulated Concrete Form System**

Project Name:
Location:
Date:
LEED Project No.:

LEED® PRODUCT RECYCLED CONTENT & MFG. LOCATION

Install. Subcontractor:		
Supplier/ Distributor:		
Address:		
Phone:	Contact:	
Material Manufacturer:	IC Form (NUDURA)	Contact: (866) 468-6299
Material Trade Name:	Insulating Concrete Forms	(NUDURA Integrated Building Technology)
Spec Section:	03-11-19	Division: 3

Total Material Cost: (inc. fabrication, exc. install labor & equipment)		
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Manufacturer Plant Address: (final point of assembly prior to shipping)	ICF Form Incorporated . 4551 Cargo Drive Columbus, GA 31901	
Distance from Jobsite:	Miles	GPS: LAT. 32°30'24" N : LON. 84°52'16" W

Harvesting/Extraction Address: (Name of Material Component No. 1)	NOVA Chemical Corporation - 786 Hardy Rd., Painesville, OH 44077-4524	
Distance from Jobsite:	Miles	GPS: LAT.41°45'34" N : LON. 81°13'50" W
	Expanded Polystyrene Foam Insulation Resin (100% Virgin Material)	

Harvesting/Extraction Address: (Name of Material Component No. 2)	Entec Polymers, LLC, 405 Parktower Road, Manchester, TN, 37355	
Distance from Jobsite:	Miles	GPS: LAT. 35°26'12" N : LON. 86°01'30" W
	HD Industrial Grd. Polypropylene (Hinged Pin Webs and Insert Webs -100% Recycled Mat.)	

Harvesting/Extraction Address: (Name of Material Component No. 3)	Entec Polymers, LLC, 405 Parktower Road, Manchester, TN, 37355	
Distance from Jobsite:	Miles	GPS: LAT. 35°26'12" N : LON. 86°01'30" W
	High Density Industrial Grade Polystyrene (Web Fastening Strips - 100% Recycled Material)	

* Attach a separate sheet for materials requiring more than 3 components. Record total recycled content on 1st sheet.

Pre-Consumer Recycled Content: (material diverted from the waste stream during the manufacturing process)	40.2%	(by weight of total product)
Post-Consumer Recycled Content: (consumer waste that has been collected to become a raw material for another product)	17.2%	(by weight of total product)

Additional LEED Data attached:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Supplemental LEED Data
Product sheet(s) attached:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	See Attached 10 -Part Spec Document
Manufacturers letter attached:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

1. NUDURA Subcontractor and Supplier/ Distributor to complete this sheet
2. The cost of each product contributing to LEED Regional Materials or Recycled Material credits must be provided.
3. The cost of each product includes fabrication but excludes installation labor & equipment.
4. Only include materials that are permanently installed in the project.
5. Indicate Percentage of Post-consumer and Pre-Consumer Recycled content as claimed by the manufacturer or supplier.
6. Attach all documentation supporting claims.

Supplier's Signature _____ Date _____

Manufacturer's Signature _____ Date _____



**Recycled Content & Manufacturing Location
for the NUDURA Insulated Concrete Form System**

Project Name:
Location:
Date:
LEED Project No.:

LEED® PRODUCT RECYCLED CONTENT & MFG. LOCATION

Install. Subcontractor:		
Supplier/ Distributor:		
Address:		
Phone:	Contact:	
Material Manufacturer:	Polymax (NUDURA)	Contact: (866) 468-6299
Material Trade Name:	Insulating Concrete Forms	(NUDURA Integrated Building Technology)
Spec Section:	03-11-19	Division: 3

Total Material Cost: (inc. fabrication, exc. install labor & equipment)		
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Manufacturer Plant Address: (final point of assembly prior to shipping)	Polyform/Polymax Inc. 877 Industrial Blvd. Granby, QC J2J 1A6	
Distance from Jobsite:	Miles (km)	GPS: LAT. 45°22'59" N. : LON. 72°45'48" W

Harvesting/Extraction Address: (Name of Material Component No. 1)	NOVA Chemical Corporation - 786 Hardy Rd., Painesville, OH 44077-4524	
Distance from Jobsite:	Miles (km)	GPS: LAT. 41°45'34" N : LON. 81°13'50" W
	Expanded Polystyrene Foam Insulation Resin (100% Virgin Material)	

Harvesting/Extraction Address: (Name of Material Component No. 2)	Aaron Industries 20 Mohawk Drive, Leominster, MA 01453	
Distance from Jobsite:	Miles (km)	GPS: LAT. 42°31'40" N : LON. 71°44'03" W
	HD Industrial Grd. Polypropylene (Hinged Pin Webs and Insert Webs -100% Recycled Mat.)	

Harvesting/Extraction Address: (Name of Material Component No. 3)	Aaron Industries 20 Mohawk Drive, Leominster, MA 01453	
Distance from Jobsite:	Miles (km)	GPS: LAT. 42°31'40" N : LON. 71°44'03" W
	High Density Industrial Grade Polystyrene (Web Fastening Strips - 100% Recycled Material)	

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Manufacturers letter attached:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

1. NUDURA Subcontractor and Supplier/ Distributor to complete this sheet
2. The cost of each product contributing to LEED Regional Materials or Recycled Material credits must be provided.
3. The cost of each product includes fabrication but excludes installation labor & equipment.
4. Only include materials that are permanently installed in the project.
5. Indicate Percentage of Post-consumer and Pre-Consumer Recycled content as claimed by the manufacturer or supplier.
6. Attach all documentation supporting claims.

Supplier's Signature	Date	
Manufacturer's Signature	Date	






MATERIALS CREDITS DOCUMENTATION SHEET

LEED™ - GREEN BUILDING RATING SYSTEM



MATERIALS OR PRODUCT:		NUDURA® Brand Low Expansion Foam	
MATERIAL COST (LESS LABOR AND EQUIPMENT):			
Contractor/Installer:	Manufacturer's Auth. Distributor:	NUDURA Corporation	
Address:	Manufacturer Location Address:	866 Horan Drive Fenton MO 63026	
Contact:			

Signed by:  Date Jan 16/09
 Company: NUDURA Corporation

Instructions to Contractor/Installer: Please complete the following information in all appropriate categories. Use one documentation sheet for each product or material (e.g. tile and grout each get their own sheet). Attach any other additional information to this sheet (e.g. cut sheets, letters from manufacturers, etc.)

Step A. – LEED Credit 3 – Resource Reuse

Has the material/product been salvaged or refurbished? **NO**

Origin of material: _____

Step B. – LEED Credit 4 – Recycled Content

Does the material/product contain post-consumer or post-industrial content? **NO**

Percentage of post-consumer (PC) content?	N/A
Percentage of post-industrial (PI) content?	N/A

If only part of the assembly contains recycled content, fill in the detail chart below:

Assembly Components:	Weight	% PC	%PI
Not Applicable			

Step C. – LEED Credit 5.1 – Locally Manufactured Materials/Product

Was the material/product manufactured or fabricated locally?

Location of manufacturer/fabricator:	Pacific, MO
Miles to manufacturer/fabricator:	

Step D. – LEED Credit 5.2 – Locally Harvested Materials

Does the product/material contain locally harvested raw materials? **NO**

Raw Materials:	Miles:
Not Applicable	

STEP E. – LEED Credit 6 – Rapidly Renewable Materials*Does the product/material contain rapidly renewable materials?***NO**

Raw Material:	% of Material \$
Not Applicable	

STEP F. – LEED Credit MR7 – FSC Certified Wood Materials*Does the product/material contain FSC certified wood?***NO**

Component:	Chain-of-Custody Certificate #	% of Material \$
Not Applicable		

STEP G. – LEED Credit EQ4.1 – Low-Emitting Materials – Adhesives & Sealants*Does the product/material meet emission factor limits of SCAQMD or BAAQM? YES - less than 250 VOC g/l*

Product Name:	VOC Content
NUDURA® Brand Low Expansion Foam (at time of application)	154 g/l
NUDURA® Brand Low Expansion Foam (after curing)	TBD

STEP H. – LEED Credit EQ4.2 – Low-Emitting Materials – Paints & Coatings*Does the product/material comply with VOC limits of Green Seal Standard?*

Product Name:	VOC Content
Not Applicable	

STEP I. – LEED Credit EQ4.3 – Low-Emitting Materials – Carpet*Does the product/material meet emission factor limits of SCAQMD or BAAQM?*

Product Name:	yes/no
Not Applicable	

STEP J. – LEED Credit EQ4.4 – Low-Emitting Materials – Composite Wood & Agrifiber Products*Does the product/material contain added urea-formaldehyde resins? N/A*

Product Name:	yes/no
Not Applicable	

LEED SUBMITTALS