



LEED™ 4.1 GREEN BUILDING PRODUCT INFORMATION GUIDE

INSULATED CONCRETE FORMS

William J. Clinton Presidential Library and Museum
Little Rock, AR | Tremco Vegetative Roofing System



Construction Products Group

Tremco CPG supports sustainable design and green building for energy efficient building. As part of Tremco CPG's vision, we manufacture several sustainable building design solutions to achieve social and environmental objectives while providing economic balance.

The Leadership in Energy and Environmental Design (LEED) program was originally developed by the United States Green Building Council (USGBC), Department of Energy and Environmental Protection Agency (EPA) in 1997 and formalized thereafter by USGBC as a guide for sustainable building design.

LEED stands as the planet's most prevalent green building assessment system. LEED certification establishes a structure for creating environmentally-friendly, cost-effective, and health-conscious green structures. These buildings not only deliver advantages in terms of the environment, society, and governance but also represent a globally acknowledged symbol of accomplishment in sustainability.

- 🌿 **LEED Credits:** Tremco CPG actively contributes sustainability by providing products and information that can offer LEED category credits. Visit the US Green Building Council LEED rating system at <https://www.usgbc.org/leed>
- 🌿 **Building Product Disclosure and Optimization:** No single extracted material is used to produce the majority of Tremco CPG Sealant products.
- 🌿 **Recycled Content** for Tremco CPG Sealant and Coating products is not available, and for the purposes of LEED reporting, should be assumed to be zero.
- 🌿 **Greenguard Gold Certification:** UL Greenguard Gold Certified products comply with the requirements of the California Department of Public Health (CDPH) Standard Method v1.2-2017.
- 🌿 **Living Building Challenge:** Many Tremco products free of Red List Chemicals can be used in projects while helping achieve a Living Building Challenge Certification.

LEED CREDIT GUIDE & CALCULATOR



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

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 = 1.307 lbs/ft² = 100%
- % 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 Foam weight = 7.112 kg
- Equivalent wight/gross wall area = 6.382 kb/m² = 100%
- % Content Virgin Material (EPS Foam Panels) = 42.6%
- % Content Recycled Polypropylene (PP) webs = 57.4%
- Equivalent wight/gross wall area = 3.662 kg/m²
- Post Consumer Content of PP Webs / Total Form weight = 17.2%
- Equivalent wight/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 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		lb	kg		lbs/ft ²	kg	
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	2.70	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	6.370	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%	1.08	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	488.24	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%	26.306	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 F weight is based on Polymax/C 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 intalled @ 16"o/c = 0.75 LF/SF of wall

IJ 15: LF of steel reinforcement in wall is also based on No. 4 horizontals intalled @ 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 0.75 = 0.782 lbs/ft² TOTAL = 1.909 lbs/ft²

116 & 117: Post Consumer and Pre-Consumer Recycle Contents based on publications from the American Steel Recycling Institute confirming 56.6% of steel comes from post consumer sources

120 & 121: Though breakdown is low, calculation assumes that 50% of concrete is recycled content with an even split between post and pre-consumer source (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 INFO FOR LEED CREDIT ASSESSMENT

Relevant Information for LEED Credit Assessment:

Category Code **Assessment/Element**

MR **Materials & Resources**
***Regional Materials - Credit 5**
NUDURA Form Fabrication: Southern USA
 IC Form Inc. 4554 Cargo Drive, Columbus, Georgia, 31901

Primary NUDURA Raw Material Manufacturing/Collection Sites - For Northern USA/Canada Plant
EPS Resin/Styrene Monomer
 NOVA Chemical Corporation, 786 Hardy Road, Painesville, OH 44077-4524

High-Density Polypropylene
 Aaron Industries Corporation, 20 Mohawk Drive, Leominster, MA 01453

NUDURA Form Fabrication: Northern USA & Canada
 Polymax Inc. 877 Industrial Boulevard, Granby, Quebec, J2J 1A6

Material	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:	100.00 lbs/ft ² - (288.243 kb/m 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 g/L (less water)
Complies with South Coast Air Quality Management District (SCAQMD) Rule 1168, under Specialty Applications Section as: Special Purpose Contact Adhesive: < 250 g/L (less water)

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

INSULATED CONCRETE FORMS

Product	Product Category	Description	Location of Manufacture	VOC (grams/L)	VOC % by Weight (as applied mixed)	Single Extracted Material	Additional Info
TREMdri 160 Liquid Waterproofing	Coating	Waterproofing Membrane	Cleveland, OH	70 g/L	4.93%	No	Lower than SCAQMD Rule 1113
Horizon Parge Coarse Coat (Tacoma Grey)	Coating	Elastomeric, emulsion-based coating		53 g/L	3.02%	No	Lower than SCAQMD Rule 1113
ExoAir 110AT	*Air, vapor, & weather resistant coating	Self-adhered air and vapor barrier membrane	Newbury, MA	<1 g/L	<1%	No	Manufacturing inventory available Lower than SCAQMD Rule 1113
Dymonic 100	Sealants & Mastics	Single-component, medium-modulus, non-sag polyurethane sealant	Cleveland, OH	40 g/L	3%	No	Manufacturing inventory available Lower than SCAQMD Rule 1168 Greenguard certified
Enviro-Dri Field Membrane	*Air, vapor, & weather resistant coating	Permeable membrane	Medina, OH	66 g/L	<5%	No	Red List Free for Living Building Challenge Lower than SCAQMD Rule 1113

*Air barrier systems, when properly installed, have been shown to reduce energy costs for HVAC by as much as 40% versus buildings without fully-adhered air barriers. This is important to remember as utilizing such an air barrier system such as ExoAir may assist in earning points within LEED.

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

Products that adhere to the California Department of Public Health (CDPH) Standard Method V1.1-2010, is a standard vital to demonstrate compliance with LEED.

We are pleased to report that products without any Red List Chemicals can be used to assist in finishing projects aimed towards achieving a Living Building Challenge Certification.



TREMCO
Construction Products Group



Tremco Construction Products Group (CPG) brings together Tremco CPG Inc. and its Dryvit and Nudura brands; Willseal; Prebuck LLC; Tremco Barrier Solutions, Inc.; Weatherproofing Technologies, Inc. and its Pure Air Control Services and Canam Building Envelope Specialists offerings; and Weatherproofing Technologies Canada, Inc.



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