

EXHIBIT A



AS SEEN ON HGTV!

home | contact us



Deck/Dock/Porch CONSUMER

Deck/Dock/Porch PROFESSIONAL

Custom Extrusions

Our Company

Deck/Dock/Porch CONSUMER

PRODUCT FEATURES

Colors and Finishes

Profiles

Environmental Impact

Lifetime Warranty

Care and Maintenance

FAQs

APPLICATIONS

Decks

Docks

Porches and Restoration

Featured Project

Product Comparison

Building Guide

Information Download Center

LOCATE A DEALER

Environmental Impact

Use EVOLVE® for Green Building

When you build with EVOLVE recycled plastic lumber, you demonstrate your commitment to the environment and sustainable living.

EVOLVE recycled plastic lumber products are 100% plastic and generally contain over 90% recycled high density polyethylene (ReHDPE) material. Unlike wood-plastic composite (WPC), EVOLVE is 100% recyclable.

- Highly sanitized, pure plastic from post-consumer and post-industrial material
- No harsh chemicals to leech into the environment
- PVC and BPA Free
- 100% recyclable

Because EVOLVE doesn't absorb water, it won't harbor harmful mold or bacteria. That means a healthier environment for you and the rest of the world.

Our Green Initiative



NEW Plastics Corp makes efforts to reduce the footprint of human consumption. This seal represents our commitment to corporate policies and practices that protect the environment for future generations.

Click on the seal to learn more >>>



Home | Deck/Dock/Porch Consumer | Deck/Dock/Porch Professional | Custom Extrusion | Our Company | Contact Us
Privacy Policy | Legal Disclaimer | Terms of Use | Site Map

Copyright 2008 RENEW Plastics - All rights reserved - Made in the U.S.A.





Deck/Dock/Porch CONSUMER

PRODUCT FEATURES

Colors and Finishes
Profiles
Environmental Impact
Lifetime Warranty
Care and Maintenance
FAQs

APPLICATIONS

Decks
Docks
Porches and Restoration
Featured Project
Product Comparison
Building Guide
Information Download Center

LOCATE A DEALER

FAQs - Consumer

For additional information and construction details, visit the [FAQ Professional](#) page.

Q. What is EVOLVE® high-density plastic lumber?

A. EVOLVE high-density plastic lumber is a solid, non-hollow foamed recycled plastic made from recycled high density polyethylene (ReHDPE) plastic, with no fillers. Common HDPE (recycling code # 2) products are gallon style milk, water and juice containers, as well as some detergent and shampoo bottles.

Q. What percentage of EVOLVE high-density plastic lumber is made from recycled plastic?

A. EVOLVE plastic lumber is 100% plastic with no wood fillers to rot, peel, weather or blister, and generally contains over 90% recycled HDPE plastic material.

Q. How much does EVOLVE alternative plastic decking weigh?

A: EVOLVE® plastic decking is comparable in weight to a good hardwood such as oak.

Q. What standard decking colors are available in inventory?

A. Standard colors in our deck and dock profiles are Dove Gray, Cedar, Weatherwood, and some railing material in White. Standard decking profile colors are subject to change over time.

Q. Are the EVOLVE plastic lumber boards colored throughout?

A. Yes, even when cut or routed, the exposed product is colored.

Q. Will my EVOLVE plastic lumber boards have consistent color and texture?

A. We make every effort to maintain color consistency. However, due to utilizing recycled materials, and the standard allowable variances in the color we purchase, shade variations can occur in our lumber. The texture may be slightly different from board to board due to the manufacturing process.

Q. Can an EVOLVE deck be stained or painted?

A. Staining or painting will not harm alternative decking material from EVOLVE. However, EVOLVE was designed to eliminate the need for such work. Stain or paint, if applied to the boards, will not penetrate the surface because the product doesn't absorb moisture. Therefore, stains or paints will tend to flake off the surface of the material over time.

Q. Will EVOLVE plastic lumber fade over time?

A. All of our EVOLVE high density plastic lumber has ultra-violet (UV) stabilizers added to help protect the color and the integrity of the HDPE.

Q. Do you have any minimum order requirements?

A. Yes. Please see the [Profile Chart](#) for minimum order quantities.

Q. Does EVOLVE plastic lumber have a grain pattern?

A. EVOLVE high density plastic lumber is very durable, and yet flexible. It does require more substructure compared to wood lumber because it doesn't have a grain pattern. Our product eliminates grain splitting.

Q. How long will my EVOLVE deck or dock last?

A. EVOLVE high density plastic lumber is still going strong after over twenty years of accelerated weather testing. We haven't seen the total life span of the product to date. We do have product installed on boat docks since 1976 with no sign of degradation.

Q. How do I take care of my plastic lumber decking?

A. Washing EVOLVE plastic lumber with a hose or a mop is about all that is needed under normal circumstances. You can use a mixture of bleach and water (1 part bleach to 10 parts water) to clean stubborn stains on the material.

Q. Will an EVOLVE deck or dock be slippery when wet?

A. EVOLVE high density plastic lumber is no more slippery than painted or sealed wood when wet. A natural film, which can't be seen or felt, is left on the surface of the material after manufacturing. Sunlight will normally "burn off" this film in a few weeks.



AS SEEN ON HGTV!

home | contact us



Deck/Dock/Porch
CONSUMER

Deck/Dock/Porch
PROFESSIONAL

Custom
Extrusions

Our
Company

Custom Extrusions

PRODUCT FEATURES

- Colors and Finishes
- Machinability
- Profiles
- Environmental Impact
- Lifetime Warranty
- Trademark
- FAQs

APPLICATIONS

- Information Download Center
- Photo Gallery

LOCATE A DEALER

Environmental Impact

Sustainable Manufacturing

EVOLVE® is 100% polyethylene recyclable plastic. Companies who use it can promote their commitment to green manufacturing and appeal to a growing consumer demand for environmentally responsible products.

EVOLVE recycled plastic lumber products generally contain over 90% recycled high density polyethylene (ReHDPE) material.

- Highly sanitized, pure plastic from post-consumer and post-industrial material
- No harsh chemicals to leech into the environment
- 100% recyclable

Because EVOLVE doesn't absorb water, it won't harbor harmful mold or bacteria. That means a healthier environment for you and the rest of the world.

Our Green Initiative



NEW Plastics Corp makes efforts to reduce the footprint of human consumption. This seal represents our commitment to corporate policies and practices that protect the environment for future generations.

Click on the seal to learn more >>>



Home | Deck/Dock/Porch Consumer | Deck/Dock/Porch Professional | Custom Extrusion | Our Company | Contact Us
Privacy Policy | Legal Disclaimer | Terms of Use | Site Map
Copyright 2008 RENEW Plastics - All rights reserved - Made in the U.S.A.





ICC Evaluation Service, Inc.
www.icc-es.org

Business/Regional Office ■ 5360 Workman Mill Road, Whittier, California 90601 ■ (562) 699-0543
Regional Office ■ 900 Montclair Road, Suite A, Birmingham, Alabama 35213 ■ (205) 599-9800
Regional Office ■ 4051 West Flossmoor Road, Country Club Hills, Illinois 60478 ■ (708) 799-2305

Legacy report on the 2000 International Building Code®, the 2002 Accumulative Supplement to the International Codes™, the BOCA® National Building Code/1999, the 1999 Standard Building Code®, the 1997 Uniform Building Code™, and the 2000 International Residential Code®

DIVISION 06 - WOOD AND PLASTICS
Section 06500 - Structural Plastics

RENEW PLASTICS,
A DIVISION OF N.E.W. PLASTICS CORP.
112 4TH STREET
P.O. BOX 480
LUXEMBURG, WISCONSIN 54217-0480
www.renewplastics.com
(920) 845-2326

1.0 SUBJECT

- 1.1 Perma-Poly™ Lumber Plastic Decking
1.2 EVOLVE® Lumber Plastic Decking

2.0 PROPERTY FOR WHICH EVALUATION IS SOUGHT

Structural

3.0 DESCRIPTION

3.1 General

RENEW Plastics' Perma-Poly™ and EVOLVE® Lumber Plastic Decking are used as a flooring or non-structural trim components for exterior balconies, porches, decks, and other exterior walking surfaces where combustible construction is permitted. Perma-Poly™ and EVOLVE® are the same product with different names for marketing purposes. Perma-Poly™ and EVOLVE® is a plastic composite material that consists of at least 90% recycled Type 2 High Density Polyethylene (HDPE) with the remainder of material being foaming agents and color with UV inhibitors. The HDPE composite material is manufactured by a continuous extrusion process in accordance with the listed quality control manual to produce comparable lumber-sized members with nominal sizes as listed in Table 1 of this report.

3.2 Structural

Table 1 lists the allowable spans of Perma-Poly™ and EVOLVE® Lumber used as decking (flat-wise bending).

4.0 INSTALLATION

The manufacturer's published installation instructions and this report shall be strictly adhered to and a copy available on the jobsite at all times during installation. The installation instructions within this report govern if there are any conflicts between the manufacturer's published installation instructions and this report.

TABLE 1
MAXIMUM ALLOWABLE SPANS1,2,3

Table with 3 columns: LUMBER SIZE (inches), MAXIMUM UNIFORM LOAD 40 psf, MAXIMUM UNIFORM LOAD 100 psf. Rows include sizes like 3/4 x 5 1/2, 3/4 x 6, 1 x 5 1/2, 1 1/2 x 3 1/2, 1 1/2 x 5 1/2.

SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa

- 1. Spans are for members used as planking (flat-wise bending).
2. Members shall be supported by a minimum of three joist (2 spans) and shall be fastened at each joist.
3. Use of members as stair treads is outside the scope of this table.

5.0 IDENTIFICATION

Perma-Poly™ and EVOLVE® Lumber Plastic Decking planks shall be labeled with the manufacturer's name and/or trademark, the product name, the name and/or trademark of the third party inspection agency (Intertek) and this evaluation report number.

6.0 EVIDENCE SUBMITTED

- 6.1 Manufacturer's descriptive literature and installation instructions.

ICC ES legacy reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, Inc., express or implied, as to any finding or other matter in this report, or as to any product covered by the report.



- 6.2** Test report on EVOLVE® Lumber in accordance with ASTM D 6662, prepared by Intertek Testing Services, Report No. 3022869, dated January 9, 2003, Revised January 17, 2003, signed by Kazamir L. Falconbridge and Cameron Robinson.
- 6.3** Test report on Fire Retardancy Test of a RENEW Plastics Lumber Decking Boards, prepared by Intertek Testing Services, Report No. 3025606, dated June 10, 2002, signed by Kent Kelsey and Rick Curkeet.
- 6.4** Quality Control/Factory Audit Manual for EVOLVE® or Perma-Poly™ Recycled Plastic Lumber, dated November 2002, Revised December 19, 2003, signed by Lynie Vincent (RENEW Plastics) and Mike Van Geyn (Intertek Testing).
- 6.5** Letter on equivalency of product sizes, prepared by Intertek Testing Services, dated February 25, 2003, signed by Chris Bowness and Francis Roma.
- 6.6** Test report on Standard Flame Spread Test Program in accordance with ASTM E 84, prepared by Intertek Testing Services, Report No. 3031070, dated August 30, 2002, signed by Greg Philp and Michael van Geyn.
- 6.7** Span length calculations for 40 psf and 100 psf at 130°F, prepared by Intertek Testing Services, Project 3022869, dated July 30, 2003, signed and sealed by Cameron Robinson, P.Eng.

7.0 CONDITIONS OF USE

The ICC-ES Subcommittee for the National Evaluation Service, Inc. finds that the application of Perma-Poly™ and EVOLVE® Lumber Plastic Decking as described in this report complies with or is a suitable alternate to the materials prescribed in the 2000 International Building Code®, the 2002 *Accumulative Supplement to the International Codes*™, the BOCA® *National Building Code*/1999, the 1999 *Standard Building Code*®, the 1997 *Uniform Building Code*™, and the 2000 *International Residential Code*® subject to the following conditions:

- 7.1** Perma-Poly™ and EVOLVE® Lumber Plastic Decking shall be limited to exterior applications where combustible construction is permitted.
- 7.2** Use of Perma-Poly™ and EVOLVE® Lumber Plastic Decking in applications where fire-rated construction is required is outside the scope of this report.
- 7.3** Perma-Poly™ and EVOLVE® Lumber shall be gapped to permit adequate drainage in accordance with the manufacturer's instructions.
- 7.4** Perma-Poly™ and EVOLVE® Lumber shall not be attached to any solid surface or watertight flooring system, such as sheathing, waterproof membranes, concrete, roof decks, or patios.
- 7.5** Use of Perma-Poly™ and EVOLVE® Lumber in applications where the code requires solid-sawn lumber to be naturally durable or preservative-treated is outside the scope of this report.
- 7.6** Use of Perma-Poly™ and EVOLVE® Lumber for single span applications is outside the scope of this report.
- 7.7** Perma-Poly™ and EVOLVE® Lumber shall be fastened directly to floor joists having adequate strength and stiffness in accordance with the applicable code.
- 7.8** Perma-Poly™ and EVOLVE® Lumber shall not be used in applications that will cause the temperature of the board to exceed 130°F (54°C).
- 7.9** This report is subject to periodic re-examination. For information on the current status of this report, consult the ICC-ES website.



Custom Extrusions

PRODUCT FEATURES

- Colors and Finishes
- Machinability
- Profiles
- Environmental Impact
- Lifetime Warranty
- Trademark
- FAQs

APPLICATIONS

- Information Download Center
- Photo Gallery

LOCATE A DEALER

Applications

Strong, Recyclable Plastic

EVOLVE® is strong, impervious to most chemicals, needs minimal (if any) maintenance, and is highly cost effective. EVOLVE is composed of polyethylene and is entirely recyclable.

Material Characteristics

- Non-absorptive
- Impervious to most chemicals
- Solid color to core
- Durable, wear resistant
- Flame resistant
- Environmentally friendly
- Machinable
- Variety of colors

Application Benefits

- Trim costs
- Increase product life
- Decrease noise
- Reduce wear
- Minimize downtime



EVOLVE has been successfully utilized in many industrial, commercial and agricultural applications.

[Product Application List](#)

NEW Plastics Corp. makes efforts to reduce the footprint of human consumption. This seal represents our commitment to corporate policies and practices that protect the environment for future generations.

Click on the seal to learn more >>>





EVOLVE® LUMBER

EVOLVE lumber is a solid, non-hollow, foamed recycled product manufactured from recycled Type 2 High Density Polyethylene (ReHDPE), with no fillers. The composite mixture of the end product is at least 90% ReHDPE, utilizing both post-consumer and post-industrial materials. The plastic is impregnated with colorant and UVI to help protect the material from physical degradation, flaking and color fade.

EVOLVE lumber is a non-commingled "pulltruded" product. This promotes a network of complete molecular linkage. EVOLVE lumber is able to sustain normal loading at temperatures ranging from -40°F to 110°F with proper installation.

EVOLVE lumber is manufactured using only heavy-metal free colorants, to be environmentally friendly, and to meet current and future federal standards.

PERMA-POLY® SHEETING

Perma-Poly sheet material is manufactured from a mixture of virgin and recycled Type 2 High Density Polyethylene (HDPE & ReHDPE). The composite mixture of the end product is at least 50% ReHDPE, utilizing both post-consumer and post-industrial materials. The plastic is impregnated with colorant and UVI to help protect the material from physical degradation, flaking and color fade.

Perma-Poly sheet is a non-commingled, extruded product. This promotes a network of complete molecular linkage. Perma-Poly sheet is able to sustain normal loadings at temperatures ranging from -40°F to 110°F with proper installation.

Perma-Poly sheet is manufactured using only heavy-metal free colorants, to be environmentally friendly, and to meet current and future federal standards.

EXHIBIT B



SOLUTIONS YOU CAN BUILD ON

- [Home](#)
- [Products](#)
- [Applications](#)
- [Technical Data](#)
- [Dealer Locator](#)
- [Project Ideas](#)

PRODUCTS

- [Environmental Decking](#)
- [Trimax Structural Lumber](#)
 - [Colors](#)
 - [Sizes](#)
 - [FAQ's](#)
- [OEM Products](#)

Structural Components without the worry

Trimax Structural Lumber is a patented formulation of fiberfill and recycled milk jugs. Together, these ingredients form structural components that allow the consumers the ability to build structures out of plastic lumber, from the ground up!



Why Trimax?

ACQ, CCA, what does this REALLY mean for me?

Pressure treated lumber has become a topic that is ever changing. First, in many years past, CCA (chromated copper arsenate) treated lumber was the answer. This was a durable treatment that would help the lumber weather the elements. Upon research and investigation, in December of 2003, the EPA (Environmental Protection Agency) banned the use of CCA treated lumber saying that other treatments are "safer." Now ACQ (alkaline copper quat) is recommended, but within the first year, ACQ, due to the extremely high levels of copper has been found to corrode fasteners at an accelerated pace.

The question is, what health issues in the future will they find wrong with ACQ? And how can I protect my loved ones against any of these issues?

And by the way, Trimax doesn't rot, warp, crack, chip, splinter or fade.

The answer is simple. Trimax Structural Lumber.

Trimax as a Deckboard

Trimax Structural Lumber is a great fit for use as structure but because it is structural, Trimax is also a great fit for a deck board. Trimax manufactures boards that have varying thicknesses. Please refer the the chart below that shows the joist spacing that can be used for deckboards of varying thicknesses.

Trimax Deckboard Allowable Joist Spacing



TRIMAX® Structural Lumber

DESCRIPTION

TRIMAX® Structural Lumber is a high-performance construction material consisting of a patented formula of recycled plastic, fiberglass, and select additives. The plastic raw material utilized in Structural Lumber is derived from post-consumer bottle waste such as milk and detergent bottles. The material is compounded into a consistent mixture of fiberglass and plastic that give it the structural properties in the table below.

Structural Lumber is a cost-effective and high-performance timber product for marine construction and commercial applications. It has exceptional resistance to marine borers, salt spray, termites, corrosive substances, oil and fuels, fungi, and other environmental stresses. It does not absorb moisture; therefore, it will not rot, splinter or crack.

Structural Lumber products are manufactured in many dimensional lumber and timber sizes, particularly in large cross sections. Deck and dock planks, sheet piling, wale timbers, camels, fenders, and piles are all available from TRIMAX® Structural Lumber. The product comes in almost any transportable length and is standard in Black. It can be special ordered in colors to complement HDPE.

Structural Lumber has excellent weathering resistance; however, as with many other polyolefins, the material will fade over the service life of the product. The product requires no waterproofing, painting, staining, or similar maintenance when used in many exterior applications.

BASIC USES

Structural Lumber products are used in a variety of commercial and marine applications and are often the product of choice for exterior applications where resistance to salt and fresh water, marine borers, and other environmentally harsh conditions is required. Due to the unique composition of TRIMAX® Structural Lumber, the product can be used for a number of structural members in commercial and shoreline timberwork. It is well suited for:

- ⇒ Dock and deck planks
- ⇒ Sheet piling
- ⇒ Pilings
- ⇒ Channel markers
- ⇒ Wale Timbers
- ⇒ Camels
- ⇒ Fenders
- ⇒ Posts, beams, and joists

Structural Properties

Mechanical Properties @ 70 F	Test Method	Average Value
Density, lbs / cu. In.	ASTM D6111-09	0.034
Water Absorption	ASTM D570-98	< 0.1
Modulus of Rupture (MOR)	ASTM D6109-05	4,134 psi
Modulus of Elasticity (MOE)	ASTM D6109-05	329,787 psi
Secant MOE @ 1% Strain	ASTM D6109-05	288,751 psi
Compression Parallel to Grain	ASTM D198-05	3,716 psi
Compression Perpendicular to Grain	ASTM D143-94	2,516 psi
Shear Strength	ASTM D143-94	1,828 psi
Tensile Strength	ASTM D198-05	3,076 psi
Durometer Hardness	ASTM D2240-05	68.2
Abrasion Resistance	ASTM D4060-10	42 mg
Chemical Resistance	ASTM D543-06	5%
Tensile Properties	ASTM D638-10	3660 psi
Coefficient of Friction (Dry)	ASTM D2047	0.95
Coefficient of Thermal Expansion	ASTM D6341-98	0.000021
Screw Withdrawal	ASTM D1761-06	938 lbf/in
Flame spread	ASTM E84	Class C

- 1 ½ x 5 ½ TRIMAX® profile used in testing data at various lengths required by the test method noted
- Lower density may occur in larger cross sections
- The above testing was performed by an independent 3rd party testing agency in January 2012

LIMITATIONS

This type of plastic lumber product has a significantly higher modulus of elasticity (MOE) than conventional forms of plastic lumber. It is important to evaluate the suitability of this product for specific uses. It is recommended that an engineering study be performed prior to use of Structural Lumber products for structural applications. Building code regulations vary by region, so all users should consult local building and safety codes prior to installation for specific requirements.

INSTALLATION

Structural Lumber can be fabricated and installed with the same tools used to work wood lumber. The product will cut and drill very cleanly, as there is no grain to split or chip, or knots to bind tools and bend fasteners. It is reinforced with glass fibers, and precautions should be taken when fabricating this product. Maintain adequate ventilation when generating fabrication dust, and personal respiratory protection such as dust masks should be employed during fabrication, as well as safety glasses or goggles.

Pilings and sheet piling products, can be driven with pile-driving equipment such as vibratory hammers, land-based or barge-mounted drop hammers, or waterjets. For sheet piling installations, backfill soils should always be analyzed to determine that the proper amount of force would be exerted on the sheet piling system. For shoreline timberwork applications, Structural Lumber is used with conventional hardware such as stainless or galvanized bolts, tie rods, nuts, washers, and anchor systems.

When using Structural Lumber for decking, joist spacing should be in accordance with the span tables. Multiple-span data at 120°F or less are presented here:

Structural Allowable Live Load (psf), Multiple Span, at 120 F or less			
Deflection Limit	12" Span	16" Span	24" Span
Structural 2X Decking Board (t = 1.50")			
L/360'	2198 PSF	927 PSF	275 PSF
L/240'	3000* PSF	1391 PSF	412 PSF
L/180'	3000* PSF	1618* PSF	550 PSF

*Load limited by allowable stress of 1000 psi.

Note: Table provides limiting uniform load present on three spans in pounds per square foot (psf) based on noted deflection criteria.

Recommended standard is to limit live load deflection for floors to L/360' and to limit total deflection (dead + live load) to L/240'. Designers may choose less restrictive or more restrictive criteria for a given application. Except for very unusual and heavy loading, deflection criteria will control allowable plank span.

Deflection determination is based on a modulus of elasticity equal to 325,000 psi at 70° Fahrenheit.

Technical Services: Technical inquiries should be directed to RENEW Plastics at 1-800-666-5207 or visit our website at <http://www.trimaxbp.com>

EXHIBIT C

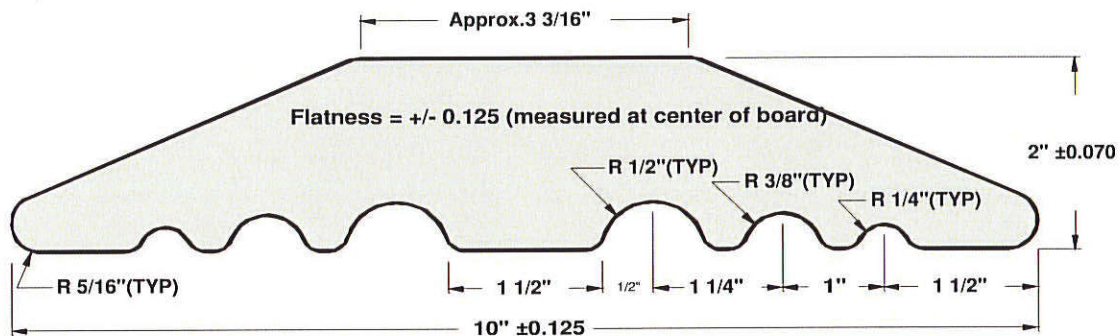
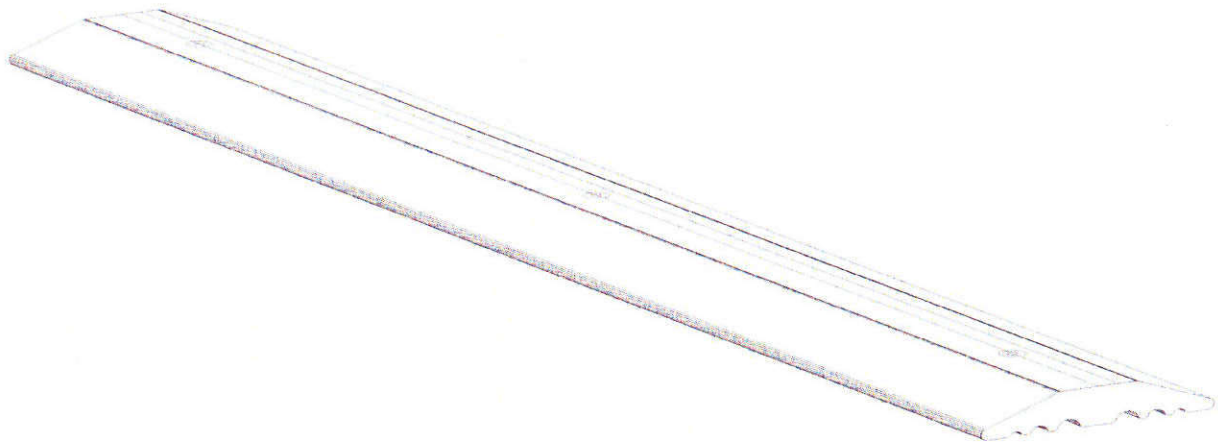


TRIMAX Structural Lumber

- **TRIMAX is a Plastic (HDPE)-fiberglass blend**
 - The plastic component is recycled
 - The product is recyclable & CONTAINS NO WOOD
 - It resists stains, mold and spotting like EVOLVE®
- **TRIMAX is great for:**
 - Deck / dock substructures
 - Posts
 - Benches and Bleachers
 - Fencing
 - And more
- **Call your representative or customer service for information**

EXHIBIT D

BENEFITS & SPECIFICATIONS



COLORS: Standard = Safety Yellow
Special Order colors are available – contact RENEW Plastics for more details.

Slight color variations may occur from one production run to another due to variations in recycled feedstock and standard allowable tolerances of colorants used in the manufacturing process.

LENGTHS: Standard = 4', 6', 8', 9', 10', and 12'
Special Order lengths are available in virtually any desired length - contact RENEW Plastics for more details.

COMPOSITION: EVOLVE® speed bumps are solid, non-hollow, foamed recycled products manufactured from recycled Type 2 High Density Polyethylene (ReHDPE), with no fillers. The composite mixture of the end product is at least 90% ReHDPE, utilizing both post-consumer and post-industrial materials. The plastic is impregnated with colorant and UVI to help protect the material from physical degradation, flaking and color fade.

EVOLVE plastic extrusions are non-commingled "pulltruded" products. This promotes a network of complete molecular linkage. EVOLVE products are able to sustain normal loadings at temperatures ranging from -40°F to 110°F with proper installation.

EVOLVE products are manufactured using only heavy-metal free colorants, to be environmentally friendly, and to meet current and future federal standards.

EXHIBIT E

I

ICC-ES Evaluation Report

ESR-2497

Issued July 1, 2009

This report is subject to re-examination in one year.

www.icc-es.org | (800) 423-6587 | (562) 699-0543

A Subsidiary of the International Code Council®

DIVISION: 06—WOOD AND PLASTICS
Section: 06500—Structural Plastics

REPORT HOLDER:

RENEW PLASTICS,
A DIVISION OF N.E.W. PLASTICS CORPORATION
112 4TH STREET
POST OFFICE BOX 480
LUXEMBURG, WISCONSIN 54217-0480
(920) 845-2326
www.renewplastics.com

EVALUATION SUBJECT

EVOLVE® PLASTIC LUMBER DECKING (ALSO KNOWN AS PERMA-POLY DECKING)

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2006 International Building Code® (IBC)
2006 International Residential Code® (IRC)

Properties evaluated

- Structural
Durability
Surface-burning characteristics

2.0 USES

The EVOLVE® (also known as Perma-Poly) Plastic Lumber Decking is limited to exterior use applications as deck boards for balconies, porches and decks of one- and two-family dwellings of Type V-B (IBC) construction and dwellings constructed in accordance with the IRC.

3.0 DESCRIPTION

3.1 General:

EVOLVE® or Perma-Poly Plastic Lumber Decking is made of a plastic composite material that consists of 90 percent recycled high-density polyethylene (HDPE), with the remaining 10 percent being foaming agents and color with ultraviolet inhibitors. The deck boards are manufactured by an extrusion process in the colors black, dove grey, dark green, weatherwood, cherrywood and white. The deck boards are manufactured in 3/4-inch-by-3 1/2-inch (19 by 89 mm), 3/4-inch-by-5 1/2-inch (19 by 140 mm), 3/4-inch-by-6-inch (19 by 152 mm) tongue and groove, 1-inch-by-5 1/2-

inch (25.4 by 140 mm), 1-inch-by-6-inch (25.4 by 152 mm) tongue and groove, 1 1/2-inch-by-3 1/2-inch (38 by 89 mm), 1 1/2-inch-by-5 1/2-inch (38 by 140 mm) and 1-inch-by-11 1/4-inch (25.4 by 286 mm) solid profiles. See Figure 1 for typical cross sections.

3.2 Durability:

When subjected to weathering, insect attack, and other decaying elements, the material used to manufacture EVOLVE® decking is equivalent in durability to preservative-treated or naturally durable lumber when used in locations described in Section 2.0 of this report. The deck boards have been evaluated for structural use when exposed to temperatures from -20°F to 125°F (-29°C to 52°C).

3.3 Surface-burning Characteristics:

When tested in accordance with ASTM E 84, the deck board products have a flame-spread index no greater than 200.

4.0 DESIGN AND INSTALLATION

4.1 General:

Installation of the deck boards must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation. When the manufacturer's published installation instructions differ from this report, this report governs.

4.2 Design (Structural):

When used as a deck board, EVOLVE® decking products have an allowable capacity, when installed at a maximum center-to-center spacing of supporting construction, as prescribed in Table 1.

4.3 Installation:

The end-to-end gap of the deck boards must be 1/16 inch (1.6 mm) for every 20°F (11°C) of difference between the installation temperature and the hottest anticipated temperature after installation. A minimum 1/8-inch (3.2 mm) gap must be provided between deck board edges. The end of each deck board must be supported by a joist. Double joists are required where decking butt-joints occur. The EVOLVE® deck boards must be attached at each joist with two No. 7 by 2 1/4-inch-long (57 mm) corrosion-resistant screws. Minimum fastener edge and end distances must be 1 inch (25.4 mm).

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, Inc., express or implied, as to any finding or other matter in this report, or as to any product covered by the report.



5.0 CONDITIONS OF USE

The EVOLVE[®] decking described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The EVOLVE[®] (also known as Perma-Poly) Plastic Lumber Decking is limited to exterior use applications as deck boards for balconies, porches and decks of one- and two-family dwellings of Type V-B (IBC) construction and dwellings constructed in accordance with the IRC.
- 5.2 Balconies constructed on one- and two-family dwellings in accordance with the IBC and rated for 60 psf (2874 Pa) must not exceed 100 square feet (9.29 m²) in total area.
- 5.3 The use of EVOLVE[®] deck boards as stair treads is outside the scope of this report.
- 5.4 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. When the manufacturer's published installation instructions differ from this report, this report governs.
- 5.5 The use of deck boards as a component of a fire-resistance-rated assembly is outside the scope of this report.
- 5.6 Only those fasteners and fastener configurations described in this report have been evaluated for installation of the EVOLVE[®] deck boards. The compatibility of the fasteners with the supporting construction, including chemically treated wood, is outside the scope of this report.
- 5.7 Adjustment factors outlined in the AF&PA National Design Standard and applicable codes do not apply

to the allowable capacity and maximum spans for EVOLVE[®] deck boards.

- 5.8 The EVOLVE[®] decking must be fastened to supporting construction. Where required by the code official, engineering calculations and construction documents consistent with this report must be submitted for approval. The calculations must verify that the supporting construction complies with the applicable building code requirements and is adequate to resist the loads imparted upon it from the products and systems discussed in this report. The documents must contain details of the attachment to the supporting structure consistent with the requirements of this report. The documents must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.
- 5.9 The EVOLVE[®] decking is manufactured in Luxemburg, Wisconsin, under a quality control program with inspections by Intertek Testing Services Inc. (AA-690).

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails) (AC174), dated February 2008 (editorially revised April 2008).

7.0 IDENTIFICATION

The EVOLVE[®] decking described in this report is identified by a stamp on each individual piece or on the packaging. The stamp includes the manufacturer's name (RENEW Plastics), the product name (EVOLVE[®] decking), the name of inspection agency (Intertek Testing Services) and the ICC-ES evaluation report number (ESR-2497).

TABLE 1—DECK BOARD SPAN RATINGS

DECK BOARD	MAXIMUM SPAN (inches) ¹	ALLOWABLE CAPACITY (lb/ft ²) ^{2,3}
EVOLVE® ¾-by-3½	12	100
EVOLVE® ¾-by-5½	12	60
EVOLVE® ¾-by-6 T&G	12	60
EVOLVE® 1-by-5½	16	60
EVOLVE® 1½-by-3½	24	60
EVOLVE® 1½-by-5½	24	100
EVOLVE® 1-by-6 T & G	16	100
EVOLVE® 1-by- 11¼ Bull Nose (used as deck board only)	16	100

For SI: 1 inch = 25.4 mm; 1 lb/ft² = 47.9 Pa.

¹ Maximum span is measured center-to-center perpendicular, of the supporting construction.

² Maximum allowable capacity is adjusted for durability. No further increases are permitted.

³ Under the IBC, deck boards not rated for at least 100 bf/ft² are limited to 100 square feet (9.29 m²) in total area.

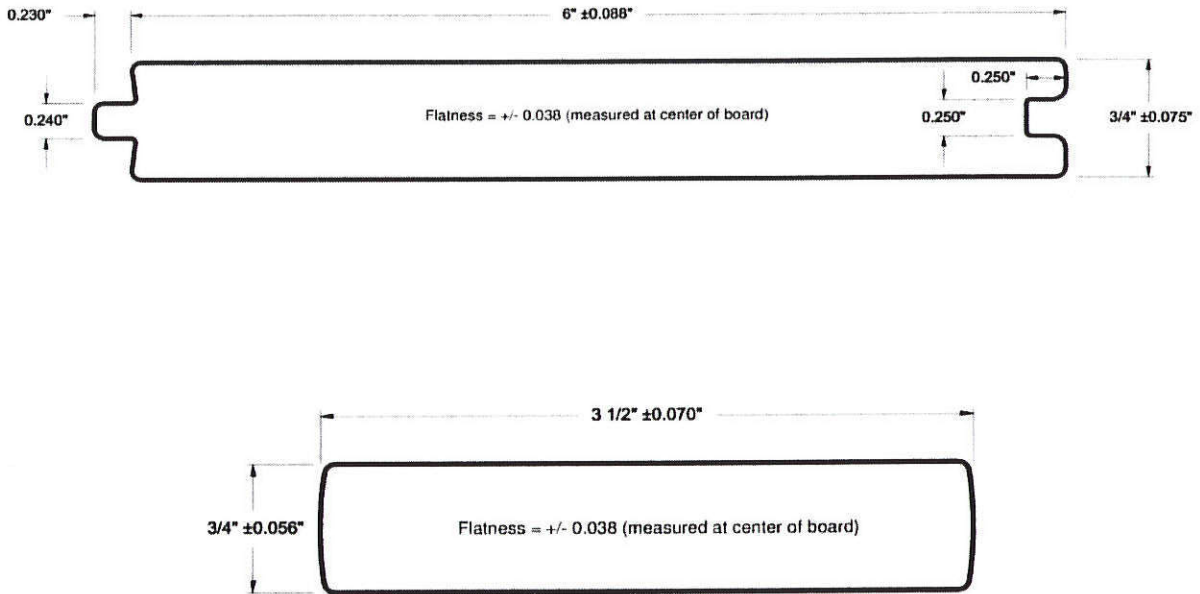
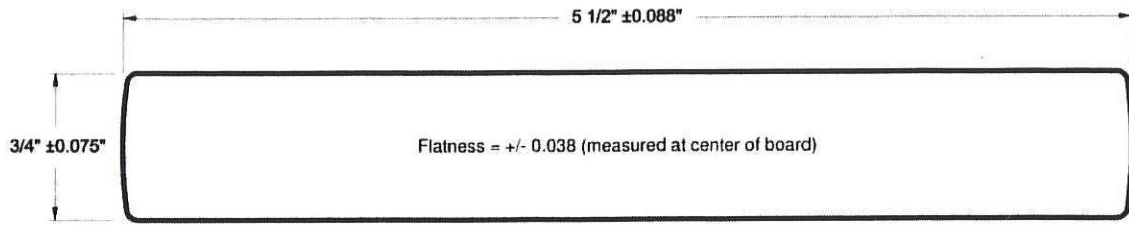
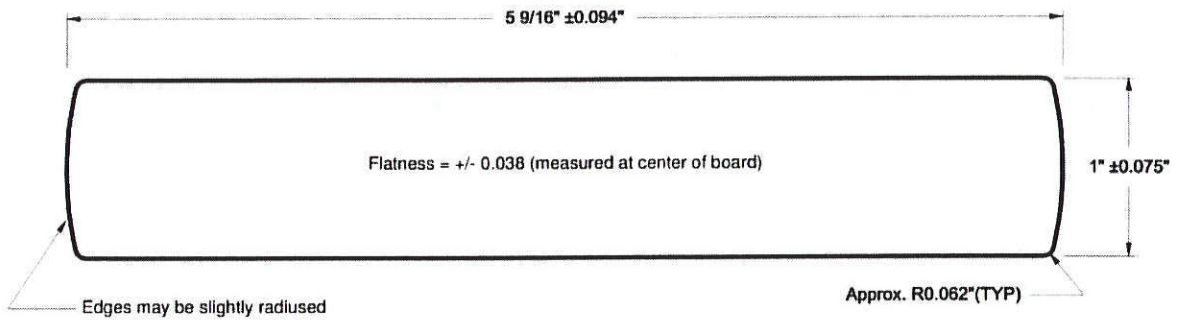


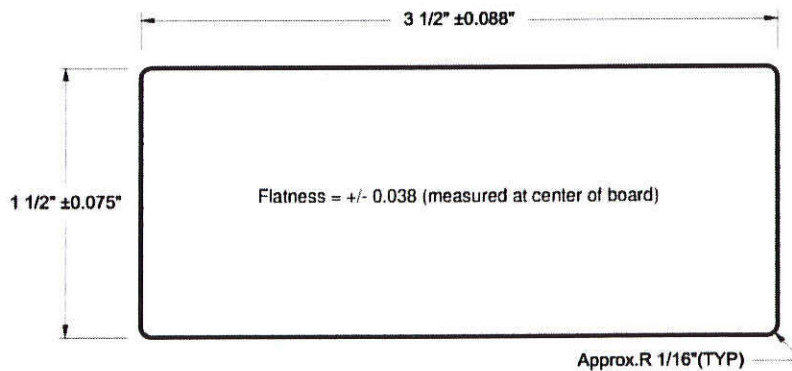
FIGURE 1—DECK BOARD PROFILES



3/4" x 5 1/2" Flat
Approximate Unit Weight -1.48 Lbs./Lin. Ft.

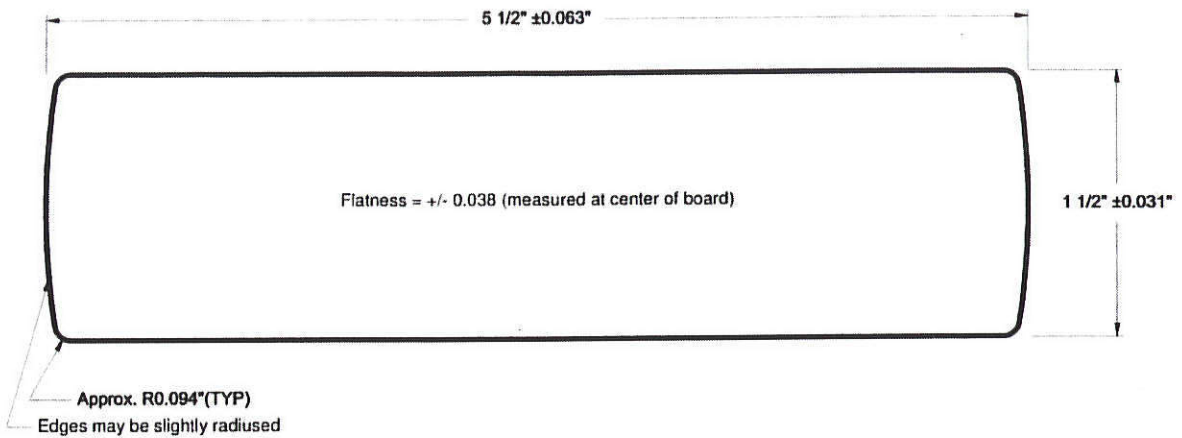


1" x 5 1/2" Flat
Approximate Unit Weight - 1.76 Lbs./Lin. Ft.

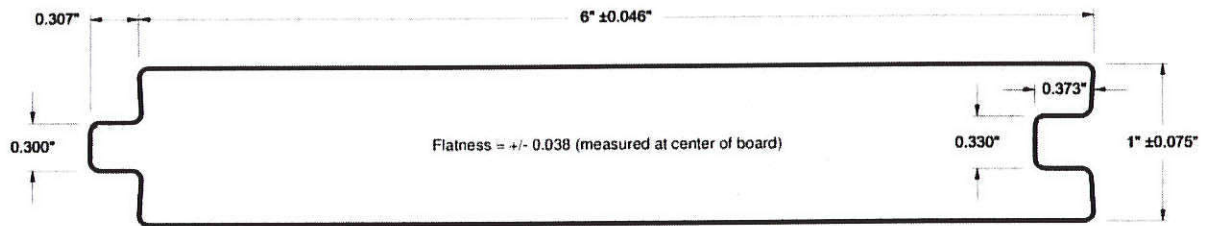


1 1/2" x 3 1/2"
Approximate Unit Weight - 1.59 Lbs./Lin. Ft.

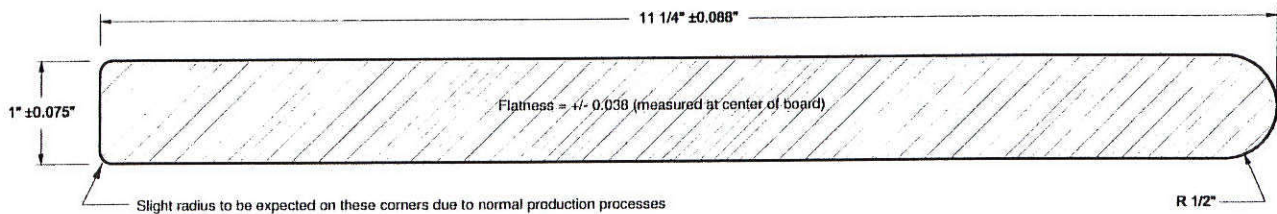
FIGURE 1—DECK BOARD PRFILES (Continued)



1 1/2" x 5 1/2"
Approximate Unit Weight – 3.75 Lbs./Lin. Ft.



1" x 6" T&G
Approximate Unit Weight – 1.92 Lbs./Lin. Ft.



1" x 11 1/4" Bullnose
Approximate Unit Weight – 3.68 Lbs./Lin. Ft.

FIGURE 1—DECK BOARD PROFILES (Continued)