



Technical Data Sheet

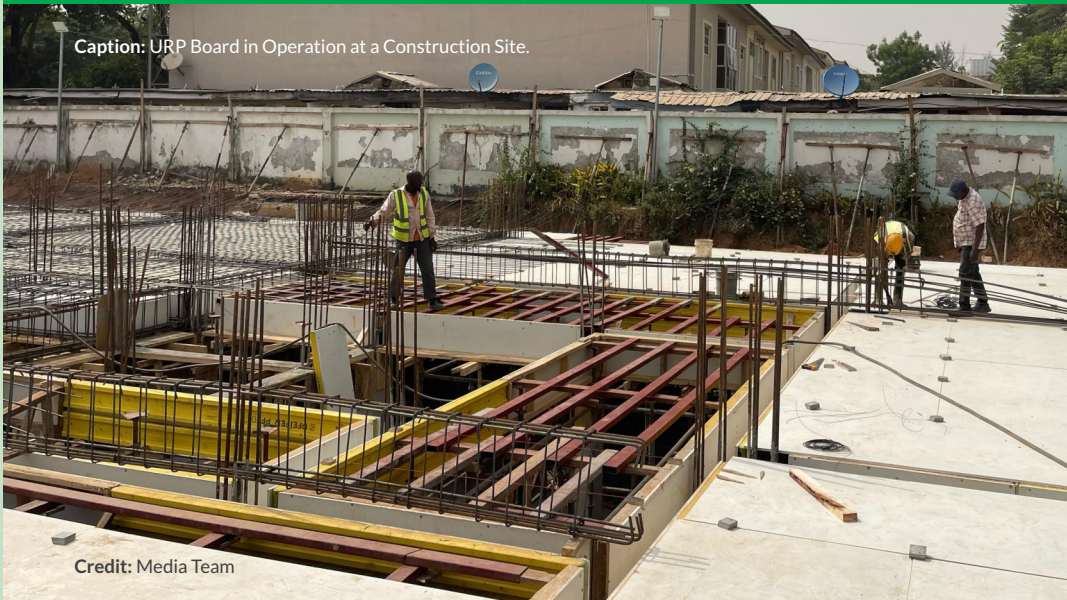


Caption: URP Board Displayed by Production Technicians at the Production Plant

Credit: Media Team

Sustainability X Durability

Enhanced **durability** & improved **reusability** with a commitment to **sustainability**.



Caption: URP Board in Operation at a Construction Site.

Credit: Media Team

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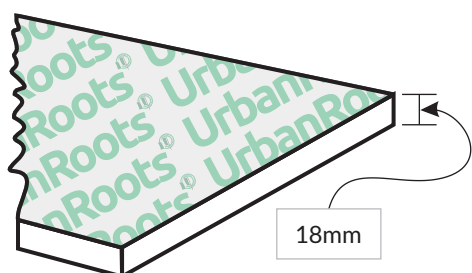
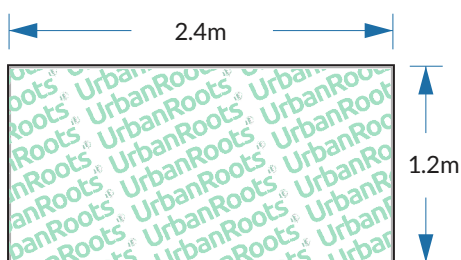
Product Information:

Introduction

UrbanRoots Plastic Formwork Boards (URPB) offer a groundbreaking solution for the construction industry, combining enhanced durability and improved reusability with a commitment to sustainability. Designed to replace traditional plywood, URPB is made from high-density PVC, providing superior performance concrete structures. With the ability to be reused up to 20 times concrete structures, these boards significantly reduce material consumption and waste generation, contributing to a greener construction process. URPB is fully recyclable, aligning with global trends in energy conservation and environmental protection.

URPB's innovative plastic formwork boards are engineered for lasting strength and versatility. They can be used in various applications beyond concrete formwork, including furniture making and aesthetic designs, due to their adaptability to curved shapes and high resistance to moisture, mold, and insects. Our clients benefit from reduced costs and enhanced productivity thanks to the boards' long-term reusability, ease of assembly, and elimination of the need for demoulding agents. UrbanRoots also offers a valuable buy-back program, promoting a circular economy and further optimizing investment in these eco-friendly construction materials.

Available sizes and thicknesses.



Product Name:

UrbanRoots PVC Board

Manufacturer/Supplier:

UrbanRoots

Product Code/Model Number:

URPB-001-MMXXIII

Date of Issue:

Date

Revision:

-]

Product Description of the PVC board:

A sustainable revolution in construction. Crafted to combat environmental challenges, our recyclable plastic boards offer a resilient, eco-friendly alternative to traditional plywood. With the ability to be reused up to 30 times in wooden structures and 20 times in concrete. Built as a global movement towards energy conservation and environmental protection.

Crafted from polymer materials, this 2.4m x 1.2m plastic board is designed to be a dependable building and crafting material. Engineered with zero moisture absorption, it ensures long-lasting durability in various construction applications.

Composition/materials used.

Calcium	Ca 55.25%	Aluminium	Al 1.33%	Sulfur	S 0.58%
Carbon	C 11.25%	Phosphorus	P 0.12%	Zinc	Zn 0.45%
Silver	Ag 16.83%	Chlorine	Cl 0.64%	Potassium	K 0.39%
Magnesium	Mg 1.41%	Silicon	Si 0.58%	Manganese	Mn 0.00%

Physical Properties:

Density:

0.539 g/cm³

Tensile Strength:

≈0.682N/mm²

Weight:

28kg

Flexural Strength:

Bending Strength @ Peak:

9.222 N/mm²

Bending Strength @ Yield:

8.195 N/mm²

Def. @ Peak:

22.648 mm

Energy to Peak:

5.944 N.m

Force @ Peak:

328.7 N

Strain @ Peak:

9.448%

Stress @ Peak:

9.222 N/mm²

Bending Modulus:

522.564 N/mm²

Def. @ Peak:

22.648mm

Impact Strength:

[kJ/m²]

Hardness:

612.2467 HB (Newton)

Color:

White

Mechanical Properties:

Modulus of Elasticity:

158.368 MPa

Compressive Strength:

≈6.02N/mm²

Thermal Properties:

Operating Temperature Range:

Ambient Temperature to 330°C

The material remains stable and does not undergo significant chemical changes or degradation below the ignition temperature (280°C). Additionally, it remains in a rigid state below the glass transition temperature (330°C).

Operating temperature range for this material is ambient temperature up to the glass transition temperature (T_g), which is 330°C.



However, it's important to note that actual operating conditions may vary depending on specific application requirements and environmental factors.

Chemical Resistance:

The UrbanRoots PVC Board has undergone chemical resistance testing using three concentrated acids: Nitric acid, Hydrochloric acid, and Sulphuric acid. During testing, only Sulphuric acid resulted in a color change from white to off-white, without any reduction in mass or alteration of the material's properties.

This demonstrates the board's resilience to chemical exposure, making it suitable for environments where exposure to acids may occur.

Electrical Properties:

PVC (polyvinyl chloride) is typically considered an insulating material and does not conduct electricity well.

Water Absorption:

Water Absorption Rate:

1.8% After 48 hours with no change in size

Safe to say, UrbanRoots PVC Board does not create room for moisture deformations and challenges.

Fire Performance:

Grade B2 -fire retardant



Still when subjected to directly to flame it releases toxic fumes. If accidentally inhaled please immediately seek medical care



Environmental Impact:

Recyclability: UrbanRoots PVC Board is made of Recyclable materials and rated to be 100% recyclable

Recyclability: The product's recyclability implies that it meets regulations and standards for recyclable materials.

Environmental Impact: The product serves as a reduced environmental footprint compared to non-recyclable alternatives. It complies with regulations aimed at reducing waste and promoting sustainable practices.

Material Safety: URPB is made for with safety in mind, ensuring they meet standards for toxicity and environmental impact.

Packaging: URPB is an eco-friendly material.

Installation Guidelines

Read me, Please.

Kindly note, Before proceeding with the installation, please thoroughly review the following instructions to ensure a successful and safe installation process.

Ensure that all necessary tools are readily available, including standard wood cutting tools, a 5mm drill bit, rivets, screws, and washers. It is imperative to wear appropriate personal protective equipment (PPE) such as gloves and safety goggles to maintain safety standards.

By adhering to these guidelines, you will maximize the lifespan and performance of UrbanRoots PVC Boards. For more detailed instructions and visual aids, please visit www.urbanrootsng.com/howto

Recommended installation methods.

Cutting and resizing UrbanRoots Plastic Formwork Board

UrbanRoots Plastic Formwork Board is customized to the client's desired length, reducing waste and saving time and effort. Despite the initial cut, resizing is feasible for reuse, removal of damaged sections, or for repair purposes.

- Use standard wood cutting tools.
- Removal and fixation of UrbanRoots Plastic Formwork Board in formwork metal frames
- It is advisable to utilize rivets for attaching UrbanRoots Plastic Formwork Board. While the board exhibits excellent nail holding capabilities, it is recommended to refrain from using nails to extend the lifespan of UrbanRoots Plastic Formwork Board and achieve a smoother concrete fair face.
- Drill using 5mm wood drill bit.
- Fill old holes with silicone.
- Avoid drilling or hammering within a distance of less than 10cm from each other, 5cm from the board edge, or near adjacent tie rod openings.

Installing UrbanRoots plastic formwork board in curved metal frame

Due to the polymer composite nature of the board, its molecules can be rearranged using heat, allowing us to provide curved boards tailored to the specified curvature. Technical support is available as needed.

Installation Procedure

- Put board on metal frame.
- Apply gentle pressure to the board to imprint on the metal frame.
- Fix board to the metal frame using rivets or screws, and add 1cm washers with the rivets or screw.

Covering the slab area with UrbanRoots Plastic Formwork Board

Distribute the boards on the slab meticulously as per approved drawings, ensuring you wear the appropriate hand protection for safety. Handle the boards with care during distribution to prevent any potential damage.

Avoid embedding board edges into concrete sections, particularly in slab connections with walls, beams, and columns. Doing so can make the dismantling process significantly challenging.

If special dimensions are necessary, feel free to use tools designed for wood to resize the board.



Fixing UrbanRoots Plastic Formwork Board on Slab

When securing the board with nails, it is advised to use 5cm nails, avoiding nailing closer than 3cm to the board edge. To ensure the board's longevity & adhere to the recommended usage, refrain from overnailing. We encourage the use of screws instead; this gives you more grip and aids the longevity of the board's usage.



Watch how to do video via www.urbanrootsng.com/howto

Dismantling after casting

Systematically disassemble the formwork from top to bottom, avoiding the reverse order.

- Begin by releasing the top unit according to the used formwork system, utilizing tools like Drop head or U-Head.
- Prepare a sufficient walk platform for dismantling, utilizing secondary support if needed.
- UrbanRoots Plastic Formwork Board doesn't require a release agent, ensuring easy detachment from concrete during dismantling. Handle with care to prevent damage.
- Utilize standard board release tools for the process.
- Collect the boards on the formwork walkways.
- Lower the boards manually without dropping.
- Avoid lowering large areas of secondary and primary support simultaneously, as non-adherence to concrete may cause sudden drops.
- If the board edge is cast on and stuck in concrete, cautiously chisel the stuck part to prevent damage.
- For post-casting cleaning and care, refer to the cleaning section.

After cast cleaning and care

To optimize the use of UrbanRoots Plastic Formwork Board and achieve a smooth concrete surface, it is crucial to clean the board thoroughly after each casting.

- Upon dismantling the forms, use a soft brush and wet cloth to promptly remove any residual concrete milk or dirt, ensuring effective cleaning of the board.
- To remedy screed scratches, utilize a paint scraper for surface smoothing. For stubborn rough concrete residue, employ either a concrete scraper or a putty knife to effectively scrape off any remaining material.
- After addressing screed scratches and removing concrete residue, rinse the surface with water. For optimal cleaning following steps 1 to 3, it is advisable to use a pressure washer.

While the Plastic Board exhibits resistance to alkali and acid, it is not advisable to employ chemicals for cleaning. The board's surface, crafted using the best of polymer technology, is designed to prevent adhesion to concrete or dirt.

Applications & Safety Precautions

Common application:

Beyond the extended re-use capability of the URPB is the adaptable feature of the board. This makes it a top choice for more works beyond concrete including fabrication, interior and aesthetic designs works, furniture works amongst others.

Handling precautions & Storage recommendations.

Unloading & storage of UrbanRoots Plastic Formwork Boards

- UrbanRoots Plastic Formwork Boards are packaged in boxes for overseas transport and securely strapped for local deliveries, as depicted in the illustrations.

Handling, Moving & Transporting UrbanRoots Plastic Formwork Board for Usage.

- Transport UrbanRoots Plastic Formwork Board in original packaging, using cloth lifting belts (avoid wire or chains).

Also consider the following;

- Place bundles near the intended usage area, preferably on the designated slab formwork.
- Do not unpack before unloading; keep bundles wrapped. Use cloth wire for lifting.
- Avoid using steel wires or chains for lifting, as they can cause damage to the boards.
- Always store UrbanRoots Plastic Board on flat smooth surface to avoid deformation, and surface damage.
- In the unlikely event the edge of the board is damaged, resize the board using standard wood resizing tools.

Certifications & Standards Compliance

List of relevant certifications and standards met

We are currently registered as a Nigerian company under the CAC, and URP PVC Board is Identified by the Standard Organization Nigeria (SON).

Warranty Information:

If used inline with manufacturer's guideline, the board is reusable for atleast 20x in constructions and the company is open to a rebate on return of damaged and used boards.

Storage Warranty period.

URP Board can be stored in a warehouse for upto 5years and more without damage to its physical or chemical integrity

Warranty coverage.

An estimated rebate, based on the weight of the boards returned – inline with terms and conditions laid as at the time in question.



**For Technical
Support & Sales
Contact us via**

Email:

info@urbanrootsng.com
support@urbanrootsng.com
urbanrootsplastics@gmail.com

Phone:

08100000982
07013333990

Abuja

Suite D2 Innovation Plaza,
Plot 770, Wuye District, Abuja.

Lagos

Formyard Yard, within Julius
Berger Palava Yard, Ajah, Lagos.

Kano

Yanduna House, Behind Jaiz Store,
Airport Round About, Along Katsina Road.