

Hard-to-Recycle Plastic Finds New Life as Durable Public Infrastructure

Turning multi-layer plastic waste into long-life public benches, showcasing a practical and scalable circular infrastructure solution.

MUMBAI, MAHARASHTRA, INDIA, April 1, 2026 /EINPresswire.com/ -- As global plastic waste continues to surge past 400 million tonnes annually, one category remains particularly difficult to address: multi-layer plastic (MLP). Widely used in food packaging and consumer goods, MLP has long been considered one of the least recyclable materials due to its complex, multi-material composition.



ReBench - Outdoor Benches made from Recycled Plastic

Now, a new approach emerging from India is demonstrating how this low-value waste stream can be transformed into durable public infrastructure. Mumbai-based Jyoti World Pvt. Ltd. has introduced INFIN ReBench, a modular outdoor seating system manufactured entirely from recycled multi-layer plastic waste. Designed for real-world applications across parks, campuses, transit areas, and urban public spaces, the product reflects a growing global shift toward circular infrastructure solutions.

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Multi-layer plastic waste can be transformed into durable public infrastructure, redefining how we think about recycling and material value”

Dr. Raju Desai, Director, Jyoti World Pvt. Ltd.

From Waste Problem to Public Asset:

Traditionally, plastic waste, especially MLP, has been

viewed as an environmental burden with limited end-of-life pathways. However, advancements in polymer processing and circular manufacturing are enabling new use cases where waste materials can be engineered into long-life products.

INFIN ReBench represents this transition. Instead of downcycling plastic into low-performance applications, the material is processed into infrastructure-grade polymer components that can

withstand continuous outdoor exposure and heavy public use. This approach aligns with a broader global movement where municipalities and organizations are increasingly adopting recycled plastic products such as outdoor furniture, decking systems, and urban fixtures to extend material lifecycles while reducing environmental impact.

Designed for Durability in Real-World Conditions:

Public seating infrastructure has traditionally relied on materials such as wood, metal, and concrete; each with inherent limitations such as:

- Metal benches are prone to corrosion and require periodic repainting
- Wooden benches are vulnerable to termites, moisture damage, and decay
- Concrete benches are heavy, difficult to relocate, and susceptible to cracking

Benches manufactured from recycled polymers offer a different performance profile.

INFIN ReBench is engineered to be:

- Corrosion-free
- Termite-proof
- Weather-resistant
- Maintenance-free
- Long-lasting in outdoor environments

These characteristics make it particularly suitable for high-traffic public environments where durability and low maintenance are critical.

Proven at Scale: Live Deployment at PLASTINDIA 2026:



ReBench - Benches made from Recycled Multi-Layered Plastic



ReBench - Benches made from 100% Recycled Plastic

Unlike many sustainability concepts that remain at the prototype stage, INFIN ReBench has already been tested in real-world conditions. At PLASTINDIA 2026 in New Delhi, more than 100 benches were installed across the exhibition venue. Over the course of the event, thousands of visitors used the benches, turning the installation into a live demonstration of durability, comfort, and performance.

The product was also showcased at The India AI Impact Summit 2026, New Delhi, where it drew attention as a practical example of circular economy principles being applied to infrastructure. This real-world deployment helped validate not just the material innovation but also the product's readiness for large-scale adoption.

Modular Design Enables Global Deployment:

Beyond sustainability, the product has been engineered for scalability and international deployment. INFIN ReBench is shipped in CKD (Completely Knocked Down) format, allowing:

- Efficient packaging and reduced shipping costs
- Lower logistics footprint
- Easy on-site assembly without specialized tools

The modular design also allows individual components to be replaced if damaged, extending the product lifecycle and reducing long-term maintenance costs.

This makes the benches suitable for global infrastructure projects across:

- Public parks and gardens
- Educational campuses
- Corporate and industrial campuses
- Transit and waiting areas
- Smart city developments

A Growing Opportunity in Circular Infrastructure:

Globally, cities are under increasing pressure to address both waste management and infrastructure development challenges. Circular economy solutions that convert waste into usable assets are gaining traction as governments explore sustainable procurement strategies and long-life materials. Products like INFIN ReBench highlight how manufacturing innovation can bridge this gap—turning difficult-to-recycle plastic waste into functional, durable infrastructure. As adoption increases, such solutions could play a meaningful role in reducing landfill dependency while supporting the development of sustainable urban environments.

About Jyoti World Pvt. Ltd.:

Established in 1959, Jyoti World Pvt. Ltd. is an integrated plastics manufacturing company specializing in contract manufacturing, polymer processing, and sustainable material solutions. The company operates over 50 injection molding machines (60T to 1200T) and more than 30 extrusion lines, supported by in-house tooling, polymer compounding, and precision machining capabilities. Serving OEM and ODM partners across global markets, Jyoti World focuses on delivering engineering-driven manufacturing solutions with an increasing emphasis on circular

materials and sustainability-led innovation.

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