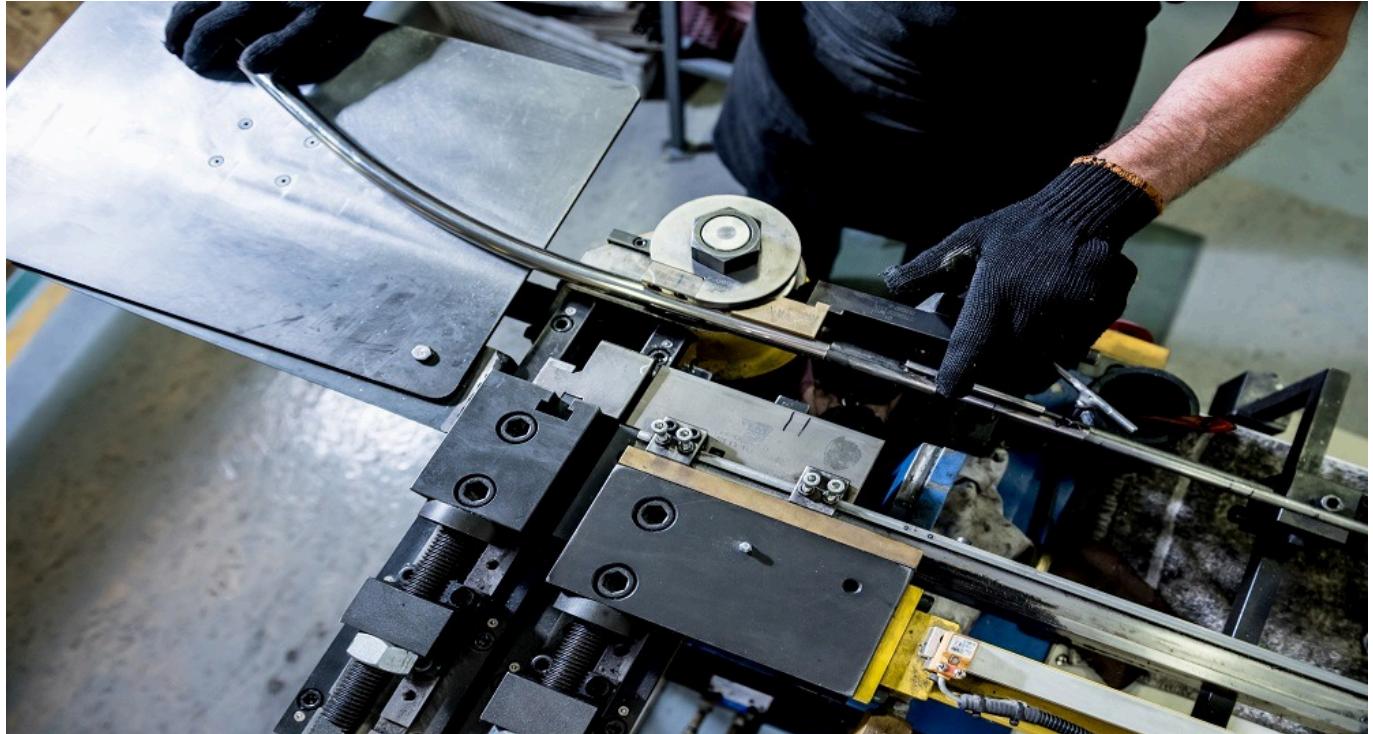


TECH OFFER

Sustainable Outdoor Furniture with Recycled Aluminium



KEY INFORMATION

TECHNOLOGY CATEGORY:

Sustainability - Circular Economy
Materials - Metals & Alloys

TECHNOLOGY READINESS LEVEL (TRL): **TRL6**

COUNTRY: **SINGAPORE**

ID NUMBER: **TO175190**

OVERVIEW

Traditional aluminium production is energy-intensive and increases greenhouse gas emissions. In contrast, recycling aluminium offers a more sustainable alternative, reducing energy consumption and minimising environmental impact. Recycling aluminium can cut carbon emissions by up to 95%, significantly reducing the carbon footprint. This technology aims to promote a circular, sustainable approach by incorporating recycled aluminium into outdoor furniture applications.

This technology utilises recycled aluminium pipes of a uniform diameter, reducing material usage and waste. The use of a single angled jig ensures precise and efficient shaping, streamlining the production process without compromising quality. This eco-friendly design is lightweight, weather-resistant, and stackable, making it ideal for both public and private outdoor spaces. With various colours and finishes, it offers long-lasting durability and low maintenance, supporting sustainable manufacturing practices that aligns with modern design standards and promotes a longer product lifecycle.

The technology owner is interested to out-license this fabrication technology to furniture companies and further co-develop this

sustainable furnishing approach using alternative materials to design eco-friendly furniture.

TECHNOLOGY FEATURES & SPECIFICATIONS

This technology features the use of recycled aluminium pipes with a single diameter, minimising material usage and environmental impact. The use of a single angled jig to bend the consistent pipe profiles ensures precision and efficiency in shaping the design.

Other features include:

- Lightweight design
- Availability in various colours and finishes
- Long-lasting weather resistance
- Low maintenance
- Stackable design for optimising space management

POTENTIAL APPLICATIONS

This technology is currently designed for outdoor furniture products but by leveraging on existing manufacturing processes (pipe pending and welding) with recycled aluminium as the primary material choice, it can be extended to other applications requiring the use of recycled aluminium.

UNIQUE VALUE PROPOSITION

The technology leverages construction principles and by using standard-diameter aluminium tubes, which are easily sourced and fabricated, eliminates the need for screw fixtures and complex assembly processes, relying instead on efficient manufacturing methods such as metal tube bending and welding. This streamlined approach not only simplifies production but enhances durability.

The use of aluminium, a lightweight yet durable metal, ensures long-lasting resistance to tropical weather, while its eco-friendly nature contributes to a lower carbon footprint. Additionally, the stackable design maximizes space efficiency, making it ideal for public spaces where space management is critical.