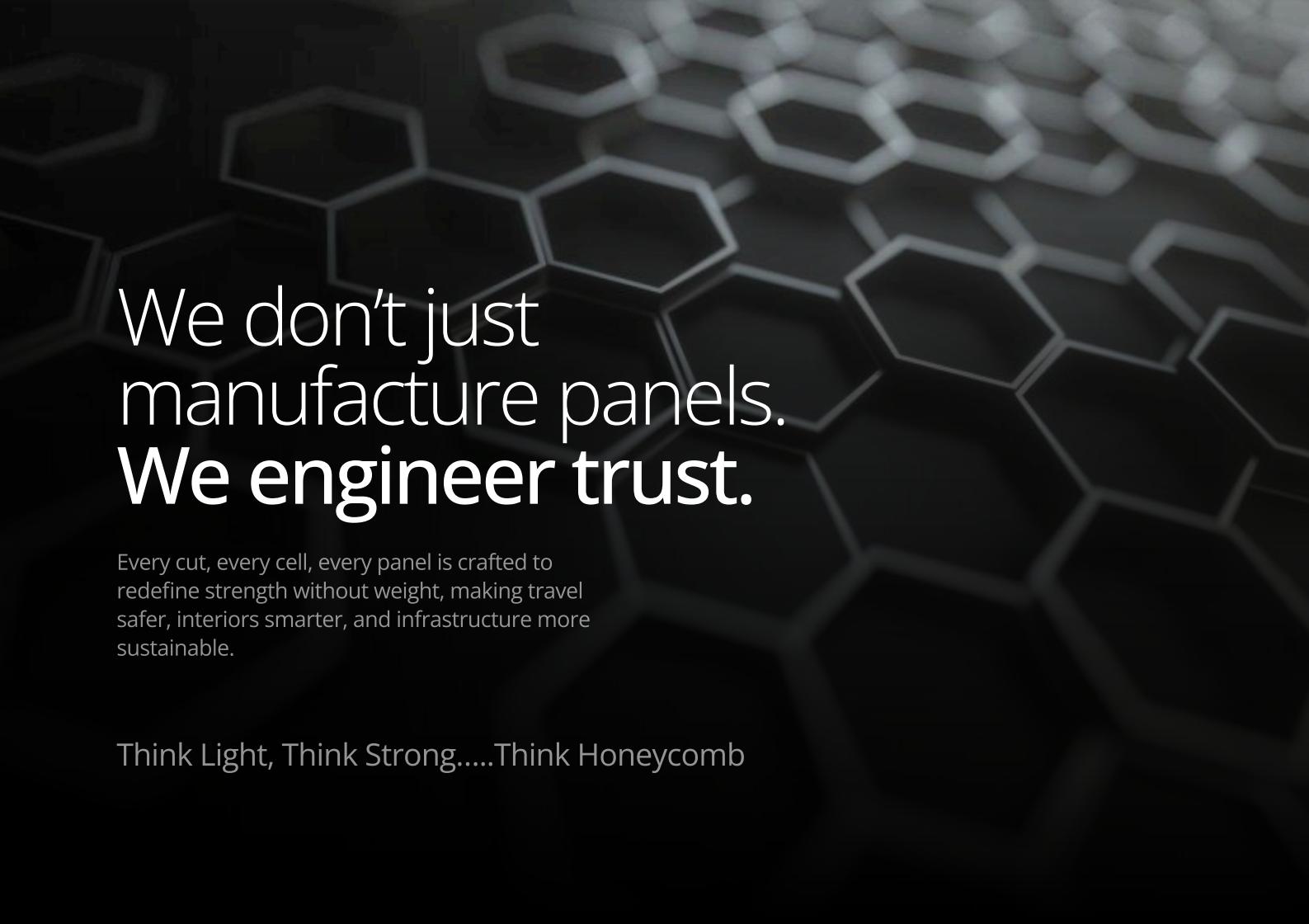




HONEYCOMB
International Inc.

PRODUCT CATALOGUE





We don't just
manufacture panels.
We engineer trust.

Every cut, every cell, every panel is crafted to
redefine strength without weight, making travel
safer, interiors smarter, and infrastructure more
sustainable.

Think Light, Think Strong.....Think Honeycomb

Company Overview

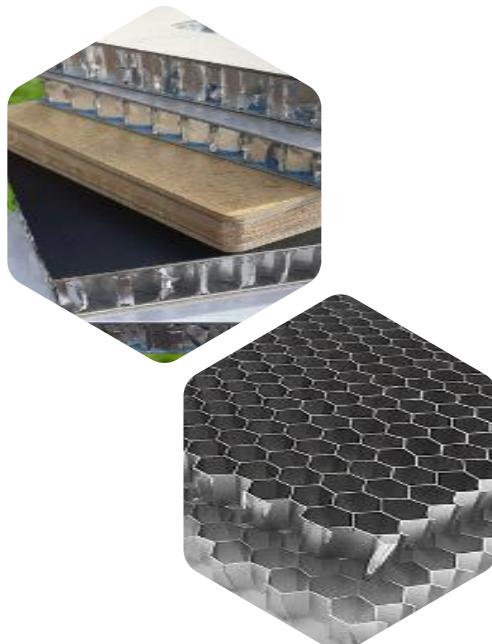
Honeycomb International Inc. (HCI) is a pioneer in honeycomb sandwich panel solutions for railways, aerospace, and infrastructure.

With 40+ years of expertise and certifications (ISO 9001, ISO 14001, ISO 45001, EN 15085), HCI delivers innovative lightweight products such as floorboards, berths, pole bars, and ladders for advanced rolling stock projects, including India's Vande Bharat Sleeper Coach.

Aluminium Honeycomb Panel

Lightweight. Fire-Safe. High Strength.

Advanced aluminium honeycomb panels engineered for superior stiffness, precision, and performance across railway, aerospace, and infrastructure applications.



Key Features & Advantages

Feature	Description
Lightweight & Strong	Honeycomb core provides exceptional stiffness with significant weight reduction.
Durable & Long-Lasting	Made from corrosion-resistant aluminium alloy for superior longevity.
Dimensional Stability	Uniform cell geometry ensures precision and structural integrity.
Excellent Bonding Compatibility	Adheres effectively to aluminium, plywood, laminate, stone, and composite skins.
Customizable Options	Available in multiple cell sizes, densities, and thickness configurations.
Tested & Validated	Salt Spray (ASTM B117), Humidity/Moisture Resistance (ASTM D2247), Corrosion (ISO 9227), Thermal Cycling & Expansion Tests.
Certified Performance	EN 45545-2 (Railway Fire Safety), EN 17460 (Adhesive Bonding), FAR 25.853 (Aerospace Flammability).

Core Types & Applications

Core Type	Description & Typical Use	Strengths / Limitations
Aluminium Core	Aluminium alloy foil folded into hexagonal cellular core. Used for railway floorboards, fuselage panels, and cladding.	Strengths: High strength-to-weight ratio, corrosion resistance, excellent mechanical performance.
Stainless Steel Core	Thin stainless-steel foil honeycomb for demanding thermal environments. Used for fire barriers and high-temperature panels.	Strengths: Excellent fire resistance, durability, high-temperature stability.
Nomex (Aramid) Core	Paper-based aramid fiber honeycomb for aerospace and premium interiors.	Strengths: Lightweight, outstanding thermal performance, excellent flame resistance.
Polypropylene (PP) Core	Thermoplastic honeycomb for interiors and non-structural applications.	Strengths: Low cost, chemical resistance. Limitations: Suitable for less mechanically demanding applications.

Aluminium Honeycomb Ladder

Lightweight. Fire-Safe. High Strength.

A precision-built aluminium honeycomb access ladder designed for modern railway sleeper berths. Engineered for strength, safety, and aesthetics combining lightweight construction with superior durability and compliance to international standards.



Key Features & Specifications

Feature	Description
Lightweight & Strong	Honeycomb core construction ensures maximum stiffness with minimal weight.
High Load Capacity	Designed to withstand up to 100 kg static load and repeated passenger use.
Fire & Smoke Compliant	Certified to EN 45545-2 railway fire safety standard.
Structural Integrity	All welding joints compliant with EN 15085; adhesive bonding as per EN 17460.
Ergonomic Design	Safe, anti-skid step profile ensures stable and secure climbing.
Durable & Corrosion-Resistant	Built from high-quality aluminium alloy for long-lasting performance.
Premium Finish Options	Available in powder-coated or anodized finishes for modern interiors.

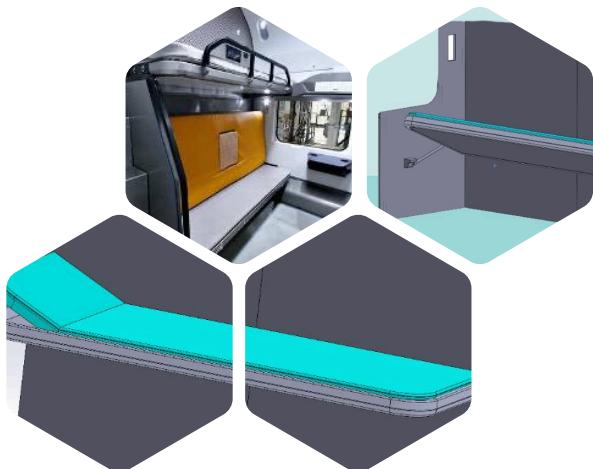
Applications

Sector	Use Case
Railway Coaches	Access ladders for upper sleeper berths in Vande Bharat and other modern trains.
Metro Coaches	Compact internal service ladders for maintenance access.
Aerospace & Marine	Lightweight, corrosion-resistant ladders for cabins, decks, and compartments.
Infrastructure & Interiors	Ideal for modular spaces and lightweight architectural structures.

Executive Sleeper Berth

Premium Comfort. Ergonomic Design.
Tested Durability

A next-generation sleeper berth designed for premium railway coaches. Built with aluminium honeycomb technology for unmatched strength, comfort, and long-term reliability ensuring luxury, safety, and functionality in every journey.



Key Features & Specifications

Feature	Description
Lightweight & Strong	Aluminium honeycomb core offers superior stiffness with reduced weight.
Load & Durability Test	Successfully tested with 100 kg human load and 1 million usage cycles in sleeping posture.
Certified Welding & Bonding	All welding joints comply with EN 15085; adhesive bonding meets EN 17460.
Advanced Structure	20 mm aluminium honeycomb core with HL3 Foam & Trim compliant to EN 45545-HL3.
Adjustable Headrest (Upper Berth)	Mechanically or electrically adjustable for enhanced passenger comfort.
Smart Lower Berth	Integrated easy-lift mechanism for convenient luggage access.
Passenger Comfort Features	Equipped with reading light, mobile charger, magazine holder, mobile holder, and berth number display.
Aesthetic Finish Options	Available in PVD, powder-coated, or anodized finishes for premium interiors.

Applications

Sector	Use Case
Railway Coaches	Ideal for Amrit Bharat, Vande Bharat, Intercity, and Commuter trains.
Industrial Use	Suitable for customized cabin and operator berth applications requiring compact, ergonomic sleeping solutions.

Snack Table

Compact. Durable. Vibration-Free

A sleek, ergonomically designed snack table built with aluminium honeycomb technology for premium railway interiors. Engineered for high performance, fire safety, and long-term durability with modern aesthetics.



Key Features & Specifications

Feature	Description
Lightweight & Strong	Honeycomb core ensures stiffness and stability while minimizing weight.
High Load Capacity	Designed to handle up to 50 kg static load and repeated passenger use.
Vibration Tested	Proven zero vibration performance after 1 million operational cycles.
Fire & Smoke Compliance	Certified to EN 45545-2 railway fire safety standards.
Certified Construction	All structural welds comply with EN 15085; adhesive bonding as per EN 17460.
Functional Design	Integrated glass holder and mobile holder for enhanced convenience.
Premium Finishes	Available in wooden, PVD-coated, powder-coated, or anodized finishes for modern interiors.

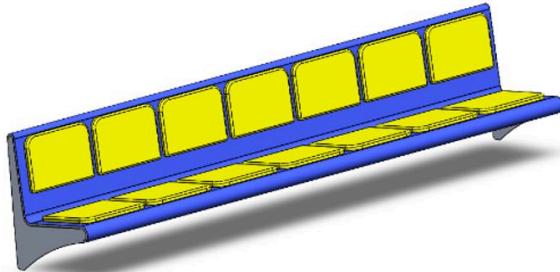
Applications

Sector	Use Case
Railway Interiors	Installed in Vande Bharat, Amrit Bharat, Commuter, and Intercity train coaches.
Industrial Cabins	Ideal for operator cabins and customized industrial workspaces requiring compact, stable surfaces.

Aluminium Honeycomb Seat for Metro

Lightweight. Durable. Safety Compliant

A next-generation metro seating system designed with aluminium honeycomb technology to achieve superior strength, reduced weight, and long-term performance. Engineered for passenger comfort and compliance with international rail standards.



Key Features & Specifications

Feature	Description
Lightweight Construction	Significant weight reduction — total weight of a 7-seater configuration is only 35 kg.
High Structural Strength	Load-tested with bi-directional push and pull of 15 kg on movable parts (simulating 70 kg passenger with 10% applied force).
Fatigue & Vibration Tested	Fully compliant with NFF 31119 for fatigue and vibration performance.
Certified Welding & Bonding	All weld joints meet EN 15085 standards; adhesive bonding compliant with EN 17460.
Fire Safety & Trim Compliance	Integrated HL3 Foam & Trim certified to EN 45545-HL3 for fire safety.
Design Flexibility	Available in 2-seater, 5-seater, and 7-seater configurations.

Applications

Sector	Use Case
Metro Coaches	Ideal for lightweight, high-capacity metro seating systems.
EMU Trains	Suited for Electric Multiple Units requiring fire-safe, durable seating solutions.

Grab Pole, Handrail & Grab Handle

Safe. Ergonomic. Rail-Certified

High-strength stainless steel grab systems designed for metro and EMU interiors. Built for passenger safety and reliability, these components combine superior structural integrity, ergonomic design, and long-term durability.



Key Features & Specifications

Feature	Description
Material & Finish	Fabricated from SS304 tubular steel, Ø 32 mm, thickness 2 mm, buffed to G220 finish.
Design Flexibility	Available in multiple handle designs and color options as per customer requirements.
Certified Welding	All welding joints compliant with EN 15085 railway standards.
Grab Handle Strength	Load test: 100 kg for 1 hour, 2500N static load test.
Endurance Test	100,000 swing cycles with 35 kg load — ensures long-term durability.
Ceiling Handrail (Horizontal)	Load capacity: Z: 85 kg, Y: 15 kg, X: 25 kg directions.
Armrest Handle	Load capacity: Z: 150 kg, Y: 150 kg directions.
Vertical Handrail	Tested for load in X and Y direction or center point loading.
Tripod / Grab Pole	Withstands 150 kg load in X/Y directions and 200 kg in Y direction at center.
Side Screen Option	Equipped with 6 mm tempered glass, fragmentation and drop tested for safety.

Applications

Sector	Use Case
Metro Coaches	Passenger handholds, vertical and horizontal supports for safe standing travel.
EMU Coaches	Durable grab poles and handrails for interior safety and stability.

Safety Handle for Bathroom

Secure. Durable. Ergonomic

High-quality stainless steel safety handles designed for train bathrooms and washrooms. Built to deliver dependable support, passenger safety, and long-lasting performance under daily operational stress.



Key Features & Specifications

Feature	Description
Material & Construction	Made from SS304 tubular steel, Ø 32 mm, thickness 2 mm.
Surface Finish	Buffed to G220 class for a smooth and corrosion-resistant finish.
Certified Welding	All structural welding joints comply with EN 15085 standards.
Design Options	Available in multiple handle designs and custom colors as per customer preference.
Enhanced Grip	Equipped with ergonomic hand grip for comfort and safety.
Load Test	Successfully tested for 100 kg vertical load at the mounted end position.

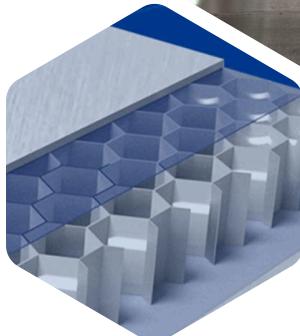
Applications

Sector	Use Case
Commuter Trains	Safety handles installed in washrooms and accessible areas for passenger stability.
High-Speed Trains	Reliable support handles designed for compact, modern rail bathroom layouts.

Aluminium Sandwich Floor Board for Rail Car Body

Lightweight. Rigid. Tested for Performance

Lightweight aluminium honeycomb floor panels engineered for superior strength, rigidity, and long-term stability. Designed for next-generation metro, commuter, and high-speed train applications, offering reduced weight and enhanced durability.



Key Features & Specifications

Feature	Description
Lightweight Construction	High-strength aluminium honeycomb core provides excellent stiffness with minimal weight.
Adhesive Bonding Compliance	Fully compliant with EN 17460 bonding standards for structural integrity.
Welding Certification	All structural welding joints meet EN 15085 standards for railway components.
Test & Validation Status	Currently under testing and validation for load, vibration, and environmental performance.
Corrosion Resistance	Aluminium structure ensures long life and protection against oxidation and wear.

Applications

Sector	Use Case
Metro Coaches	Lightweight floorboards for enhanced energy efficiency and durability.
Commuter Trains	Structural flooring with superior load-bearing and vibration resistance.
High-Speed Trains	Advanced sandwich panels for stable, safe, and long-lasting flooring systems.



HONEYCOMB
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Engineering
tomorrow.

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