

INDUSTRIAL PACKAGING SOLUTIONS

by



Nilkamal
BUBBLE
GUARD
ENDLESS SOLUTIONS

Pallet**GUARD**

Pack**GUARD**

Coil**GUARD**

Sheet**GUARD**



THE MULTI-FUNCTIONAL MATERIAL

For custom packaging and storage solutions

Nilkamal introduces the **BubbleGUARD** series for Industrial Packaging Solutions – an innovative range of sheets designed to fit every application and industry. This multi-utility material supplants conventional, single-use packaging by providing superior protection, reducing weight and improving cost efficiency. **BubbleGUARD** offers complete customisation to meet every packaging need.

TECHNOLOGY AT ITS CORE

BubbleGUARD is manufactured with a patented European technology engineered to deliver high-performance. 9 precise microlayers of polypropylene are co-extruded and bonded with a circular honeycomb structure at the centre which fortifies **BubbleGUARD** with non-collapsible bubbles.

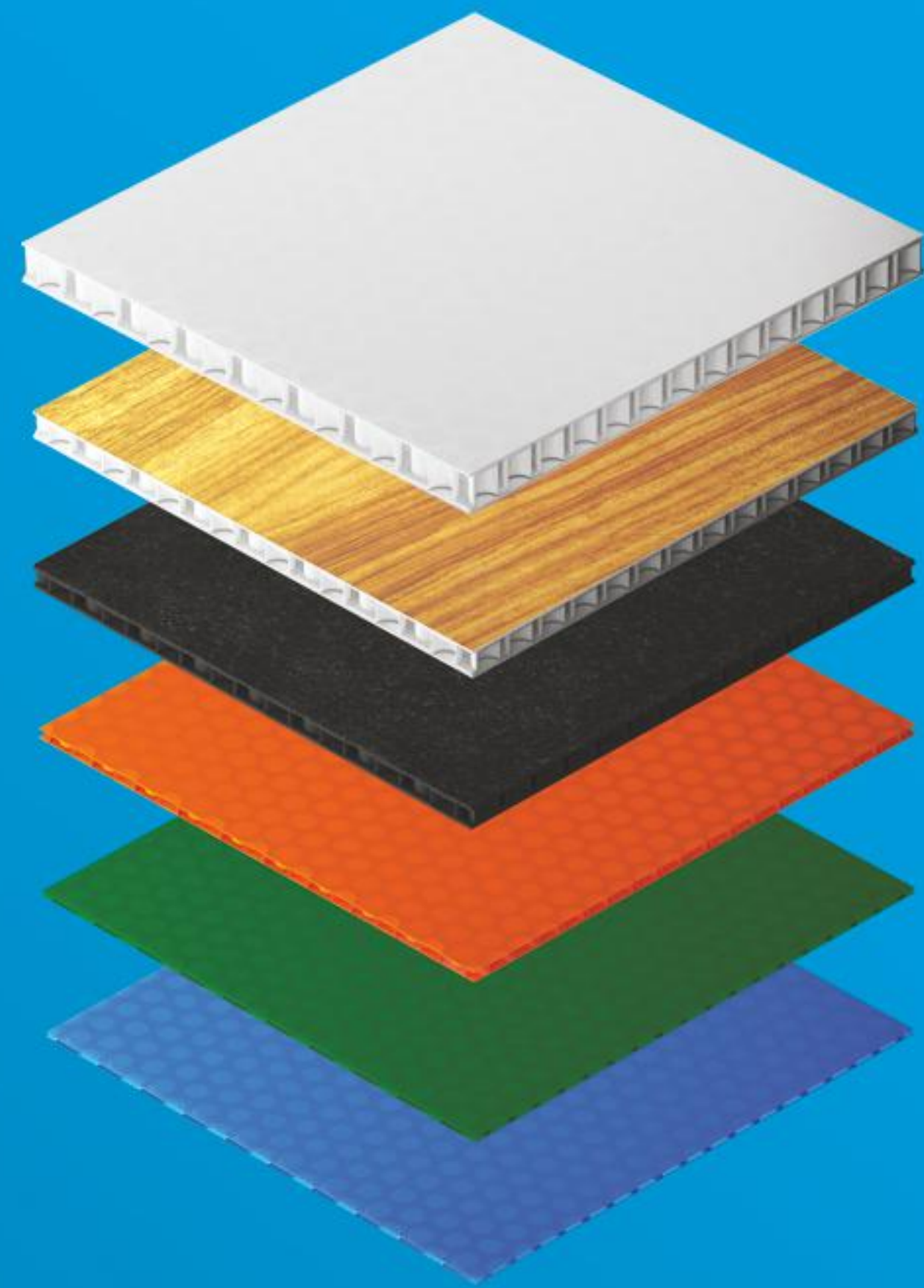
The *Air-Lock* technology ensures constant cushioning to protect contents from damage throughout storage, handling and transportation, without losing its effectiveness. The high strength-to-weight ratio delivers impressive impact with compressive strength, absolute durability and ultra-low weight. Nilkamal quality makes **BubbleGUARD** a highly robust solution tailored to exceed even the most rigorous standards.



UNBEATABLE COMBINATION OF VERSATILITY AND STRENGTH

Suited for applications across industries, this versatile material is available in variants of 200 GSM to 3500 GSM; ranging from thin and flexible to strong and rigid. **BubbleGUARD** is available in custom sizes including sheet or roll form, multiple thicknesses and in any colour of choice.

Additional features include value addition through in-line lamination of foam, textiles & printed film, Corona treatment, UV and fire resistance, closed or rounded edges, cutting, welding or fabrication to specification.



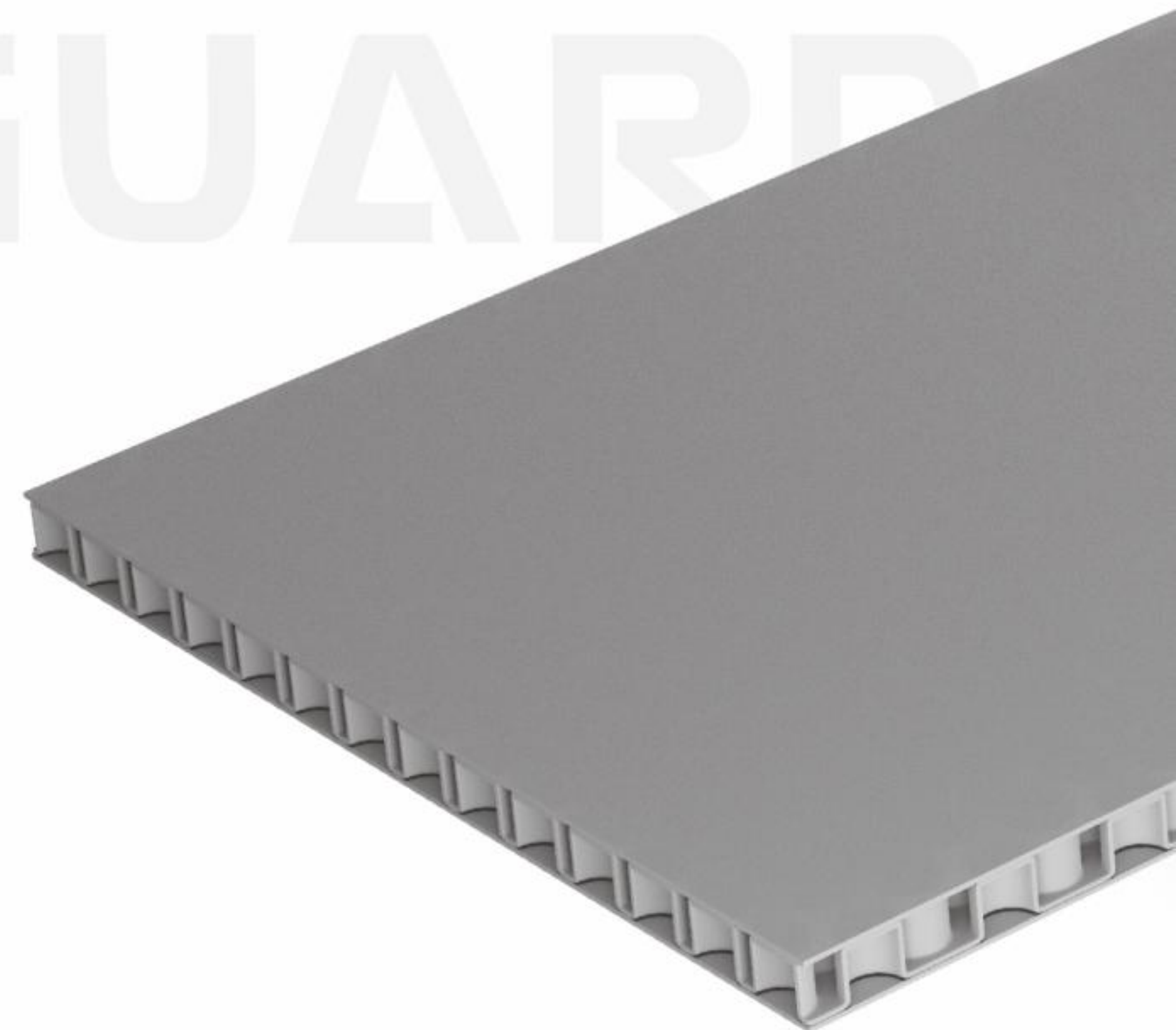
BUBBLE GUARD

THE PROFITABLE SOLUTION

Offering a sustainable and cost-efficient solution, **BubbleGUARD** is produced with practicality in mind. Against conventional materials like paper and wood, **BubbleGUARD** is made to be reused over multiple cycles lowering the cost and carbon footprint.

Formulated with 100% polypropylene, it is 100% waterproof, UV resistant, heat resistant and chemical resistant ensuring protection in all industrial environments. The light-weight structure facilitates reduced freight costs for one-way and return logistics.

BubbleGUARD is the revolution in Industrial Packaging providing the best in protection, quality and efficiency.



Pallet**GUARD**^{PRO} Sleeve System

The intelligent and complete
packaging solution



THE PRACTICAL PALLET ENCLOSURE

Whatever the product, **PalletGUARD** Sleeve System (PSS) offers the most secure and versatile packaging solution. The intelligent space-saving unit is comprised of 3 parts - *Lid, Sleeve and Pallet* - designed to store and transport loads of up to 800 kgs. PSS can be completely collapsed when empty for efficient reverse logistics.

PalletGUARD is available with a wide range of optional features to provide complete freedom and versatility use no matter the contents inside. Precise dimensions as per international standards ensures that PSS can be easily integrated into your existing supply chain.

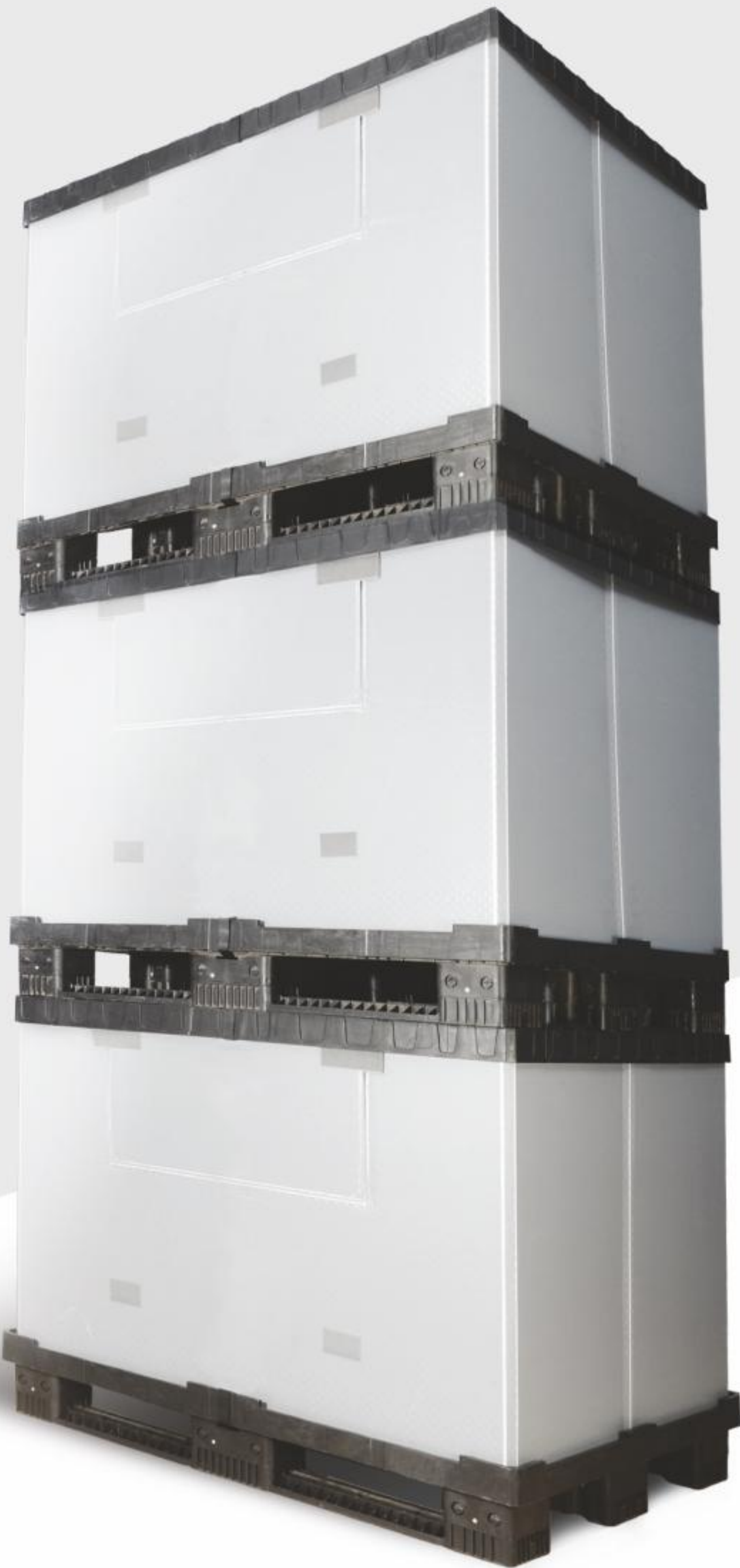


BUILT TO ENDURE

The injection moulded *Lid* and *Pallet* deliver high strength and load carrying capacity without increasing the weight of the packaging. The scientifically designed walls and ribs provide larger internal dimensions and carrying capacity. **PalletGUARD** *Lid* and *Pallet* are designed with a 3-runner base for stable stacking and compatibility with all standard forklifts for easy handling.

The *Sleeve*, made from Nilkamal **BubbleGUARD** with a unique honeycomb core, offers a combination of high physical durability and ultra-low weight. It's impressive impact and compressive strength due to *air-lock* technology keeps damage at bay during rough transportation.

The robust unit is quality tested for 1000+ cycles to provide an outstanding cost-performance ratio per use. Replacement Sleeves are available to further extend usage.



KEY BENEFITS



Reusable
Multiple Times



Durable



Foldable Design



Lightweight



Rounded Edges
For Safety



Available As
Per Size Required



High Point Load
Bearing Capacity



100%
Recyclable



Can Be Fully
Customised

STANDARD SPECIFICATIONS

Pallet Dimensions*	Inner Dimensions	Loading Capacity**	Max Stacking
1200 X 1000	1135 X 935	500 KG	3 (1+2)
1200 X 800	1130 X 730	400 KG	3 (1+2)

*Other sizes available on request

**Loading capacity will vary with stacking height

Pallet**GUARD**^{LITE}

Sleeve System

The flexible and efficient packaging Solution

UNLIMITED DIMENSIONS, UNLIMITED POSSIBILITIES

Upgrade any Wooden Pallet to the PSS Lite. The Easy, flexible and cost-effective solution to ensure best in class protective packaging at maximum ROI. With PSS Lite, you can customize a solution for any dimension, tailored to your requirement making it the perfect choice for packaging across all product lines.

Thanks to our unique, first of its kind innovation – the PSS Lite brackets - instantly upgrade to a collapsible and returnable solution. Made from rust proof, powder coated Mild Stainless Steel, our patented bracket design helps secure and lock the tough **BubbleGUARD** Sleeve to your standard Euro Pallet. The durable sleeve and the lid are manufactured with the same high performance **BubbleGUARD** as that of the PSS Pro.



INTELLIGENT DESIGN

With the PSS Lite brackets, collapsible sleeve and lid - experience all the benefits of the PSS Pro without the high investment.

The collapsible design of the system allows stocking and transportation, making it perfect for both returnable as well as export and one way logistics requirements.

The PSS Lite is designed to ensure maximum optimization of space without affecting pallet dimensions. The brackets can be retrofitted onto existing pallets or the pallets can be purchased additionally.



LITE ADVANTAGES



Fits on any standard pallet maintaining pallet dimensions



Locking system to secure the sleeve to the pallet



Foldable sleeves

- + Powder coated steel brackets/rust proof and weather proof brackets for use in any environment
- + Highly durable, High Strength sleeve design for enhanced impact resistance
- + **BubbleGUARD** sleeve and Lid is non-reactive and safe with oils and chemicals for industrial usage
- + Compatible with all standard forklift and material handling equipment

KEY BENEFITS



Durable



Foldable Design



Rounded Edges For Safety



Available As Per Size Required



High Point Load Bearing Capacity



Reusable Multiple Times



Lightweight



Can Be Fully Customised



100% Recyclable

STANDARD SPECIFICATIONS

PalletGUARD^{LITE} Sleeve System includes:

- + 4 corner brackets
- + 4 side brackets with sleeve locking
- + 1 collapsible **BubbleGUARD** Sleeve
- + 1 **BubbleGUARD** Lid
- + Wooden Pallet (optional) sold separately

*Recommended for 1+1 stacking

FILLED WITH FEATURES

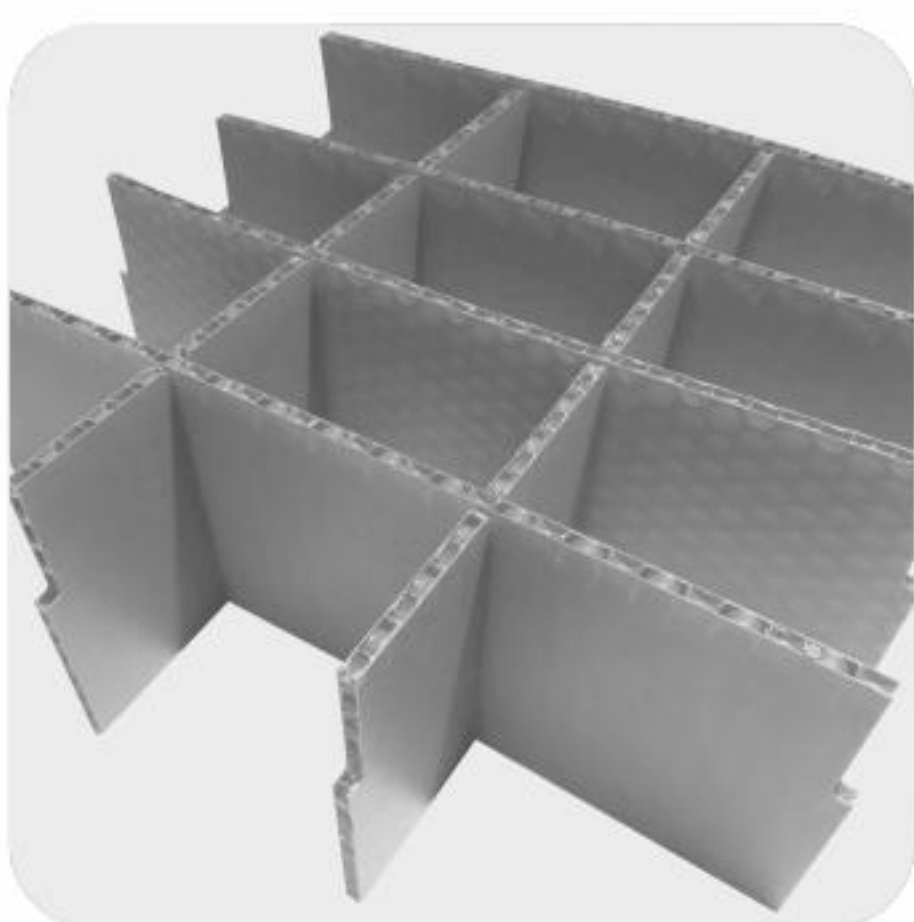
PalletGUARD Sleeve Systems are available with a wide range of features ensuring a solution designed to meet every requirement.



Front and back flaps for easy access **P L**



Secure Lock **P**



Internal partitions and fabrication **P L**



Flat closed edges for safety **P L**



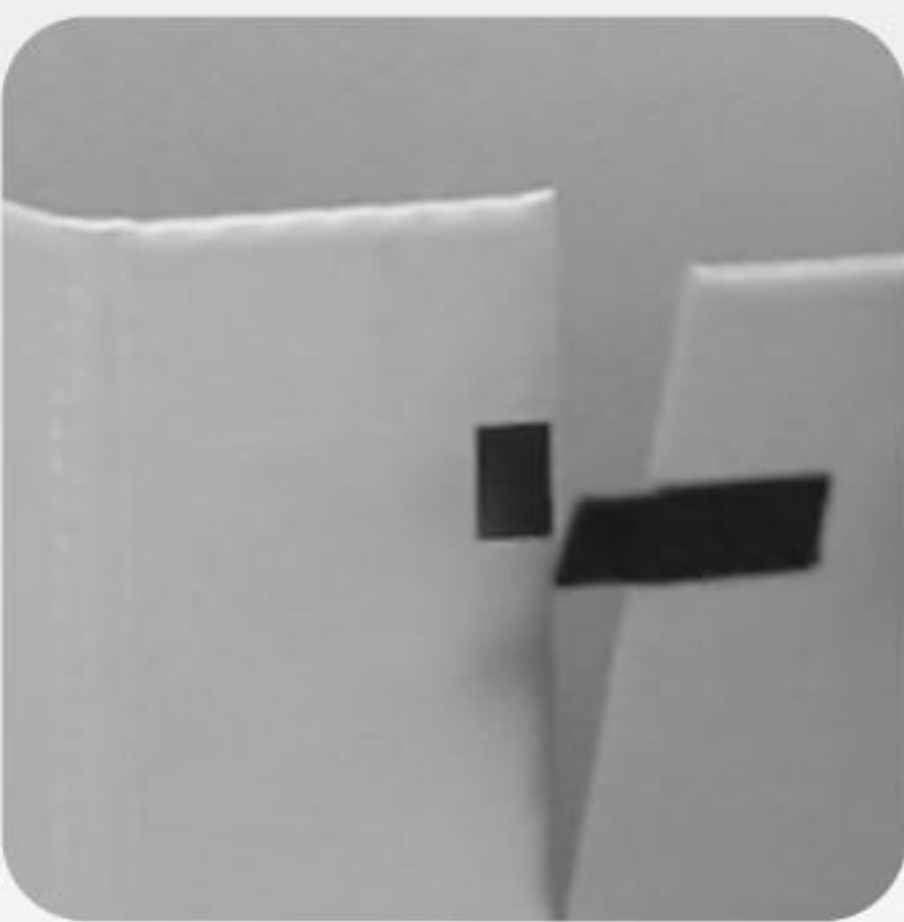
Variable height and size **P L**



Logo or corporate branding **P L**



Document pouch **P L**



Velcro flap lock **P L**



Inner lamination or soft trays **P L**



Trip-tracker **P L**



3-runner pallet base with fork access from all sides **P**

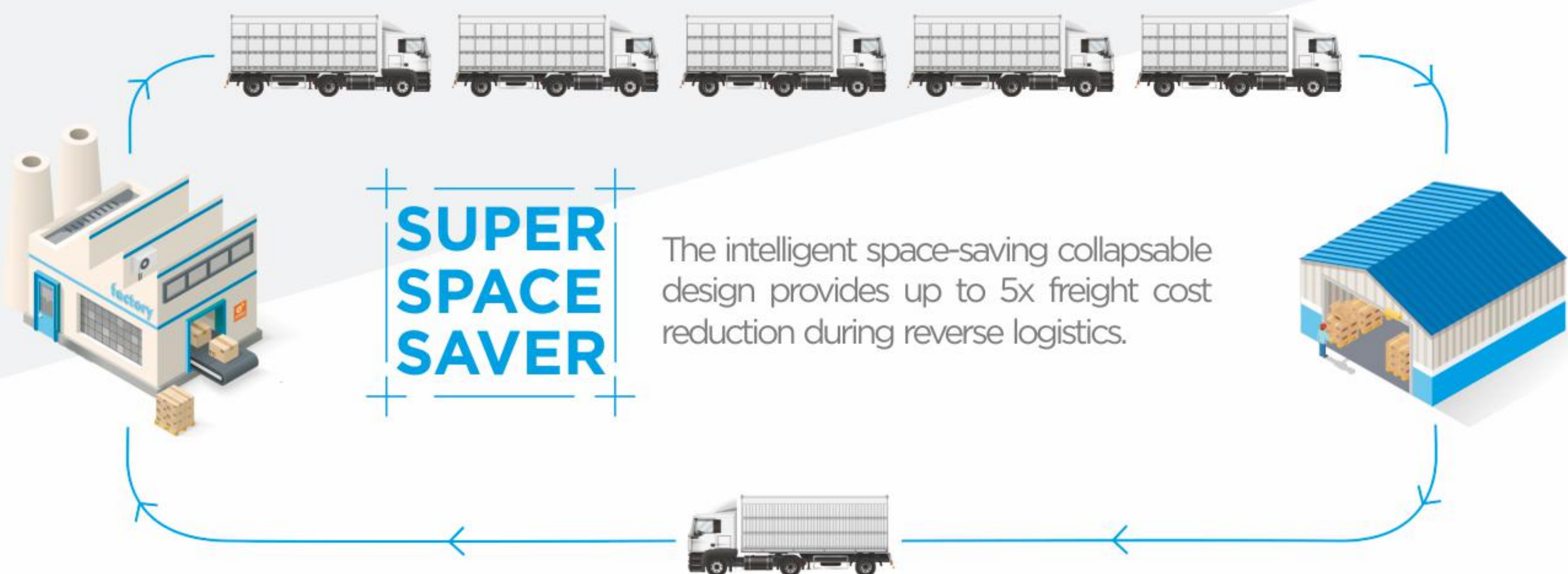


M or Z folding for easy collapse **P L**

OUTPERFORMS CONVENTION

Nilkamal **PalletGUARD** Sleeve Systems offers multiple benefits over conventional paper boxes, octabins and crates.

- + Precise dimensions ensure the most optimum usage of floor space and maximum carrying capacity
- + **BubbleGUARD** walls provide the best strength-to-weight ratio making it lightweight without compromising on superior protection
- + Durability and reusability equals the most cost-effective solution and higher savings
- + 100% polypropylene walls that are completely waterproof, UV resistant, heat resistant and chemical resistant ensuring protection in all industrial environments
- + Branding, trip-tracker, document pouch and secure lock features ensure high visibility in the supply chain reducing risk of loss
- + 100% recyclable sleeves so you can replace them after multiple uses without hurting the environment



**QUICK & EASY
TO ASSEMBLE**



Pallet**GUARD** *NEO*

Durable and Lightweight Pallet



DESIGNED FOR EFFICIENCY

De-clutter your factory floor and make material movement easier with the **PalletGUARD** Neo.

PalletGUARD Neo offers a unique range of lightweight pallets made with 3000 GSM honeycomb structured **BubbleGUARD** Sheets to make your shop-floors organized and make material easy to transport.

Material lying on the floor in factories, warehouses and workshops is at risk to get soiled and water damage. It is also time and energy consuming to move material manually. The **PalletGUARD** Neo is compatible with all standard hand pallet trucks and forklifts allowing you to move heavy stacks of up to 800 kg, easily. Thanks to the patented honeycomb structure of **BubbleGUARD**, **PalletGUARD** Neo provides uniform strength in all directions – suitable for single point or uneven loads.

ADVANTAGE BY FOOT

PalletGUARD Neo has interlocking removable legs for easy storage and refurbishment providing an extended lifecycle and high return on investment.

The design provides 120mm ground clearance to factory materials keeping them safe from liquid damage and soiling.

120 mm
Ground Clearance



NEO ADVANTAGES

PalletGUARD Neo is available with a wide range of features ensuring a solution designed to meet every requirement.



KEY BENEFITS



High Stiffness
& Rigidity



Lightweight



Perfectly Flat
Surface



Reusable
Multiple Times



High Point Load
Bearing Capacity



Available As
Per Size Required



Can Be Fully
Customised



100%
Recyclable



Rounded Edges
For Safety

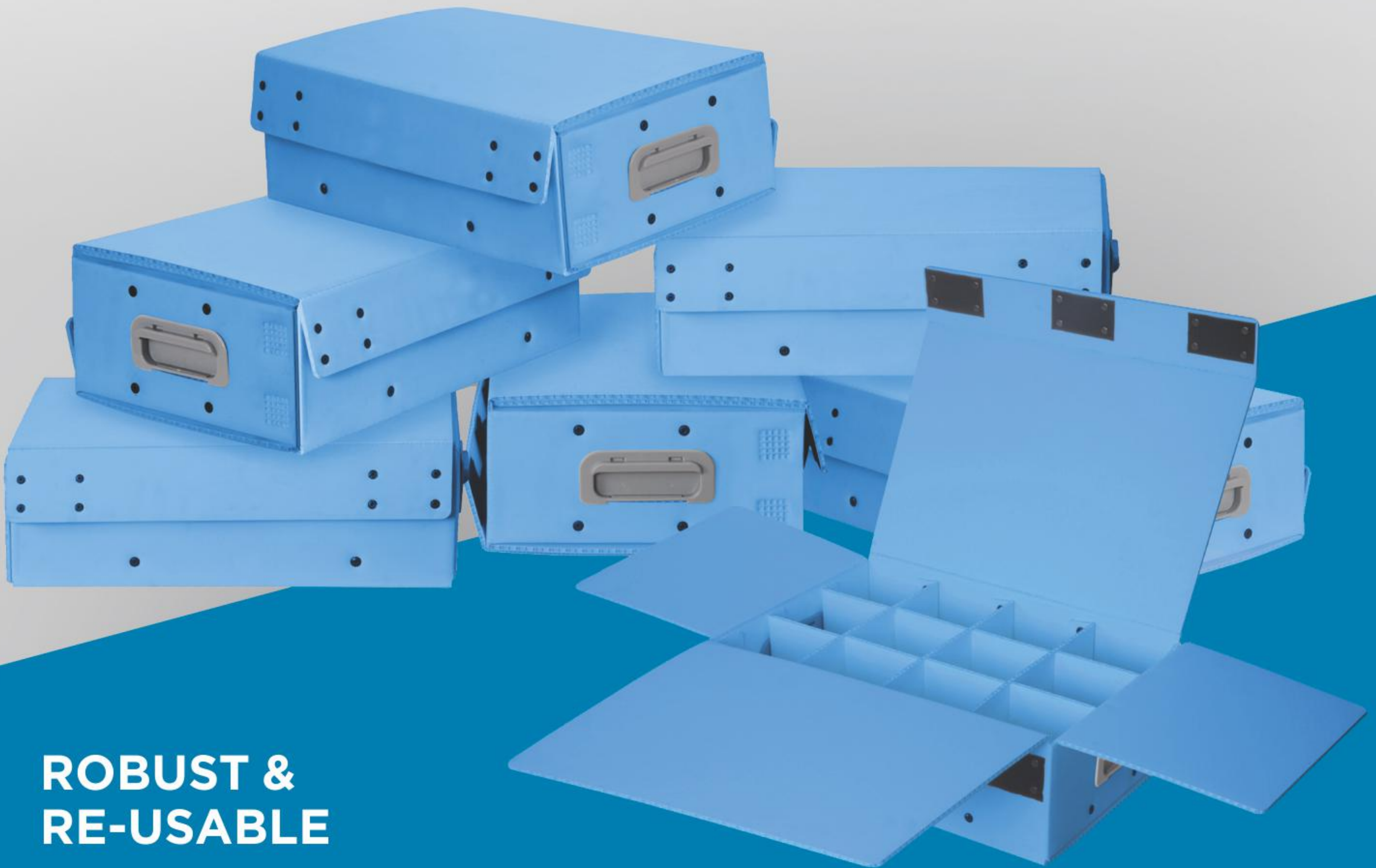
STANDARD SPECIFICATIONS

Pallet Dimensions*	Ground Clearance	Loading Capacity**	Fork Lift Access
Customisable	120 mm	800 KG	From 4 Sides

*Loading capacity will vary with stacking height

PackGUARD

Strong durable sheets for
fabricated boxes

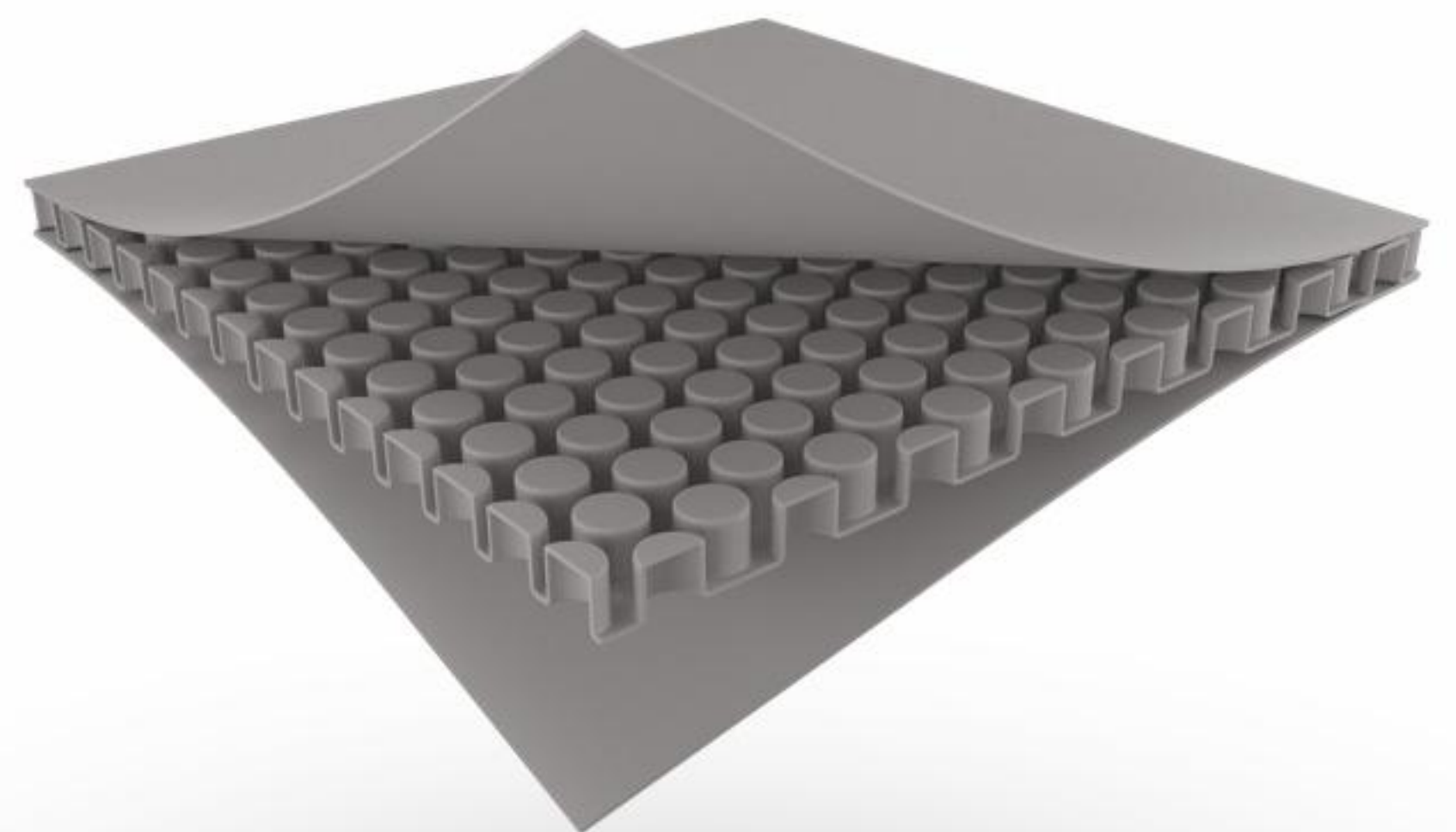


ROBUST & RE-USABLE

The **PackGUARD** range of sheets is engineered to be converted into extremely lightweight boxes with a high load carrying capacity. **PackGUARD**'s optimal strength-to-weight ratio makes it ideal for stacking and keeps your products protected during storage, handling and transportation. The sheets are highly durable so they can be reused for multiple cycles.

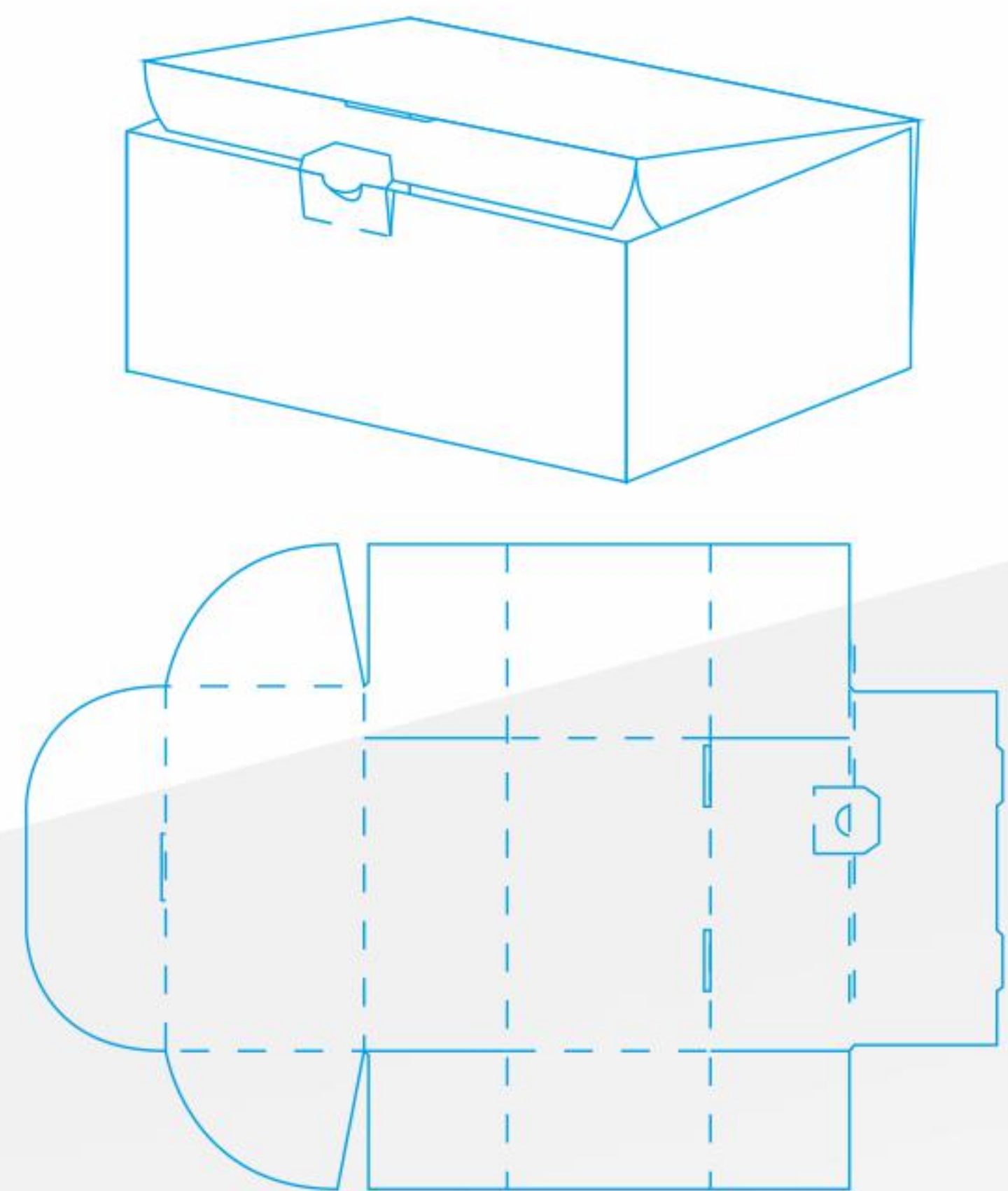
POWER-PACK PERFORMANCE

PackGUARD is formulated to be tough and rigid while simultaneously being easy to fabricate. With a patented honeycomb-structured design, **PackGUARD** sheets provide superior impact protection to the contents stored inside with its *air-lock* technology. **PackGUARD**'s strong walls don't crack and prevent deformation from bulging or sagging.



HIGHLY VERSATILE

Boxes made from **PackGUARD** are highly customizable for multi-functional usage. They can be cut, creased or fabricated in any size and fitted with value added features such as internal partitions, handles, soft liner, Velcro locks, rivets, ultra-sonic welding and branding. Compared to conventional paper boxes, **PackGUARD** is tear resistant, completely waterproof and can be reused over multiple cycles without losing effectiveness. Its light weight property reduces freight cost considerably making it an ideal solution across industries.



KEY BENEFITS



High Stiffness
& Rigidity



Uniform Strength
In All Directions



Can Be Cut,
Creased



Can Be Welded &
Thermoformed



Lightweight



High Load
Carrying
Capacity



Reusable
Multiple Times



Can Be Fully
Customised



100%
Recyclable

PRODUCT DETAILS

Size:
Custom sizes

Variant:
400-2000 GSM

Colours available:



(Also available in
custom colours)

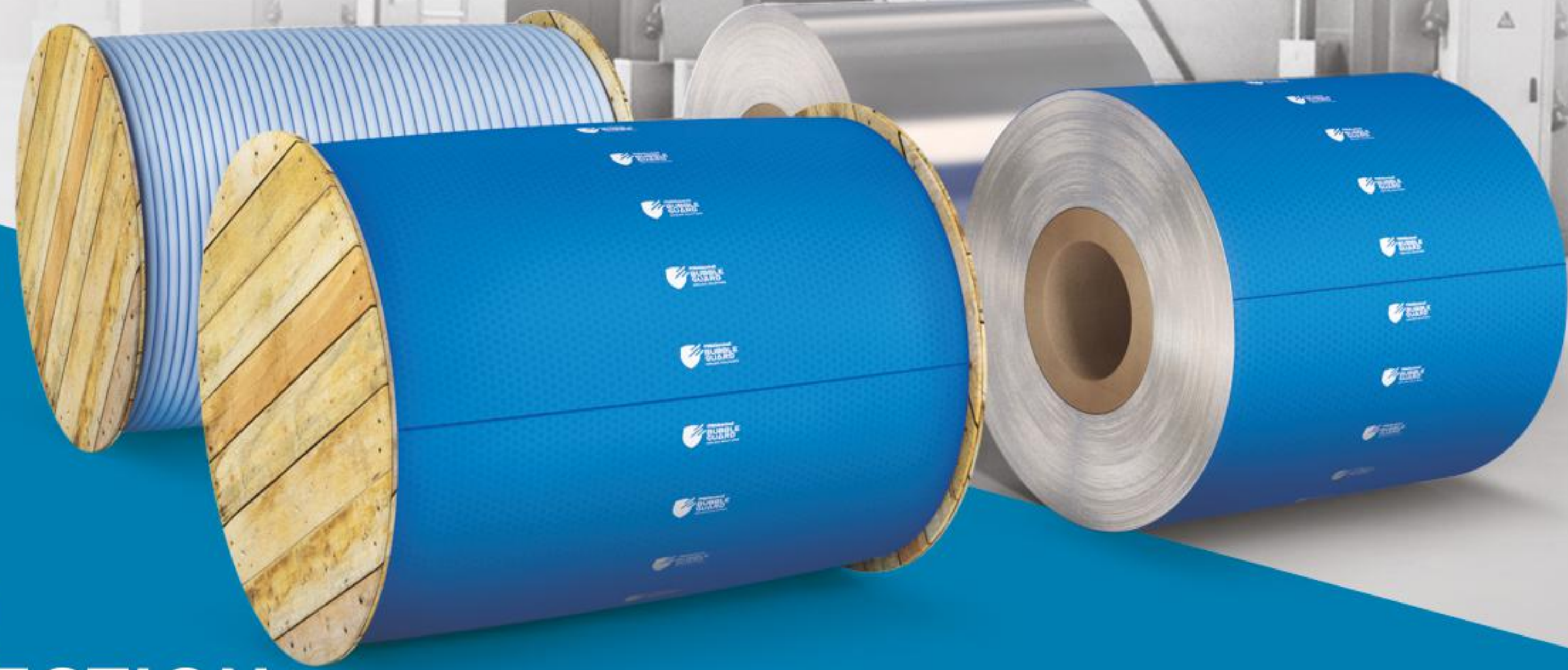
STANDARD SPECIFICATIONS

Test Type	Strength Value	Test Standard
Breaking Strength	29.85 kgf / 15mm	ASTM D 638
Edge Crush	2.54 / m	IS - 7063
Puncture Resistance	76.86 kgf / cm	IS - 4006-2

Note: Test values for 700 GSM

CoilGUARD

Engineered rolls for
specialised coil packaging



INNOVATION MEETS PROTECTION

The optimum combination of strength and flexibility, **CoilGUARD** is a range of versatile rolls scientifically engineered to protect industrial coils. The patented *air-lock* technology is proven to absorb impact and prevent damage to metal coils, wires or cylindrical drums during storage, handling and transportation.

SCIENTIFICALLY ENGINEERED

9 precise microlayers of polypropylene are co-extruded and bonded with a circular honeycomb structure at the centre which fortifies **CoilGUARD** with non-collapsible bubbles. Trapped air makes the sheet extremely lightweight and guarantees constant cushioning throughout its use without losing effectiveness. The high-performance material is flexible to facilitate easy wrapping and highly resistant to tear propagation. A single sheet of **CoilGUARD** provides complete protection from impact, scratches and dents.

SUPERIOR PROTECTION

CoilGUARD is completely waterproof, resistant to UV light, heat and chemicals ensuring protection in all industrial environments. Against conventional materials like paper and wood, **CoilGUARD** delivers superior protection while requiring lesser packing material and it is 100% recyclable!



MANUFACTURED TO SPECIFICATION

CoilGUARD is fully customizable to meet the needs of your application. It is available in multiple colours, sizes, thickness and with corporate branding. For additional protection, **CoilGUARD** can be layered with soft-touch fabric.

KEY BENEFITS



High Impact Resistance



High Point Load-bearing Capacity



Less Packaging Material Required



Lightweight



Quick And Easy To Wrap Around



Available As Per Size Required



Can Be Fully Customised



Waterproof



100% Recyclable



PRODUCT DETAILS

Size:
50 mt. rolls
(Also available in custom sizes)

Variant:
300-700 GSM

Colours available:
      (Also available in custom colours)

STANDARD SPECIFICATIONS

Test Type	Strength Value	Test Standard
Breaking Strength	11.76 kgf / 15mm	ASTM D 638
Puncture Resistance	22.88 kgf / cm	IS - 4006-2
Elongation	26.48 %	ASTM D 638

Note: Test values for 300 GSM

Sheet**GUARD**

Strong and rigid interlayer sheets

THE STACKING SOLUTION

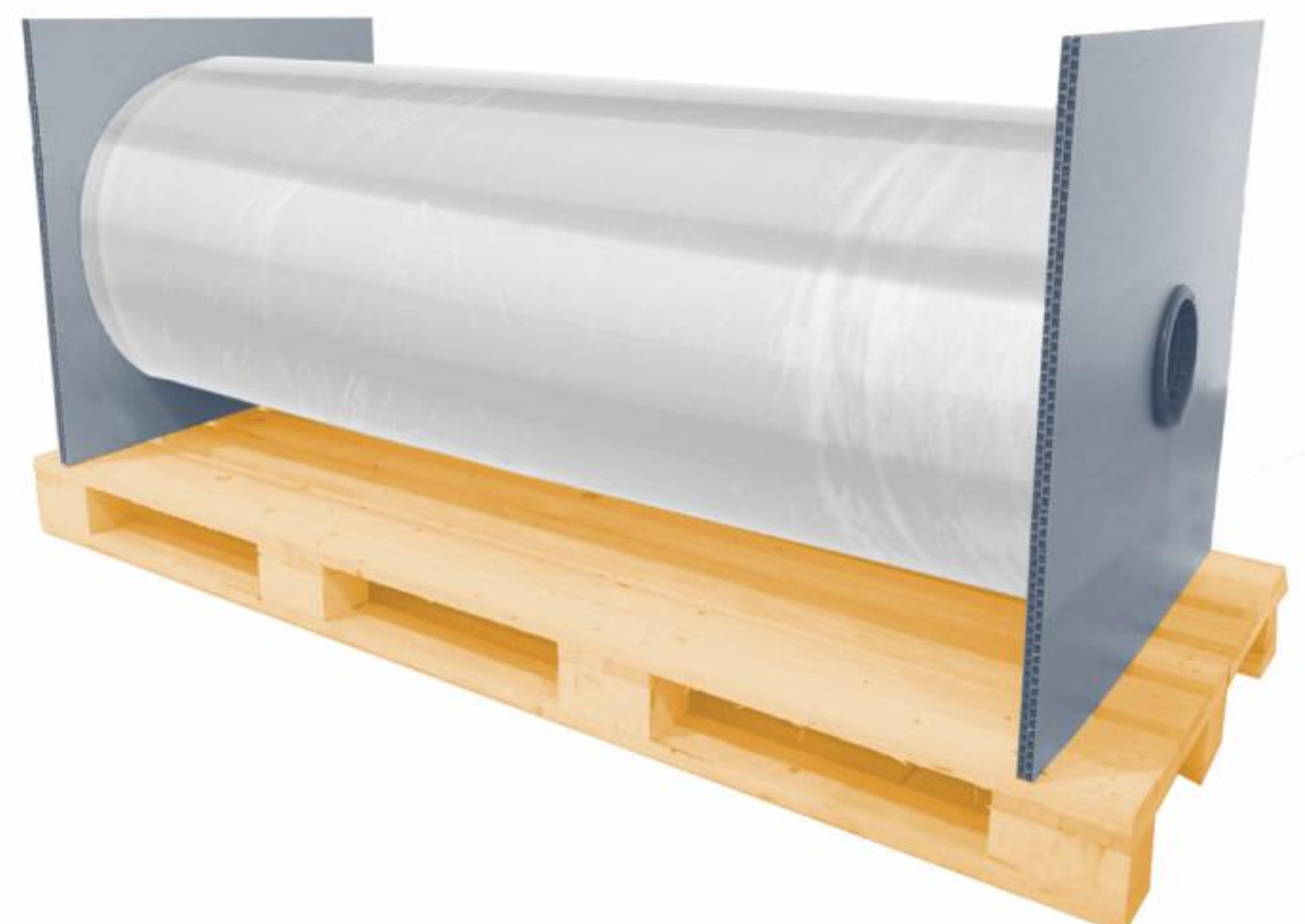
SheetGUARD is a range of highly robust, stiff and rigid polypropylene boards ideal for usage as layer pads, separator sheets, end boards and partitions across industries.

SheetGUARD delivers excellent compressive strength and high point load-bearing capacity to ensure complete protection for stacked products. Tremendous durability ensures constant safety over multiple usage cycles.



CORE STRENGTH

Fortified by a unique circular honeycomb structure, **SheetGUARD** has a completely flat surface with uniform strength in all directions. The *Air-Lock* technology with non-collapsible bubbles guarantees superior strength while being extremely low in weight. Engineered for stacking applications, the patented European technology can withstand point loads and prevents the board from sagging.

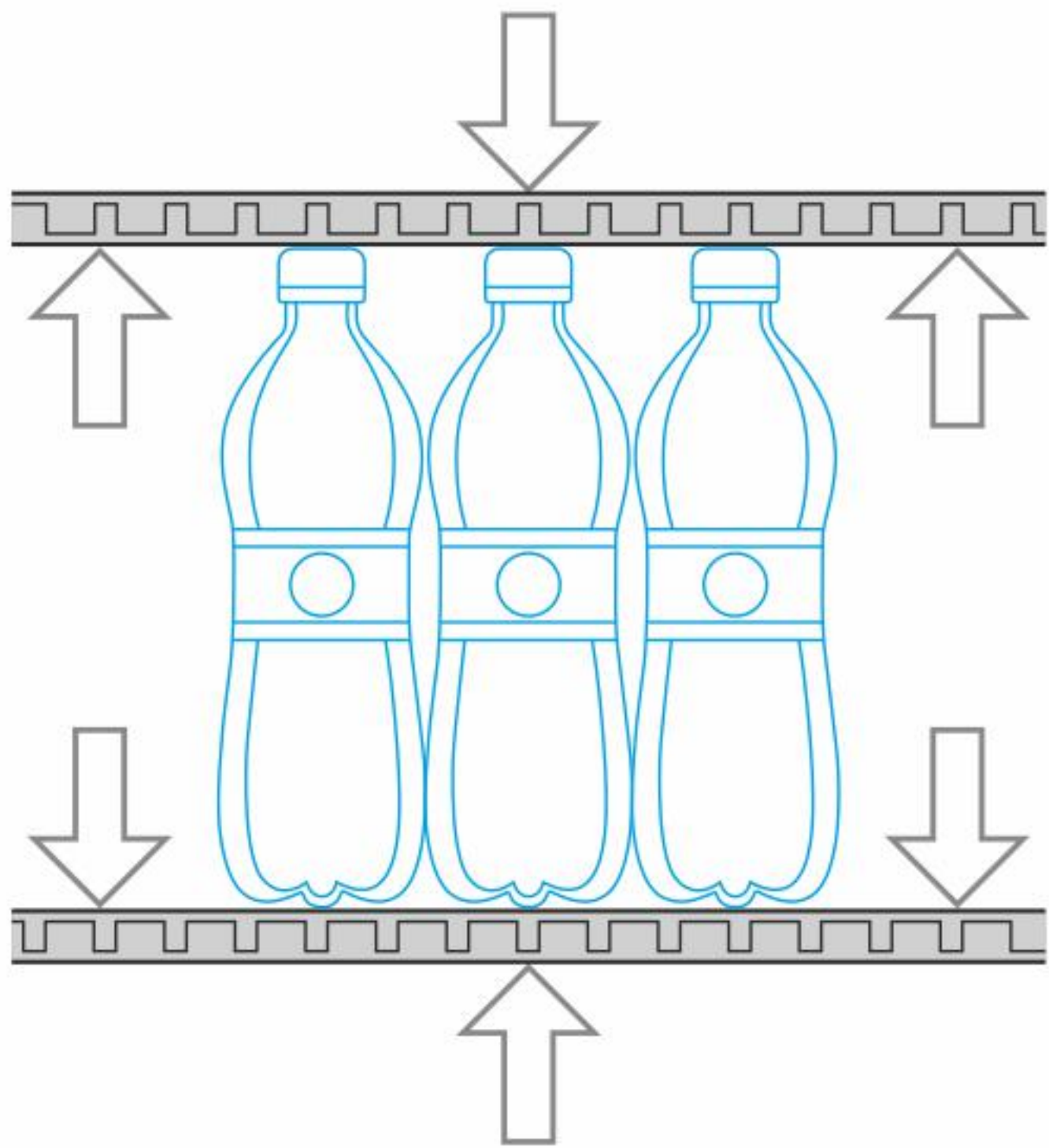


THE OBVIOUS CHOICE

Striking the perfect balance between protection and performance, **SheetGUARD** replaces conventional materials like paper and wood due to its superior benefits. The bubbles with trapped air make the sheet extremely lightweight and provide constant cushioning without losing effectiveness. Made from 100% polypropylene, **SheetGUARD** is completely waterproof, bacteria resistant, tear resistant and completely recyclable.

MADE TO MEASURE

Tailored to fit your exact needs, **SheetGUARD** is offered with customization options in colour, size, weight, shape and corporate branding. It offers endless lamination possibilities to enhance its performance with industry specific requirements, such as soft layers or non-slip surfaces.



KEY BENEFITS



High Stiffness
& Rigidity



Lightweight



Perfectly Flat
Surface



Reusable
Multiple Times



High Point Load
Bearing Capacity



Available As
Per Size Required



Can Be Fully
Customised



100%
Recyclable



Rounded Edges
For Safety

PRODUCT DETAILS

Size:
Custom sizes

Variant:
800-3000 GSM

Colours available:
 (Also available in
custom colours)

STANDARD SPECIFICATIONS

Test Type	Strength Value	Test Standard
Puncture Resistance	107.97 kgf / cm	IS - 4006-2
Edge Crush	5.13 kN / m	IS - 7063
Tensile Strength	35.49 kgf / 15mm	ASTM D 638

Note: Test values for 1000 GSM

MATERIAL DESCRIPTION:

Co-extruded polypropylene sheets with a central honeycomb bubble structure layer

Product	Thickness	Weight (Gr / sqm)	Colour
Bubble GUARD	1.6 mm – 11 mm	200 - 3500	Various

TREATMENT:

- + Corona- up to 60 dynes
- + Fire Retardant- upon request
- + UV Resistant- on select variants

Printing	One Side	Two Side
Offset UV	✓	✓
Digital UV	✓	✓
Screen-printing	✓	✓

COMPATIBLE CONVERSION

- + Gluing (hot melt: PP or polyurethane reactive)
- + Heat or Ultrasonic Welding
- + Screwing
- + Riveting
- + Stapling
- + Cutting (guillotine, die cut, laser, knife, plotter)
- + Folding (hot or cold)

MECHANICAL PROPERTIES

Property	Method	GSM 300	GSM 1000	GSM 3000	Units
Breaking Strength	ASTM D 638	11.8	35.5	84.3	kgf / 15mm
Elongation MD	ASTM D 638	26.5	23.2	32.7	%
Elongation TD	ASTM D 638	N/A	33.4	42.7	%
Puncture Resistance	IS - 4006-2	75	354	>1500	Beach units (BU)
		22.9	108	>457.5	kgf/cm
Edge Crush Test	IS - 7063	0.5	5.1	18.2	kN/m

CHEMICAL PROPERTIES

Nilkamal **BubbleGUARD** products are manufactured with virgin blend Polypropylene which is non-toxic and food grade safe with RoHS and FDA compliance.

Polypropylene has good chemical inertness and good resistance to cracking under stress. It has no solvent at 20°C. Very resistant to mineral and organic products; it is neither affected by water solutions of mineral salts, nor by chemical bases and mineral acids at temperatures lower than 60°C, except very strong acids. Not resistant to substances with an oxidizing effect or to certain solvents. Details can be supplied on request.

ENVIRONMENT

Polypropylene is persistent in the environment and is not biodegradable.

RECYCLING PROPERTIES

Thermal recycling or incineration

The heat produced can then be used as substitutes for oil, gas and coal or to generate energy at power plants. The complete combustion of polypropylene with air only produces carbon dioxide and water. At higher temperatures traces of nitrogen oxide are present. The incomplete combustion of polypropylene produces soot, carbon dioxide and monoxide, and several carbon, hydrogen and oxygen compounds. Unburnt substances or additional products may be released. The same by-products are also released during the combustion of natural materials such as wood or wool.

MECHANICAL RECYCLING

Polypropylene wastes can easily be recycled. They are collected, separated, milled, melted and extruded in granules in order to be re-injected in our process. We can reuse our own waste.

OTHER PRODUCTS FROM Nilkamal Bubble**GUARD**

Floor**GUARD**

The most cost-effective floor protection solution.



Wood**GUARD**

The best protection for wooden furniture from water, bacteria & fungi.



Print**GUARD**

A revolutionary board for graphic display and signage.



Nilkamal, a brand synonymous with trust is a household name due to its undisputed leadership in the Moulded Plastic Furniture and Material Handling Products segments. Nilkamal is also a category leader in other businesses like @home and Mattrezzz. Through its joint venture with Bito Lagertechnik Bittman (Germany), the company supplies high-rise metal racking systems for warehousing and provides specialty products for the hospitality industry in Joint Venture with Cambro Inc (USA). Nilkamal has a strong sales network of 400+ techno-commercial experts operating through 39 regional offices and 71 warehouses supported by 10 manufacturing plants spread across India.



www.nilkamalbubbleguard.com

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