



## 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.





## OUR PLANET OUR RESPONSIBILITY



### BLUE FOR GREEN Reduce, Reuse, Recycle

Engineered for **reusability** across multiple usage cycles, Nilkamal BubbleGUARD Industrial Packaging replaces single-use paper and plastic that ends up in landfills polluting the environment. With air-lock technology that provides constant cushioning, BubbleGUARD is durable for a long life.

Our unique space-saving and collapsible packaging designs, allows you to **reduce** your return logistics and packaging material requirement. Less packaging means more savings!

With award-winning Nilkamal quality, our products are made from 100% virgin PP. All BubbleGUARD products are **100% recyclable**.

BubbleGUARD eliminates conventional packaging and can immediately improve your ESG score by reducing your carbon footprint for packaging and logistics. Our solutions firmly promote **sustainability** making it the perfect solution.

### THE WIN-WIN SOLUTION

BubbleGUARD solutions combine sustainability with cost efficiency. All products are designed with practicality in mind. BubbleGUARD sheets are 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.

We are committed to help companies transition to sustainable and profitable packaging solutions with ease. Our packaging experts will individually customise solutions to your needs and supply chain challenged to deliver a high return on your investment.



Made of 100%  
Polypropylene



Reusable  
Multiple Times



100%  
Recyclable

# 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:



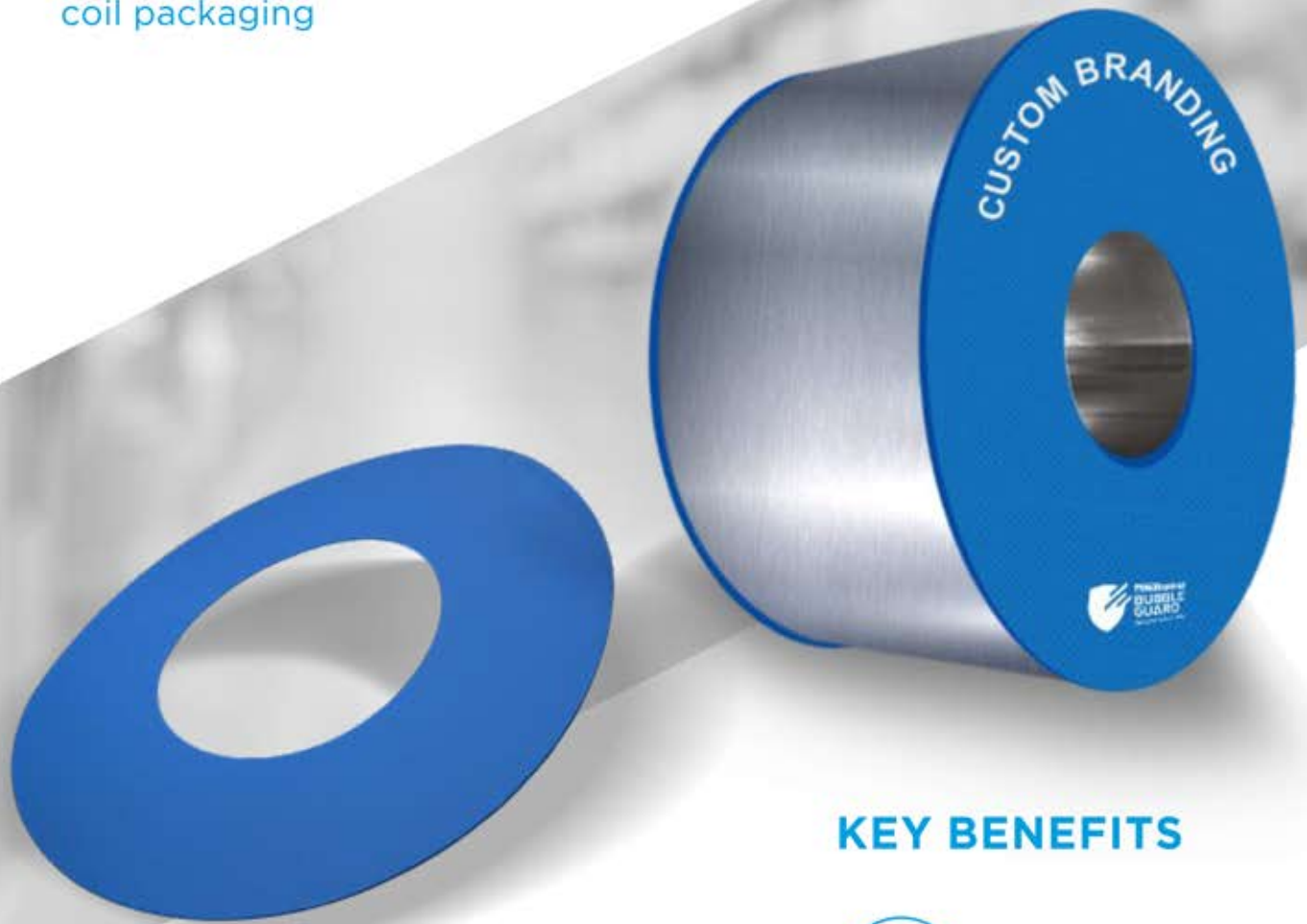
## STANDARD SPECIFICATIONS

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

# DiscGUARD

Side guards customised for coil packaging



**DiscGUARD** provides complete and comprehensive protection to the sides of metal coils. The solution improves safety by covering sharp edges and improves ease of handling without risking any damage. **DiscGUARD** is pre-fabricated and customised to your OD and ID requirements and is easy to install with strapping. **DiscGUARD** is specifically engineered for protection of GP Coils, Colour coated coils & CR Coils. Its flat shape allows for easy stacking and space-saving for return logistics and reusability.

## PRODUCT DETAILS

### Customisation Possibility:

- Colour
- GSM
- Dimensions
- Branding
- Soft surface

## STANDARD SPECIFICATIONS

**Dimension:** up to 1600 mm OD

**GSM:** up to 1500

## KEY BENEFITS



High Impact Resistance



Lightweight



Can Be Fully Customised



Waterproof



100% Recyclable

## MATERIAL DESCRIPTION:

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

Product	Thickness	Weight (Gr / sqm)	Colour
Bubble <b>GUARD</b>	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 Bubble**GUARD** 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.