

Plastic Solutions Uplifting Modern Infrastructure



Braskem 

Innovation is the tool that drives us in the pursuit of our **long-term commitments with sustainable development**

Our purpose is to improve people's lives by creating sustainable solutions through chemicals and plastics.

In line with the **UN 2030 sustainable development goals**, Braskem took on long-term goals with people and the planet in 2020. Working in three priority and four complementary dimensions, we are looking to achieve these goals through innovation.



Eliminating plastic waste



Mitigating Climate Change



Social Responsibility & Human Rights

An **ecosystem** developed to represent Braskem's **products, technologies and initiatives** that help drive the circular economy.



All our polypropylene grades are available with **ISCC+ certification**, using the **mass balance method with bio, circular or bio-circular feedstocks***, ensuring sustainability and traceability across the supply chain.

Braskem Global Presence



With a **global, human-oriented vision of the future**, Braskem strives every day to improve people's lives by creating sustainable solutions in chemistry and plastics. Braskem is the largest producer of thermoplastic resins in the Americas and a **global leader in the production of biopolymers on an industrial scale**.

Our products are exported to some **70 countries** and we count on 40 Industrial units, located in Brazil, the United States, Germany and Mexico (in partnership with Mexican company Idesa). For more information, visit www.braskem.com.

The advantages of our plastic solutions



Durability

They are **ideal for applications that require durability**, such as windows and pipes. They do **not rust and are easy to maintain**. Another example is PP macrofibres for concrete reinforcement, which do not corrode and are **highly resistant** to alkalis and acids, providing greater long-term durability for the concrete.



Resistance

They are **impact resistant**, as is the case with manholes. They are also resistant to loads, like plastic forms, preventing the **extraction of wood for disposable use**.



Lightness

They contribute to savings by **reducing labor and the need for heavy equipment such as cranes**. Because they are lighter to transport; they can reduce the number of trips and thus help reduce CO2 emissions.



Waterproofing

They **prevent infiltration** into environmental infrastructure works, such as geomembranes, which protect the soil from contamination. In addition, they **allow solutions for water transportation and storage**, such as pipes and cisterns.



Recyclable

Products made from **100% plastic are 100% recyclable**. Recycling reduces the consumption of new raw materials and reduces the volume of waste sent to landfills.



Non-toxic

It guarantees the quality of air and water in solutions such as pipes and water tanks, preserving the health of people and natural systems.

- **Products made from PP and PE** are being used as **innovative solutions** within infrastructure like wires & cables, construction, and water management. Attributes such as lightness, recyclability, possibility of reuse and greater durability – when compared to traditional materials, result in **increased productivity onsite and reduced need for maintenance during the operation phase**.
- For the environment, the **lightness of the materials improves logistics**, reducing greenhouse gas emissions. Their high durability, the possibility of reuse and the ease of recycling avoid the extraction of new raw materials and the generation of waste. Products that are **already colored and Pipes with elastic joints or welded joints**, for example, help reduce the need for paints and glues and, consequently, reduce the emission of volatile organic compounds, which improves air quality for installers and users.
- **Here we present the products produced by our partners**. You will certainly find innovative and competitive solutions that will make a difference in your projects.



Braskem is your experienced and reliable partner in products for infrastructure.

We supply selected products to meet your requirements in a spectrum of fields: wire & cables, construction and water management. Our portfolio range includes Polypropylene

Homo-, Random- and Heterophasic Copolymers. Additionally, the portfolio is complemented with **High Density Polyethylene (HDPE)** grades.

We consistently strive to advance solutions to further enhance our portfolio and to develop new products in cooperation with you.

Wire & Cable

Polyolefin-based wire and cable solutions deliver reliable performance across power, data, and control applications—**thanks to the material's excellent insulation properties, chemical resistance, and cost-efficiency.** Whether for automotive, industrial, or building infrastructure, our polyolefins enable safer, more durable, and sustainable cable designs that meet modern demands.



Construction

Polyolefins in construction applications offer **durable, lightweight, and cost-effective solutions for insulation, roofing, and protective layers in modern building infrastructure.** Their excellent weatherability, chemical resistance, and ease of processing make them ideal for sustainable and high-performance materials in residential, commercial, and industrial projects.

Water Management

Braskem's polypropylene is a **versatile material used in a wide range of water management** applications such as **sewer and sewage pipes, irrigation systems, water storage tanks, stormwater drainage systems, and wastewater treatment components.** Its **durability, chemical resistance, and lightweight nature** make it an ideal choice for these **demanding environments,** helping to **ensure cost-efficient and sustainable** water management solutions.



Water Management

Extrusion

PP extrusion grades are designed for **non-pressure pipes for sewerage and drainage**. Braskem's materials are ideal for mono – and multilayer pipe systems with very high stiffness and impact resistance. **Compared to PVC, PP pipes characterized by increased chemical resistance.**



PP piping systems: DIN EN 1852-1:2023-07

Our **high-performance products** for sewer pipes have been tested at an accredited institute to ensure reliability. **CSP030N is a standard pipe grade offering excellent impact strength**, while **INSPIRE 118** is ideal when additional ring stiffness is needed.



▶ High molecular weight PP impact copolymer for non-pressure sewer pipes

▶ Excellent stiffness-toughness balance at lower temperatures

▶ Enabling higher SDR/SN

▶ DIN EN 1852-1:2023-07

		INSPIRE 118			CSP030N		
		SN4 / SDR 33 / S16	Pipe SN8 / SDR 22 / S10,5	SN16 / SDR 22 / S10,5	Granules	Pipe	Granules
		Accredited institute	Accredited institute	Accredited institute	Braskem	Accredited institute	Braskem
Hoop Stress Test	1000h/95 °C/2,5 MPa	✓	✓	✓	-	✓	-
	140h/80 °C/4,2 MPa	✓	✓	✓	-	✓	-
Ring stiffness		✓	✓	✓	-	✓	-
		6,4 MPa	8,4 MPa	22 MPa	-	6,4 MPa	-
Resistance to external blows		✓	✓	✓	-	✓	-
MFR		✓	✓	✓	-	✓	-
OIT		-	-	-	>60 Min	-	>60 Min

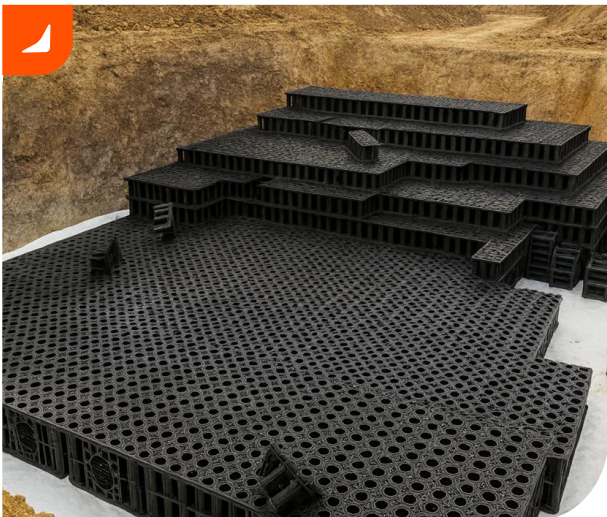
Injection Molding

Injection molding produces components like **fittings, valves, and pump components**. **Braskem offers a diverse range of PP products** that deliver high-strength and durable parts ideal for water management systems.



Infiltration boxes

Injection molded infiltration boxes offer advantages like excellent **durability and high storage capacity**, making them a **long-lasting and reliable solutions** for managing stormwaters. Their lightweight and easy-to-install nature reduces labor costs, while their inherent toughness ensures they can withstand static loads and maintain their integrity in diverse environments.



Fittings

PP pipe fittings for various applications provide **durable, leak-proof, and chemically resistant solutions for different needs**. These PP fittings are part of larger systems designed for underground drainage and indoor plumbing, and compatible with respective pipe types.

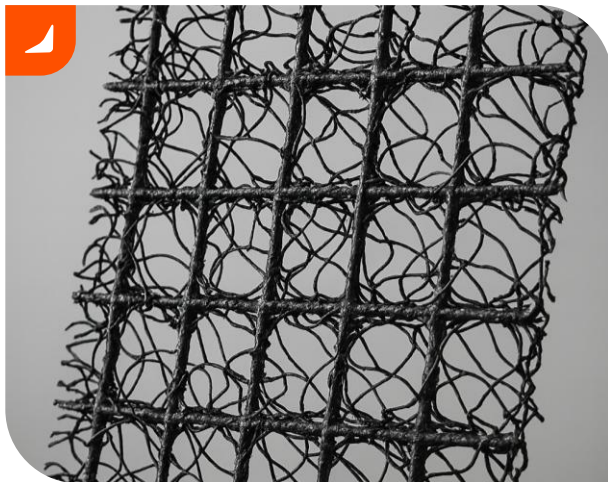


Construction Applications

Concrete fibers

Polypropylene fibers enhance concrete by improving resistance to cracking, increasing overall durability and lifespan, and providing better impact and abrasion resistance.

They are non-corrosive, lightweight, and improve workability, offering a faster, more cost-effective, and uniform reinforcement compared to traditional methods.



Geogrids

Plastic geogrids made from polypropylene (PP) offer high tensile strength and stability for **reinforcing soil and asphalt**, improving roadbed and foundation bearing capacity, preventing cracking and subsidence, and extending service life. They are durable, can withstand high loads, resist deformation, and are suitable for applications like slope protection, embankments, and foundations.

TPO roofing

TPO (thermoplastic polyolefin) roofing offers numerous advantages, including durability, flexibility, energy efficiency, and cost-effectiveness. It provides excellent resistance to UV rays, extreme temperatures, and punctures. **TPO's reflective, lighter colors reduce heat absorption, lowering cooling costs and energy consumption.** Its heat-welded seams create a strong, watertight barrier, and its single-ply nature makes it relatively easy to install. Additionally, TPO is environmentally friendly and recyclable.



Wire & Cable Applications

Conduit pipes

Polypropylene conduit pipes offer advantages such as lightweight construction, superior corrosion and chemical resistance, excellent thermal insulation and low thermal conductivity. They are also non-conductive, which is important for electrical safety, and contribute to energy savings due to reduced heat loss.

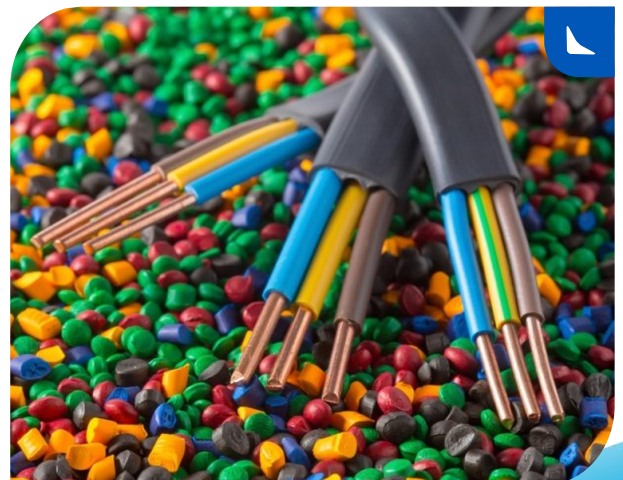


Medium and low voltage cable

Polypropylene (PP) is an increasingly viable insulation material for medium and low voltage power cables, offering excellent electrical properties, higher operating temperatures, superior water tree retardancy, and significant energy and cost savings compared to traditional XLPE or EPR insulation.

Compounding

Braskem offers wide range of polypropylene grades with MFR between 0.3 up to 100 g/10 min, enabling high filler loading for e.g. enhanced flame retardancy. Our selection includes polymers with a tensile modulus down to 500 MPa, as well as heterophasic copolymers with impact resistance up to 10 kJ/m² at -20°C, providing exceptional durability and versatility for advanced wire and cable applications.



► PROFILE EXTRUSION

Family	Grade	MFR (ISO 1133)	Density	Flex ISO 178 [MPa]	Tensile E-Mod [MPa]	Yield Strength (MPa)	n.Ch 23°C (kJ/m ²) ISO 179 1A	n.Ch -20°C (kJ/m ²) ISO 179 1A	n.Izod 23°C (J/m) ASTM D256	n.Izod -20°C (J/m) ASTM D256	OIT (200 °C) Min
HPP	D232.02	0,5	900	1800	-	-	7	-	-	-	-
	PG107H	0,8	900	1635	1340	33,5	8,5	-	-	-	>30
ICP	CSP030N	0,3	900	1513	1250	28	95	6	955	55	>60
	Inspire 118	0,3	900	1753	1500	32	85	2,2	969	26	>60
	Inspire 114EU	0,5	900	1710	1350	28	72	4	835	44	>20
	C123-01N	1,2	900	1641	1320	28	42	4	565	44	>10
	CG15	1,5	900	1200	1230	26	48	5,5	-	-	-
	CG70	7	900	1564	1312	28	8	4	83	33	>10
HPDE	HDB0763	0,72	960	1480	-	-	-	-	-	-	-
	HDB0358	0,3	958	1520	-	-	-	-	-	-	-
LLDPE	SLL318	2,7	918	-	120	-	-	-	-	-	-

► FILM EXTRUSION

Family	Grade	MFR (ISO 1133)	Density	Flex ISO 178 [MPa]	Tensile E-Mod [MPa]	Yield Strength (MPa)	n.Ch 23°C (kJ/m ²) ISO 179 1A	n.Ch 0°C (kJ/m ²) ISO 179 1A	n.Ch -20°C (kJ/m ²) ISO 179 1A	Tm (°C) ISO 11357	Tc (°C) ISO 11357
HPP	DPF033.01	3,3	900	1550	-	18	-	-	-	163	120
ICP	Inspire 007	0,75	900	600	580	22	70	8	2	139	102
	Inspire 137	0,8	900	930	-	22	50	5,5	2	165	119
	CG15	1,5	900	1200	1230	26	48	7,5	5,5	164	124
	DC7056.05	3,5	900	1000	1000	24	12	5	4	167	127
	CG70	7	900	1564	1312	28	8	4	4	163	117
	LLDPE	SLL318	2,7	918	-	120 /340	-	-	-	-	-



► INJECTION MOLDING

Family	Grade	MFR (ISO 1133)	Density	Flex ISO 178 [MPa]	Tensile E-Mod [MPa]	Yield Strength (MPa)	n.Ch 23°C (kJ/m ²) ISO 179 1A	n.Ch -20°C (kJ/m ²) ISO 179 1A	n.Izod 23°C (J/m) ASTM D256	n.Izod -20°C (J/m) ASTM D256	Tm (°C) ISO 11357	Tc (°C) ISO 11357
ICP	C123-01N	1,2	900	1641	1320	28	42	4	565	44	165	125
	CG15	1,5	900	-	1230	26	48	5,5	-	-	164	124
	EP445L	6	900	1450	-	32	-	3,3	80	25	-	-
	CG70	7	900	1564	1312	28	8	4	83	33	163	117
	C715-12NHP	12	900	1450	-	25	10	4,5	-	-	-	-

► FIBERS

Family	Grade	MFR (ISO 1133)	Density	Flex ISO 178 [MPa]	Tensile E-Mod [MPa]	Yield Strength (MPa)	n.Ch 23°C (kJ/m ²) ISO 179 1A	n.Izod 23°C (J/m) ASTM D256	Vicat 10N (°C) DIN ISO 306	HDT B 0,45 MPa (°C) DIN ISO 75	Tm (°C) ISO 11357
HPP	HSP165G	16,5	900	1519	1398	33	3	33	154	87	163
	PF260GQ	26	900	1350	1200	35	3,2	25	155	93	-

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