

January 10, 2025  
FP CORPORATION

**Official order placed for Ultra-High-Rigidity and Thermo-Formable Biaxially Oriented Polypropylene Sheet manufacturing machine**

FP Corporation (Chairman and Representative Director: Morimasa Sato; hereinafter, the “Company”) has officially placed an order with Brückner Maschinenbau GmbH (hereinafter, “Brückner”) for LISIM, the manufacturing equipment for the ultra-high-rigidity and thermo-formable biaxially oriented polypropylene sheet (hereinafter, “new OPP sheet”) announced on April 30, 2024.

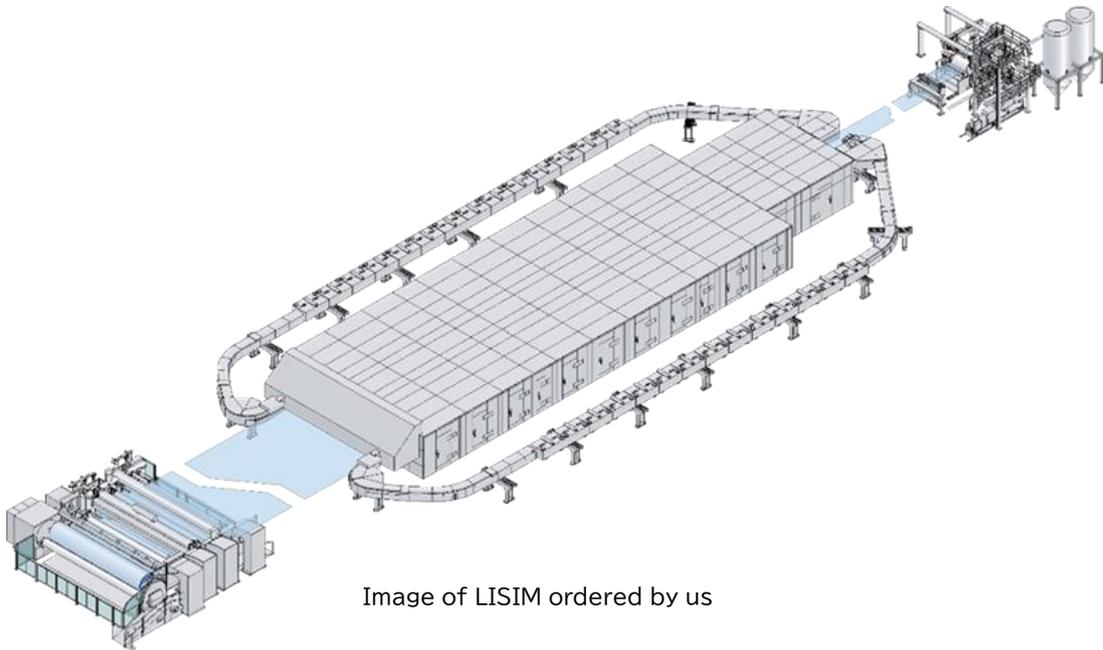
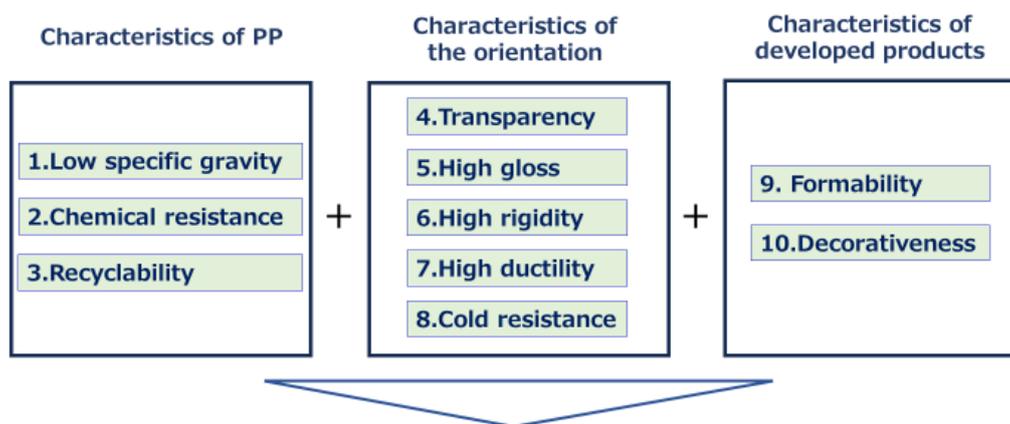


Image of LISIM ordered by us

In the development of the new OPP sheet, our company has conducted extensive research and testing over the past decade using the testing equipment of Brückner, a company based in Germany. Under this partnership, the optimal combination of our material technologies and Brückner’s LISIM simultaneous stretching technology has borne fruit in the successful development of the new OPP sheet.

Biaxially oriented polypropylene film is generally used in thicknesses of 30 to 50 microns, mainly for flexible packaging materials for food products. Our newly developed OPP sheet is 150 to 300 microns thick, which is five to six times thicker than biaxially oriented polypropylene film. This new OPP sheet exhibits excellent transparency, heat resistance, cold resistance, and oil resistance as a sheet for food containers. Moreover, it demonstrates a well-balanced combination of rigidity and high impact resistance across a wide temperature range, from extremely low to high temperatures.

## 10 Characteristics of the New OPP Sheet



## Towards a Circular Society and CO2 Reduction

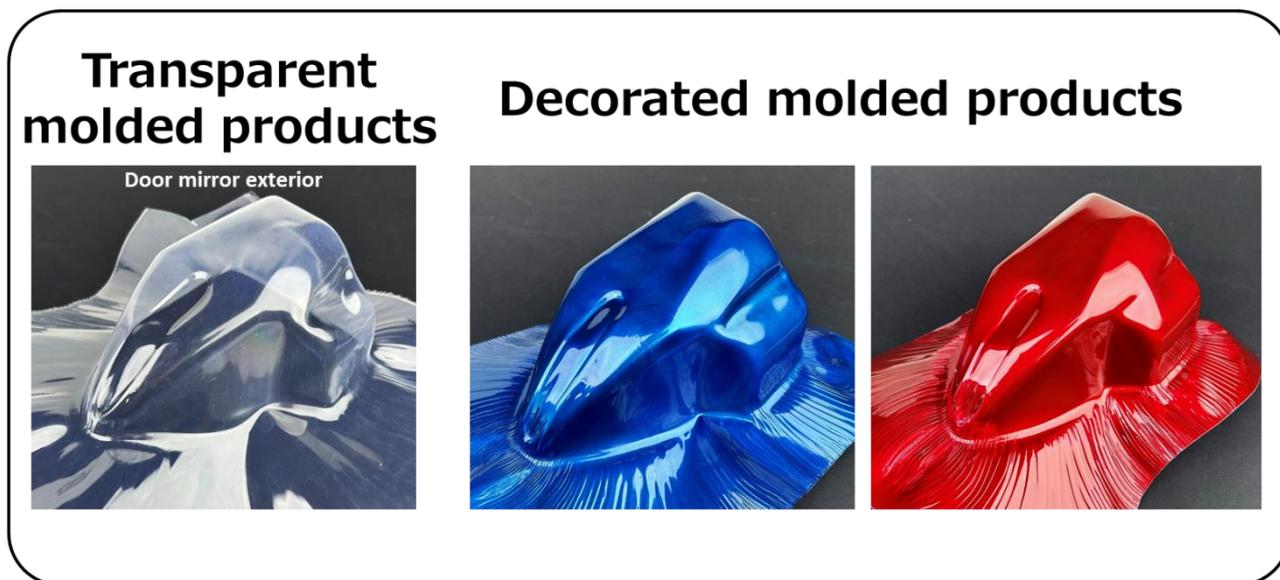
Leveraging these characteristics, it has become possible to develop unprecedented food containers, while also expanding the potential for use in various industrial fields beyond food containers.

For example, in the case of in-mold labeling (hereinafter, "IML"), by replacing the conventional decorative sheet made from composite materials with new OPP and using polypropylene (hereinafter, "PP") for the injection resin, it is possible to reduce the amount of resin used in the molded product by about 20% (our estimate) while maintaining the same level of mechanical strength as conventional IML, which opens up the possibility of reducing the amount of plastic used and making the molded product lighter.

In terms of the environment, the new OPP sheet, which is made mainly from polypropylene, is an excellent product because it is highly recyclable thanks to the use of a single material, and it also contributes to the omission of the coating process through printing because it is more transparent than conventional polypropylene sheets, making it possible to comply with VOC regulations\*1.

Furthermore, by thermally fusing new OPP sheets to create laminated sheets of 1 to 3 mm thickness, it is possible to achieve high rigidity, impact resistance, toughness, and thermo-formability, and because it retains a higher degree of transparency than

conventional PP sheets, it is excellent for decorative purposes. In addition, because it has a linear expansion coefficient similar to aluminum, it has the potential to be used as a partial substitute for steel sheets, aluminum steel sheets, FRP\*<sup>2</sup>, polycarbonate sheets, and CFRP\*<sup>3</sup>.



As mentioned above, the new OPP sheet is highly regarded not only as a food container, but also in a wide range of industrial fields, including automobiles, housing equipment, construction, solar cells, and logistics materials, and there are high expectations for its potential for use in a wide range of fields.

Our group is considering building a new factory in Bando City, Ibaraki Prefecture, with the goal of starting up LISIM operations in the second half of 2027. In order to promote business development in a wide range of fields for the new OPP sheet, we are considering marketing, including alliances with related industries, and we will announce specific business plans and investment details as soon as they are decided.

【Links to our website】

•Successful Development of the World's First Ultra-High-Rigidity Biaxially Oriented Polypropylene Sheet

[https://www.fpc.jp/dcms/media/other/press\\_keieikikaku\\_20240621.pdf](https://www.fpc.jp/dcms/media/other/press_keieikikaku_20240621.pdf)

【Links to the Brückner website】

•Brückner, FP Corporation and the really big thing

[Contract conclusion for a new stretching line for](#)

•Brückner Maschinenbau web-site

[Brückner Maschinenbau: Film stretching lines](#)

•Brückner Group web-site

[Brückner Group](#)

## ■Supplemental Information

### ◇About Brückner Maschinenbau

Brückner Maschinenbau GmbH, headquartered in Siegsdorf, Germany, is a global leader in the stretching technology of plastic films. Since its founding in 1960, the company has been providing manufacturing equipment for packaging films and technical applications, striving for the highest standards of quality and innovation. With approximately 2,900 employees across the group, Brückner Maschinenbau and its subsidiaries demonstrate market and technological leadership in their respective fields.

The company's products support various polymers, such as polypropylene (PP), polyethylene terephthalate (PET), and polyamide (PA), with single-axis and biaxial stretching (sequential stretching, simultaneous biaxial stretching) technologies. These are widely used in the production of packaging films and specialty films. Additionally, Brückner Maschinenbau is committed to innovative technology development and service provision, addressing the diverse needs of its customers. The company is also focused on improving sustainability and recyclability, promoting environmentally friendly product development. Its efforts have been highly regarded both within and outside the industry.

### ◇About LISIM

The biaxial simultaneous stretching line stretches the film in both directions simultaneously. Brückner's LISIM technology (Linear Motor Simultaneous Stretching) uses linear motors to drive the clips without any mechanical connections. This enables high-speed, flexible production (particularly because the stretching ratio in the machine direction is variable), while also reducing wear parts and making maintenance easier. Since 1996, the LISIM production lines have been operating smoothly.

"LISIM" is a registered trademark of the Bruckner Maschinenbau GmbH

\*1 VOC regulations:Laws and regulations that control volatile organic compounds (VOCs) emitted into the atmosphere.

\*2 FRP:Fiber-reinforced plastic

\*3 CFRP:Carbon Fiber Reinforced Plastic (CFRP)

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