



Foam Extrusion Technology

More Than Machinery

ECOFEL™ Foam Extrusion Lines for

XPS Panels
XPET Foam Core
Graphite EPS Beads
PLA Foam Beads
PET Foam Beads
XLPE/IXPE Sheets
Microfoam Sheets

Higher Productivity
Better Quality
Lower Cost
More Eco-friendly
More Intelligent



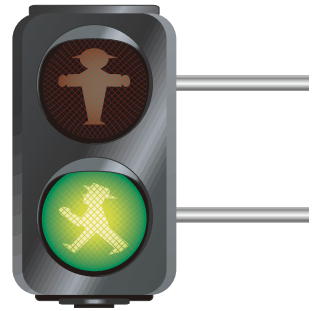
Walk The Talk



ECOFEL™ Foam extrusion lines

Making plastic products in a more sustainable way

ECOFEL™ series extrusion lines have been developed to respond the growing demand for foam plastic products and the challenge of the environment issues. In the past decade, it has made tremendous contribution to the global environment. Aiming to achieve Carbon Neutrality and Emission Peak, ECOFEL will do more to make our world a better place.



Leading innovation

Innovation Creates Cutting-edge

Useon has been committed to providing innovative solutions for polymer foam extrusion products. Optimization of screw profile; highly efficient cooling barrel structure; steam density reduction; intelligent control system. We believe that innovation creates cutting-edge. Besides a quality machine supplier, [Useon is your reliable strategic partner](#).



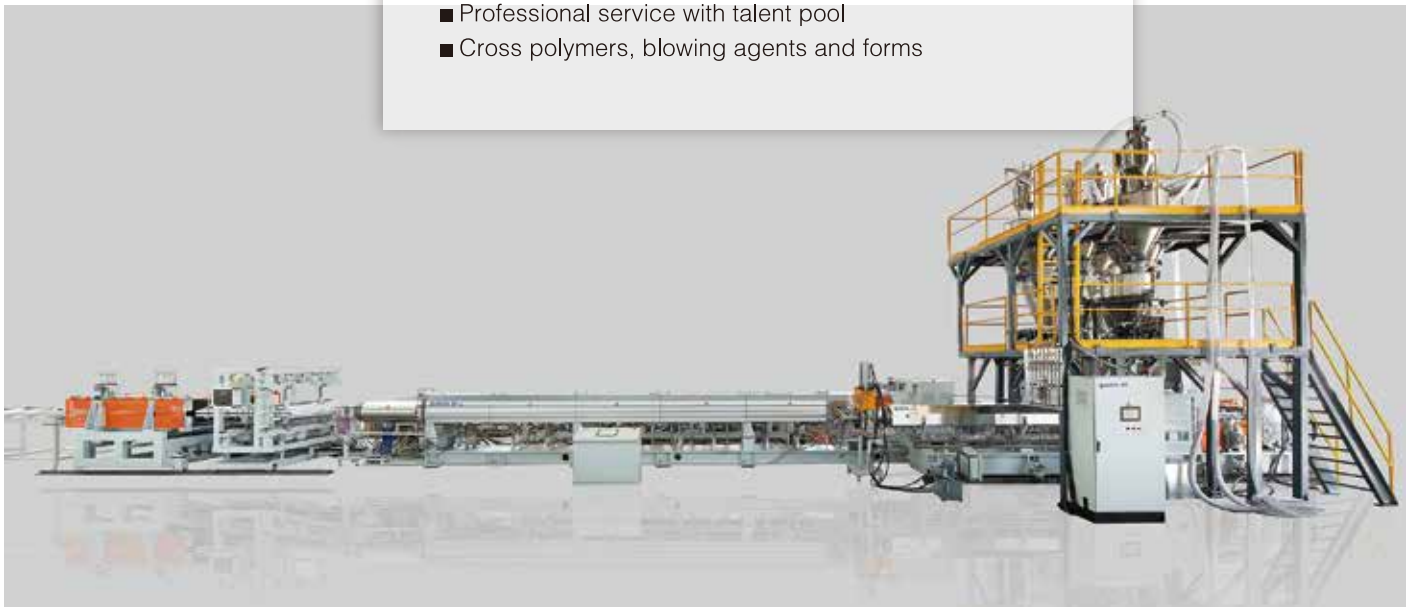
Excellent Quality and Reliability

Recognized by Fortune 500 Groups and Organizations of United Nations

The quality and reliability of ECOFEL™ has been recognized by [Fortune 500 groups](#) and leading XPS manufacturers in different regions worldwide as well as UNIDO ([United Nations Industrial Development Organization](#)). As a strategic partner of UNIDO to phase-out the usage of HCFCs in XPS production, Useon has been cooperating with UNIDO to implement projects worldwide.

Features at a glance

- Huge capacity---up to 3,000kg/hr
- High compressive strength---up to 1500kpa
- Eco-friendly blowing agent
- Wealthy experiences from numerous successful cases
- Intelligent control system with big data access
- Professional service with talent pool
- Cross polymers, blowing agents and forms



Full automatic raw material handling system

A Good Start of Production Management

Pre-treatment is required for some materials to obtain desired technical properties. Pre-drying, crystallization, grinding and blending we provide individual solution for each foam extrusion product. Continuous and even feeding is the first step to produce excellent products. Incorporated with DCS intelligent control system, it can manage production and contain cost more effectively.

TDS-E High Torque Twin Screw Extruder

A Guarantee for Excellent Products

Distinguishing from normal compounding twin screw extruders, we adopt TDS-E series super high torque twin screw extruder for foam extrusion, which brings specific torque up to 15 Nm/cm³. High torque twin screw extruder has many advantages which can keep the melt temperature as low as possible during processing, which can minimize the usage of flame retardants while keep the same flame retardancy level, which can keep the products' color bright and fresh etc. All CNC manufactured barrels and screws assure the precise fit so that it can provide excellent mixing and dispersion as well as optimum residence time distribution (RTD). Not only can it save additives usage but enhance products quality.



Innovative Cooling Single Screw Extruder

Leading the efficiency.

Temperature control plays a key role in foam extrusion processing. In term of cooling barrel design, the newest version of cooling single screw extruder has [increased cooling capacity by 80%](#) comparing with traditional design. Besides upgraded barrel design, the latest screw profile increases renewal rate of molten materials so that it assures the cooling efficiency and homogenization of materials temperature, yet [decreases the power consumption by 30%](#).



Blowing Agent System

Strike the Balance Between Cost and Quality

Variable physical properties of CO₂ make metering it a challenge. It involves temperature control, pressure control and mass flow rate control, in addition, it's a balance between processing parameters. We designed a [CO₂ system which can control its properties at a certain status](#) to meter it precisely. Multiple blowing agent injection system allow you to shift the products portfolio easily to cater for different market positioning. Pursuing quality and containing cost are at ease.



All Series Auxiliaries

One Step for All

Fully automatic vacuum raw material handling system, loss-in-weight or gravimetric dosing system, surface planner and groover, double or triple knives cut-off, rotary cooling rack, four-side fine milling, auto-stacker, auto-packaging, inline recycling, central dust collection, and laboratory facilities are optional. We provide [all facilities and peripherals as a turn-key project](#).



XPS board production lines

The definition of cost effectiveness

As for as XPS board production lines, Useon has more experiences than anyone else. As of 2023, we have successfully launched more than [290](#) CO2 foam XPS lines worldwide. We are the partner of a great number of influential XPS manufacturers in the world. From consulting to training, our team will help you step by step.

Technical Datasheet

Model	Output	Transformer required
TDS75-TDD150	200-450kg/hr	300KVA
TDS85-TDD200	400-700kg/hr	400KVA
TDS95-TDD250	600-1,000kg/hr	500KVA
TDS110-TDD300	800-1,200kg/hr	600KVA
TDS135-TDD400	1,500-2,000kg/hr	800KVA
TDS135-TDD500	2,000-3,000kg/hr	1000KVA

PET Foam Core lines

Comparing with other plastic products, XPET foam core lines are comparatively sophisticated. We provide turn-key projects for XPET foam core production lines so let you get rid of such troubles. Our training program includes the recipe and how-how transfer to produce different types of panels. Our experts will also help you develop new applications together.

Technical DataSheet

Model	Throughput	Transformer required
XPET-500	500-600KG/HR	800KVA
XPET-800	600-800KG/HR	1200KVA





XEPS Beads Production Lines
A New Member of Polystyrene Insulation Family

Graphite enriched EPS can reduce the thermal conductivity by 20–30%. Thanks to our own graphite EPS beads factory where we installed 7 lines, our wealthy experience can help you launch this project successfully.

This line also can turn EPS waste into EPS beads again, making the EPS recycling into a circular economy mode.

Tired of white EPS packaging materials? ECOFEL™ can produce EPS beads in any color.



Technical DataSheet

Model	Output	Transformer required
TDS110–TDD200	800–1,000kg/hr	600KVA
TDS135–TDD250	1,500–2,000kg/hr	800KVA
TDS175–TDD400	3,000–4,000kg/hr	1,250KVA

PLA foam beads lines

The future of packaging industry

Plastic packaging material is one of the big sources of environment issues. The advent of PLA foam beads bring the hope to us. 100% biodegradable PLA foam beads would be a good alternative to traditional EPS packaging material.



What is Microcellular foam plastic technology?

Microcellular foam plastic technology (Microfoam) is to add eco-friendly blowing agent into traditional plastic sheet/film to get lightweight products with equivalent mechanical properties or some desired properties. This technology can drive down the raw material cost by 20–40%. It is a great way to reduce the carbon footprint of plastic products.



Benefits

Lower production cost

Less carbon footprint

Unique aesthetic

Heat resistant

Popular materials are:

- | | |
|------------------------------|------------------------------|
| ☐ PLA | ☐ PET |
| ☐ PC | ☐ PS |
| ☐ PE | ☐ PP |
| ☐ PU | |

XLPE foam sheet production lines

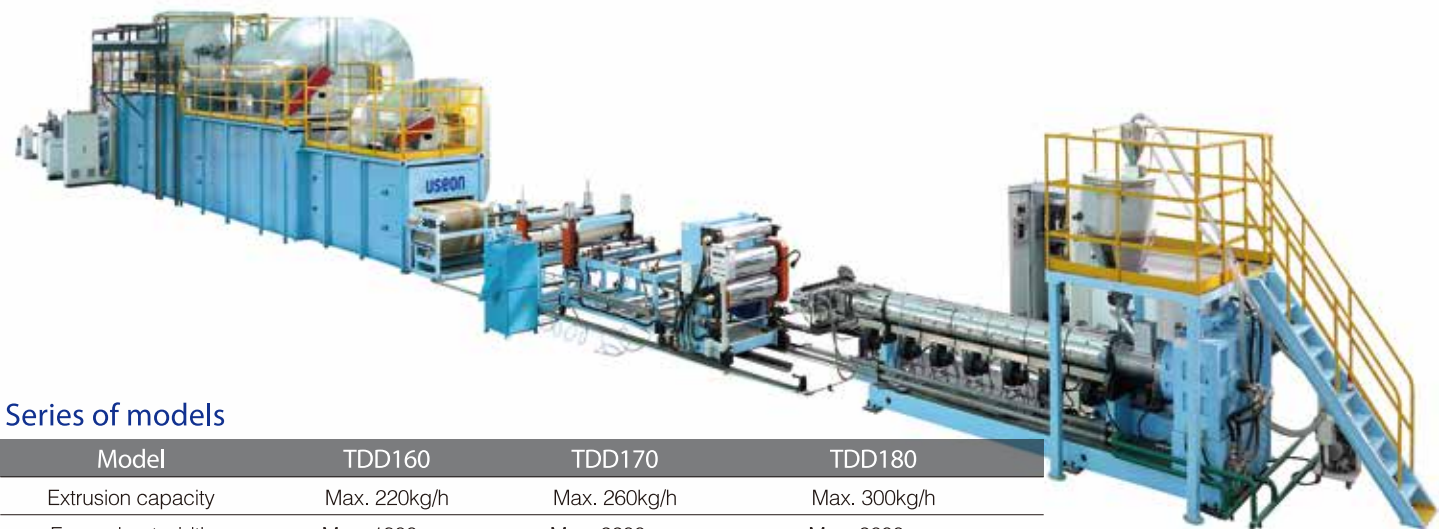
XLPE (also called as XPE) is the chemically cross-linked polyethylene foam material made from the materials of LDPE, AC and DCP, etc. It is non-toxic, odorless, light weight with good sound absorption and waterproof features.



Main applications:

- 3D wallpaper sticker
- Car floor mat
- Thermal insulation
- Construction material
- Sports / entertainment
- Packaging material

Process flow: Kneading → Granulating → Master Sheet extrusion → Foaming → Winding → Laminating



Series of models

Model	TDD160	TDD170	TDD180
Extrusion capacity	Max. 220kg/h	Max. 260kg/h	Max. 300kg/h
Foam sheet width	Max. 1800mm	Max. 2200mm	Max. 2600mm
Foam sheet thickness	3–12mm	3–12mm	3–12mm
Density	25–125kg/m ³	25–125kg/m ³	25–125kg/m ³

IXPE foam sheet production lines

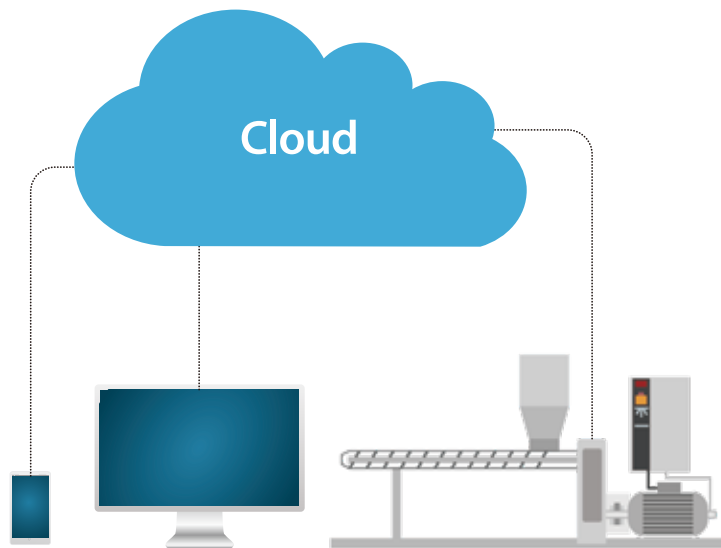
IXPE is the irradiated crosslinked polyethylene foam. The crosslinking of master sheet is achieved by irradiation in the electron generator. Then high temperature foaming is done in vertical / horizontal ovens.

As compared to XLPE foam sheet, IXPE has more uniform and denser cell with smoother surface. It is widely used as underlayment of flooring, gasket, etc.

DCS Intelligent Control System

A Prelude to Industry 4.0

Pulling data from recipe management and operation history, then optimize parameters from big data. Extracting data from maintenance record and alarm history, remote analysis and technical support can be done through such notifications. DCS intelligent control system helps you manage your production and maintain your equipment more effectively. Powerful industry leads your productions lines into [Big Data era](#).



Expertise in international projects

The Confidence of Success

From small–medium enterprises to Fortune 500 groups, from National EPA (Environment Protection Agency) to UNIDO (United Nations Industrial Development Organization), a huge number of projects let us profoundly understand clients' rigorous demands in safety, reliability and humanization design. We have cooperated with [more than 1,000 clients worldwide](#). Such expertise become a critical part to implement projects successfully.

Turk-key Projects

You Make Decision We Do the Rest

For foam extrusion products, selecting a high-quality equipment is just the first step to success. Our professional team not only provides fine equipment, we provide [various and rounded services](#). It covers workshop design consulting, warehouse logistic management, recipe management, operation and maintenance training etc. We have our own international talent pool. We are ready to be at your proposal. We do turn-key project.



Laboratory facilities

They Are Yours Too

To facilitate research and development, trial new recipe and new processing, our laboratory facilities are yours too. [We welcome you to discover all possibilities](#) of polymer foam products together. We provide various laboratory equipment and tailor-made foam extrusion equipment to universities, institutes and enterprise.

Useon



Polyolefin Pelletizing

☐ **Polyolefin Pelletizing**

- Jumbo Extruder
- Underwater Pelletizer



Compounding

☐ **Polymer Compounding**

- Color/filler and functional MB
- Engineering plastic reinforcement
- TPE/TPR/TPV
- Cable compounding



Foam Extrusion

☐ **Polymer Foam Extrusion**

- CO2 foam XPS board
- Graphite EPS beads pelletizing
- PET Foam Core
- PLA Foam Beads pelletizing
- XPE Foam Sheet



Direct Extrusion

☐ **Direct Extrusion**

- EVA/POE solar film
- UHMWPE battery separator film
- BOPET/BOPA/BOPP film extrusion
- Steel pipe coating



PET Recycling & Extrusion

☐ **PET Recycling & Extrusion**

- Bottle flakes recycling (BTB)
- PET fiber/film recycling
- Undried PET sheet extrusion
- PSF/POY direct extrusion



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