

PRESS RELEASE

CANNON ESTRIM High-Productivity RTM Moulding Technology for Epoxy Composites

Apply High Pressure – Get ESTRIM Results!

Cannon has presented at JEC 2010 "ESTRIM" a high-productivity RTM process for fast-demoulding, automated production of Epoxy composites for automotive and other mass-production markets. Lightweight, thin-walled composite mouldings of complex shape and large dimensions, made with Epoxy resins and Carbon or other continuous fibres, can be produced at very reduced cycle times: a part-to-part cycle of 2-3 minutes – a typical request from the automotive industry – can now be achieved.

ESTRIM (Epoxy Structural Reaction Injection Moulding) is a process innovation announced by Cannon at JEC Composites Exhibition – Paris, April, 2010. ESTRIM is based on **the right mix of technologies** able to **achieve fast cycle times and automated production of Composites:**

- High-pressure metering, mixing and injection of a properly formulated family of liquid Epoxy components in a closed mould: **this decreases demoulding times from 20-30 minutes to 2-3 minutes, maintaining optimum mechanical properties and surface aspect characteristics.**
- Self-cleaning mixing heads: they **eliminate the use of flushing or cleaning solvents, achieving significant economic savings and environmental advantages.** These heads can be permanently fixed on the tools, **speeding up the production and eliminating leakage** problems from the injection point.
- High-pressure injection, in combination with closed-loop controlled metering systems: they **guarantee optimum repeatability** of the dispensed weight from shot to shot. **This provides high standardisation of the moulded parts and avoids unnecessary overfilling of the mould,** with all relevant advantages (material savings, no leaks, cleaner working environment, no emissions of vapours from the moulds, much lower scrap rate)
- Dedicated preforming machines: they provide repetitive and fast production of the inserts to be positioned in the moulds prior to the injection, **avoiding long manual preparation of the production tools and increasing the profitability of the equipment.**

PRESS RELEASE

- **Resins and Hardeners:** as well as preforming binders, these **specialty formulated chemicals** show dedicated and accurate technical profiles, **fitting with the requirement of the new process and equipment.**

A production rate up to ten times faster than that provided by RTM speaks for itself:

- **Presses and moulds generate ten times more parts per unit of time,** potentially with the same manpower.
- **Production lines can be automated,** making use of 40+ years of industrialisation experiences matured by other plastics processing technologies. **Production, raw material and scrap disposal costs are significantly reduced.**
- **Multiple heads can be connected to a single dispensing machine** to serve several moulds in a row, **reducing the required equipment's investment** per point of injection and **optimising the performances** of formulation and dosing machine.

Automotive, transportation and aerospace industries can think in new terms the production of structural or decorative lightweight composite parts, since their production rates can be brought nearer to their assembly lines' timings and logistic needs.



***Photo - Cannon preformers for Carbon, glass and other long fibers** have been used for more than twenty years for the automatic production of large preforms. Automatically or manually positioned in moulds prior to the resin's injection, these preforms provide highly-repetitive quality mouldings and significantly reduce the service time on the moulds, increasing the return on investment of the whole moulding plant.*

PRESS RELEASE

CANNON GROUP PROFILE

Today, Cannon is an international Group with a diversified portfolio of industrial activities, providing industries with a wide and dedicated series of equipment, specialties and services:

- metering machines and complete plants for polyurethanes processing
- thermoforming lines and vacuum forming systems for thermoplastic sheets
- presses for composite materials
- machinery for aluminum die-casting
- industrial electronics
- industrial boilers
- biomass energy plants
- water and waste treatment plants.

Innovation, internationalism and independency are the values that have distinguished and contributed to the success of the Cannon Group. Owing to an important contribution of the company's staff, innovative solutions have been implemented giving rise to more than 350 patents, which in many cases have revolutionized existing production methods and processes.

Cannon is directly present in 40 nations worldwide through a vast commercial and industrial network involving 1000 people, working in about 15 production units and local representative offices, which supply products, services and technical consultancy to over 15,000 enterprises, speaking their languages, sharing their mentality and customs, keeping contacts with the markets.