



MARTIN COLES Matrix Polymers

Big Advances in Rotomoulding Technology Are Coming

As I approach my 60th birthday I've been reflecting on my 37 years in the rotomoulding industry. I marvel at how it has changed and grown.

In the 1980's the common phrase used by many was "Rotomoulding is an Art, not a Science", and in many ways they were right. Often people were guessing what to do and trial and error was the name of the game.

Whilst the process remains fiendishly complicated owing to the massive range of variables involved in a zero-pressure casting process, the fact is that these days Rotomoulding is much more of a science.

Perhaps the founding father of this revolution was Professor Roy Crawford back in the late 1980's and early 1990's. With his team at Queen's University in Belfast, he developed the Rotolog internal temperature measuring device.

This opened a whole new world of understanding of what is occurring with the powder inside the mould. It introduced us to novel concepts such as Peak Internal Air Temperature (PIAT) and real-time monitoring of the exact temperature inside the mould throughout the cycle.

This enhanced level of process control, combined with the much higher precision and repeatability we have with CNC moulds and the greatly improved polymers we have these days, means that we are a world away from how the



Professor Roy Crawford

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industry was 40 years ago.

The overall quality, tight tolerances, aesthetic appearance, and physical performance of many mouldings made today would seem impossible only a relatively short time ago. These advances have led to the extremely diverse and ever-growing list of products made with this process.

And in the future?

There are some significant and exciting upcoming developments about to hit the market. Our industry has woken up to many challenges, particularly sustainability and poor energy efficiency in the process. In my view, the future will be electrically heated moulds requiring no ovens. These moulds will enable us to massively cut energy usage and have even increased process control. They will also provide us with more flexibility in the materials that can be used.

The "holy grail" is a low-cost system of direct heating of moulds with electricity that can enable the use of existing tooling of any size. From what I have been privileged to see, I don't think that this is far away, and I believe that when fully commercialised the Rotomoulding industry will fully adopt this new technology and make another big leap-forward. Watch this space! ■