AFFILIATO:

Market Monitoring Newsletter

THE ESSENTIAL NEWS OF ROTOMOULDING WORLDWIDE

Pioneering sustainability in rotational moulding.

Renowned for producing protective cases and containers, CP Cases collaborates with Matrix Polymer and Queen's University on a feasibility study project funded by Innovate UK for introducing the power of recyclable bio polymers into the rotational moulding process, thus paving the way for a more eco-friendly manufacturing approach.

This project focuses on revolutionising rotational moulding by integrating Matrix Polymer's cutting-edge materials, with sustainability at the forefront. Matrix Polymer brings to the table its expertise in raw materials, as a leading supplier to the rotational moulding industry whereas the Queen's University is providing critical insights and technical expertise to validate the feasibility of creating recyclable bio polymers to introduce into rotational moulding. Its involvement ensures that the project's outcomes are grounded in scientific rigour. Leveraging decades of experience, CP Cases designs and manufactures custom cases, containers, and enclosures that safeguard valuable equipment and delicate instruments from even the harshest conditions. The project's success hinges on rigorous testing and validation, a process guided by the combined expertise of the three partenrs. Through meticulous examination of the materials' performance within rotational moulding processes, the collaboration aims to ensure a seamless integration that meets industry standards and requirements. The impact of this collaborative effort could be profound across industries reliant on rotational moulding. Sectors such as aerospace, automotive, and packaging stand to gain from these eco-friendly alternatives. By reducing reliance on traditional plastics, these industries can significantly decrease their carbon footprint and contribute to a more sustainable future.

https://cpcases.com/case-studies/pioneering-sustainability-in-rotational-moulding

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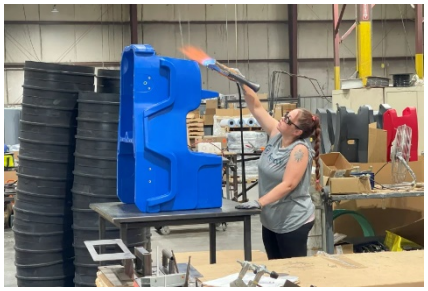
Behind the scenes of manufacturing at Revolv.

In south Brainerd, Revolv Manufacturing produces a wide range of custom products using rotomolding. Revolv Manufacturing employs about 80 people at its Brainerd locations, nearly 160 people across all locations - Brainerd, Maple Plain, and Hoyt Lakes - the Hoyt Lakes site also carries out thermoforming operations.



Many of their rotomolding products are for agricultural purposes and go to customers like AGCO and The Toro Company. Revolv also manufactures restaurant technologies and supplies, such as oil tanks, as well as reservoirs and gas, fuel and hydraulic tanks. The molds Revolv uses are aluminum and steel frame structures intended to withstand high temperatures over. Prior to July 2022, Revolv Manufacturing operated under the name Stern Assembly. Axis North Solutions, formerly Stern Industries, its sister company, came about through the same process, and its logo is visually similar to Revolv's. Axis North Solutions serves as the company's marketing and sales arm. Most of Revolv's customers are located within Minnesota and surrounding states. By nature, rotomolding usually involves large, hollow parts, which are difficult to ship any distance without paying a lot of money, according the CEO. As rotomolding is a labor intensive process, integrating robotics into rotomolding is difficult because of the volume of orders and the variation of parts, according the company president. Moreover, rotomolding typically involves small to moderate volumes in batches. In early August, the company has installed a plant floor management software designed specifically for the rotomolding industry, letting them monitor schedules and track every machine and part in the system.

https://www.brainerddispatch.com/news/local/behind-the-scenes-of-manufacturing-at-revolv

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Research & Patents

Design, fabrication, and evaluation of a small turbine blade manufactured by rotational molding.

The notion of renewable energy has become deeply ingrained in the world, captivating an increasing number of researchers and industry professionals who invest substantial resources to advance the development of more efficient systems.

While large-scale wind turbine blades currently reach lengths exceeding 50 m and are typically manufactured as single entities, this study focuses on the design and evaluation of a blade profile tailored specifically for small turbines. The blades were manufactured using rotational molding, employing various groups of polymers including thermosets and thermoplastics. To enhance their mechanical performance, foams were incorporated into the polyurethane and polyethylene blades. The suitable blade by evaluating various formulations and foams was identified by mechanical analysis. Aerodynamic analysis was conducted across different ranges of wind speeds and pitch angles. The results indicate that the power coefficient (Cp) closely approaches 0.5.

https://link.springer.com/article/10.1007/s00170-023-12136-z

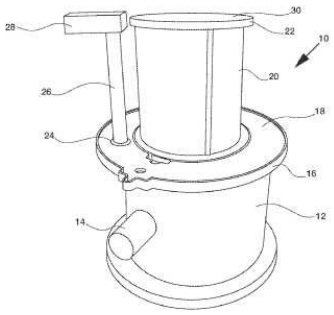
Effect of process parameters on the performance of PA6 products fabricated by rotational molding.

In this study, a desktop-class dual-axis rotational molder was employed to mold PA6 products. Notably, the morphology of the plastic powder during the rotational molding process was examined through visualization techniques.

The research also aimed to delineate the causes of wall thickness variation in the products, while proposing a process method to enhance the uniformity of wall thickness. The implementation of a two-stage mold temperature setting method for the ends of the mold improved wall thickness uniformity of the products. Furthermore, the interrelationships between crystallinity, tensile strength, and impact strength of the products were explored by comparing different cooling rate conditions. Increasing the cooling rate resulted in a decrease in both crystallinity and tensile strength, while concurrently boosting the impact strength of the products.

https://4spepublications.onlinelibrary.wiley.com/doi/10.1002/pen.26482

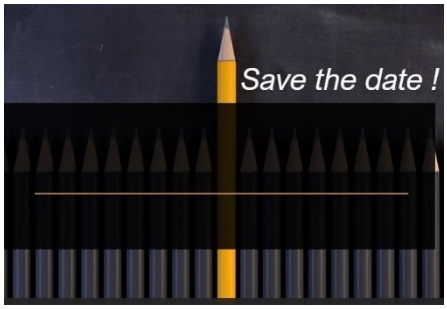
Non-contact sensor for determining a F.O.G. level in a separator using rotomolded parts.



An apparatus having a layer of fats, oils and grease (F.O.G) on water includes a tank having an inlet and an outlet. The inlet connects to a source of F.O.G.-laden effluent and the outlet connects to a sewer pipe so that the outlet defines a normal static water level for F.O.G. and effluent in the tank.

A sensor mounted above the static water level determines a distance from the sensor to a top of F.O.G. within the tank, so that a thickness of the F.O.G. in the tank can be determined. If the sensor is LIDAR, sensing may be at about 940 nm. When the F.O.G. is sensed to be above a threshold, the apparatus generates signals to remove the F.O.G. Ultrasonic sensing may be used. Preferably, the sensor is mounted far enough above the static water level so the distance between the sensor and the liquid surface is filled with air. More preferably, the sensor is far enough above the static water level so that the top of the F.O.G. does not touch the sensor even as the top of the F.O.G. rises above the static water level. (patent filed by **Thermaco Incorporated**)

https://worldwide.espacenet.com/publicationDetails/biblio?CC=US&NR=2023279655A1&KC=A1&FT=D&ND=3&date=20230907&DB=EPODOC&locale=fr_EP



27/30 September 2023
ARM 2023 Annual Meeting

28/29 November 2023
Master Class AFR

28/30 January 2024.
StaR 2024 Annual Conference & Trade Show


Association
Francophone du
Rotomoulage


anipac
Asociación Nacional de
Industrias del Plástico, A.C.


Association of Rotational Moulding
(Central Europe) e.V.


ARM - Association of Rotational Molders


ARMA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Plastics
Federation


IT-RO


Nordic
ARM


ROTOPOL


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StAR
SOCIETY OF ASIAN ROTOMOULDERS