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AFFILIATION OF ROTATIONAL MOULDING ORGANISATIONS

Market Monitoring Newsletter

THE ESSENTIAL NEWS OF ROTOMOULDING WORLDWIDE

AIMPLAS recycling project to make use of plastic waste in sea.

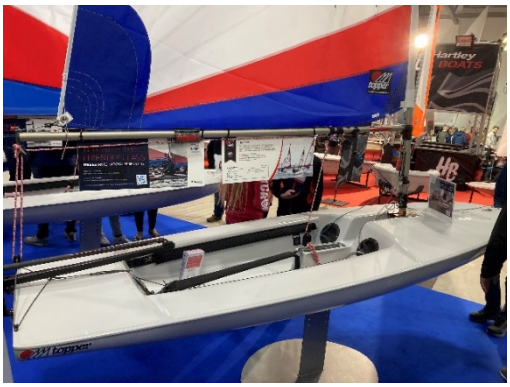
The spanish rotomolding company Rotogal is part of the consortium supporting the ÑCostas project, which is coordinated by the technological institute Aimplas and the Spanish Institute of Oceanography (IEO).

Rotogal

The ÑCostas project takes place in three main spanish regions, Valencia, Galicia and La Rioja, and aims to make it possible to reuse plastic material recovered from the sea and waste from the aquaculture industry. The research project, which started in 2021 will last for four years and studies the treatment and recycling of recovered plastic material for use in walkways and access platforms in fish farms to replace the wood currently used. These are known as port protection products, structural and floating tubes for platforms and buoys for signalling and anchoring; by reusing plastic waste products such as fishing gear, nets and meshes, experts believe that they can create more lightweight reinforcement for concrete platforms and other products. AIMPLAS claims, the project is based on the best method for recovery, selection and processing of marine plastic waste and aquaculture industry waste, considering its lack of uniformity and the different levels of degradation at different times in the sea. Most of the plastic products found in the seas and coasts of Spain are polyolefins (e.g. HDPE and LDPE), the most common material for making bottles and bags. When combined with smaller amounts of other polymers, polyolefins are used to create all kinds of containers, such as styrene. These materials have a high chemical resistance, according to AIMPLAS makes them ideal for recycling products for the use in the marine environment.

https://interplasinsights.com/plastics-environment-news/plastics-recycling-innovations-news/aimplas-recycling-project-to-make-use-of-plastic-waste-in-se/

Introducing the new rota moulded polyethylene International Topper



Topper International, in full consultation and cooperation with Ian Proctor Designs and senior members of the International Topper Class Association (World) committee, have moved the production technology of the Topper from injection moulded polypropylene to rota moulded polyethylene.

Roger Proctor, son of Ian Proctor who designed the International Topper, and the Designer's Representative for Ian Proctor Designs who own the design rights for the Topper, explains the need for the change. This is the production method now used by the majority of boat manufacturers globally. This was necessary to do to in order to safeguard the future of the Topper. The reason it has changed is threefold, with the first reason being the most important:

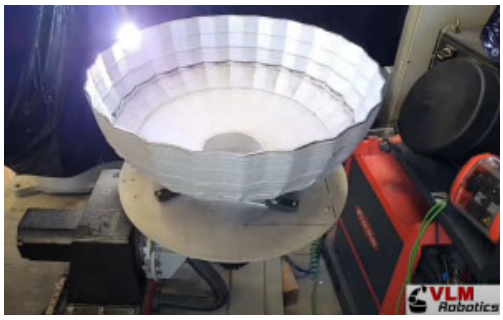
1/ The deck mould was 47 years old, it had literally broken 20 years ago and been repaired at a huge cost, and was then damaged again 2 years ago, requiring replacement at a cost £1.5m. This clearly did not stack up financially because any return on investment would be over too long a period of time.

2/ Only 3 companies in the world can mould the Topper in polypropylene due to the size of the mould. All 3 moulders demand very high production runs and the German moulders were increasingly reluctant commit to specific delivery dates, making it impossible for Topper International (TI) to plan their schedules and deliveries.

3/ The cost per unit was constantly increasing, and the moulder required minimum orders of 500, so tying up Tl's cashflow in an increasingly uneconomic way for the business. However, extensive research and various considerations were made before the decision to move to rota moulding was taken however.

https://www.itcaworld.org/news/introducing-the-new-rota-moulded-polyethylene-international-topper/

Wire Arc Additive Manufacturing for Rotational Mold Making



Wire Arc Additive Manufacturing (or WAAM) is a technology derived from welding that uses standard arc welding equipment. It is a metal additive manufacturing process that involves generating an electric arc between a substrate and a metal wire to form a bead.

There are few differences between robotic welding and WAAM, as the traditional welding torches used in industry for the assembly of parts are used. Nevertheless, technological improvements developed for welding allow to optimize the process. This is particularly the case with CMT technology, developed by **Fronius**. Metal additive manufacturing is increasingly used for re-engineering and reproducing parts that no longer exist, with reduced manufacturing times and costs for single parts or small series. Moreover, like all additive manufacturing processes, its key point is its flexibility, and it becomes possible to manufacture parts with designs not accessible by casting. To gain in productivity, it is also possible to use two current sources and two welding wires on the same torch. This is the case with the Twin

mode of CMT technology, which doubles the production rate and allows to reach deposition rates of about 10 kg/h. However, as with any additive manufacturing process, once the parts have been produced, post-processing by machining remains necessary in order to obtain parts with the desired dimensions. Among its applications, WAAM is particularly well suited to the manufacture of large, complex parts, including molds for the rotational molding of plastic parts. For example, Fronius worked with **VLM Robotics** on a project to manufacture wine tanks by rotational molding. Since this type of part is difficult to manufacture in a boiler room, especially because of the ribs on the part, WAAM manufacturing seemed to be an ideal solution, especially since machining was not required for this application. (article in French)

https://www.techniques-ingenieur.fr/actualite/articles/la-fabrication-additive-par-arc-fil-une-technologie-derivee-du-soudage-qui-a-le-vent-en-poupe-121812/

Diversified Plastics adds manufacturing capacity

Diversified Plastics Inc. (DPI) has installed a new Rotoline 4.1 molding oven at its Latta, South Carolina, facility, which the company says will complement the Rotoline molding oven the firm added last year.

DPI, a Latta-based company that makes collection carts for the waste and recycling industries among its product lines, now has 14 roto-molding ovens, bolstering its credentials as "a leading international rotational molder for custom moldings." The company currently has more than 25 plastic product lines that vary from commercial trash containers to material handling carts in a portfolio the company says continues to grow. The new oven will be equipped to help manufacture all of DPI's product lines, the firm says. Founded in 1976, DPI's product line includes plastic utility carts, bulk material handing carts, laundry carts, fork-liftable bulk containers, round drums and containers, tote boxes, spring platform trucks, tilt trucks, elevated carts and easy-access carts. The firm says its waste and plastic recycling containers, which are made from what DPI calls "100 percent-recyclable" plastics, can be found in restaurants, stadiums, sports venues, apartment and condominium complexes and corporate office buildings.

https://recyclingtoday.com/news/diversified-plastics-south-carolina-waste-recycling-cart-manufacturing/

C12 Technology, Carbon Conversions launch products made with rCF

C12 Technology and Carbon Conversions Inc. (CCI) have reported a partnership to innovate a novel technology and material to create what the companies say are the world's first eco-friendly rotational-molded carbon fiber products.

The companies completed a multi-year joint development agreement to produce a reinforced thermoplastic material that has the capability to be rotationally molded. Combining C12's rotomolding technology and CCI's expertise in recycled carbon fiber, this new development enables production of large composite structures using low-cost tooling that produces parts with high mechanical properties in both stiffness and compressive strength. CCI's recycled carbon fiber molding material, re-Evo RRC, is available now to support C12 customer-specific projects. C12 offers rapid prototype development capabilities on a micro- and macroscale to trial new projects prior to production. Future applications could include, but are not limited to, ultra-lightweight recreational sporting goods including kayaks, industrial storage containers and pressure vessel liners.

https://www.compositesworld.com/news/c12-technology-carbon-conversions-launch-products-made-with-rcf

Research & patents

Thermoplastic moulding materials for rotomoulding method

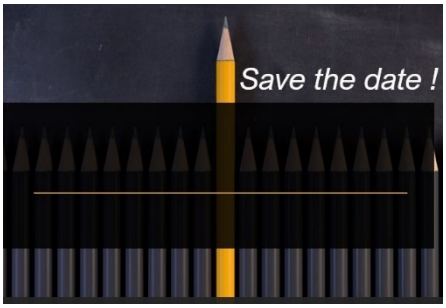
The invention relates to the use of thermoplastic compositions comprising amorphous (co)polymer resins based on aromatic vinyl monomers, semi-crystalline polymers and compatibilisers for the production of mouldings by rotomoulding, and a process for the production of a moulding by rotomoulding using said thermoplastic resin compositions, and a moulding produced by rotomoulding using said thermoplastic resin compositions. (patent in German filed by **INEOS Styrolution Group GmbH**)

https://worldwide.espacenet.com/publicationDetails/biblio?CC=EP&NR=3808810B1&KC=B1&FT=D&ND=4&date=20230329&DB=EPODOC&locale=fr_EP

Microgranules for rotational moulding and method for their manufacture

The invention concerns a process for the production of a microgranulate of thermoplastic material for rotational moulding. First, the plastic is melted. Plastic is continuously extruded from the melt. The extrusion takes place through a micro-hole plate. When the plastic exits the micro-hole plate, it is granulated under water. The granulated plastic is then dried, for example by means of centrifugation. According to the invention, the process temperature of the water in which the granulation of the plastic takes place is at least 90°C, at least in the region of the micro-hole plate, and a surfactant is also added to the water. In this way, amorphous engineering plastics in particular can be processed into microgranules which can be used directly for rotational moulding. (patent in German filed by **GRAFE Polymer Solutions GmbH**)

https://worldwide.espacenet.com/publicationDetails/biblio?CC=EP&NR=4155042A1&KC=A1&FT=D&ND=3&date=20230329&DB=EPODOC&locale=fr_EP



RotoMoulding TechTalk : Smart RotoMoulding Technology for Efficient Hydrogen Liner Solution

Webinar, 13 April 2023,1.00 am CET

https://virtualevents.technobiz.org/web/781/Roto-Moulding

RotoMoulding Leadership #10 : Conversation with Conchita Miranda, Director General, Miraplastek, Mexico

Webinar, 18 April 2023, 9.00 am CET

https://virtualevents.technobiz.org/web/785/Roto-Moulding

RotoMoulding Leadership #11 : Conversation with Mr. Sunil Raithatha, Managing Director, Vinodrai Engineers, India

Webinar, 25 April 2023, 5.00 pm India

ttps://virtualevents.technobiz.org/web/786/Roto-Moulding

RotoMoulding TechTalk : Shrinkage and Warpage Simulation in Rotomoulded PE Parts

Webinar, 30 May 2023, 3.00 pm UK

https://virtualevents.technobiz.org/web/784/Roto-Moulding

ARMO 2023

10-12 September, Poznań, Poland

https://www.armo2023.com/
