



Market Monitoring Newsletter

ARMO'S ROTATIONAL MOLDING NEWSLETTER

jeudi 23 décembre 2021

Research & Patents

A comparative study of Mechanical, morphological and vibration damping characteristics of wood fiber reinforced LLDPE processed by rotational moulding



The present work investigates the mouldability of Linear Low-Density Polyethylene (LLDPE) with Wood Dust (WD) as a potential reinforcement with enhanced mechanical, morphological, and vibration damping characteristics. This was achieved by incorporating treated wood particles in rotomoulded grade into the LLDPE matrix with the help of a lab model rotomoulding machine. The incorporation of natural fibers finds difficult in the processing of rotomoulded parts since the process itself is a powder processing technique. The rotomoulded parts developed here is distinct from the previous works reported as it utilizes melt-compounded composite granules of a significantly larger size than the matrix material which is in the powder form. The need for natural fiber composite is come into existent because of its availability in abundance and is cheap. This project aims to come up with a solution of the best polymer composite material with a given percentage of natural fiber as filler. In rotational molding, several natural fibers have been used such as coir, flax, agave, sisal, palymira, etc. In the present study, LLDPE powder is used as a base material and mixed with a different weight percentage of WD fillers. The mechanical

characterization and morphological study results proved that a sufficient hike in strength is obtained for 10% WD fiber added composites. The Experimental Modal Analysis (EMA) results also prove that the incorporation of WD is effective in improving the vibration damping characteristics of the composites developed.

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SPA peripheral wall and method of assembly



A method of manufacturing a spa including molding a plurality of side walls, cutting utility openings in said side walls, thereby producing cutouts which are then secured to the side wall and cover at least a part of the utility opening. The cutouts may cover the same utility opening from which it stems or a different utility opening from the same side wall or different side wall. The side walls may be made integral to the basin, such as in rotomolded spas, or made separate from the basin. Certain cutouts are rotated so as to have a major dimension of the cutout cover a minor dimension of the utility opening. Certain cutouts are trimmed from their initial size so as to cover a utility opening smaller than the utility opening from which it stems. (*NB : same inventors as US2021355700 (A1) patent*)

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Liner rotomolding process simulation for the production of a high pressure hydrogen tank



As part of the ULHYSSE project, this thesis' call for applications focuses on the simulation of rotational molding of polyethylene powder. This simulation concerns the heat transfer, the coalescence and densification of particles and the flow of the molten polymer. The development of technologies based on hydrogen is a priority investment axis for France, as it represents an opportunity to accelerate the ecological transition and create a dedicated industrial sector at national and European levels. The storage of hydrogen in compressed form at high pressure allows the development of clean mobility, especially heavy mobility. (Translated from french)

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Rotomolding Market News - Africa

Agriplas-Sotralentz launches a reusable IBC



French company Agriplas-Sotralentz Packaging, a specialist in industrial plastic packaging, has just launched IBC Multiway (MW), a large bulk container (IBC). With a capacity of 1000 L, this IBC is entirely made of plastic (the pallet and the lid are made of recycled material), weighs 86 kg, and fills up in the middle and empties completely in 10 minutes. Announced as reliable and robust, it can be washed with water and the ribbed plastic pallet is optimized to absorb shocks. With specific approvals for standard chemical liquids, it can be used to transport hazardous materials and seals can be added. To facilitate maintenance and recycling at the end of its life, this container can be completely and easily dismantled. Finally, the bag can be changed without any specific tool. These IBCs are produced by extrusion blow moulding and not by rotational moulding, which "allows precise control of the distribution of the plastic material and therefore to have structured parts that are not bulky but very strong" according to the company. A subsidiary of the Roullier group, Agriplas-Sotralentz Packaging manufactures bottles, cans, jars, drums and barrels in HDPE and PP by extrusion blow molding and injection. The company has three plants in France. (article in French)

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Rotomolding Market News - Europe

Whaly offers boats "without constraints"

15/12/2021



Imported into France since 2018 by Whaly France, based in Brittany, the Dutch brand Whaly has two ranges, a "Pleasure" range bringing together nine models from 2.10 to 5 meters and a "Pro" range counting three boats from 4.35 to 5 meters. Whaly boats are made of rotomolded recycled polyethylene, which makes them virtually indestructible and ensures a wide range of uses. In addition to their solidity, they have the advantage of requiring very little maintenance (no need for antifouling), and of being easy to use. They are available in twelve different colors and sold bareboat without any equipment at very attractive prices. But since Whaly boats can be custom-made, a wide range of accessories is available to customers, who can choose to add a console (with or without a windshield), bench seats, a roll bar or a bimini. For 2022, a new model, named 400, will be introduced in the range between the 370 and the 435. It was presented in a pleasure version with a polyethylene roll bar, a small side console and numerous benches allowing to embark not less than eight people in category C. It can also receive a small protective balcony and a console windscreen. Its maximum motorization is 30 horsepower. In addition, the 4.55 and 5 meter models

are available with the front that opens to allow you to disembark without getting your feet wet when the boat is beachbound. Finally, the Whaly 500 is also proposed for 2022 in a Fishing version equipped with rod holders, a leaning-post, a fish tank and lure storage. (article in French)

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Rotomoulding contributions



Video in Spanish by Ing. Marlene Fragoso, Chair of the Rotomoulding Section of the Mexican association ANIPAC (Asociación Nacional de Industrias del Plástico, A.C)

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