

Development of a DuraPulp packaging demonstrator

Plastic and paper are well known today, but a material containing both are rare to find. The new material DuraPulp combines cellulose and plastic made from corn starch into a strong and water resistant renewable composite. It therefore have the possibility to change the approach to packages.

Plastic is used extensively today and depletes the earth's resources. We need to use renewable materials for a sustainable development. Innventia started to research for a light and environmentally friendly material by combining cellulose fibres and bio-based plastic into composites, for a strong and water resistant material. The DuraPulp project started as a collaboration between Innventia and Södra Skogsägarna 2000 and the year 2008 was DuraPulp born.

DuraPulp production and activation

Södra is now alone developing and exploring the possibilities of DuraPulp at their pilot plant in Varberg. DuraPulp can be used activated or inactivated. The manufacturing method, used in Varberg, converting the DuraPulp into activated end products is wet moulding and heat pressing. Wet moulding and heat pressing allows a great formability and can produce product measuring up to 350x350x500mm. Activation occurs during the heat pressing and it gains then its beneficial properties; stable, durable, even and smooth surface with a nice tactile feeling, low water absorption and lint-free. One by one are these properties not unique but the combination of them, being a biodegradable and renewable cellulose based material makes it unique.

Field of application

It is important to develop products exploring the possibilities with this new material, with the goal to gain attention from converters and brand owners. One market segment where a DuraPulp product is applicably and can benefit from its unique properties is packages for on-ear headphones costing 100 Euro or less. These lack cases and do not like smartphones or sunglasses have plenty to choose from on the market. A clever designed packaging can be used as a case, protecting the headphones when being packaged. Designing to on-ear headphones enable the possibility to highlight DuraPulp's great formability in combinations with its stability and durability, as well as giving the packaging a lint-free and smooth surface. It was decided to design for a special on-ear headphone, in order to easier gain attention from brand owners and customer, the chosen one is Zinken, from Urbanears.

Developing the packaging

If a packaging shall be convenient to use as a case, it need to be light and add minimal volume. With the great formability of DuraPulp it was decided to it as thin as possible, like a skin, only leaving space for the headphones, cable and brochure. In the packaging will a special folding, like a joint, be designed to facilitate an easy bending. One U-profile one the backside and one on the front side, which can be pushed into each other like a Tupperware, will enable opening and re-closing of the packaging, when being used as a case.



Exploring the possibilities of DuraPulp

Today there are many techniques which are either well known on paper or plastic, which need to be tested and evaluated on DuraPulp. This packaging is designed to challenge and explore DuraPulp, in order to continue to identify its properties and discover its full potential.