

Wasa AG, 64293 Darmstadt, Germany

Solid plastic board proven with 25 years on the market

A success story often begins with a supposedly absurd idea. That's how it was at the end of the 1980s when Heinz Bechtold, former owner and CEO of today's WASA AG – which was then known as Wasa Unterlagplatten GmbH – had the idea of manufacturing production boards from recycled yogurt cups, films and other dual system (DSD) reusable materials. DSD – known in Germany for the Green Dot and the Yellow Sack – sought meaningful recycling opportunities for the plastic collected from private households. And they would find them in the next few years in Wasa solid plastic boards.

How it all began

In 1989, Heinz Bechtold read an article about recycling plastic waste from DSD material. It stated that a company produced square timber and posts from this plastic waste. That made him prick up his ears, because the import of hardwoods from Singapore promised to become difficult due to the political situation (tropical woods import ban). He thought that, if someone could produce these planks and square timbers from recycled plastic, it ought to be possible to manufacture planks for the production boards. A test was needed!

Heinz Bechtold drove to this firm on the very next day. He obtained several planks and took them to the Scior sawmill in Mossautal. There he had them handled exactly like wood, to see if this worked. Due to the aluminium elements in the plastic (e.g. yogurt cup lids), the woodworking tools, such as saws or sanding belts, were quickly broken.

Nevertheless, it was possible to produce two 1,400 x 550 x 45 mm boards. He took them to a good customer in the Koblenz area, who immediately put the boards into circulation together with softwood boards.

Tough conditions prevailed there (steam chamber), providing the harshest application case. Heinz Bechtold agreed to return every two weeks to examine the boards. The result was very promising and even impressed the customer.

It was now clear to him that it would work in principle. At the same time, it was also clear to him that the product would have to be made in one piece; he wanted to develop the first jointless board, apart from steel sheet, for the concrete block industry.

So he then began to look for someone engaged in the manufacturing of recycled products. In Germany, for example, there was Mr Heuschkel at the WKR firm in Worms. Together with the Planex company, he had designed and built a planetary roller extruder that was able to process even contaminated and partly undefined plastics into shaped pieces. After first obtaining protection for his idea through Konle, the Munich patent lawyer (registered design and patent), he went to Heuschkel and explained his project.

To determine whether everything, including the manufacture of complete boards, worked with the tight dimension specifications and requirements of concrete block



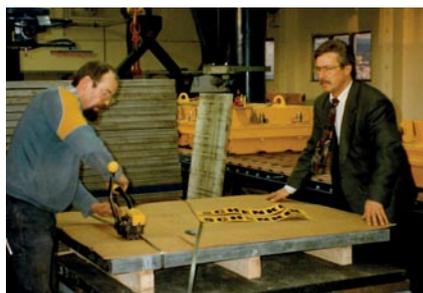
Current Wasa Uniplast® production at the Thuringia location.

industry customers, additional sample boards would be manufactured at WKR. These boards were then initially made, with many setbacks, by hand in the simplest manner.

The Hötzel firm in Eggenstein (now Lithonplus) with Horst Ecker was then gained as a close partner in the trials. All the important tests were run there. When Bechtold was reasonably sure that this would work, the decision was made to buy the extruder from WKR. At the time, the more than 1 million DM incurred for the



After numerous trial runs and a long period of development, the first solid plastic boards are demoulded in 1990.



Heinz Bechtold and Rainer Berger prepare the first boards for delivery to the customer.



"What's the best way to do this?" The electrical department manager, Helmut Walther, explains the next steps with Peter Weibel and Heinz Bechtold.

extruder was a very large investment for Wasa. Heuschkel would supervise the project at the same time. The plant would initially be set up in the Scior sawmill in Mossautal. At that time, Bechtold invited Wolfgang Scior to join Wasa, because Bechtold saw the timber business declining in the long run and believed the future lay in plastic. They thus founded Wasa Recycling Technik GmbH, with Wolfgang Scior and Heinz Bechtold as partners.

Between the end of 1989 and the beginning of 1990, Heinz Bechtold was at a tradeshow in the USA, where he presented the new product. So far it had only been produced very expensively by hand. But he relied on Heuschkel and his assurances and sold the first two containers of these new boards there on a trial basis. A courageous step!

Then the ongoing approval process for production in Mossautal was politically derailed. Suddenly there was no longer a location - but a down payment had already been made on the extruder.

In 1990, the search for a suitable production location led Bechtold to Neubrunn in Thuringia. After a long search, he found a property that consisted, at the time, of three halls belonging to a collective farm.

Conversion of the halls followed purchase of the property. When looking for the first 10 employees, he made sure that, as far as possible, trades that could help in the con-



Even in the most remote regions of the world, Wasa Uniplast and Wasa Uniplast Ultra are in use. For example at Atco on the Caribbean island of Aruba.

version were represented. Following an adventurous construction period, installation of the plant began. Wolfgang Scior moved his residence and family from Mossautal to Neubrunn and became the responsible person on site.

Right away, Wasa had a fire in the production hall in 1992. As a result, production

was at a standstill for weeks. But loss of production insurance was able to minimise the damage.

“Many so-called experts were coming and going. Most of them certainly thought they had a clue. But then they found out that manufacturing our product is rather different from traffic guidance blocks, benches,

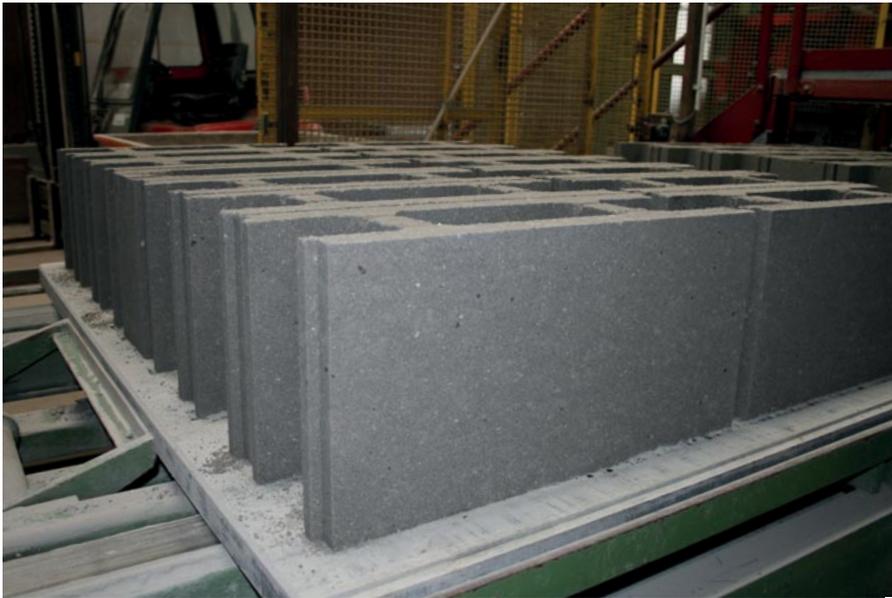
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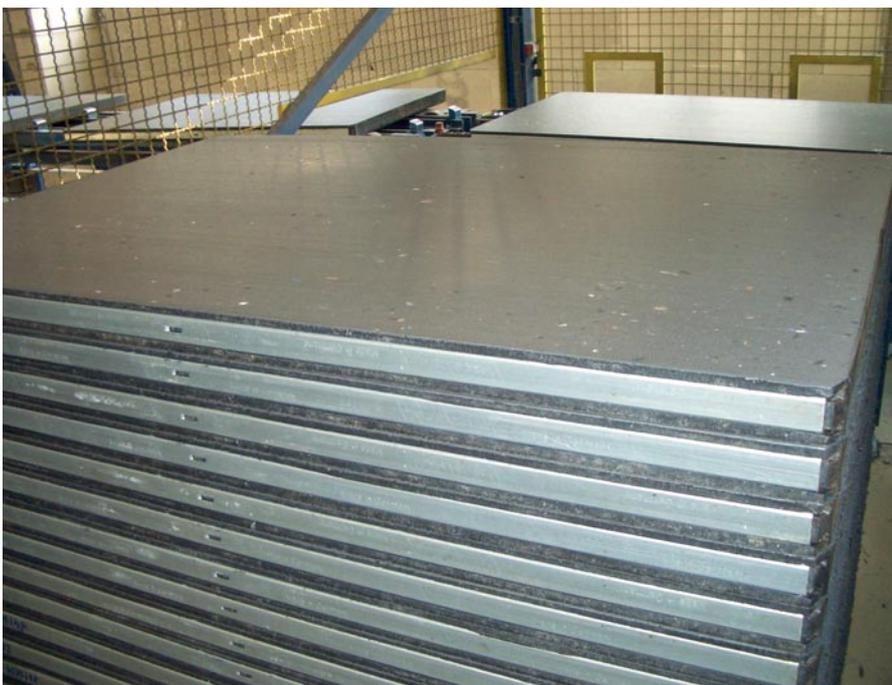
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Wasa Uniplast Ultra production board with hardened formwork blocks at EBN Betonwerk Neumünster GmbH.



These boards have been in use for 14 years and still display brand-new surfaces: No problem, thanks to Wasa's regrinding service.

palisades or the like, which do not involve the millimeter accuracy that the concrete block industry demands", Heinz Bechtold recalls.

The commissioning in Neubrunn was a learning process. At the time, none of the moulds withstood the heavy loads and had to be replaced. Silos did not function. The material inside jammed, because it was insufficiently free-flowing. Most of the changes were undertaken in practice by the employees who contributed decisively

to the success of the plastic board and still do so today.

"The material supply now had to be secured, which was also extremely difficult. Plastic waste for recycling (Green Dot) was available from DSD with a certain additional charge. The very large disposal companies were one step ahead, since they were shareholders in DSD and ensured the best contracts for themselves. Only surplus quantities were assigned to the small recyclers. Naturally, you couldn't create a business

plan under those conditions and negotiate with banks", according to Heinz Bechtold. "I then realized that we recyclers would have to join forces. We established the Association of German Plastic Recyclers and I became the chairman. This gave me direct access to DSD and every other important office. This largely secured our own raw material situation".

At the founding of the association, he made the acquaintance of Peter Webel, who attended the inaugural meeting as the representative of the WKR company. He proposed him for the management board and from then on they both worked together. Peter Webel has worked at Wasa since 1997.

Wasa also forged contact with Prof. Breuer at the Plastic and Recycling Research Institute (FKUR) in Krefeld and Wasa awarded her a research contract. Mr Wesels and Mr Muhle were graduate students at the time and worked on the project. Mr Muhle joined Wasa upon completion of his thesis. As an engineer, he still substantially supports all important developments at Wasa. SKZ (Süddeutsches Kunststoffzentrum) in Würzburg supervised further tests and trials of the solid plastic boards.

In 1997, Scior returned to his parents' business after it was determined that a plastics expert was needed to manage the company. Webel and Bechtold acquired Wolfgang Scior's shares.

The plastic board experienced numerous innovations and improvements during the last 25 years. While plastics from disposal companies were processed at the beginning, only recycled high-performance plastics from industry are used today. The glass fibres required for the Wasa Uniplast® Ultra are actually completely new material.

Regrindable solid plastic board

Peter Webel, Wasa AG board member and responsible for production of production boards, knows about additional benefits of the solid plastic board: "The Wasa Uniplast® and the Wasa Uniplast® Ultra can be reground, due to their solid material. Thus, the customer can obtain like new board surfaces after many years without great financial expense."

Several board types for different customer requirements

Wasa's first customer to place a large order was the Rinn Beton- und Naturstein



25 years after the invention of the Wasa Uniplast: today's Wasa AG administrative headquarters on the Europaplatz in Darmstadt.

GmbH & Co. KG firm based in Heuchelheim. After the board, which was marketed under the Uniplast® name, proved to be completely satisfactory, additional orders quickly followed from all over the world. For example, from Consent in Dubai, various Unilock plants in Canada, Ebema in Belgium or Marshalls in England. To date, a total of almost four million solid plastic boards have been produced and sold. Wasa's Product range will be expanded by economically attractive wooden boards in certified renewable pine woods (Wasa Softwood®) and by Wasa Woodplast® polyurethane coated wooden boards. The revised Wasa Tecboard will be presented at the bauma 2016 trade show. Wasa has further developed it following the takeover of competitor Tecboard in August 2014. Wasa can thus offer its customers several board types and provide solutions for diverse requirements.

The Wasa product range is complemented by polyurethane moulds for wetcast production.

At the end of 2011, Heinz Bechtold, the solid plastic board pioneer, stepped down from operative business and today he is chairman of the executive board of Wasa AG, which is now based in Darmstadt. His son, Matthias, took over chairmanship of the management board and, jointly with Peter Webel, has managed the destiny of this globally active company, which employs 120 people worldwide, since January 1, 2012.

FURTHER INFORMATION



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