



Reusable material cycle for aluminum composite



Germany

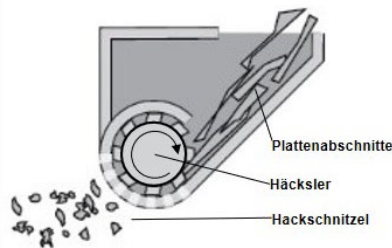
The aluminium composite panels from 3A Composites GmbH, consist of two aluminium cover sheets and a core material that may vary depending on the product. The panels sandwich structure gives the product its exceptional properties such as flatness, rigidity, strength, and an extremely light weight. All aluminium composite panels from 3A Composites GmbH are fully recyclable, therefore, both the core material and the aluminium cover sheeting can be returned to the recycling process.

RECYCLING

There are various processes for separating the material components from the composite. One of the industrial process techniques is described as followed:

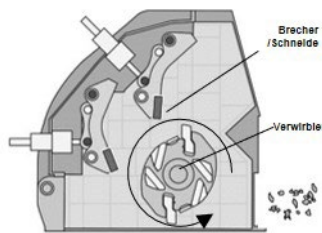
Step 1: Shredding of the panels

The scrap material waste is processed into evenly shredded chips.



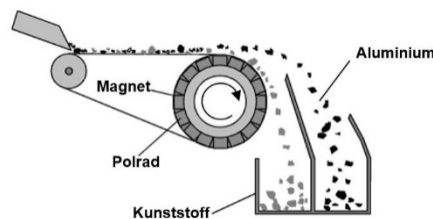
Step 2: Compound breakdown through a turbo rotor mill

The shredded chips are slung at high speed against the cutting blades of a rotor mill and are thus broken up into their individual components.



Step 3: Separating the core from the aluminium by their weight differences

The components are separated from each other using eddy current through the different materials densities.



Step 4: Preparation of the components

After separation, the aluminium is sent directly to the smelter for melt-down. The polymer chips made of polyethylene and PLUS/FR (flame-retardant) are processed into granulate/pellets via an extrusion process before being returned to the cycle.



aluminium



A2 core



Polyethylene core



PLUS/FR core

Step 5: Re-usage

Thanks to the high-grade alloy EN AW-5005A (AlMg1), the secondary aluminium can be used again for high-quality alloys. In the form of alloy bars, it is either fed back into the cycle, or is used to produce sheet metal or profiles. The core materials can be used in various applications after being processed into granulate/pellets. First and foremost, 3A Composites is seeking to reuse the plastic in the production of aluminium composite panels. In addition, the granulate is also available on the open market for applications such as grass pavers or heavy-duty profiles.

OUR GOAL

We are actively engaged in the recycling of aluminium composite panels by building a recycling network of as many recycling and collection companies as possible. As part of our mission "TOGETHER RESPONSIBLE", we have set ourselves a goal; to bring back into our production flow, as many panel materials as possible that have reached the end of their "life span".

This goal can only be achieved together, and with strong partners. That is why in 2020, 3A Composites joined the A|U|F association and set up a workgroup to tackle the subject of aluminium composites. As the initiator and leading body of the team, we have significantly advanced the development of the recycling of aluminium composite panels. Together with our partners, we can now offer this recycling service to you.

OUR PARTNER

The A|U|F is an association supported by German metal construction companies, system-houses, and other companies, which organises a closed loop system for recycling aluminium used in windows, doors, and façades.

The following members of the association work actively in the workgroup 'Recycling Aluminium Network' and form the basis for the functionality of the recycling process.

Collection partners (logistics):

With their own logistics or logistics partners, these companies can guarantee a Germany-wide network. They are already playing an integral part in the recycling of different types of plastics for many processing companies in the advertising technology and industry:

Krall Kunststoff-Recycling GmbH
63820 Elsenfeld a. Main

Tel.: +49 6022 70990
Mail: recycling@krall.de



Pekutherm Kunststoffe GmbH
65366 Geisenheim

Tel.: +49 6722 9377030
Mail: info@pekutherm.de



Environmental partners (recycling):

The following company's plants technology systems are designed specifically for aluminium composite materials. Not only composite panels, but also many other aluminium-plastic composites get separated into their original components:

D.A.R. Metall AG
99713 Rockensussra

Tel.: +49 36020 7030
Mail.: info@darmetall.de



W.E.R.T. GmbH
78315 Radolfzell

Tel.: +49 7732 92600
Mail: info@wert-recycling.de



EXPANSION OF THE RECYCLING LOOP

To get the aluminium composite panels to the specialised recycling companies, the cooperation of all consumer outlets of the composite panels from 3A Composites is now required. Only with a defined material cycling through efficiently coordinated transport routes and large-volume accumulations of recyclable materials can the reuse of resources be guaranteed in the long term.



Together with 3A Composites you can start a sustainable disposal of aluminium composite panels by contacting our collection partners that can provide you with a container for leftover material from processing or deconstruction. As a rule, the collection partners provide collection boxes. For larger volumes of aluminium composite panels, a container/skip can also be made available directly via the environmental partners. Depending on the scrap material, sorting grade and transport route, an individual agreement can be arranged with a collection or environmental partner.

We are happy to have your active participation in the recycling of resources. Please get in touch with one of the above collection partners today and help our environment by putting your composite waste back into the recycling loop!