

■ Process: Dust Removal in a Packing Station in Gypsum Industry



■ The Task

Within the process of manufacturing gypsum products, a great amount of dust is generated within various process steps starting with bulk conveying and ending with sacking.

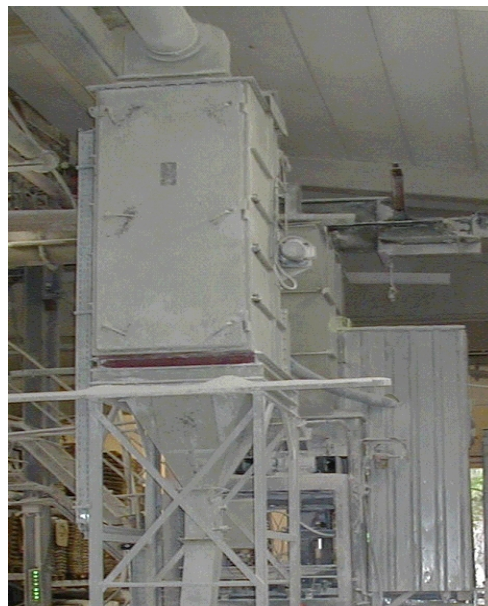
In the past for dedusting of the different process steps the German company Turmgips mainly used filter units equipped with woven polyester filter bags or pocket filters. In combination with humidity a hard layer of gypsum builds up on the surface of these filter elements.

The results are poor removal of the filter cake and high pressure drop causing a constant decline in air flow of filter units.

In order to improve the process characteristics of the finished product, certain amounts of filler material (e.g. perlite) are added. Perlite is highly abrasive and accelerates wear and tear on fabric filters.

For special types of anhydrous gypsum plaster glass fibers are inserted in order to reduce fire risk and tendency forming cracks. Glass fibers, however, tend to penetrate into the filter fabric and cause

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■ The Solution

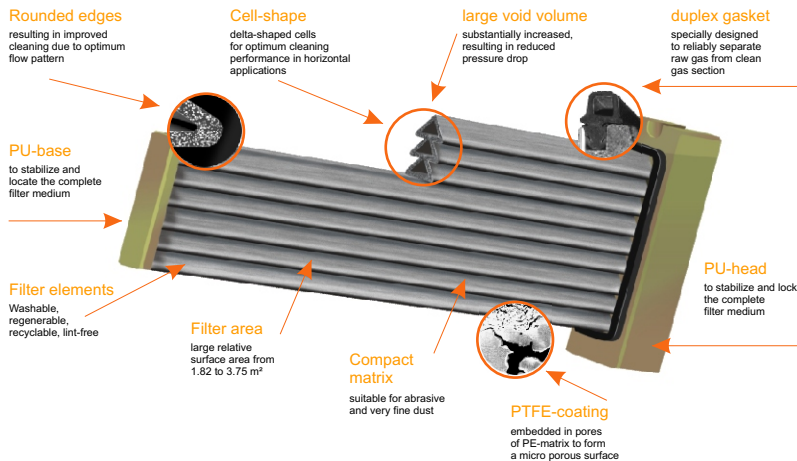
In summer 2001, the existing high maintenance fabric filter unit was replaced by a Herding® filter unit, type DELTASys 1500-48/9 SZ with Sinter Plate Filterelemente (picture back page top right). Since this point in time, the Herding filter unit DELTASys is operated with extremely low pressure drop and constant air flow. Due to the Herding filter unit's extremely low residual dust content as well as its high operational safety the clean gas can be re-routed back into the production facilities, saving heating cost during the winter period.

Operation of the new Herding DELTASys has shown significant improvement in handling of light and fibrous dust components. Applying the down flow principle in combination with the filter element's rigid body design, the system allows for significantly higher filter area loading.

The picture on the right above shows a fabric filter bag after use with gypsum dust including glass fibers. Fibers have visibly penetrated the fabric material.

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Process Manufacturing of Gypsum Products and the Solution of the Dust Problem



(continue: The Task)

Within the sacking station of Turmgips an annual change of fabric filters was necessary (see picture front page left).

The results were both high costs for downtime and current high cost for maintenance of the filter unit including replacement of filter elements.



(continue: The Solution)

On the other hand the Herding Sinter Plate Filter used in the same application, does not show any damage or dust deposition (see picture left). Hence, maintenance intervals of Herding filter units are extremely long.

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