

APPLICATION

THE TASK

In the production of ink ribbons for label printers, jumbo reels are used at an early stage in production. These jumbo reels hold kilometers of polyester film covered with a protective coating of wax or resin.

In a single process step the jumbo reels are made up into rolls of ink ribbon of different dimensions for label printers. To define the start and the end of an ink ribbon, sections of film are cut out across the whole width, replaced by a blue plastic film and then spliced with the roll of ink ribbon.

Both the edge strips from the cutting process and the sections of film that are cut out need to be reliably removed and extracted.

The vacuum extracted waste film is difficult to handle for further transportation. Moreover, there is also a risk of the endless strips clogging the pipe.



THE SOLUTION

Since it takes less than a second to extract the sections of film that are cut out, and the process is not continuous, an electric-pneumatic flap was fitted which is operated from the production plant. The sections of film that are cut out are extracted via a separate, central suction pipe and shredded by multicutters fitted in the pipeline. This step is necessary to ensure that the waste film can be taken off in the form of shreds and therefore prevent the pipeline getting clogged. To keep the noise level as low as possible, the multicutter shredder units are fitted with plastic sheathing and rock wool insulation.

The film shreds are conveyed through a central suction pipe via a transportation fan to a film shred separator on the outside. All of the shreds are collected in a press container. To extract the dust from the air, the separator with discharge hopper is connected to a Herding® sinter-plate filter system with a fan. The extraction air rate is 5,400 m³/h.

An important consideration for the design of the two fans is that the filter fan must have 10% more capacity than the transportation fan. The throttling of the filter fan means that a zero point is reached in the separator, which results in complete separation.



PROCESS // VACUUM EXTRACTION OF WASTE FILM

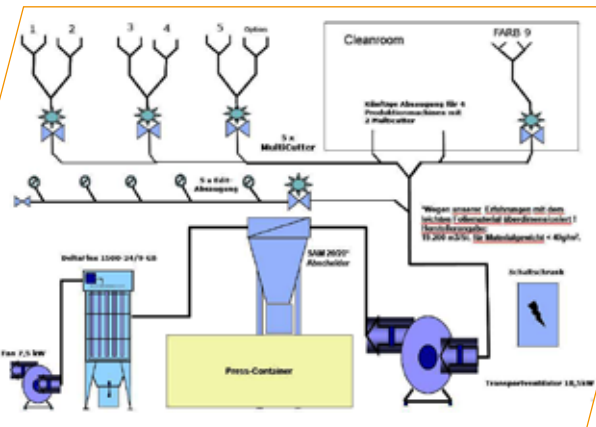


Diagram of the process

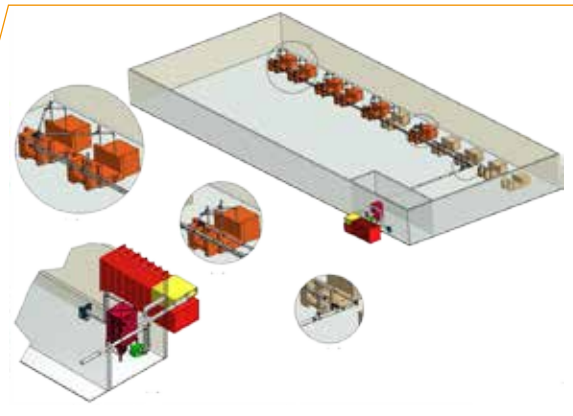


Diagram of the solution with Herding® filter system

ADVANTAGES OF THE Herding® SINTER-PLATE FILTE FILTER

- » High separation rate
- » Constant operating conditions and extraction volume due to surface filtration
- » Low maintenance costs due to the rigid filter medium (no flexing and no wear)
- » Low space requirement due to compact and customer-specific system design
- » Long service life ensures low servicing costs
- » Herding® Filtertechnik as an engineering partner and problem solver
- » Very low clean gas values

Herding® is a registered trademark // V1.0

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