

# Product Presentation Paper

## CONTIBAC® SM Guard Filter

### Background

When it comes to securing a safe operation in terms of filtrate quality cartridge filters are often the first choice. They offer high separation efficiency in a compact housing and at an affordable price. There is a wide choice of various types and materials and for general applications many options are available. To keep cost down the replaceable elements are usually constructed in inexpensive plastics such as PE or PP.

However, under certain conditions such elements are not well suited. For example at higher temperatures or for aggressive solvents more expensive high performance plastics, such as PTFE or PVDF may be required or sometimes no plastic can resist the exposed operating conditions (i.e. high temperature applications).



Additionally, when the feed solids concentration fluctuates significantly and larger quantities of solids are expected at certain moments the operating cost of cartridge filters (due to frequent replacement of elements) can quickly amount to considerable sums which may be better invested into a more sustainable solution. For such cases the sinter metal (SM) guard filter may present an interesting option.

### Design Features and Benefits

SM elements are ideally suited for high temperature applications and when applied as guard filters they are among the most economic choices: given the small diameter and compact arrangement of the elements the filter vessel can be kept small, which saves cost and reduces hold up volume.

Despite the fact that these elements can be regenerated by back-flush, such filter types are best suited for low feed solids concentrations where high specific throughputs are reached, resulting in more economic deployment of the equipment.

Differently from main process filters which deal with larger solids quantities, a filter cake is hardly formed in a CONTIBAC®SM filter, resulting in long filtration cycles. The typical element regeneration issues stemming from poor back-wash capabilities of the non-flexible sinter metal is observed to a much lesser extent.

DrM has optimized the design of SM filters by applying features coming from the typical, well-proven CONTIBAC® and FUNDABAC® design: namely, the use of registers instead of one single head plate with all elements attached to it. This adaptation has a number of advantages:

- Lower peak requirement for process gas during back-wash operations
- Possibility of excluding only a portion of the filtration area (in the unlikely event of failure on one element) and keep the filter in operation until next planned maintenance without the need to shut down the whole unit
- Product hold-up inside the vessel is minimised by placing registers at the vessel bottom and installing SM elements upside-down, as shown in the top picture.

Please contact DrM for further information.