sgl carbon

SIGRABOND® Chemical carbon fiber reinforced column internals

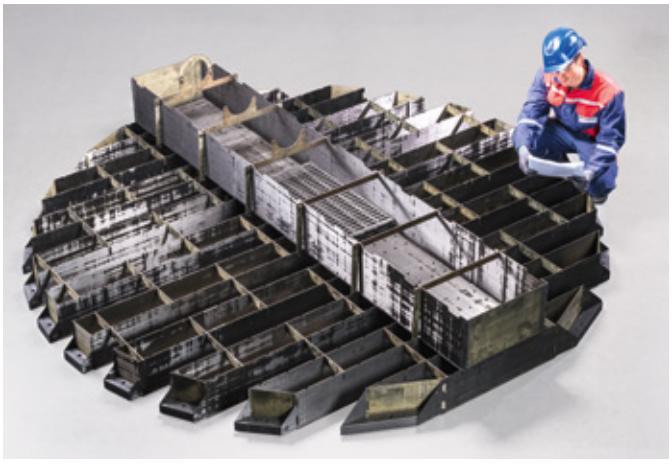
The new benchmark for internals in corrosive applications

SIGRABOND Chemical is a modern high-strength, temperature resistant composite material made of carbon fibers within a plastic or carbon matrix. Significant customer benefits in technological as well as economic aspects can be provided, outperforming most other conventional materials.

We developed a full range of innovative column internals:
- liquid distributors
- liquid collectors
- structured packing
- support grids
- retaining grids
- feed tubes for liquids and gases
- etc.

Our know-how in carbon fiber production and processing is consequently combined with mass transfer application knowledge. In fact cooperation with global leading internal suppliers are set up to combine unique column internal know-how with our material expertise.

The clear aim is to provide innovative and economic solutions for our customers and their demanding applications.



↑ SIGRABOND Chemical liquid distributor for packed columns

Customer benefits

- **Minimum pressure drop:** free flow cross-section > 90 % for grids and > 50 % for distributors also in case of high mechanical loads (up to 50 t) and column diameters > 3 m
- **Reliable performance:** sustainable dimensional stability at high temperatures up to 1000 °C even in case of fast operational changes, essential e. g. for liquid distributors
- **Absolute easy in handling:** carbon fiber based compound material enables designs with up to 10 times lower weight than designs made of traditional materials
- **High degree of freedom in design:** customized segmentation of internals beginning with single components up to fully assembled one-piece internals
- **Extensive corrosion resistance:** use of carbon materials enables extreme corrosion resistance even at high temperatures
- **Secured availability at economic price level:** standard lead times starting at four weeks at competitive price level to special metals and many plastic materials

Target applications

New column installations as well as upgrades (performance, reliability, lifetime, etc.) of existing installations utilizing traditional corrosion resistant materials like exotic metals, ceramics, plastics, glass linings, etc. in:
- Chemical and fine chemical industry
- Petrochemical industry
- Food and fertilizer industry

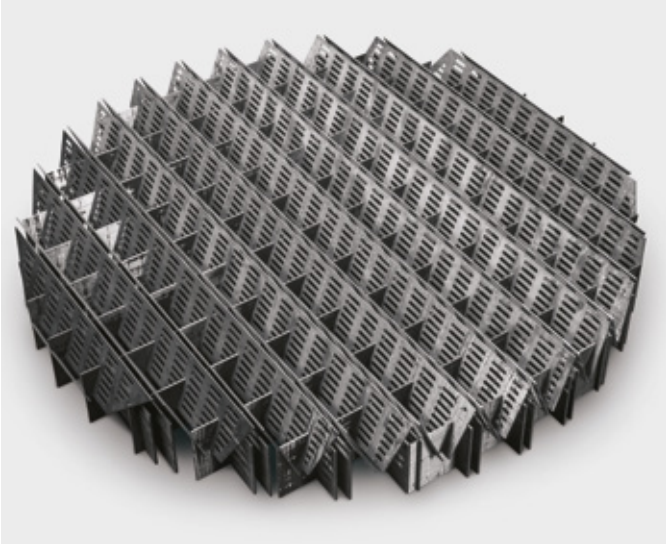
Examples of our standard portfolio

Type	Units	Liquid distributor	Support grids	Feed tubes
Typical designs		bottom-hole lateral-hole lateral-hole with splash-plate	bar design roof design	liquids gases gas/liquid
Models		one-piece, or segmented	one-piece, or segmented	one-piece
Mech. layout		self-supporting	self-supporting	self-supporting
Add-on		liquid collection lift protection retainer integrated	lift protection	gas/liquid separation
Realized diameter	mm	> 3500	> 3500	DN600 (> 2000)
Realized load		> 70 m^3/h	> 40 kN/m^2	
Free flow cross-section	%	up to 70	> 90	
Max. temperature	°C	300 (oxidizing atmosphere) 1000 (inert atmosphere)	300 (oxidizing atmosphere) 1000 (inert atmosphere)	200

Main advantages of SIGRABOND® Chemical column internals against traditional materials

	Flow cross section	Load/weight ratio	Thermal stability	Brittleness	Component price	Material availability
Exotic metals		•			•	•
Plastics	•	•	•		[•]	
Ceramics	•	•		•		
Glass	•	•		•		
Graphite	•	•		•	•	

• SIGRABOND Chemical performs better



↑ SIGRABOND Chemical support grid in roof design

↑ SIGRABOND Chemical feed tubes

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