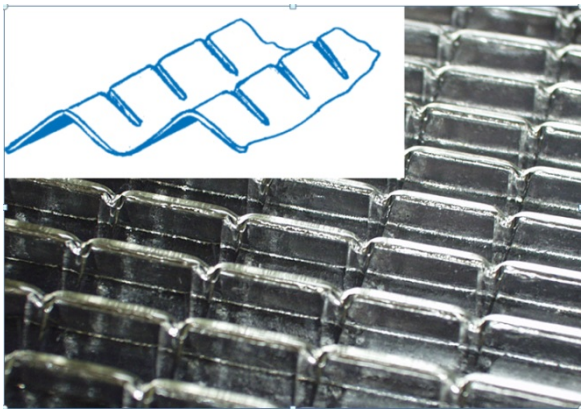
DATASHEET
DURAPACK® - structured packing for mass transfer from material Borosilikat-Glass 3.3

In order to intensify the material transition in absorption, desorption, distillation and extraction columns structured packing from borosilicate glass 3.3 is used. They ensure high flow rates with low pressure loss and at the same time guarantee good separation.

DURAPACK® patented structured packing is comprised alternately of allocated glass corrugated plates in which the current channels slopes are 45°.

In order to increase the turbulence the corrugations are notched. The packing is only made from Borosilicate glass 3.3, i.e. the plates are connected without glue so that only borosilicate glass comes in contact with the media to be processed



Pictures: Channels with notches

Application / media

Applications are among other corrosive chemicals such as sulfuric acid, nitric acid and mixtures thereof, other mineral acids such as HCl also halides such as bromine, iodine, and high-purity chemicals: short wherever metallic materials but also plastics fail. With slightly corrosive removal as in the presence of small HF-content, Durapack® packing acts lifetime increasing within email columns in comparison to random packing beds such as Glass-Raschig rings.

Technical data

- For columns diameter: DN100 until DN2400 and more
- Max. packing height within on bed: 5m = 25 layers each 200mm
- Material: Borosilikat Glass 3.3, PTFE/FEP/Tantalum
- Specific surface: 300 m^2/m^3
- Density: 400 kg/m^3
- Free area: 80%
- Slope: 45°
- Surface: fire polished, nonporous, non- adhesive, smooth
- Max. shock temperature: 150°K
- Thermal coefficient of linear expansion: ca. 3,25 x 10^{-6}/K
- Max. operation temperature +200°C

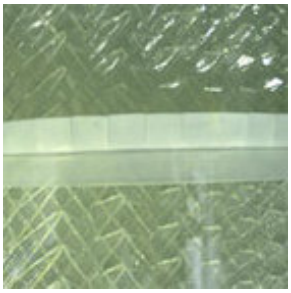
Packing beds

The packing elements are in one piece in the nominal bore from DN100 to DN300. The nominal width DN400 and DN450 are comprised of two half circular connected segments and can also be used on a support ring. Elements with a nominal width of DN500 or more are divided into individual segments, than an additional support grid is required.
Due to the segmentation are no limits upwards to larger diameters set. Glass lined columns with main flange are manufactured to the nominal diameter of DN2400. In rectification / distillation we can realize packed heights up to 5 m in a one single bed.

Edge deflector

DURAPACK® mass transfer packaging can be used both in glass columns and in columns made of other material such as glass lined steel, PTFE-lined or Tantalum cladded materials. In spherical glass receivers up to a nominal width of DN 1000 the outer diameter of the packaging is automatically adjusted to the column. With columns made of other materials the column-inner diameter must be adjusted with the tolerance of the column shell. To avoid wall effect on flow the packing-elements are equipped with patented edge deflectors made of PTFE on the outside (within the scope of supply).

Picture: patented edge deflector



All packing elements normally have a height of 200mm. Smaller heights to fit gaps inside column tower bed could be provided on request.

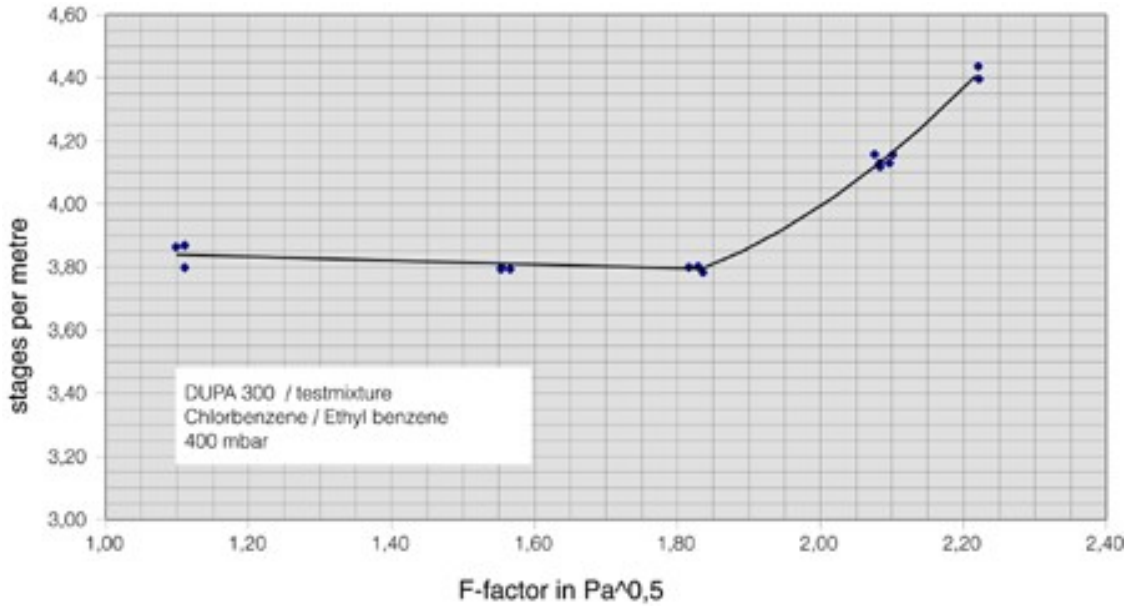
All packaging elements have a height of 200 mm. Up to a nominal width of DN 300 the packaging elements have two edge deflectors, from 300 one each. Flexible edge deflectors can be installed with glass packaging in standard column pipes. Special glass precision pipes are not required.

Picture: Element DN300

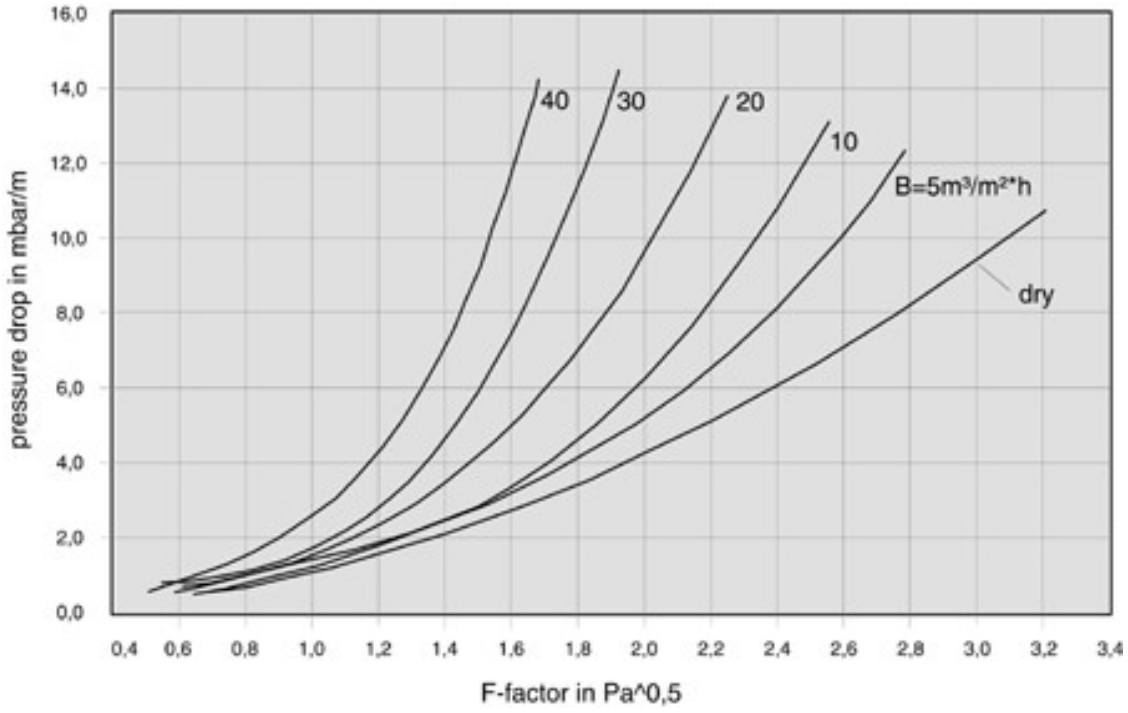
Performance

DURAPACK® packing can be used for distillation as well as for extraction processes. The easy-to-clean smooth and inert surface is extremely convenient.

Performance for distillation



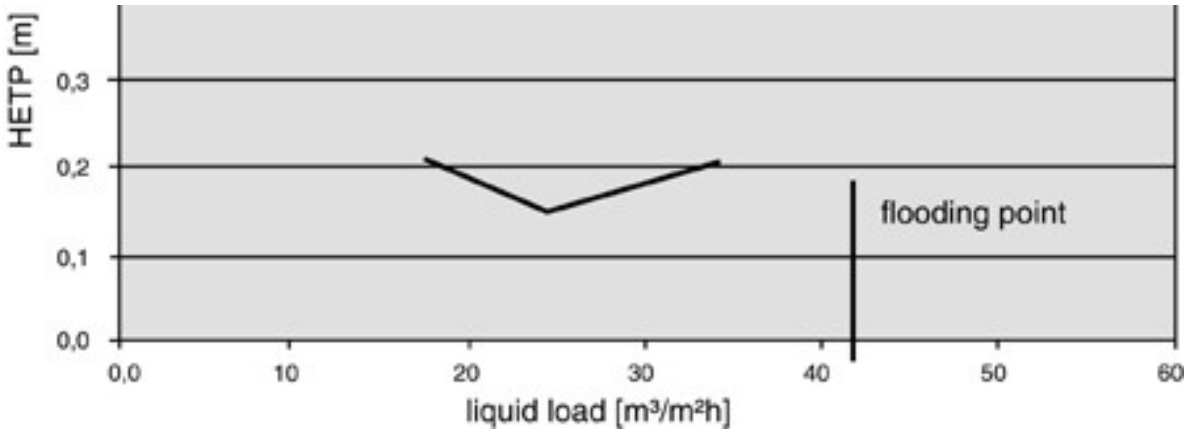
Pressure drop



Performance for extraction columns

Since it must be avoided that the packing surfaces become wet from the mostly organic disperse phase during extraction, a glass packing with smooth, fire-polished surfaces are best suited for this.

The extraction experiments have been carried out in a pulsed column with the test mixture toluene/acetone/water. During these experiments the flooding point was determined with an amplitude of 8 mm and a frequency of 100 min-1.
The number of stages are measured with a load of 80, 60 and 40%
Scale-Up factors for bigger column diameter should be considered according to relevant methods.



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