

Structured packings  
Innovation for  
mass and heat transfer



# Structured packings from RVT Process Equipment

In addition to random tower packings and mass transfer trays, structured packings represent a further group of products that are used in the field of mass and heat transfer processes.

RVT Process Equipment GmbH provides a broad range of innovative and conventional structured packings in both metallic and thermoplastic materials for different applications.

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*Hiflow® PLUS packing element*

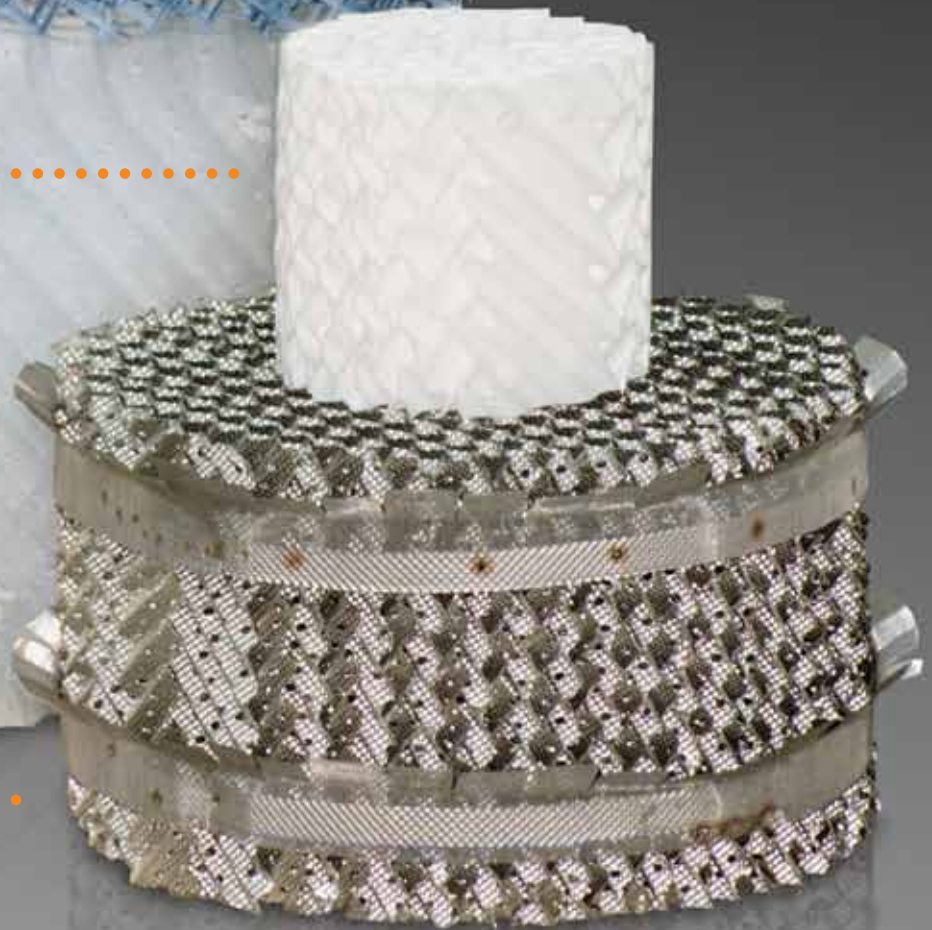
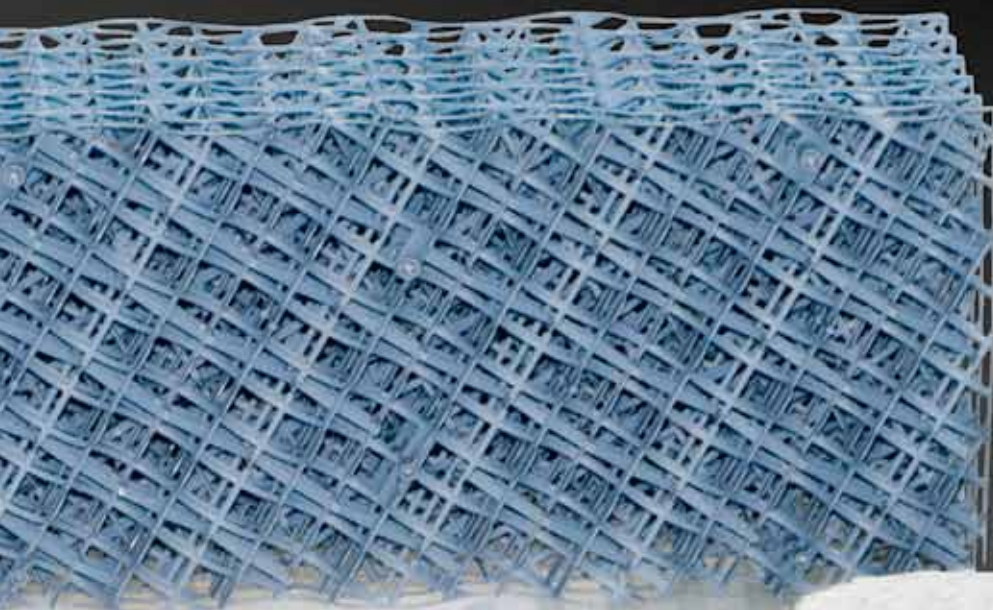
.....  
*Structured packing in sheet structure*

.....  
*RPP S 250 Y high performance design of structured packing made of plastics*

In some countries outside Europe high performance structured packings may be subject to patent protections of third parties. In case you are interested in countries outside Europe to use these products, do not hesitate to contact us.

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*Element of structured packing type RMP N 250Y*





# RMP

## RVT Metal Structured Packings

The typical application fields for metal structured packings are processes with following operating conditions:

- low irrigation densities
- high gas loads
- low pressure drop requirement
- high demand of transfer units

These operating conditions are common in many vacuum distillation and rectification processes in the chemical and petrochemical industry, as well as in amine scrubbers, C3-, C4-splitters and applications in the field of fine chemicals.

The RMP packings are available in different specific surface areas and corrugation angles as well as in several finishing varieties:

- smooth or textured surface
- perforated or unperforated
- X (60°) or Y (45°) corrugation angles
- standard (type N) or high-capacity (type S) corrugation geometry
- 0.1 to 0.4 mm metal sheet thickness
- materials: carbon steel, stainless steel, others on request

| RMP                   | N 125 X and Y                      | N 250 X and Y                      | N 350 X and Y                      | S 250 Y                            |
|-----------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Specific surface area | 125 m <sup>2</sup> /m <sup>3</sup> | 250 m <sup>2</sup> /m <sup>3</sup> | 350 m <sup>2</sup> /m <sup>3</sup> | 250 m <sup>2</sup> /m <sup>3</sup> |
| Weight ***            | 75 kg/m <sup>3</sup> *             | 100 kg/m <sup>3</sup> **           | 140 kg/m <sup>3</sup> **           | 100 kg/m <sup>3</sup> **           |
| Void fraction         | 99%                                | 99%                                | 98%                                | 99%                                |

Packings with other surfaces also available on request

\* 0.15 mm wall thickness

\*\* 0.1 mm wall thickness

\*\*\* the specific weights are to be regarded as average values that depend on the production-related tolerances in steel manufacturing

## RPP S 250 Y

### High performance structured packing made of plastics

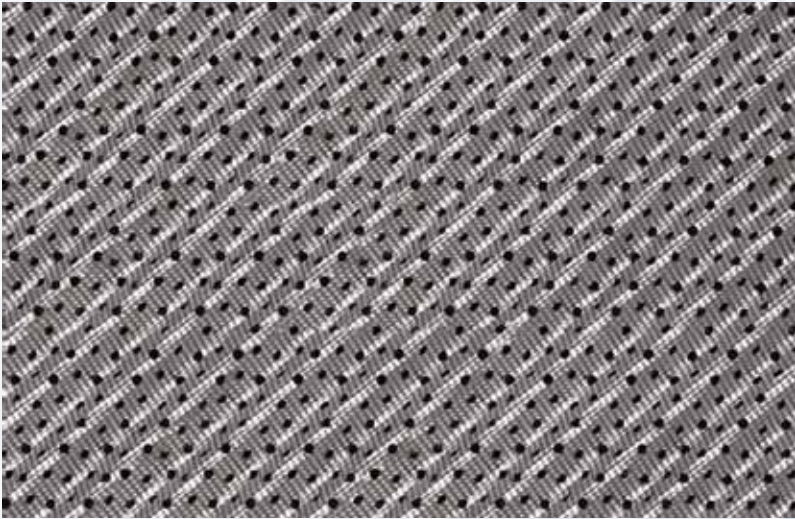
| RPP S 250 Y           |                                    |
|-----------------------|------------------------------------|
| Specific surface area | 250 m <sup>2</sup> /m <sup>3</sup> |
| Weight *              | 110 kg/m <sup>3</sup>              |
| Void fraction         | 88 %                               |

The geometry of the high performance structured packing RPP S 250 Y made of plastics is similar to the RMP S 250 Y made of metals.

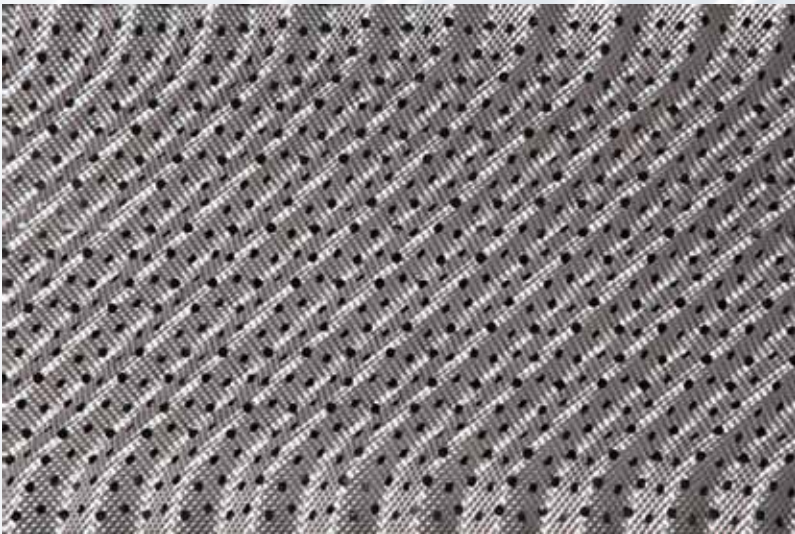
So the RPP is mainly used for processes with corrosive media when the process temperature allows the utilization plastics instead of more expensive metals.

Packings with other surfaces also available on request

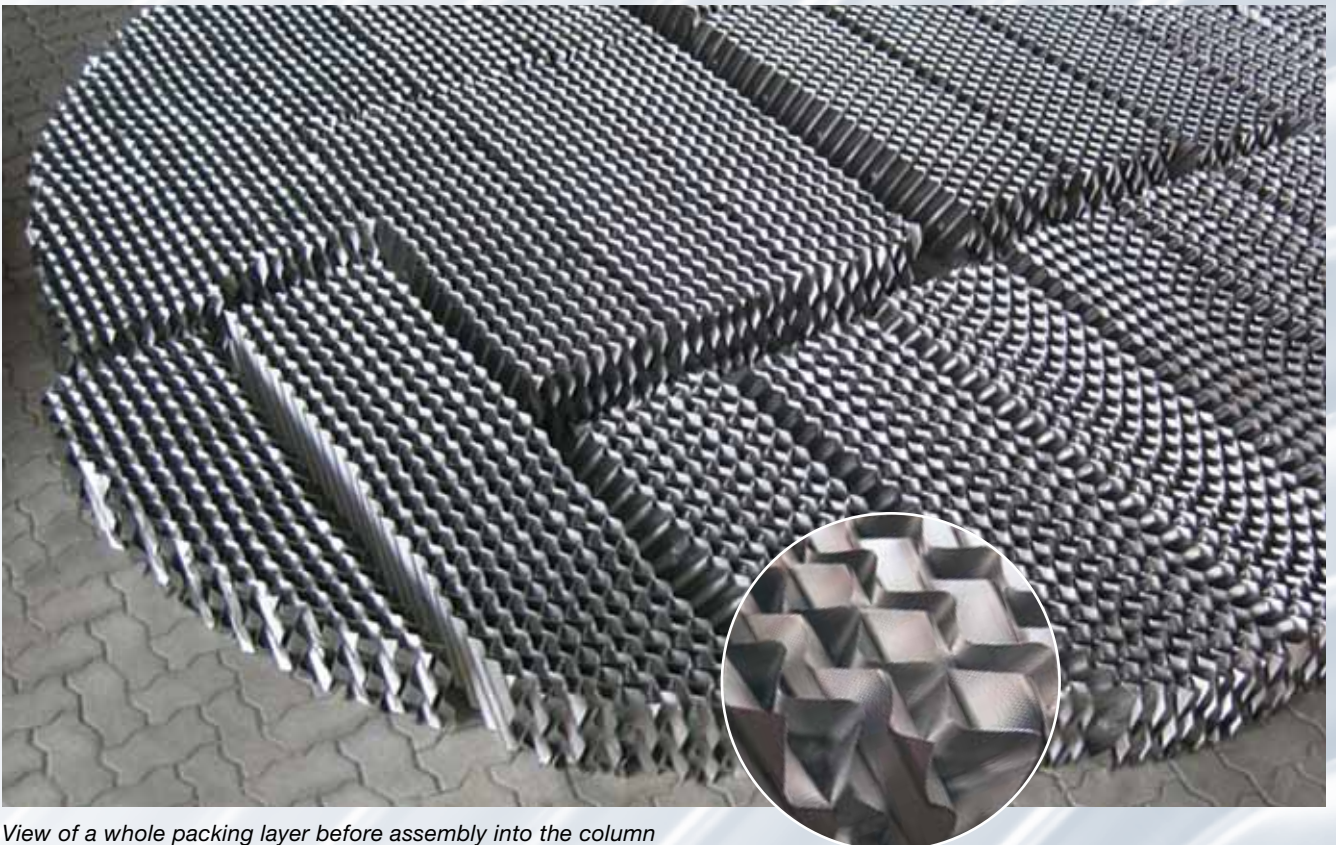
\* the specific weights are to be regarded as average values that depend on the production-related tolerances



*RMP N 250Y structured packing  
with perforated and textured surface*



*RMP S 250Y structured packing  
with perforated and textured surface*



*View of a whole packing layer before assembly into the column*

# Hiflow® PLUS

## Lattice plastic structured packing

In addition to conventional structured packings, RVT Process Equipment's scope of supply includes a lattice structured packing type, which is particularly suitable for applications that require high capacities at even greater liquid loads.

Hiflow® PLUS is a product that combines the advantages of random tower packing and conventional structured packings while reducing the limitations of these two mass transfer components.

The development of Hiflow® PLUS was inspired by the Hiflow® plastic random packing, which has been successfully used in several applications for many years and whose form guarantees outstanding mass transfer efficiency at low specific pressure drops. This extensively proven and tested packing can be easily recognized throughout the lattice structure of the Hiflow® PLUS packing again.

| Hiflow® PLUS          | 1                                  | 2                                  | 3                                 |
|-----------------------|------------------------------------|------------------------------------|-----------------------------------|
| Specific surface area | 180 m <sup>2</sup> /m <sup>3</sup> | 100 m <sup>2</sup> /m <sup>3</sup> | 80 m <sup>2</sup> /m <sup>3</sup> |
| Weight                | 65 kg/m <sup>3</sup>               | 46 kg/m <sup>3</sup>               | 38 kg/m <sup>3</sup>              |
| Void fraction         | 93 %                               | 95 %                               | 96 %                              |

Available raw materials: PP, PE, PPH

### Application fields

Typical application fields for random packings are flue gas scrubbers, strippers (e. g. CHC), pre-coolers in air separation plants or amine scrubbers for CO<sub>2</sub> separation from flue gases as well as heat recovery scrubbers.



*The installation of Hiflow® PLUS in a lying column at the column manufacturer's site considerably reduces transportation and installation costs at jobsite*

# Plastic and ceramic conventional packings

In some of these applications, the gas flows to be treated have attained increasingly large throughput volumes, such as in CCS or SO<sub>2</sub> separation processes from flue gases by means of scrubbing. This leads to ever greater column diameters and therefore to high investment costs. Here, Hiflow® PLUS packing offers distinct advantages as the column diameter and the pressure drop can be reduced without affecting the mass transfer efficiency.

The main performance characteristics and advantages of Hiflow® PLUS are:

- lower pressure drop than random tower packing
- improved cross flow compared to conventional structured packings
- economic production due to reduced raw material requirement
- no redistribution required (no wall wipers)
- easy installation
- installable in a horizontal or vertical column, consequently reducing packing transportation costs and installation time and cost at jobsite
- standard liquid distributor as designed for random packing can be used
- significantly improved resistance against fouling in comparison to conventional structured packings

For applications with particular operating conditions, RVT Process Equipment offers structured packings made of highly resistant plastics such as PVDF and PTFE. Typical application fields are HCl absorbers, SO<sub>2</sub> absorbers with operating temperatures up to a maximum of 130 °C.



*Structured packing made of PVDF in sheet structure, spec. surface area 300 m<sup>2</sup>/m<sup>3</sup> (packings with other specific surface areas available on request)*

Ceramic structured packings are mainly used for even higher temperatures and corrosive process conditions. RVT Process Equipment manufactures conventional ceramic structured packings in both X (60°) and Y (45°) corrugation angles as well as with specific surface areas from 125 to 450 m<sup>2</sup>/m<sup>3</sup>.



*Ceramic structured packing*

