



TECHINICAL BROCHURE

Column Packing

Table of Contents

STRUCTURED PACKING

Baretti Conventional Structured Packing

- Technical info3
- Average Efficiency and Pressure Drop4

Baretti High-Capacity Structured Packing

- S type Corrugation Angle B-HC Type10

Baretti Grid Packing B-37

- Technical info13

Baretti Grid Packing B-45

- Technical info14

RANDOM PACKING

- BMRP Rings15
- Raschig Rings19
- Hi Cap Pall Ring19
- Baretti Super Rings20
- BB Rings20
- B-CD Rings20
- Raah Rings20

Baretti Conventional Structured Packings

Technical Info

Mechanical Concept & Surface Optimization

The structured packing element is compiled from a series of thin, corrugated metal sheets arranged parallel to each other. Corrugation angles, typically 60° or 45° force both vapor and liquid into a continuous, interlocking cross-current path. This structural maze promotes intense mixing between the phases.

Gauzing Texture & Promoted Wetting

Standard sheets undergo a precise mechanical micro-embossing or texturing process. This geometric texturing creates a dense network of micro-channels along the metal walls. The effective interfacial area for mass transfer is maximized, exploiting the full thermodynamic potential of the packing bed.

The Anti-Fouling Geometry

For services with high fouling potential, suspended solids, polymerizable compounds, or heavy tar formation, micro-embossing is intentionally omitted, resulting in completely smooth metal surfaces. Although smooth sheets provide slightly lower wettability than textured ones, they significantly reduce the risk of solids or polymer deposits becoming trapped, ensuring unobstructed liquid flow and improved fouling resistance.

Structural Integrity

To ensure maximum mechanical life, our structured packing elements feature a robust, **fully welded if needed framework**.

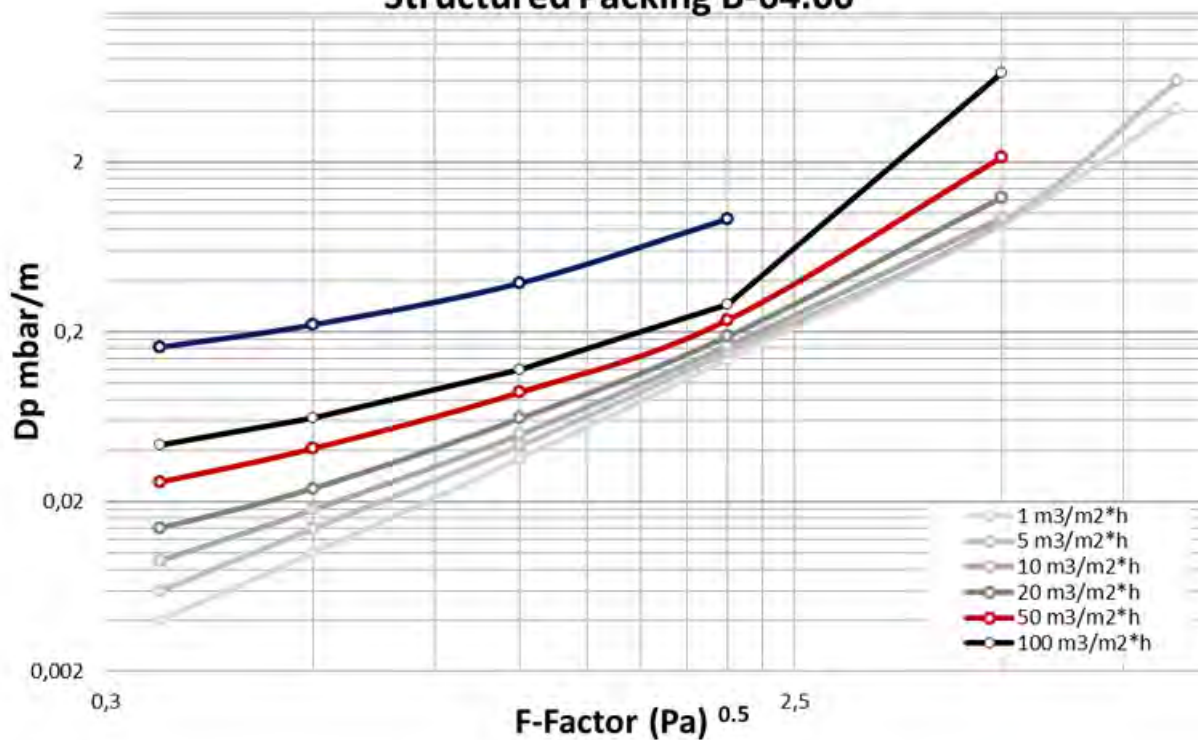
Materials of Construction

BARETTI custom-manufactures its entire range of **Standard and High Performance (HC) Structured Packings** across a comprehensive selection of foil thicknesses and premium metallurgies. To meet diverse chemical and process requirements, our production capabilities span from **AISI 410** to the full **AISI 300 series** (including **304L**, **316L**, **317L**, and **321**), **Nickel Alloys**, **Copper**, **Duplex and Super Duplex**, **Monel**, and **pure Titanium**, ensuring ultimate mechanical life and maximum corrosion resistance.

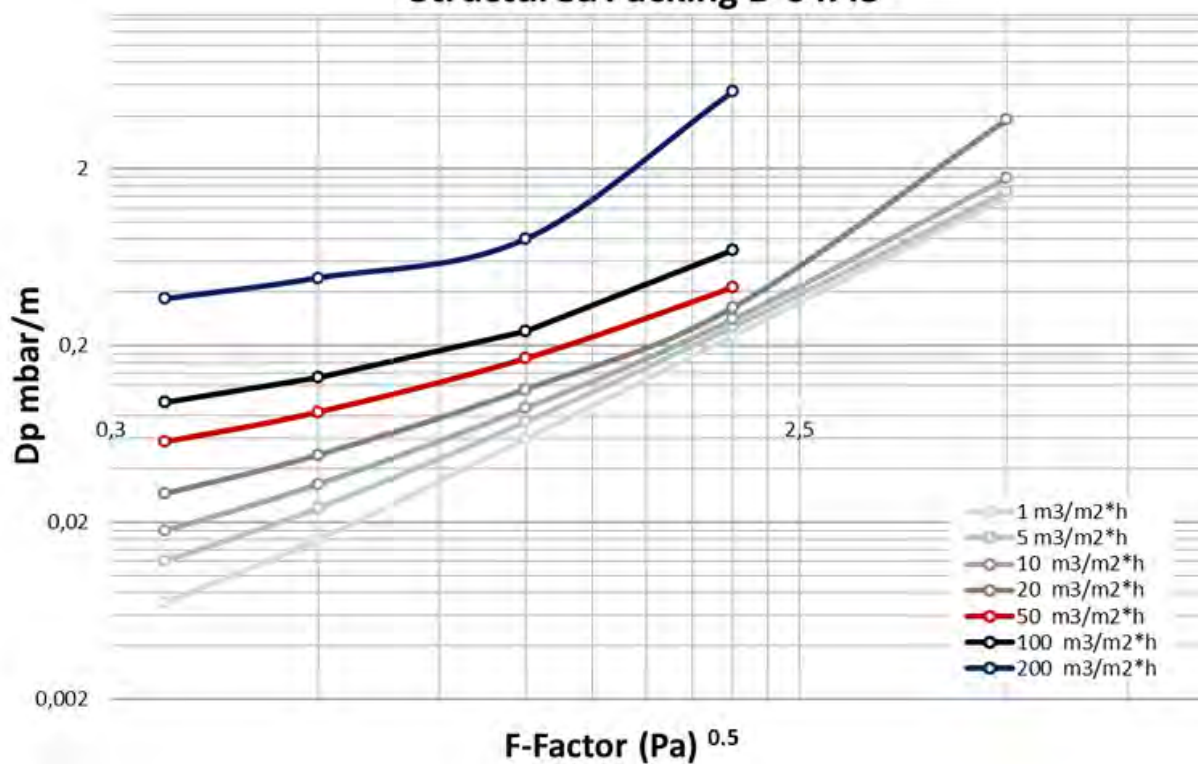
Average Efficiency and Pressure Drop

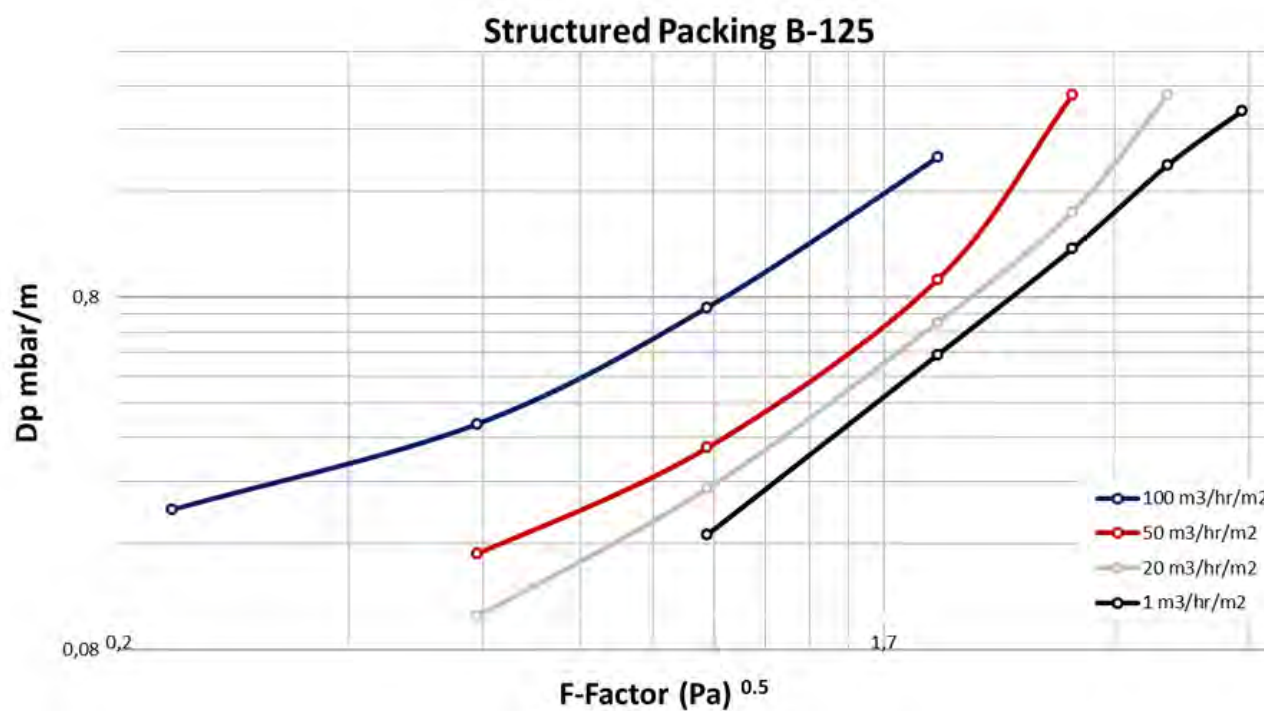
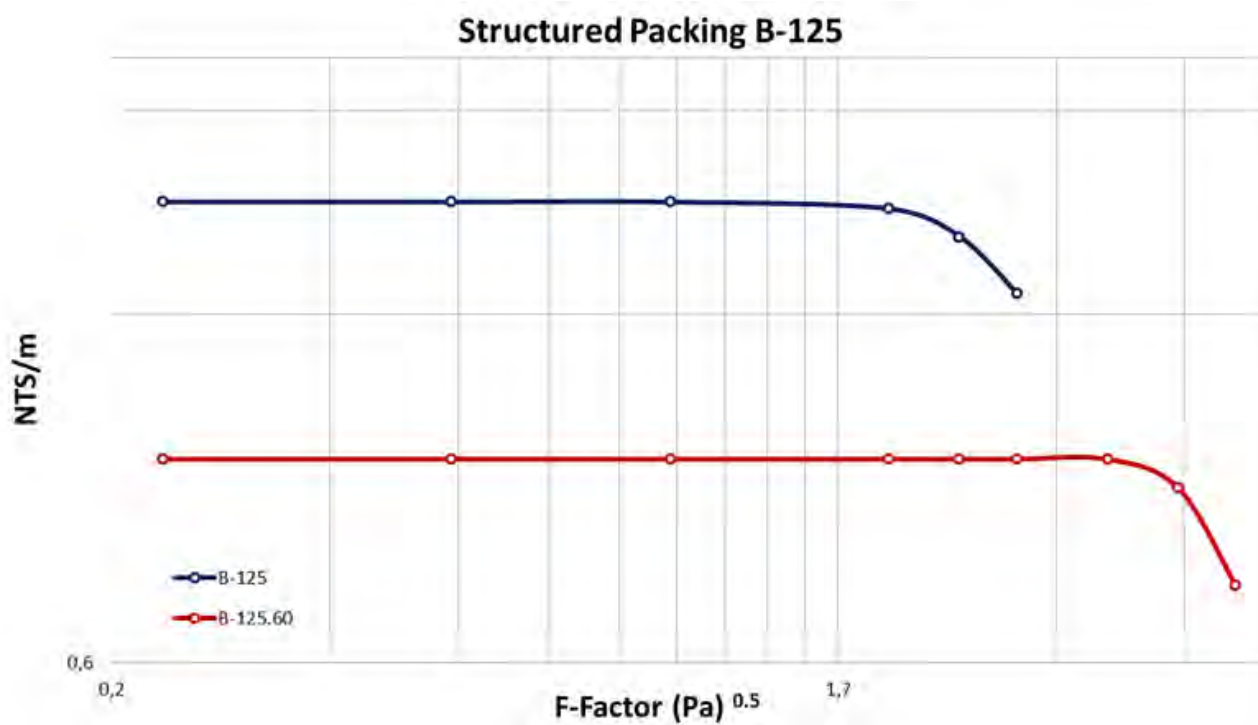
Type	Specific Surface (m ² /m ³)	Crimp Angle	Average Efficiency (TS/m)	Crimp Angle	Average Efficiency (TS/m)	Standard Thk.
<u>B-64</u>	64	45°	1.0	60°	0.6	0.25
B-100	100	45°	1.2	60°	0.8	0.15
<u>B-125</u>	125	45°	1.5	60°	0.9	0.15
<u>B-150</u>	150	45°	2.0	60°	1.3	0.15
<u>B-170</u>	172	45°	2.2	60°	1.4	0.10
<u>B-200</u>	200	45°	2.5	60°	1.6	0.10
<u>B-250</u>	250	45°	3.0	60°	2.0	0.10
<u>B-300</u>	300	45°	3.5	60°	2.5	0.10
<u>B-350</u>	350	45°	4.0	60°	3.0	0.10
<u>B-400</u>	400	45°	4.5	60°	3.6	0.10
<u>B-500</u>	500	45°	4.8	60°	3.8	0.10
<u>B-750</u>	700	45°	5.5	60°	4.5	0.10

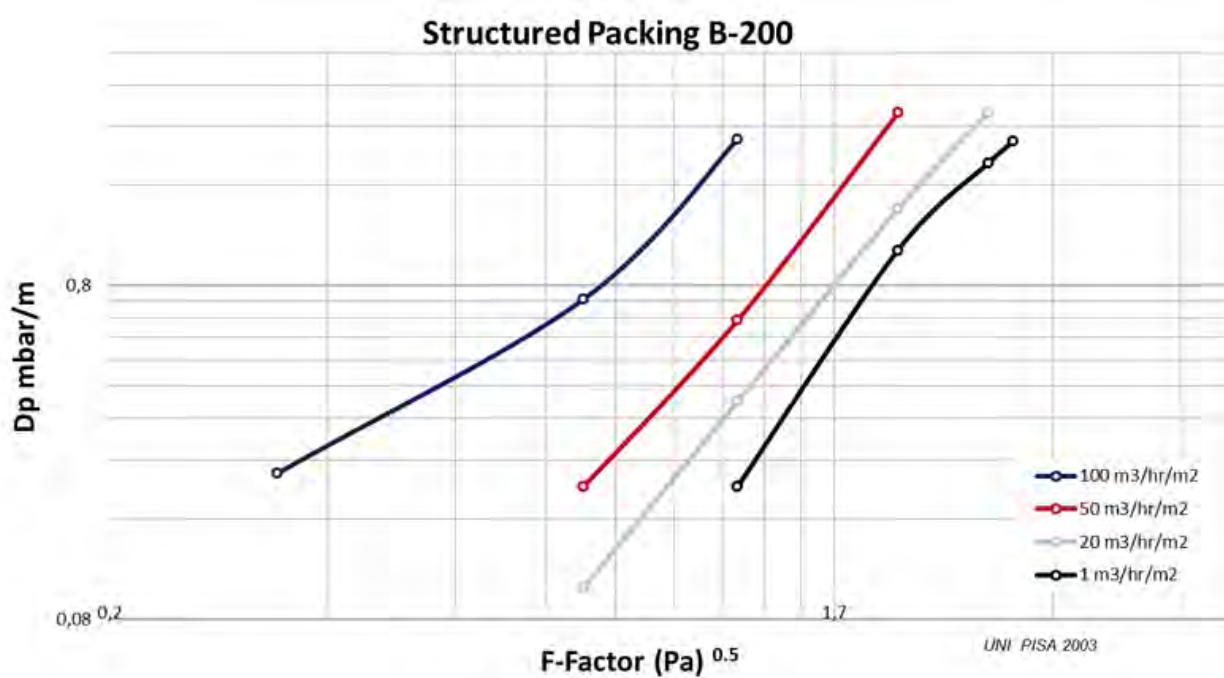
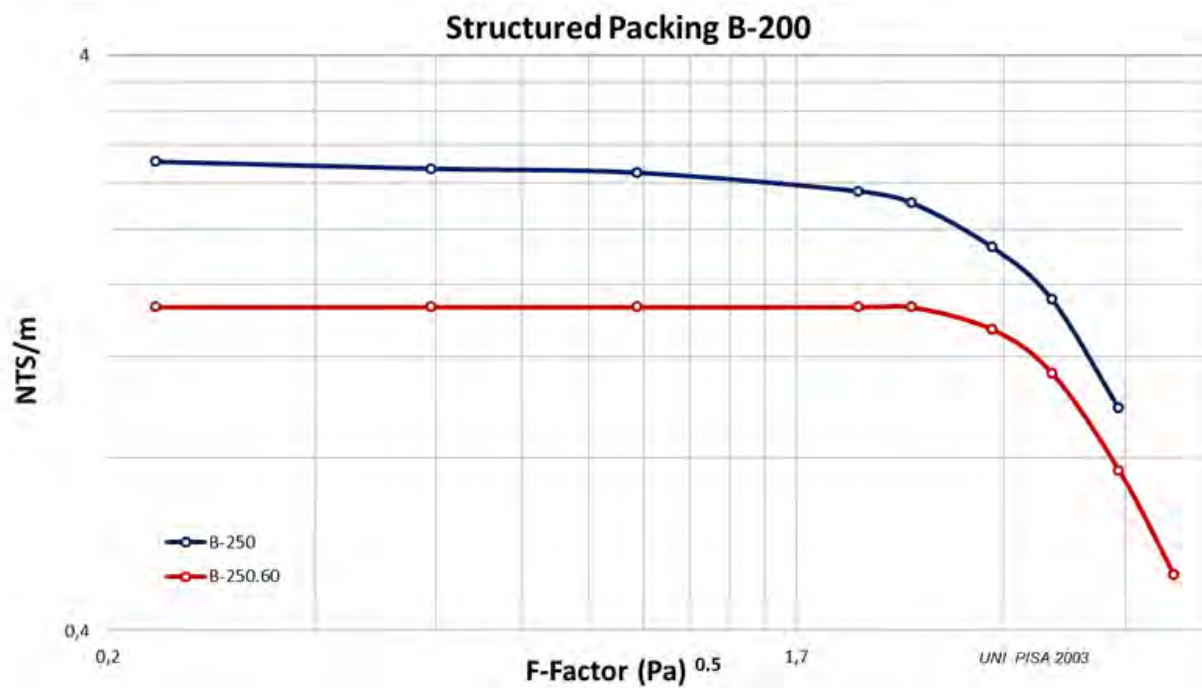
Structured Packing B-64.60

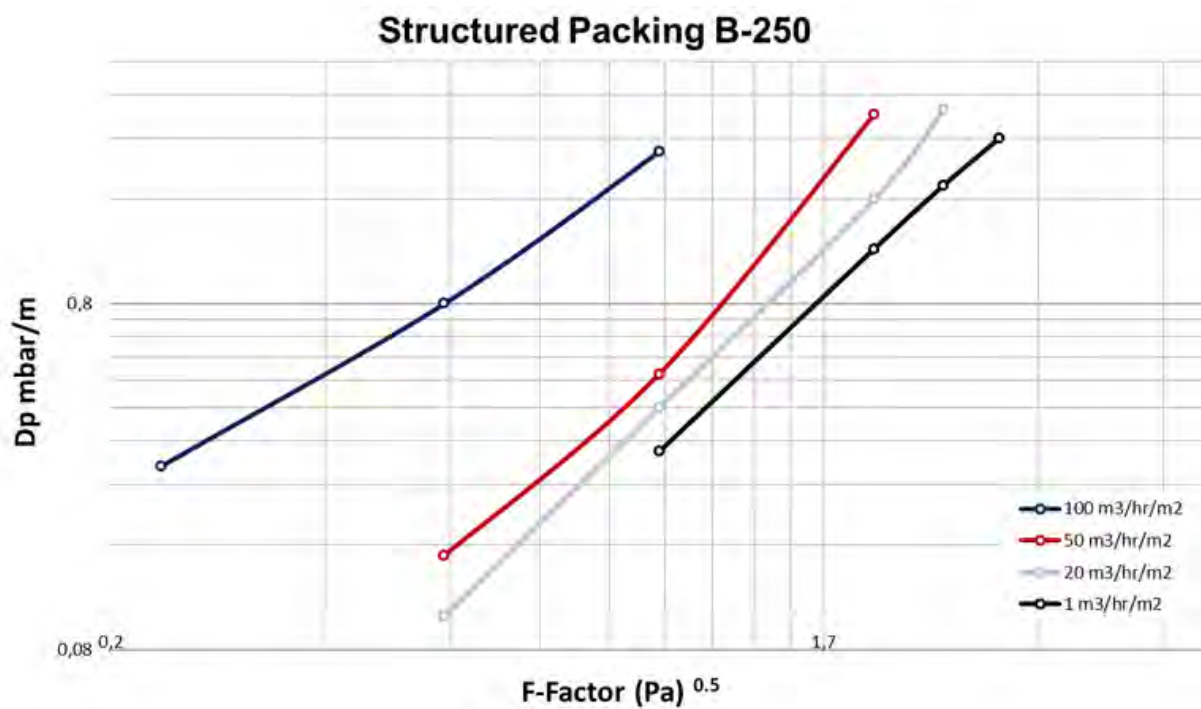
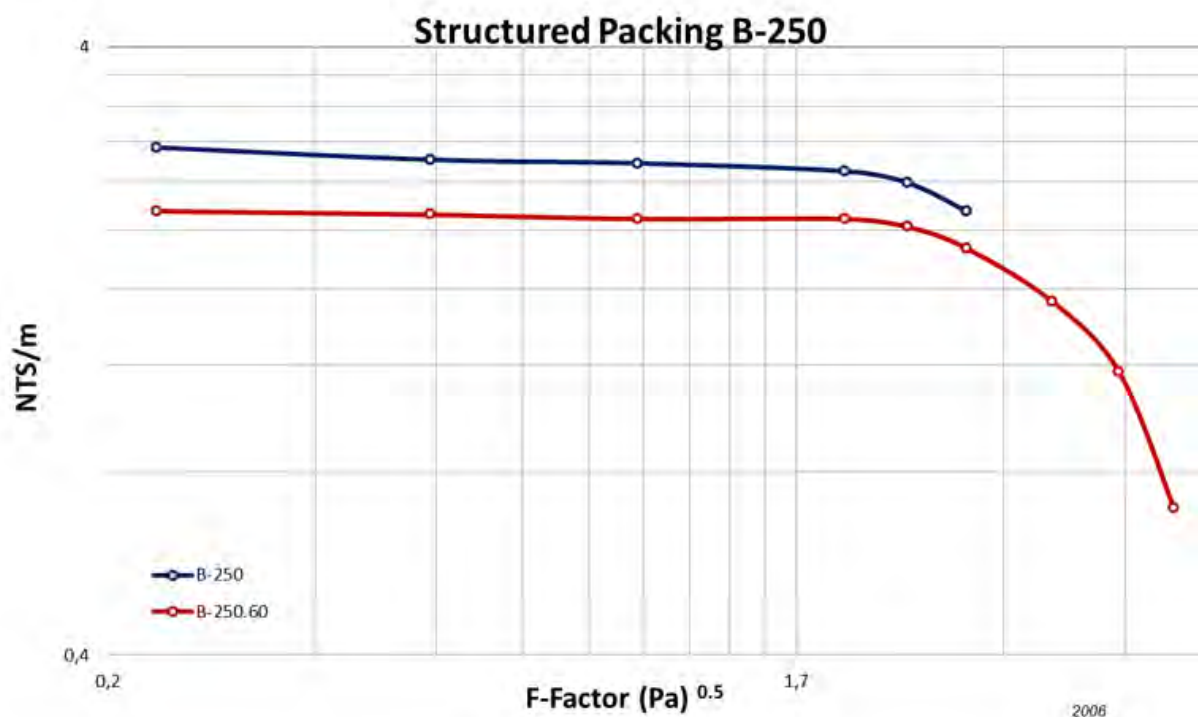


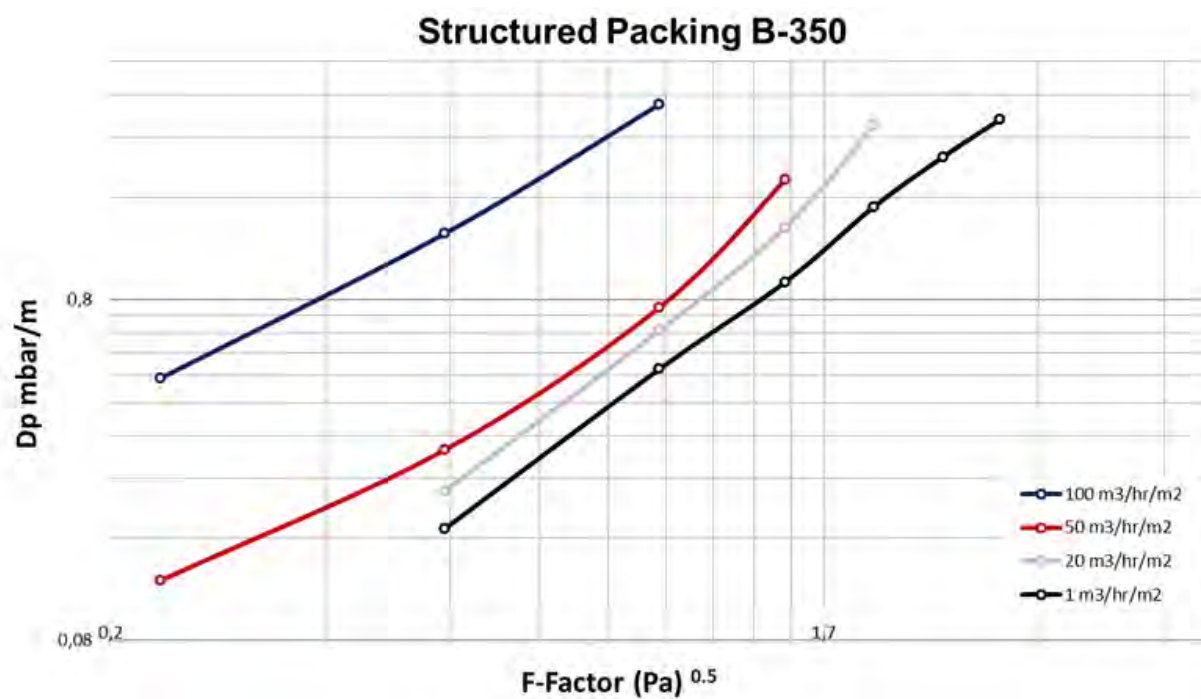
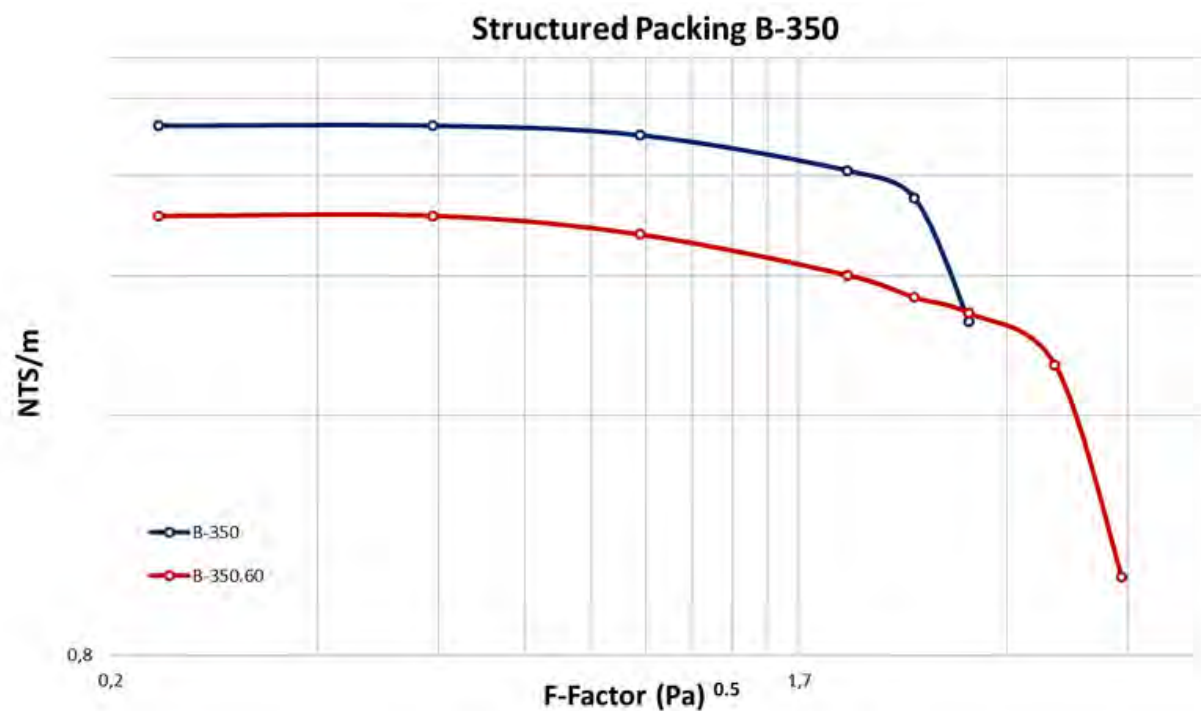
Structured Packing B-64.45











BARETTI HIGH-CAPACITY STRUCTURED PACKINGS

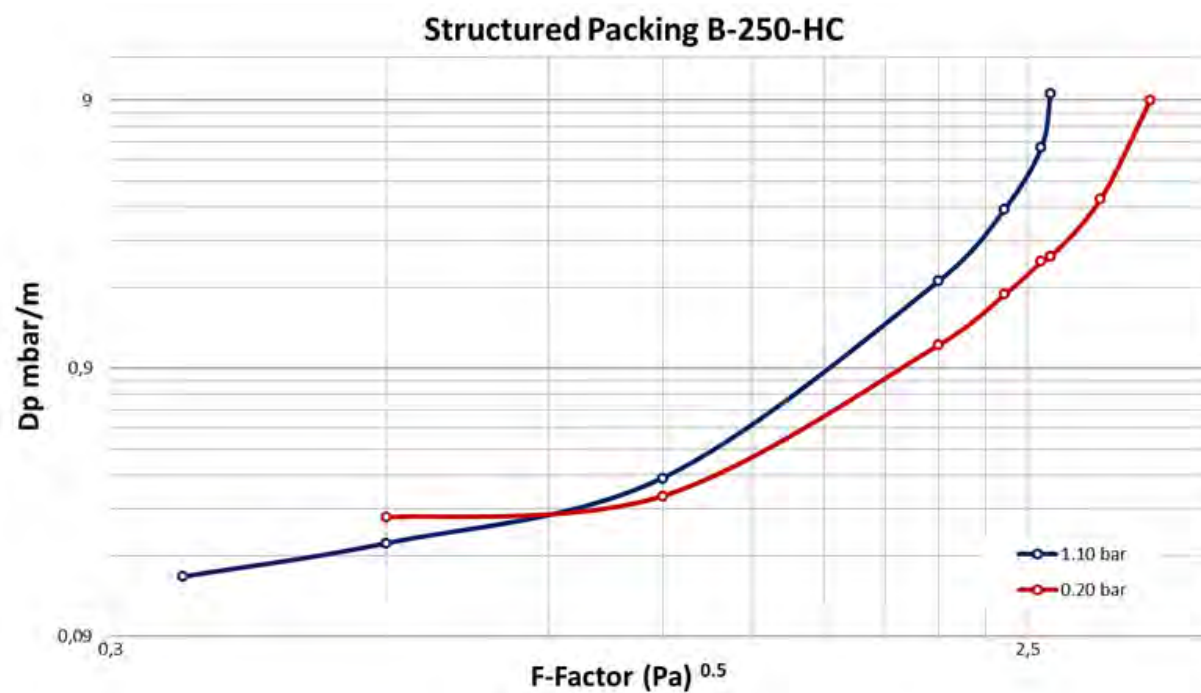
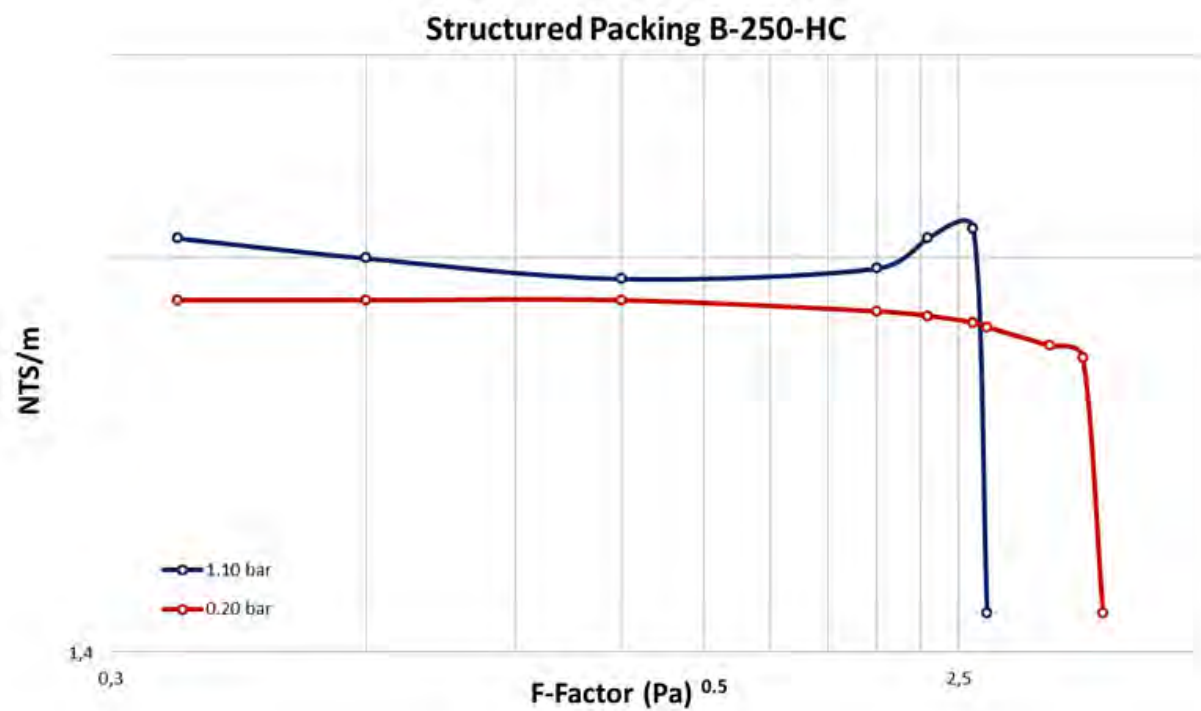
| S type Corrugation Angle B-HC Type

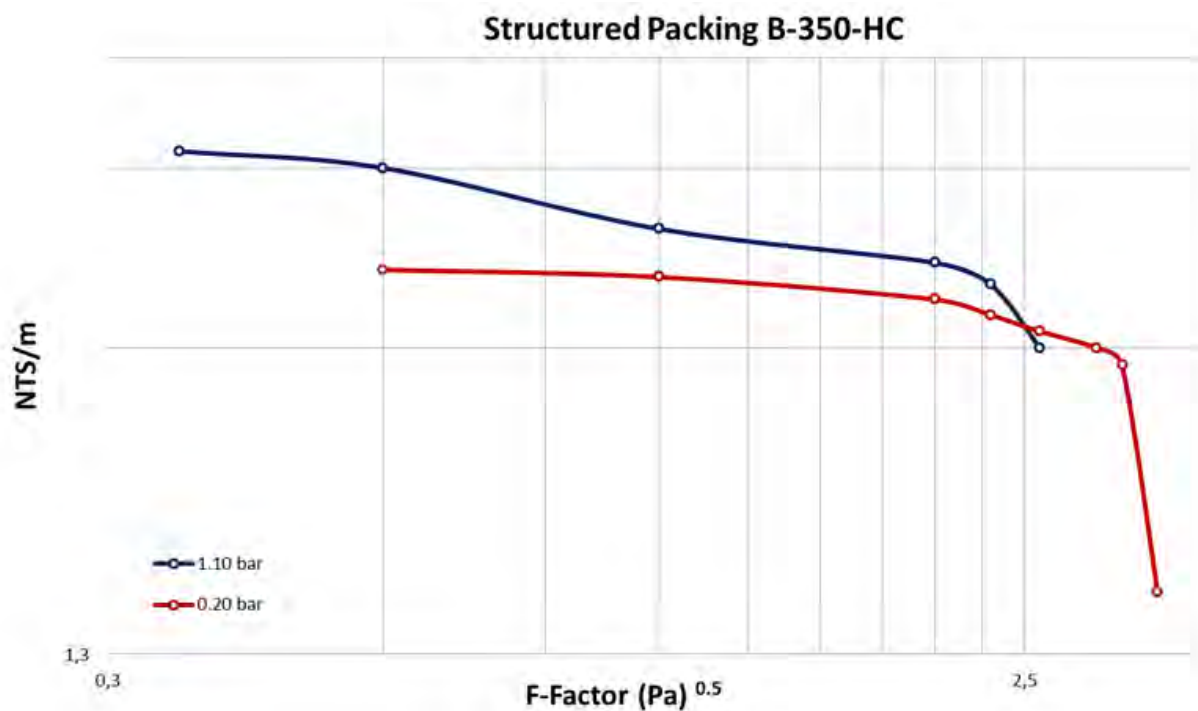
High-Performance Solution

BARETTI High-Performance Structured Packing introduces an advanced geometric modification specifically engineered to provide absolute fluid-dynamic continuity between layers. This shape reduce pressure drop and localized flow restrictions are completely avoided.

Quantifiable Performance Gains

- v **>30% Capacity Increase**: Allows the tower to process significantly higher vapor and liquid volumetric rates before reaching the flooding point.
- v **Lower Pressure Drop (ΔP)**: Reduces overall hydraulic resistance while maintaining the exact same mass transfer efficiency per meter.





Baretti Grid Packing B-37

The B-37 grid packing is specifically designed for the most severe and demanding services, typically encountered in refinery vacuum column wash/quench sections or other extremely high-fouling environments, where gas flow rates are exceptionally high and process streams contain significant amounts of solids, coke particles, or asphaltic materials.

Technical Info

Layer Cross-Arrangement

A 45° staggered arrangement is adopted between consecutive packing layers, with each structured packing module rotated by 45° relative to the underlying layer. This engineered angular configuration optimizes macroscopic fluid redistribution, minimizes channeling effects, and promotes a more uniform liquid and vapor distribution throughout the packed bed.

Fouling & Solids Resistance

The B-37 grid packing offers industry-leading resistance to fouling. Its highly open square-cell structure, combined with smooth vertical walls, minimizes deposition sites and significantly reduces the tendency for polymers, coke fines, and heavy hydrocarbon fractions to adhere and accumulate within the packing bed.

Pressure Drop & Vapor Capacity

Extremely low pressure drop (ΔP) combined with ultra-high hydraulic capacity. The open-grid architecture minimizes vapor flow resistance, making B-37 grid packing the preferred solution where maximizing vapor throughput and maintaining the lowest possible pressure drop are critical process requirements.

Baretti Grid Packing B-45

Baretti Grid Packing B-45 is a high-reliability structured grid framework engineered for the most punishing separation environments. By offering two tailored geometries (45-2 for ultimate capacity and fouling bypass, and 45-3 for enhanced gas-phase turbulence and heat transfer efficiency), it adapts perfectly to critical refinery wash and quench zones, providing absolute mechanical integrity and extended runtimes.

Technical Info

Separation Efficiency

Ensures reliable and efficient separation between vaporized fractions and entrained heavy liquid droplets, a critical requirement for protecting downstream catalyst beds and maintaining the purity of high-value petroleum products.

Robust Construction & Maintenance

B-45 grid is designed to withstand severe corrosive and erosive conditions associated with high temperatures and reactive process fluids. Its modular design facilitates installation, inspection, and maintenance activities within the column shell.

RANDOM PACKING

| BMRP Rings

BMRP elements are custom-manufactured in a wide range of standard sizes (from small sizes for high fractionation purity to large sizes for maximum hydraulic capacity). To ensure long operating lifecycles under corrosive or high-temperature environments, they can be fabricated in standard Carbon Steel, various Stainless Steels (such as AISI 304, 316L, 410), Duplex alloys, Copper and exotic materials like Titanium or Monel upon process request.

Technical info

Mechanical Design & Geometry

The BMRP design maintains a high void fraction while providing efficient liquid distribution. The internal blades are carefully engineered to maximize drip points, promoting enhanced liquid spreading and mass transfer performance.

Mass Transfer Efficiency

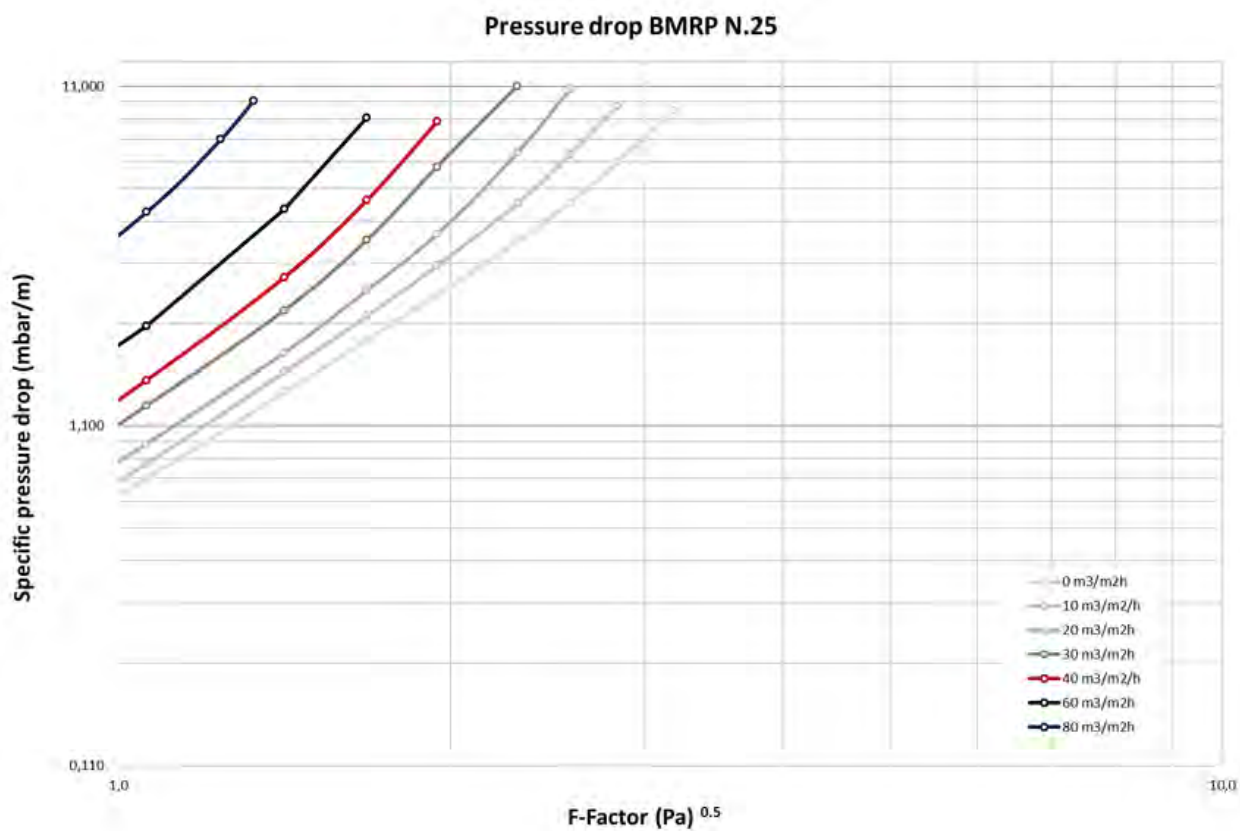
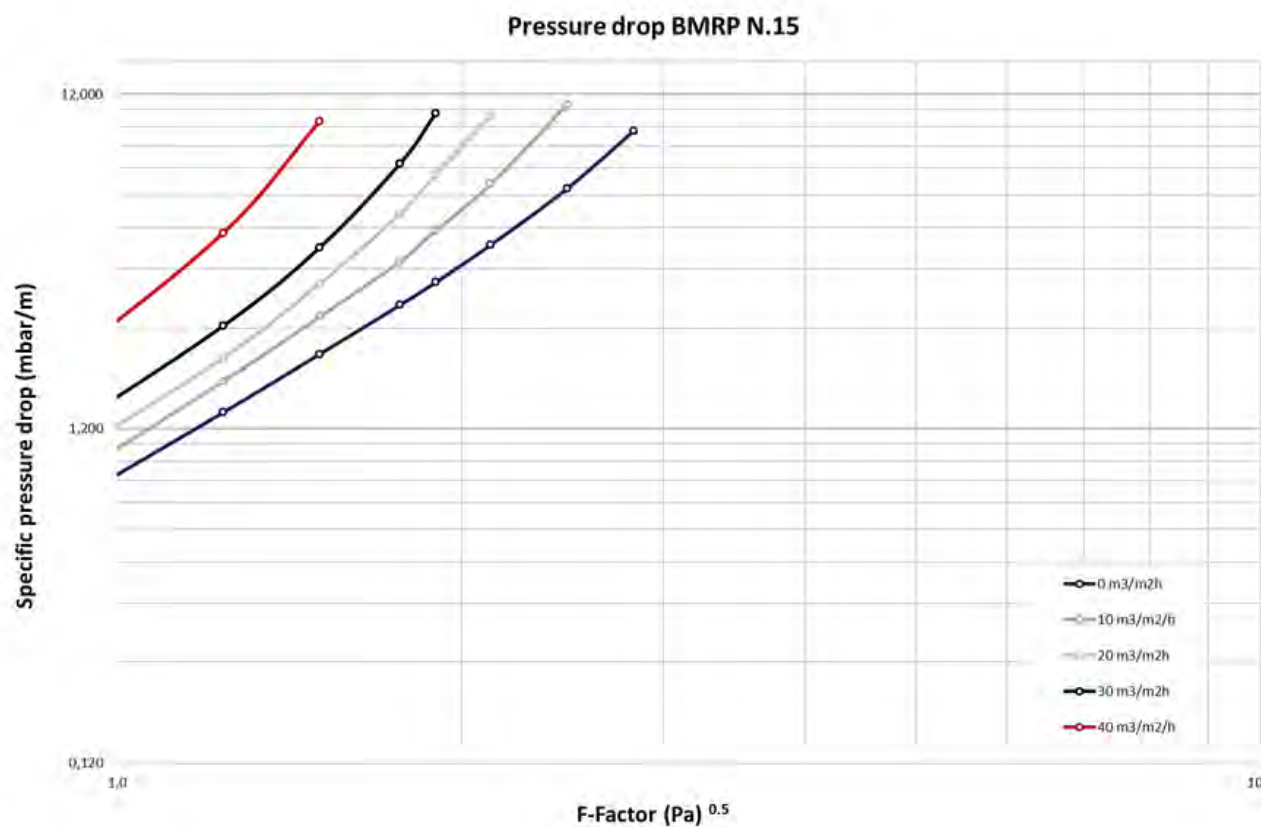
Compared to 2nd generation Pall Rings, the BMRP Ring geometry significantly reduces the Height Equivalent to a Theoretical Plate (HETP), resulting in improved separation efficiency.

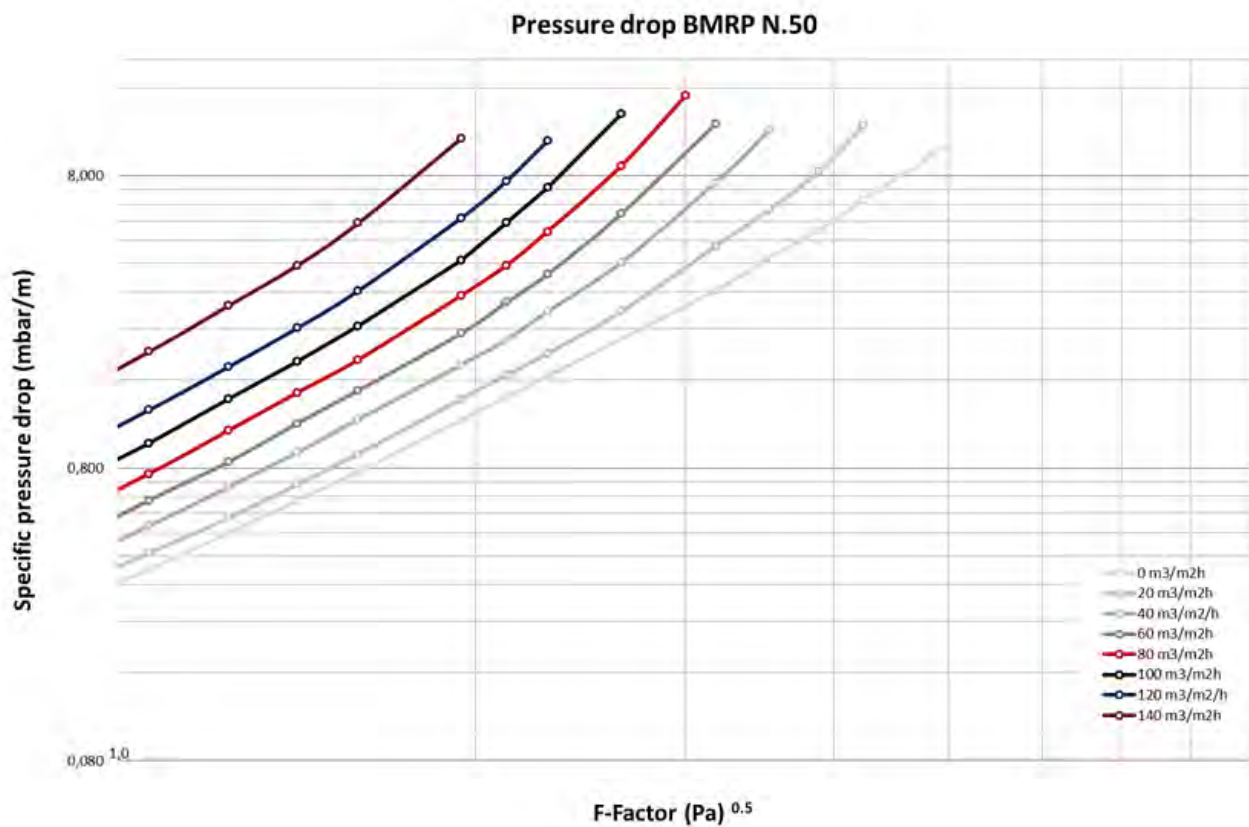
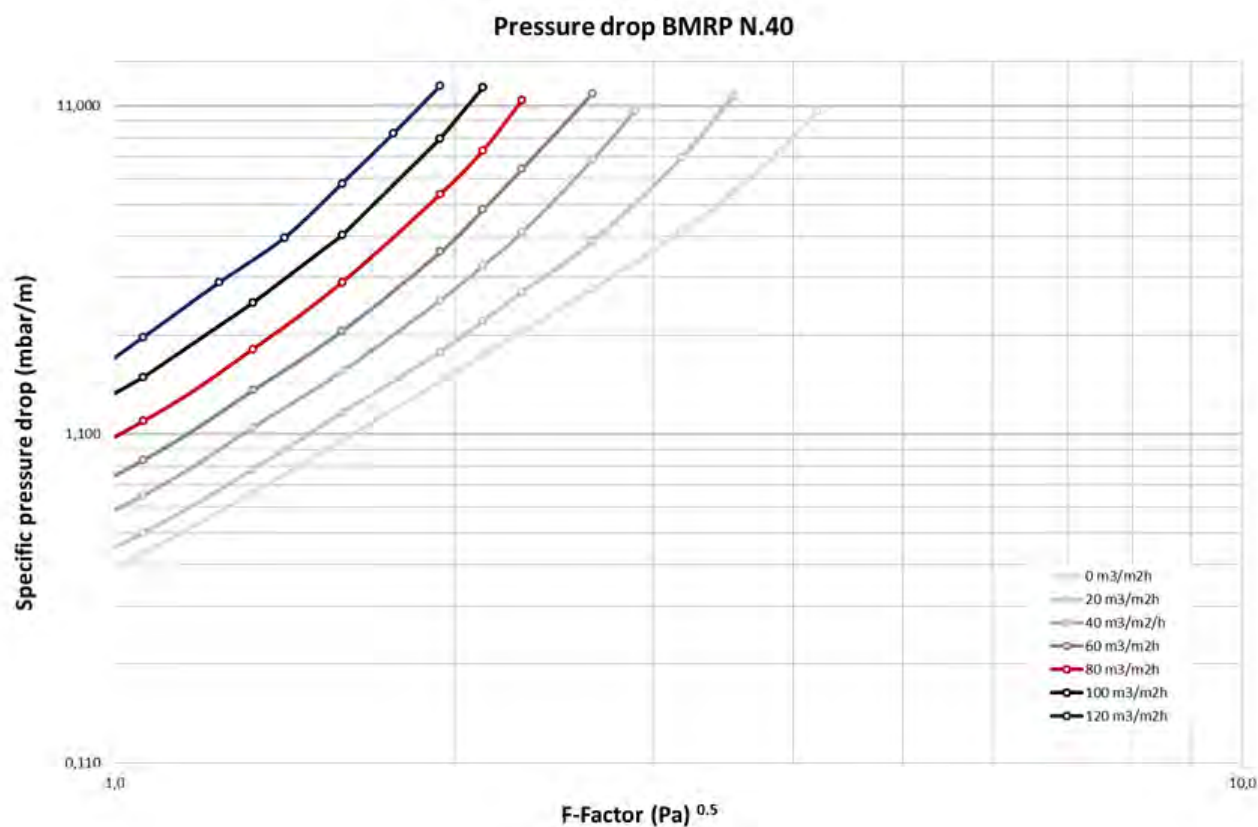
Mechanical Strength

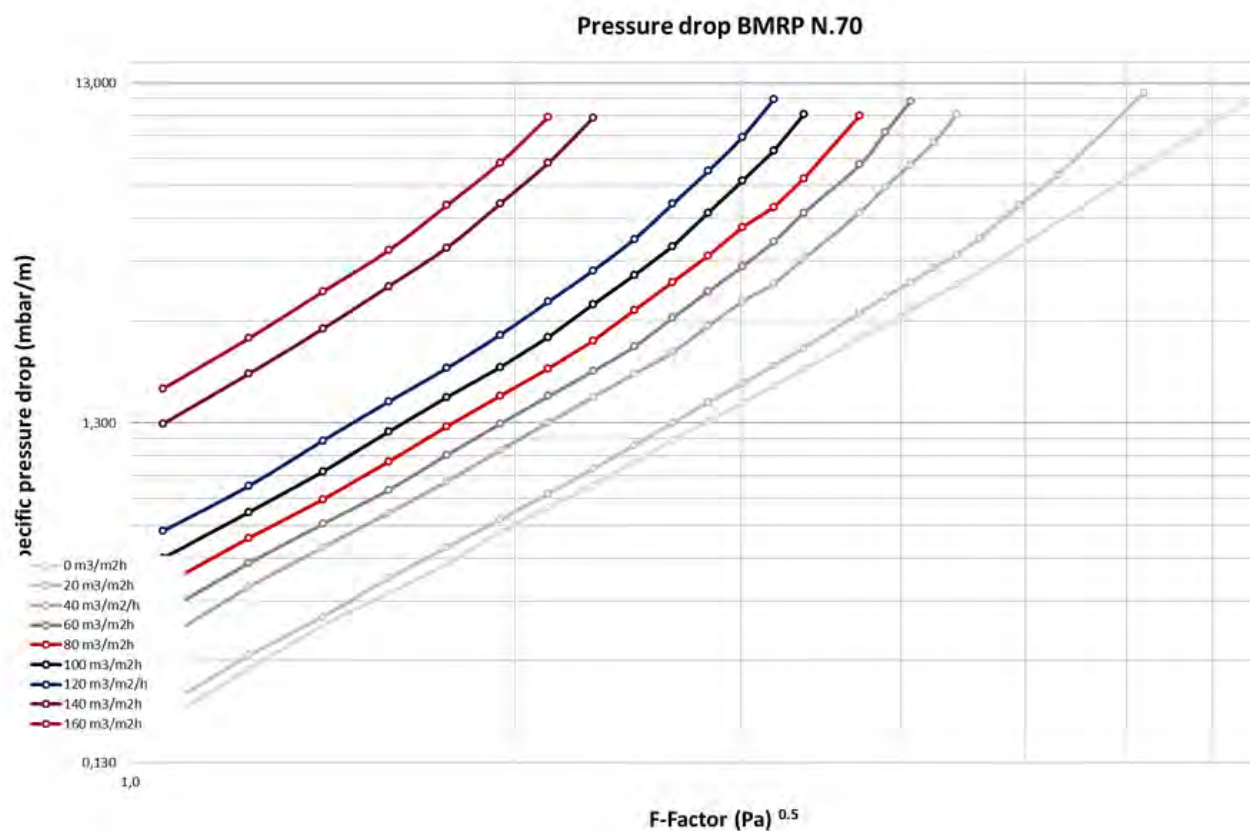
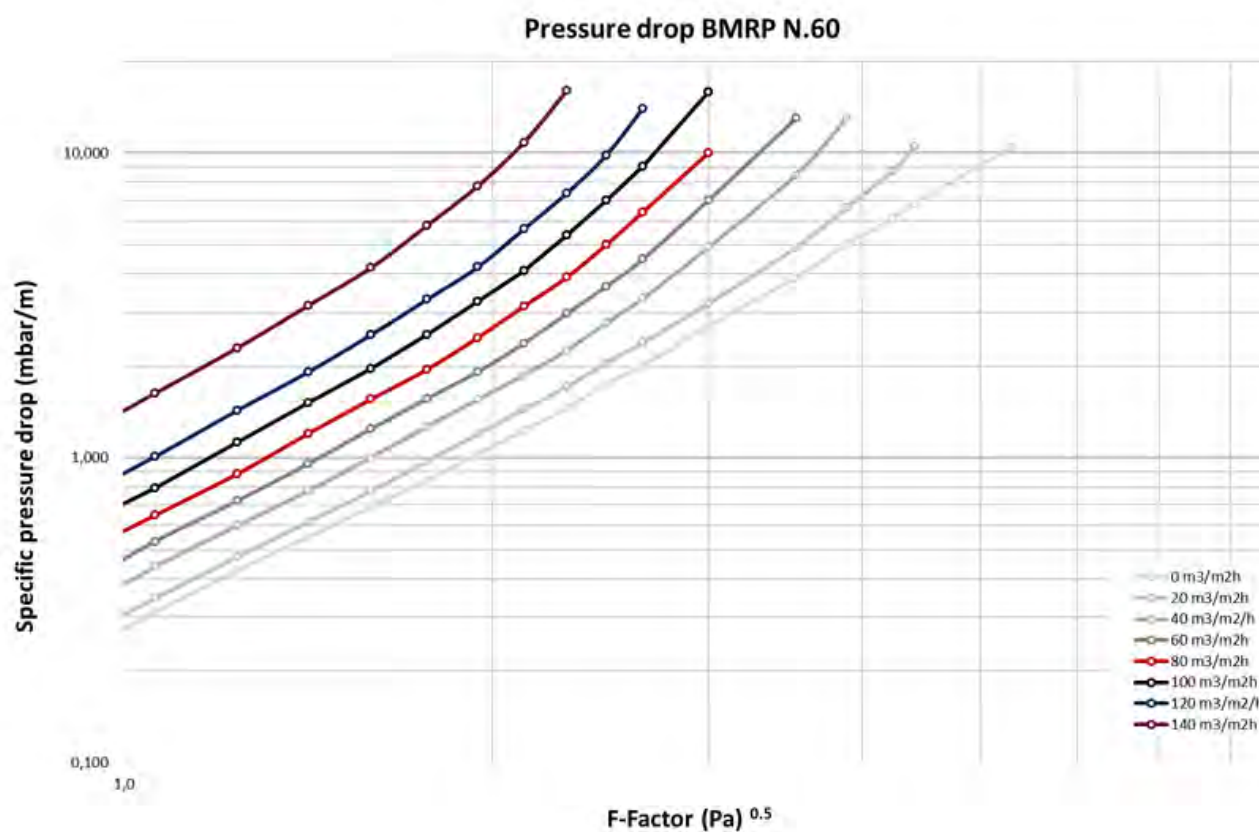
Despite its high void fraction, the BMRP Ring features reinforced edges and structural bridging elements provide excellent resistance to static loads, ensuring mechanical integrity during installation and operation.

Hydraulic Capacity & Pressure Drop

The large side windows facilitate vapor passage while allowing rapid liquid drainage, significantly reducing the tendency toward flooding and foaming phenomena.







RANDOM PACKING

Raschig Ring

Baretti Raschig Rings represent the time-tested, first-generation standard in random packing technology, providing a reliable and cost-effective surface matrix for gas-liquid contact. Featuring a simple, heavy-duty cylindrical geometry, they are highly versatile and can be manufactured in a wide variety of materials—including carbon steel, various stainless steel grades (such as AISI 304L, 316L), copper, and specialized high-nickel alloys, carbon and plastic—to meet any specific chemical compatibility or high-temperature plant environment.

Hi Cap Pall Ring

Baretti Hi-Cap Rings feature an optimized geometry that allows for a larger size footprint, delivering an advanced packing solution with significantly increased capacity and reduced pressure drop without compromising mass transfer efficiency.

This high-capacity design makes them the ideal choice for direct revamping and replacement of conventional Pall rings or standard random packings of equivalent size, allowing processing plants to quickly expand throughput or minimize resistance to vapor flow.

Baretti Super Rings

Baretti Super Rings utilize a highly advanced wave-like structural design to offer maximum open area and optimal liquid wetting. This unique geometry ensures a very low pressure drop (ΔP) and exceptional mechanical stability, significantly boosting mass transfer capacity in high-load separation and absorption columns.

RANDOM PACKING

Baretti Saddle

Baretti Saddles feature an advanced open-wall, multi-ring structure engineered to deliver maximum surface area with extremely low pressure drop (ΔP). This high-performance metallic packing prevents fluid channeling and ensures superior vapor-liquid contact, making it the ideal choice for high-capacity vacuum distillation and absorption columns.

BB Ring

Baretti BB Rings feature an optimized low-aspect-ratio geometry with high internal open areas that significantly lowers pressure drop while maximizing mechanical crush resistance. This specialized design ensures high capacity and superior anti-nesting behavior, making it the ideal choice for high-load distillation and stripping columns.

B-CD Ring

Baretti B-CD Rings feature a low-aspect-ratio geometry similar to BB Rings, but enhance it with a distinct flanged edge that forces a preferential orientation within the bed when dumped. This specialized plastic design maximizes available surface area and drastically reduces pressure drop, making it an excellent high-capacity alternative for demanding absorption and stripping columns.

Raah Ring

Baretti Raah Rings (Ralu-Ring type) feature an optimized, open-cylinder geometry with internal curved tabs that ensures exceptional liquid distribution and a very high void fraction. This advanced design minimizes pressure drop and prevents fouling, making it the ideal choice for high-volume absorption and scrubbing applications.



HEADQUARTERS & MANUFACTURING

**Baretti Mefe S.r.l.,
SS 415 Loc. Ponte Adda snc
26016 Spino d'Adda (CR)
Italia**

FRENCH SALES OFFICE

**Baretti Sarl,
1 Avenue de l'Homme à la Fenetre
ZI La Valampe Lot 6B
13220 Chateauneuf les Martigues
France**



EMAIL

info@baretti.it

info@baretti.fr



PHONE

+39 0373 96701

+33 4 42 34 60 97



WEBSITE

www.baretti.it



ISO 9001:2025 | ISO 14001:2015