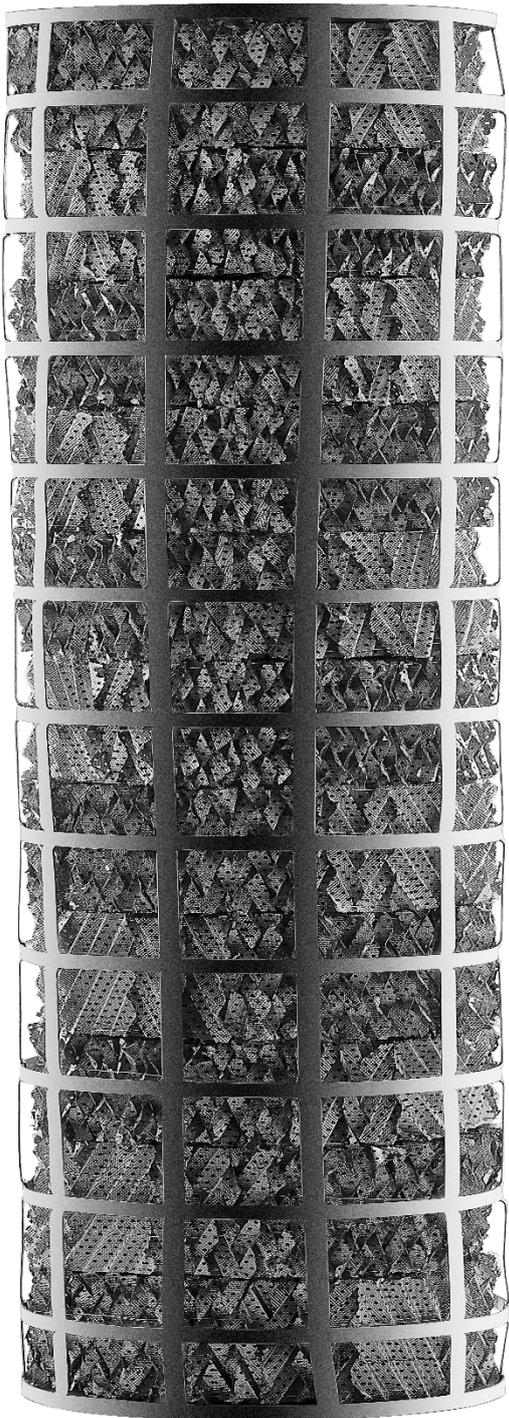


STRUCTURED PACKING



CHEM GROUP
AZAR ENERGY Co.

STRUCTURED PACKING

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- **Structured packings**

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MELLAPAK

MELLAGRID

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Flexipac

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Overview

The structured packing is made up of metallic wires and corrugated metallic sheets. The material selection depends on the vapour-liquid mixture to be transferred, their corrosive properties, acid-alkali nature, working temperature, etc.

Structured packing **materials** are: SS 304 – SS 304L – SS 316 – SS 316L, Monel 400 – Monel 600 – Monel 800, acti.

STRUCTURED PACKING

	Type of Packing	Application	Diameter & Operating range	Characteristics
	MELLAPAK	<ul style="list-style-type: none"> ✓ In refining and in Petrochemicals ✓ C₃ and C₄ splitter, absorption ✓ Desorption columns ✓ Drying of natural gas 	<ul style="list-style-type: none"> ✓ Minimum diameter 200 mm ✓ Vacuum to high pressure ✓ Liquid load 0.2 to more than 300 m³/m²h 	<ul style="list-style-type: none"> ✓ Universal packing type, suitable for a wide range of applications ✓ Usable for liquid loads ranging from low to very high
	MELLAGRID	<ul style="list-style-type: none"> ✓ Crude oil distillation ✓ Quench column ✓ Refineries and petrochemical industry 	<ul style="list-style-type: none"> ✓ Minimum diameter 900 mm ✓ Vacuum to high pressure 	<ul style="list-style-type: none"> ✓ Smooth surface ✓ Mechanically robust ✓ Not prone to blockage ✓ Not sensitive to fouling
	Gauze packing	<ul style="list-style-type: none"> ✓ Fine chemicals ✓ Isomers ✓ Perfumes ✓ Flavours 	<ul style="list-style-type: none"> ✓ Diameter approx. 40 mm to 6 m ✓ Pressure 1 mbar to normal pressure ✓ Optimum : 1-100 mbar 	<ul style="list-style-type: none"> ✓ High separation efficiency, even at small liquid loads ✓ Minimum pressure drop ✓ Small hold-up
	Flexipac	<ul style="list-style-type: none"> ✓ In refining and in Petrochemicals ✓ Desorption columns ✓ Drying of natural gas 	<ul style="list-style-type: none"> ✓ Minimum diameter 200 mm ✓ Vacuum to high pressure ✓ Liquid load 0.2 to more than 400 m³/m²h 	<ul style="list-style-type: none"> ✓ Lower pressure drop ✓ Reduced liquid holdup ✓ Increased heat transfer ✓ Reduced reflux ratio
	Intalox	<ul style="list-style-type: none"> ✓ In refining and in Petrochemicals ✓ Crude oil distillation 	<ul style="list-style-type: none"> ✓ High liquid rate ✓ High pressure systems 	<ul style="list-style-type: none"> ✓ Lower pressure drop ✓ High capacity

STRUCTURED PACKING

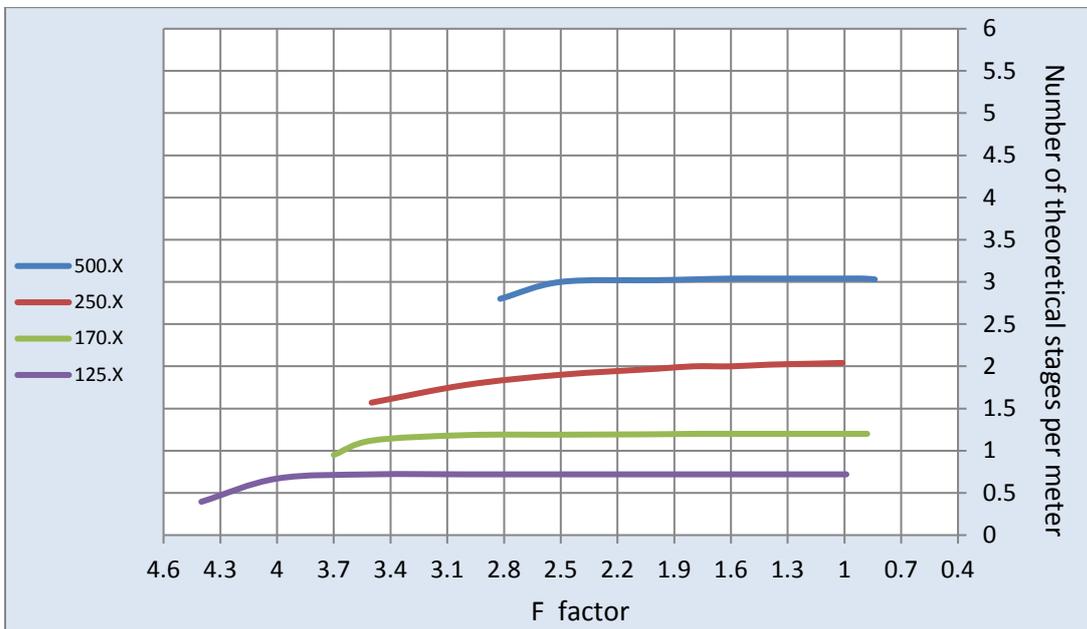
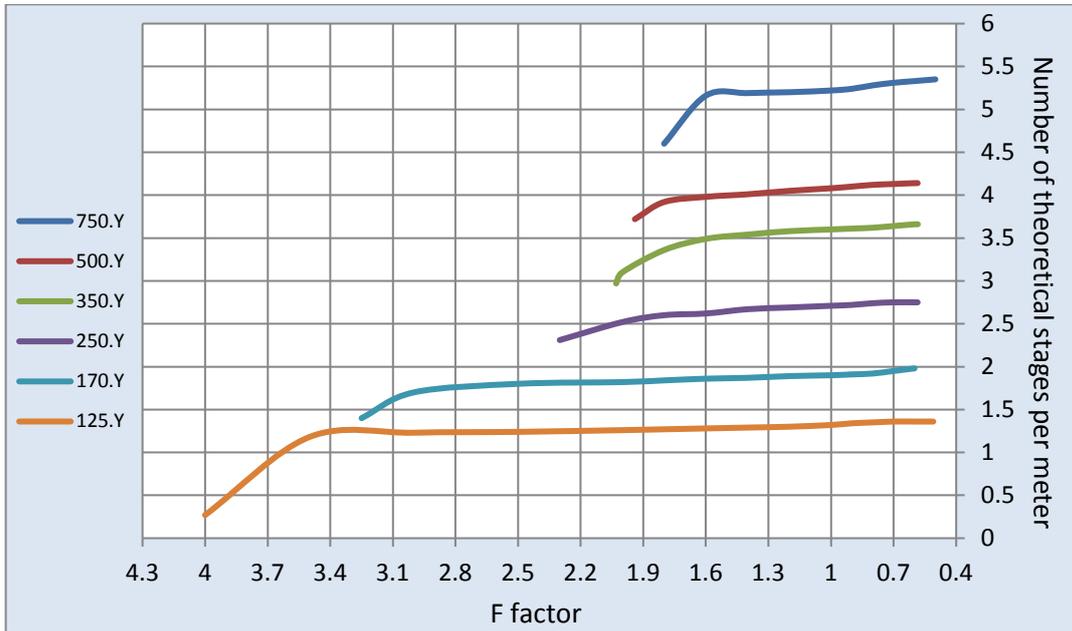
Mellapak has grooved and perforated surfaces. Adjacent elements are rotated 90°. The crimp angle is 45°, and the crimp apex is sharp. Mellapak is available in several types. The Mellapak number denotes the nominal surface area of the packing per unit volume (m²/m³). The suffix denotes the angle of orientation to the vertical axis; Y signifies 45°, X signifies 60°. For instance, Mellapak 250.Y has a surface area of 250 m²/m³, and a 45° angle of orientation to the vertical axis. Mellapak is available in metals and plastics from AzarEnergy Co. in Iran.

In its metal and plastic versions, Mellapak has a characteristic surface structure which results in a high separation performance at liquid loads ranging from small to high. The alternating arrangement of the individual corrugated sheets forms intersecting open channels. These effects an optimum intermixing of gas flows.

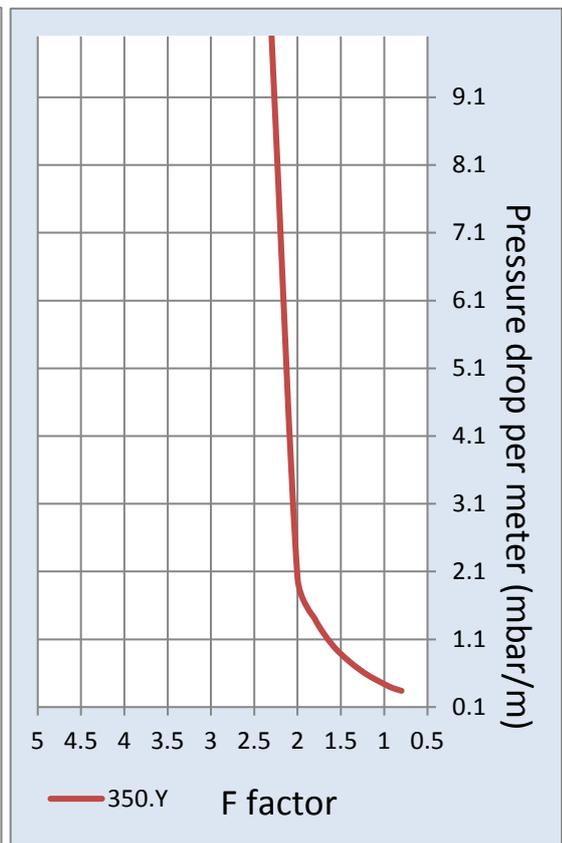
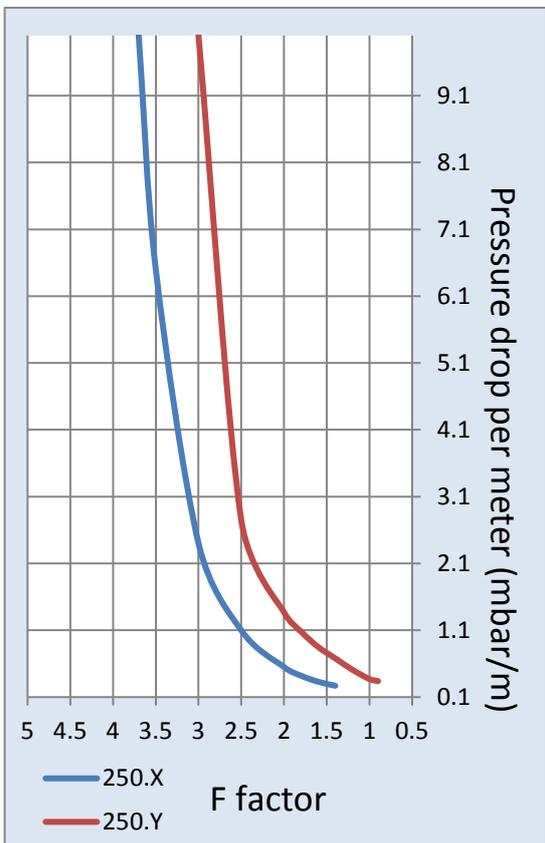
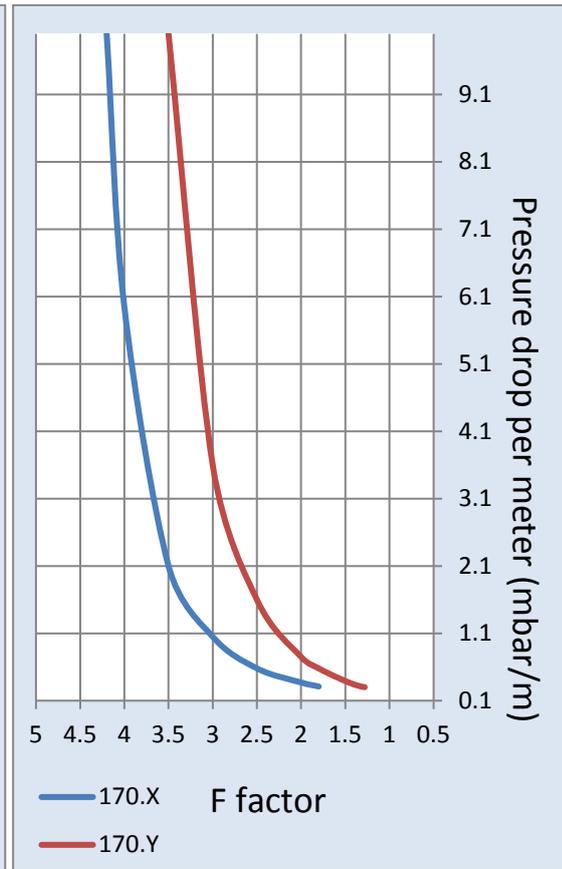
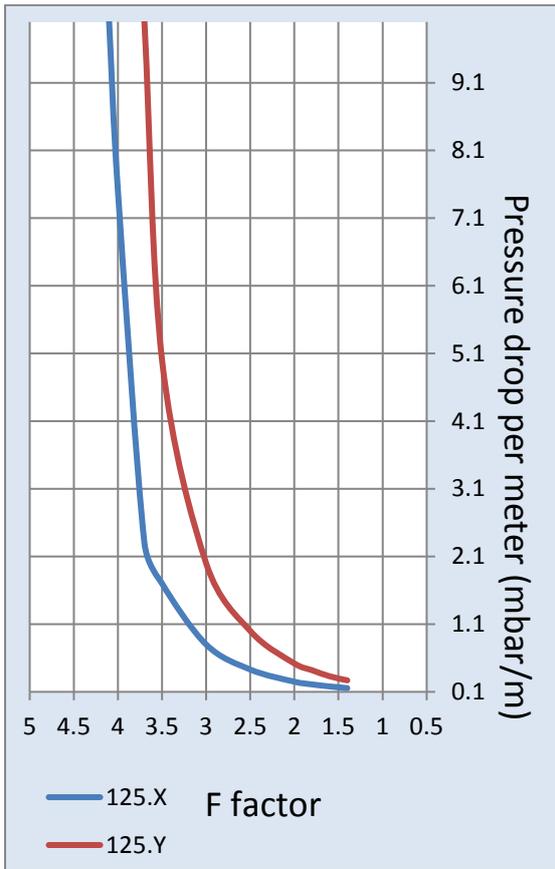
Packing Type	125X/125Y	170X/170Y	250X/250Y	350X/350Y	500X/500Y	750X/750Y
Specific surface area (m ² /m ³)	125	170	250	350	500	750



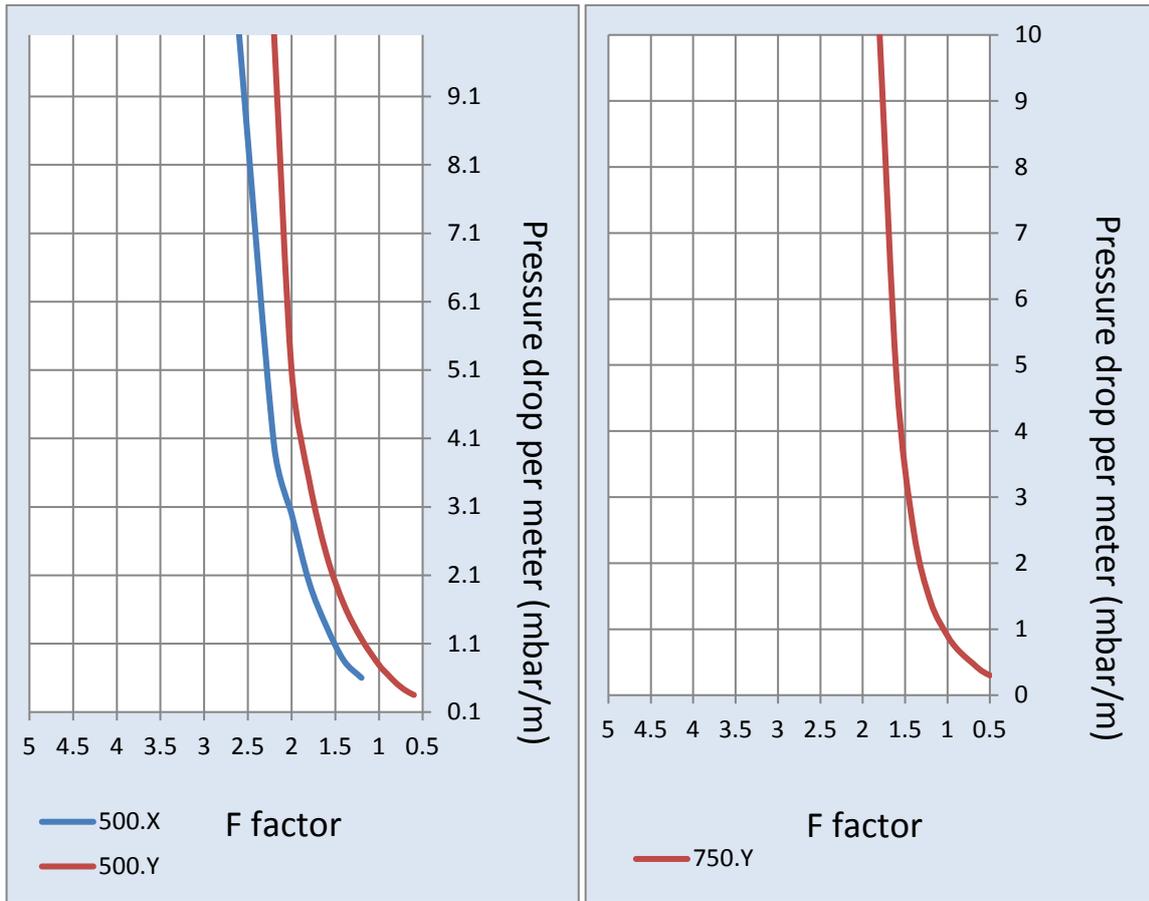
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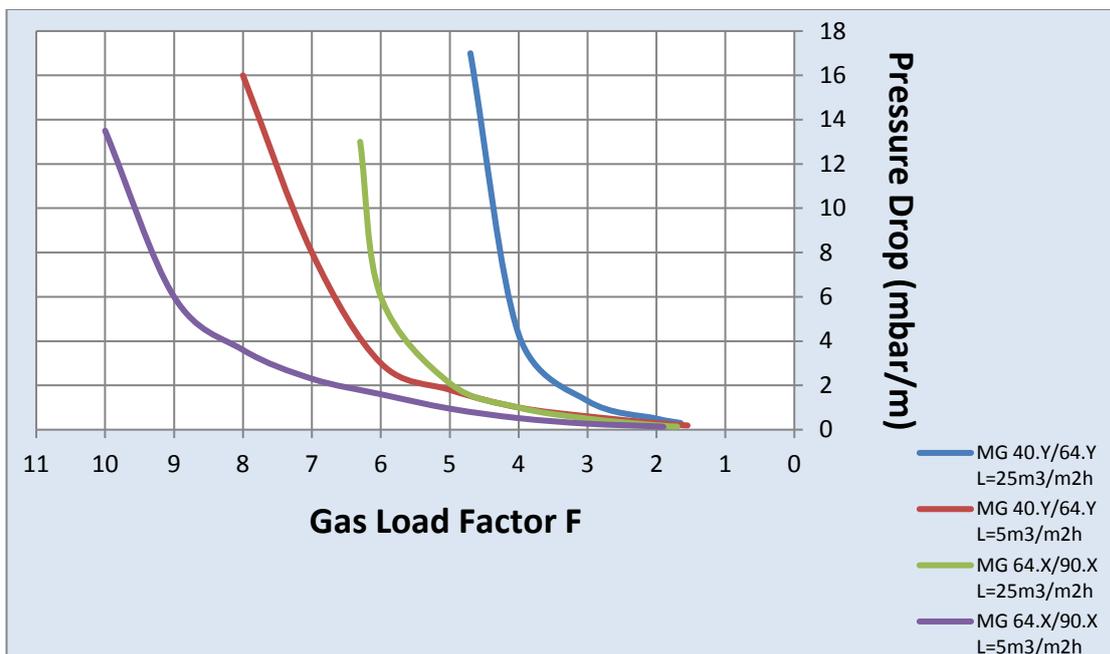
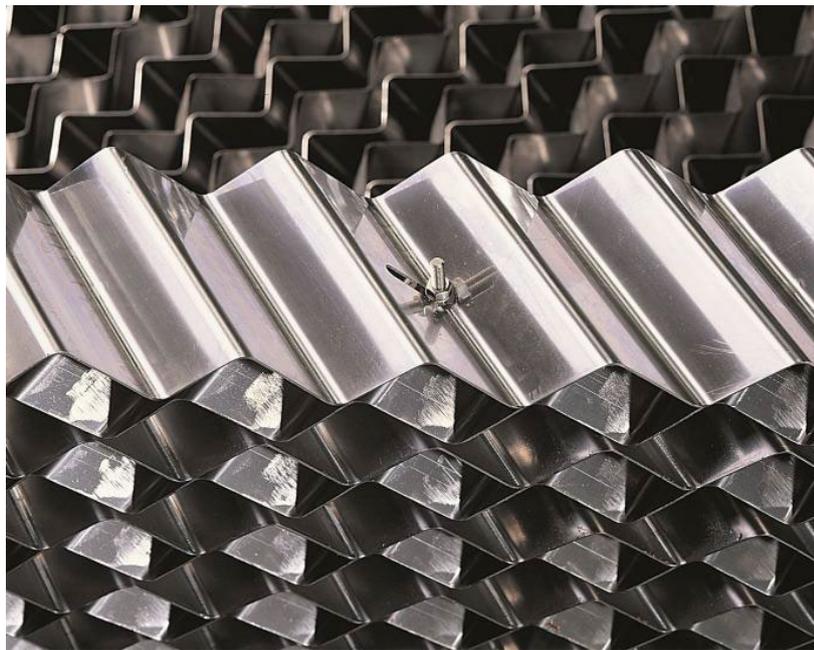


Gauze Packing

With the new development of **Mellagrid**, efficiency of structured packing is combined with the mechanical resistance of grid. Mellagrid is used in every area where the mechanical strength of structured packing could result in some concern or where coking is likely to occur. Mellagrid is not sensitive to coking and fouling due to its geometrical structure and smooth surface. Its structure and element height allow for easy cleaning and can be removed, unscrewed and cleaned with a water jet.

Technical Data

Mellagrid	MG 90.X	MG 64.X	MG 64.Y	MG 40.Y
Specific surface area	90 m ² /m ³	64 m ² /m ³	64 m ² /m ³	40 m ² /m ³
Element height	140 mm	220 mm	130 mm	200 mm
Material thickness	1 mm as standard			

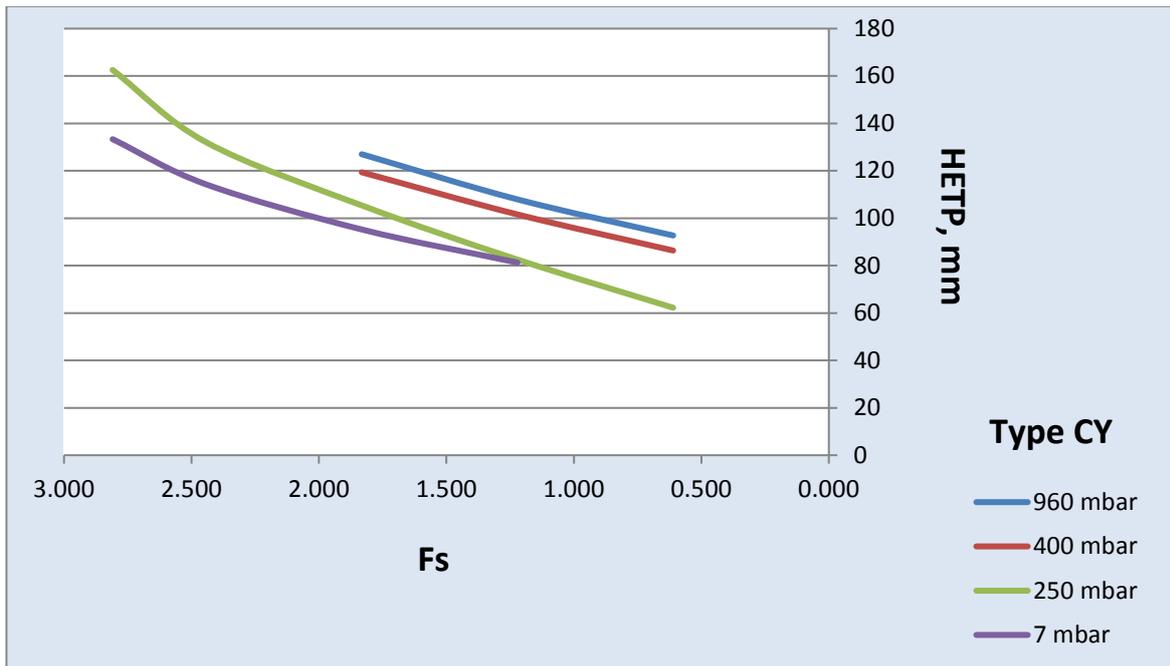
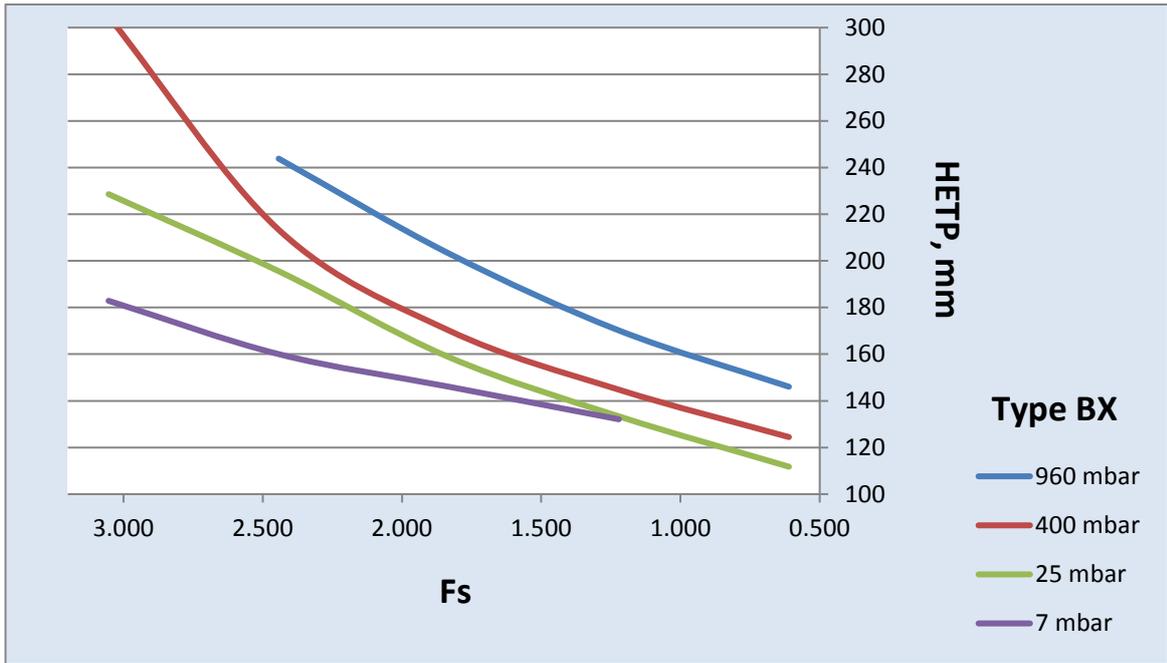


Gauze Packing

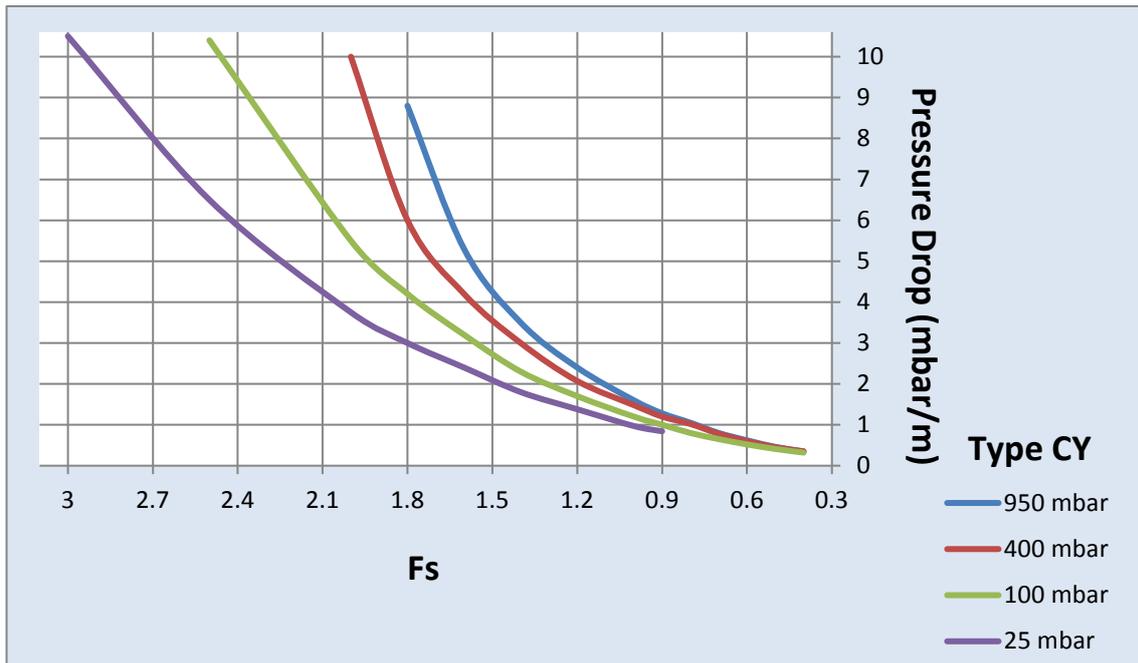
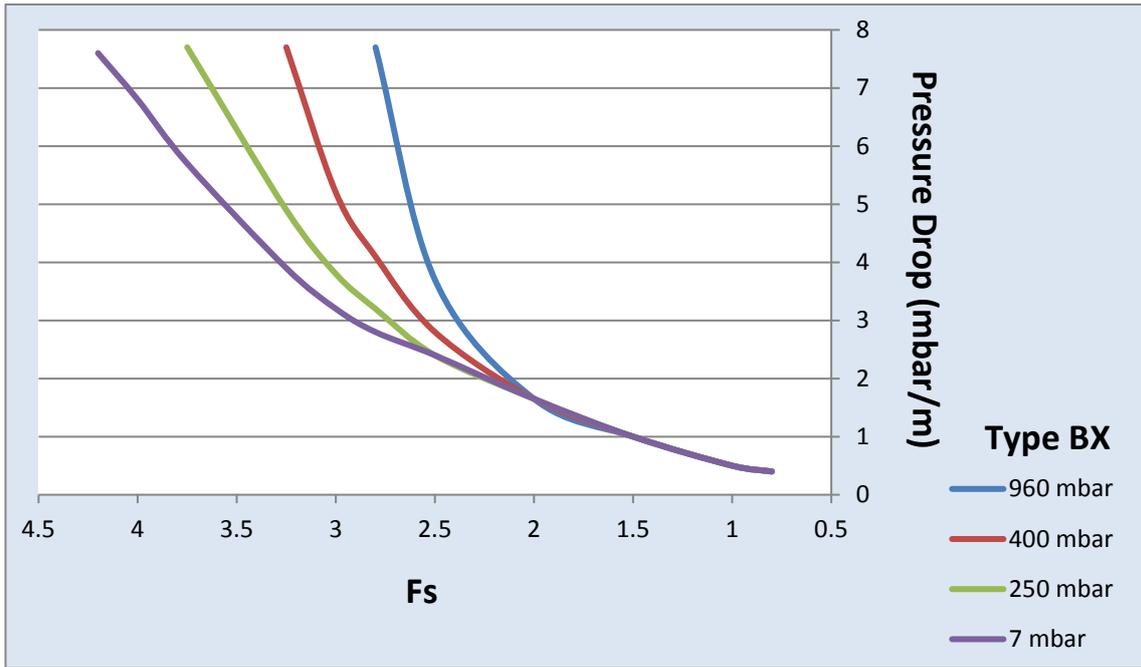
Gauze structured packing is recognized in distillation service for deep vacuum and low liquid rate applications. For processing specialty chemicals, pharmaceuticals and temperature sensitive materials, the very high efficiency and low pressure drop characteristics of this packing are unsurpassed. Used in thousands of diverse applications around the world, BX wire gauze structured packing is the most widely used. For even greater efficiency requirements, CY wire gauze structured packing is also available. Wire gauze structured packing is generally used in medium to small diameter columns for separations where the requirement is to achieve the maximum number of theoretical stages in the minimum column height. Because of capillary effect the wire gauze material provides an extremely wettable surface, resulting in excellent mass transfer efficiency, particularly at very low liquid rates.



Gauze Packing



Gauze Packing

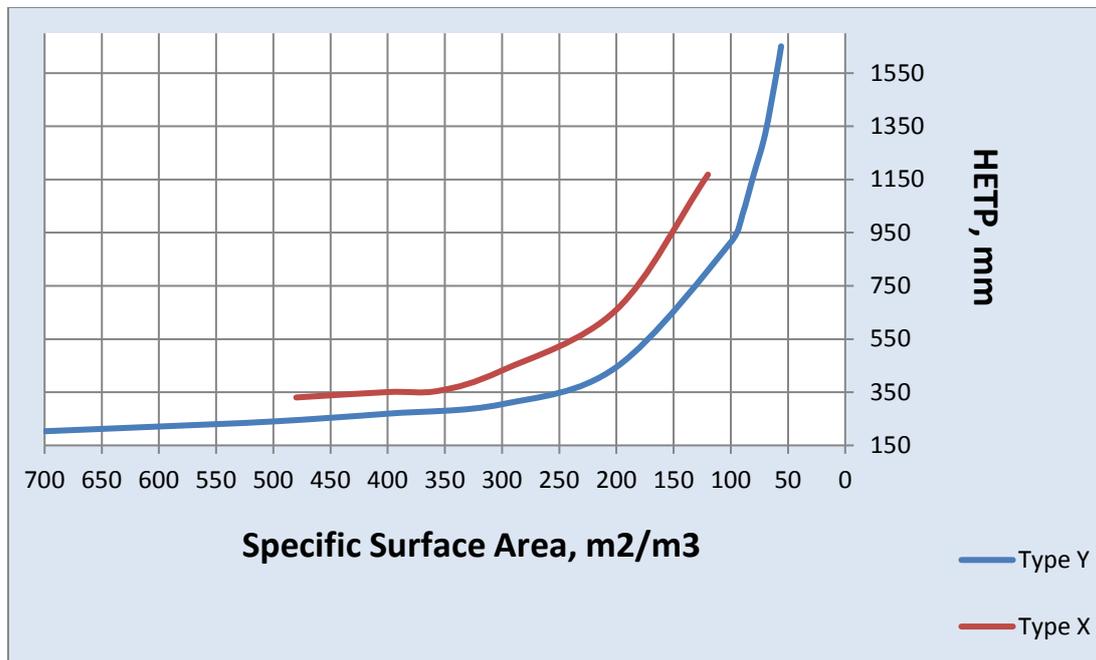


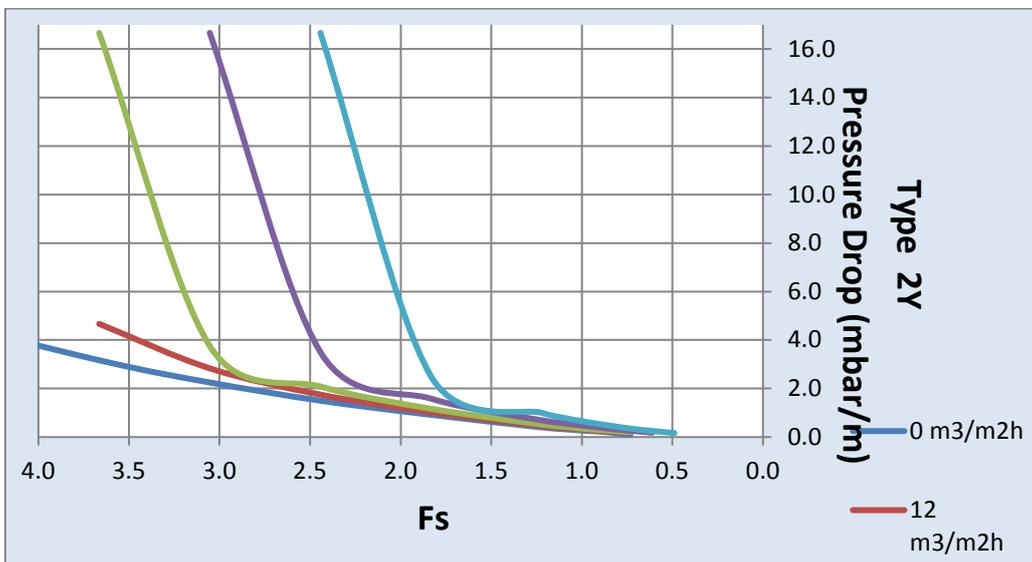
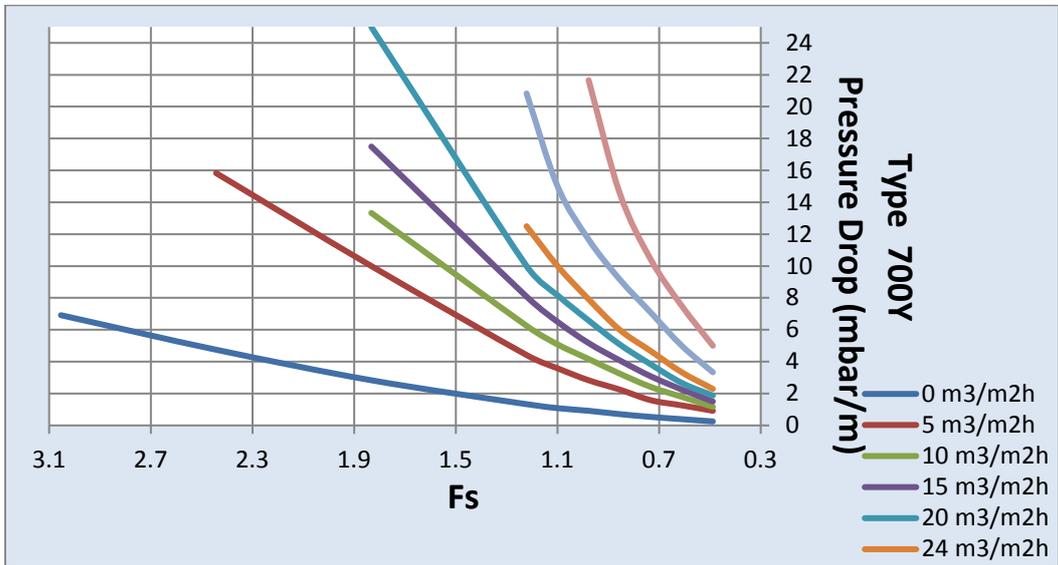
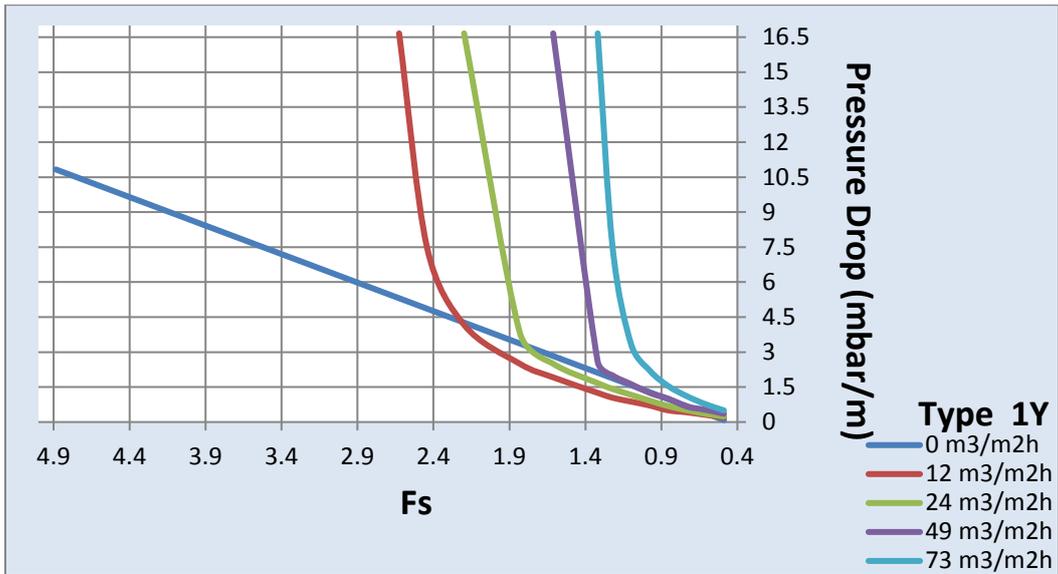
As the industry standard, **FLEXIPAC** structured packing has been used in thousands of columns worldwide. FLEXIPAC packing provides a lower pressure drop per theoretical stage and increased capacity compared to trays and conventional random packings. Columns packed with FLEXIPAC packing have resulted in:

- ❖ Improved product yields
- ❖ Improved product purities
- ❖ Reduced reflux ratio
- ❖ Increased throughput
- ❖ Lower pressure drop
- ❖ Reduced liquid holdup
- ❖ Increased heat transfer

FLEXIPAC structured packing is available in a variety of corrugation crimp sizes, each at two inclination angles. The Y designated packing have a nominal inclination angle of 45° from the horizontal, and are the most widely used. The X packing have a nominal inclination angle of 60° from the horizontal, and are used where high capacity and low pressure drop are the overwhelming requirements for a specific application. The benefit of the X packings is that they provide a lower pressure drop per theoretical stage for the same surface area.

FLEXIPAC surface area	m2/m3	55	80	110	155	225	250	295	350	420	500	725
Inclination Angle	45°	4Y	3.5Y	3Y	2.5Y	2Y	250Y	1.6Y	1.4Y/350Y	1Y	500Y	700Y
	60°	4X	3.5X	3X	2.5X	2X	250X	1.6X	1.4X/350X	1X	500X	700X





INTALOX. Structured packing was shown to have greater efficient capacity than other structured packings. A patented, aggressively textured surface, combined with patented corrugation reversals in each packing layer, along with other subtle proprietary geometric features, give Intalox structured packing a higher capacity.

INTALOX	5T	4T	3T	2T	1.5T	1T
Specific surface area	90 m ² /m ³	135 m ² /m ³	170 m ² /m ³	215 m ² /m ³	250 m ² /m ³	310 m ² /m ³
Approximate HETP	762 mm	610 mm	457 mm	406 mm	356 mm	279 mm