

**Ambani**  
**METALS**

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RELIABLE FOUNDATION, REMARKABLE FUTURES!

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**MASS TRANSFER SOLUTIONS**

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**TRAYS | PACKING | INTERNALS**

## About the Company

Ambani Metals is a leading name in the engineering and manufacturing of mass transfer products, including distillation trays, structured packing, random packing, and column internals. With a focus on providing high-quality and innovative solutions, we cater to diverse industries such as petroleum, chemicals, metallurgy, pharmaceuticals, and more. Our products are designed to optimize mass transfer processes, ensuring efficiency in distillation, absorption, and extraction applications. From our headquarters in Mumbai, India, we deliver state-of-the-art products globally, backed by exceptional customer service and a commitment to excellence.



## Our Mission

- Foster sustainability by developing efficient and eco-friendly solutions.
- Ensure high product quality and precision in all manufacturing processes.
- Provide innovative and reliable mass transfer solutions to industries worldwide.
- Deliver exceptional customer service through tailored solutions and prompt support.
- Maintain a strong commitment to continuous improvement and technological advancement.

## Our Vision

- Build long-term partnerships through trust, integrity, and reliable service.
- Achieve customer satisfaction by offering high-performance, cost-effective solutions.
- Become a global leader in the mass transfer industry, known for innovation and excellence.
- Expand our market presence globally while maintaining high standards of quality and safety.
- Continuously evolve our technologies to meet future industrial needs and sustainability goals.

## Table of Content

In the realm of process design, engineering, and manufacturing, the pivotal role of mass transfer processes cannot be overstated. Specifically, within the domains of distillation, absorption, and extraction technologies, the efficiency and success of these processes rely heavily on the intricate understanding and application of mass transfer principles.

### Distillation Trays

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- Bubble Cap Tray [AMB - BUB]
- Sieve Tray [AMB - SVE]
- Floating Valve Tray [AMB - FLO]
- Fixed Valve Tray [AMB - FIX]

### Structured Packing

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- Series Structured Packing [AMB - STRUC]
- High Capacity Vantage Structured Packing [AMB - STRUC Plus]
- Wire Mesh Structured Packing [AMB - MESH]
- Lab Structured Packing [AMB - LAB]

### Random Packing

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- Pall Ring [AMB - PALL]
- Raschig Ring [AMB - RR]
- Saddle Ring [AMB - SR]
- Cascade Mini Ring [AMB - CMR]

We also manufacture various other rings like - Super Raschig Ring, Cannon Ring, Dixon Ring, etc. (For more information view our **Random Packing page/catalogue**)

### Column Internals

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- Demister Pads [AMB - DEM]
- Flanged Type Collector [AMB - FTC]
- Collectors with Support Grid [AMB - SGC]
- Chimney Tray Type Collectors [AMB - CC]
- Vane Type Collector [AMB - VTC]
- Feed Pipe Distributor [AMB - FPD]
- Channel Type Distributor & Redistributor [AMB - CTD]
- Chimney Tray Distributor [AMB - CHM]
- Pan Type Distributor [AMB - PAN]
- Spray Nozzle Type [AMB - SPR]
- Trough Type Distributor [AMB - THR]
- L-L Extraction [AMB - LTD]
- Packing Support [AMB - SUP]
- Bed Limiters [AMB - BEL]



## Distillation Trays

Ambani Metals presents a selection of Distillation Trays designed for diverse separation purposes, accommodating different column dimensions. These trays are easily deployable and require minimal regular maintenance. Crafted from various metallic materials using punching and bending processes, we manufacture trays tailored for applications in industries such as hydrocarbon processing, chemical, desalination, petrochemical, and gas-liquid absorption units. Our specialized Column Internals encompass Floating Valve Tray, Bubble Cap Tray, Fixed Valve Tray, Grid tray, and Sieve Tray, catering to the varied needs of different sectors.

Collaborating with our skilled process engineers, we assist you in choosing the most suitable trays for your specific requirements. Furthermore, our proficient team is ready for prompt installation upon your request. Irrespective of the application, Ambani Metals offers random packing in diverse sizes and materials for distillation trays to ensure optimal performance. We provide a comprehensive array of tray sizes in common materials, all available for shipping at competitive prices.

### Bubble Cap Tray [AMB - BUB]

Bubble Cap Trays stand as the initial type of trays utilized in distillation procedures. Termed as "liquid sealed" trays, these trays incorporate vapor ascending through brief pipes called risers, each capped with a serrated edge or slots. Irrespective of the vapor flow rates, these trays sustain a steady liquid level, providing the benefit of accommodating a wide range of liquid flow rates.



#### Material of Construction

SS 304/L, SS 316/L, 904L, 254SMO, Duplex, Super Duplex, Titanium, Hastelloy, Monel, Inconel, Copper or any metal/alloy as per customer request

#### Key Characteristics

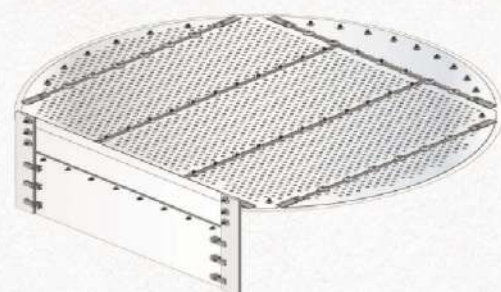
Bubble Cap Tray used for low liquid loads. Very wide turndown ratio

#### Available Size

Bubble Cap Trays are available up to upto 6m with 50 - 100 mm caps

### Sieve Tray [AMB - SVE]

A Sieve Tray is a variant of the cross-flow tray design, consisting of metal plates with perforations. Vapor ascends through these openings in the plate, while the liquid is held on the tray due to the flow of vapor. The configuration, quantity, and dimensions of the holes serve as key design parameters.



#### Material of Construction

SS 304/L, SS 316/L, 904L, 254SMO, Duplex, Super Duplex, Titanium, Hastelloy, Monel, Inconel, Copper or any metal/alloy as per customer request

#### Key Characteristics

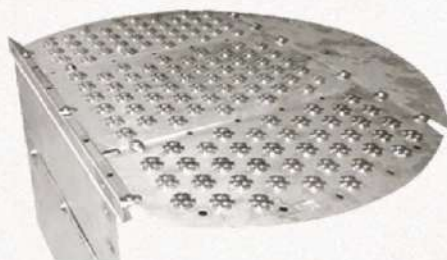
Low cost. Not flexible for wide range of turndown ratio. High capacity and efficiency, low pressure drop, ease of cleaning, and low capital cost

#### Available Size

Sieve Trays are available up to 6m diameter

## Floating Valve Tray [AMB - FLO]

Float valves demonstrate high efficiency in handling varying flow rates. The inclusion of legs serves the purpose of ensuring continuous valve opening to prevent weeping and enhance mass transfer, particularly under low flow conditions. In specific situations, both light and heavy valves may be employed. The floating valve tray features an adjustable opening area that automatically adapts to vapor flow rates, providing a broad range of operational flexibility.



Material of Construction

SS 304/L, SS 316/L, 904L, 254SMO, Duplex, Super Duplex, Titanium, Hastelloy, Monel, Inconel, Copper or any metal/alloy as per customer request

Available Size

Floating Valve Trays available up to 6m diameter

## Fixed Valve Tray [AMB - FIX]

A valve is a non-moving part that is cut out from trays at a set distance. Fixed valve trays have a big advantage because the fast horizontal vapor speed through a narrow area mixes well with liquids flowing across and pushes any carried particles to the side before they go up. This helps with a quick transfer of substances. The high vapor speed also stops solids from settling or causing problems. Since it doesn't have parts that move, it works well with substances that can corrode.



Material of Construction

SS 304/L, SS 316/L, 904L, 254SMO, Duplex, Super Duplex, Titanium, Hastelloy, Monel, Inconel, Copper or any metal/alloy as per customer request

Key Characteristics

Fixed valve tray used for wider turndown ratio and better resistance to fouling compared to Sieve Tray.

Available Size

Fixed Valve Trays are available up to 6m diameter

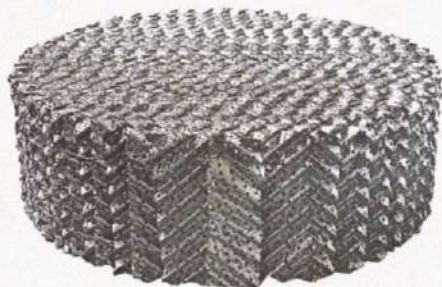
## Structured Packing

For over 20 years, Ambani Metals has been a leader in crafting high-performance Structured Packing, specifically engineered to streamline substance transfer in thermal fractionation processes. Our extensive expertise and continuous refinement have culminated in a product renowned for its superior functionality and reliability.

Utilizing carefully selected thin metal sheets or mesh, our Structured Packing boasts a meticulously designed pattern, maximizing surface area and open spaces. This innovative configuration facilitates optimal mixing of gases and liquids, ensuring seamless substance transfer while maintaining uniform distribution and accommodating varying liquid levels. Trust Ambani Metals' Structured Packing to revolutionize your fractionation processes, delivering unparalleled efficiency and performance.

## AMB - STRUC Series Structured Packing [AMB - STRUC]

The AMBSTRUC structured packing is a useful and affordable product used in various industries today. It has good qualities like being able to predict how much substance it can handle, not causing too much pressure, working efficiently, and being flexible. This makes it important for separating different substances. The following sizes are available in X and Y type: AMBSTRUC 125 X, AMBSTRUC 125 Y, AMBSTRUC 210 X, AMBSTRUC 210 Y, AMBSTRUC 250 X, AMBSTRUC 250 Y, AMBSTRUC 350 X, AMBSTRUC 350 Y, AMBSTRUC 500 X, AMBSTRUC 500 Y, AMBSTRUC 750 X, AMBSTRUC 750 Y.



Material of Construction	Stainless Steel, Nickel Based Alloys, Hastelloy, Titanium, Tantalum, Monel
Application	Standard application, moderate vacuum to high pressure, low to high liquid loading
Available Size	F-factor : 1.2 to 3.5 Surface Area : 125 to 750 m <sup>2</sup> / m <sup>3</sup> NTSM: 1 to 4.4

## High Capacity Vantage Structured Packing [AMB - STRUC Plus]

Ambani's AMBSTRUC Plus Series structured packing is a special kind of material with a unique texture that helps liquids spread out really well. It controls how gases move and makes sure liquids don't get stuck in one place. This type of structured packing is often used in columns to make them hold more substance, reduce pressure, and can replace other materials like sheet metal, random packings, and trays.



Packing Types	AMB-HC 2.SL / AMB-HC 3.SL / AMB-HC 4 .SL / AMB-HC 6.2L / AMBHC 7.SL / AMB-HC 10.0L
Surface Area (m <sup>2</sup> /m <sup>3</sup> )	250 / 300 / 350 / 420 / 500 / 750
Application	Very low pressure drop and heat sensitive systems, high liquid & vapour loading
Material of Construction	Stainless Steel, Nickel Based Alloys, Hastelloy, Titanium, Tantalum, Monel
Key Characteristics	Available in both sheet metal and wire mesh, eliminates abrupt change in flow direction, eliminates premature build up of liquid, provides up to 50% higher capacity at the same NTSM compared to conventional structured packing, significantly lower pressure drop compared to conventional packing

## Wire Mesh Structured Packing [AMB - MESH]

Wire mesh packing has been used in industries for over 10 years and has proven effective for challenging separation tasks. It's typically used in smaller to medium-sized columns where a lot of theoretical stages are needed in a small column space.



Packing Types	AMB-WM 5.0M / AMB-WM 7.5L
Surface Area (m <sup>2</sup> /m <sup>3</sup> )	500 / 750
Application	High vacuum to low pressure drop requirement. Fatty alcohols, Processing of specialty chemicals, Monomers from plastics, Pharmaceuticals, Fine Chemicals, Isomer mixture separation.
Key Characteristics	Excellent wetting characteristics, Large number of theoretical stages, Low overall height, Capillary effect of special wire mesh, High fractionation efficiency and capacity, Large number of theoretical stages F-factor : 1.5 to 2.2 Surface Area : 500 to 750 m <sup>2</sup> /m <sup>3</sup> NTSM : 6 to 8.5

## Lab Structured Packing [AMB - LAB]

Ambani Metals also has special lab packing series AMB-LAB packing for research and development trials and pilot unit distillation. This packing is really good at its job with very little pressure drop (0.1 to 0.4 mbar per stage). It works well with small amounts of liquid (0.05 m<sup>3</sup> per square meter per hour), and it has a large surface area and NTSM.



Series	AMBPAK - Lab 10, AMBPAK - Lab 20
Material of Construction	Stainless steel or any Metal/Alloy according to customer request
Application	Can be used for High vacuum to 2 mbar
Key Characteristics	NTSM : 20 - 40 Diameter : 25 - 100 mm

## Random Packing

Random packings are commonly used in gas, refinery, and chemical plants for absorption, stripping, and fractionation operations. They are a cost-effective way to increase a tower's capacity and efficiency.

Ambani Metals has a lot of experience and knowledge in this area, providing the best solutions for your critical applications. Using specially designed random packings from Ambani Metals can boost your tower's capacity without sacrificing efficiency. Their expert engineers can help you improve the performance of both new and existing towers, offering reliable solutions tailored to your needs.

Ambani Technology offers random packings in different sizes and materials like metal, plastic, or ceramic, depending on your specific requirements. They provide various packing sizes in common materials at competitive prices, ensuring quick delivery to minimize downtime for customers.

## AMBPALL Pall Ring [AMB - PALL]

Pall rings were created by BASF AG in the 1940s, inspired by the Raschig ring. People still use them a lot in different industries because they can hold a good amount of stuff without needing much pressure. Metal Pall Rings come in different types like Stainless Steel, Carbon Steel, Aluminium, and Copper.

### METAL PALL RING

Size	10 to 75 mm
Bulk Density	140 - 520 kg/m <sup>3</sup>
Surface Area	120 - 500 m <sup>2</sup> /m <sup>3</sup>
NTSM	1.8 to 2.2
Thickness	0.3 to 0.6 mm

### PLASTIC PALL RING

Size	16 to 90 mm
Bulk Density	43 - 95 kg/m <sup>3</sup>
Surface Area	985 - 340 m <sup>2</sup> /m <sup>3</sup>
NTSM	1.8 to 2.5
MOC	PP, PVDF, PTFE & PFA

### CERAMIC PALL RING

Size	25 to 50 mm
Bulk Density	535 - 640 kg/m <sup>3</sup>
Surface Area	120 - 220 m <sup>2</sup> /m <sup>3</sup>
NTSM	1.4 to 1.8



## AMBRR Raschig Ring [AMB - RR]

We also offer specially designed Lab packing for R&D trails and pilot unit distillation. These are very efficient packing with very low pressure drop 0.1 to 0.4 mbar/stage, suits low liquid load 0.05 m<sup>3</sup>/m<sup>2</sup>h, higher surface area and NTSM.

### METAL RASCHIG RING

Size	10 to 80 mm
Bulk Density	130 - 540 kg/m <sup>3</sup>
Surface Area	71 - 430 m <sup>2</sup> /m <sup>3</sup>
NTSM	1.5 to 2
Thickness	0.3 to 1 mm

### PLASTIC RASCHIG RING

Size	25 to 50 mm
Bulk Density	86 - 92 kg/m <sup>3</sup>
Surface Area	95 - 205 m <sup>2</sup> /m <sup>3</sup>
NTSM	2.0 to 2.5
MOC	PP, PVDF, PTFE & PFA

### CERAMIC RASCHIG RING

Size	15 to 75 mm
Bulk Density	500 - 710 kg/m <sup>3</sup>
Surface Area	70 - 330 m <sup>2</sup> /m <sup>3</sup>
NTSM	1.4 to 1.7



## AMBSR Saddle Ring [AMB - SR]

Metal Saddle Rings are a type of random tower packing suitable for high-capacity and highperformance applications.

### METAL SADDLE RING

Size	15 to 70 mm
Bulk Density	90 - 350 kg/m <sup>3</sup>
Surface Area	60 - 285 m <sup>2</sup> /m <sup>3</sup>
NTSM	2.2 to 2.5
Thickness	0.3 to 0.6 mm





## PLASTIC SADDLE RING

Plastic Saddle Ring is sometimes called a super saddle ring or plastic super Intalox saddle. It looks like a saddle and is an improved version of another plastic Intalox saddle. The difference is that it has a wavy edge instead of a smooth one. This change makes more spaces between the packing and helps the gas and liquid spread out better in the layers.

Size	25 to 75 mm
Bulk Density	48 - 83 kg/m <sup>3</sup>
Surface Area	89 - 210 m <sup>2</sup> /m <sup>3</sup>
NTSM	2 to 2.5
MOC	PP, PVDF, PTFE & PFA



## CERAMIC SADDLE RING

Ceramic saddles are often used as random packings, especially when dealing with corrosive substances. They have a smooth surface that makes them resistant to chemicals and stable. Saddles are a cost-effective choice and are commonly used in places like acid gas scrubbers, dryer towers, and tail gas scrubbers.

Size	13 to 75 mm
Bulk Density	545 - 725 kg/m <sup>3</sup>
Surface Area	91 - 625 m <sup>2</sup> /m <sup>3</sup>
NTSM	1.8 to 2.6

## Cascade Mini Ring [AMB - CMR]

The Cascade Mini Ring is a type of random packing crafted from materials like carbon steel or stainless steel. It typically looks like a cylinder with multiple open windows on the surface and an expanded, trumpet-shaped opening at one end. This random packing is known for its improved efficiency in mass transfer and better separation results compared to Metal Intalox Saddle and Metal Raschig Ring.

## CASCADE MINI RING

Size	10 to 50 mm
Bulk Density	150 - 270 kg/m <sup>3</sup>
Surface Area	50 - 250 m <sup>2</sup> /m <sup>3</sup>
NTSM	2.2 to 2.5
Thickness	0.3 to 0.6 mm



## Column Internals

Ambani Metals has a special team focused on improving the movement of substances in columns. They create, produce, and provide materials for columns that are crucial for important uses. In a column system, the materials inside can work best when they are used with the right distributors, collectors, supports, and other parts to make sure liquids and gases spread out properly.

We make these materials using high-quality raw materials and advanced techniques. Our offered materials are known for excellent performance, needing little maintenance, being strong, precise in size, and having a small design. We've created a variety of these materials that are used in industries like oil processing, chemicals, desalination, petrochemicals, and gas-liquid absorption units.

### Demister Pads [AMB - DEM]



Demister pads are made from high-quality raw materials and advanced technology, ensuring efficient operation with reduced time and energy consumption. They are designed to meet current industry standards and trends, making them suitable for various applications in sectors like petroleum, chemicals, metallurgy, automotive and pharmaceuticals. Mesh demisters can be installed horizontally or vertically, with horizontal flow providing a 30% higher capacity, allowing for a more compact design.

**Key Characteristics :** These pads are constructed from durable materials and comply with industry standards. They are versatile, finding use across multiple sectors, and are available in various sizes and models. Additionally, the horizontal installation offers 30% greater capacity than vertical flow.

## Liquid Collectors

Liquid collectors are essential in industrial processes, efficiently gathering and directing liquids within systems. Available in designs like troughs and ring types, they are made from durable materials to withstand harsh conditions. These collectors optimize flow distribution and minimize liquid loss while allowing for total or partial liquid draw-off. By enhancing operational efficiency, they significantly contribute to process performance and product quality.

### Flanged Type Collectors [AMB - FTC]



Flanged type collectors are designed for easy installation between column flanges, ideal for small to medium-diameter columns. They efficiently collect liquids and direct them for further processing, ensuring minimal pressure drop. Ambani's flanged collectors are built for reliability and ease of maintenance, making them suitable for a range of industrial applications.

**Key Characteristics :** Flanged type collectors are designed for quick and easy installation between column flanges, making them ideal for small to medium-diameter columns. They ensure efficient liquid collection with minimal pressure drop and provide long-term reliability due to their robust construction.

## Collectors With Support Grid [AMB - SGC]



Collectors with support grids efficiently gather and channel liquids while providing structural support to the packing. They ensure even liquid distribution and stabilize the packing to prevent shifting, essential for maintaining optimal process performance. Ambani offers durable and efficient solutions for diverse industrial applications.

**Key Characteristics :** Collectors with support grids combine efficient liquid collection with strong packing support. They ensure uniform liquid distribution and maintain the stability of the packing, even under high throughput. Designed for durability, they can be customized for various column sizes and process needs.

## Chimney Tray Type Collectors [AMB - CTC]



Typically utilized for large diameter columns with high liquid throughput, this collector is designed to efficiently manage liquid distribution. Its robust construction ensures durability and reliability in demanding operational environments. Available in both welded and bolted designs, it offers versatility to meet various installation requirements.

**Key Characteristics :** This collector is engineered to collect liquid from above the bed and channel it to the distributor below, ensuring effective distribution across the column. It features a lateral downcomer shaft that facilitates the flow of collected liquid, optimizing throughput and minimizing the risk of flooding.

## Vane Type Collectors [AMB - VTC]



Vane Type Collectors are designed to enhance liquid distribution in large diameter columns while minimizing pressure drops. Their efficient design makes them suitable for various industrial applications.

**Key Characteristics :** Featuring strategically positioned vanes, these collectors direct liquid flow for even distribution, reducing turbulence and enhancing separation efficiency. They can handle high liquid throughput and contribute to lower pressure losses, optimizing overall system performance.

## Liquid Distributor & Redistributors

Liquid distributors and redistributors play a critical role in ensuring uniform distribution of liquids over the packing within towers or columns. These devices facilitate the proper wetting of the packing surface, enhancing mass transfer efficiency. A well-designed liquid distributor ensures even flow across the entire cross-section of the tower, preventing channeling or dry spots. Redistributors, on the other hand, are used to collect and redistribute the liquid, often at different stages within a column, to maintain consistent performance throughout the process. Ambani provides a range of liquid distributors and redistributors, designed to meet the varying needs of different applications, ensuring optimal process efficiency and performance.

## Feed Pipe Distributor [AMB - FPD]



The Pipe Type Distributor features a simple design that works well for managing high vapor flow. Its pipe-based construction allows for a large volume of vapor to flow through efficiently.

**Key Characteristics :** These distributors can handle liquid loads from 20 to 25 m<sup>3</sup>/m<sup>2</sup>h and are suitable for columns with diameters of 500 mm or more. Though they can be designed for smaller columns, installation becomes more difficult. They can be produced as a single unit or with flanged arms for easier installation in restricted spaces.

## Channel Type Distributor & Redistributor [AMB - CTD]



Channel-type distributors are crucial in packed columns, ensuring even liquid distribution across packing for optimal gas interaction. Redistributors enhance flow uniformity and prevent maldistribution, boosting overall process efficiency.

**Key Characteristics :** These distributors feature a flexible design with multiple channel configurations for adaptability to various column sizes. Made from durable materials, they withstand harsh conditions and ensure reliable performance. Their design promotes stable liquid distribution, which is essential for maintaining high mass transfer efficiency. Overall, these characteristics contribute to enhanced operational efficiency and process effectiveness.

## Chimney Tray Collector - Distributor [AMB - CHM]



Chimney Collector Trays are used to collect liquid from packed beds during tray transitions. They are crucial in processes where liquid needs to be drawn off, either partially or fully. Various designs are available to accommodate different vapor and liquid flow rates.

**Key Characteristics :** Chimney trays are ideal for handling large volumes of liquid in bigger columns. They serve as both distributors and redistributors, ensuring effective liquid collection and distribution. The chimney design plays a vital role in managing liquid and vapor flow, as well as pressure drop. Some trays can be designed without holes for full or partial liquid draw-off.

## Pan Type Distributor [AMB - PAN]



Pan-type distributors are devices used in packed columns to evenly distribute liquids across packing material, ensuring optimal contact with gas phases. Their flat, pan-like design features multiple outlets for uniform liquid flow, enhancing mass transfer efficiency and overall process performance.

**Key Characteristics :** These distributors have a simple, robust design for easy installation and maintenance. They effectively handle high liquid loads and are suitable for various column diameters. Made from durable materials, they withstand harsh conditions and minimize pressure drop, contributing to improved system efficiency.

## Spray Nozzle Type Distributor [AMB - SPR]



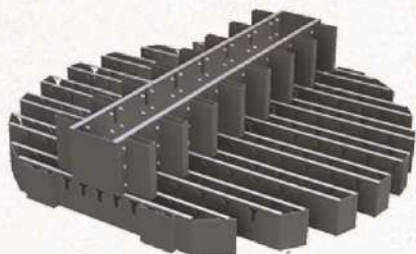
A spray nozzle distributor is a widely used type of liquid distributor in packing towers. It features a compact design that sprays liquid onto the tower packing through nozzles when pressure is applied. This distributor is increasingly utilized in processes that involve heat exchange and scouring.

**Key Characteristics :** Unlike traditional distributors that rely on distribution holes, the spray nozzle type uses cone spray nozzles to uniformly distribute liquid. One significant advantage of this design is its ability to handle liquids containing solid particles without the risk of clogging the nozzles. The spray nozzle distributor comprises a main header, laterals with downpipes, and spray nozzles.

**Distributor Liquid Loading :** Ranges from 2 to 200  $\text{m}^3/\text{m}^2\text{h}$

**Distributor Size :** Up to 6 m

## Trough Type Distributor [AMB - THR]

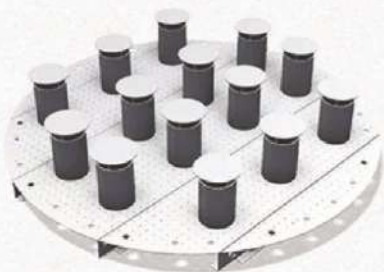


The liquid distributor LO is designed with troughs that feature lateral notches for discharge openings. These troughs are supplied by a parting box, enhancing the distributor's resistance to fouling and broadening its range of applications. The trough-type distributor includes a pre-distribution opening, known as a "parting box," positioned above several evenly spaced narrow troughs.

**Key Characteristics :** This trough-type distributor is built to handle very high liquid loads and larger column diameters, typically starting from 900 mm and above. It can accommodate both bottom holes and tube constructions. In the top-through distributor, liquid flows through bottom channels, promoting even distribution across the packing surface.

It is suitable for both structured and random packing, with liquid loads varying from 2  $\text{m}^3/\text{m}^2\text{hr}$  to 50  $\text{m}^3/\text{m}^2\text{hr}$ . The simplicity of this design contributes to effective seating, enhanced leveling, and ease of installation.

## L- L Extraction Distributor [AMB - LTD]



These collectors are used in packed liquid-liquid extraction columns for both continuous and dispersed phases, effectively preventing emulsions, especially in cases of low surface tension. Their design enhances the separation process, ensuring optimal recovery of desired compounds. By facilitating smooth liquid flow and minimizing resistance, these collectors contribute to the overall efficiency of extraction operations.

**Key Characteristics :** They allow for selective compound extraction based on solubility in two immiscible liquids, showcasing high efficiency and versatility across various industries. This method is scalable for both laboratory and industrial applications, utilizing equipment such as mixers and extraction columns. The collectors are designed for easy integration into existing systems, making them ideal for a range of operational scales and environments.

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## Packing Support [AMB-SUP]



Packing support systems are crucial in packed columns, providing a stable foundation for packing material while allowing optimal liquid and gas flow. They prevent packing movement, ensuring efficient mass transfer and enhancing overall process performance.

**Key Characteristics :** Typically made from durable materials like stainless steel or plastic, packing supports feature openings for fluid flow and can be customized for various column diameters and packing types. Their robust design ensures stability and longevity, contributing to reliable operation.

## Bed Limiters [AMB - BEL]



Bed limiters are devices used in packed columns to maintain the height and integrity of the packing material during operation. They prevent packing from shifting or settling, ensuring uniform flow and efficient mass transfer. By confining the packing material, bed limiters help optimize the performance of the column and improve process reliability.

**Key Characteristics :** Bed limiters are typically constructed from durable materials, such as stainless steel or plastic, to withstand harsh operating conditions. They come in various designs, including perforated plates or screens, allowing for optimal fluid flow while effectively containing the packing. Customizable for different column sizes and packing types, bed limiters contribute to stable operation and enhanced process efficiency.

## Industry Expertise & Certifications

As an ISO 9001:2015 and MSME certified company, Ambani Metals brings unparalleled expertise and a commitment to quality assurance. Our certified processes ensure that each product meets the strictest international standards for reliability, durability, and performance. We are proud to serve clients across multiple industries, including automotive, chemical, petrochemical, oil & gas, aerospace, pharmaceutical, and consumer goods.

### ISO CERTIFICATE



### MSME CERTIFICATE



### QUALITY CERTIFICATE



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