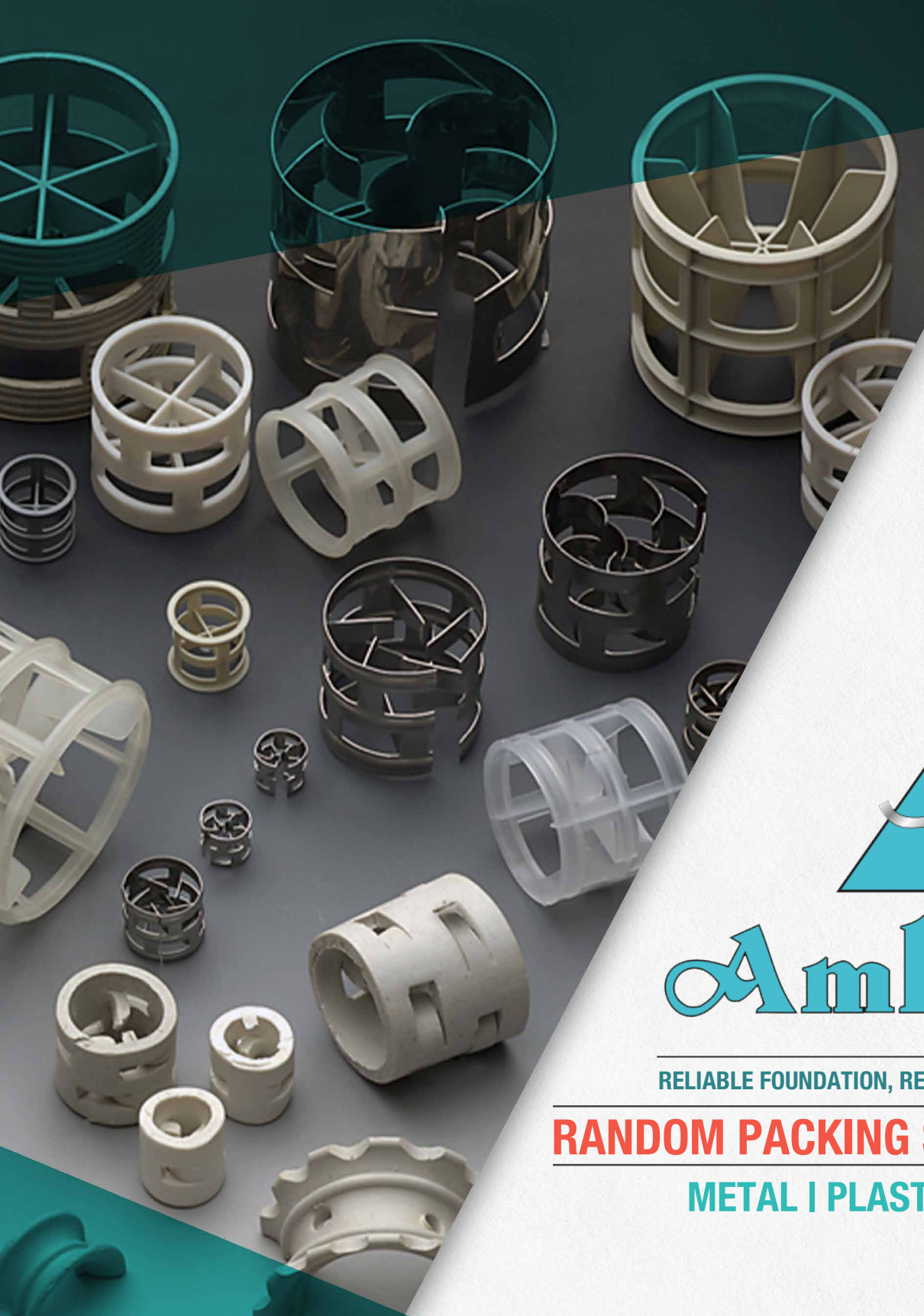

Ambani METALS

RELIABLE FOUNDATION, REMARKABLE FUTURES!

RANDOM PACKING SOLUTIONS

METAL I PLASTIC I CERAMIC

Table of Content

Ambani Metals has been offering Random Packing for more than 20 years. You can purchase all standard random packings from us. Additionally, based on your drawings and requirements, we can customize them for you. We supply all types of random packings in metallic, plastic, and ceramic materials, providing high performance in coal gas, petroleum, chemical, and other fields for distillation, absorption, purification, and other processes.

Head Office
Office no. 2, 2nd floor, Nebula Tower, Sindhi Lane, Mumbai - 40004, Maharashtra, India.

Email
sales@ambanimetal.com
export@ambanimetal.com

Contact Person
Jay Shah - Domestic Division - +91 83692000178
Manan Bokadia - Export Division - +91 9930498865

Website
http://www.ambanimetal.com

Pall Ring

The Pall ring is considered the second generation of tower packing and is widely used. It has rectangular windows designed on it, similar to the Raschig ring. The Pall ring has a special design with multiple blades that increases the internal surface area and enhances fluid exchange. These blades are bent inwards, touching each other. The windows on the ring's wall help distribute gas and liquid more effectively, resulting in a larger internal surface compared to the Raschig ring. Under the same pressure conditions, the Pall ring can handle 50% more material than the Raschig ring. Pall rings can be made from metal, plastic, or ceramic materials, all of which have excellent corrosion resistance for use in corrosive environments.

Features

- 20–40% packing volume saving
- 20% higher mass transfer efficiency
- 50% pressure drop reduction under the same handling capacity
- 50% increased handling capacity than Raschig ring under the same pressure drop

Application

- **Metal Pall Ring:**
- Vacuum distillation towers
- Dealing with heat-sensitive materials
- Dealing with easy decomposition materials
- Dealing with easy polymerization materials
- Dealing with easy carbonization materials
- **Plastic Pall Ring:** Medium and low temperature distillation, absorption and washing towers in chemical, petroleum, chlor-alkali, coal gas and environmental protection industries
- **Ceramic Pall Ring:** Contacting packing for carbon dioxide degassing tower, acid fog purifying tower, ozone contact reaction tower and other reaction towers

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, etc
- Plastic - PP, RPP, CPVC, PVDF and PVC.
- Ceramic

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Table 1: Technical Parameters of Metal Pall Ring						
Item	Ring Diameter (mm)	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Packing Factor (m^{-1})
APM-01	16	16 × 16 × 0.4	239	92.8%	143000	299
APM-02	25	25 × 25 × 0.6	219	93.4%	55900	269
APM-03	38	38 × 38 × 0.8	129	94.4%	13000	153
APM-04	50	50 × 50 × 1.0	112	94.9%	6500	131
APM-05	76	76 × 76 × 1.2	72	95.1%	1830	84

Note: Bulk density is different according to different materials

Table 2: Technical Parameters of Plastic Pall Ring						
Item	Ring Diameter (mm)	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Packing Factor (m^{-1})
APP-01	16	16 × 16 × 1.1	188	91%	112000	249
APP-02	25	25 × 25 × 1.2	175	90%	53500	239
APP-03	38	38 × 38 × 1.4	115	89%	15800	220
APP-04	50	50 × 50 × 1.5	112	90%	6500	154
APP-05	76	76 × 76 × 2.6	73	92%	1930	94

Note: Bulk density is different according to different materials

Table 3: Technical Parameters of Ceramic Pall Ring						
Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Quantity (pcs/m^3)	Bulk Density (kg/m^3)	Packing Factor (m^{-1})
APC-01	25 × 25 × 3	238	73%	54000	520	565
APC-02	38 × 38 × 4	197	75%	13400	570	365
APC-03	50 × 50 × 5	154	78%	6800	550	252
APC-04	80 × 80 × 8	116	80%	1950	520	146

Raschig Ring



Raschig ring is the first generation tower packing. It has simple structure and economical cost to be widely accepted and used in various fields. The material of Raschig ring can be metal, plastic and ceramic. The height of Raschig ring is same to the diameter. It can be made into 6–150 mm. And the most popular sizes ranges from 25 mm to 75 mm. Because its mass transfer efficiency is low and handling capacity is small, so it is replaced than other high efficient random packings.

Features

- Acid and alkali resistance
- Temperature resistance
- Simple structure and low cost

Application

- Washing tower, actifier column
- Drying tower, absorption tower

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, etc

Table 4: Technical Parameters of Metal Raschig Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ARM-01	16 × 16 × 0.5	350	90%	660	2480000	460
ARM-02	25 × 25 × 0.8	220	93%	610	55000	290
ARM-03	50 × 50 × 1.0	110	95%	430	7000	130
RRM-04	80 × 80 × 1.0	60	96%	400	1820	80

Table 5: Technical Parameters of Ceramic Raschig Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ARC-01	16 × 16 × 3	250	66%	820	178000	870
ARC-02	25 × 25 × 3	147	78%	510	42000	310
ARC-03	38 × 38 × 4	100	80%	458	12000	195
ARC-04	50 × 50 × 5	80	81%	465	5600	156
ARC-05	76 × 76 × 9	62	75%	575	1700	147

Table 6: Technical Parameters of Plastic Raschig Ring			
Item	Diameter × Height × Thickness (mm)	Bulk Quantity (pcs/m³)	Bulk Density (kg/m³)
ARP-01	25 × 25 ×1	48500	88
ARP-02	50 × 50 × 1.5	6500	65

Super Raschig Ring

The Super Raschig ring, also known as the double-layer conjugate ring, is an upgraded version of the Raschig ring. It's made from materials like carbon steel, stainless steel, and aluminum alloy steel. Compared to traditional random packing, it can hold 33% more material, has 67% less pressure drop, and is 12% more efficient in separating substances. It has a thinner wall, can handle high temperatures, allows for a high flow rate, and has low pressure drop with excellent filtering efficiency. It's particularly useful in processes like vacuum distillation and for handling materials that easily carbonize, polymerize, or decompose. This type of ring finds applications in industries like petroleum, chemical, fertilizer, and environmental protection.

Features

- 33% higher loading capacity
- 67% pressure drop
- 12% improved separating efficiency

Application

- Petroleum, chemical, chlorine-alkali, gas, environmental protection fields.

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, etc.

Table 7: Technical Parameters of Plastic Raschig Ring				
Item	Specs (mm)	Bulk Quantity (pcs/m³)	Surface Area (m²/m³)	Void Fraction
AR+P-01	50 × 45 × 0.6	9800	86	95%
AR+P-02	76 × 70 × 0.6	2480	81	96%

Cascade Mini Ring

The Cascade Mini Ring has a special flanging structure at the top, boosting its strength and enhancing directional flow by disrupting the packing symmetry. This design increases the space between the rings, ensuring even distribution of liquid and gas, resulting in efficient mass transfer. Compared to the Pall Ring, the Cascade Mini Ring has a half-height diameter ratio, reducing pressure drop and increasing flow.

Cascade mini ring is a sort of random pressing made of Carbon Steel or Stainless Steel. It is regularly a cylinder with a few windows open on a surface level and a trumpet-molded extended opening toward one side. This sort of random packing has higher mass transfer efficiency and preferable separation impact over the metal intalox saddle and metal raschig ring.

Features

- Point contact of gas and liquid
- Larger void fraction and low pressure drop
- Half height-diameter-ratio of pall ring
- Improved mechanical strength

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, etc

Application

- Petroleum, chemical, chlorine-alkali, gas, environmental protection fields

Table 8: Technical Parameter of Metal Cascade Mini Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Quantity (pcs/m^3)	Bulk Density (kg/m^3)	Packing Factor (m^{-1})
CMRM-01	25 × 12.5 × 0.5	221	95%	383	98120	257
CMRM-02	38 × 19 × 0.6	153	96%	325	30040	173
CMRM-03	50 × 25 × 0.8	109	96%	308	12340	123
CMRM-04	76 × 38 × 1.2	72	96%	306	3540	81

Table 9: Technical Parameter of Plastic Cascade Mini Ring						
Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Quantity (pcs/m^3)	Bulk Density (kg/m^3)	Packing Factor (m^{-1})
CMRP-01	25 × 13 × 1.2	228	90%	98	81500	313
CMRP-02	38 × 19 × 1.4	133	93%	58	27200	176
CMRP-03	50 × 25 × 1.5	114	94%	55	10740	143
CMRP-04	76 × 37 × 3.0	90	93%	698	3420	112

Table 10: Technical Parameters of Ceramic Cascade Mini Ring						
Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Quantity (pcs/m^3)	Bulk Density (kg/m^3)	Packing Factor (m^{-1})
CMRC-01	25 × 15 × 3	210	73%	650	72000	540
CMRC-02	38 × 23 × 4	153	74%	630	21600	378
CMRC-03	50 × 30 × 5	102	76%	580	9100	232
CMRC-04	76 × 46 × 9	75	78%	530	2500	158

Intalox Saddle Ring

Intalox saddle rings are commonly used in many fields and come in metal, plastic, and ceramic versions. They're made by a continuous extrusion process. Compared to Raschig rings, they allow for high flow rates, low pressure drops, and efficient performance. They're stronger and stiffer than pall rings. The design of intalox saddle rings creates larger spaces for fluid flow, reducing resistance.

Metal intalox saddle rings are strong and durable. Ceramic pall rings combine the benefits of annular and saddle rings, improving gas and liquid distribution and resisting acids and high temperatures. They're suitable for various acids and solvents, except hydrofluoric acid.

Features

- Inorganic and organic acid & other organic solvent resistance
- High temperature resistance
- Low resistance & diffusivity ratio
- High density

Application

- Drying tower, absorption tower, cooling tower, washing tower and regeneration towers in chemical, metallurgy, coal gas and environment protection industries

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, etc.
- Plastic - PE, PVDF, CPVC, PP, PVC, RPP
- Ceramic

Table 11: Technical Parameters of Metal Intalox Saddle Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ASRM-01	25 × 20 × 0.6	185	96%	409	101160	209
ASRM-02	38 × 30 × 0.8	112	96%	365	24680	137
ASRM-03	50 × 40 × 1.0	75	96%	291	10400	85
ASRM-04	76 × 60 × 1.2	58	97%	245	3320	63

Table 12: Technical Parameters of Plastic Intalox Saddle Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ASRP-01	25 × 13 × 1.2	288	85%	102	97680	467
ASRP-02	38 × 19 × 1.2	264	95%	91	25200	309
ASRP-03	50 × 25 × 1.5	250	96%	75	9400	282
ASRP-04	76 × 38 × 3.0	200	97%	59	3700	220

Table 13: Technical Parameters of Ceramic Intalox Saddle Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ASRC-01	16 × 12 × 2	450	70%	710	382000	1311
ASRC-02	25 × 19 × 3	250	74%	610	84000	617
ASRC-03	38 × 30 × 4	164	75%	590	25000	389
ASRC-04	50 × 40 × 5	142	76%	560	9300	323
ASRC-05	76 × 57 × 9	91	78%	520	1800	194

Super Intalox Saddle Ring

The Super Intalox saddle ring is a more advanced version of the regular Intalox saddle ring. It's made for plastic and ceramic materials. Instead of smooth curves, it has serrated edges and holes on the back. This design creates smoother channels for fluid flow and better distribution of liquids. It also reduces resistance to gas flow and increases efficiency in transferring mass.

Features

- High void fraction, high flooding volocity and high
- Operating flexibility
- Uniform liquid and gas distibution
- Low pressure drop and high flux

Application

- Dewaxing oil refined extraction, demethanation, phthalic anhydride refining processes in chemical, petroleum, chlor-alkali, coal gas and environment protection fields

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, etc.
- Plastic. PVC, PP, PE, CPVC and RPP
- Ceramic

Table 14: Technical Parameters of Ceramic Super Intalox Saddle Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Quantity (pcs/m^3)	Bulk Density (kg/m^3)	Packing Factor (m^{-1})
ASR+C-01	25 × 20 × 3	190	78%	76600	510	340
ASR+C-02	38 × 30 × 4	131	84%	24600	463	190
ASR+C-03	50 × 42 × 6	88.4	81%	7344	454	166
ASR+C-04	76 × 53 × 9	58.5	77%	1976	489	127

Table 15: Technical Parameters of Plastic Super Intalox Saddle Ring					
Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ASR+P-01	76 × 38 × 3.0	130	52%	3700	138
ASR+P-02	50 × 25 × 1.5	168	68%	9400	184
ASR+P-03	38 × 19 × 1.2	178	75%	25200	201
ASR+P-04	25 × 20 × 1.2	238	85%	56000	340

Dixon Ring

Dixon Ring also called θ packing ring, is made of stainless steel and other metallic wires. Weave the metal wires into rolls and then cut them into specified strips. Roll up the strips and form the Dixon Ring. The diameter of Dixon Ring is same as the height, which can supply high performance.

Application

The Dixon ring is widely used in laboratory and low-volume, high purity product separation process.

Stainless Steel Dixon Ring

Phosphor Bronze Dixon Ring

Table 16: Technical Parameter of Dixon Ring								
Item	Specs (mm)	Mesh Size (mesh)	Tower Diameter (mm)	Theoretical Plate (pcs/m)	Bulk Density (kg/m^3)	Surface Area (m^2/m^3)	Void Friction	Pressure Drop (mbar/m)
AD-01	2 × 2	100	10-35	60-65	670	3700	91%	30
AD-02	3 × 3	100	20-50	50-55	520	2800	93%	15
AD-03	4 × 4	100	20-70	30-32	380	1700	95%	10
AD-04	5 × 5	100	20-100	15-20	295	1100	95%	10
AD-05	6 × 6	80	20-150	12-15	280	950	95%	10
AD-06	7 × 7	80	20-200	14-17	265	800	95%	8
AD-07	8 × 8	80	20-250	20-12	235	750	95%	8
AD-08	10 × 10	80	20-300	7-8	200	550	95%	8

Canon Ring

Canon Ring has similar sizes with dixon ring, which is small but highly efficient. It is commonly made from stainless steel. Also, it can be made from Monel and other materials for excellent corrosion and rust resistance performance. Stainless steel or other metal plates are perforated into several tiny holes. As the points of the die push passing through the metal, jagged burrs are formed on the reverse side of the plates. The tensile strength is higher than other laboratory packings.

Features

- Suitable for laboratory and high purity products distillation towers
- Unique wetting process and high filtering efficiency
- Atmospheric and reduced Pressure environments

Table 17: Technical Parameter of Canon Packing

Item	Specs (mm)	Surface Area (m^2/m^3)	Theoretical Plate (pcs/m)	Bulk Density (kg/m^3)	Pressure Drop (mbar/m)
AC-01	2 × 2	1500	22-23	576	23
AC-02	3 × 3	1380	20-22	540	30
AC-03	4 × 4	1340	14.5-15.5	480	147
AC-04	5 × 5	1029	14-15	410	195
AC-05	6 × 6	910	12-14	365	86
AC-06	7 × 7	670	6-7	290	65
AC-07	8 × 8	540	5	240	13
AC-08	9 × 9	360	5	140	9

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Super Mini Ring

Super mini ring also called flat ring, is an advanced random packing in the column tower packing. It has similar structure with cascade mini ring, which has low height and wall windows. But there is not flanging structure at the top and bottom. It can improve the packing strength through adjust the arc of internal blade. It has reasonable flow structure, low pressure drop and high mass transfer performance. Super mini ring has two main types, which are different in the internal blades, which names as QH-1 and QH-2.

Features

- High mechanical strength
- Large handling capacity
- High mass transfer
- High flux and low pressure drop
- Uniform gas and liquid distribution

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, Carbon Steel, etc.

Application

- Liquid-liquid extraction
- Gas-liquid mass transfer
- Vacuum distillation
- Thermal sensitive material distillation
- Decomposable plant material distillation
- Easy polymerization material distillation
- Easy carbonization material distillation

Specifications

- Height-diameter ratio:
- Plastic Super Mini Ring -1:5 to 2:5
- Metal Super Mini Ring -1:5 to 2:5

Table 18: Technical Parameter of Metal Super Mini Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ASMM-01	16 × 5.5 × 0.5	348	92%	604	630000	312
ASMM-02	25 × 9.0 × 0.6	228	94%	506	160000	280
ASMM-03	38 × 12.7 × 0.7	150	95%	390	48000	175
ASMM-04	50 × 17 × 0.8	115	97%	275	21500	156

Table 19: Technical Parameter of Plastic Super Mini Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ASMP-01	38 × 12 × 1.2	145	92%	70	46000	186
ASMP-02	50 × 17 × 1.5	128	93%	67	21500	15
ASMP-03	76 × 26 × 2.5	116	93%	58	6500	144

Table 20: Technical Parameter of Ceramic Super Mini Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ASMC-01	16 × 10 × 1.5	250	87%	750	300500	1150
ASMC-02	25 × 16 × 2.0	180	85%	700	87040	800
ASMC-03	30 × 18 × 2.5	170	85%	690	55000	850
ASMC-04	38 × 23 × 3.5	140	85%	720	27600	905
ASMC-05	50 × 30 × 4.5	110	84%	650	10100	880

Conjugate Ring

Conjugate ring available for metallic, plastic and ceramic materials, is an high efficient random packing in column towers. It takes good advantages of annular rings and saddle rings. Suitable height-diameter-ratio, uniform void fraction and conjugate curved rib structure contribute uniform liquid and gas distribution, low pressure drop and high mass transfer performance.

Features

- Low pressure drop and high flux
- Uniform liquid and gas distribution
- Excellent operating flexibility
- Small channeling and wall flow
- High organic acid and organic acid resistance

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, Carbon Steel, etc.

Application

- Plastic conjugate ring.Alcohol purification, sulfuric acid absorption, Methyl methacrylate distillation, waster gas purification, water purification.
- Ceramic conjugate ring. Drying tower, absorption tower, cooling tower, washing tower, regeneration tower in chemical, metallurgy, coal gas and oxygen production.
- Metal conjugate ring.Vacuum distillation, gas washing, purification and dealing of heat sensitive, easy decomposing, easy polymerized and easy carbonized materials.

Table 21: Technical Parameters of Metal Conjugate Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ACM-01	25 × 25 × 0.3	185	95%	312	75000	216
ACM-02	38 × 38 × 0.5	116	96%	275	19500	131
ACM-03	50 × 50 × 0.8	86	96%	275	9770	97
ACM-04	76 × 76 × 1.0	81	97%	245	3980	95

Table 22: Technical Parameters of Plastic Conjugate Ring						
Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ACP-01	25 × 25 × 1.0	185	95%	96	74000	216
ACP-02	40 × 34 × 1.5	130	93%	61	18650	162
ACP-03	37 × 37 × 1.5	142	91%	80	16320	188
ACP-04	50 × 40 × 1.5	104	80%	66	9500	164
ACP-05	76 × 76 × 2.5	81	95%	81	3980	94

Table 23: Technical Parameters of Ceramic Conjugate Ring						
Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ACC-01	25 × 25 × 3	175	78%	520	64000	369
ACC-02	38 × 38 × 4	118	80%	470	14000	230
ACC-03	50 × 50 × 5	72	81%	450	6300	135

HY-Pak Ring

The HY-pak ring, also known as the advanced pall ring, is a more developed version of the pall ring. It has ribs added to the ring wall, which help increase mass transfer efficiency. This improves how liquids and gases are spread out within the ring. It also makes the ring stronger and more flexible in different operating conditions.

Features

- Low pressure drop and high flux
- Higher mechanical strength
- 30% increased mass transfer point
- High & low temperature resistance

Application

- Petroleum, chemical, chlorine-alkali, gas, environmental protection fields

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, Carbon Steel, etc.
- Carbon steel

Table 24: Technical Parameters of HY-Pak Ring

Item	Diameter (mm)	Bulk Quantity (pcs/m^3)	Bulk Density (kg/m^3)	Void Fraction	Packing Factor (m^{-1})
AHYP-01	76	1100	208	97.7%	49
AHYP-02	50	3670	224	97.4%	59
AHYP-03	38	9390	280	97%	85
AHYP-04	25	29900	312	96.5%	141

VSP Ring

The VSP ring, also known as the inner arc ring or very special packing, is typically made from stainless steel materials like 304, 321, and 316. These rings have a neat geometric pattern where the inner arcs are evenly folded along the length and arranged alternately. This creates a smooth surface with lots of space inside and ensures even distribution of fluids. Compared to pall rings, VSP rings can handle higher flow rates, about 15% to 30% more, and they cause less pressure drop, which can be reduced by 20% to 30%.

Features

- Reasonable geometric symmetry
- Evenly gas and liquid distribution
- High mass transfer performance
- 15%–30% Increased flux
- 20%–30% Reduced pressure drop

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, Carbon Steel, etc.

Application

- Petrochemical, fertilizer, environment protection, sugar refinery and other industries. It is widely used in the synthesis ammonia desulfuration, decarburization and other large devices

Table 25: Technical Parameters of VSP Ring						
Item	Diameter × Height × Thickness (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
AVS-01	25 × 25 × 0.6	250	420	59200	93%	310
AVS-02	38 × 38 × 0.6	138	396	14000	94.7%	163
AVS-03	50 × 50 × 0.8	121	350	7000	95%	144
AVS-04	76 × 76 × 1.0	75	280	1950	95%	86

Plastic Hollow Floatation Ball

Plastic hollow floatation balls, also known as plastic hollow floatation ball packing, have lots of space inside, can filter well, and resist chemical damage. They're good at reducing acid mist and heat loss. These balls stay in place well, don't need much space to work, and cover things well.

Features

- Large void fraction and uniform liquid and gas distribution
- High temperature and chemical corrosive resistance
- Low cost but high mass transfer performance

Application

- Plastic hollow floatation ball is suitable for particle control, waste gas recovery, exhaust gas purification and acid mist purification. It can be used as check-valve balls in various flow, mist and odor control applications

Material

- PE, PP, RPP, PVC, CPVC and PVDF

Table 25: Technical Parameters of Plastic Hollow Float Ball					
Item	Diameter (mm)	Bulk Quantity (pcs/m^3)	Bulk Density (kg/m^3)	Void Fraction	Packing Factor (m^{-1})
AMF-01	25 × 1.0	41500	125	200	40%
AMF-02	38 × 1.2	22000	121	150	40%
AMF-03	50 × 1.5	10480	73	120	40%

Cross Spherical Ring

The Cross Spherical Ring, made of plastic or ceramic, has more space inside and more surface area compared to older random packing methods. It doesn't cause much pressure drop and transfers substances efficiently. It's used a lot in chemical, fertilizer, coal gas, pharmaceutical, oxygen production, and metallurgy industries.

Features

- Large void fraction and surface area
- High temperature resistance
- High mass transfer efficiency
- Low pressure drop and high flux

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, Carbon Steel, etc.
- Plastic - PE, PP, RPP, PVC, CPVC and PVDF
- Ceramic

Application

- Chemical, fertilizer, coal gas, pharmacy, oxygen production and metallurgy fields

Table 26: Technical Parameters of Plastic Cross Spherical Ring

Item	Diameter × Height × Thickness (mm)	Bulk Quantity (pcs/m³)	Surface Area (m²/m³)	Void Fraction	Bulk Density (kg/m³)
ACSP-01	50 × 2	9200	145	92%	63
ACSP-02	90 × 3	1320	130	95%	58

Table 27: Technical Parameters of Ceramic Cross Spherical Ring

Item	Diameter × Height × Thickness (mm)	Surface Area (m²/m³)	Void Fraction	Bulk Density (kg/m³)
ACSC-01	50 × 5	135	91%	350
ACSC-02	76 × 7	127	93%	270

Hi-flow Ring

The Hi-flow ring, also known as the high flow ring, is a newer and improved version of the pall ring. It has openings on the packing wall that make up more than 50% of the surface area, allowing for better flow. It also has a higher void fraction than the pall ring. Moreover, it can handle more flow than the pall ring while causing much less pressure drop, which is about 45% lower. Inside, there are two layers of blades arranged in a staggered pattern along the wall, and there are reinforced ribs in the center of the wall to make it stronger.

Features

- High free volume and low pressure drop
- Low mass-transfer unit height and high flooding point
- Small specific gravity and high mass transfer
- Uniform gas-liquid distribution
- Uniform glass-liquid distribution

Application

- Absorption, scrubbing, separation, washing, purification

Material

- PP, PVC, CPVC, RPP, PVDF

Table 28: Technical Parameters of Hi-Flow Rings

Item	Diameter × Height × Thickness (mm)	Bulk Quantity (pcs/m³)	Surface Area (m²/m³)	Void Fraction
AHF-01	25 × 25 × 1.0	53500	190	92%
AHF-02	38 × 38 × 1.3	15800	150	94%
AHF-03	50 × 50 × 1.5	6500	110	96%
AHF-04	76 × 76 × 2.5	1930	82	98%

Plastic Tri-pack Ring

The plastic tri-pack ring is a type of tower packing that's used randomly in towers. It's shaped like a hollow sphere and made of plastic. The design is symmetrical and includes ribs, struts, and drip rods. It's made by injecting plastic into molds, using materials like PP, PE, PVC, PVDF, and others. The most common sizes for these plastic rings are 1 inch, 1-1/4 inches, 3 inches, and 3-1/2 inches in diameter.

Features

- Low pressure drop and high flux
- Low tendency of channeling and wall flow
- Excellent gas and liquid contacting

Application

- Gas absorption and purification
- Gas & liquid separation
- Liquid extraction
- Water treatment
- Biological filtration

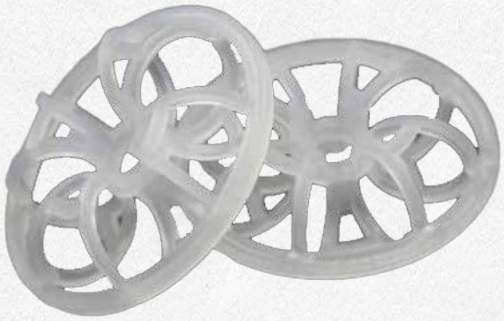
Material

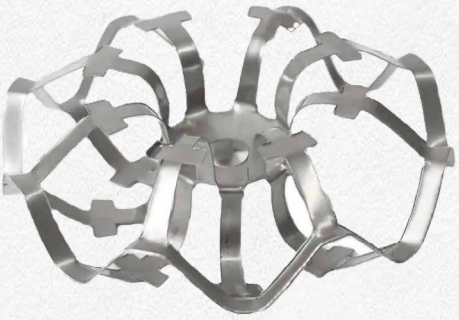
- PP, RPP, PVC, CPVC and PVDF

Table 29: Technical Parameters of Tri-Pack Rings

Item	Nominal Size (in.)	Nominal Size (mm)	Surface Area (m^2/m^3)	Void Fraction	Bulk Density (kg/m^3)	Bulk Quantity (pcs/m^3)	Packing Factor (m^{-1})
ATP-01	1	25	85	90%	81	81200	28
ATP-02	1.25	32	70	92%	70	25000	25
ATP-03	2	50	48	93%	62	11500	16
ATP-04	3.5	90	38	95%	45	1800	12

Teller Rosette Ring





The Teller rosette ring is made of either metal or plastic. The metal version has twelve small rings arranged radially, while the plastic version can have a different number of small rings. For plastic, there are usually ten or other amounts arranged in a radial direction. This unique design gives the Teller rosette ring a large empty space inside, prevents clogging, allows for high flow rates, and reduces pressure drop. Because there's a lot of space for fluid in between the rings, it slows down the flow of liquid, gives more time for gas and liquid to mix, and improves how efficiently substances are transferred.

Features

- Large void fraction and low pressure drop
- Fully contacting of liquid and gas
- Temperature and corrosion resistance
- Non-jam and large flux

Material

- Stainless Steel 316/L, 304/L, 410, Inconel, Monel, Hastelloy, Carbon Steel, etc.
- Plastic - PE, PP, PVC, PVDF, CPVC, RPP.

Application

- Plastic teller rosette ring. Media temperature ranges from 60°C to 150 °C. Gas washing and purifying towers
- Metal teller rosette ring. Vacuum distillation, coal gas dehydrators and other column towers.

Table 30: Technical Parameters of Plastic Teller Rosette Ring						
Item	Diameter (mm)	Height (mm)	Bulk Quantity (pcs/m³)	Bulk Density (kg/m³)	Surface Area (m²/m³)	Void Fraction
ATRP-01	25	9	170000	195	82	90%
ATRP-02	47	19	32500	185	88	91%
ATRP-03	51	19	25000	180	98	75%
ATRP-04	59	19	17500	150	92	64.7%
ATRP-05	73	27.5	8000	127	98	68.8%
ATRP-06	95	37	3900	94	90	58.5%
ATRP-07	100	37	3300	78	93	56.1%
ATRP-08	145	48	1100	65	95	38.5%

Table 31: Technical Parameters of Metal Teller Rosette Ring				
Item	Diameter × Height × Thickness (mm)	Surface Area (m²/m³)	Void Fraction	Bulk Density (kg/m³)
ATRM-01	50 × 25 × 0.8	112.8	96.2%	85–100
ATRM-02	75 × 27.5 × 1	136.1	97.3%	120–150
ATRM-03	100 × 40 × 1.2	140	96.5%	216.6
ATRM-04	108 × 45 × 1.2	53.4	95%	170–200

Head Office
Office no. 2, 2nd floor, Nebula Tower, Sindhi Lane, Mumbai - 40004, Maharashtra, India.

Contact Person
Jay Shah - Domestic Division - +91 83692000178
Manan Bokadia - Export Division - +91 9930498865

Email
sales@ambanimetal.com
export@ambanimetal.com

Website
http://www.ambanimetal.com