

## RANDOM PACKING DATASHEET

Ambani Metals supplies a comprehensive range of Random Packing, designed for efficient mass transfer in distillation, absorption, stripping, and scrubbing columns. Random packing consists of loose, irregularly arranged elements such as Raschig Rings, Pall Rings, Saddles, and many more, that offer a large surface area and void space to facilitate effective vapor-liquid contact. Engineered for low pressure drop, high capacity, and cost-effective performance, random packing is widely used in petrochemical, chemical, fertilizer, and environmental industries.

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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.

|                                         |    |
|-----------------------------------------|----|
| 01. Pall Ring [AMB-PALL]                | 2  |
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## TECHNICAL TABLE

### AMB-PALL PALL RING

**Table 4: Technical Parameters of Plastic Pall Ring**

| Item        | Ring Diameter (mm) | Diameter × Height × Thickness (mm) | Surface Area (m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Quantity (pcs/m <sup>3</sup> ) | Packing Factor (m <sup>-1</sup> ) |
|-------------|--------------------|------------------------------------|------------------------------------------------|---------------|-------------------------------------|-----------------------------------|
| AMB-PALL-01 | 16                 | 16 × 16 × 1.1                      | 188                                            | 91%           | 112000                              | 249                               |
| AMB-PALL-02 | 25                 | 25 × 25 × 1.2                      | 175                                            | 90%           | 53500                               | 239                               |
| AMB-PALL-03 | 38                 | 38 × 38 × 1.4                      | 115                                            | 89%           | 15800                               | 220                               |
| AMB-PALL-04 | 50                 | 50 × 50 × 1.5                      | 112                                            | 90%           | 6500                                | 154                               |
| AMB-PALL-05 | 76                 | 76 × 76 × 2.6                      | 73                                             | 92%           | 1930                                | 94                                |

**Note:** Bulk density is different according to different materials.

**Table 5: Technical Parameters of Ceramic Pall Ring**

| Item        | Diameter × Height × Thickness (mm) | Surface Area (m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Quantity (pcs/m <sup>3</sup> ) | Bulk Density (kg/m <sup>3</sup> ) | Packing Factor (m <sup>-1</sup> ) |
|-------------|------------------------------------|------------------------------------------------|---------------|-------------------------------------|-----------------------------------|-----------------------------------|
| AMB-PALL-01 | 25 × 25 × 3                        | 238                                            | 73%           | 54000                               | 520                               | 565                               |
| AMB-PALL-02 | 38 × 38 × 4                        | 197                                            | 75%           | 13400                               | 570                               | 365                               |
| AMB-PALL-03 | 50 × 50 × 5                        | 154                                            | 78%           | 6800                                | 550                               | 252                               |
| AMB-PALL-04 | 80 × 80 × 8                        | 116                                            | 80%           | 1950                                | 520                               | 146                               |

**Table 3: Technical Parameters of Metal Pall Ring**

| Item        | Ring diameter (mm) | Diameter × Height × Thickness (mm) | Surface Area (m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Quantity (pcs/m <sup>3</sup> ) | Packing Factor (m <sup>-1</sup> ) |
|-------------|--------------------|------------------------------------|------------------------------------------------|---------------|-------------------------------------|-----------------------------------|
| AMB-PALL-01 | 16                 | 16 × 16 × 0.4                      | 239                                            | 92.8%         | 143000                              | 299                               |
| AMB-PALL-02 | 25                 | 25 × 25 × 0.6                      | 219                                            | 93.4%         | 55900                               | 269                               |
| AMB-PALL-03 | 38                 | 38 × 38 × 0.8                      | 129                                            | 94.4%         | 13000                               | 153                               |
| AMB-PALL-04 | 50                 | 50 × 50 × 1.0                      | 112                                            | 94.9%         | 6500                                | 131                               |
| AMB-PALL-05 | 76                 | 76 × 76 × 1.2                      | 72                                             | 95.1%         | 1830                                | 84                                |

**Note:** Bulk density is different according to different materials.



## AMB-RR RASCHIG RING

**Table 6: Technical Parameters of Metal Raschig Ring**

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

**Table 7: Technical Parameters of Ceramic Raschig Ring**

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

**Table 8: Technical Parameters of Plastic Raschig Ring**

| Item      | Diameter× Height × Thickness (mm) | Bulk Quantity (pcs/m <sup>3</sup> ) | Bulk Density (kg/m <sup>3</sup> ) |
|-----------|-----------------------------------|-------------------------------------|-----------------------------------|
| AMB-RR-01 | 25 × 25 × 1                       | 48500                               | 88                                |
| AMB-RR-02 | 50 × 50 × 1.5                     | 6500                                | 65                                |

## AMB-RR+ SUPER RASCHIG RING

**Table 20: Technical Parameters of Super Raschig Ring**

| Item                    | Specs         | Bulk Quantity (pcs/m <sup>3</sup> ) | Surface Area (m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction |
|-------------------------|---------------|-------------------------------------|------------------------------------------------|---------------|
| AMB-RR <sub>+</sub> -01 | 50 × 45 × 0.6 | 9800                                | 86                                             | 95%           |
| AMB-RR <sub>+</sub> -02 | 76 × 70 × 0.6 | 2480                                | 81                                             | 96%           |



## AMB-CMR CASCADE MINI RING

**Table 15: Technical Parameter of Metal Cascade Mini Ring**

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

**Table 16: Technical Parameter of Plastic Cascade Mini Ring**

| Item       | Diameter× Height × Thickness<br>(mm) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Density<br>(kg/m <sup>3</sup> ) | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Packing Factor<br>(m <sup>-1</sup> ) |
|------------|--------------------------------------|---------------------------------------------------|---------------|--------------------------------------|----------------------------------------|--------------------------------------|
| AMB-CMR-01 | 25 × 13 × 1.2                        | 228                                               | 90%           | 98                                   | 81500                                  | 313                                  |
| AMB-CMR-02 | 38 × 19 × 1.4                        | 133                                               | 93%           | 58                                   | 27200                                  | 176                                  |
| AMB-CMR-03 | 50 × 25 × 1.5                        | 114                                               | 94%           | 55                                   | 10740                                  | 143                                  |
| AMB-CMR-04 | 76 × 37 × 3.0                        | 90                                                | 93%           | 698                                  | 3420                                   | 112                                  |

**Table 17: Technical Parameter of Ceramic Cascade Mini Ring**

| Item       | Diameter× Height × Thickness<br>(mm) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Density<br>(kg/m <sup>3</sup> ) | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Packing Factor<br>(m <sup>-1</sup> ) |
|------------|--------------------------------------|---------------------------------------------------|---------------|--------------------------------------|----------------------------------------|--------------------------------------|
| AMB-CMR-01 | 25 × 15 × 3                          | 210                                               | 73%           | 650                                  | 72000                                  | 540                                  |
| AMB-CMR-02 | 38 × 23 × 4                          | 153                                               | 74%           | 630                                  | 21600                                  | 378                                  |
| AMB-CMR-03 | 50 × 30 × 5                          | 102                                               | 76%           | 580                                  | 9100                                   | 232                                  |
| AMB-CMR-04 | 76 × 46 × 9                          | 75                                                | 78%           | 530                                  | 2500                                   | 158                                  |

## AMB-SR INTALLOX SADDLE RING

**Table 21: Technical Parameters of Metal Intalox Saddle Ring**

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



**Table 22: Technical Parameters of Plastic Intalox Saddle Ring**

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

**Table 23: Technical Parameters of Ceramic Intalox Saddle Ring**

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

## AMB-SR+ INTALLOX SADDLE RING

**Table 24: Technical Parameters of Ceramic Super Intalox Saddle Ring**

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

**Table 25: Technical Parameters of Plastic Super Intalox Saddle Ring**

| Item                    | Diameter× Height × Thickness<br>(mm) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Packing Factor<br>(m <sup>-1</sup> ) |
|-------------------------|--------------------------------------|---------------------------------------------------|---------------|----------------------------------------|--------------------------------------|
| AMB-SR <sub>+</sub> -01 | 76 × 38 × 3.0                        | 130                                               | 52%           | 3700                                   | 138                                  |
| AMB-SR <sub>+</sub> -02 | 50 × 25 × 1.5                        | 168                                               | 68%           | 9400                                   | 184                                  |
| AMB-SR <sub>+</sub> -03 | 38 × 19 × 1.2                        | 178                                               | 75%           | 25200                                  | 201                                  |
| AMB-SR <sub>+</sub> -04 | 25 × 20 × 1.2                        | 238                                               | 85%           | 56000                                  | 340                                  |



## AMB-DIX DIXON RING

Table 1: Technical Parameter of Dixon Ring

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

## AMB-CANNON CANNON RING

Table 2: Technical Parameter of Cannon Packing

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

## AMB-SMR SUPER MINI RING

Table 9: Technical Parameter of Metal Super Mini Ring

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



**Table 10: Technical Parameter of Plastic Super Mini Ring**

| Item       | Diameter× Height × Thickness<br>(mm) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Density<br>(kg/m <sup>3</sup> ) | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Packing Factor<br>(m <sup>-1</sup> ) |
|------------|--------------------------------------|---------------------------------------------------|---------------|--------------------------------------|----------------------------------------|--------------------------------------|
| AMB-SMR-01 | 38 × 12 × 1.2                        | 145                                               | 92%           | 70                                   | 46000                                  | 186                                  |
| AMB-SMR-02 | 50 × 17 × 1.5                        | 128                                               | 93%           | 67                                   | 21500                                  | 159                                  |
| AMB-SMR-03 | 76 × 26 × 2.5                        | 116                                               | 93%           | 58                                   | 6500                                   | 144                                  |

**Table 11: Technical Parameter of Ceramic Super Mini Ring**

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

## AMB-CR CANNON RING

**Table 12: Technical Parameters of Metal Conjugate Ring**

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

**Table 13: Technical Parameters of Plastic Conjugate Ring**

| Item      | Diameter× Height × Thickness<br>(mm) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Density<br>(kg/m <sup>3</sup> ) | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Packing Factor<br>(m <sup>-1</sup> ) |
|-----------|--------------------------------------|---------------------------------------------------|---------------|--------------------------------------|----------------------------------------|--------------------------------------|
| AMB-CR-01 | 25 × 25 × 1.0                        | 185                                               | 95%           | 96                                   | 74000                                  | 216                                  |
| AMB-CR-02 | 40 × 34 × 1.5                        | 130                                               | 93%           | 61                                   | 18650                                  | 162                                  |
| AMB-CR-03 | 37 × 37 × 1.5                        | 142                                               | 91%           | 80                                   | 16320                                  | 188                                  |
| AMB-CR-04 | 50 × 40 × 1.5                        | 104                                               | 80%           | 66                                   | 9500                                   | 164                                  |
| AMB-CR-05 | 76 × 76 × 2.5                        | 81                                                | 95%           | 81                                   | 3980                                   | 94                                   |



**Table 14: Technical Parameters of Ceramic Conjugate Ring**

| Item      | Diameter× Height × Thickness<br>(mm) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Density<br>(kg/m <sup>3</sup> ) | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Packing Factor<br>(m <sup>-1</sup> ) |
|-----------|--------------------------------------|---------------------------------------------------|---------------|--------------------------------------|----------------------------------------|--------------------------------------|
| AMB-CR-01 | 25 × 25 × 3                          | 175                                               | 78%           | 520                                  | 64000                                  | 369                                  |
| AMB-CR-02 | 38 × 38 × 4                          | 118                                               | 80%           | 470                                  | 14000                                  | 230                                  |
| AMB-CR-03 | 50 × 50 × 5                          | 72                                                | 81%           | 450                                  | 6300                                   | 135                                  |

## AMB-HY-PAK HY-PAK RING

**Table 26: Technical Parameters of HY-Pak Ring**

| Item          | Diameter<br>(mm) | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Bulk Density<br>(kg/m <sup>3</sup> ) | Void Fraction | Packing Factor<br>(m <sup>-1</sup> ) |
|---------------|------------------|----------------------------------------|--------------------------------------|---------------|--------------------------------------|
| AMB-HY-PAK-01 | 76               | 1100                                   | 208                                  | 97.7%         | 49                                   |
| AMB-HY-PAK-02 | 50               | 3670                                   | 224                                  | 97.4%         | 59                                   |
| AMB-HY-PAK-03 | 38               | 9390                                   | 280                                  | 97%           | 85                                   |
| AMB-HY-PAK-04 | 25               | 29900                                  | 312                                  | 96.5%         | 141                                  |

## AMB-VSP VSP RING

**Table 27: Technical Parameters of VSP Ring**

| Item       | Diameter× Height × Thickness<br>(mm) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Bulk Density<br>(kg/m <sup>3</sup> ) | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Void Fraction | Packing Factor<br>(m <sup>-1</sup> ) |
|------------|--------------------------------------|---------------------------------------------------|--------------------------------------|----------------------------------------|---------------|--------------------------------------|
| AMB-VSP-01 | 25 × 25 × 0.6                        | 250                                               | 420                                  | 59200                                  | 93%           | 310                                  |
| AMB-VSP-02 | 38 × 38 × 0.6                        | 138                                               | 396                                  | 14000                                  | 94.7%         | 163                                  |
| AMB-VSP-03 | 50 × 50 × 0.8                        | 121                                               | 350                                  | 7000                                   | 95%           | 144                                  |
| AMB-VSP-04 | 76 × 76 × 1.0                        | 75                                                | 280                                  | 1950                                   | 95%           | 86                                   |

## AMB-FLOAT HOLLOW FLOAT BALL

**Table 28: Technical Parameters of Plastic Polyhedral Hollow Ball**

| Item         | Outer Diameter<br>(mm) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Bulk Density<br>(kg/m <sup>3</sup> ) |
|--------------|------------------------|---------------------------------------------------|---------------|----------------------------------------|--------------------------------------|
| AMB-FLOAT-01 | 25                     | 60                                                | 84%           | 45                                     | 85000                                |
| AMB-FLOAT-02 | 38                     | 320                                               | 88%           | 114                                    | 28500                                |
| AMB-FLOAT-03 | 50                     | 236                                               | 90%           | 81                                     | 11500                                |
| AMB-FLOAT-04 | 76                     | 206                                               | 90%           | 80                                     | 3000                                 |
| AMB-FLOAT-05 | 100                    | 193                                               | 80%           | 80                                     | 3000                                 |



**Table 29: Technical Parameters of Plastic Hollow Float Ball**

| Type         | Size (mm) | Bulk Quantity (pcs/m <sup>3</sup> ) | Bulk Density (kg/m <sup>3</sup> ) | Surface Area (m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction |
|--------------|-----------|-------------------------------------|-----------------------------------|------------------------------------------------|---------------|
| AMB-FLOAT-01 | 25 × 1.0  | 41500                               | 125                               | 200                                            | 40%           |
| AMB-FLOAT-02 | 38 × 1.2  | 22000                               | 121                               | 150                                            | 40%           |
| AMB-FLOAT-03 | 50 × 1.5  | 10480                               | 73                                | 120                                            | 40%           |

## AMB-CSR CROSS SPHERICAL RING

**Table 31: Technical Parameters of Plastic Cross Spherical Ring**

| Item    | Diameter× Height × Thickness (mm) | Bulk Quantity (pcs/m <sup>3</sup> ) | Surface Area (m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Density (kg/m <sup>3</sup> ) |
|---------|-----------------------------------|-------------------------------------|------------------------------------------------|---------------|-----------------------------------|
| PCSR-01 | 50 × 2                            | 9200                                | 145                                            | 92%           | 63                                |
| PCSR-02 | 90 × 3                            | 1320                                | 130                                            | 95%           |                                   |

**Table 32: Technical Parameters of Ceramic Cross Spherical Ring**

| Item    | Diameter× Height × Thickness (mm) | Surface Area (m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Density (kg/m <sup>3</sup> ) |
|---------|-----------------------------------|------------------------------------------------|---------------|-----------------------------------|
| PCSR-01 | 50 × 5                            | 135                                            | 91%           | 350                               |
| PCSR-02 | 76 × 7                            | 127                                            | 93%           | 270                               |

## AMB-HI-FLOW HI-FLOW RING

**Table 35: Technical Parameters of Hi-Flow Rings**

| Items          | Diameter× Height × Thickness (mm) | Bulk Quantity (pcs/m <sup>3</sup> ) | Surface Area (m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction |
|----------------|-----------------------------------|-------------------------------------|------------------------------------------------|---------------|
| AMB-HI-FLOW-01 | 25 × 25 × 1.0                     | 53500                               | 190                                            | 92%           |
| AMB-HI-FLOW-02 | 38 × 38 × 1.3                     | 15800                               | 150                                            | 94%           |
| AMB-HI-FLOW-03 | 50 × 50 × 1.5                     | 6500                                | 110                                            | 96%           |
| AMB-HI-FLOW-04 | 76 × 76 × 2.5                     | 1930                                | 82                                             | 98%           |



## AMB-TRI TRIPACK RING

**Table 36: Technical Parameters of Tri-Pack Rings**

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

## AMB-TR TELLER ROSETTE RING

**Table 18: Technical Parameters of Plastic Teller Rosette Ring**

| Item      | Diameter<br>(mm) | Height<br>(mm) | Bulk Quantity<br>(pcs/m <sup>3</sup> ) | Bulk Density<br>(kg/m <sup>3</sup> ) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction |
|-----------|------------------|----------------|----------------------------------------|--------------------------------------|---------------------------------------------------|---------------|
| AMB-TR-01 | 25               | 9              | 170000                                 | 195                                  | 82                                                | 90%           |
| AMB-TR-02 | 47               | 19             | 32500                                  | 185                                  | 88                                                | 91%           |
| AMB-TR-03 | 51               | 19             | 25000                                  | 180                                  | 98                                                | 75%           |
| AMB-TR-04 | 59               | 19             | 17500                                  | 150                                  | 92                                                | 64.7%         |
| AMB-TR-05 | 73               | 27.5           | 8000                                   | 127                                  | 98                                                | 68.8%         |
| AMB-TR-06 | 95               | 37             | 3900                                   | 94                                   | 90                                                | 58.5%         |
| AMB-TR-07 | 100              | 37             | 3300                                   | 78                                   | 93                                                | 56.1%         |
| AMB-TR-08 | 145              | 48             | 1100                                   | 65                                   | 95                                                | 38.5%         |

**Table 19: Technical Parameters of Metal Teller Rosette Ring**

| Item      | Diameter × Height × Thickness<br>(mm) | Surface Area<br>(m <sup>2</sup> /m <sup>3</sup> ) | Void Fraction | Bulk Density<br>(kg/m <sup>3</sup> ) |
|-----------|---------------------------------------|---------------------------------------------------|---------------|--------------------------------------|
| AMB-TR-01 | 50 × 25 × 0.8                         | 112.8                                             | 96.2%         | 85–100                               |
| AMB-TR-02 | 75 × 27.5 × 1                         | 136.1                                             | 97.3%         | 120–150                              |
| AMB-TR-03 | 100 × 40 × 1.2                        | 140                                               | 96.5%         | 216.6                                |
| AMB-TR-04 | 108 × 45 × 1.2                        | 53.4                                              | 95%           | 170–200                              |

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