



Column Packing [Colpack] :

Colpack has over the years become generally accepted as the most efficient packing for distillation towers operating at reduced pressure. Separation of heat sensitive, close boiling fractions calls for many theoretical stages and low pressure drop. Colpack is the precise solution to this problem

Construction :

Colpack are fabricated by knitting bunched fine wires of filaments (0.01mm) which is further crimped and wound into a roll of the desired column diameter. Any material which can be drawn into a fine wire or filament can be used in the manufacture of colpack. However, stainless steel 304 and 316 grades are readily stocked and other higher alloys are available as per requirement.

Installation :

Colpacks are supplied as 150 mm high packing of the same diameter as the nominal bore of the column. Only the simplest type of support is required, usually two bars at right angles or in case of large towers, parallel bars at six inch are placed. Packing are inserted into the top of each section free from all internal projection tower and pushed gently down to the support grid. A disc of wood mounted on a pole permits the packing to be pushed without damage. Direction of their crimps going in opposite direction to be inserted.

Salient Features :

1. Simply replacing random packing with existing column you can upgrade existing process with increased product quality, higher production capacity and lower pressure drop.
2. Low bulk density of Colpack result in decreasing the dead weight of the new packed column systems, minimize structural foundation, piping insulation and hence installation cost. High efficiency of Colpack permits reduction in column diameter.
3. The high voidage of Colpack allows free flow of both liquid and vapor through the packed column, resulting in low pressure drop per unit height of the packing.
4. The high surface area of Colpack permits intimate contact between vapor and liquid resulting in low values of HETP (1780 sq.mt /m3).
5. The low bulk density of Colpack result in decreasing the dead weight of the column(432 kg /m3).
6. The HETP (height equivalent of a theoretical plate) of Colpack is less than 15 cm over the entire range of velocity.
7. The flooding velocity of Colpack is 2 to 2.5 times higher than those of conventional packing. This depending upon the requirement will reduce the column diameter or will increase the throughput

Applications :

1. Vacuum distillation service where pressure drop across the packed height is critical, separation of close boiling points components which require a very large number of theoretical plates.
2. Where components are thermally unstable, colpacks are indispensable.
3. Applications involving very low superficial velocities (0.1cm/ sec)
4. In pollution control operations in biological oxidation of liquid effluents.
5. In manufacture of various organic compound
6. Colpacks supersede all the conventional tower packing in their characteristic and performance

Comparative technical data of colpacks :

Sr. No.	Packing Type	Size(mm)	Density (kg/m3)	Surface Area	Voidage %	Pdts Mm of hg	HETP (mm)
1	Colpack	All	432	1780	94.5	0.07	120
2	Rasching ring ceramic	12.5	804	410	64	---	---
3	Rasching ring metal	25	641	190	73	0.53	290
4	Berl saddles (ceramic)	25	722	253	69	---	---
5	Intolox sadles ceramics	12.5	545	260	78	0.13	230
6	Intolox sadles metals	25	545	260	77.5	---	---