

Title (en)

An apparatus for drying bulk particulate material and a method of drying bulk particulate material

Title (de)

Vorrichtung zur Trocknung von partikelförmigem Schüttmaterial und Verfahren zur Trocknung von partikelförmigem Schüttmaterial

Title (fr)

Appareil et procédé de séchage de matière particulaire en vrac

Publication

EP 3009776 A1 20160420 (EN)

Application

EP 14189037 A 20141015

Priority

EP 14189037 A 20141015

Abstract (en)

An apparatus for drying bulk particulate material, the apparatus comprises 1) a vessel capable of maintaining superheated steam at a pressure equal to or larger than the ambient pressure surrounding the vessel. The vessel defines a lower cylindrical part which defines a first cross-sectional area which is perpendicular to the length of the lower cylindrical part and an upper cylindrical part which defines a second cross-sectional area which is perpendicular to the length of the upper cylindrical part; 2) an inner cylindrical part centrally located within the upper cylindrical part and the lower cylindrical part of the vessel to establish a first fluid path from the upper cylindrical part to the lower cylindrical part within the inner cylindrical part and a second fluid path from the lower cylindrical part to the upper cylindrical part outside the inner cylindrical part; 3) a first number of partitioning walls which extend radially within the lower cylindrical part between the lower cylindrical part and the inner cylindrical part and which defines in the lower cylindrical part an inlet chamber, an outlet chamber and a second number of intermediate chambers located between the inlet chamber and the outlet chamber in a circumferential direction, the inlet chamber comprises an inlet in order to receive a moist bulk particulate materials, the outlet chamber comprises an outlet for ejecting a dry bulk particulate materials, the inlet chamber and the intermediate chambers each defines a steam permeable bottom, the outlet chamber defines a non-steam permeable bottom; 4) a heat exchanger located within the inner cylindrical part for heating the superheated steam; 5) an impeller to generate a flow of superheated steam along the first fluid path from the upper cylindrical part through the heat exchanger within the inner cylindrical part to the lower cylindrical part via the steam permeable bottom, and along the second fluid path from the lower cylindrical part to the upper cylindrical part outside the inner cylindrical part; and 6) the steam permeable bottom of the inlet chamber which is adapted to receive between 20% and 50% of the flow of superheated steam from the impeller.

IPC 8 full level

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CPC (source: EP)

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Citation (applicant)

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BA ME

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TR 201808829 T 20151014