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*Content Based
Chemical Engineering*

Dust Accumulation - Single Area
 NFPA 654 (2006), TIA 06-1 (3-1-2011)

EQUIPMENT : _____
Equip No : _____
Dust : _____ **Bulk Density :** _____ lb/ft³

----- **Adjusted Layer Depth Criterion (in)** -----

$$\frac{(1/32 \text{ in})(75 \text{ lb/ft}^3)}{\text{Bulk Density (lb/ft}^3)} = \text{inch (D)}$$

----- **User Input** -----

Room Footprint Area = _____ ft² (F)
 Actual Accumulation Area = _____ ft² (A)
 Average Layer Depth in Accumulation Area = _____ in (L)

----- **Dust Volumes** -----

Allowable Volume = _____ ft³
 Measured Volume = _____ ft³

----- **Ratio** -----

$$\frac{A \cdot L}{5\% \cdot F \cdot D} = \frac{\text{ft}^2 \cdot \text{in}}{\text{ft}^2 \cdot \text{in}}$$

----- **Result** -----

Dust Accumulation - Single Area
 NFPA 654 (2006), TIA 06-1 (3-1-2011)

EQUIPMENT :
Equip No :
Dust : **Bulk Density :** kg/m³

----- **Adjusted Layer Depth Criterion (mm)** -----

$$\frac{(0.79 \text{ mm})(1201 \text{ kg/m}^3)}{\text{Bulk Density (kg/m}^3)} = \text{mm (D)}$$

----- **User Input** -----

Room Footprint Area = m² (F)
 Actual Accumulation Area = m² (A)
 Average Layer Depth in Accumulation Area = mm (L)

----- **Dust Volumes** -----

Allowable Volume = m³
 Measured Volume = m³

----- **Ratio** -----

$$\frac{A \cdot L}{5\% \cdot F \cdot D} = \frac{\text{m}^2 \cdot \text{mm}}{\text{m}^2 \cdot \text{mm}}$$

----- **Result** -----

Dust Accumulation - Multiple Areas
 NFPA 654 (2006), TIA 06-1 (3-1-2011)

EQUIPMENT : _____
Equip No : _____
Dust : _____ **Bulk Density :** lb/ft³
Room Footprint Area : ft² (F)

----- **Adjusted Layer Depth Criterion (in)** -----

$$\frac{(1/32 \text{ in})(75 \text{ lb/ft}^3)}{\text{Bulk Density (lb/ft}^3)} = \text{inch (D)}$$

----- **User Input** -----

Accumulation Location	Area	Average Layer Depth	Accumulation

----- **Dust Volumes** -----

Allowable Volume = ft³
 Measured Volume = ft³

----- **Ratio** -----

$$\frac{\text{Accumulation}}{5\% \cdot F \cdot D} = \frac{\text{ft}^2 \cdot \text{in}}{\text{ft}^2 \cdot \text{in}}$$

----- **Result** -----

Dust Accumulation - Multiple Areas
 NFPA 654 (2006), TIA 06-1 (3-1-2011)

EQUIPMENT : _____
Equip No : _____
Dust : _____ **Bulk Density :** kg/m^3
Room Footprint Area : m^2 (F)

----- **Adjusted Layer Depth Criterion (mm)** -----

$$\frac{(0.79 \text{ mm})(1201 \text{ kg/m}^3)}{\text{Bulk Density (kg/m}^3)} = \text{mm (D)}$$

----- **User Input** -----

Accumulation Location	Area	Average Layer Depth	Accumulation

----- **Dust Volumes** -----

Allowable Volume = m^3
 Measured Volume = m^3

----- **Ratio** -----

$$\frac{\text{Accumulation}}{5\% \cdot F \cdot D} = \frac{\text{m}^2 \cdot \text{mm}}{\text{m}^2 \cdot \text{mm}}$$

----- **Result** -----

Dust Accumulation

BASIS : This program is for calculating the allowable dust accumulation for an area.

NOTE : Always begin a new case by retrieving the original file. Direct entry of data in cells that originally contain table lookups could cause functions to be lost and/or incorrect calculations. Cells that require data entry are colored **RED**; calculated values are black.

REFERENCES :

- 1) *NFPA 654 (2006), TIA 06-1 (3-1-2011)*

<-<-<-<-<-< **ProcSafety May 2011, by Mark Roote** <-<-<-<-<-<

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