calculatoratoz.com

unitsconverters.com

Settling Zone Formulas

Calculators! Examples! Conversions!

Bookmark **calculatoratoz.com**, **unitsconverters.com**

Widest Coverage of Calculators and Growing - **30,000+ Calculators!**
Calculate With a Different Unit for Each Variable - **In built Unit Conversion!**
Widest Collection of Measurements and Units - **250+ Measurements!**

Feel free to SHARE this document with your friends!

Please leave your feedback here...

List of 17 Settling Zone Formulas

Settling Zone

Height of Settling Zone

1) Height of Settling Zone given Cross-section Area of Sedimentation Tank

Open Calculator

fx $$h = \frac{A_{cs}}{w}$$

ex $$12227.07\text{mm} = \frac{28\text{m}^2}{2.29\text{m}}$$

2) Height of Settling Zone given Detention Time

Open Calculator

fx $$h = \frac{T_d \cdot Q}{L \cdot w}$$

ex $$6615.721\text{mm} = \frac{3\text{min} \cdot 1.01\text{m}^3/\text{s}}{12\text{m} \cdot 2.29\text{m}}$$

3) Height of Settling Zone given Height at Outlet Zone with respect to Area of Tank

Open Calculator

fx $$h = H \cdot \frac{Q}{v' \cdot A_{cs}}$$

ex $$14428.57\text{mm} = 40\text{m} \cdot \frac{1.01\text{m}^3/\text{s}}{0.1\text{m}/\text{s} \cdot 28\text{m}^2}$$

4) Height of Settling Zone given Height at Outlet Zone with respect to Discharge

Open Calculator

fx $$h = H \cdot \frac{Q}{L \cdot w \cdot v'}$$

ex $$14701.6\text{mm} = 40\text{m} \cdot \frac{1.01\text{m}^3/\text{s}}{12\text{m} \cdot 2.29\text{m} \cdot 0.1\text{m}/\text{s}}$$

5) Height of Settling Zone given Height at Outlet Zone with respect to Settling Velocity

Open Calculator

fx $$h = H \cdot \frac{V_s}{v'}$$

ex $$12000\text{mm} = 40\text{m} \cdot \frac{0.03\text{m}/\text{s}}{0.1\text{m}/\text{s}}$$

6) Height of Settling Zone given Length of Sedimentation Tank with respect to Surface Area

Open Calculator

fx $$h = L \cdot \frac{A_{cs}}{A}$$

ex $$6720\text{mm} = 12\text{m} \cdot \frac{28\text{m}^2}{50\text{m}^2}$$

7) Height of Settling Zone given Length of Tank with respect to Darcy Weishbach Factor

Open Calculator

fx $$h = L \cdot \sqrt{\frac{f}{8}}$$

ex $$3000\text{mm} = 12\text{m} \cdot \sqrt{\frac{0.5}{8}}$$

8) Height of Settling Zone given Length of Tank with respect to Height for Practical Purpose

Open Calculator

fx $$h = \frac{L}{10}$$

ex $$1200\text{mm} = \frac{12\text{m}}{10}$$

9) Height of Settling Zone given Ratio of Removal with respect to Tank Height

Open Calculator

fx $$h = \frac{H}{R_r}$$

ex $$13333.33\text{mm} = \frac{40\text{m}}{3}$$

Length of Settling Zone

10) Length of Settling Zone given Detention Time

Open Calculator

fx $$L = \frac{T_d \cdot Q}{w \cdot h}$$

ex $$6.615721\text{m} = \frac{3\text{min} \cdot 1.01\text{m}^3/\text{s}}{2.29\text{m} \cdot 12000\text{mm}}$$

11) Length of Settling Zone given Height at Outlet Zone with respect to Discharge

Open Calculator

fx $$L = \frac{H \cdot Q}{w \cdot h \cdot v'}$$

ex $$14.7016\text{m} = \frac{40\text{m} \cdot 1.01\text{m}^3/\text{s}}{2.29\text{m} \cdot 12000\text{mm} \cdot 0.1\text{m}/\text{s}}$$

12) Length of Settling Zone given Surface Area of Sedimentation Tank

Open Calculator

fx $$L = \frac{A_{cs}}{w}$$

ex $$12.22707\text{m} = \frac{28\text{m}^2}{2.29\text{m}}$$

13) Length of Settling Zone given Vertical Falling Speed in Sedimentation Tank

Open Calculator

fx $$L = \frac{Q}{V_s \cdot w}$$

ex $$14.7016\text{m} = \frac{1.01\text{m}^3/\text{s}}{0.03\text{m/s} \cdot 2.29\text{m}}$$

Width of Settling Zone

14) Width of Settling Zone given Cross-section Area of Sedimentation Tank

Open Calculator

fx $$W = \frac{A_{cs}}{h}$$

ex $$2.333333\text{J/kg} = \frac{28\text{m}^2}{12000\text{mm}}$$

15) Width of Settling Zone given Detention Time

Open Calculator

fx $$W = \frac{T_d \cdot Q}{L \cdot h}$$

ex $$1.2625\text{J/kg} = \frac{3\text{min} \cdot 1.01\text{m}^3\text{/s}}{12\text{m} \cdot 12000\text{mm}}$$

16) Width of Settling Zone given Height at Outlet Zone with respect to Discharge

Open Calculator

fx $$W = H \cdot \frac{Q}{L \cdot h \cdot v'}$$

ex $$2.805556\text{J/kg} = 40\text{m} \cdot \frac{1.01\text{m}^3\text{/s}}{12\text{m} \cdot 12000\text{mm} \cdot 0.1\text{m/s}}$$

17) Width of Settling Zone given Surface Area of Sedimentation Tank

Open Calculator

fx $$W = \frac{A}{L}$$

ex $$4.166667\text{J/kg} = \frac{50\text{m}^2}{12\text{m}}$$

Variables Used

- **A** Area *(Square Meter)*
- A_{cs} Cross-Sectional Area *(Square Meter)*
- **f** Darcy Friction Factor
- **h** Height of Crack *(Millimeter)*
- **H** Outer Height *(Meter)*
- **L** Length *(Meter)*
- **Q** Discharge *(Cubic Meter per Second)*
- R_r Removal Ratio
- T_d Detention Time *(Minute)*
- V_s Settling Velocity *(Meter per Second)*
- v' Falling Speed *(Meter per Second)*
- **w** Width *(Meter)*
- **W** Width of Settling Zone *(Joule per Kilogram)*

Constants, Functions, Measurements used

- Function: **sqrt**, sqrt(Number)
  A square root function is a function that takes a non-negative number as an input and returns the square root of the given input number.
- Measurement: **Length** in Millimeter (mm), Meter (m)
  Length Unit Conversion
- Measurement: **Time** in Minute (min)
  Time Unit Conversion
- Measurement: **Area** in Square Meter (m²)
  Area Unit Conversion
- Measurement: **Speed** in Meter per Second (m/s)
  Speed Unit Conversion
- Measurement: **Volumetric Flow Rate** in Cubic Meter per Second (m³/s)
  Volumetric Flow Rate Unit Conversion
- Measurement: **Latent Heat** in Joule per Kilogram (J/kg)
  Latent Heat Unit Conversion

Check other formula lists

- Diameter of Sediment Particle Formulas
- Displacement and Drag Formulas
- Sedimentation Tank Formulas
- Settling Velocity Formulas
- Settling Zone Formulas
- Specific Gravity and Density Formulas

Feel free to SHARE this document with your friends!

PDF Available in

English Spanish French German Russian Italian Portuguese Polish Dutch

10/7/2024 | 5:46:28 AM UTC

Please leave your feedback here...