



Rainfall Infiltration Method Formulas

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List of 43 Rainfall Infiltration Method Formulas

Rainfall Infiltration Method (

1) Catchment Area when Recharge from Rainfall is Considered 🗗



Open Calculator

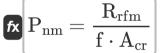
$$\mathbf{A}_{
m cr} = rac{\mathrm{R}_{
m rfm}}{\mathrm{f} \cdot \mathrm{P}_{
m nm}}$$

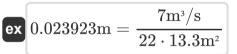
ex
$$13.25758 ext{m}^2 = rac{7 ext{m}^3/ ext{s}}{22\cdot 0.024 ext{m}}$$

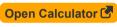
2) Normal Rainfall in Monsoon Season 🖸











3) Rainfall Infiltration Factor when Recharge from Rainfall is Considered

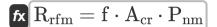
$$\mathbf{f} \mathbf{f} = rac{R_{rfm}}{A_{cr} \cdot P_{nm}}$$

$$ext{ex} 21.92982 = rac{7 ext{m}^3/ ext{s}}{13.3 ext{m}^2 \cdot 0.024 ext{m}}$$





4) Recharge from Rainfall in Monsoon Season by Rainfall Infiltration Method

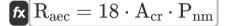


Open Calculator

 $ext{ex} 7.0224 ext{m}^3/ ext{s} = 22 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}$

Maximum value of Rainfall Factor for Various Hydrogeologic Conditions based on the Norms

5) Recharge from Rainfall in Alluvial East Coast Areas for Known Maximum Rainfall Factor



Open Calculator 🗗

 $ext{ex} 5.7456 ext{m}^3/ ext{s} = 18 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}$

6) Recharge from Rainfall in Alluvial Indo Gangetic and Inland Areas for Known Max Rainfall Factor

fx $m R_{ai} = 25 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

 $ext{ex} 7.98 ext{m}^3/ ext{s} = 25 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}$

7) Recharge from Rainfall in Alluvial West Coast Areas for Known Maximum Rainfall Factor

 $\mathbf{K} \left[\mathrm{R}_{\mathrm{awc}} = 12 \cdot \mathrm{A}_{\mathrm{cr}} \cdot \mathrm{P}_{\mathrm{nm}}
ight]$

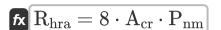
Open Calculator

ex $3.8304 \mathrm{m}^3/\mathrm{s} = 12 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$





8) Recharge from Rainfall in Hard Rock Areas with Consolidated Sandstone for Maximum Rainfall Factor



Open Calculator 🗗

ex $2.5536 \mathrm{m}^3/\mathrm{s} = 8 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

9) Recharge from Rainfall in Hard Rock Areas with Granulite Facies for Known Rainfall Factor

fx $m [R_{hra} = 6 \cdot A_{cr} \cdot P_{nm}]$

Open Calculator

ex $1.9152 \mathrm{m}^3/\mathrm{s} = 6 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

10) Recharge from Rainfall in Hard Rock Areas with Laterite for Known Maximum Rainfall Factor

fx $m R_{hrl} = 14 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

 $ext{ex} \ 4.4688 ext{m}^3/ ext{s} = 14 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}$

11) Recharge from Rainfall in Hard Rock Areas with Low Clay Content for Known Rainfall Factor

fx $m R_{hrc} = 12 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

ex $3.8304 \mathrm{m}^3/\mathrm{s} = 12 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$



12) Recharge from Rainfall in Hard Rock Areas with Massive Poorly Fractured Rocks

 $m x R_{hra} = 7 \cdot A_{cr} \cdot P_{nm}$

Open Calculator 🖸

ex $2.2344 \mathrm{m}^3/\mathrm{s} = 7 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}^3$

13) Recharge from Rainfall in Hard Rock Areas with Phyllites, Shales for Known Max Rainfall Factor

fx $R_{hrp} = 14 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

ex $4.4688 \mathrm{m}^3/\mathrm{s} = 14 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

14) Recharge from Rainfall in Hard Rock Areas with Semi Consolidated Sandstone for Max Rainfall Factor

fx $m R_{hra} = 8 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

ex $2.5536 \mathrm{m}^3/\mathrm{s} = 8 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

15) Recharge from Rainfall in Hard Rock Areas with Significant Clay Content for Known Rainfall Factor

fx $m R_{hra} = 9 \cdot A_{cr} \cdot P_{nm}$

Open Calculator 🗗

ex $2.8728 \mathrm{m}^3/\mathrm{s} = 9 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$



16) Recharge from Rainfall in Hard Rock Areas with Vesicular and Jointed Basalt for Max Rainfall Factor



Open Calculator

ex $2.8728 \mathrm{m}^3/\mathrm{s} = 9 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

17) Recharge from Rainfall in Hard Rock Areas with Weathered Basalt for Known Maximum Rainfall Factor

fx $m [R_{hra} = 6 \cdot A_{cr} \cdot P_{nm}]$

Open Calculator

ex $1.9152 \mathrm{m}^3/\mathrm{s} = 6 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

Minimum Value of Rainfall Factor for Various Hydrogeologic Conditions based on the Norms

18) Recharge from Rainfall in Hard Rock Areas consisting Vesicular and Jointed Basalt

fx $R_{hrv} = 5 \cdot A_{cr} \cdot P_{nm}$

Open Calculator 🗗

= 1.596 $\mathrm{m}^{_{3}}/\mathrm{s} = 5\cdot 13.3\mathrm{m}^{_{2}}\cdot 0.024\mathrm{m}$

19) Recharge from Rainfall in Hard Rock Areas consisting Weathered Basalt

fx $m [R_{wb} = 4 \cdot A_{cr} \cdot P_{nm}]$

Open Calculator

ex $1.2768 \mathrm{m}^3/\mathrm{s} = 4 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$





20) Recharge from Rainfall in Hard Rock Areas of Massive Poorly Fractured Rocks

fx $m R_{fr} = 5 \cdot A_{cr} \cdot P_{nm}$

Open Calculator 🗗

ex $1.596 \mathrm{m}^3/\mathrm{s} = 5 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

21) Recharge from Rainfall in Hard Rock Areas of Significant Clay content for Known Min Rainfall Factor

fx $R_{hra} = 8 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

 $ext{ex} \ 2.5536 ext{m}^3/ ext{s} = 8 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}$

22) Recharge from Rainfall in Hard Rock Areas with Consolidated Sandstone

fx $m R_{ss} = 6 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

 $ext{ex} \left[1.9152 ext{m}^3/ ext{s} = 6 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}
ight]$

23) Recharge from Rainfall in Hard Rock Areas with Granulite Facies for Known Minimum Rainfall Factor

fx $m R_{gf} = 4 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

ex $1.2768 \mathrm{m}^3/\mathrm{s} = 4 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$



24) Recharge from Rainfall in Hard Rock Areas with Laterite for Known Min Rainfall Factor

fx $m R_{hra} = 12 \cdot A_{cr} \cdot P_{nm}$

Open Calculator 🗗

ex $3.8304 \mathrm{m}^3/\mathrm{s} = 12 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

25) Recharge from Rainfall in Hard Rock Areas with Low Clay content for Known Minimum Rainfall Factor

fx $R_{hra} = 10 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

ex $3.192 \mathrm{m}^3/\mathrm{s} = 10 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

26) Recharge from Rainfall in Hard Rock Areas with Phyllites, Shales given Min Rainfall Factor

fx $m [R_{hra} = 10 \cdot A_{cr} \cdot P_{nm}]$

Open Calculator 🗗

ex $3.192 ext{m}^3/ ext{s} = 10 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}$

27) Recharge from Rainfall in Hard Rock Areas with Semi Consolidated Sandstone for Min Rainfall Factor

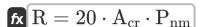
fx $m R_{ss} = 6 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

ex $1.9152 \mathrm{m}^3/\mathrm{s} = 6 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$



28) Recharge from Rainfall in Indo Gangetic and Inland Alluvial Areas for Known Minimum Rainfall Factor



Open Calculator

ex $6.384 \mathrm{m}^3/\mathrm{s} = 20 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

29) Recharge from Rainfall in Silty Alluvial Areas for Known Minimum Rainfall Factor

fx $R=20\cdot A_{cr}\cdot P_{nm}$

Open Calculator

 $ext{ex} \ 6.384 ext{m}^3/ ext{s} = 20 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}$

30) Recharge from Rainfall in West Coast Alluvial Areas for Known Minimum Rainfall Factor

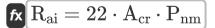
 $m_{Rawc} = 8 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

ex $2.5536 \mathrm{m}^3/\mathrm{s} = 8 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

Recommended Value for Rainfall Factor for Various Hydrogeologic Conditions based on Norms 🗗

31) Recharge from Rainfall in Alluvial Indo Gangetic and Inland Areas



Open Calculator

ex $7.0224 \mathrm{m}^3/\mathrm{s} = 22 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$





$R_{ m aec} = 16 \cdot A_{ m cr} \cdot P_{ m nm}$

Open Calculator

 $\mathbf{ex} \ 5.1072 \mathrm{m}^3/\mathrm{s} = 16 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

33) Recharge from Rainfall in Hard Rock Areas consisting Massive Poorly Fractured Rocks

32) Recharge from Rainfall in East Coast Alluvial Areas 🗗

fx $m R_{fr} = 6 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

ex $1.9152 \mathrm{m}^3/\mathrm{s} = 6 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

34) Recharge from Rainfall in Hard Rock Areas of Consolidated Sandstone

fx $m R_{ss} = 7 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

 $\mathbf{ex} \ 2.2344 \mathrm{m}^3/\mathrm{s} = 7 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}^3$

35) Recharge from Rainfall in Hard Rock Areas with Granulite Facies

fx $m [R_{gf} = 5 \cdot A_{cr} \cdot P_{nm}]$

Open Calculator

ex $1.596 \mathrm{m}^3/\mathrm{s} = 5 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

36) Recharge from Rainfall in Hard Rock Areas with Laterite

fx $m R_{hrl} = 13 \cdot A_{cr} \cdot P_{nm}$

Open Calculator 🖸

 $[4.1496 ext{m}^3/ ext{s} = 13 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}]$





37) Recharge from Rainfall in Hard Rock Areas with Low Clav Content



Open Calculator 🚰

ex $3.5112 \mathrm{m}^3/\mathrm{s} = 11 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$



 $m{\kappa} m{
m R_{hrp} = 12 \cdot A_{cr} \cdot P_{nm}}$

Open Calculator

ex $3.8304 \mathrm{m}^3/\mathrm{s} = 12 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

39) Recharge from Rainfall in Hard Rock Areas with Semi Consolidated Sandstone

fx $m R_{ss} = 7 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

ex $2.2344 \mathrm{m}^3/\mathrm{s} = 7 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

40) Recharge from Rainfall in Hard Rock Areas with Significant Clay

fx $m R_{hra} = 8 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

 $ext{ex} \left[2.5536 ext{m}^3/ ext{s} = 8 \cdot 13.3 ext{m}^2 \cdot 0.024 ext{m}
ight]$

41) Recharge from Rainfall in Hard Rock Areas with Vesicular and Jointed Basalt

fx $m R_{hra} = 8 \cdot A_{cr} \cdot P_{nm}$

Open Calculator

 $= 2.5536 \mathrm{m}^3/\mathrm{s} = 8 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$





42) Recharge from Rainfall in Hard Rock Areas with Weathered Basalt



fx $m R_{wb} = 5 \cdot A_{cr} \cdot P_{nm}$

Open Calculator 🗗

ex $1.596 \mathrm{m}^3/\mathrm{s} = 5 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$

43) Recharge from Rainfall in West Coast Areas based on Recommended Rainfall Infiltration Factor





ex $3.192 \mathrm{m}^3/\mathrm{s} = 10 \cdot 13.3 \mathrm{m}^2 \cdot 0.024 \mathrm{m}$



Variables Used

- A_{cr} Area of Computation for Recharge (Square Meter)
- f Rainfall Infiltration Factor
- P_{nm} Normal Rainfall in Monsoon Season (Meter)
- R Recharge from Rainfall (Cubic Meter per Second)
- Raec Recharge from Rainfall in Alluvial East Coast (Cubic Meter per Second)
- Rai Recharge from Rainfall in Alluvial Indo (Cubic Meter per Second)
- R_{awc} Recharge from Rainfall in Alluvial West Coast (Cubic Meter per Second)
- R_{fr} Rainfall Recharge in Hard Rock Poorly Fractured (Cubic Meter per Second)
- R_{gf} Rainfall Recharge in Hard Rock Granulite Facies (Cubic Meter per Second)
- R_{hra} Recharge from Rainfall in Hard Rock Areas (Cubic Meter per Second)
- Recharge from Rainfall in Hard Rock Low Clay (Cubic Meter per Second)
- Rhrl Recharge from Rainfall in Hard Rock Laterite (Cubic Meter per Second)
- R_{hrp} Recharge from Rainfall in Hard Rock Phyllites (Cubic Meter per Second)
- Rhrv Recharge from Rainfall in Hard Rock Vesicular (Cubic Meter per Second)





- R_{rfm} Recharge from Rainfall in Monsoon Season (Cubic Meter per Second)
- R_{SS} Rainfall Recharge in Hard Rock Sandstone (Cubic Meter per Second)
- R_{wb} Rainfall Recharge in Hard Rock Weathered Basalt (Cubic Meter per Second)





Constants, Functions, Measurements used

- Measurement: Length in Meter (m)

 Length Unit Conversion
- Measurement: Area in Square Meter (m²)

 Area Unit Conversion
- Measurement: Volumetric Flow Rate in Cubic Meter per Second (m³/s)

 Volumetric Flow Rate Unit Conversion





Check other formula lists

 Rainfall Infiltration Method Formulas

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