

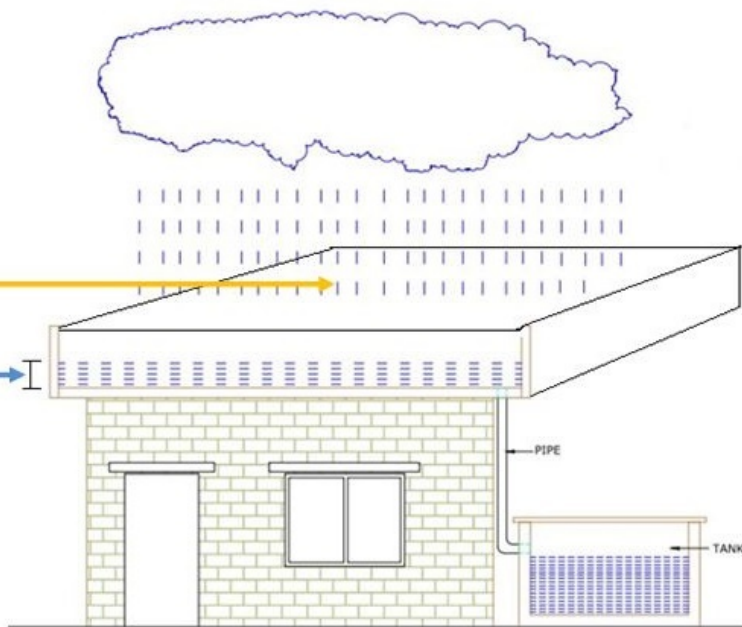
## Ready Reckoner for Design of Roof Top RWH System

---

(Source: Manual on Artificial Recharge of Ground Water, Central Water Commission, Ministry of Water Resources, Govt. of India, September, 2007)

### **A-Availability of Rainwater for Roof Top Rainwater Harvesting**

Rainfall (mm)	100	200	300	400	500	600	800	1000	1200	1400	1600	1800	2000
Roof top area (m <sup>2</sup> )	Harvested Water from Roof top (m <sup>3</sup> )												
20	1.6	3.2	4.8	6.4	8	9.6	12.8	16	19.2	22.4	25.6	28.8	32
30	2.4	4.8	7.2	9.6	12	14.4	19.2	24	28.8	33.6	38.4	43.2	48
40	3.2	6.4	9.6	12.8	16	19.2	25.6	32	38.4	44.8	51.2	57.6	64
50	4	8	12	16	20	24	32	40	48	56	64	72	80
60	4.8	9.6	14.4	19.2	24	28.8	38.4	48	57.6	67.2	76.8	86.4	96
70	5.6	11.2	16.8	22.4	28	33.6	44.8	56	67.2	78.4	89.6	100.8	112
80	6.4	12.8	19.2	25.6	32	38.4	51.2	64	76.8	89.6	102.4	115.2	128
90	7.2	14.4	21.6	28.8	36	43.2	57.6	72	86.4	100.8	115.2	129.6	144
100	8	16	24	32	40	48	64	80	96	112	128	144	160
150	12	24	36	48	60	72	96	120	144	168	192	216	240
200	16	32	48	64	80	96	128	160	192	224	256	288	320
250	20	40	60	80	100	128	160	200	240	280	320	360	400
300	24	48	72	96	120	160	192	240	288	336	384	432	480
400	32	64	96	128	160	192	256	320	384	448	512	576	640
500	40	80	120	160	200	240	320	400	480	560	640	720	800
1000	80	160	240	320	400	480	640	800	960	1120	1280	1440	1600
2000	160	320	480	640	800	960	1280	1600	1920	2240	2560	2880	3200
3000	240	480	720	960	1200	1440	1920	2400	2880	3360	3840	4320	4800



## B. Computation of Peak Flow from Roof

Rainfall Intensity mm/hr for 20 min	50 (min)	100 (min)	150 (min)	200 (min)
Roof top area Sq m	Peak flow in $\times 10^{-3}$ m <sup>3</sup> /s (lps)			
20	0.28	0.56	0.87	1.11
30	0.42	0.83	1.25	1.67
40	0.56	1.11	1.67	2.22
50	0.69	1.39	2.08	2.78
60	0.83	1.67	2.50	3.33
70	0.97	1.94	2.92	3.89
80	1.11	2.22	3.33	4.44
100	1.39	2.78	4.17	5.55
200	2.78	5.56	8.33	11.11
500	6.95	13.89	20.83	27.78
1000	13.92	27.78	41.67	55.55

### C. Size of Storage Tank

Tank Capacity (in m <sup>3</sup> )	Diameter of Tank (in m)
1.60	1.21
2.40	1.48
3.20	1.71
4.00	1.91
4.80	2.09
5.60	2.26
6.40	2.41

<b>7.20</b>	<b>2.56</b>
<b>8.00</b>	<b>2.70</b>
<b>9.60</b>	<b>2.95</b>
<b>11.20</b>	<b>3.19</b>
<b>12.00</b>	<b>3.30</b>
<b>12.80</b>	<b>3.41</b>
<b>14.40</b>	<b>3.62</b>
<b>16.00</b>	<b>3.81</b>
<b>16.80</b>	<b>3.91</b>
<b>19.20</b>	<b>4.18</b>
<b>20.00</b>	<b>4.26</b>

Note: For rural areas, the diameter of tank may be limited to 3 m. The tank would be adequate to meet the drinking water requirements of a family of 5 members for 6 months. For large storage, two or more tanks may be provided instead of a single large tank.

Next Chapter >>  
**How to Make Roof Top RWH System**