



Statistiek van de extreme neerslag voor de Belgische gemeenten

Schoten (NIS 11040)

1. Geschatte neerslaghoeveelheid voor een neerslagduur van 10 minuten tot 30 dagen (rijen) en een terugkeerperiode van 2 tot 200 jaar (kolommen). Eenheid: mm.

| Duur | Terugkeerperiode (jaren) | | | | | | | | | | | |
|--------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2 | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 75 | 100 | 200 |
| 10 min | 7.6 | 10.9 | 13.4 | 14.9 | 16.1 | 16.9 | 17.7 | 18.9 | 19.9 | 21.7 | 23.1 | 26.6 |
| 20 min | 11.0 | 15.8 | 19.4 | 21.6 | 23.2 | 24.5 | 25.5 | 27.3 | 28.7 | 31.3 | 33.2 | 38.2 |
| 30 min | 13.0 | 18.9 | 23.3 | 26.0 | 27.9 | 29.5 | 30.8 | 32.9 | 34.6 | 37.8 | 40.2 | 46.2 |
| 1 u | 16.1 | 22.6 | 27.4 | 30.3 | 32.5 | 34.2 | 35.6 | 37.9 | 39.8 | 43.2 | 45.8 | 52.4 |
| 2 u | 19.3 | 26.6 | 32.0 | 35.3 | 37.7 | 39.7 | 41.3 | 43.8 | 45.9 | 49.8 | 52.7 | 60.0 |
| 3 u | 21.4 | 29.5 | 35.4 | 39.0 | 41.7 | 43.8 | 45.5 | 48.4 | 50.6 | 54.9 | 58.0 | 66.1 |
| 6 u | 25.9 | 34.2 | 40.3 | 44.0 | 46.7 | 48.9 | 50.6 | 53.5 | 55.9 | 60.2 | 63.4 | 71.5 |
| 12 u | 31.5 | 41.5 | 48.8 | 53.2 | 56.4 | 59.0 | 61.1 | 64.6 | 67.3 | 72.5 | 76.2 | 85.9 |
| 1 d | 38.7 | 50.1 | 58.4 | 63.2 | 66.8 | 69.6 | 71.9 | 75.6 | 78.5 | 84.0 | 88.0 | 98.0 |
| 2 d | 49.1 | 62.8 | 72.4 | 78.1 | 82.1 | 85.3 | 87.9 | 92.0 | 95.3 | 101.3 | 105.7 | 116.5 |
| 3 d | 52.2 | 66.8 | 76.9 | 82.8 | 87.0 | 90.2 | 92.9 | 97.2 | 100.5 | 106.6 | 111.0 | 121.9 |
| 4 d | 56.8 | 72.3 | 83.0 | 89.2 | 93.5 | 96.9 | 99.7 | 104.1 | 107.6 | 113.9 | 118.4 | 129.5 |
| 5 d | 64.4 | 81.3 | 92.7 | 99.3 | 104.0 | 107.6 | 110.5 | 115.2 | 118.8 | 125.5 | 130.2 | 141.8 |
| 7 d | 74.2 | 92.5 | 104.8 | 111.8 | 116.7 | 120.5 | 123.6 | 128.5 | 132.3 | 139.2 | 144.2 | 156.1 |
| 10 d | 88.4 | 109.0 | 122.6 | 130.4 | 135.8 | 140.0 | 143.4 | 148.7 | 152.8 | 160.3 | 165.7 | 178.5 |
| 15 d | 107.1 | 131.1 | 146.8 | 155.6 | 161.7 | 166.5 | 170.3 | 176.3 | 180.9 | 189.2 | 195.1 | 209.2 |
| 20 d | 124.7 | 152.7 | 170.9 | 181.0 | 188.0 | 193.3 | 197.7 | 204.5 | 209.7 | 219.1 | 225.7 | 241.4 |
| 25 d | 133.0 | 162.7 | 181.9 | 192.5 | 199.9 | 205.5 | 210.0 | 217.1 | 222.5 | 232.2 | 239.1 | 255.2 |
| 30 d | 155.4 | 187.4 | 207.8 | 219.0 | 226.8 | 232.7 | 237.5 | 245.0 | 250.7 | 260.9 | 268.1 | 284.9 |

2. Geschatte neerslaghoeveelheid en standaardafwijking van deze schatting voor een neerslagduur van 10 minuten tot 30 dagen (rijen) en een terugkeerperiode van 2 tot 200 jaar (kolommen). Eenheid: mm.

| Duur | Terugkeerperiode (jaren) | | | | | | | | | | | |
|--------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2 | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 75 | 100 | 200 |
| 10 min | 7.6 | 10.9 | 13.4 | 14.9 | 16.1 | 16.9 | 17.7 | 18.9 | 19.9 | 21.7 | 23.1 | 26.6 |
| | 0.2 | 0.3 | 0.5 | 0.7 | 0.8 | 0.9 | 1.0 | 1.2 | 1.4 | 1.7 | 1.9 | 2.7 |
| 20 min | 11.0 | 15.8 | 19.4 | 21.6 | 23.2 | 24.5 | 25.5 | 27.3 | 28.7 | 31.3 | 33.2 | 38.2 |
| | 0.3 | 0.5 | 0.8 | 1.0 | 1.1 | 1.3 | 1.4 | 1.7 | 1.9 | 2.3 | 2.6 | 3.6 |
| 30 min | 13.0 | 18.9 | 23.3 | 26.0 | 27.9 | 29.5 | 30.8 | 32.9 | 34.6 | 37.8 | 40.2 | 46.2 |
| | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.3 | 1.4 | 1.6 | 1.8 | 2.1 | 2.4 | 3.2 |
| 1 u | 16.1 | 22.6 | 27.4 | 30.3 | 32.5 | 34.2 | 35.6 | 37.9 | 39.8 | 43.2 | 45.8 | 52.4 |
| | 0.4 | 0.7 | 1.0 | 1.3 | 1.5 | 1.7 | 1.9 | 2.2 | 2.4 | 2.9 | 3.3 | 4.5 |
| 2 u | 19.3 | 26.6 | 32.0 | 35.3 | 37.7 | 39.7 | 41.3 | 43.8 | 45.9 | 49.8 | 52.7 | 60.0 |
| | 0.5 | 0.8 | 1.2 | 1.5 | 1.7 | 1.9 | 2.1 | 2.4 | 2.7 | 3.3 | 3.8 | 5.1 |
| 3 u | 21.4 | 29.5 | 35.4 | 39.0 | 41.7 | 43.8 | 45.5 | 48.4 | 50.6 | 54.9 | 58.0 | 66.1 |
| | 0.6 | 0.9 | 1.2 | 1.5 | 1.7 | 1.9 | 2.1 | 2.4 | 2.6 | 3.2 | 3.6 | 4.8 |
| 6 u | 25.9 | 34.2 | 40.3 | 44.0 | 46.7 | 48.9 | 50.6 | 53.5 | 55.9 | 60.2 | 63.4 | 71.5 |
| | 0.7 | 1.0 | 1.3 | 1.7 | 2.0 | 2.2 | 2.4 | 2.9 | 3.2 | 4.0 | 4.6 | 6.3 |
| 12 u | 31.5 | 41.5 | 48.8 | 53.2 | 56.4 | 59.0 | 61.1 | 64.6 | 67.3 | 72.5 | 76.2 | 85.9 |
| | 1.0 | 1.3 | 1.8 | 2.3 | 2.7 | 3.0 | 3.3 | 3.8 | 4.3 | 5.3 | 6.0 | 8.2 |
| 1 d | 38.7 | 50.1 | 58.4 | 63.2 | 66.8 | 69.6 | 71.9 | 75.6 | 78.5 | 84.0 | 88.0 | 98.0 |
| | 1.1 | 1.3 | 1.6 | 1.9 | 2.1 | 2.3 | 2.4 | 2.7 | 3.0 | 3.5 | 3.9 | 5.0 |
| 2 d | 49.1 | 62.8 | 72.4 | 78.1 | 82.1 | 85.3 | 87.9 | 92.0 | 95.3 | 101.3 | 105.7 | 116.5 |
| | 1.6 | 2.1 | 2.8 | 3.3 | 3.7 | 4.0 | 4.3 | 4.8 | 5.2 | 6.1 | 6.8 | 8.6 |
| 3 d | 52.2 | 66.8 | 76.9 | 82.8 | 87.0 | 90.2 | 92.9 | 97.2 | 100.5 | 106.6 | 111.0 | 121.9 |
| | 1.9 | 2.6 | 3.3 | 3.8 | 4.2 | 4.5 | 4.8 | 5.3 | 5.8 | 6.6 | 7.2 | 9.0 |
| 4 d | 56.8 | 72.3 | 83.0 | 89.2 | 93.5 | 96.9 | 99.7 | 104.1 | 107.6 | 113.9 | 118.4 | 129.5 |
| | 2.2 | 2.8 | 3.4 | 3.8 | 4.1 | 4.4 | 4.6 | 5.0 | 5.4 | 6.1 | 6.6 | 8.0 |
| 5 d | 64.4 | 81.3 | 92.7 | 99.3 | 104.0 | 107.6 | 110.5 | 115.2 | 118.8 | 125.5 | 130.2 | 141.8 |
| | 2.6 | 3.2 | 3.8 | 4.1 | 4.4 | 4.7 | 4.9 | 5.3 | 5.6 | 6.2 | 6.7 | 8.1 |
| 7 d | 74.2 | 92.5 | 104.8 | 111.8 | 116.7 | 120.5 | 123.6 | 128.5 | 132.3 | 139.2 | 144.2 | 156.1 |
| | 3.1 | 3.7 | 4.2 | 4.5 | 4.8 | 5.0 | 5.2 | 5.5 | 5.8 | 6.3 | 6.8 | 7.9 |
| 10 d | 88.4 | 109.0 | 122.6 | 130.4 | 135.8 | 140.0 | 143.4 | 148.7 | 152.8 | 160.3 | 165.7 | 178.5 |
| | 3.8 | 4.7 | 5.4 | 5.8 | 6.1 | 6.4 | 6.6 | 7.0 | 7.3 | 7.9 | 8.4 | 9.6 |
| 15 d | 107.1 | 131.1 | 146.8 | 155.6 | 161.7 | 166.5 | 170.3 | 176.3 | 180.9 | 189.2 | 195.1 | 209.2 |
| | 4.7 | 5.7 | 6.4 | 6.8 | 7.0 | 7.2 | 7.4 | 7.7 | 7.9 | 8.3 | 8.6 | 9.5 |
| 20 d | 124.7 | 152.7 | 170.9 | 181.0 | 188.0 | 193.3 | 197.7 | 204.5 | 209.7 | 219.1 | 225.7 | 241.4 |
| | 5.5 | 6.8 | 7.6 | 8.1 | 8.5 | 8.7 | 9.0 | 9.3 | 9.6 | 10.2 | 10.6 | 11.7 |
| 25 d | 133.0 | 162.7 | 181.9 | 192.5 | 199.9 | 205.5 | 210.0 | 217.1 | 222.5 | 232.2 | 239.1 | 255.2 |
| | 6.2 | 7.7 | 8.8 | 9.5 | 10.0 | 10.4 | 10.7 | 11.3 | 11.8 | 12.7 | 13.5 | 15.3 |
| 30 d | 155.4 | 187.4 | 207.8 | 219.0 | 226.8 | 232.7 | 237.5 | 245.0 | 250.7 | 260.9 | 268.1 | 284.9 |
| | 6.8 | 8.4 | 9.7 | 10.6 | 11.3 | 11.8 | 12.3 | 13.1 | 13.7 | 15.0 | 15.9 | 18.4 |

3. 95%-betrouwbaarheidsinterval van de geschatte neerslaghoeveelheid voor een neerslagduur van 10 minuten tot 30 dagen (rijen) en een terugkeerperiode van 2 tot 200 jaar (kolommen). Eenheid: mm.

| Duur | Terugkeerperiode (jaren) | | | | | | | | | | | |
|--------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2 | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 75 | 100 | 200 |
| 10 min | 7.2 | 10.3 | 12.4 | 13.6 | 14.5 | 15.1 | 15.7 | 16.5 | 17.2 | 18.4 | 19.3 | 21.3 |
| | 8.0 | 11.6 | 14.5 | 16.3 | 17.6 | 18.8 | 19.7 | 21.3 | 22.5 | 25.0 | 26.9 | 31.8 |
| 20 min | 10.4 | 14.8 | 17.9 | 19.7 | 20.9 | 21.9 | 22.7 | 24.0 | 25.0 | 26.8 | 28.1 | 31.1 |
| | 11.6 | 16.8 | 20.9 | 23.5 | 25.4 | 27.0 | 28.3 | 30.5 | 32.3 | 35.8 | 38.4 | 45.3 |
| 30 min | 12.2 | 17.7 | 21.7 | 24.0 | 25.7 | 27.0 | 28.0 | 29.8 | 31.1 | 33.6 | 35.4 | 40.0 |
| | 13.8 | 20.0 | 24.9 | 27.9 | 30.2 | 32.0 | 33.5 | 36.1 | 38.1 | 42.0 | 44.9 | 52.5 |
| 1 u | 15.3 | 21.2 | 25.4 | 27.8 | 29.5 | 30.9 | 32.0 | 33.7 | 35.0 | 37.5 | 39.3 | 43.5 |
| | 17.0 | 24.0 | 29.4 | 32.8 | 35.4 | 37.5 | 39.2 | 42.1 | 44.5 | 49.0 | 52.4 | 61.3 |
| 2 u | 18.3 | 25.0 | 29.7 | 32.4 | 34.4 | 35.9 | 37.1 | 39.1 | 40.6 | 43.3 | 45.3 | 50.0 |
| | 20.3 | 28.2 | 34.4 | 38.2 | 41.1 | 43.4 | 45.4 | 48.6 | 51.2 | 56.3 | 60.1 | 70.0 |
| 3 u | 20.2 | 27.7 | 33.0 | 36.1 | 38.3 | 40.0 | 41.5 | 43.7 | 45.5 | 48.7 | 51.0 | 56.7 |
| | 22.7 | 31.3 | 37.9 | 42.0 | 45.1 | 47.5 | 49.6 | 53.1 | 55.8 | 61.1 | 65.1 | 75.4 |
| 6 u | 24.4 | 32.2 | 37.7 | 40.7 | 42.9 | 44.5 | 45.8 | 47.9 | 49.5 | 52.4 | 54.5 | 59.3 |
| | 27.3 | 36.1 | 42.9 | 47.3 | 50.5 | 53.2 | 55.4 | 59.1 | 62.2 | 67.9 | 72.3 | 83.8 |
| 12 u | 29.6 | 38.8 | 45.2 | 48.8 | 51.2 | 53.1 | 54.7 | 57.1 | 58.9 | 62.2 | 64.4 | 69.7 |
| | 33.5 | 44.1 | 52.4 | 57.7 | 61.6 | 64.8 | 67.6 | 72.1 | 75.7 | 82.7 | 88.1 | 102.0 |
| 1 d | 36.6 | 47.5 | 55.2 | 59.6 | 62.7 | 65.1 | 67.1 | 70.3 | 72.7 | 77.2 | 80.4 | 88.3 |
| | 40.8 | 52.7 | 61.6 | 66.9 | 70.9 | 74.0 | 76.7 | 80.9 | 84.3 | 90.8 | 95.5 | 107.7 |
| 2 d | 46.0 | 58.6 | 67.0 | 71.7 | 74.9 | 77.4 | 79.4 | 82.6 | 85.0 | 89.4 | 92.4 | 99.6 |
| | 52.2 | 67.0 | 77.8 | 84.4 | 89.3 | 93.1 | 96.3 | 101.4 | 105.6 | 113.3 | 119.0 | 133.4 |
| 3 d | 48.4 | 61.8 | 70.5 | 75.4 | 78.8 | 81.4 | 83.5 | 86.7 | 89.2 | 93.7 | 96.8 | 104.3 |
| | 56.0 | 71.9 | 83.4 | 90.2 | 95.2 | 99.1 | 102.4 | 107.6 | 111.8 | 119.5 | 125.2 | 139.5 |
| 4 d | 52.4 | 66.8 | 76.4 | 81.8 | 85.5 | 88.3 | 90.6 | 94.3 | 97.0 | 102.0 | 105.5 | 113.8 |
| | 61.2 | 77.9 | 89.6 | 96.6 | 101.6 | 105.5 | 108.8 | 114.0 | 118.1 | 125.7 | 131.3 | 145.2 |
| 5 d | 59.4 | 75.0 | 85.4 | 91.2 | 95.3 | 98.4 | 100.9 | 104.8 | 107.8 | 113.3 | 117.0 | 126.0 |
| | 69.5 | 87.5 | 100.1 | 107.4 | 112.6 | 116.8 | 120.1 | 125.6 | 129.8 | 137.7 | 143.4 | 157.7 |
| 7 d | 68.3 | 85.3 | 96.6 | 102.9 | 107.3 | 110.7 | 113.4 | 117.7 | 120.9 | 126.8 | 130.9 | 140.7 |
| | 80.2 | 99.7 | 113.0 | 120.6 | 126.1 | 130.3 | 133.8 | 139.3 | 143.7 | 151.7 | 157.4 | 171.6 |
| 10 d | 80.9 | 99.7 | 112.1 | 119.0 | 123.8 | 127.4 | 130.4 | 135.0 | 138.5 | 144.8 | 149.2 | 159.6 |
| | 95.8 | 118.2 | 133.2 | 141.8 | 147.8 | 152.5 | 156.3 | 162.4 | 167.2 | 175.8 | 182.1 | 197.3 |
| 15 d | 97.9 | 119.9 | 134.3 | 142.4 | 148.0 | 152.3 | 155.8 | 161.2 | 165.4 | 172.9 | 178.2 | 190.6 |
| | 116.2 | 142.2 | 159.3 | 168.8 | 175.5 | 180.6 | 184.8 | 191.3 | 196.4 | 205.6 | 212.1 | 227.7 |
| 20 d | 113.8 | 139.4 | 155.9 | 165.0 | 171.4 | 176.2 | 180.2 | 186.2 | 190.9 | 199.2 | 205.0 | 218.6 |
| | 135.6 | 166.0 | 185.8 | 196.9 | 204.6 | 210.5 | 215.2 | 222.8 | 228.6 | 239.0 | 246.5 | 264.3 |
| 25 d | 120.9 | 147.7 | 164.7 | 174.0 | 180.3 | 185.1 | 188.9 | 194.9 | 199.3 | 207.3 | 212.7 | 225.2 |
| | 145.1 | 177.8 | 199.1 | 211.0 | 219.4 | 225.8 | 231.1 | 239.3 | 245.7 | 257.2 | 265.4 | 285.2 |
| 30 d | 142.1 | 170.8 | 188.7 | 198.2 | 204.7 | 209.5 | 213.4 | 219.3 | 223.8 | 231.6 | 236.9 | 248.9 |
| | 168.7 | 203.9 | 226.9 | 239.8 | 248.9 | 255.9 | 261.6 | 270.6 | 277.6 | 290.3 | 299.2 | 320.9 |

4. Schatting van de coëfficiënten van Montana.

Formule van Montana : intensiteit[mm/h] = $a \cdot \text{duur}[\text{min}]^{-b}$ voor verschillende tijdsduren

a_1, b_1 : duur < 25 min

a_2, b_2 : duur tussen 25 min en 6000 min (= 100 h)

a_3, b_3 : duur > 6000 min (= 100 h)

| Terugkeerperiode (jaren) | a_1 | b_1 | a_2 | b_2 | a_3 | b_3 |
|--------------------------|-------|--------|--------|--------|-------|--------|
| 2 | 135.6 | 0.4719 | 299.4 | 0.7179 | 52.3 | 0.5174 |
| 5 | 194.1 | 0.4711 | 464.0 | 0.7417 | 78.3 | 0.5372 |
| 10 | 236.6 | 0.4681 | 596.0 | 0.7551 | 101.6 | 0.5518 |
| 15 | 261.9 | 0.4659 | 679.9 | 0.7622 | 117.5 | 0.5604 |
| 20 | 280.3 | 0.4641 | 742.9 | 0.7670 | 129.9 | 0.5665 |
| 25 | 294.8 | 0.4627 | 794.1 | 0.7706 | 140.3 | 0.5713 |
| 30 | 306.8 | 0.4614 | 837.5 | 0.7734 | 149.3 | 0.5752 |
| 40 | 326.1 | 0.4594 | 909.1 | 0.7779 | 164.5 | 0.5814 |
| 50 | 341.5 | 0.4578 | 967.3 | 0.7813 | 177.3 | 0.5862 |
| 75 | 370.1 | 0.4547 | 1079.7 | 0.7873 | 202.8 | 0.5951 |
| 100 | 391.0 | 0.4524 | 1165.0 | 0.7916 | 222.8 | 0.6014 |
| 200 | 443.8 | 0.4466 | 1391.0 | 0.8015 | 278.9 | 0.6168 |

Referenties

Van de Vyver, H. (2012). Spatial regression models for extreme precipitation in Belgium, *Water Resour. Res.*, 48, W09549, doi :10.1029/2011WR011707.

Van de Vyver, H. (2013). Practical return level mapping for extreme precipitation in Belgium, RMI scientific and technical publication 062, 30 pages.

Disclaimer

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Zo niet, dan zijn de rechtbanken van het arrondissement Brussel bevoegd.