# Roof Pitch Factor Chart

Pitch 1:12 to 24:12: angle, percent slope, slope factor and hip/valley factor

| Pitch | Angle | Percent slope | Slope factor | Hip/valley factor |
|---|---|---|---|---|
| **1:12** | 4.76° | 8.33% | 1.0035 | 1.4167 |
| **2:12** | 9.46° | 16.67% | 1.0138 | 1.4240 |
| **3:12** | 14.04° | 25.00% | 1.0308 | 1.4361 |
| **4:12** | 18.43° | 33.33% | 1.0541 | 1.4530 |
| **5:12** | 22.62° | 41.67% | 1.0833 | 1.4743 |
| **6:12** | 26.57° | 50.00% | 1.1180 | 1.5000 |
| **7:12** | 30.26° | 58.33% | 1.1577 | 1.5298 |
| **8:12** | 33.69° | 66.67% | 1.2019 | 1.5635 |
| **9:12** | 36.87° | 75.00% | 1.2500 | 1.6008 |
| **10:12** | 39.81° | 83.33% | 1.3017 | 1.6415 |
| **11:12** | 42.51° | 91.67% | 1.3566 | 1.6853 |
| **12:12** | 45.00° | 100.00% | 1.4142 | 1.7321 |
| **13:12** | 47.29° | 108.33% | 1.4743 | 1.7815 |
| **14:12** | 49.40° | 116.67% | 1.5366 | 1.8333 |
| **15:12** | 51.34° | 125.00% | 1.6008 | 1.8875 |
| **16:12** | 53.13° | 133.33% | 1.6667 | 1.9437 |
| **17:12** | 54.78° | 141.67% | 1.7341 | 2.0017 |
| **18:12** | 56.31° | 150.00% | 1.8028 | 2.0616 |
| **19:12** | 57.72° | 158.33% | 1.8727 | 2.1230 |
| **20:12** | 59.04° | 166.67% | 1.9437 | 2.1858 |
| **21:12** | 60.26° | 175.00% | 2.0156 | 2.2500 |
| **22:12** | 61.39° | 183.33% | 2.0883 | 2.3154 |
| **23:12** | 62.45° | 191.67% | 2.1619 | 2.3819 |
| **24:12** | 63.43° | 200.00% | 2.2361 | 2.4495 |

Sloped length = horizontal run × slope factor.  Roof surface = horizontal plan area × slope factor.
Slope factor = sqrt(12^2 + rise^2) / 12.  Hip/valley factor = sqrt(2 x 12^2 + rise^2) / 12.
The hip/valley factor is for a regular roof: equal pitch on both planes, meeting at 90° in plan.
Example: a 12 ft run at 6:12 is 12 × 1.1180 = 13.4164 ft.
Values are geometric. They do not include overhang, ridge thickness, cuts or waste. Check your drawings.