Wind Turbine Ice Throw and Ice Fall Distance

Screening distances for ice thrown from a rotating wind turbine and ice falling from a stopped turbine using the Seifert empirical formulas.

Method: Seifert empirical ice throw and ice fall distances

Input parameters

Unit system: SI

Parameter	Value	Unit
Hub height	100.00	m
Rotor diameter	120.00	m
Wind speed at hub height (for ice fall)	15.000	m/s

Calculated results

Parameter	Value	Unit
Ice throw distance (rotating)	330.00	m
Ice fall distance (stopped)	160.00	m
Tip height	160.00	m

Notes for this case

• Seifert et al. (2003) screening rules from observations: throw d = 1.5(D + H) for an operating turbine; fall d = U(D/2 + H)/15 for a stopped turbine. Use for screening only; risk assessments use trajectory models with fragment statistics.

Formula and method

$$d_{throw} = 1.5(D + H), \quad d_{fall} = \frac{U(D/2 + H)}{15}$$

Variables

H	Hub height	m
D	Rotor diameter	m
U	Wind speed at hub height (for ice fall)	m/s
d_{throw}	Ice throw distance (rotating)	m
d_{fall}	Ice fall distance (stopped)	m
$H + D/2$	Tip height	m

Method and standards

Ice throw screening.

Assumptions and limits

- Empirical; flat terrain.

References

Seifert empirical ice throw and ice fall distances

Report details

Report reference	FCC-12CP-MZ0M (the same inputs always give the same reference)
Generated	23 November 2026, 17:34 UTC
Calculator	Wind Turbine Ice Throw and Ice Fall Distance
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Software release	FireCAD Calc, release of 22 November 2026
Release checks	3 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/environmental/wind-power/wind-turbine-ice-throw-setback

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.