

Risk Categories

Building codes are not overly stringent as is commonly thought. They are a compromise between safety and economy. Based on statistics, a long history of weather observations, and post disaster damage investigations, building codes are the minimum standards for what is deemed as an acceptable level of safety at an affordable cost.

Risk Categories are used to differentiate between structures with low safety concerns if they collapse (e.g most fences) to high safety concerns. (post disaster recovery infrastructure)

Your backyard fence – Risk Category I.

A fence around a federal prison – Risk Category III or IV.

The client decides what the Risk Category should be.

The higher the Risk Category, the more stringent the requirements become and the lower the chance a freak storm will cause a collapse.

For Example – Houston , Texas, IBC 2021 / ASCE 7-16

Risk Category I (most fences / sheds)

128 mph basic wind speed - 8% chance of higher wind speeds in 25 years

Risk Category II (houses / apartments / office buildings)

136 mph basic wind speed – 3.5% chance of higher wind speeds in 25 years

Risk Category III (schools / theaters)

145 mph – 1.5% chance of higher wind speeds in 25 years

Risk Category IV (hospitals / fire stations)

150 mph – 0.8% chance of higher wind speeds in 25 years

If you build a Risk Category I fence in Houston to only 77 mph, the % chance of experiencing faster wind speeds are:

39% chance in 5 years 63% chance in 10 years 78% chance in 15 years

87% chance in 20 years 92% chance in 25 years 95% chance in 30 years

Building to code minimum doesn't guarantee your fence won't blow over, but it means if you get sued, you're probably off the hook as you can demonstrate that you followed the rules.

Codes change over time, but you're only held to the code that was active at the time of installation.