

Why screen enclosures fail

They aren't like a house, where wind hits a wall and passes around it.

Without sufficient airflow, and bracing, screen enclosures twist and collapse

With screen enclosures, hurricane winds hit one water-soaked screen wall, then pass through and push against the far wall from the inside, while also pushing up the top. Wind

that does deflect around the outside of the enclosure tugs at it from behind. Without sufficient bracing, an enclosure twists and crumples when subjected to these forces.

Poor enclosure construction

Common flaws in screened-enclosure construction

Thin aluminum: What you save in money, you lose in strength.

Lack of diagonal bracing: Lightweight enclosures can twist and break if they don't have enough bracing.



Weak or corroded screws: Everything put together sooner or later falls apart, sooner when the connectors are rusty or worn.

Densely woven screens:

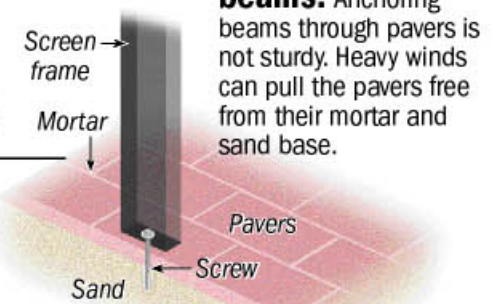
Although great for keeping bugs out, they catch too much wind.

Long, insufficiently supported beams:

Contractors may use a 'man with the span,' an engineer who'll sign off on an enclosure designed with over-long beams that can't withstand high winds that can twist and break them.

Improperly anchored support beams:

Anchoring beams through pavers is not sturdy. Heavy winds can pull the pavers free from their mortar and sand base.



Weak, poorly attached corners:

Enclosure angles and corners take heavy stress during a storm and one break can bring down an entire pool cage.

How screen enclosures can collapse like a cardboard box

Like a cardboard box with an open top...



...any force exerted on one of its sides will cause it to twist...

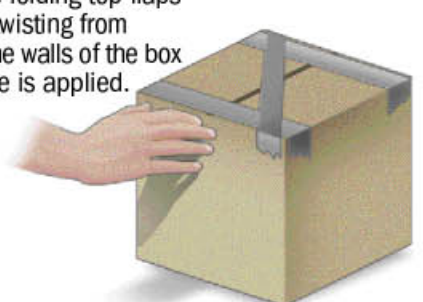


...and collapse.



How to fix problem:

Taping the folding top flaps prevents twisting from warping the walls of the box when force is applied.



Correct enclosure construction

Ways to build in strength to your screened enclosure

Replace corroded screws:

A few rusted screws can kill a \$20,000 enclosure.

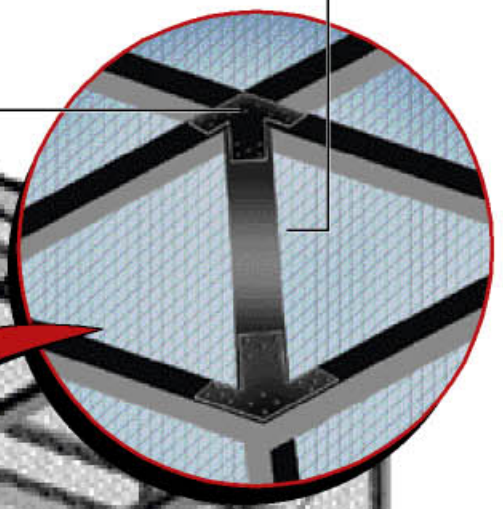


Use thick metal for angle brackets:

Secure joints with multiple screws.

Have walls and top of cage braced with diagonals,

even at expense of views. These cross braces counteract the twisting forces.



Brace house to handle wind loads from screen cage.

Use thicker beams and columns:

The wind knows the difference.

Use 'K' bracing or tension wires: They beef up the corners.

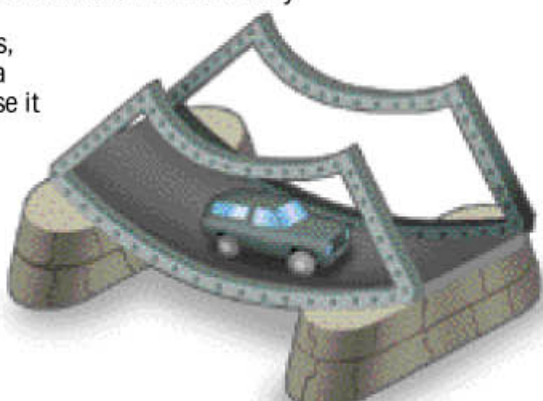
Remove or open as much screening as possible

before a storm to give the structure less resistance.

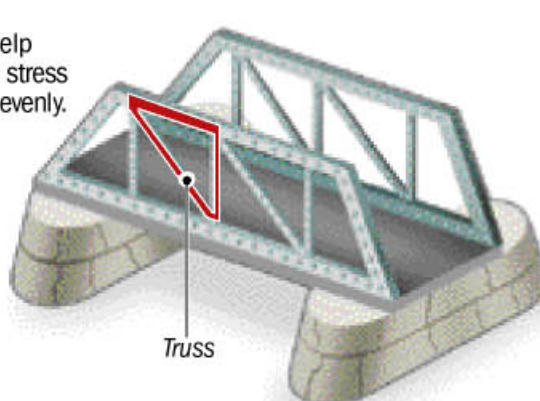
How cross-bracing adds strength

Much like the trusses or crossbeams on a bridge, tension wires help to distribute stress evenly.

Without trusses, the weight on a bridge will cause it to bend.



Trusses help distribute stress of weight evenly.



Properly anchor support beams:

Beams should be secured directly to concrete footing — not into pavers.

