NO OTHER MATERIAL IS AS

RESILIENT AS STEEL

That means that no other material can absorb and recover from an extreme event as well as steel does.

Why? Wood and concrete just can't match steel's inherent durability, strength, and elasticity. They can also be combustible and subject to decomposition—yikes!—while steel is neither.

That means structural steel framing systems can withstand the pounding of hurricane-force winds, stormwater surge and intrusion of flood waters, and the destructive shaking of earthquakes to keep people safe.

Steel's unique resilience makes communities resilient, too. After a disaster, steel structures can be quickly and easily inspected, then either repaired quickly or adapted for another use to give communities a place to come back together.

STRONG IN ALL THE RIGHT WAYS

Unlike other materials, structural steel has identical compressive and tensile strengths. Push it, pull it—doesn't matter. It's strong either way.

That's critically important in an extreme event. Disasters frequently require that structural members unexpectedly transition from being in compression to being in tension. Steel is more likely to resist failure when that happens.

Steel also has the highest strength-to-weight ratio around. It can span great distances with fewer columns while resisting earthquakes, hurricanes, and more—all while using efficient designs and less material.

INCOMPARABLY DUCTILE

Steel's unique ductility gives it the ability to handle extreme loads without cracking or permanently deforming. A steel structure can remain operational and be more easily repaired after an extreme event than structures made of concrete or wood.

Steel Helps Your Community Get Back on Its Feet Faster Than Any Other Material

Steel: The obvious choice

No other structural material can match domestically fabricated structural steel.

Structural steel can **SUPERCHARGE YOUR PROJECT SCHEDULE** because you can design, fabricate, and construct a steel building 50% faster than you could just a few years ago.

Steel is the **MOST RESILIENT STRUCTURAL MATERIAL** because it boasts superior ductility, the highest strength-to-weight ratio, and can be easily repaired.

Structural steel is the **MOST SUSTAINABLE MATERIAL** because it is made from recycled scrap using pure electricity—in fact, it will continue to get greener as the power grid incorporates more renewable energy.

Structural steel is the **MOST EFFICIENT MATERIAL** because its high strength-to-weight ratio allows longer spans, fewer and smaller columns, and larger bays—you can maximize open space today and easily adapt for future reuse.

Structural steel is an **INCREDIBLY ECONOMICAL CHOICE** because its offsite fabrication streamlines the construction process, saving time and money. Bring a structural steel fabricator onto your project team early to save around 70% on your steel package!

Structural steel is a **RELIABLE CHOICE** because it has the most robust quality certification program out there, which is designed to prevent errors instead of correcting them.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION AISC FOUNDED 1921

Smarter. Stronger. Steel.

NO OTHER MATERIAL IS AS
RESILIENT AS STEEL

MILLENNIA OF DURABILITY

No one refers to the Concrete Age or the Timber Age—but any archaeologist will tell you that the Iron Age followed the Stone Age. Iron and steel artifacts are still around, centuries and in some cases millennia later. Now *that* is a legacy!

Steel maintains its full strength and net section properties throughout the life of a building. This means that the integrity of a building will not be compromised under any normal or extreme event—next week or 100 years from now.
(And your work could end up in a natural history museum someday. How cool is that?)

Specify American steel

The American steel industry empowers families and resilient communities. We create high-wage jobs, build relationships, and fuel local economies. We strive to make every community in America a better, cleaner, safer, and more prosperous place to live.

GET THE FACTS

Don't just take our word for it—take a good look at wood and concrete's performance and sustainability claims. Visit **aisc.org/discover** to get started.

Take a good look at today's American structural steel industry, too. All structural steel members are made out of recycled scrap using pure electricity. As the power grid gets greener, so will steel!

When it comes to building a resilient and sustainable future, steel has a long history of innovation to make our built environment greener with structures that are safe, resilient, and economical—and will endure for generations.

Case studies:

WILSHIRE GRAND CENTER | LOS ANGELES

The Wilshire Grand Center is impossible to miss in the L.A. skyline—it's the tallest building west of Chicago. (In fact, it's the tallest American building that's not in Chicago or New York.)

Seismic design gets complicated when you're developing a 73-story tower in a city famous for earthquakes. But it's possible with steel—19,900 tons of it, in fact.

The building is designed to remain elastic with immediate occupancy following a 475-year earthquake, and it's designed not to collapse during an extremely rare 2,475-year earthquake. Some 180 buckling-restrained braces provide lateral resistance and distribute lateral overturning forces to the exterior concrete-filled steel box columns.

ALFRED P. MURRAH FEDERAL BUILDING | OKLAHOMA CITY

The 1993 Oklahoma City bombing killed 168 people and injured almost 700 more. A progressive collapse caused some 85% of the structural damage. A Federal Emergency Management Agency study (FEMA 277) attributed the collapse to, among other things, the lack of continuity reinforcement in the concrete transfer girders and floor slabs as well as the detailing of the concrete columns (which did not provide the redundancy and ductility required for the additional demands on the columns). A subsequent National Institute of Science and Technology study demonstrated that if the Murrah building had a structural steel frame, a critical column wouldn't have failed. There would have been no progressive collapse, and there would have been 85% less damage to the structure.

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