Structurally Deficient Bridges: 101

What is a "Structurally Deficient" Bridge?
Structurally deficient bridges are those that are in need of repair, rehabilitation, or reconstruction to meet current federal, state, and local standards. This includes bridges that have been determined to be structurally deficient or functionally obsolete. These bridges are a safety concern and represent a significant financial burden for local and state governments.

The Current State of Our Infrastructure
According to the American Society of Civil Engineers (ASCE), the United States has approximately 1.5 million bridges, of which over 100,000 are identified as structurally deficient. The ASCE estimates that it would cost between $2 trillion and $3.5 trillion to repair and replace all of the nation’s bridges, roads, and other infrastructure.

How is a Bridge Determined to Be Structurally Deficient?
A bridge is considered structurally deficient if it fails one of the following criteria:

1. It has an algebraic rating of 5 or less on the 1-10 rating scale used by the Federal Highway Administration.
2. It has deficiencies in the bridge approach, which includes the roadway connecting to the bridge.
3. It has deficiencies in the alignment, which includes the alignment of the roadways and other features.
4. It has deficiencies in the superstructure, which includes the bridge deck and other elements that support traffic.
5. It has deficiencies in the substructure, which includes the supports and other elements that support the superstructure.

The Role of UHPC in Restoring American Infrastructure
Ultra-high-performance concrete (UHPC) is a material with high compressive strength and durability, making it ideal for the construction and repair of bridges and other infrastructure. UHPC can be used to reinforce existing bridges, which can extend their service life and reduce the need for costly replacements.

UHPC Solutions
UHPC is a revolutionary material that offers a sustainable and cost-effective solution for repairing and replacing existing infrastructure. With its high strength and durability, UHPC can be used to create new bridges and repair existing ones, providing a safer and more reliable transportation network for communities across the United States.