CASE STUDY

New US 181 Harbor Bridge Project

Delivering a future-ready stay cable system

- North America’s longest concrete segmental cable-stayed bridge
- 152 stay cables delivered and installed on time
- Compliant with Buy America
- Global expertise combined with local integration

DYWIDAG

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Delivering a future-ready Stay cable system for the US 181 Harbor Bridge

Photos courtesy of: Harbour Bridge Project

Project background

The Texas Department of Transportation (TxDOT) set out to replace the aging 1950s Harbor Bridge in Corpus Christi with a modern cable-stayed structure to improve safety, ease congestion, and increase navigational clearance for one of the busiest ports in the United States. The new bridge spans 1,661 ft with a total length of 3,295+ ft, making it North America's longest concrete segmental cable-stayed bridge.

To support this landmark project, DYWIDAG delivered 152 stay cable systems, tie-down cables and specialized equipment compliant with Buy America standards. The team worked closely with the main contractor to address challenges and scheduling requirements.

Project wins

- ✓ **Team composition:** Experienced specialists with strong technical and site execution backgrounds, combined with a focus on safety requirements.
- ✓ **Seamless integration:** Stay cable installation was critical on the path to site progress, requiring smooth execution under pressure, achieved through close integration and effective stakeholder communication.
- ✓ **Adaptive delivery:** Despite pandemic-related delays and design challenges, milestones were met through accelerated schedules and flexible planning.
- ✓ **Global supply, local compliance:** Full Buy America compliance with access to global expertise and sourcing where applicable.

Location	Corpus Christi, Texas, United States
Customer	Texas Department of Transportation (owner)
Timeline	2018 – 2025
Partners	Flatiron Dragados, LLC (main contractor), ARUP (designers), C.F.C. (designers)
Products	3700 ton of of 0.6" epoxy coated strand, 152 sets of Dyna-Grip® DG-E 73, 85, 91, 109 & 121 stay cable systems, 8 temporary stay cables PT-E27, 24 tiedown cables DG-E31, 55, 73
Services	Installation of stay cable systems, tie-downs, and temporary stays / Inspection of Stay Cable systems

Photos courtesy of: Harbour Bridge Project

Challenge

The design requirements for TxDOT's new US 181 Harbor Bridge included building the longest concrete segmental cable-stayed bridge in the US, designed for a 170-year service life, with specific structural, safety, and aesthetic features. Key challenges involved ensuring the design met all safety specifications, managing complex construction logistics in harsh environmental conditions.

> This ambitious project required a partner with proven stay cable technology, specialized installation equipment, and experienced technical teams.

The stay cable partner needed to ensure full Buy America compliance, access to global supply chains (where applicable), and seamless integration with the main contractor activities to minimize risk.

Results and impact

Despite pandemic-related delays and extended design-phase discussions, DYWIDAG met all installation milestones through adaptive scheduling and integrated workforce planning.

The project achieved full Buy America compliance while leveraging global supply chains, demonstrating DYWIDAG's ability to balance regulatory requirements with technical delivery.

This successful project delivered a future-ready structure designed to improve mobility, enhance safety, and expand harbor access for decades to come.

DYWIDAG's Solution

DYWIDAG delivered the main deck support system and provided end-to-end technical expertise, including:

- **152 stay cable systems (Dyna-Grip® DG-E series)**
  Designed for high fatigue resistance and long-term durability
- **24 tie-down cables and 8 temporary stays**
  Critical for structural stability during construction phases
- **Over 3,700 ton of 0.6" epoxy-coated strand**
  Offering superior corrosion protection for Gulf Coast conditions
- **Purpose-built installation equipment**
  Engineered for large-scale cable works to ensure precision and safety
- **On-site technical supervision and training**
  Integrated with the main contractor's workforce for efficient execution
- **Multiple system sizes (DG-E 73, 85, 91, 109, 121)**
  Providing flexibility to match varying load demands across the span

The DG-E system combines DYWIDAG's proprietary DYNA Grip anchorage technology with epoxy-coated strands, delivering strength, durability, and compliance. Proven worldwide, this system is trusted on iconic bridges in France, the USA, and Thailand.

Creating safer, stronger, and smarter structures

Since 1865, DYWIDAG has been developing and delivering superior engineered solutions that make structures reliable, resilient, and built to stand the test of time.

From post-tensioning and geotechnical systems to stay cables and advanced monitoring, we partner with customers globally to ensure structural performance and longevity at every stage of asset life.

Want to know more?

Discover how our products, services and technical expertise can help deliver your structural projects with confidence.

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