CMC

INQUIK® BRIDGE

FREQUENTLY ASKED QUESTIONS

FOR OWNERS

1. How are these certified? Can you design to meet my state's DOT requirements?

The InQuik Bridge meets **AASHTO LRFD Bridge Design Specifications, 9th Edition,** and CMC is engaged with state DOT's to ensure compliance and enable the use of both federal and state funding for installation.

2. Where do you manufacture?

We have manufacturing facilities in **Georgia and Virginia**, but can easily ship in shipping containers or on the back of a truck (up to 3 deck panels can stack on top of each other) with no extra transportation permits required.

3. What are the lead times?

Currently, CMC Bridge Systems lead times are **16-20 weeks** for shorter spans and **20-24** for longer spans, which includes 2-3 weeks to finalize design.

4. What does the system include?

InQuik offers a **full solution above the foundation**, including abutments, wing walls, super-structure, and pier/bent caps if necessary. Our abutments are compatible with all bridge foundation types.

5. What is the design life?

Our bridges are certified to AASHTO standards with a **75+ year design life** that **can exceed 100+** when built with optimized materials. In Australia, our same product has been certified to last 150+, showcasing the remarkable durability of the InQuik design.

6. How long will your bridge uphold under heavy salting?

Our bridges are designed to withstand heavy salting and have a design life of 75+ years, with up to 100 years when built with optimized materials. We utilize hot-dipped galvanizing (Galvabar) as standard, and optionally **ChromX 9100,** which offers up to 5 times more corrosion resistance than conventional steel, particularly in harsh conditions such as de-icing salts, chemicals, and daily temperature swings. Our stay-in-place metal formwork and integral design further enhance durability and protection against corrosion, ensuring a long-lasting bridge structure.

7. What types of formwork are offered?

ZAM (zinc, aluminum, & magnesium) is the most common, but we also offer **weathering and stainless steel**, with each having different corrosion behavior. The most suitable formwork should be selected based on its corrosion performance in each bridges specific environment. Other materials would require a special order.

8. Is the formwork removable? How do you inspect the concrete?

While we do recommend that you leave the formwork in place to protect the concrete, it is **removable if necessary,** but not replaceable. The steel formwork helps to prevent honeycombing, voiding, and cracking in the long run. Additionally, it is only 1/8" thick and accentuates vibration during concrete placement, ensuring a higher quality pour when compared to using wood formwork. Inspecting the concrete can be performed much like sounding the bottom side of the deck or with GPR technology, should you choose to leave the form in place. An additional bonus is the metal design allows you to clean the bridge easier (for graffiti, etc.) using standard solvents, as the smooth steel is not absorbent.

9. What type of rebar do you use?

The standard for our bridges is CMC's **Galvabar,** a galvanized rebar with a zinc alloy coating that provides the well-known corrosion protection of zinc without peeling or flaking. However, CMC provides solutions to fit the desired life expectancy of any customer project, offering alternative rebar like **ChromX** (100+ year design life) as well.

10. How does InQuik reduce whole of life costs?

The InQuik Integral design has no bearings, tie downs, bolted connections, longitudinal joints or grouted joints, ensuring zero structural maintenance over the 75+ year design life. Additionally, our **Galvabar/ChromX** and stay-in-place formwork ensures even further protection for the structure.

11. Are the bearings part of the bridge?

While InQuik deck panels **can be simply-supported** on bearings, our **integral design** helps to support durability, disaster resilience, and helps to reduce maintenance.

12. What is an integral bridge? How does an integral design work?

An integral bridge is one that has **structural continuity between the deck and abutments** that support it. This fully continuous connection between the superstructure and substructure at the abutments eliminates the need for joints or bearings to accommodate rotations and displacements at the ends of the deck. As the deck and abutment components are filled with concrete on-site, provision can be made to integrate them together through a reinforced concrete connection to form a solid single homogeneous mass of concrete. This creates a stronger, more robust structure, requiring zero maintenance and reducing long term inspections.

13. Are there any traffic volume limits on the bridge?

As the bridge deck is designed to the **HL-93 load rating**, and the deck is one homogeneous slab with no deck joints, there are no traffic volume limits other than as defined by the bridge width. Theoretically we can place as many panels next to each other as needed, but have not previously exceeded 5 in the past.

14. Can you provide me with a general cost estimate?

Unfortunately, while our system is modular, pricing can range vastly depending on the specific site needs. However, we can provide you a **free, no commitment budget proposal** if you reach out to us on our website, LinkedIn, or schedule a personalized lunch and learn with one of our representatives.

FOR CONTRACTORS

1. Do you install it?

We **do not** perform the installation, but we do provide an **on-site support representative** throughout the entire process and installation, and are happy to collaborate with/provide consultation to any contractors, engineers, or crews as needed.

2. How long does it take to install an InQuik Bridge?

The time to install depends on how many people are working on-site, the complexity of the bridge design, and the speed and preferences of the installer. For example, it is possible to install the abutments with wing walls and pour and finish the concrete in one day, but an installer may prefer to place the parts on one day, and then pour the concrete on another day. The "place and pour" methodology means that an InQuik bridge **can be installed in 2-3** days over a **total project timeline of 1-2 weeks.**

3. How many components can be transported on one truck?

A typical single lane, single span bridge can be transported on one truck, which includes 2 deck panels, 2 abutments with wing walls and the appropriate connection pieces. It is possible to transport **3 standard deck panels stacked on one truck.** Singular abutments and deck panels have previously been transported with a standard pick-up truck, with no need for transportation permits.

4. How do I learn to install an InQuik Bridge? Do I need certifications or transportation permits?

We provide detailed **installation guides** and a **full set of stamped shop drawings** upon request, and we also provide an **on-site representative** for each installation. No certifications or transportation permits are required.

5. Do I need a crane to install it? How heavy is the average pick?

Most equipment can be set with an **excavator**, and only an excavator is needed for our shorter spans. **The average pick is about 3-4 tons**. A small crane can be used for our larger spans, with the heaviest pick being about 12.1 tons.

6. How do you install a multi-span bridge?

The InQuik system is versatile and can be used for various structures, including single-span and multi-span bridges. Multi-span bridges can be **semi-integral, fully integral** (for spans between 21-45 ft), or **simply-supported** with decks tied down to the pier/bent cap using brackets. InQuik's custom pier and bent cap designs support these configurations, allowing for flexible and durable bridge solutions.

7. Does it require any propping?

The abutments and bridge deck are **fully self-supporting**, and should not require any external props at any point in the construction process. However, the abutments and wing walls should be checked to ensure they are level to the base, and braced if required.

8. Do I need a specific type of concrete? Can I use accelerated concrete?

We recommend that you use your **local ready mix concrete, with a 3/4" aggregate mix.** You can use accelerated concrete if you prefer, as long as it is cured to the required PSI.

9. How do you fill the structure with concrete? Can I pour in one go?

The abutments can be set and filled on the same day, pouring in roughly 20" increments and vibrating adequately to avoid air voids. After the abutments have been cured to 3,600 PSI, which typically takes **3-4 days**, the **deck panels can then be set and filled on the same day** (for shorter spans). For larger spans, deck panels need to be poured in two separate stages, with the deck beams poured and cured to 3,600 KSI first, then followed by the rest of the deck pour.

10. How long does the abutment need to cure before the deck can be placed?

Both the abutment and the deck are designed to use 5,000 PSI concrete. Once this has cured to about **3,600 PSI (~3 to 4 days)**, the deck panels are then able to be placed and filled.

11. After the concrete is poured, how long until it can take traffic?

Both the abutment and the deck are designed to use 5,000 PSI concrete. Light traffic is allowed after deck concrete reaches **3,500 PSI (~7 days)**. Unrestricted traffic is allowed after the deck concrete reaches design strength at **5,000 PSI (~28 days).**

12. Do you need any post-tensioning or transverse stressing?

The reinforcing cage in the panels is designed to be **fully structural on its own**, without the need for any post-tensioning or transverse stressing.

13. How do you install the barrier system? What types of barrier systems can be installed?

The inQuik system is certified for low, regular, and medium performance barriers, and can accommodate a customized connection system as required. The barrier system can **accommodate for nearly all barrier types**, including top/side mounted thrie beams, TMR or RMS styled steel barriers, and concrete barriers. The **anchoring bolts are pre-assembled** in the fabrication shop, and contractors can then install in the field.

14. How does InQuik address safety in design?

At InQuik, we prioritize safety in design by utilizing an integral bridge form of construction that **eliminates the need for falsework**, significantly reducing worker risk. Our self-supporting superstructure design **removes the need to work beneath the bridge,** minimizing the risk of accidents. By avoiding traditional falsework, we reduce the risk of falsework collapses, which account for over 1/3 of all falsework failures. Our innovative design ensures a **safer working environment** for construction teams.

FOR ENGINEERS

1. Do you design the foundation? What drawings do you provide?

While site-specific engineers traditionally do the foundation design for an InQuik bridge, **we do offer design services and P.E. support if needed.** Since our bridges are pre-engineered and modular, we provide a full set of stamped shop drawings for the design.

2. Is there a specific foundation needed?

InQuik bridges are **compatible with all major bridge foundation types.** The best foundation for a particular bridge will depend on site-specific conditions (consult your engineer), but, the standard and most common foundation we accommodate for are driven H-piles spaced at 5'-3" (or 10-6") and a shallow poured slab at 4"-5". It is also common to put a foundation pad with either concrete or aggregate, but it is not structural.

3. What vehicle loads can be designed for?

Our bridges are certified to be compliant with AASHTO LRFD's Bridge Design Specification **HL-93 load rating.**

4. What are your span lengths? Is this adjustable?

Our span lengths approximately range from **21'-61',** with increments at 21', 30', 40', 45', 53', and 61', with a 3' shorter clear span difference for each size (please refer to drawings for exact measurements). Though the lengths are not adjustable, we can supply multi-span bridges (including pier/bent caps).

5. What widths can you accommodate for?

Our widths are flexible and customizable, with each deck panel being approximately **8'** (check drawings for exact measurements - panels are slightly less than 8' after the flanges are overlapped). We also offer spacer plates (sheets of formwork that are spliced) up to 18" for further flexibility when it comes to width. Theoretically we can place as many panels next to each other as needed, but have not previously exceeded 5 in the past.

6. Do deck depths vary?

Yes. Our deck depths, including the beam, range from approximately **14" for our 21' span, 27" for our 30', 40', and 45' spans, and 40" for our 53' and 61' spans.** The deck depth without the beam is 8".

7. What are the measurements for your abutments?

The abutment is approximately **3' or 4' wide, with a standard height of 3'-11"**. You can have a maximum height of 9' that increases in 8" increments from the standard (check drawings for exact measurements). For greater heights, a thicker binding slab can be used, and the abutment will be delivered in sections due to transport height limitations.The foot of the beam will seat 18" back onto the abutment. If an approach slab is required, a 1' wide pocket is incorporated into the abutment, so the approach slab can be placed on top.

8. What are the measurements and angles for your wing walls?

Wing walls are approximately **6' to 9', with angles at 45 degrees or 90**. While we do supply them and attach the corners to the abutments, they are not structural for the bridge.

9. What is the connection detail between the bridge deck panels?

Steel reinforcing tie bars supplied by InQuik are used to connect the panels.

10. Can you accommodate for skews?

Yes, our standard design can accommodate for **up to a 20 degree skew.** Our engineers are also currently developing 30 degree and 45 degree designs, which will be available in 2026 and beyond.

CONTACT US:

Email:
bridgesystems@cmc.com

Phone:
866.249.9661

Website:
cmc.com/bridgesystems

it's what's **inside** that counts