

The Popular CRSI Rebar Reference Mobile App Continues to Evolve

by Dave Mounce, Concrete Reinforcing Steel Institute

The Concrete Reinforcing Steel Institute (CRSI) has entered the mobile app arena with a practical application designed to benefit the architectural, engineering, and construction communities. Introduced in 2019 at the World of Concrete tradeshow, the app quickly gained popularity among the contractor audience. The CRSI Rebar Reference mobile app was developed to augment the vast array of industry publications and resources that CRSI produces. Available for both Android and iOS mobile devices, the app serves as a ready reference guide for general information pertaining to steel reinforcement (rebar). Developed initially to be used in the field, its evolution has enabled it to cross over to the office environment.

The free portion of the app includes a variety of commonly referenced reinforcing steel data such as

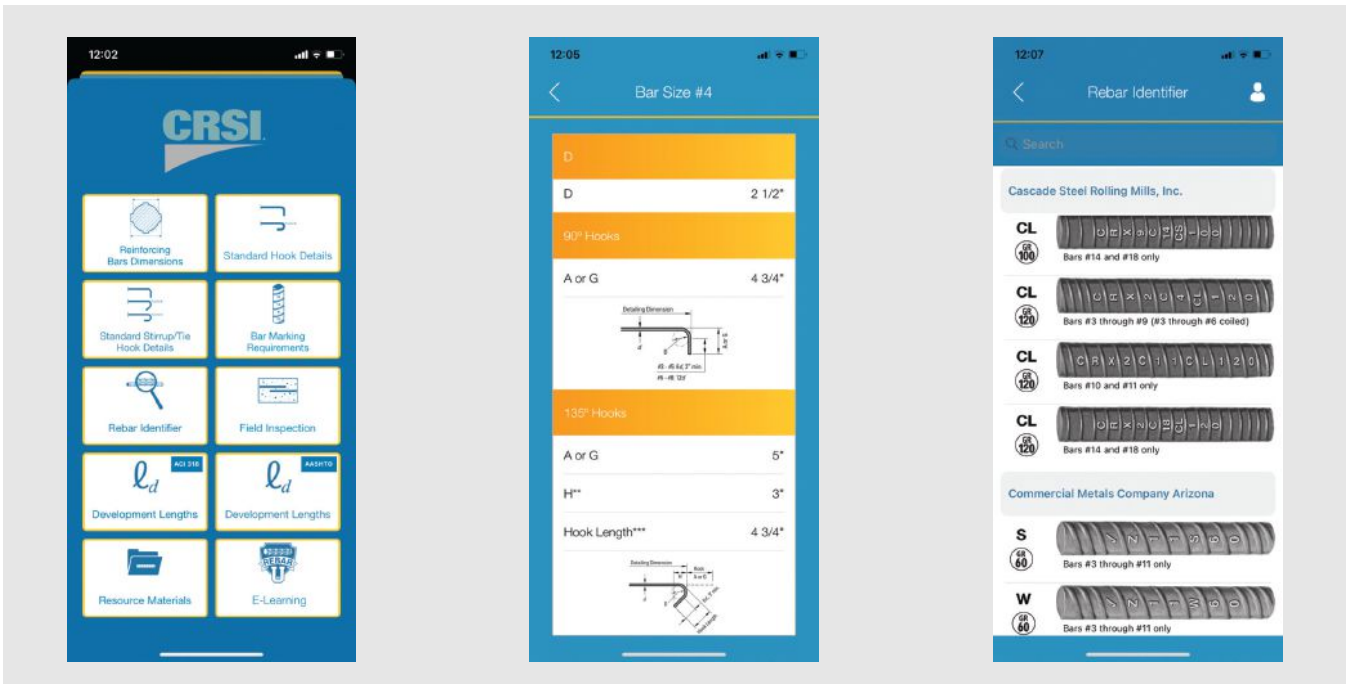
- ASTM reinforcing bar specifications on dimensions and deformations,
- an illustrated explanation of bar marks for reinforcing steel grades 40, 50, 60, 75, 80, 100, and 120,
- standard hook (90- and 180-degree) details, and
- standard hook (90-, 135-, and 180-degree) details for stirrups and ties.

This information is based on CRSI's popular "bar cards," which are available for purchase from CRSI.

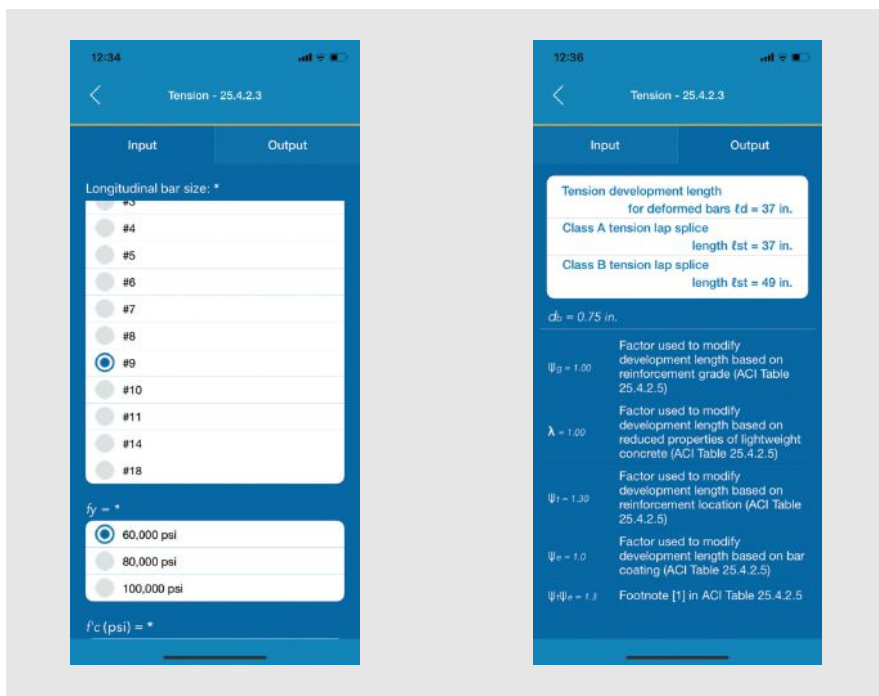
Since the app's release, CRSI has supported it with updates and new

features. Additional free content added late last year included a Field Inspection module. The module provides information for cast-in-place concrete construction, including required cover depth, an explanation of tie wire along with diagrams of the types of ties used at steel reinforcing bar intersections, reinforcing bar placing tolerances and details, and lap splice information with illustrations of the types of lap splices.

Users can further enhance and customize the app on their devices by opting to purchase access to additional modules. The dynamic Rebar Identifier module is based on Appendix A of CRSI's industry-trusted *Manual of Standard Practice*.¹ The Rebar Identifier displays representations of reinforcing bars from all manufacturers



The CRSI Rebar Reference mobile app allows users to access free modules on reinforcing bar data and resource links, as well as the Rebar Identifier and Development Lengths calculators, which are additional modules that can be purchased. CRSI is focused on keeping the app relevant by updating the data regularly. All Figures: Concrete Reinforcing Steel Institute.



The Development Lengths calculators walk users through a simple process to calculate the development lengths and lap splice lengths for reinforcing bars.

of concrete reinforcing bars in the United States. Users can input or filter results by entering specifics such as bar size, grade, and/or type. Manufacturer information is also a swipe away for each bar image, making this tool handy both on site and during field inspections.

The most recent app features that can be purchased as an add-on are the Development Lengths calculators. These modules are available in versions for the American Association of State Highway and Transportation Officials' *AASHTO LRFD Bridge Design Specifications*² and the American Concrete Institute's (ACI's) *Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary (ACI 318-14R)*.³ In these modules, users are taken through a simplified process to calculate the development lengths and lap splice lengths for steel reinforcing bars of any grade, including deformed bars in tension (AASHTO LRFD 5.10.8.2.1, ACI 318 25.4.2.3, and ACI 318 25.4.2.4), standard hooks in tension (AASHTO LRFD 5.10.8.2.4 and ACI 318 25.4.3), deformed bars in compression (AASHTO LRFD 5.10.8.2.2 and ACI 318 25.4.9), and headed deformed bars in tension (ACI 318 25.4.4). The Development Lengths calculators are especially useful for determining the development and lap splice lengths when away from the office.

"The Rebar Reference app provides the Institute with a vehicle to engage our industry in a new and dynamic way," says

Danielle Kleinhans, president and CEO of CRSI. "Along with the general data provided, we can also push important information out, including things like best practices that help standardize steel reinforcement issues within the industry. It's all about making our extensive technical knowledge more accessible and useful."

The app includes a link to CRSI's online Resource Materials portal where users can find free downloadable technical documents, design aids, and reference materials, as well as design guides and field publications for purchase. Also featured is Rebar-U, CRSI's eLearning portal for continuing education and professional development, which offers a variety of eLearning courses and webinar presentations on design and construction topics.


As part of its member committee structure, CRSI has a mobile app task group that focuses on improving and furthering the development of the Rebar Reference app. "The app allows CRSI to stay nimble and utilitarian with information that needs to be communicated to the AEC [architecture, engineering, and construction] community. For example, there has been a recent change to the way fabricated reinforcing steel is measured," Kleinhans states. "That kind of information needs to be readily available on the spot, especially when it comes to field inspection."

CRSI is excited to keep up the momentum around the app, including the addition of a Measuring Fabricated Bars module, which is due to be released in early 2021. CRSI is contemplating a desktop version to make the app—and the Development Lengths module specifically—more easily accessible to designers and detailers while at their workstations during the design and development phase. Additional content and modules will be developed based on input that CRSI's region managers acquire from industry contacts, along with recommendations from technical committees. With multiple new features identified, in development, or already implemented, CRSI is striving to ensure the app remains beneficial and relevant to its users into the future.

The Concrete Reinforcing Steel Institute (CRSI)

Founded in 1924, CRSI is one of the oldest trade associations in the United States. It is a technical institute and an ANSI-accredited Standards Developing Organization that stands as the authoritative resource for information related to steel-reinforced concrete construction. CRSI offers many industry-trusted technical publications, standards documents, design aids, reference materials, and educational opportunities to advance and standardize the reinforced concrete construction industry.

References

1. Concrete Reinforcing Steel Institute (CRSI). 2018. *Manual of Standard Practice*. 29th ed. Schaumburg, IL: CRSI.
2. American Association of State Highway and Transportation Officials (AASHTO). 2017. *AASHTO LRFD Bridge Design Specifications*, 8th ed. Washington, DC: AASHTO.
3. American Concrete Institute (ACI) Committee 318. 2014. *Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary (ACI 318R-14)*. Farmington Hills, MI: ACI. 

Dave Mounce is the director of communications for the Concrete Reinforcing Steel Institute in Schaumburg, Ill.