

Publication of

“Guideline on Design and Application Methods of Galvanized Steel Reinforcement for Concrete Structures” March 2019.

Application of Galvanized (Zinc-coated) steel rebar was started from 1970s' in Japan. The first guideline was established in 1979 by AIJ (Architectural Institute of Japan) and the second one was in 1980 by JSCE (Japan Society of Civil Engineers).

In 1983, JCI (Japan Concrete Institute) listed “galvanized steel rebar” as a corrosion preventive counter measure for marine concrete structures, as “epoxy coated rebar” and “cathodic protection” in the “Guideline for corrosion preventive methods for marine concrete structures”.

The special feature of this galvanized steel rebar is that it has two effectiveness such as “protective layer” and “sacrificial corrosion prevention effect”. This is different point from epoxy coated rebar or stainless steel rebar. However, zinc is dissolved in alkali solution. This fact is one of the reason why the reliability of galvanized steel rebar in concrete could not be established, especially, under wet marine conditions.

Recent trend in design system of concrete structures, that is, the world trend for performance design system, changed the situation. And, recent research on galvanized steel rebar on durability in concrete made it possible to quantitatively estimate the thickness reduction of zinc layer, therefore, to evaluate the service life of the structures with this special rebar.

The committee was established in JSCE in 2016 (Chairman, Dr. Prof. Koji Takewaka, Kagoshima Univ.), for revision of the JSCE guideline established in 1980, with financial support by JGA (Japan Galvanizers Association Inc.). As a result of the 3 years' committee activity, the revised guideline was completed and just published in March 2019. In this new guideline, the durability verification design system is clearly described. And new information on this special rebar obtained recent a few decades, not only in Japan, but also in the world, is included.

Content is: Chapter 1 General, Chapter 2 Galvanized Steel Rebar, Chapter 3 Durability Verification, Chapter 4 Structural Detail, Chapter 5 Construction Procedure, Chapter 6 Inspection, and Chapter 7 Record.

Total committee member is 45. Key members are: Dr. Koji Takewaka (Kagoshima Univ.), Dr. Hidenori Hamada (Kyushu Univ.), Dr. Yasuhiko Sato (Waseda Univ.), Dr. Shinichi Miyazato (Kanazawa Institute of Technology), Dr. Toshinobu Yamaguchi (Kagoshima Univ.) and Dr. Takashi Yamamoto (Kyoto Univ).



Galvanized Steel Rebar in Real Construction Site