Corrosion of steel reinforcement is the most significant factor in the deterioration of reinforced concrete structures. Applying corrosion inhibitors to the concrete to reduce the rate of corrosion of the steel has been shown to be effective. Generally, the inhibitor is adsorbed on the surface of the metal and modifies the composition and structure of the double layer or induces passivity. Many types of inorganic- and organic-inhibiting systems are available, including concrete admixtures, rebar coatings and migrating compounds. Conclusions from previous studies on the effectiveness and field performance of these inhibiting systems on corrosion of reinforcing steel are controversial. In this paper, eight commercial corrosion-inhibiting systems for reinforcing steel in concrete have been evaluated from a newly reconstructed barrier wall of a highway bridge. Results from a 5-year field survey and laboratory electrochemical study are presented. The methods and procedures of testing these systems are also discussed.