

alculation of corrosion rate for reinforced concrete beams based on corrosive crack width

钢筋混凝土梁基于锈胀裂缝的锈蚀率计算

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Main goal

The calculation model for single measuring point and the correction method for corrosive crack width is proposed to calculate the corrosion rate of beam in the case of non-uniform corrosion.

Calculation model for single measuring point

The calculation model for steel bar corrosion rate for single point is obtained through quantitative analysis and accelerated corrosion tests on more than 70 reinforced cubic members.

Correction method for corrosive crack width

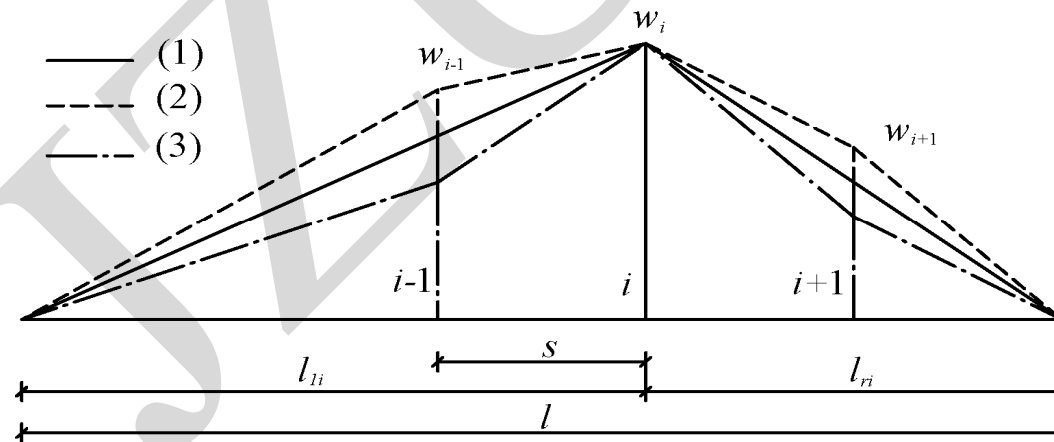
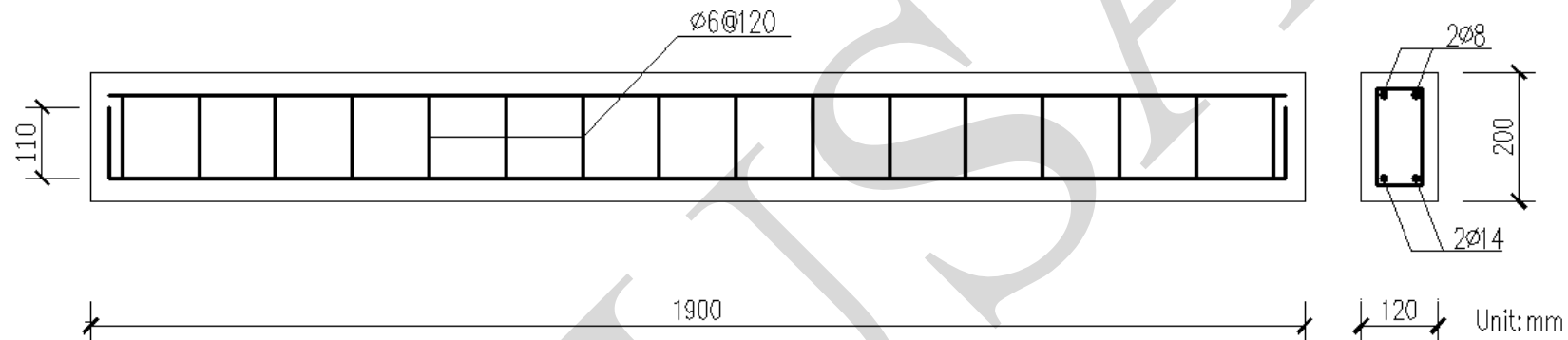


Fig. 1 Correction model of crack width at the dangerous point

Test results and conclusions

Longitudinal bars in the bottom of each beam were corroded after electrolyte accelerated corrosion test with a current intensity of 1.5 A. All the specimens were corroded in batches, with the duration from 7 d to 13 d.



The experimental results indicate that the ratio between the maximum corrosion rate by the indirect method and the measured average value ranges from 1.4 to 2.4, which is of high accuracy and justifies further research along these lines in this area.

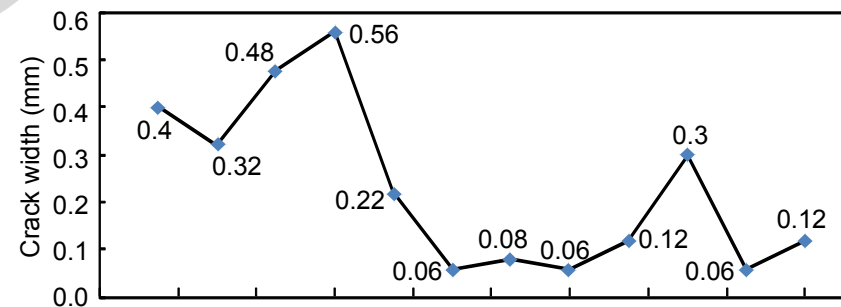


Fig. 11 Distribution curves of measuring points based on crack width (f) B-6