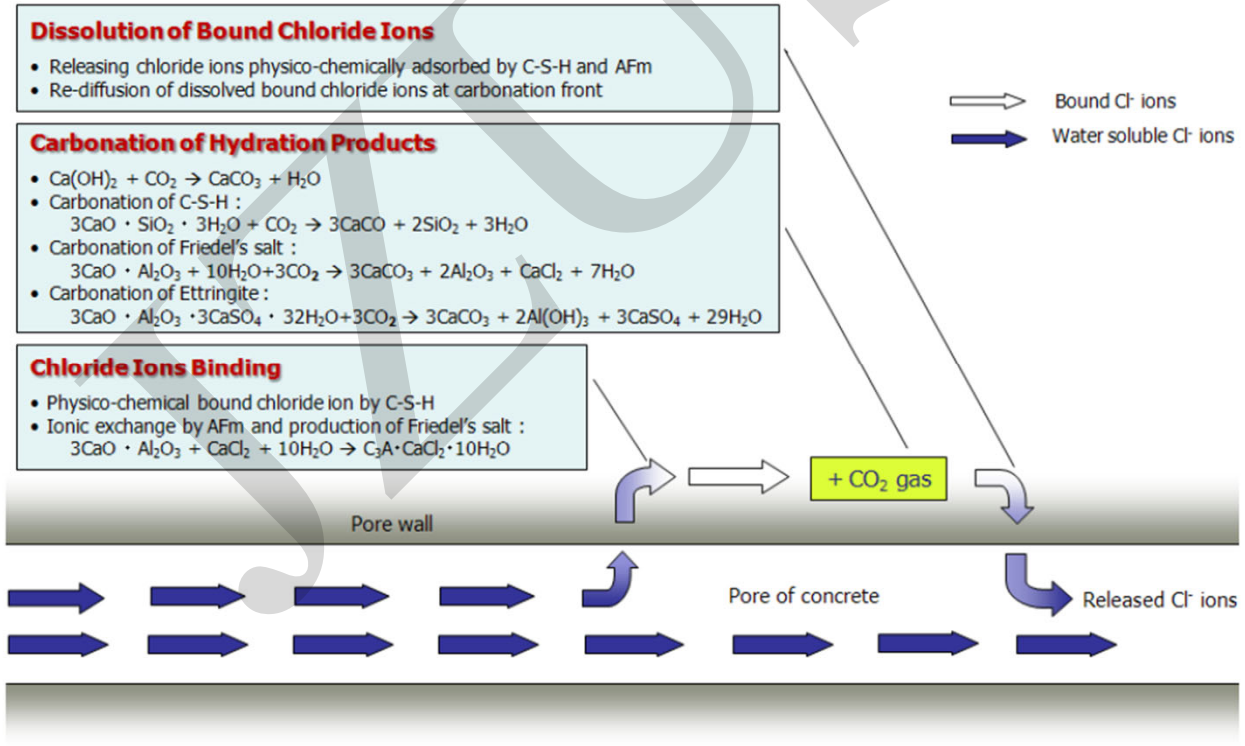
Chloride content and pH value in the pore solution of concrete under carbonation

碳化环境下混凝土孔溶液中的氯离子含量和pH值

Citation: Xiao-mei WAN, 2013. Chloride content and pH value in the pore solution of concrete under carbonation. Journal of Zhejiang University-Science A (Applied Physics & Engineering), 14(1):71-78. [doi:10.1631/jzus.A1200187]

Introduction

- Under usual climatic conditions the pore space is partially filled with water, depending on the relative humidity of the environment.
- Chloride content and pH value of the pore solution in the neighborhood of steel reinforcement are decisive parameters for initiation and rate of corrosion.



Procedure

- The pore solution has been expressed under high pressure.
- Then the influence of carbonation on the dissolved chloride content and pH value was investigated.

Conclusions

- The content of dissolved chloride in the pore solution decreases with increasing water-cement ratio. The amount of chemically bound chloride increases with time, but it decreases with decreasing content of dissolved chloride in the pore solution.
- Carbonation not only lowers the pH value but at the same time it liberates chemically bound chloride.