

Causes of Cracks in Concrete

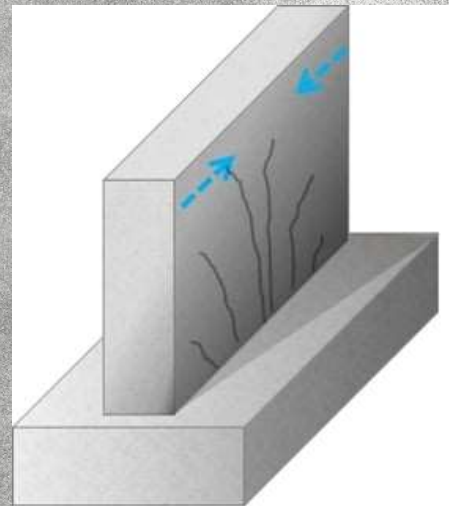


Structural Guide

Types of Concrete Cracks

Cracks in Immature Concrete

Cracks in Harden Concrete



Cracks in Immature Concrete

Plastic Cracking

- Plastic Shrinkage Cracks
- Plastic Settlement Cracks

Construction Movement

- Movement of Formwork
- Movement of subgrade



Reasons for Cracking of Hardened Concrete

Physical Reasons for Cracking

- Shrinkable aggregates
- Drying shrinkage
- Crazing

Chemical Reasons for Cracking of Concrete - Chemical attack to Concrete

- Corrosion of Reinforcements
- Alkali aggregate reaction
- Cement carbonation shrinkage

Thermal Effects - Thermal Cracking of Concrete

- Freeze/thaws Cycles
- External seasonal temperature variations
- Early thermal Contractions
- Cracking of concrete caused by the rise of core temperature resulting to form delayed ettringites

Structural Design Issues

- Accidental overload
- Cracking due to creep
- Cracking due to the consideration of incorrect design loads
- Cracking due to Wrong Construction Practices

Thank you



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Civil & Structural Engineering Knowledge Base