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Nota di contenuto	Front cover; Concrete structures: protection, repair and rehabilitation; Copyright page; Contents; Acknowledgments; About the author; Introduction; CHAPTER 1 Understanding concrete; CHAPTER 2 Evaluating concrete in concrete structures; Reviewing the records; Site survey; Shoddy workmanship; Cracking; Pattern cracking; Isolation cracks; Crack depth; Crack width; Crack activity; All crack occurrence; Disintegration and spalling; Scaling; Dusting; Distortion; Erosion; Joint seals and seepage; Special cases of spalling; Delamination; Crack surveys; Sizing cracks; Surface mapping Joint inspectionsCore drilling; Underwater inspections; Underwater vehicles; Photographic tools; High-resolution acoustic mapping system; Side scanner; Other means of underwater testing; Laboratory work; Chemical analysis; Physical analysis; Nondestructive testing; Rebound hammers; Carbonation of concrete surface probes; Ultrasonic pulse-velocity testing; Acoustic mapping; Ultrasonic pulse-echo testing; Radar; Other considerations; CHAPTER 3 Causes of distress and deterioration of concrete; Accidental loadings; Chemical reactions; Acid; Aggressive-water attack; Alkali-carbonate rock reaction

Alkali-silica reaction; Various chemical attacks; Sulfate attack; Poor workmanship; Corrosion; Design mistakes; Abrasion; Cavitation; Freezing and thawing; Settlement and movement; Shrinkage; Temperature changes; CHAPTER 4 Planning and design of concrete repair; Compressive strength; Modulus of elasticity; Thermal expansion; Bonding; Drying shrinkage; Creep; Permeability; Planning a repair; Manufacturer's data; CHAPTER 5 Concrete removal and preparation for repair; Removal methods; Blasting; Crushing; Cutting; Stitch cutting; Thermal cutting; Impacting methods; Boom-mounted concrete breakers

Spring-action hammers; Handheld impact breakers; Hydromilling; Rotary-head milling; Presplitting; Chemical agents; Piston-jack splitters; Plug-feather splitter; Prep work; Chemical cleaning; Mechanical cleaners; Shot blasting; Blast cleaning; Acid etching; Bonding agents; Reinforcing steel; Anchors; CHAPTER 6 Materials and methods for repair and rehabilitation; Prestressing steel; Autogenous healing; Conventional placement; Crack arrest techniques; Drilling and plugging; Drypacking; Fiber-reinforced concrete; Flexible sealing; Gravity soak; Chemical grouting; Hydraulic-cement grouting

High-strength concrete; Jacketing; Judicious neglect; Polymer overlays; Latex; Portland cement; Polymer coatings; Polymer concrete; Polymer impregnation; Polymer injection; Precast concrete; Preplaced-aggregate concrete; Rapid-hardening cement; Roller-compacted concrete; Routing and sealing; Shotcrete; Shrinkage-compensating concrete; CHAPTER 7 Maintenance of concrete; Stains; Stain removal; Cleaning details; Oil stains; Grease; Dirt; Mildew; Asphalt; Efflorescence; Soot; Coatings and sealing compounds; CHAPTER 8 Specialized repairs; Rehabbing lock walls; Cast-in-place; Blasting lock walls

Anchors

Sommario/riassunto

The success of a repair or rehabilitation project depends on the specific plans designed for it. Concrete Structures: Protection, Repair and Rehabilitation provides guidance on evaluating the condition of the concrete in a structure, relating the condition of the concrete to the underlying cause or causes of that condition, selecting an appropriate repair material and method for any deficiency found, and using the selected materials and methods to repair or rehabilitate the structure. Guidance is also provided for engineers focused on maintaining concrete and preparing concrete investigation r
