WINNER

1997 R&D 100 Awards Winner

ASR Detect™—Diagnostic Method for Analyzing Degrading Concrete

Features

- Identifies alkali-silica reaction (ASR) in concrete through colorful, easy-to-interpret staining of two ASR gels
- Differentiates ASR from other causes of degradation with ASR-specific reagents
- Eliminates need for special equipment and extensive training
- Diagnoses ASR deterioration in time for remediation that forestalls structural repairs or replacements
- Reveals proximity of ASR to different aggregate components
- Avoids the radioactive materials of other diagnostic methods
- Provides reliable diagnosis in less than five minutes for less than $1 per concrete sample

Applications

- Analyzing the integrity of concrete in structures such as highways, bridges, dams, railroad ties, and culverts on the site
- Finding ASR before structures are irreparably damaged
- Identifying aggregate components triggering ASR
- Evaluating concrete mix designs for ASR potential
- Expanding studies of all factors associated with ASR's occurrence

Benefits

- Allows many structures to be tested quickly
- Opens the door to discovering and eliminating widespread degradation in the nation's infrastructure
- Eliminates expensive repairs and replacements by identifying ASR early enough for remediation
- Enables research into improved concrete mixes and better remediation treatments
- Supports efforts to develop ASR-free concrete for the future