New Jersey Department of Transportation ASR Values for Aggregate Sources

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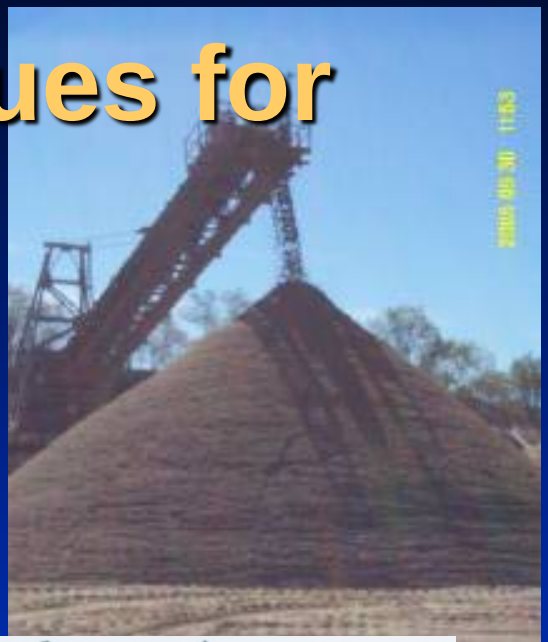


NJDOT Specifies: AASHTO T 303, Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction

- 14 days reading (16 day for results)
- Aggregate Inspection Section obtains sample(s) at NJDOT aggregate source. Is it PCC source?
- Coarse Aggregate (i.e. quarries, gravel pits) – usually test #8 (3/8”)
- Fine Aggregate – only the approved PCC sands.

Step 4

- NJDOT: ASR can always be remediated, determined value is a number for PCC design purposes.
- Potentially reactive after 14 days in solution if produced expansion of 0.10% or more (vs. 0.08%). At 0.40% or more higher amount of Type F flyash.
- **For 0.10 or more**:

  1) use 15% Type F flyash

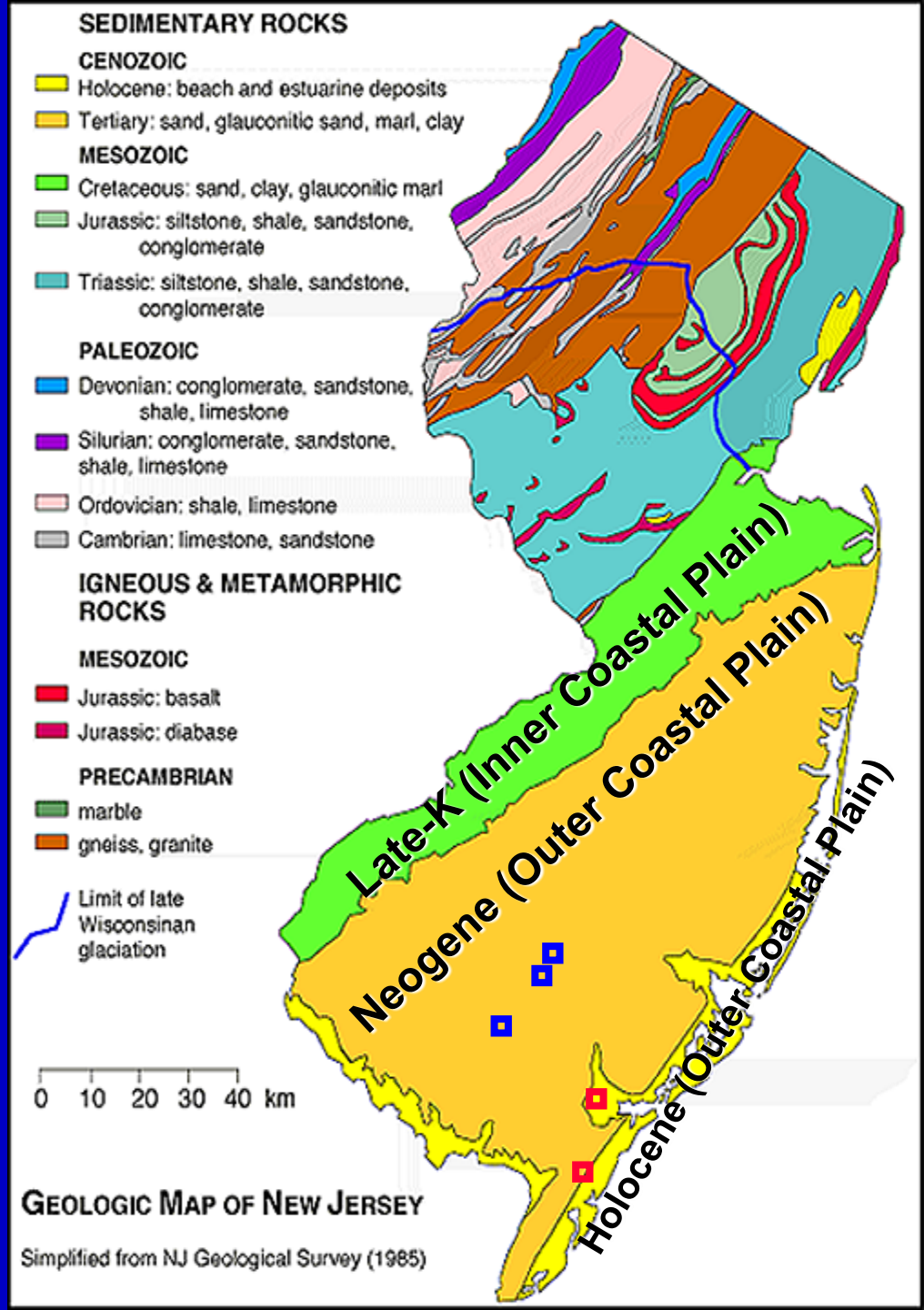
  2) or use 25% slag

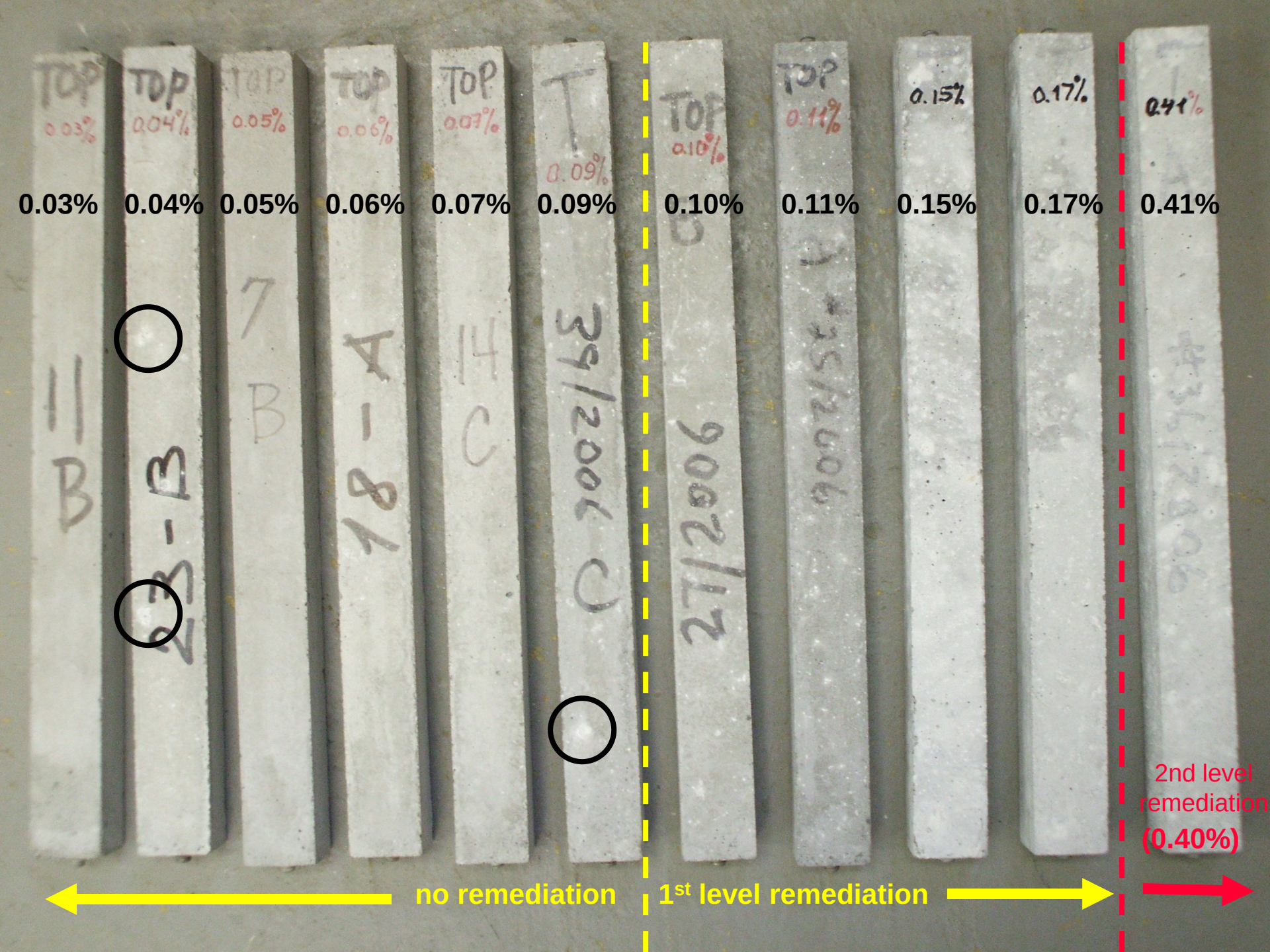
  3) or use low-Alkali

  cement of less than 0.60%

  For 0.40% or more: when using Type F flyash, use 20%

Geologic Map of New Jersey




0.03%
0.04%
0.05%
0.06%
0.07%
0.09%
0.10%
0.11%
0.15%
0.17%
0.41%
2nd level remediation (0.40%)
no remediation
1st level remediation

References cited:

- NJDOT Standard Specifications, Section(s) 901.06: Aggregates for Concrete, Mortar, and Grout and 903.03.01: Concrete (Composition)
- AASHTO T-303-00 (2012)

Questions?