ASTM International Standards
Supporting Sustainable Concrete Construction

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The Standards Developed

- ASTM MoU Program provides a full collection of ASTM International standards to its signatories for reference, adoption or use as the basis of a national standard.

- As a MoU partner ZABS is able to adopt ASTM standards.

- Four ASTM International standards
  - Two address better practices for water use, notably recycled water at the site (C1602, C1603)
  - Two address recycled industrial materials in concrete production (C1697, C1798)
How the Standards Help

- Zambia’s National Construction Council obliges ZABS to identify standards for the construction industry
  - C1697 (aggregates) allows use of local materials:
    - Economic efficiency
    - Standard ensures that quality is maintained
    - Result: inexpensive, plentiful, accessible, easily transportable concrete
How the Standards Help

- C1603 (water) permits use of recycled waste water
- Water’s source impacts its qualities
- Water’s properties greatly affect strength and durability of the final product
- Use of water with some impurities (solids) disturbs concrete’s cohesion and adhesion properties.
- Standard was adopted to determine the impurities (solids) in the water
- Knowledge ensures industry uses quality raw materials
Lessons Learned

- Authority’s requirement for standards:
  - Supports the authority’s objective
  - Limits substandard works in a growing construction industry
  - Checks the quality of raw materials used
  - Promotes the recycling of materials used in construction
  - Reduces the number of landfills, preserving the environment (land and water bodies).
  - Encourages sustainable communities/cities with a reduced environmental pollution
Thank you!