

# CIR-IC Test Strip Procedure

## CIR-IC Test Strip Procedure

Goal: Establish Target Density, rolling pattern, and ICMV

### I. Field

#### A. Choose test Strip location

1. Within the test strip for CIR
2. 500 feet long
3. Use rover to establish test strip boundary
4. Use rover to establish the position of 3 randomly selected nuclear gage density locations

#### B. Determine target Density (Break Over Point) and rolling pattern

1. After each coverage measure density at 3 pre-selected locations using nuclear gage and record
2. Record the pass (coverage) number
3. Record type of the roller
4. Calculate average density for each pass (coverage)
5. Plot average density vs. number of passes
  - a. Determine Break over point (maximum density) and the corresponding no. of passes
  - b. Use intelligent compaction steel drum vibratory roller as the last coverage after reaching break over point
    - (1) Measure density at 10 random locations
      - (a) If the average density is greater than break over point density
        - i) Establish new break over point
          - (1) Continue rolling using steel or rubber tire roller
          - (2) Measure density at 10 random locations
          - (3) Plot average density vs. passes
          - (4) Determine the break over point density
        - (b) If the density is lower than break over point density
          - i) Stop rolling
          - ii) Break over point is the previous density

### II. VETA Analysis

- A. Download the latest version of VETA from [www.intelligent.com](http://www.intelligent.com)
- B. Analyze data for steel drum and pneumatic tire roller separately.
  1. Steel drum vibratory IC roller

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- a. Import all passes data (e.g. \*.csv or \*.pIn) into VETA
  - b. Enter the coordinate system
  - c. Set up the test strip boundary as a filter location to exclude outside work data
    - (1) Set the filter compaction mode to vibratory
  - d. Enter or import the density reading corresponding to each pass
  - e. Run analysis with test strip filter, for number of passes for steel drum IC roller
  - f. Use compaction curve for all passes to determine the target ICMV corresponding to target number of passes for steel drum vibratory roller established in field for break over point
  - g. Report  
Prepare and include the following
    - (1) Completed form CEM-IC20
    - (2) Spreadsheet of boundary coordinates
    - (3) Spreadsheet of density readings and coordinates
    - (4) Plot of field average density vs. number of passes
    - (5) Plot of VETA compaction curve for all passes
    - (6) Plots of VETA coverage for all passes
2. AMG rubber tire roller
- a. Import all passes data (e.g. \*.csv or \*.pIn) into VETA
  - b. Enter the coordinate system
  - c. Set up the test strip boundary as a filter location to exclude outside work data
    - (1) Set the filter compaction mode to static
  - d. Enter or import the density reading corresponding to each pass
  - e. Run analysis with test strip filter, for number of passes for AMG roller
  - f. Use compaction curve for all passes to determine the target density corresponding to target number of passes established in field for break over point
  - g. Report  
Prepare and include the following
    - (1) Completed form CEM-IC20
    - (2) Table of boundary coordinates
    - (3) Table of gage density readings and coordinates
    - (4) Plot of field average density vs. number of passes

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- (5) Plot of compaction curve for all passes
- (6) Plots of coverage for all passes