

## SPECIAL PROVISION

PROJECT #

PIN #

### SECTION 02743S

## INTELLIGENT COMPACTION REQUIREMENT

Add to Section 02741:

### PART 3 EXECUTION

#### 3.7 COMPACTION

- C. Intelligent Compaction (IC) shall be used within the limits of the work as described in the plans. The primary position for the IC roller is in the initial phase (breakdown) in the paving sequence. IC rollers can also be used in the intermediate phase as long as the mat temperatures are sufficient for compaction. The use of IC rollers in the finish phase is not recommended.
1. The IC system shall meet the following specific requirements:
    - a. IC rollers shall be self-propelled double-drum vibratory rollers
      1. Rollers may be equipped with accelerometers mounted in or about the drum.
    - b. IC rollers shall be equipped with non-contact temperature sensors for measuring pavement surface temperatures.
    - c. GPS radio and receiver units shall be mounted on each IC roller to monitor the drum locations and track the number of passes of the rollers.
      1. GPS testing shall be conducted daily during production operations to ensure consistency and accuracy of GPS measurements for all GPS devices.
    - d. IC rollers shall include an integrated on-board documentation system that is capable of displaying real-time color-coded maps of measurement values including roller location, number of roller passes, pavement surface temperatures, and roller speeds.
      1. Recording vibration frequencies and amplitudes of roller drums is optional.
      2. The display unit shall be capable of transferring the data by means of a USB port.
  2. The Contractor shall follow vendor-specific instructions on exporting measurement values to Veda software, and must visually inspect the exported maps within Veda for accuracy before submitting the final product to UDOT. The minimum frequency of

obtaining data from the roller and processing and submitting the finalized product from Veda to the UDOT Engineer shall be one (1) time per day of asphalt compaction operations. Only one day's data shall be submitted to the Engineer at one time (not cumulative). The data shall be date/time stamped which permits for evaluation at a later time.

- a. Veda software can be downloaded for free at [www.intelligentcompaction.com](http://www.intelligentcompaction.com)
  - b. The recorded GPS data shall be in the following formats
    1. Time: The time stamp shall be in military format, hhmmss.ss in either UTC or local time zone. 0.01 second is required to differentiate sequence of IC data points during post process.
    2. GPS: Latitudes and longitude shall in ddm.ddd or decimal degrees, dd.ddd.ddd. . Longitudes are negative values when measuring westward from the Prime Meridian.
    3. Grid: Coordinates shall be in feet with at least 3 digits of significance (0.001 ft).
3. The Contractor shall coordinate for on-site technical assistance and training from an IC roller representatives for the duration of asphalt production. The roller representative shall also assist the Contractor with IC data input and processing.