

203-R-653 EMBANKMENT OTHER THAN ROCK, WITH STRENGTH OR DENSITY CONTROL

(Adopted 11-18-16)

The Standard Specifications are revised as follows:

SECTION 203, BEGIN LINE 887, DELETE AND INSERT AS FOLLOWS:

203.23 Embankment other than Rock, with Strength or Density Control

The compaction will be determined by dynamic cone penetrometer, DCP, testing in accordance with ITM 509 and the moisture content in accordance with ITM 506. Soil classification will be performed in accordance with the ITM 512 and the following DCP blow counts will be used for compaction control:

Textural Classification	Maximum Dry Density (pcf)	Optimum Moisture Content Range (%)	Acceptable Minimum DCP value for 6 in. for 95% compaction	Acceptable Minimum DCP value for 12 in. for 95% compaction	Acceptable Minimum DCP value for 12 in. for 100% compaction
CLAY SOILS					
Clay	< 105	19 - 24	6		*
Clay	105 - 110	16 - 18	7		*
Clay	111 - 114	14 - 15	8		*
SILTY SOILS					
Silty	115 - 116	13 - 14		9	*
Silty	117 - 120			11	*
SANDY SOILS					
Sandy	121 - 125	8 - 12		12	*
Sandy	> 125			15	*
GRANULAR SOILS – STRUCTURE BACKFILL AND A-1, A-2, A-3 SOILS					
No. 30				6	9
No. 4				7	10
1/2 in.				11	14
1 in.				16	19
<i>Note: * Test section required in accordance with ITM 514</i>					

~~Three random test locations will be determined in accordance with ITM 802 for each 2,000 cy yd of compacted soil for each two-lane pavement section.~~ Unless otherwise specified, all material directed to be compacted in accordance with 203.23 shall meet the acceptable minimum DCP value for 95% compaction. Subgrade shall meet the acceptable minimum DCP value for 100% compaction when required.

As an alternate, all embankments shall be compacted to at least 95% of their maximum dry density and all subgrade shall be compacted to at least 100% of their maximum dry density. In situ density will be determined in accordance with AASHTO T 191 and the moisture content as specified.

For clay, silty, and sandy soils compacted to 100% of their maximum dry density, a test section is required in accordance with ITM 514 for DCP testing.

Clay soils shall be constructed and tested with DCP in 6 in. lifts, whereas silty, sandy, and granular soils shall be constructed in 6 in. lifts and tested with DCP for 12 in.

The moisture compaction range for all soils types shall be as follows:

Soil Type	Moisture Compaction Range
Clay (< 105 lb/cu ft)	-2 to +2% of optimum moisture content
Clay (105-114 lb/cu ft)	-2 to +1% of optimum moisture content
Silty and Sandy (> 114 lb/cu ft)	-3% to optimum moisture content
Granular	5 to 8%

DCP testing will be performed in accordance with the Frequency Manual at random locations determined in accordance with ITM 802.

Moisture testing will be performed ~~every four hours for clayey soils and once a day for silty, sandy, and granular soil types~~ in accordance with the Frequency Manual.
