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| DOTLOGO2 | | | | | | | | | | | | | **Field Soil Compaction (Nuclear)** | | | | | | | | | | | | |
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|  | | | | | | | |  | | | | | | | | | | Test Id No.(1): | | | |  | | | |
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| Inspector No.(2): |  | | | | | Contract No.(3): | | | | | |  | | | | | | | | Job No.(4): | | |  | | |
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| Responsible Loc(5): | | |  | |  | Lab(6): | | |  | |  | Lab Name(7): | | | |  | | | | | | | | | |
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| Sub Contractor(8): | |  | | | | | | | | Producer Code(9): | | | | | | |  | | | | Material Code(10): | | | |  |
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|  | Test | |  | Test |  | Station |  | | Ref | |  | Type | | |  | Type |  | Original |  | Elevation(18): | | | | |
|  | Date(11): | |  | No.(12): |  | (13): |  | | (14): | |  | Const(15): | | |  | Insp(16): |  | Id No.(17): |  | Grnd |  | Grade |  | Test |
| A |  | |  |  |  |  |  | |  | |  |  | | |  |  |  |  |  |  |  |  |  |  |
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| E |  | |  |  |  |  |  | |  | |  |  | | |  |  |  |  |  |  |  |  |  |  |
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|  | Material | | | |  | | Soil |  | Test | | | |  | | Opt |  | | Actual | |  | % | | |  | Std | | |  | Actual | | |  | % | | |  | | Min | | | | |  | | Results | | |
|  | Source(19): | | | |  | | Type(20): |  | Method(21): | | | |  | | H20(22): |  | | H20(23): | |  | Opt(24): | | |  | Proc(25): | | |  | Dens(26): | | |  | Std(27): | | |  | | Spec(28): | | | | |  | | (29): | | |
| A |  | | | |  | |  |  |  | | | |  | |  |  | |  | |  |  | | |  |  | | |  |  | | |  |  | | |  | |  | | | | |  | |  | | |
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| F |  | | | |  | |  |  |  | | | |  | |  |  | |  | |  |  | | |  |  | | |  |  | | |  |  | | |  | |  | | | | |  | |  | | |
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| G |  | | | |  | |  |  |  | | | |  | |  |  | |  | |  |  | | |  |  | | |  |  | | |  |  | | | |  | |  | | | | |  | |  | | |
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| **\*Note:** **All test data that is stored in MISTIC must be metric.** If the data ion the form is in English units, then type “Y” in the convert field “\*C (30)” and the MISTIC system will convert it to Metric values after processing. If the data on the form is in metric units, then leave blank. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **\*C**(30): | | |  | | | | | | |

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  | A | B | C | D | E | F | G |
| (31): Moisture Reading |  |  |  |  |  |  |  |
| (32): Moisture Standard Count, C.P.M. |  |  |  |  |  |  |  |
| (33): Moisture Count Ratio (31 ÷ 32) |  |  |  |  |  |  |  |
| (34): Density Reading |  |  |  |  |  |  |  |
| (35): Density Standard Count, C.P.M. |  |  |  |  |  |  |  |
| (36): Density Count Ratio (34 ÷ 35) |  |  |  |  |  |  |  |
| (37): Gauge Wet Density, lb/ft3 |  |  |  |  |  |  |  |
| (38): Field Moisture, lb/ft3 (Gauge + 41 or Oven Dry) |  |  |  |  |  |  |  |
| (39): Field Dry Density, lb/ft3 (37 - 38) |  |  |  |  |  |  |  |
| (40): Field % Moisture (38 ÷ 39) X 100 |  |  |  |  |  |  |  |
| (41): Moisture Correction Factor (MCF), lb/ft3 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| (42): Weight of Proctor Mold + Soil, grams |  |  |  |  |  |  |  |
| (43): Weight of Proctor Mold, grams |  |  |  |  |  |  |  |
| (44): Net Weight of Soil, grams (42 – 43) |  |  |  |  |  |  |  |
| (45): Proctor Wet Density, lb/ft3 (44 X Mold Factor) |  |  |  |  |  |  |  |
| (46): Proctor Dry Density, lb/ft3 [45÷(52+100)] X 100 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| (47): Wet Soil + Pan, grams |  |  |  |  |  |  |  |
| (48): Dry Soil + Pan, grams |  |  |  |  |  |  |  |
| (49): Water Loss, grams (47 – 48) |  |  |  |  |  |  |  |
| (50): Pan Weight, grams |  |  |  |  |  |  |  |
| (51): Dry Soil, grams (48 – 50) |  |  |  |  |  |  |  |
| (52): Proctor % Moisture (49 ÷ 51) X 100 |  |  |  |  |  |  |  |

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| Remarks(53): |  | | | | | | |
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| MISTIC Input Date(54): | |  | Copies(56): |  | Resident(57): |  | |
|  | | | | | | |
| Initials(55): | |  |  |  | Inspector(58): |  | |

This form has hidden text (in red). To print the hidden text, the “Print hidden text” option must be on. Select the Office button (upper left corner of your screen), select “Print”, select “Options” (lower left corner of the dialog box), select “Print hidden text” (under the “Printing options” heading) and select “OK”.

**INSTRUCTIONS FOR BMPR MI701N**

1 **Test Id No.:** Enter the test identification number generated from MISTIC.

2 **Inspector No.:**

* 1. **IDOT personnel** enter 9-digit social security number or MISTIC inspector number (begins with the letter “I”).
  2. **Consultant personnel** enter tax number, left justified and right fill with zeros. The field is 9 spaces long, zero fill accordingly.

*Example:* tax number 12345 = 123450000

* 1. **Local agency personnel** enter a "9" and then IDOT District number 8 times or call the district materials office for the number they want you to use.

*Example:* District 6 local agency = 966666666

3 **Contract No.:** Enter the 5-digit contract number, or if it is a local agency contract without a 5-digit number, then enter

the MFT (Motor Fuel Tax) contract number.

4 **Job No.:** If applicable, enter the 8-character job number corresponding with the 5-digit contract number.

5 **Responsible Loc:** Enter the District identification designation number as a “9” followed by the District number.

*Example:* District 6 = 96

6 **Lab:** Enter the 2-letter MISTIC lab code. IDOT personnel use “FC” (Field Construction), others use “IN” (Independent

Lab).

7 **Lab Name:** Enter the name of the company - cannot exceed 20 characters.

8 **Sub Contractor:** Enter the name of Sub Contractor performing the work - cannot exceed 20 characters.

9 **Producer Code:** Enter the 4 to 8-digit MISTIC code number for the Producer of the lime, fly ash, cement, or

aggregate. MISTIC will default to “75000-00” for Soil Compaction Producer if no other producer code is entered by

the District.

10 **Material Code:** Enter the 5 to 9-digit MISTIC material code number for the type of soil mixture. MISTIC will default to

“75000M” for Field Soil Compaction if no other material code is entered by the District.

75000 FIELD SOIL COMPACTION 75004 MIXTURE, SOIL CEMENT

75001 MIXTURE, LIME-SOIL 75005 MIXTURE, CEMENT-FLYASH-AGGREGATE CFAM

75002 MIXTURE, LIME-FLYASH-AGGREGATE PAM 75007 MIXTURE, FLYASH SOIL

75003 MIXTURE, CEMENT AGGREGATE CAM

*Note:* Add “M” to the end of the number if a metric project. If chemical and physical testing of a component material is required, do not use the above material code on the BMPR LM6 form. Use the material code assigned to the individual component material, which can be found in Material Group “001 Aggregates” (i.e. aggregates and lime) and “375 Portland Cement” (i.e. fly ash and cement). The above material codes are used for density testing on the BMPR MI701N form.

Enter the 7to 9-digit MISTIC material code number for the aggregate subbase, base course, or surface course as follows:

* The first space is a “0” to indicate the material is an aggregate.
* The second space indicates the “Quality Level” of the aggregate (see below).
* The third space indicates the “Type of Material” (see below).
* The fourth space indicates the “Aggregate Type”(see below).
* The fifth space indicates the “Specification” of the aggregate (see below).
* The sixth and seventh spaces are the “Gradation Number” of the aggregate. See Articles 1003.01(c) and 1004.01(c) of the Standard Specifications.

**INSTRUCTIONS FOR BMPR MI701N, cont.**

Quality Level Type of Material Aggregate Type Specification

0 & 1 Have No Quality 0 = Gravel C = Coarse Aggregate A = Standard Specification

2 = A Quality 1 = Crushed Gravel F= Fine Aggregate M = Modified or QC/QA Specification

3 = B Quality 2 = Crushed Stone

4 = C Quality 3 = ACBF Slag

5 = D Quality 5 = Recycled

6 = D Quality Stabilized 7 = Natural Sand

8 = Stone Sand

9 = Special Aggregate

11 **Test Date:** Enter the date the test was taken in mmddyy format. *Example:* 071507

12 **Test No.:**  The entry must be numeric cannot exceed 3 digits and should be consecutive throughout the project.

13 **Station:** Enter the station location along the alignment where the test was taken – cannot exceed 7 characters.

*Example: 701+00*

14 **Ref:** Enter the offset where the test was taken from the centerline(CL), baseline(BL), surveyline(SL), etc.

An alphanumeric combination may be used – cannot exceed 4 characters.

*Example:* For 102 feet right of centerline use “102R” and mention under remarks that the offset was taken from the

centerline, for Westbound Driving Lane use “WBDL”, etc.

15 **Type Const:** At the location of the test, enter the 8-letter designation for the type of construction.

*Example:*  Embankment (Embankmt), Backfill, Subgrade, Soil Modification (Soil Mod), Subbase, Base Course

(Base Cse), Surface Course (Surf Cse), etc.

16 **Type Insp:** Enter the 3-letter designation: “PRO” for Process Control, “IND” for Independent Assurance, “RES” for

Resample, or “INV” for Investigative.

17 **Original Id No.:** Use for resample tests only. Enter the original Test Id No. of the failing test.

18 **Elevation:**

A **GRND:** Enter the original ground elevation – cannot exceed 6 characters. If using English unit of measure,

type a “Y” in the “C” field in order for MISTIC to convert to metric after processing.

B **GRADE:** Enter the proposed grade elevation – cannot exceed 6 characters. If using English unit of measure,

type a “Y” in the “C” field in order for MISTIC to convert to metric after processing.

C **TEST:** Enter the test elevation – cannot exceed 6 characters. If using English unit of measure, type a “Y” in

the “C” field in order for MISTIC to convert to metric after processing.

19 **Material Source:** Enter the borrow pit name, cut section, or producer name of the material. In addition, the material

code(s) for materials used in a soil mixture may be reported here. Cannot exceed 15 characters.

20 **Soil Type:** Enter the 2, 3, or 4-letter designation.

SiL = Silty Loam

SiC = Silty Clay

CL = Clay Loam

Sand

SiCL = Silty Clay Loam

Clay

Loam

SaL = Sandy Loam

SaC = Sandy Clay

SaCL = Sandy Clay Loam

Silt

Peat

21 **Test Method:** Enter “Nuc” for Nuclear Gauge.

22 **Opt H20:** Enter the optimum moisture from the laboratory Proctor curve or from the Family of Curves – One Point

Method. Cannot exceed 4 characters.

23 **Actual H20:** Enter the result as calculated by the nuclear gauge or the value shown on line # 40 – cannot exceed 4

characters. If no moisture correction factor is available, obtain a soil sample and use lines 47-52 to determine the

moisture content. Then enter the value from line 52.

**INSTRUCTIONS FOR BMPR MI701N, cont.**

24 **% Opt:** MISTIC will calculate the result after data has been entered in the “Opt H20” and “Actual H20” fields by pressing

“Enter”. The result is obtained by the following calculation: (Actual H20 ÷ Opt H20) x 100

25 **Std Proc:** Enter the maximum dry density from the laboratory Proctor curve or from the Family of Curves – One Point

Method. Cannot exceed 6 characters.

26 **Actual Dens:** Enter the result as calculated by the nuclear gauge or the value shown on line 39 – cannot exceed 6

characters.

27 **% Std:** MISTIC will calculate the result after data has been entered in the “Std Proc” and “Actual Dens” fields by

pressing “Enter”. The result is obtained by the following calculation: (Actual Dens ÷ Std Proc) x 100

28 **Min Spec:** Enter the minimum density specification requirement for the material being tested – cannot exceed 5

characters.

29 **Results:** Enter one of the following abbreviations for the corresponding results:

APPR = Approved test results COMP = Completed test results

FAIL = Failing test results INVL = Invalid test results

30 **C:** Enter a “Y” if the data on the form is in English. MISTIC will convert the data to metric values after processing. If

the data on the form is in metric units, then leave blank.

**All test data that is stored in MISTIC must be metric.**

**NOTE: Fields 31- 58 are not for MISTIC input. Fields 31-41 are for the gauge, fields 42-46 are for the laboratory**

**dry density, and fields 47-52 are for the laboratory moisture content.**

31 **Moisture Reading:** For gauge model 3401, enter the moisture test count taken at the test location.

32 **Moisture Standard Count:** For gauge model 3401, enter the moisture standard count in count per minute (C.P.M.)

before performing any tests.

33 **Moisture Count Ratio:** For gauge model 3401, Line 31 ÷ Line 32.

34 **Density Reading:** For gauge model 3401, enter the density test count taken at the test location.

35 **Density Standard Count:** For gauge model 3401, enter the density standard count in count per minute (C.P.M.) before performing any tests.

36 **Density Count Ratio:** For gauge model 3401, Line 34 ÷ Line 35.

37 **Gauge Wet Density:** On newer models (3440 or 5001) the nuclear gauge will calculate this value. If the nuclear gauge

does not calculate the value (model 3401), it may be obtained by referring to the calibration book using the count ratio.

38 **Field Moisture:** On newer models (3440 or 5001) the nuclear gauge will calculate this value. Add the moisture

correction factor from line 41 to the nuclear gauge value. If no moisture correction factor is available, obtain a

moisture sample and use lines 47 to 52 to determine the oven-dry moisture content. If the nuclear gauge does not

calculate the value (model 3401), it may be obtained by referring to the calibration book using the count ratio.

39 **Field Dry Density:** Line 37 – Line 38.

40 **Field % Moisture:** (Line 38 ÷ Line 39) x 100.

41 **Moisture Correction Factor:** Enter the moisture correction factor for the material being tested.

42 **Weight of Mold + Soil**

43 **Weight of Mold**

**INSTRUCTIONS FOR BMPR MI701N, cont.**

44 **Net Weight of Soil:** Line 42 – Line 43.

45 **Wet Density:** Line 44 x the mold factor.

46 **Dry Density:** (Line 45 ÷ (Line 52 + 100)) x 100.

47 **Initial Soil + Pan (Wet)**

48 **Final Soil + Pan (Dry)**

49 **Moisture Loss:** Line 47 – Line 48.

50 **Tare Weight**

51 **Net Dry Soil:** Line 48 – Line 50.

52 **% Moisture:** (Line 49 ÷ Line 51) x 100.

53 **Remarks:** Enter any remarks pertaining to the report.

54 **MISTIC Input Date:** Enter the date the results are entered into MISTIC in mmddyy format. *Example:* 071507

55 **Initials:** Enter the initials of the individual that entered the results.

56 **Copies:** The original goes to the District Materials Engineer. A copy goes to the Resident Engineer and to the tester.

57 **Resident:** Enter the Resident’s name.

58 **Inspector:** Enter the Inspector’s name.