LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

DOTD 03-22-4196
English
4/98

# LABORATORY MOISTURE - DENSITY RELATIONSHIP
## DOTD TR 418 - Methods E & F
## (English)

PROJECT NO: _____ DATE: _____ LAB NO: _____

*TYPE ADDITIVE: _____ TYPE SOIL: _____ SAMPLE NO: _____

TESTED BY: _____ CHECKED BY: _____

| SIEVE | | | Weight Retained, lb | + 1" Replacement $B_n/\{1 - (A/C)\}$ | Prorated Wt. Ret., lb (F) | % Retained (F/E) x 100 (G) | Adjusted Weight, lb (G x 15) ÷ 100 | Accumulated Weight lb |
|---|---|---|---|---|---|---|---|---|
| 1" | A | | | | | | | |
| 3/4" | $B_1$ | | | → | | | | |
| 1/2" | $B_2$ | | | → | | | | |
| No. 4 | $B_3$ | | | → | | | | |
| No. 10 | $B_4$ | | | → | | | | |
| Subtotal | C | A + $\sum B_{1..n}$ | → | | | | | |
| - No. 10 | D | | → | | | | | 15.00 |
| Total | E | C + D | → | | | 100 | K = 15.00 | |

| | | | |
|---|---|---|---|
| *MAX. DRY DENSITY OF MATERIAL ( ___ TR 418-E, ___ TR 415-A), lb/ft³ | H | | |
| *REQUIRED % BY VOL. OF ADDITIVE ( ___ TR 432-A, ___ TR 432-B, ___ TR 416, ___ specified) | I | | |
| *% WT. OF ADDITIVE (____ chart, ____ formula) | J | | |
| DRY WT. OF MATERIAL (Representative Portion), lb | K | | 15.00 |
| *WT. OF ADDITIVE TO BE ADDED, lb | L | (J x K) ÷ 100 | |
| *TOTAL DRY WT. OF MATERIAL AND ADDITIVE, lb | M | K + L | |

* ***FOR USE WITH DOTD TR 418, METHOD F ONLY.***

| CURVE POINT NO. | *** | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| WATER ADDED, mL | N | See Calculations | | | | | | |
| WT. MOLD, BASE (if appl.) & WET MATL, lb | O | | | | | | | |
| WT. MOLD & BASE (if applicable), lb | P | | | | | | | |
| WT. WET COMPACTED MATERIAL, lb | Q | O - P | | | | | | |
| VOLUME OF MOLD (or specimen), ft³ | R | | | | | | | |
| WT. OF PAN & DRY MATERIAL, lb | S | | | | | | | |
| WT. OF PAN, lb | T | | | | | | | |
| WT. OF DRY MATERIAL, lb | DW | S - T | | | | | | |
| WT. OF WATER, lb | WW | Q - DW | | | | | | |
| WET DENSITY, lb/ft³ | WWD | Q/R | | | | | | |
| MOISTURE CONTENT, % | MC | (WW/DW) x 100 | | | | | | |
| DRY DENSITY, lb/ft³ | DWD | $\frac{WWD}{100 + MC} \times 100$ | | | | | | |

REMARKS: _____