******THIS IS A NEW APPENDIX. – PLEASE READ CAREFULLY.******

CALIBRATION FORM #820020

Form 820020
7-91

Iowa Department of Transportation
MOBILE MIXER CALIBRATION

Contractor/Owner Cramer + ASSOC. County Blawkhawk Date 7-18-06
Mixer Serial No. 6MFDCC139 ET Operating Speed 100 CY/hr Calibrated By Donnie Cotter
Project No. BRFN-057-2(18)39-07 Design No. 206V Witnessed By [illegible]

MATERIALS AND SETTINGS

Material	Source	Sp. Gr.	Dry Weight	Wet Weight	Gate Setting
Cement	Lafarge	3.14			
*Sand	Basic Materials, Waterloo	2.65	1393	1436	4.1
*Rock	Martin Marietta Aldon	2.59	1361	1368	4.53
Water					
Water Reducer	Brett INR-91 lot# B0602305				
Air Entraining Agent	Brett AEA-92 lot# RD32815				

* *(Optional moisture content - Sand 3% Rock 0.5%)*

Determine **CEMENT METER COUNT.** *Run: 50 count ± Model 60 Magnum unit*
100 count ± Standard unit

Trial	1	2	3	4	5	Totals
Counts	25	25	25.5	25.5	25.0	126.0
Gross Weight						
Tare Weight						
Net Weight	84.5	85.0	84.0	85.5	83.0	422.0
Time (sec.)	10.84	11.03	10.97	11.00	10.78	54.62

$\frac{\text{Total Pounds}}{\text{Total Count}} = \frac{(422)}{(126)} = 3.35$ Lb./Meter Count

$\frac{\text{94 lb. cement}}{\text{Lb./Meter Count}} = \frac{\text{94 lb.}}{(3.35)} = 28.06$ Counts/Bag

AIR ENTRAINING AGENT DILUTION RATE 1+1
Admixtures

Time per bag = (Counts/Bag) x $\frac{\text{Total seconds}}{\text{Total counts}}$ = 12.16 Sec./Bag

Water Reducer
Dosage Required (oz./100 lbs. cement) 8 oz.
Dilution rate None
Dilution Req'd (total oz./100 lbs. cement) None

Sand

$\frac{\text{Sand weight}}{\text{1 Bag}} = \frac{\text{Wet weight}}{8.78} = \frac{1436}{8.78} = 163.6$ Lb./Bag

Divide this by the Count/Bag from Step 1.

$\frac{(163.6)\ \text{Lb./Bag}}{(28.06)\ \text{Count/Bag}} = 5.83$ Lb./Count

This is the target value.

The tolerance limits are:

Upper = (5.83) x 1.02 = 5.95
Lower = (5.83) x 0.98 = 5.71

The calibration check average is:

$\frac{\text{Sum of checks}}{\text{No. of checks}} = \frac{(17.48)}{(3)} = 5.83$ Lb./Count

Trial	1	2	Check	Check	Check	Check
Setting						
Counts			25	25	25	
Gross weight						
Tare weight						
Net weight			146.5	145.0	145.5	
Time (sec.)						
Lb./Count			5.86	5.80	5.82	

Rock

$\frac{\text{Rock weight}}{\text{1 Bag}} = \frac{\text{Wet weight}}{8.78} = \frac{1368}{8.78} = 155.8$ Lb./Bag

Divide this by the Count/Bag from Step 1.

$\frac{(155.8)\ \text{Lb./Bag}}{(28.06)\ \text{Count/Bag}} = 5.55$ Lb./Count

This is the target value.

The tolerance limits are:

Upper = (5.55) x 1.02 = 5.66
Lower = (5.55) x 0.98 = 5.44

The calibration check average is:

$\frac{\text{Sum of checks}}{\text{No. of checks}} = \frac{(16.67)}{(3)} = 5.56$ Lb./Count

Trial	1	2	Check	Check	Check	Check
Setting						
Counts			24.5	25.0	25.0	
Gross weight						
Tare weight						
Net weight			135.5	140.0	138.5	
Time (sec.)						
Lb./Count			5.53	5.60	5.54	

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MOBILE MIXER CALIBRATION

Contractor/Owner _____ County _____ Date _____
Mixer Serial No. _____ Operating Speed _____ Calibrated By _____
Project No. _____ Design No. _____ Witnessed By _____

MATERIALS AND SETTINGS

Material	Source	Sp. Gr.	Dry Weight	Wet Weight	Gate Setting
Cement					
*Sand					
*Rock					
Water					
Water Reducer					
Air Entraining Agent					

* *(Optional moisture content - Sand 3% Rock 0.5%)*

Determine **CEMENT METER COUNT.** *Run: 50 count ± Model 60 Magnum unit*
100 count ± Standard unit

Trial	1	2	3	4	5	Totals
Counts						
Gross Weight						
Tare Weight						
Net Weight						
Time (sec.)						

$$\frac{\text{Total Pounds}}{\text{Total Count}} = \frac{(\quad)}{(\quad)} = \_\_\_\_ \text{ Lb./Meter Count}$$

$$\frac{\text{94 lb. cement}}{\text{Lb./Meter Count}} = \frac{\text{94 lb.}}{(\quad)} = \_\_\_\_ \text{ Counts/Bag}$$

AIR ENTRAINING AGENT DILUTION RATE _____
Admixtures

Time per bag = (Counts/Bag) x $\frac{\text{Total seconds}}{\text{Total counts}}$ = _____ Sec./Bag

Water Reducer
Dosage Required (oz./100 lbs. cement) _____
Dilution rate _____
Dilution Req'd (total oz./100 lbs. cement) _____

$$\frac{\text{Sand weight}}{\text{1 Bag}} = \frac{\text{Wet weight}}{8.78} = \frac{\_\_\_\_}{8.78} = \_\_\_\_ \text{ Lb./Bag}$$

Divide this by the Count/Bag from Step 1.

$$\frac{(\quad) \text{ Lb./Bag}}{(\quad) \text{ Count/Bag}} = \_\_\_\_ \text{ Lb./Count}$$

This is the target value.

The tolerance limits are:

Upper = ( ) x 1.02 = _____
Lower = ( ) x 0.98 = _____

The calibration check average is:

$$\frac{\text{Sum of checks}}{\text{No. of checks}} = \frac{(\quad)}{(\quad)} = \_\_\_\_ \text{ Lb./Count}$$

Trial	1	2	Check	Check	Check	Check
Setting						
Counts						
Gross weight						
Tare weight						
Net weight						
Time (sec.)						
Lb./Count						

$$\frac{\text{Rock weight}}{\text{1 Bag}} = \frac{\text{Wet weight}}{8.78} = \frac{\_\_\_\_}{8.78} = \_\_\_\_ \text{ Lb./Bag}$$

Divide this by the Count/Bag from Step 1.

$$\frac{(\quad) \text{ Lb./Bag}}{(\quad) \text{ Count/Bag}} = \_\_\_\_ \text{ Lb./Count}$$

This is the target value.

The tolerance limits are:

Upper = ( ) x 1.02 = _____
Lower = ( ) x 0.98 = _____

The calibration check average is:

$$\frac{\text{Sum of checks}}{\text{No. of checks}} = \frac{(\quad)}{(\quad)} = \_\_\_\_ \text{ Lb./Count}$$

Trial	1	2	Check	Check	Check	Check
Setting						
Counts						
Gross weight						
Tare weight						
Net weight						
Time (sec.)						
Lb./Count						