

APPENDIX A:

MRMCA Scale Check Data Form

(Approved February 04, 2011)

This form is to be completed by a scale calibration technician

Cement []

Aggregate []

Other []

1.0 Scales - General

This Scale Check Data Form (SCDF) outlines the minimum scale/weighing system requirements and tolerances that must be met. A qualified technician, employed by an authorized Scale Company or Scale Manufacturer, must complete this agreement. The completed agreement must be kept on record at the plant and submitted to the Auditing Engineer at the time of the plant audit to meet the requirements of Section 2.0 – Scales, of the Approved Quality Program – Audit and Check List.

Scales must be checked as per clause 1.3 and calibrated as per clause 1.4 of this document, or whenever alterations are made to the plant that may affect the weighing accuracy of the scales, or whenever the plant is moved.

Note: Once the scale has been calibrated, the computer reading (if applicable) of that scale must be verified as an accurate representation of the digital readout over the range of the test weights.

This document shall bear the “P” Pass, “F” Fail or “N/A” Not Applicable for each item.

1.1 Each scale is comprised of a suitable system of levers or load cells which will weigh consistently within the tolerance given in 1.4 with loads indicated either by a beam with a balance indicator, or a full reading dial or digital readout display verifying accuracy in accordance with 1.4. []

1.2 Lever system scales are so designed that the centre of gravity of the gross load always lies within the load pivots. []

1.3 The following mechanical checks should be done on each weigh hopper:
Pivots and bearings Safety rods, chains or cables
The centre connection All hopper hangers
Hopper alignment Load cell alignment
Load cell tight & secure All connecting links
All areas free of debris Clean & lubricate (if required)
There must be no evidence of burring or wear. []

1.4 Each scale is accurate to within 0.20 percent throughout the entire operating range.

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- Scale calibrations shall be done at a minimum of 2 points, one shall be at 20 percent and the second shall be at minimum of 80 percent of the normal operating capacity. []
- 1.5 The scale company shall use only government certified traceable weights. []
- 1.6 Weight setting devices such as scale poises, pointers, dials, punch cards, etc. permit distinguishing differences to 0.1 percent of total scale capacity. (No weight setting device is required for a dial scale in a manual plant.) []
- 1.7 A scale check and calibration report has been issued which states that each scale is checked to clause 1.3 and calibrated to clause 1.4. []
- 1.8 The batch person must be able to read the load indicating devices from their position of operation. []
- 2.0 Beam Scales**
- 2.1 The beam scale is provided with a zero balance beam, balance indicator and a separate weighing beam for each ingredient of a batch to be weighed on the same scale. []
- 2.2 Beam poises are corrosion resistant, equipped with positive and accurate holding devices, and capable of being set to minimum graduated intervals which shall not be greater than 0.1 percent of capacity with a clear interval of not less than 0.8mm. []
- 2.3 Balance indicators are sufficiently sensitive to show movement when a weight corresponding to 0.10 percent of scale capacity is placed in the batch hopper at a load equal to or greater than 50 percent of scale capacity. The pointer travel is at least 5 percent of net rated capacity of largest weigh beam or 90 kg. (whichever is less) for underweight and 4 percent or 45 kg. (whichever is less) of overweight, provisions are made for damping oscillation of the indicator or pointer. []
- 3.0 Load Cell Scales**
- 3.1 The entire load is transmitted to one or more load cells directly or by a system of levers in such a manner that the cell system registers the entire load accurately to a load indicating device. []
- 3.2 Load cells should be mounted with the appropriate hardware, which will cause the load cell to move freely causing no strain or fatigue. []

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4.0 Dial Indicating Scales

4.1 The dial indicators and dial faces are protected from dust. []

4.2 The scale must indicate load in batches continually from zero balance to full weighing capacity of the scale. []

4.3 The scale shall have clear interval graduations of the circular reading line of the dial face not less than 1.0 mm. []

5.0 Acceptance

5.1 The Scale Manufacturer or the Scale Company, certifies that the named plant meets all requirements of the MRMCA Scale Check Form. []

_____ Ready Mix Company
_____ R/M Plant and Location
_____ Date
_____ Signature of Ready Mix Plant Manager

_____ Inspection Company Name
_____ Technician Name
_____ Date
_____ Signature of Technician