

NTEP CC's

How they can help with HB 44 Inspections



**2019 WWMA
Annual Meeting**

September 11, 2019



Scale Manufacturers Association

Type Evaluation vs Field Enforcement

Type Evaluation ensures devices:

- * Are capable of meeting operational and performance requirements of HB 44
- * Reliable
- * Do not facilitate fraud

Type Evaluation vs Field Enforcement

Field Enforcement ensures devices:

- * Comply with the NTEP CC
- * Are accurate
- * Used as intended


NTEP CC and Field Enforcement

- * NTEP Certificates of Conformance are a resource for the field official
- * Use the NTEP certificate to determine if device meets approval
- * NTEP staff can assist in determining compliance

NTEP Certificate of Conformance

- * Certificate Number
- * Type of Device and Model
- * Applicant Information
- * Description of features and options

Certificate Number: 94-101A4
Page 1 of 3


 NATIONAL TYPE EVALUATION PROGRAM
Certificate of Conformance
 for Weighing and Measuring Devices

Type of device and model →

→ **Certificate number first two digits indicate year issued**

For: Weighing/Load Receiving Element Vehicle Livestock Scale, Load Cell Electronic Model: PLT-2600XLT-XXX, PLT-2610XLT-XXX e_{max} : 10 000 e_{min} : 10 lb Capacity: 50 000 lb to 270 000 lb Platform: (see below) CLC: 25 000 lb to 100 000 lb Accuracy Class: III L	Submitted By: Fairbanks Scales 2176 Portland Street, Suite 1 St. Johnsbury, VT 05819 Tel: 802-473-5215 Fax: 802-473-5213 Contact: Keith P. Charron Email: kcharron@fairbanks.com Web site: www.fairbanks.com
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→ **Applicant Information**


Standard Features and Options		
Platform:		
<ul style="list-style-type: none"> Platform Widths to 14 feet Maximum Lengths of Span: 36 feet Minimum Length of Span: 10 feet Platform Material: Steel or Concrete The length of the scale platform is unrestricted provided that $v_{min} \leq d/\sqrt{N}$ (where N is the number of load cells in the scale) e_{min} = 10 lb or 20 lb depending on load cell used (see load cell parameters, page 2) 		
Optional Livestock or Combination Vehicle/Livestock Scale:		
<ul style="list-style-type: none"> e_{min}: 10 lb Minimum Number of Sections: 3 Minimum Net Load: 5 000 lb (500d) 		
Options:		
<ul style="list-style-type: none"> Dump Through Deck Platform Dump 		
Model PLT-2600XLT-XXX	Concrete Deck	Pit Type
Model PLT-2610XLT-XXX	Steel Deck	Pit Type

→ **Description of features and options**

Installations must satisfy the relationships of $v_{min} \leq d/\sqrt{N}$, (d=the division size and N=number of load cells) and nominal capacity $\leq CLC \times (N-0.5)$ where N is the number of sections in the scale.
 Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of NIST Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices. Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages. *Editorial changes, not affecting the type or metrological content, corrected this certificate.


 Kurt Floren
 Chairman, NCWM, Inc.


 Tim Tyson
 Chairman, National Type Evaluation Program Committee
 Issued: October 13, 2011

1135 M Street, Suite 110 / Lincoln, Nebraska 68508

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NTEP Certificate Information

- * **Application** (type of service the device is intended for)
- * **Identification** (identification badge location)
- * **Sealing** (identifies what type of sealing method and location of sealing)

NTEP Certificate Information

- * **Test conditions** (type of testing that was conducted and associated components that were involved in the testing)
- * **Evaluated by** (the name of the NTEP Lab and individual that conducted the testing or evaluation)
- * **Type evaluation criteria used** (Handbook 44 version (year) that was used as the basis for compliance)

Marking Requirements

- * Required information aids in determining suitability and approval - Can be found in the General Code and Scale Code
- * Complete Scales
- * Components
 - * Weighing and Load Receiving Element
 - * Indicating Element
 - * Load Cells
 - * Other Equipment

General Considerations

- * Is this the Initial Verification of a new device
- * Marked or Unmarked Device
- * Scales manufactured after Jan. 1, 1986 are required to be marked with a class designation
- * Class I, II, III, III L, or IIII

HB 44 - General Code Requirements

G-S.1. Identification

- (a) the name, initials, or trademark of the manufacturer or distributor;
- (b) a model identifier that positively identifies the pattern or design of the device;
- (c) a nonrepetitive serial number
- (d) the current software version identifier for not-built-for-purpose, software-based devices;
- (e) a National Type Evaluation Program (NTEP) Certificate of Conformance (CC) number

HB 44 – Scale Code Requirements

S.6.3. Scales, Main Elements, and Components of Scales or Weighing Systems. – Scales, main elements of scales when not contained in a single enclosure for the entire scale, load cells for which Certificates of Conformance (CC) have been issued under the National Type Evaluation Program (NTEP), and other equipment necessary to a weighing system, but having no metrological effect on the weighing system, shall be marked as specified in Table S.6.3.a. Marking Requirements and explained in the accompanying notes in Table S.6.3.b.

Table S.6.3.a.

To Be Marked With ↓	Weighing Equipment				
	Complete Scale	Indicator	Load-Receiving Element	Load Cell (11)	Other Equipment (10)
Manufacturer's ID (1)	X	X	X	X	X
Model Designation and Prefix (1)	X	X	X	X	X
Serial Number and Prefix (2)	X	X	X	X	X (16)
Certificate of Conformance Number (CC) (23)	X	X	X	X	X (23)
Accuracy Class (17)	X	X (8)	X (19)	X	
Nominal Capacity (3)(18)(20)	X	X	X		
Value of Scale Division, "d" (3)	X	X			
Value of "e" (4)	X	X			
Temperature Limits (5)	X	X	X	X	
Concentrated Load Capacity (CLC) (12)(20)(22)		X	X (9)		
Special Application (13)	X	X	X		
Maximum Number of Scale Divisions (n_{max}) (6)		X (8)	X (19)	X	
Minimum Verification Scale Division (e_{min})			X (19)		
"S" or "M" (7)				X	
Direction of Loading (15)				X	
Minimum Dead Load				X	
Maximum Capacity				X	
Safe Load Limit				X	
Load Cell Verification Interval (v_{min}) (21)				X	
Section Capacity and Prefix (14)(20)(22)(24)		X	X		

Note: For applicable notes, see Table S.6.3.b.

NTEP Certificate Number: 10-089A4

For:

Indicating Element

Digital Electronic

Model: FB2550-XXX* (see
below)

n_{\max} : 10 000

Accuracy Class: III / III L

Submitted By:

Fairbanks Scales

2176 Portland Street, Suite 1
St. Johnsbury, VT 05819

Tel: 802-473-5215

Fax: 802-473-5213

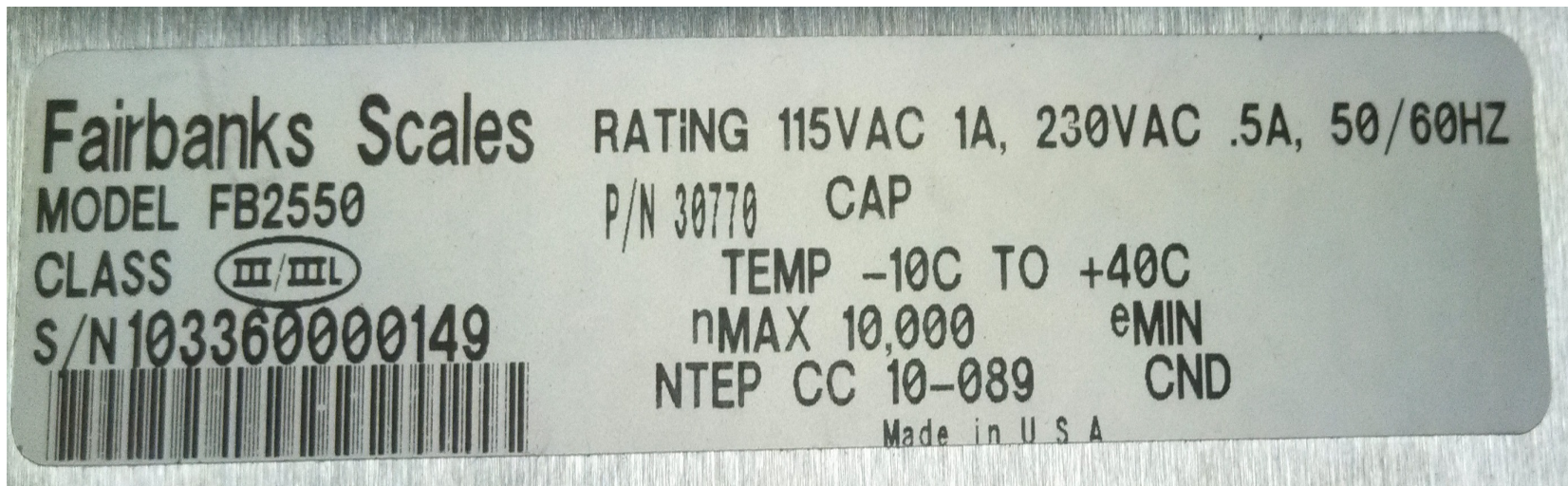
Contact: Keith P. Charron

Email:

kcharron@fairbanks.com

Web site: www.fairbanks.com

Fairbanks Scales - Model FB2550



NTEP Certificate Number: 94-101A4

For:

Weighing/Load Receiving Element
Vehicle/Livestock Scale, Load Cell
Electronic

Model: PLT-2600XLT-XXX, PLT-
2610XLT-XXX

n_{\max} : 10 000

e_{\min} : 10 lb

Capacity: 50 000 lb to 270 000 lb

Platform: (see below)

CLC: 25 000 lb to 100 000 lb

Accuracy Class: III L

Submitted By:

Fairbanks Scales

2176 Portland Street, Suite 1

St. Johnsbury, VT 05819

Tel: 802-473-5215

Fax: 802-473-5213

Contact: Keith P. Charron

Email: kcharron@fairbanks.com

Web site: www.fairbanks.com

Fairbanks Scales Model PLT-2600XLT



DATE

SERIAL NO.

PART NO.

MODEL NO.

n MAX.

NOMINAL CAPACITY

CLC

CC#

____/____/____

8284-R

124288

PLT-2600XL-2M1

10K

e MIN.

20

lb.

100T

lb.

60K lb.

ACCURACY
CLASS

III L

94-101

07/25/2013 15:41

Dump Through Option



Platform Dump Option



NTEP Certificate Number: 94-101A4

Standard Features and Options

Platform:

- Platform Widths to 14 feet
- Maximum Lengths of Span: 36 feet
- Minimum Length of Span: 10 feet
- Platform Material: Steel or Concrete
- The length of the scale platform is unrestricted provided that $v_{\min} \leq d/\sqrt{N}$ (where N is the number of load cells in the scale)
- $e_{\min} = 10$ lb or 20 lb depending on load cell used (see load cell parameters, page 2)

Optional Livestock or Combination Vehicle/Livestock Scale:

- e_{\min} : 10 lb
- Minimum Number of Sections: 3
- Minimum Net Load: 5 000 lb (500d)

Options:

- Dump Through Deck
- Platform Dump

Model PLT-2600XLT-XXX	Concrete Deck	Pit Type
Model PLT-2610XLT-XXX	Steel Deck	Pit Type

Installations must satisfy the relationships of $v_{\min} \leq d/\sqrt{N}$, (d=the division size and N=number of load cells) and nominal capacity \leq CLC x (N-0.5) where N is the number of sections in the scale.

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

S.5.4. Relationship of Load Cell Verification Interval Value to the Scale Division

The relationship of the value for the load cell verification scale interval, v_{\min} , to the scale division, d , for a specific scale installation using National Type Evaluation Program (NTEP) load cells shall comply with the following formulae where N is the number of load cells in the scale (such as hopper or vehicle scale weighing/load-receiving elements):

(a) Electronic Scale: $v_{\min} \leq d/\sqrt{N}$

(b) Electro-mechanical Scale: $v_{\min} \leq d/\sqrt{N} \times \text{Scale Multiple}$

Full Electronic Scales

Example: For a vehicle scale with four sections (eight load cells) and a displayed scale division of 20 lb, the maximum value permitted for each load cell is 7.1 lb.

The calculation: $v_{\min} \leq d/\sqrt{N}$ $20\text{lb}/\sqrt{8} = 20\text{lb}/2.83 = 7.07$ (rounded to 7.1 lb)

If the value marked on the load cell is less than or equal to the value computed for V_{\min} then the device complies with S.5.4.

Mechanical Scales with single Load Cell

Example: Calculate the multiple of the lever system from the ratios marked on the levers (contact the manufacturer). Suppose the multiple for a vehicle scale is 400:1 and the scale has a scale division (d) of 20 lb. Then the maximum value for the v_{\min} of the load cell is 0.05 lb.

The calculation: $v_{\min} \leq d/\sqrt{N} \times \text{Scale Multiple} = 20\text{lb}/ (1 \times 400) = 0.05 \text{ lb.}$

If the load cell is marked with a v_{\min} less than or equal to the calculated value, then the load cell complies with S.5.4.

S.6.1. Nominal Capacity; Vehicle and Axle-Load Scales

For all vehicle and axle-load scales, the marked nominal capacity shall not exceed the concentrated load capacity (CLC) times the quantity of the number of sections in the scale minus 0.5.

As a formula, this is stated as:

$$\text{nominal capacity} \leq \text{CLC} \times (\text{N} - 0.5)$$

where N = the number of sections in the scale.

Nominal Capacity of Vehicle Scale

Example: For a vehicle scale with four sections and a CLC of 60,000 lbs, the maximum nominal capacity of the scale is 210,000 lbs.

$$\text{nominal capacity} \leq \text{CLC} \times (\text{N} - 0.5)$$

$$60,000 \times 3.5 \text{ (4 sections - 0.5)} = 210,000$$

The marked nominal capacity of the scale must be less than or equal to 210,000 lb.

Thank You!

Lou Straub

Fairbanks Scales, Inc.

Mobile: (410) 610-3059

Office: (864) 543-2353

lstraub@fairbanks.com

<http://www.fairbanks.com>



QUESTIONS ?



Scale Manufacturers Association

P.O. Box 26972

Columbus, Ohio 43226-0972

Ph: 866-372-4627

Email info@scalemanufacturers.org

<http://www.scalemanufacturers.org>