



**Ministry of Business,  
Innovation & Employment**

Wellington, New Zealand

# CERTIFICATE OF APPROVAL

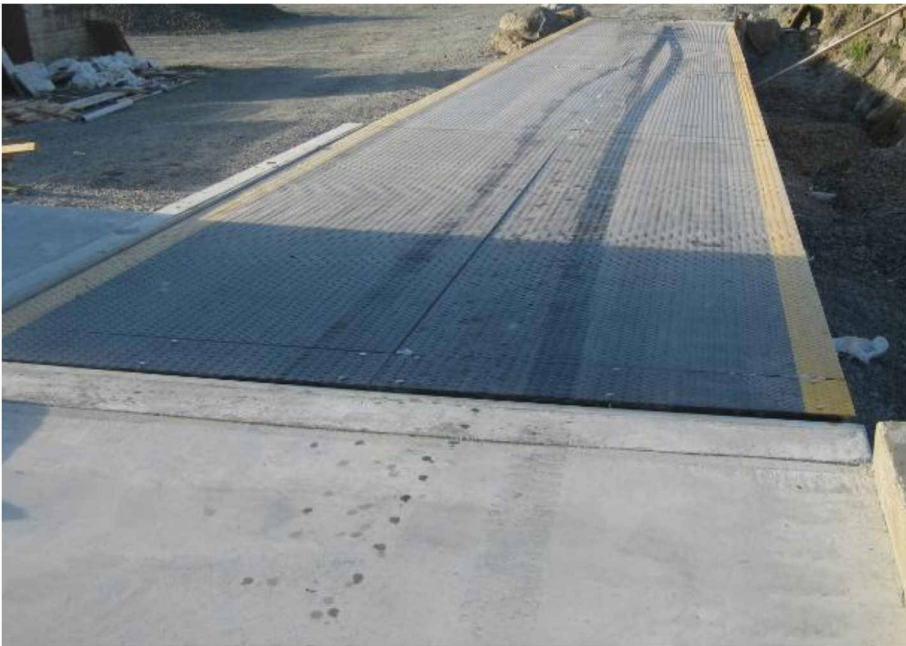
## Weights and Measures Regulations 1999 Part 1 Regulations 5 and 6

Current Date of Issue: 01 August 2016  
Original Date of Issue: 20 January 2012

### Certificate 2061

This certifies that the BWT PPV (Weighbridge), Weighing Instrument described overleaf has been approved as suitable for trade use subject to any conditions stated in the schedule:

Figure 1.1 - BWT Model PPV Weighbridge (above ground type)



**S R Bobbala**

**J P Crane**

Under delegated authority from the Chief Executive of The Ministry of Business, Innovation & Employment

*Note: This is not an approval to any person but only with respect to the type and pattern of weight, measure, or weighing or measuring instrument.*

## SCHEDULE

<b>Pattern:</b>	Weighing Instrument
<b>Make:</b>	BWT
<b>Model:</b>	PPV (Weighbridge)
<b>Manufacturer:</b>	BWT-Weegtechniek (The Netherlands)
<b>Submitter:</b>	SiLodec New Zealand Ltd
<b>Maximum Capacity (Max):</b>	≤ 60, 000 kg
<b>Minimum Capacity:</b>	20e
<b>Verification Scale Interval:</b>	≥ 20 kg (n = 3000 maximum )
<b>Class:</b>	III
<b>Load Receptors:</b>	≤ 24 x 3 metres
<b>Conditions of Approval:</b>	<ol style="list-style-type: none"><li>1. Any weighing conducted must take place with the vehicle wholly on the platform.</li><li>2. Split weighing is not permitted on this weighbridge.</li><li>3. The operator shall have a clear and simultaneous view of the indicator and the deck.</li><li>4. It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with MAPSS and with the relevant Certificate of Approval and Technical Schedule.</li><li>5. MAPSS reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.</li><li>6. This certificate does not imply and should not be construed as guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.</li></ol>

### Description:

A BWT Model PPV weighbridge (figure 1.1) is a Class III self indicating non-automatic weighing instrument with a maximum capacity of up to 60 000 kg and verification scale interval equal to or greater than 20 kg. The pattern may be installed in a pit or above the ground (pit-less type, figure 1.2)

### Construction:

#### 1. Basework:

The basework is of a modular construction. The whole deck is made of 8 modular sections each of 5500 mm x 1500 mm and 5 supporting box sections of 350 mm each. Two modules are positioned side-to-side forming a pair with ends supported on the box sections (figure 1.3), a maximum of four pairs of modules are required to give a total weighbridge deck of 24 m x 3 m.

Note: This certificate also covers smaller versions modular sections.

For example, a 11 m x 3 m weighbridge would require:

(a) 4 modules, each of 4975 mm x 1500 mm,

(b) 3 supporting box sections, each of 350 mm x 3000 mm, and (c) a total of 6 load cells.

Each module comprises of U-shape beams that run longitudinally underside of the deck plate (see Figure 1.4) and are held together in position by welding to a reinforced plates on either ends and are bolted to the supporting box sections. The supporting box section in-between the modules are designed to incorporate two compression type load cells making the whole weighbridge deck supported on 10 load cells.

Longitudinal and transverse movement is limited by bolts fitted in the supporting box section (figure 1.5) or other suitable method.

Concrete ramps at each end are provided for easy vehicle access.

#### 2. Load Cells:

2061

Page 2 of 7

Original Date of Issue: 20 January 2012

The complete structure is supported by 10 x Zemic type BM14G, compression type load cells with an Emax of 40 tonne capacity each. The load cells are certified to OIML R60 (Test certificate no: D09-05.21). Table 1 details the technical specifications of the loadcells.

### 3. Indicator:

An Avery Weigh-Tronix Model E11 or E12 Series digital indicator(\*) is used. The indicator is also described in the approval documentation of MCA 2041

\* Any other approved compatible digital indicator shall meet the conditions detailed in this certificate.

CRITERIA for using the weighbridge with a MAPSS approved indicator:

The conditions to be met are:

- The excitation voltage used is within the range approved for the basework.
- The maximum load applied to the basework (live load plus any dead load does not exceed the load cell maximum capacity).
- The verification scale interval is not less than the minimum value specified.
- The number of verification scale intervals is less than or equal to the n max specified.
- The signal voltage per verification scale interval is not less than the minimum sensitivity value per verification scale interval for the indicator (as specified in the approval document / technical specifications of the indicator).

i.e. Indicator Sensitivity  $\leq (1000 \times Ex \times LC\_Sens \times e) / (N \times Emax)$ , where

Ex = Excitation from indicator (V)

LC\_Sens = load cell sensitivity (mV/V)

e = verification scale interval of the instrument (kg)

N = number of load cells

Indicator Sensitivity = Minimum sensitivity value per verification scale interval for the indicator ( $\mu V$ )

### ZERO SETTING DEVICES:

Zero may be automatically corrected to within  $\pm 0.25e$  whenever the instrument comes to rest within  $0.5e$  of zero. Zero can be set by pressing the zero button.

Initial zero setting is  $\leq 20\%$  of maximum capacity of the instrument.

The instrument has a semi-automatic zero-setting device ( to set the instrument to within  $\pm 0.25e$  of zero) with a nominal range of not more than 4% of the maximum capacity of the instrument.

### METROLOGICAL MARKINGS

Instruments shall carry the following markings:

Manufacturer' name        ----  
Serial number            ----  
Accuracy class            ----  
Pattern approval No for the Basework    MCA .... \*\*  
Maximum capacity Max ..... kg \*  
Minimum capacity Min ..... kg \*  
Verification scale interval e =..... kg \*  
Serial number:----

\* These markings shall also be shown near the display.

\*\*This marking must be marked on the indicator along with the approval number of the indicator.

### Components:

- Avery Weigh-Tronix model E11 or E12 Series Digital Indicator or any MAPSS approved compatible indicator.
- 10 x Zemic type BM14 G Load cells (each of 40 tonne capacity).

### Sealing:

- As provided on the approved indicator.
- The Junction box shall be sealed by an adhesive destructible label or an approved type seal placed across the joining of both the covers.

### Mark of Verification:

An adhesive destructible label or an approved type seal that inhibits access to calibration on the indicator and the junction box should carry a Mark of Verification. Removal of seal deems the instrument not verified.

TABLE 1

## Specification: Type BM14G

Accuracy class		OIML R60 C3
Output sensitivity ( = FS )	mV/V	$2.0 \pm 0.002$
Maximum capacity ( $E_{max}$ )	t	10, 20, 30, 40, 50
Maximum number of load cell intervals ( $n_{LC}$ )		3000
Ratio of minimum LC verification interval $Y = E_{max} / V_{min}$		$10000 - 12000^1$
Combined Error	%FS	$\pm 0.020$
Minimum dead load	t	0
Safe overload	of $E_{max}$	150 %
Ultimate overload	of $E_{max}$	300 %
Zero balance	of FS	$< \pm 1.0 \%$
Excitation, recommended voltage	V	5 ~ 12
Excitation maximum	V	18
Terminal resistance, input	$\Omega$	$700 \pm 7$
Terminal resistance, output	$\Omega$	$700 \pm 7$
Insulation impedance	M $\Omega$	$\geq 5000$ ( at 50VDC )
Temperature range, compensated	°C	-10 ~ +40
Temperature range, operating	°C	-35 ~ +65
Element material		Stainless steel
Ingress Protection (according to EN 60529)		IP68
ATEX classification (optional)	II1G Ex ia II1C T4	II1D Ex iaD 20 T73°C
		II3G nL II C T4

Figure 1.2 - Above Ground (pit-less type) installation



Figure 1.3 - Supporting Box Section



Figure 1.4 - Underside View



Figure 1.5 - Bolts limit longitudinal & Transverse Movements

