



R 76 OIML-CS-02 Rev.2

Additional requirements from Canada

Durability test for instruments with Max > 100 kg

Revision number	Date of Revision (DD/MM/YYYY)	Nature of the revision
Rev.0	29/09/2006	Initial document
Rev.1	25/08/2011	Add the requirement for endurance testing for devices over 1000 kg
Rev. 2	05/02/2018	Replace logo and reference to OIML MAA with reference to OIML-CS.

Measurement Canada identifies specific additional durability requirement for non-automatic weighing instruments with Max > 100 kg. These additional requirements are defined in the following publications:

- Specifications Relating to Non-automatic Weighing Devices (1998)

Introduction

In Canada, the capacity of devices that requires durability testing for at least 100 000 weighings differs from that of R 76:2006. A weighing device shall maintain its metrological characteristics and perform within the applicable limits of error for a weighing device with a maximum capacity of not more than 1 000 kg (2 000 pounds), and for at least 300 weighings in all other cases.

1. Application

This test is intended for any complete mechanical or electronic weighing devices and for any weighing elements tested separately. Devices are subjected to the repetitive loading and unloading of specific loads applied 100 000 times (capacities of up to 1 000 kg (2 000 lb)) or 300 times (capacities above 1 000 kg (2 000 lb)). **The durability test is performed after all other tests.**

2. Settings

- AZT may be in operation during the tests. It must be set to the lowest value; if zero is the lowest selectable value, it will be set to zero. The amount that the AZT may track at once may not be set to a value larger than **0.6 e** which is the maximum value allowed by the Specifications.
- If a device is provided with an IZSM, the test will be performed only once with the IZSM set at the upper limit of its range.
- The weighing device must be leveled to its reference position, be adjusted as close as possible to zero error, and pre-loaded to the maximum capacity at least once.
- The device must be set for the maximum capacity and smallest verification scale interval for which the approval is sought.

- If so equipped, the "enhance resolution feature" of the device will be used during the test. If this feature is not available, use the small weight method to determine the device errors before rounding.
- This test is performed at ambient temperature ($\approx 20^{\circ}\text{C}$); or at the mid point of the temperature range if significantly different from 20°C .

3. Procedure (capacities of up to 1 000 kg (2 000 lb))

The following test load shall be used:

Devices with $\text{Max} \leq 100 \text{ kg}$: a load equal to $\frac{1}{2} \text{ Max}$;

Devices with $\text{Max} > 100 \text{ kg}$: a load between $\frac{1}{4}$ and $\frac{1}{2}$ of Max without exceeding 250 Kg.

- After having moved the device to the permanence testing bench, perform an increasing and decreasing test, an eccentricity test, a load discrimination or sensitivity test, to ascertain that the device measures as close to zero error as possible. Re-calibrate the DUT as necessary.
- Apply the test load 25 000 times; perform an increasing and decreasing load test and record the results.
- Apply the test load an additional 25 000 times; perform an increasing and decreasing load test and record the results.
- Apply the test load an additional 25 000 times; perform an increasing and decreasing load test and record the results.
- Apply the test load an additional 25 000 times.
- Perform a load discrimination test, an increasing and decreasing load test, an eccentricity test.
- Record the results.

Procedure (capacities above 1 000 kg (2 000 lb))

The following test load shall be used: **a load between $\frac{1}{4}$ and $\frac{1}{2}$ of Max**

- After having moved the device to the permanence testing area, perform an increasing and decreasing test to ascertain that the device measures as close to zero error as possible. Re-calibrate the DUT as necessary.
- Apply the test load 300 times.
- Perform a load discrimination test, an increasing and decreasing load test, an eccentricity test.
- Record the results.

4. Interpretation of Results

The device meets the requirements if all the results remain within the applicable limits of error.