



# CIRCULAR ED 210-14

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## GUIDELINES FOR ALCOHOL DETERMINATION

### *PROTOCOL FOR THE EXAMINATION AND APPROVAL OF A MASS FLOW MEASURING SYSTEM*

#### *INTRODUCTION*

This protocol states the procedure to follow for the examination and approval of a Mass Flow Measuring System (MFMS) for the determination of alcoholic mass for excise purposes.

A MFMS consists of a Mass Flow Meter (MFM) and an approved, compatible, electronic register.

#### *PROCEDURE*

A licensee must inform the regional excise officer and an inspector under the *Weights and Measures Act* or an authorised, accredited representative under the *Weights and Measures Act*<sup>1</sup> if he wishes to have a MFMS examined for approval for excise purposes.

The excise officer sends the licensee a list of the basic requirements (see Appendix 1) for a MFMS before the examination. The licensee must ensure that all of the basic requirements are met before scheduling the examination.

The examination must be performed in the presence of the excise officer.

#### *EXAMINATION OF A MFMS*

The excise officer, in consultation with the inspector, ensures that the basic requirements (see Appendix 1) for a MFMS are met. The inspector then proceeds to do all necessary tests of the MFMS as required under the *Weights and Measures Act*.

The excise officer must be present during the testing of the MFMS and keep notes of all measuring data provided by the inspector. He must forward these notes to the Chief, Alcohol and Tobacco Section, Laboratory and Scientific Services Directorate (tel: (613) 954-9944 fax: (613) 952-7825) who will examine the results and recommend the approval or rejection of this MFMS.

#### *ANALYSIS OF A MFMS EXAMINATION RESULTS*

A MFMS must meet all requirements for use in trade at various flow rates under the accuracy class 0.3 as stated in the *Weights and Measures Regulations* or as specified in the *Ministerial Specifications*. At each flow rate, tests are repeated three times and averaged in order to obtain statistically valid results.

#### *EXAMINATION OF RESULTS OF THE MFMS*

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<sup>1</sup> For brevity an "inspector under the *Weights and Measures Act* or an authorised, accredited representative under the *Weights and Measures Act*" will herein after be called "inspector".

The excise officer will approve the use of this MFMS for the determination of alcoholic mass for excise purposes if:

- the inspector approves this MFMS for use in trade;
- LSSD recommends the approval of this MFMS; and
- both the inspector and excise officer are satisfied that this MFMS will operate properly.

If a MFMS is approved for excise purposes, the excise officer will seal it with an excise seal on each of the various components of the MFMS to prevent tampering and will issue a letter to the licensee (copy to LSSD) indicating that this MFMS is approved for a period of two years. It is the responsibility of the licensee to have this MFMS re-examined for approval after two years.

If one of the values of this examination does not meet the criteria as stated above, the licensee is informed by the excise officer that his MFMS has failed and that corrective measures must be taken before he can reapply for a new examination<sup>2</sup>. In order to reapply for a new examination, the licensee must provide written documentation to the excise officer (who will transmit this information to LSSD) that corrective measures have been taken to remedy the erroneous readings obtained from the MFMS. Examples of corrective measures may include servicing of the MFMS by a qualified technician, re-calibration of the MFMS, etc.

Upon receipt of written documentation provided by the licensee that corrective measures have been taken and when satisfied that such measures may have corrected the erroneous readings, LSSD will inform the excise officer who will inform the licensee that the MFMS may be submitted to another round of examinations. The examination and treatment of these results follow the same procedure described previously. Proof of corrective measures is mandatory following every failed examination should the licensee wish to have his MFMS approved for excise purposes.

#### ***CHARGES FOR THE EXAMINATION OF A MFMS***

Under the *Weights and Measures Act*, an inspector may charge a fee for the examination or re-examination of a device. All charges for the examination or re-examination of the MFMS will be paid to the inspector by the licensee.

#### ***ADDITIONAL INFORMATION***

Information or enquiries concerning this procedure should be communicated to the Chief, Alcohol and Tobacco Section, Laboratory and Scientific Services Directorate at (613) 954-9944.

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<sup>2</sup> Conditional approvals may be granted under exceptional circumstances.

# APPENDIX

Appendix no.1

***BASIC REQUIREMENTS FOR A MFMS***

MFMS for the determination of alcoholic mass may be further examined for excise purposes only if it :

- is of a class, type or design for use in trade and approved by the Minister of Industry Canada under the *Weights and Measures Act*;
- is of a class, type or design which meets all of the requirements for the accuracy class 0.3 as stated in the *Weights and Measures Regulations* under the *Weights and Measures Act* and operates within the appropriate limits of error as prescribed by the *Weights and Measures Regulations* or *Ministerial Specifications*;
- measures the mass in grams or kilograms of ethyl alcohol of a strength of 95% by volume or more<sup>3</sup> as stated in the *Weights and Measures Regulations*;
- is located in an environment protected from the elements and under other such conditions as to prevent degradation of the metrological characteristics of the MFMS;
- has all necessary devices to ensure an acceptable level of accuracy and precision, e.g., an air eliminator or de-aerator, alcohol cooling systems, etc...;
- has a measuring capacity which is optimum for the average flow rate of alcohol of that particular system;
- is a tamper proof system, e.g., there is no sampling valve or other opening before the alcohol passes through the MFMS, etc...;
- is a closed unit to prevent unhooking or any unauthorised alteration or degradation of the metrological characteristics of the MFMS or facilitate fraudulent use of the MFMS;
- is set-up to allow for re-examination of the MFMS every 2 years by an inspector, e.g., a sealed pipe may be opened for the weighing of the alcohol measured by the MFMS and subsequently re-sealed by an excise officer for normal operation of the MFMS.

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<sup>3</sup> Percentage by volume of ethyl alcohol is measured at 20°C.