

Council Directive of 20 March 1970 on the approximation of the laws of the Member States on measures to be taken against air pollution by emissions from motor vehicles (70/220/EEC) (repealed)

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*Status: EU Directives are being published on this site to aid cross referencing from UK legislation. After IP completion day (31 December 2020 11pm) no further amendments will be applied to this version.*

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## [<sup>F1</sup>ANNEX III

### TYPE I TEST

(Verifying the average emission of tailpipe emissions after a cold start)

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#### **Textual Amendments**

- F1** Substituted by [Council Directive of 26 June 1991 amending Directive 70/220/EEC on the approximation of the laws of the Member States relating to measures to be taken against air pollution by emissions from motor vehicles \(91/441/EEC\)](#).

## Appendix 6

### METHOD OF CALIBRATING THE EQUIPMENT

#### 3. EFFICIENCY TEST OF THE NO<sub>x</sub> CONVERTER

The efficiency of the converter used for the conversion of NO<sub>2</sub> into NO is tested as follows:

Using the test set up as shown in Figure III.6.3 and the procedure described below, the efficiency of converters can be tested by means of an ozonator.

- 3.1. Calibrate the CLA in the most common operating range following the manufacturer's specifications using zero and span gas (the NO content of which must amount to about 80 % of the operating range and the NO<sub>2</sub> concentration of the gas mixture to less than 5 % of the NO concentration). The NO<sub>x</sub> analyzer must be in the NO mode so that the span gas does not pass through the converter. Record the indicated concentration.
- 3.2. Via a T-fitting, oxygen or synthetic air is added continuously to the gas flow until the concentration indicated is about 10 % less than the indicated calibration concentration given in 3.1. Record the indicated concentration (C). The ozonator is kept deactivated throughout this process.
- 3.3. The ozonator is now activated to generate enough ozone to bring the NO concentration down to 20 % (minimum 10 %) of the calibration concentration given in 3.1. Record the indicated concentration (d).
- 3.4. The NO<sub>x</sub> analyzer is then switched to the NO<sub>x</sub> mode which means that the gas mixture (consisting of NO, NO<sub>2</sub>, O<sub>2</sub> and N<sub>2</sub>) now passes through the converter. Record the indicated concentration (a).
- 3.5. The ozonator is now deactivated. The mixture of gases described in 3.2 passes through the converter into the detector. Record the indicated concentration (b).
- 3.6. With the ozonator deactivated, the flow of oxygen or synthetic air is also shut off. The NO<sub>x</sub> reading of the analyzer must then be no more than 5 % above the figure given in 3.1.
- 3.7. The efficiency of the NO<sub>x</sub> converter is calculated as follows:

$$\text{Efficiency (\%)} = \left(1 + \frac{a-b}{c-d}\right) \cdot 100$$

Diagram of NO<sub>x</sub> converter efficiency device

- 3.8. The efficiency of the converter must not be less than 95 %.
- 3.9. The efficiency of the converter must be tested at least once a week.]