

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laws of the Member States on measures to be taken against air pollution by emissions from motor vehicles (70/220/EEC) (repealed)

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[^{F1}ANNEX IV

TYPE II TEST

(Carbon monoxide emission test at idling speed)

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 \(91/441/EEC\)](#).

1. INTRODUCTION

This Annex describes the procedure for the type II test defined in 5.3.2 of Annex I.

2. CONDITIONS OF MEASUREMENT

2.1. The fuel must be the reference fuel, specifications for which are given in Annex VIII.

[^{F2}2.2. During the test, the environmental temperature must be between 293 and 303 K (20 and 30 °C).

The engine shall be warmed up until all temperatures of cooling and lubrication means and the pressure of lubrication means have reached equilibrium.]

[^{F3}2.2.1. Vehicles that are fuelled either with petrol or with LPG or NG shall be tested with the reference fuel(s) used for the type I test.]

Textual Amendments

- F3** Inserted by [Commission Directive 98/77/EC of 2 October 1998 adapting to technical progress Council 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 \(Text with EEA relevance\)](#).

Textual Amendments

- F2** Substituted by [Council Directive 93/59/EEC of 28 June 1993 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](#).

2.3. In the case of vehicles with manually operated or semi-automatic-shift gearboxes the test must be carried out with the gear lever in the 'neutral' position and with the clutch engaged.

2.4. In the case of vehicles with automatic gear-boxes the test is carried out with the gear selector in either the 'neutral' or the 'parking' position.

2.5. Components for adjusting the idling speed

2.5.1. Definition

For the purposes of this Directive, 'components for adjusting the idling speed' means controls for changing the idling conditions of the engine which may be easily operated by a mechanic using only the tools described in 2.5.1.1. In particular, devices for calibrating fuel and air flows

are not considered as adjustment components if their setting requires the removal of the set-stops, an operation which cannot normally be performed except by a professional mechanic.

2.5.1.1. Tools which may be used to control components for adjusting the idling speed: screwdrivers (ordinary or cross-headed), spanners (ring, open-end or adjustable), pliers, Allen keys.

2.5.2. Determination of measurement points

[^{F2}2.5.2.1 A measurement at the setting in accordance with the conditions fixed by the manufacturer is performed first.]

2.5.2.2. For each adjustment component with a continuous variation, a sufficient number of characteristic positions are determined.

2.5.2.3. The measurement of the carbon-monoxide content of exhaust gases must be carried out for all the possible positions of the adjustment components, but for components with a continuous variation only the positions defined in 2.5.2.2 are adopted.

2.5.2.4. The type II test is considered satisfactory if at least one of the two following conditions is met:

2.5.2.4.1. none of the values measured in accordance with 2.5.2.3 exceeds the limit values;

2.5.2.4.2. the maximum content obtained by continuously varying one of the adjustment components while the other components are kept stable does not exceed the limit value, this condition being met for the various combinations of adjustment components other than the one which was varied continuously.

2.5.2.5. The possible positions of the adjustment components are limited:

2.5.2.5.1. on the one hand, by the larger of the following two values: the lowest idling speed which the engine can reach; the speed recommended by the manufacturer, minus 100 revolutions per minute;

2.5.2.5.2. on the other hand, by the smallest of the following three values: the highest speed the engine can attain by activation of the idling speed components; the speed recommended by the manufacturer, plus 250 revolutions per minute; the cut-in speed of automatic clutches.

2.5.2.6. In addition, settings incompatible with correct running of the engine must not be adopted as measurement settings. In particular, when the engine is equipped with several carburettors all the carburettors must have the same setting.

3. SAMPLING OF GASES

3.1. The sampling probe is placed in the pipe connecting the exhaust with the sampling bag and as close as possible to the exhaust.

3.2. The concentration in CO (C_{CO}) and CO₂ (C_{CO_2}) is determined from the measuring instrument readings or recordings, by use of appropriate calibration curves.

3.3. The corrected concentration for carbon monoxide regarding four-stroke engines is:

$$C_{CO\text{corr}} = C_{CO} \frac{15}{C_{CO} + C_{CO_2}}$$

(Vol. %)

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- 3.4. The concentration in C_{CO} (see 3.2) measured according to the formulae contained in 3.3 need not be corrected if the total of the concentrations measured ($C_{CO} + C_{CO_2}$) is at least 15 for four-stroke engines.]