DIRECTORATE FOR FOOD, AGRICULTURE AND FISHERIES
COMMITTEE FOR AGRICULTURE

OECD Standard Codes for the Official Testing of Agricultural and Forestry Tractors

MANDATORY CODE 4 TESTING
WHEN 1150 mm TRACTOR WIDTH MAY BE EXCEEDED

This document is submitted by the Italian testing stations of Bologna, Milan and Turin. It is circulated to delegations and National Designated Authorities for DISCUSSION at the Annual Meeting to be held on 3-5 April 2000 [draft Agenda AGR/CA/T/A(2000)1, item 24].
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1. Rationale

During the Test Engineer’s Conference held in 1999 in Prague different proposals were advanced to solve the problem of the tyre dimensions exceeding the minimum track width (1150 mm).

In the meeting 3 proposals were suggested:

1) the range of tyre dimensions allowed in the type approval process may not guarantee adequate safety in some countries. Therefore, the testing procedure used may be inappropriate;

2) the validity of the test report may have to be restricted;

3) Code 4 testing may be appropriate provided it is amended to permit testing of tiltable front-mounted rollbars.

2. Test result

Following the suggestions written in point 24 of the Draft Agenda of the next Annual Meeting, relevant to a report about the national approach to this issue, the Italian testing stations of Bologna, Milano and Torino do not agree with any of the three above mentioned proposals.

Tests were carried out in Bologna on a iso-diametric wheel narrow tractor, in order to study the results obtained from the preliminary tests provided by Code 6, arranging the machine with different tyres and track width (Table 1).

<table>
<thead>
<tr>
<th>Tyres</th>
<th>Tractor make: Carraro Antonio SpA</th>
<th>type: 943565 (TRX 8400)</th>
<th>Engine type: VM 29B/3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary tests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral stability test</td>
<td>Non-continuous rolling test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Width (mm)</td>
<td>Track width (mm)</td>
<td>Steering wheel turned to full</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
<td>Left angle (°)</td>
<td>Right angle (°)</td>
<td></td>
</tr>
<tr>
<td>11.2R20</td>
<td>280</td>
<td>1130</td>
<td>53</td>
</tr>
<tr>
<td>11.2R20</td>
<td>280</td>
<td>1480</td>
<td>62</td>
</tr>
<tr>
<td>400/55 – 17.5</td>
<td>380</td>
<td>1285</td>
<td>62</td>
</tr>
<tr>
<td>31x15.50-15</td>
<td>398</td>
<td>1295</td>
<td>62</td>
</tr>
</tbody>
</table>
The tyre 11.2R20 is the tyre selected according to Code 6 specification (greatest diameter and smallest cross-section). The Bologna Test Station carried out preliminary tests on the tractor setting both the minimum and the maximum track width.

The first two lines of the table show the lateral stability angle at the above mentioned conditions: the non-continuous rolling test is positive at the minimum track but negative in the other setting. The result of the non-continuous rolling test changes from negative to positive only if the overall height of the structure (point of impact height, H6) increases from 2162 mm to 2400 mm (+ 238 mm).

The same tractor was then equipped with the two largest available tyre types. In this case the adjustment of the track is not possible due to the rim type; as a consequence the track value is always higher than 1150 mm (1285 mm and 1295 mm). The lateral stability angle increases up to 62° in both cases (the minimum foreseen is 38°). The non-continuous rolling test result was negative; the calculated minimum H6 values to obtain positive results were respectively 2240 mm and 2146 mm (+ 139 mm and + 86 mm).

The H6 calculated values are in both cases lower than that calculated for the type approval process tyres. Therefore the test tyres show the worse result when the maximum track width is set.

3. Proposal

At point 2.1.2 of Code 6 (Yellow Codes - Volume III, page 32) modify the sentence:

“fixed or adjustable minimum track width with one of the axles less than 1150 mm fitted with tyres of a larger size. It is assumed that the axle mounted with the wider tyres is set at a track width of not more than 1150 mm” (…).

with

“fixed or adjustable minimum track width with one of the axles less than 1150 mm when fitted with tyres having the greatest diameter indicated by the manufacturer and the smallest cross-section for tyres of that diameter. It is assumed that the axle mounted with these tyres is set at a track width of not more than 1150 mm” (…).

The scope of this proposal is to achieve consistency between the first sentence of point 2.1.2 (Field of application) and point 3.1.2.2 (Rules and Directions, Preparation for the preliminary tests) on page 33.

4. Code 7

To better clarify the field of application, the same modification may be introduced at point 2.1.2 of Code 7 (Yellow Codes - Volume III, page 108).