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**Committee of Experts on the Transport of Dangerous Goods  
and on the Globally Harmonized System of Classification  
and Labelling of Chemicals****Sub-Committee of Experts on the Transport of Dangerous Goods****Fifty-seventh session**

Geneva, 29 June-8 July 2020

Item 6 (b) of the provisional agenda

**Miscellaneous proposals for amendments to the Model Regulations  
on the Transport of Dangerous Goods: packagings****Supplement for drop orientations in the drop test of box  
packaging****Transmitted by the expert from China\*****Introduction**

1. When carrying out drop tests, China found out that the manufacturing junction is one of the weakest parts of the package, which was prone to breakage, and should be paid attention to during testing. For example, most of the box-type packaging containers have six surfaces and eight corners. When the drop test project was actually carried out, it was found out that if the corner or the side connected to the junction of the box-type container was selected for the drop position, the junction would tend to crack more commonly during the drop.

**Necessity of revision**

2. During actual inspections, we noted that the manufacturing junction of packaging is one of the weakest parts of the package and is prone to breakage. When we drop box containers, we select the corners and sides that are connected to the manufacturing junction of box container to carry out drop tests, as there will be more cases of failure. In the "Recommendations on the Transport of Dangerous Goods Model Regulations - 6.1.5.3.1", there is no mention that the manufacturing junction should be chosen during the drops. It is recommended to indicate in the template that the manufacturing junction is one of the weakest parts of box packaging, and thus attention is needed when selecting the drop orientation.

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\* 2020 (A/74/6 (Sect.20) and Supplementary, Subprogramme 2).

## Proposal

3. China proposes to clarify in 6.1.5.3.1 that, during the drop test, attention should be paid to the manufacturing junction. Two options are given below (new text is underlined):

### Option 1:

*“6.1.5.3.1 Number of test samples (per design type and manufacturer) and drop orientation*

For other than flat drops the centre of gravity shall be vertically over the point of impact.

Where more than one orientation is possible for a given drop test, the orientation most likely to result in failure of the packaging shall be used (e.g. the manufacturing junction is one of the weakest parts of the packaging and needs attention during testing).

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### Option 2:

*“6.1.5.3.1 Number of test samples (per design type and manufacturer) and drop orientation*

For other than flat drops the centre of gravity shall be vertically over the point of impact.

Where more than one orientation is possible for a given drop test, the orientation most likely to result in failure of the packaging shall be used.

Packaging	No. of test samples	Drop orientation
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Boxes of natural wood Plywood boxes Reconstituted wood boxes Fibreboard boxes Plastics boxes Steel or aluminum boxes Composite packagings which are in the shape of a box	Five (one for each drop)	First drop: flat on the bottom Second drop: flat on the top Third drop: flat on the long side Fourth drop: flat on the short side Fifth drop: on a corner <u>Note: The manufacturing junction is one of the weakest parts of the box, which needs attention when choosing the drop orientation.</u>
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