



**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****Fortieth session**

Geneva, 28 November – 7 December 2011

Item 4 (c) of the provisional agenda

Miscellaneous proposals of amendments to the**Model Regulations on the Transport of Dangerous goods: marking and labelling****Revised proposals for the descriptions of labels, placards,
symbols, markings and marks****Transmitted by the expert from the United Kingdom¹****Background**

1. At the thirty-ninth session of the Sub-Committee, the expert from the United Kingdom submitted the discussion document ST/SG/AC.10/C.3/2011/5 (Descriptions of labels, placards, symbols, markings and marks). The Sub-Committee provided valuable feedback, along with some written comments, for which the expert from the United Kingdom is grateful.
2. This paper provides revised proposals for the markings etc which were discussed in the previous paper. However, in reviewing the proposals, it was noticed that the current provisions for the fumigation warning mark and the new provisions for the coolant/conditioning unit warning mark have errors which require substantive amendments. As a result, these will now be dealt with in a separate paper since the amendments suggested go beyond editorial changes.
3. Some delegates contacted the United Kingdom expert with suggestions for amendments such as specifying more exactly the situations when reduced dimension labels may be applied. The expert from the United Kingdom is not against this idea in principle. However, the expert is reluctant to widen the scope of this paper from specifying what

¹ In accordance with the programme of work of the Sub-Committee for 2011-2012 approved by the Committee at its fifth session (refer to ST/SG/AC.10/C.3/76, para. 116 and ST/SG/AC.10/38, para. 16).

markings should look like to when they should be applied in a particular way. The scope of the current paper is already wide, and to widen it further risks making it too unwieldy.

Discussion

4. This paper presents revised versions of the proposals from the previous paper, along with a new proposal for the marking in packing instruction P650. To avoid repetition, each proposal in this paper only has explanatory passages explaining changes from ST/SG/AC.10/C.3/2011/5. That paper should be referred to for comprehensive discussion of the principles behind the proposed amendments.

5. Comments were received to suggest more accurately specify colours for markings. The expert from the United Kingdom has considered carefully how to improve the provisions. Specifying pantones is ruled out by copyright considerations. In any case, the effect of weathering on markings would alter the pantone due to fading. In the case of red markings, the effect of fading is to turn them to pink which of course is described as a different colour rather than “pale red”. The same problem exists for black markings, which turn grey on fading. Due to the subjective nature of colour, this paper is unable to propose a tightening of the colour specification.

6. The expert from the United Kingdom has received feedback asking for tolerances to be added for the overall size of markings. The proposals as currently worded only specify minimum dimensions for the overall size of markings, so in fact the proposals already have *de facto* tolerances allowing markings to be larger.

7. Allowing tolerances for the size of markings to be slightly smaller is superficially attractive, but has drawbacks. It would complicate the provisions and reintroduce doubt as to what is required. It would undermine what is meant by a minimum size. The revised proposals have been drafted to ease the production of labels, for example by avoiding the need for printing bleeds. For professionally produced markings, meeting minimum size requirements ought not to be onerous. Adding tolerance provisions would also be editorially complex, requiring separate provisions for labels, Limited Quantity marks and Excepted Quantity marks etc. Therefore, no such provisions are proposed.

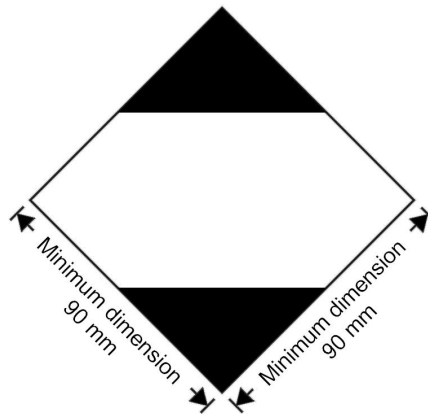
Proposal 1: Limited quantity marking

8. The United Kingdom proposes a revised version of the amended description for the Limited Quantity marking. As well as some editorial amendments, the required minimum measurement is reduced to 90 mm x 90 mm. This is to align the revised provision with the existing practical situation where adhesive labels of 100 mm x 100 mm have an LQ marking printed several millimetres from the edge of the label without a printing bleed. A similar provision applies for the reduced size label which now has a proposed minimum size of 45 mm x 45 mm. It is also proposed that the thickness of the outer border line may also be reduced in this circumstance, from 2 mm to a minimum of 1 mm. The tautological reference to “all four sides of the same length” is removed from the proposal.

9. Amend sections 3.4.7 and 3.4.8 and insert new paragraphs 3.4.7.1, 3.4.7.2, 3.4.8.1 and 3.4.8.2 as follows (new text is underlined):

“3.4.7 Marking for packages containing limited quantities

3.4.7.1 Except for air transport, packages containing dangerous goods in limited quantities shall bear the marking shown below:

Figure 3.4.1

Marking for packages containing limited quantities

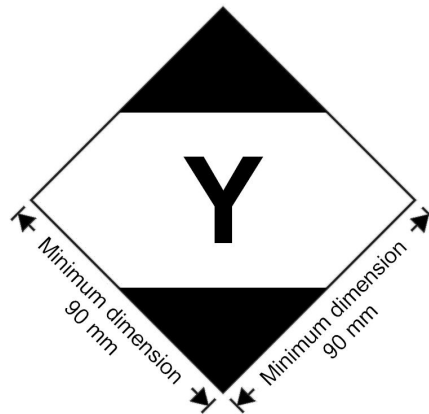
The marking shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness.

The marking shall be in the form of a square set at an angle of 45 degrees (diamond-shaped) and all features shall be in proportion to those shown. The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 90 mm x 90 mm and the minimum width of line forming the diamond shall be 2 mm.

3.4.7.2 If the size of the package so requires, the minimum outer dimensions shown in figure 3.4.1 may be reduced to be not less than 45 mm x 45 mm provided the marking remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm.

3.4.8 Marking for packages containing limited quantities conforming to Part 3, Chapter 4 of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air

3.4.8.1 Packages containing dangerous goods consigned for air transport in conformity with the provisions of Part 3, Chapter 4 of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air shall bear the marking shown below:

Figure 3.4.2

Marking for packages containing limited quantities conforming to Part 3, Chapter 4 of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air

The marking shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness.

The marking shall be in the form of a square set at an angle of 45 degrees (diamond-shaped) and all features shall be in proportion to those shown. The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 90 mm x 90 mm and the minimum width of line forming the diamond shall be 2 mm. The symbol "Y" shall be placed in the centre of the mark and shall be clearly visible.

3.4.8.2 If the size of the package so requires, the minimum outer dimensions shown in figure 3.4.2 may be reduced to be not less than 45 mm x 45 mm provided the marking remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm. The symbol "Y" shall remain in proportion to that shown in figure 3.4.2."

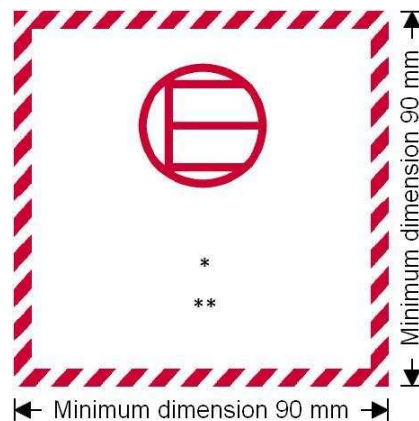
Proposal 2: Excepted quantity mark

10. The background for the amendments to the provisions for the Excepted Quantity mark is explained in detail in the paper ST/SG/AC.10/C.3/2011/5. The current proposal makes some editorial amendment to the proposal. The minimum dimensions are reduced to 90 mm x 90 mm for the same reason as given for Limited Quantity markings. No changes to the text of 3.5.4.3 are proposed, but the paragraph is repositioned below Figure 3.5.1.

11. Amend 3.5.4.2 and 3.5.4.3 as follows (new text is underlined):

“3.5.4.2

Figure 3.5.1



Excepted quantities mark

- * The Class(es) or, when assigned, the Division number(s) shall be shown in this location.
- ** The name of the consignor or of the consignee shall be shown in this location if not shown elsewhere on the package.

The marking shall be in the form of a square and all features shall be in proportion to those shown. The hatching and symbol shall be of the same colour, black or red, on white or suitable contrasting background. The minimum dimensions shall be 90 mm x 90 mm.

3.5.4.3 An overpack containing dangerous goods in excepted quantities shall display the markings required by 3.5.4.1, unless such markings on packages within the overpack are clearly visible.”

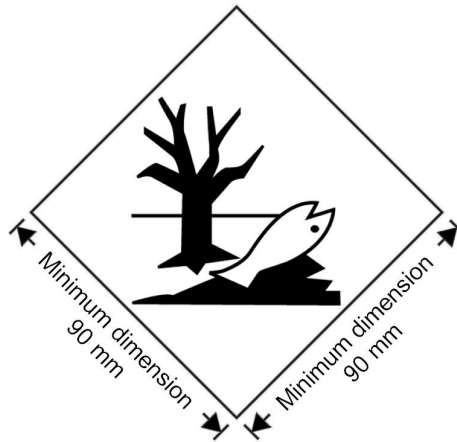
Proposal 3: Environmentally hazardous substance mark

12. This proposal is amended to alter the minimum dimensions to 90 mm x 90 mm for the same reason as with the Limited Quantity marking. A reduction for the larger labels for Cargo Transport Units is to 240 mm x 240 mm is also for this reason. These are also the same dimensions as the line inside the inner edge on placards. The text “with all four sides the same length” is also removed from the proposal. The colour is specified as black. This is not currently specified in the text, but would appear to be intent of Figure 5.2.2.

13. Delete the existing paragraph 5.2.1.6.3 and Figure 5.2.2 and replace with a new paragraph 5.2.1.6.3 and Figure 5.2.2 as follows:

“5.2.1.6.3 The environmentally hazardous substance mark shall be as shown in Figure 5.2.2.

Figure 5.2.2



Environmentally hazardous substance mark

The marking shall be in the form of a square set at an angle of 45 degrees (diamond-shaped) and all features shall be in proportion to those shown. The symbol (fish and tree) shall be black on white or suitable contrasting background. The minimum dimensions shall be 90 mm x 90 mm and the minimum width of line forming the diamond shall be 2 mm. If the size of the package so requires, the dimensions/line thickness may be reduced, provided the marking remains clearly visible.

NOTE: *The labelling provisions of 5.2.2 apply in addition to any requirement for packages to bear the environmentally hazardous substance mark.”*

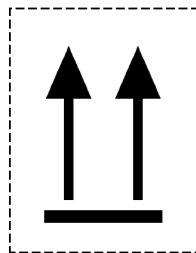
14. Add a new paragraph 5.3.2.3.2 as follows:

5.3.2.3.2 The environmentally hazardous substance mark for cargo transport units shall be as described in 5.2.1.6.3 and Figure 5.2.2, except that the minimum dimensions shall be 240 mm x 240 mm. The minimum width of line forming the diamond shall be 5 mm.

Proposal 4: Orientation arrows

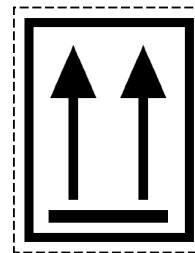
15. No feedback has been received by the United Kingdom expert on the proposal for orientation arrows, so no changes have been made to the original proposal in ST/SG/AC.10/C.3/2011/5. The proposal is below (new text is underlined):

“Figure 5.2.3



or

Figure 5.2.4



All features shall be in proportion to those shown.”

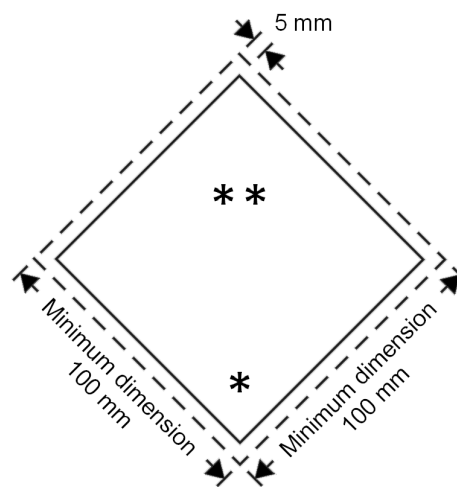
Proposal 5: Class/division labels

16. This proposal has only one revision from ST/SG/AC.10/C.3/2011/5; to specify that the measurement from the edge of the label to the line inside the edge be measured to the outside of that line. The expert from the United Kingdom notes that is the current measurement used on label samples that have been examined, but is open to altering this part of the proposal if preferred. No printing bleed is used for these labels, so the overall minimum dimensions remain at 100 mm x 100 mm.

17. Delete the existing 5.2.2.2.1.1 and replace with a new sub-paragraph 5.2.2.2.1.1, Figure 5.2.5 and insert a new paragraph 5.2.2.2.1.8 as follows:

“5.2.2.2.1.1 Labels shall be configured as shown in Figure 5.2.5. Labels shall be displayed on a background of contrasting colour, or shall have either a dotted or solid outer boundary line.”

Figure 5.2.5



Class/division label

* Class or division number shall be shown in this location in the bottom corner.

** The class or division symbol/numeral/text shall be shown in this location.

5.2.2.2.1.8 If the size of the package so requires the dimensions may be reduced, provided the marking remains clearly visible. The line inside the edge shall remain 5 mm to the edge of the label. The minimum width of the line inside the edge shall remain 2mm. Dimensions for cylinders shall comply with 5.2.2.2.1.2.

The label shall be in the form of a square set at an angle of 45 degrees (diamond-shaped) with all four sides the same length. The minimum dimensions shall be 100 mm x 100 mm and the minimum width of the line inside the edge forming the diamond shall be 2 mm. The line inside the edge shall be parallel and 5 mm from the outside of that line to the edge of the label. The line inside the edge on the upper half of the label shall be the same colour as the symbol and the line inside the edge on the lower half of the label shall be the same colour as the class or division number in the bottom corner.”

Class/division placards (not Class 7)

18. Both these alternative proposals have been revised in a similar way to proposal 5 to make the outer edge of the inner line the point of measurement. Likewise, the UK is open to amending this part of the proposal if this is the will of the UN Sub-Committee.

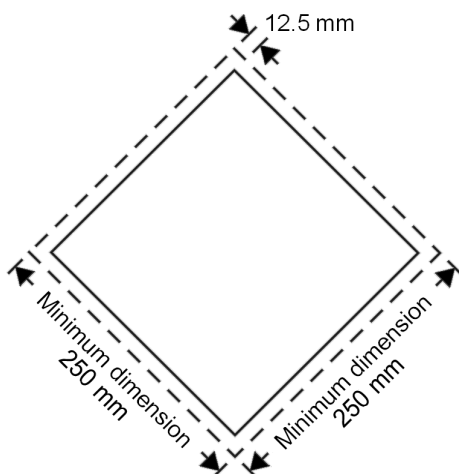
Proposal 6

19. The description follows that proposed for class/division labels as closely as possible. To avoid altering the logical structure of the provisions, some references to labels remain in the descriptive text.

20. Delete the existing paragraph 5.3.1.2.1 and replace with a new paragraph 5.3.1.2.1 as follows:

"5.3.1.2.1 Except as provided in 5.3.1.2.2 for the Class 7 placard, a placard shall be configured as shown in Figure 5.3.0.

Figure 5.3.0



Placard (except for class 7)

The placard shall be in the form of a square set at an angle of 45 degrees (diamond-shaped) with all four sides the same length. The minimum dimensions shall be 250 mm x 250 mm (to the edge of the placard outside a holder) and the minimum width of the line inside the edge forming the diamond shall be 5 mm. The line inside the edge shall be parallel and 12.5 mm from the outside of that line to the edge of the label. The symbol and line inside the edge shall correspond in colour to the label for the class or division of the dangerous goods in question. The class or division symbol/numeral shall be positioned and sized in proportion to those prescribed in 5.2.2.2 for the corresponding class or division of the dangerous goods in question. The placard shall display the number of the class or division (and for goods in class 1, the compatibility group letter) of the dangerous goods in question in the manner prescribed in 5.2.2.2 for the corresponding label, in digits not less than 25 mm high."

Proposal 7

21. Delete paragraph 5.3.1.2.1 and replace with a new paragraph 5.3.1.2.1 as follows:
- “5.3.1.2.1 Except as provided in 5.3.1.2.2 for the class 7 placard, a placard shall follow the provisions of paragraphs 5.2.2.2.1 and 5.2.2.2.2 for the label of the class or division of the dangerous goods in question except:
- (a) The minimum dimensions shall be 250 mm x 250 mm (to the edge of the placard outside a holder) and the minimum width of the line inside the edge forming the diamond shall be 5 mm. The line inside the edge shall be parallel and 12.5 mm from the outside of that line to the edge of the placard (outside a holder).
- (b) The class or division number (and for goods in Class 1, the compatibility group letter) of the dangerous goods in question shall have digits not less than 25 mm high.”
22. As a consequential amendment, the final sentence of 5.3.1.1.2 could be deleted as this duplicates text in 5.2.2.2.1 referenced in 5.3.1.2.1.

Proposal 8: Elevated temperature substance mark

23. In the description, the term “symbol” is replaced by “marking” to make the term more consistent with other markings and to aid translation.
24. In 5.3.2.2, amend the text and figure after "shown in Figure 5.3.4" to read as follows:

"Figure 5.3.4

Mark for carriage at elevated temperature



Mark for carriage at elevated temperature

The marking shall be an equilateral triangle with all three sides the same length and all features shall be in proportion to those shown. The colour of the mark shall be red. The minimum dimension of the sides shall be 250 mm.”

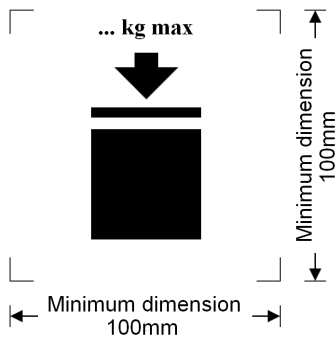
Proposal 9: IBC and large packaging stacking load symbols

25. The proposal for stacking load symbols is clarified to make clear that the area within the printer’s marks should be square. This would ensure that the symbols remain in proportion. For situations where the printer’s marks are not printed on an IBC or large packaging, the requirement for the symbol to be in proportion to 100 mm as shown in the example diagram gives an indication of the minimum required size. From a practical point of view, printers have the discretion to increase the size used to ensure the marking is large enough when printing the symbols without a printer’s mark. The United Kingdom is reluctant to specify the dimensions of the symbols themselves due to the complexity involved in doing so. This would also change recently adopted approach from the 17th revised edition of the Model Regulations.

26. Amend 6.5.2.2.2 to read as follows:

"6.5.2.2.2 The maximum permitted stacking load applicable when the IBC is in use shall be displayed on a symbol as shown in Figure 6.5.1 or Figure 6.5.2. ~~follows:~~ The symbol shall be durable and clearly visible.

Figure 6.5.1

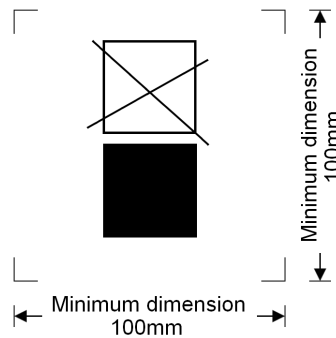


IBCs capable of being stacked

~~The symbol shall not be less than 100 mm x 100 mm, be durable and clearly visible.~~

The minimum dimensions shall be 100 mm x 100 mm. The letters and numbers indicating the mass shall be at least 12 mm high. The area within the printer’s marks shall be square and all features shall be in proportion to those shown.”

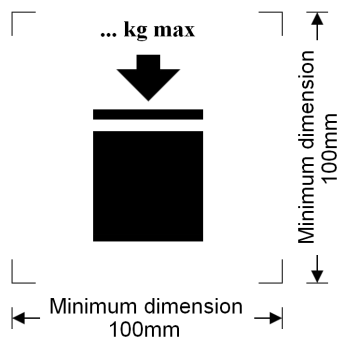
Figure 6.5.2



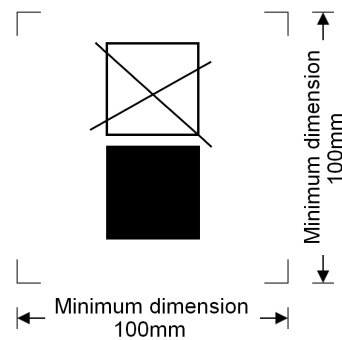
IBCs NOT capable of being stacked

27. Amend 6.6.3.3.3 to read as follows:

"6.6.3.3 The maximum permitted stacking load applicable when the large packaging is in use shall be displayed on a symbol as shown in Figure 6.6.1 or Figure 6.6.2. ~~follows:~~ The symbol shall be durable and clearly visible.

Figure 6.6.1

Large packagings capable of being stacked

Figure 6.6.2

Large packagings NOT capable of being stacked

~~The symbol shall not be less than 100 mm x 100 mm, be durable and clearly visible.~~

The minimum dimensions shall be 100 mm x 100 mm. The letters and numbers indicating the mass shall be at least 12 mm high. The area within the printer's marks shall be square and all features shall be in proportion to those shown. The mass marked above the symbol shall not exceed the load imposed during the design type test (see 6.6.5.3.3.4) divided by 1.8.

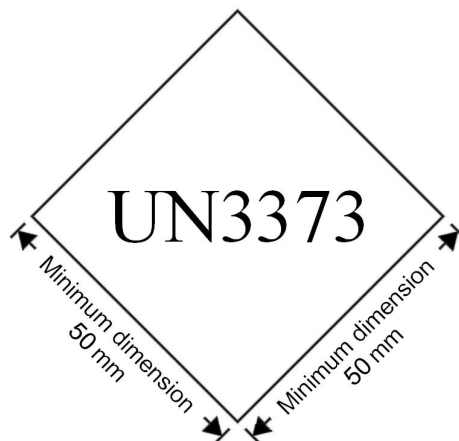
NOTE: *The provisions of 6.6.3.3 shall apply to all large packagings manufactured, repaired or remanufactured as from 1 January 2015.*

Proposal 10: Mark shown in Packing Instruction P650

28. Packing Instruction P650 includes a simple mark consisting of a diamond with the lettering "UN3373" inside. The specification allows latitude in the sizing of the lettering and numbers, which can be smaller in proportion to the diamond than is shown in the diagram. This paper does not propose to change this, so no text prescribing that the features be in proportion to the diagram is proposed. It is only proposed that dimensional arrows be added in line with the other diamond shaped markings in the Model Regulations.

29. The same issue relating to printing bleeds may exist for this marking as for the Limited Quantities markings (see proposal 1). If the Sub-Committee judges it necessary, the Expert from the United Kingdom would be open to reducing the minimum dimensions to 45 mm for the same reasons given for the Limited Quantities markings.

30. Amend the diagram in P650 as follows (overall size of diagram increased to allow for the size of dimensions lettering/arrows):



Transitional measures

31. The expert from the United Kingdom still has no firm opinion on transitional periods, and is open to suggestions.

32. If adopted in the current biennium, these proposals would not pass through to the ICAO Technical Instructions, International Maritime Dangerous Goods code and RID/ADR/ADN until at least January 2015. Despite this timescale, the Expert from the United Kingdom appreciates that some transitional measures are needed and that they need to be harmonised across the modes. The United Kingdom does not have a fixed view on the exact length these may be.

33. The Expert from the United Kingdom suggests that transitional measures be adopted for each individual proposal if adopted. For those proposals where a transition date of 1 January 2015 is appropriate, no action need be taken. For those proposals which require a deviation from that date, a note in italics would need to be added to the appropriate amended text.

Guiding principles

34. This document proposes a more consistent approach for the description of labels, placards, symbols, markings and marks. If these proposals meet with the approval of the Sub-Committee, the expert from the United Kingdom suggests that the Guiding Principles be amended to include a standardized format for the design of any future labels, placards, symbols, markings and marks that may be added to the UN Model Regulations.
