



HARMONIZED SYSTEM
REVIEW SUB-COMMITTEE

-
21st Session
-

NR0082E1
(+ Annexes)
O. Eng.

Brussels, .

AMENDMENT OF THE EXPLANATORY NOTE TO HEADING 85.14
TO CLARIFY THE MEANING OF THE TERM "DIELECTRIC HYSTERESIS"

(Item II.A.9 on Agenda)

Reference document :

NR0072E2, paras. 86 and 87, Annex C (RSC/20 - Report)
NR0072B2, Annex D/16/18 (RSC/20 - Report)
NC0104E1 (HSC/24)

I. BACKGROUND

1. At its 20th Session, the Review Sub-Committee examined possible amendments to the Explanatory Notes to heading 85.14. One delegate suggested that the term "dielectric hysteresis" be replaced by "dielectric loss", as he felt that the two terms were synonymous.
2. The Sub-Committee decided that both the Secretariat and administrations would examine the question concerning the reference to "dielectric hysteresis" during the intersession with a view to determining whether this expression was synonymous with "dielectric loss".

II. COMMENTS BY THE US ADMINISTRATION

"Heading 85.14 Draft Explanatory Notes

3. The United States submits the following comments regarding the draft Explanatory Note to heading 85.14. These comments relate to the Review Sub-Committee's consideration of possible changes to the Explanatory Notes consequential upon the Article 16 Recommendation of 25 June 1999.

File No. 2152

4. Taking note of the decision of the Review Sub-Committee, as reflected in paragraph 86 to the summary record of the 20th Session (Doc. NR0072E2), that the use of the term “dielectric hysteresis” in the Explanatory Note to heading 85.14 should be reviewed, we suggest that the term “dielectric loss” be substituted for the term “dielectric hysteresis” **wherever** it occurs in the Explanatory Note to that heading.
5. “Dielectric loss” is the term most often used in the trade. Also, it is both logical and consistent to use this term since it appears in the new text for heading 85.14, as adopted by the Harmonized System Committee.”

II. SECRETARIAT COMMENTS

6. Acting on the Sub-Committee’s instructions, the Secretariat contacted the International Microwave Power Institute in order to receive their comments. These are reproduced in Annex I to this document.
7. The Secretariat can agree with the comments by both the US Administration and the International Microwave Power Institute that the term “dielectric hysteresis” be replaced by “dielectric loss”. On this basis, the Secretariat has made the necessary changes to the Amendments to the Explanatory Notes reflected in Doc. NR0072B2, page D/16/18, Items 5 and 8 (Heading 85.14, page 1463). In addition, the Secretariat has added a new Item to reflect the corresponding change in the existing text of the Explanatory Note to heading 85.14 (I)(D), page 1463. Finally, the Secretariat has deleted the term “(current)” in square brackets in the proposed text to Item 5 as being superfluous. These changes are reproduced in Annex II to this document.

III. CONCLUSION

8. The Sub-Committee is invited to take account of the Note from the International Microwave Power Institute, as well as the proposed amendments to the Explanatory Notes, as set out in the Annex to this document, when it examines this agenda item.

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NOTE FROM THE INTERNATIONAL MICROWAVE POWER INSTITUTE

Our resident expert on terminology has reviewed the definition for "Dielectric Capacitance Furnaces" and determined that "loss" is the proper term. The use of "hysteresis" is archaic and, in this case, not completely accurate. We recommend that the term "dielectric hysteresis" be replaced with "dielectric loss" in section 85.14.

Robert C. LaGasse, Executive Director
International Microwave Power Institute

E-mail to Mr. Robert C. LaGasse

The two-word term "dielectric loss" is defined in the International Electrotechnical Vocabulary, published by the IEC. It is entry 841-06-04. It is a recommended general expression. The two-word term "dielectric hysteresis" may exist only in some old textbooks, and has then a more limited meaning. The IEC Committee on Terminology recommends not using the term "hysteresis" in conjunction with "dielectric" or "electric".

By "dielectric loss" is meant that power is absorbed from an electric field applied to a material with such electric properties that the field pattern is determined mainly by the permittivity (and hence not by the resistivity or permeability) of the material. The term "hysteresis" is a particular kind of loss which does not exist in a static (i.e. direct current (DC) or static voltage) situation. The loss is thus not conductive (but may instead be by molecular relaxation or other phenomena). Losses in magnetic materials can likewise be of two kinds: by electric conductivity (the so-called eddy current losses) and by magnetic hysteresis.

In the case here, it is very obvious that the combination term should be "dielectric loss", since there is no reason to exclude conductive losses, or to try to separate the various possible molecular or atomic loss mechanisms.

Per Olov Risman, Microtrans AB

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Annexe au
II Doc. NR0082B1
Annex to
(SCR/21/fév. 2000)
(RSC/21/Feb. 2000)

ANNEXE II

(A TRADUIRE)

(Point II.A.9 de l'ordre du jour)

ANNEX II

AMENDMENT OF THE EXPLANATORY NOTE TO HEADING 85.14
TO CLARIFY THE MEANING OF THE TERM "DIELECTRIC HYSTERESIS"

(Item II.A.9 on Agenda)

PROCEDURE DE L'ARTICLE 16
MODIFICATIONS DES NOTES EXPLICATIVES

5. Premier paragraphe. Nouvelle deuxième phrase.

Texte anglais seulement.

8. Partie I. Deuxième paragraphe. Alinéa D).

Nouvelle rédaction :

Ajouter la nouvelle phrase suivante :

“Parmi ces fours on distingue notamment les **fours industriels à micro-ondes** dans lesquels les matières diélectriques à chauffer sont soumises à l’action d’ondes électromagnétiques [à très haute fréquence]. Par pertes diélectriques, l’énergie dégagée par ces ondes est convertie simultanément en chaleur dans la totalité de la masse du produit, ce qui assure un échauffement très uniforme. Ces fours sont utilisés notamment pour le séchage et le dégivrage, ainsi que le moulage des matières plastiques.”

9. Partie (I). Deuxième paragraphe. Première phrase. Alinéa (D).

Texte anglais seulement.

ARTICLE 16 PROCEDURE
AMENDMENTS TO THE EXPLANATORY NOTES

Page 1463. Heading 85.14.

5. First paragraph.

Insert the following new second sentence :

“The heading includes furnaces and ovens functioning by induction or dielectric loss and other industrial or laboratory equipment for the heat treatment of materials by induction or dielectric loss (e.g., industrial microwave furnaces, ovens and equipment).”

8. Part (I). Second paragraph. Item (D).

(a) Second sentence.

Delete “dielectric hysteresis” and substitute “dielectric loss”.

(b) Add the following new third sentence :

“This group includes **industrial microwave ovens**, in which dielectric products to be heated are subjected to the action of electromagnetic waves. By dielectric loss, the energy from the waves is converted simultaneously into heat throughout the mass of the product, ensuring very uniform heating. These ovens are used for drying, defrosting, moulding of plastics, etc.”

Annexe II au doc. NR0082B1
(SCR/21/fév. 2000)