On approval of the Technical Regulations on Maximal Allowed Consumption of Electric Power by the Devices of Refrigeration

In accordance with Article 14 of Law of Ukraine "On standards, technical regulations and conformity assessment procedures", the Cabinet of Ministers of Ukraine resolves to:

1. Approve the Technical regulations on Maximal Allowed Consumption of Electric Power by the Devices of Refrigeration and the plan of measures relating to implementation of these regulations (attached).

2. The State Committee for Issues Concerning Technical Regulation and Consumer Policy to ensure implementation of the Technical regulations on Maximal Allowed Consumption of Electric Power by the Devices of Refrigeration and to carry out control over conformity to requirements of these regulations.

Prime Minister of Ukraine

Y.TIMOSHENKO

Ind. 21

APPROVED
by Resolution of the Cabinet of Ministers of Ukraine
of 3 September 2008 # 787
TECHNICAL REGULATIONS
the Maximal Allowed Consumption of Electric Power by the Devices of Refrigeration

General issues

1. These Technical regulations set forth requirements relating to energy effectiveness of household electric refrigerators, freezers and combinations thereof (hereinafter - refrigerating devices).

2. In these Technical regulations the terms are used in the meaning specified in Laws of Ukraine "On standards, technical regulations and conformity assessment procedures", "On verification of conformity" and "On accreditation of conformity assessment authorities".

3. These Technical regulations apply to the specified in section 14 of these Technical regulations new refrigerating devices operating on the electric current.

These Technical regulations shall not apply to refrigerating devices operating from other energy sources, in particular accumulators, and to household absorption refrigerating devices and devices that are manufactured for one-time use.

4. Putting into circulation the refrigeration equipment shall be allowed only on condition that the level of consumption of electric energy does not exceed the maximum level allowed for relevant category of refrigeration equipment, determined in conformity with paragraphs 17 or 18 of these Technical regulations.

5. Producer of a refrigeration device or his authorized representative - resident of Ukraine (hereinafter - authorized person) or in the event where the producer or his authorized person do not carry out an activity in the territory of Ukraine, or a person who out the refrigerating devices into circulation, shall bear responsibility in accordance with legislation for ensuring conformity of each refrigeration device put into circulation with requirements of these Technical regulations.

6. Putting refrigeration equipment into circulation without affixing the national mark of conformity shall be prohibited.

7. It shall not be permitted to establish a prohibition, restriction or hamper introduction into circulation of refrigeration equipment bearing the national mark of conformity.

8. In the event where refrigerating devices are subject to other technical regulations, which provide for affixing of the national mark of conformity, the refrigerating devices shall be required also to conform to requirements of such other technical regulations. A precondition for affixing the national mark is conformity of the refrigeration equipment with all technical regulations.

9. Affixing to the refrigerating devices any sign similar in form to the national mark of conformity is prohibited. Any other mark may be affixed to the refrigerating devices, their packaging, operating instructions or other documentation on condition of ensuring clarity and readability of the national mark of conformity.

10. If it has been established that the national mark of conformity is affixed to the refrigerating equipment which does not conform to requirements of these Technical regulations, the producer or authorized person or a person who has introduced the refrigerating equipment into circulation,
shall be required to ensure conformity of the equipment to the requirements of these Technical regulations.

11. In the event of a repeat establishment of the fact of improper affixing of the national mark of conformity to the refrigerating equipment it will be necessary to implement measures aimed to limit or prohibit introduction of such products into circulation or to remove such products from the circulation in accordance with legislation of Ukraine.

12. Any decision concerning limitation of introduction of refrigeration equipment into circulation must be substantiated. The adopted decision, as well as the terms set for stopping the violations of requirements of these Technical regulations shall be notified to parties concerned.

**Method for computation of the maximum allowed level of consumption of electric energy by the refrigerating equipment**

13. Level of consumption of electric energy by the refrigerating equipment depends on the category, volume, energy effectiveness of the design thereof (thickness of thermo insulation, compressor effectiveness, etc.) and the ratio of the temperature of the air outside and inside the equipment.

14. Depending on the level of consumption of electric energy, refrigerating devices can be of the following categories:

- category 1 - a refrigerator without a low-temperature compartment. A low-temperature compartment - any compartment the temperature of the air in which is equal or less than -6° C;
- category 2 - a refrigerator with a compartment the temperature of the air in which is +5° C and/or +12° C;
- category 3 - a refrigerator with a low-temperature compartment not marked with an asterisk;
- category 4 - a refrigerator with a low-temperature compartment marked with one asterisk (*);
- category 5 - a refrigerator with a low-temperature compartment marked with two asterisks (**);
- category 6 - a refrigerator with a low-temperature compartment marked with three asterisks (***);
- category 7 - a refrigerator-freezer with a freezing compartment marked with four asterisks (****);
- category 8 - freezer-cabinet;
- category 9 - freezer-box;
- category 10 - a refrigerator-freezer with more than two doors or other devices.

15. The maximum allowed level of consumption of electric energy by the refrigerating equipment shall be determined for each category thereof based on the linear equation that is function of the volume/capacity of the equipment.
For refrigeration equipment having several compartments, an adjusted volume/capacity, which is a weighted sum of capacities of all compartments of the refrigeration equipment, will be used.

16. Adjusted volume of the refrigeration equipment $V_{np}$ shall be determined using the formula:

$$V_{np} = \sum V_c \cdot W_c \cdot F_c \cdot C_c,$$

Where $V_c$ – volume of the specific type of compartment, liters; $W_c$ - temperature coefficient determined using the following formula:

$$W_c = \frac{(25 - T_c)}{20},$$

Where $T_c$ – temperature determined for each compartment, °C; $F_c$ - the coefficient that equals 1.2 for no-frost compartment and 1 - for other compartments; $C_c$ - the coefficient that equals 1 - for refrigeration equipment of climate classes N and SN, $X_c$ (weight coefficient) - for refrigeration equipment of climate class ST, $Y_c$ (the weight coefficient) - for refrigeration equipment of climate class T.

The weight coefficients $X_c$ and $Y_c$ for various types of compartments of refrigeration equipment are presented in Annex 1.

17. The maximal allowed level of consumption of electric energy ($E_{max}$) by refrigerating equipment of various categories shall be determined using formulas shown in annex 2 (with precision at the level of two digits after the dot).

18. For refrigerators-freezers with more than two doors $E_{max}$ shall be computed using formulas shown in annex 3.

Procedures for conducting tests for determining conformity of the level of consumption of electric energy by refrigerating equipment with requirements of the Technical regulations

19. Level of consumption of electric energy by refrigerating equipment shall be determined in conformity with the state standard DSTU EN 153 "Methods for measuring energy consumption and relevant characteristics of household refrigerators, freezing chambers, freezers and combinations thereof that operate from the electric current net".

Testing of refrigeration equipment shall be carried out under the following conditions:

- temperature air outside the refrigeration equipment for climate classes SN, N, ST and T must be $+25^\circ$C;
- marginal deviations of the voltage of alternate electric current is ±1 percent of the nominal voltage 220 B;
- marginal deviations of the frequency of alternate electric current is ±1 percent of the nominal frequency of 50 Hz.

20. In the event where the level of consumption of electric energy by the tested refrigerating equipment does not exceed the value of $E_{max}$ determined in conformity with paragraphs 17 or 18
of these Technical regulations by 15 percent, the refrigerating devices will be regarded as such that conform to requirements of these Technical regulations.

If the level of consumption of electric energy by such refrigerating equipment exceeds $E_{\text{max}}$ by 15 percent, then three refrigerating devices must be tested.

In the event where the average arithmetic value of the level of consumption of electric energy of the three devices does not exceed the value of $E_{\text{max}}$ by 10 percent, the refrigerating devices shall be regarded as such that conform to requirements of these Technical regulations.

If the average arithmetic value exceeds the value of $E_{\text{max}}$ by 10 percent, the refrigerating devices shall be regarded as such that do not conform to requirements of these Technical regulations.

**Conformity assessment procedures**

21. Producer or authorized person shall carry out assessment of conformity of refrigeration equipment to requirements of these Technical regulations applying module A (inner production control) in conformity with the Technical regulations modules for assessment of conformity and requirements relating to application of the national mark of conformity, which are used in technical regulations, approved by Resolution of the Cabinet of Ministers of Ukraine of 7 October 2003 # 1585 (Official gazette of Ukraine, 2003, # 41, p. 2175).

Producer or its authorized person shall affix to each refrigerating device the national mark of conformity and prepare a declaration of conformity of refrigeration equipment to requirements of the Technical regulations. The form of the declaration of conformity is presented in Annex 4.

22. Producer or its authorized person shall prepare the specified in paragraph 23 of these Technical regulations technical documentation, keep it together with the declaration of conformity during three years following the date of manufacture of the last refrigeration equipment and shall provide it for examination in cases provided for by the legislation.

23. The technical documentation shall be prepared in the national language and must contain:

- name/title and location of the producer;
- general description of the model of refrigeration equipment which must be adequate for its identification;
- information concerning principal characteristics of the design of the refrigeration equipment, including necessary drawings, in particular characteristics that significantly affect the level of consumption of electric energy, size, volume and compressor characteristics;
- operating instructions;
- protocols of the tests of the level of consumption of electric energy;
- verification of conformity of the results of such tests to the estimates derived under paragraph 17 or 18 of these Technical regulations.

24. Producer or its authorized person shall be responsible for determination of the level of consumption of electric energy by the refrigerating equipment by means of the tests under
paragraph 19, as well as for correctness of computations carried out in conformity with paragraph 17 or 18 of these Technical regulations.

Producer shall implement measures to ensure, during the production process, conformity of the produced refrigeration equipment with the technical documentation and with requirements of these Technical regulations.

25. Person who has introduced the refrigerating devices into circulation shall carry out assessment of their conformity to requirements of these Technical regulations by applying module G (individual product unit examination) in conformity with the Technical regulations modules for assessment of conformity and requirements relating to application of the national mark of conformity, which are used in technical regulations.

During the application of the said module a person who has introduced the refrigerating devices into circulation shall affix to each tested unit of refrigeration equipment the national mark of conformity and shall prepare a declaration of conformity on the basis of the certificate of conformity, issued in accordance with legislation by the conformity assessment agency.

26. To obtain a certificate of conformity, a person who has introduced refrigerating devices into circulation, shall submit to one of the designated conformity assessment agencies, at one’s own choice, an application for testing each unit of refrigeration equipment. The application must contain:

name/title and location of the producer;

general description of the refrigeration equipment model adequate for its identification;

operating instructions.

27. Designated conformity assessment agency shall:

examine every sample of the refrigeration equipment and carry out the tests in conformity with paragraph 19 of these Technical regulations;

issue certificates of conformity on the basis of the performed tests and grant a permission to affix its identification number on every tested sample of refrigeration equipment.

28. A person who has introduced refrigerating devices into circulation shall keep the declaration of conformity and certificates of conformity during three years from the date of putting the refrigeration equipment into circulation and shall provide them for examination in cases provided for under the legislation.

29. A person who has introduced refrigerating devices into circulation shall bear responsibility both for determination of the level of consumption of electric energy by each sample refrigeration equipment unit by conducting the tests in conformity with paragraph 19, and for correctness of computations carried out in conformity with paragraph 17 or 18 of these Technical regulations.
### Weight coefficients for various types of compartments of refrigeration equipment

<table>
<thead>
<tr>
<th>Compartments</th>
<th>Weight coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compartment for cooling of the products</td>
<td>1,25 1,35</td>
</tr>
<tr>
<td>Compartment for preserving fresh products</td>
<td>1,2 1,3</td>
</tr>
<tr>
<td>Compartment, the temperature of the air in which equals 0° C</td>
<td>1,15 1,25</td>
</tr>
<tr>
<td>Low temperature compartment not marked with asterisks</td>
<td>1,15 1,25</td>
</tr>
<tr>
<td>Low temperature compartment, marked with one asterisk (*)</td>
<td>1,12 1,2</td>
</tr>
<tr>
<td>Low temperature compartment, marked with two asterisks (**)</td>
<td>1,08 1,15</td>
</tr>
<tr>
<td>Low temperature compartment, marked with three asterisks (*<strong>), and the freezing compartment marked with four asterisks (</strong>**)</td>
<td>1,05 1,1</td>
</tr>
</tbody>
</table>

Annex 1
to the Technical regulations
### FORMULAS for determination of the maximum allowed level of consumption of electric energy (E<sub>max</sub>) by refrigerating equipment

<table>
<thead>
<tr>
<th>Category</th>
<th>Name of refrigeration equipment</th>
<th>Formula for determination E&lt;sub&gt;max&lt;/sub&gt;, KWatts · hour/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Refrigerator without a low temperature compartment</td>
<td>(0.207 · V&lt;sub&gt;n&lt;/sub&gt; + 218) / 365</td>
</tr>
<tr>
<td>2</td>
<td>Refrigerator with compartment, temperature air in which is +5° C and/or +12° C</td>
<td>(0.207 · V&lt;sub&gt;n&lt;/sub&gt; + 218) / 365</td>
</tr>
<tr>
<td>3</td>
<td>Refrigerator with a low-temperature compartment, not marked with asterisk</td>
<td>(0.207 · V&lt;sub&gt;n&lt;/sub&gt; + 218) / 365</td>
</tr>
<tr>
<td>4</td>
<td>Refrigerator with a low-temperature compartment, marked with one asterisk (*)</td>
<td>(0.557 · V&lt;sub&gt;n&lt;/sub&gt; + 166) / 365</td>
</tr>
<tr>
<td>5</td>
<td>Refrigerator with a low-temperature compartment, marked with two asterisks (**)</td>
<td>(0.402 · V&lt;sub&gt;n&lt;/sub&gt; + 219) / 365</td>
</tr>
<tr>
<td>6</td>
<td>Refrigerator with a low-temperature compartment, marked with three asterisks (***</td>
<td>(0.573 · V&lt;sub&gt;n&lt;/sub&gt; + 206) / 365</td>
</tr>
<tr>
<td>7</td>
<td>Refrigerator-freezer with the freezing compartment, marked with four asterisks (****</td>
<td>(0.697 · V&lt;sub&gt;n&lt;/sub&gt; + 272) / 365</td>
</tr>
<tr>
<td>8</td>
<td>Freezer-cabinet</td>
<td>(0.434 · V&lt;sub&gt;n&lt;/sub&gt; + 262) / 365</td>
</tr>
<tr>
<td>9</td>
<td>Freezer-box</td>
<td>(0.48 · V&lt;sub&gt;n&lt;/sub&gt; + 195) / 365</td>
</tr>
</tbody>
</table>
**FORMULAS**
for determination of the maximum permitted level of consumption of electric energy (E\(_{\text{max}}\)) by refrigerating equipment with more than two doors

<table>
<thead>
<tr>
<th>Compartment with the lowest temperature</th>
<th>Category of refrigeration equipment</th>
<th>Formula for determination E(_{\text{max}}), KWatts • hour/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; - 6° C</td>
<td>1 - 3</td>
<td>(0,207 • V(_{\text{пр}}) + 218) / 365</td>
</tr>
<tr>
<td>≤ -6° C(*)</td>
<td>4</td>
<td>(0,557 • V(_{\text{пр}}) + 166) / 365</td>
</tr>
<tr>
<td>≤ -12° C (***)</td>
<td>5</td>
<td>(0,402 • V(_{\text{пр}}) + 219) / 365</td>
</tr>
<tr>
<td>≤ -18° C (***)</td>
<td>6</td>
<td>(0,573 • V(_{\text{пр}}) + 206) / 365</td>
</tr>
<tr>
<td>≤ -18° C (****)</td>
<td>7</td>
<td>(0,697 • V(_{\text{пр}}) + 272) / 365</td>
</tr>
</tbody>
</table>
DECLARATION of conformity

(full name of the producer, his authorized person - resident of Ukraine, person who has introduced the refrigerating devices into circulation,

location thereof, code in conformity with EDRPOU (if available)

represented

(job title, surname, first and second name of the authorized person)

confirms that

(full name of refrigeration equipment,

type, make, model)

which is manufactured in conformity with

(name of regulatory documents that verify conformity to

Technical regulations on the maximum permitted consumption of electric energy by refrigerating equipment)

conforms to the Technical regulations.

Certificate of conformity* (number of the certificate, date of its registration, period of validity

name/title and location of the designated conformity assessment authority)

This declaration is prepared on the basis of responsibility of the producer or his authorized representative, person, who has introduced the refrigerating devices into circulation.

(job title of individual who prepared the declaration)

(signature)

(initials and surname)
Place of seal

Place for mark denoting registration of the declaration

* Used in case of application of the module under which assessment of conformity of the refrigeration equipment must be carried out by the designated conformity assessment authority.

APPROVED by Resolution of the Cabinet of Ministers of Ukraine of 3 September 2008 # 787
PLAN OF MEASURES
concerning implementation of the Technical regulations on the maximum permitted consumption of electric energy by refrigerating equipment for the period until 2009

<table>
<thead>
<tr>
<th>Measure</th>
<th>Agencies responsible for implementation</th>
<th>Period of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Designating an agency responsible for implementation of the Technical regulations</td>
<td>State committee on technical regulation and consumer policy</td>
<td>Second half of 2008</td>
</tr>
<tr>
<td>2. Making, if required, own regulatory-legal acts conform to provisions of the Technical regulations</td>
<td>State committee on technical regulation and consumer policy Ministry of industrial policy NAER</td>
<td>-&quot;-</td>
</tr>
<tr>
<td>3. Promoting implementation of the Technical regulations through mass media, as well as by conducting seminars and conferences</td>
<td>Ministry of industrial policy State committee on technical regulation and consumer policy</td>
<td>-&quot;-</td>
</tr>
<tr>
<td>4. Preparing national enterprises for production of refrigeration equipment in conformity with requirements of the Technical regulations</td>
<td>Ministry of industrial policy</td>
<td>Second half of 2008 - 2009</td>
</tr>
<tr>
<td>5. Voluntary implementation by enterprises of the Technical regulations by applying conformity assessment procedures to the refrigeration equipment</td>
<td>-&quot;-</td>
<td>-&quot;-</td>
</tr>
<tr>
<td>6. Designating agencies for assessment of conformity of refrigeration equipment to requirements of the Technical regulations</td>
<td>State committee on technical regulation and consumer policy Ministry of industrial policy NAER</td>
<td>-&quot;-</td>
</tr>
<tr>
<td>7. Mandatory implementation of the Technical regulations by enterprises</td>
<td>Ministry of industrial policy</td>
<td>2009</td>
</tr>
</tbody>
</table>