Appendix 3

Product variety control numbers (PCN) within the framework of the anti-dumping investigation regarding the import into Ukraine of radiators for heating originating from the Republic of Türkiye and the People's Republic of China

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| **Product characteristics** | **Classification** | **Code** |
| Material | Steel | А01 |
| Aluminum | А02 |
| Bimetallic | А03 |
| Height, mm | <200 | B01 |
| 200-299 | B02 |
| 300-399 | B03 |
| 400-499 | B04 |
| 500-599 | B05 |
| 600-699 | B06 |
| 700-799 | B07 |
| 800-899 | B08 |
| 900-999 | B09 |
| >999 | B10 |
| Length, mm (for steel radiators) | <400 | C01 |
| 400-499 | С02 |
| 500-599 | С03 |
| 600-699 | С04 |
| 700-799 | С05 |
| 800-899 | С06 |
| 900-999 | С07 |
| 1000-1099 | С08 |
| 1100-1199 | С09 |

|  |  |  |
| --- | --- | --- |
|  | 1200-1299 | С10 |
| 1300-1399 | С11 |
| 1400-1499 | С12 |
| 1500-1599 | C13 |
| 1600-1699 | C14 |
| 1700-1799 | C15 |
| 1800-1899 | C16 |
| 1900-1999 | C17 |
| 2000-2099 | C18 |
| 2100-2199 | C19 |
| 2200-2299 | C20 |
| 2300-2399 | C21 |
| 2400-2499 | C22 |
| 2500-2599 | C23 |
| 2600-2699 | C24 |
| 2700-2799 | C25 |
| 2800-2899 | C26 |
| 2900-2999 | C27 |
| 3000-3099 | C28 |
| >3099 | C29 |
| Number of heating convectors, number of panels (for steel radiators) | Without convectors | D01 |
| 1 | D02 |
| 2 | D03 |
| 3 | D04 |
| >3 | D05 |
| Section depth (for aluminum and bimetallic radiators), mm | <70 | E01 |

|  |  |  |
| --- | --- | --- |
|  | 70-75 | E02 |
| 76-84 | E03 |
| 85-95 | E04 |
| 96-100 | E05 |
| >100 | E06 |
| Connection type (for steel radiators) | Lateral | F01 |
| Lower | F02 |
| Other | F03 |

The proposed methodology provides for different PCN codes for the following product characteristics:

1) Material from which the radiator is made;

2) Height;

3) Length;

4) Number of heating convectors, number of panels (for steel radiators);

5) Section width (for aluminum and bimetallic radiators);

6) Type of connection (for steel radiators).

**Steel radiators (A01)** are spot-welded thin plates of sheet steel. The coolant moves through a zigzag channel, which is due to the fact that the plates are stamped in the form of a recess under the channel.

T**he appearance and variety of sizes of steel radiators.** The national producer produces radiators from 200 mm to 600 mm in height (B01-B05), and in length from 400 mm to 3000 mm (C01 - C27), which allows the end user to make a choice based on his needs. For example, low and elongated for installation in front of panoramic windows, and high and narrow for installation near the door to the balcony, etc. It is also possible to trace the connection, how to identify the number of active heating panels and convectors to increase heat output by marking the radiator. For example, type 22 (internal classification) means that there are 2 active panels behind which the coolant circulates and two corrugated steel convectors corresponding to PCN code D03.

In addition, steel radiators differ in the type of connection to pipe wiring:

**- the lower connection** is intended for systems with hidden piping in the floor (does not work without a circulation pump); used if an autonomous heating system is installed and there is a risk of power outages in winter, but such a system is more economical and works better with thermostat heads;

**- lateral connection** has a lower cost. Including, you can use thermal heads with a lateral diagonal connection, which allows the heating system to work with natural circulation of the coolant.

**Aluminum radiators (A02)** are a construction of separate aluminum sections with better heat transfer, different design and light weight. Each section consists of elements - a head, a rib and a bottom part, which are connected to each other.

Sections are created by casting, the main raw material is aluminum (86%), supplemented with silicon and copper, which increases the strength of the radiator several times. It has a standard pressure of 16 atmospheres, but thanks to innovative technologies, the national manufacturer managed to improve production in such a way that each element is able to withstand pressure jumps in the system up to 24 atmospheres.

Aluminum radiators are produced from 300 mm to 600 mm (B02-B05). The length depends on the number of interconnected sections. Most often, aluminum radiators are produced in 6, 8, 10 and 12 sections, but everything depends on the end user, so the main unit of measurement is the section.

The national producer produces radiators with different section depths: from 70 to 96 mm (E01-E04), which affects heat transfer indicators, the weight of the radiator, overall dimensions for a convenient choice for the consumer.

**Bimetallic radiators (A03)** are made of two materials: steel and aluminum. The pipe through which the coolant flows, the inner layer is made of steel, and the outer layer of the radiator is made of aluminum. Working pressure 24 atmospheres.

The weight of bimetallic radiators is +/- 25% higher than that of aluminum radiators due to the fact that bimetal has an additional layer of steel collector through which the coolant passes. The additional weight is an advantage due to the increased reliability and guarantee against microcracks and leaks, as a result of which the service life is longer.

Bimetallic radiators, as well as aluminum radiators, are produced from 300 mm to 600 mm (B02-B05), the length of which depends on the number of interconnected sections.