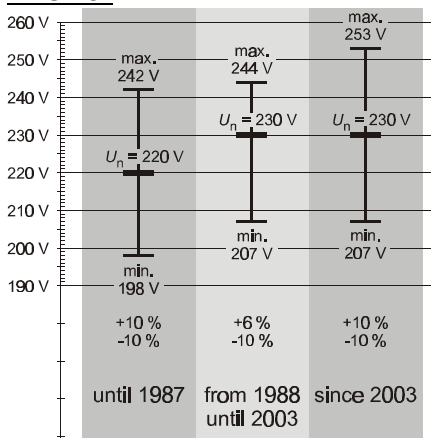


## Question

When has the electricity supply been standardized to 230 V in Europe?

## Answer



European countries, except the UK, made the change in two steps. See figure.

1. From 1988 on the nominal rated voltage has been changed to 230 V and the upper tolerance threshold has been decreased so that the maximum possible voltage nearly remained the same.
2. Since the year 2003 the tolerance band is  $\pm 10\%$ , as it has been until 1987, but this time with 230 V.

## Standardization in Europe

Meanwhile all Europe accepted the nominal rated voltage of 230/400 V.

A standardization, HD 472 S1, was reached on Nov. 4 1988 through CENELEC (European Committee for Electrotechnical Standardization, acronym according french translation).

## Effects on equipment and devices

In general equipment and devices are not supposed to undergo negative effects by the change to 230/400 V.

The tolerance thresholds given during the transitional period between 1988 and 2003 was designed to allow certain electrical equipment designed for 220/380 V, like electric bulbs, to be used until the end of their life cycle.