In present work the continentality of climate over Europe is studied. Attention is given to its basic characteristics, geographic distribution and its dependences on latitude and longitude. Firstly basic terms such as annual air temperature amplitude, thermal continentality and corresponding indices that characterize it are described. Attention is paid to the geographic distribution of continental indices for two reference periods (1951 – 1980 and 1981 – 2010) and the differences between them. The dependences of individual indices on latitude and longitude in order to capture in greater detail their properties are also studied. The results have shown that there has been considerable change of continentality between these periods in most of Europe's territory, which is described in detail in this work.