

Rhine–Main–Danube Canal

The Rhine–Main–Danube Canal (German: Rhein-Main-Donau-Kanal; also called Main-Danube Canal, RMD Canal or Europa Canal), located in Bavaria, Germany, connects the Main and the Danube rivers across the European Watershed, running from Bamberg via Nuremberg to Kelheim. The canal connects the North Sea and Atlantic Ocean to the Black Sea, providing a navigable artery between the Rhine delta (at Rotterdam in the Netherlands) and the Danube Delta in eastern Romania.



Rhine-Main-Danube Canal at Essing in Germany **Construction** □

The first concrete plans for the new waterway emerged in 1938, for the so-called Mindorfer Linie south of Nuremberg. As early as 1939 the first preparatory work began at Thalmässing in Landkreis Roth. However, after the war this route was dropped. By 1962, the Main's channel had been expanded as far upstream as Bamberg. In 1966, the Duisburger Vertrag, an agreement between Bavaria and the Federal Republic of Germany, was reached for financing the completion of the project. The contract was signed on 16 September of that year in Duisburg by Federal Transport Minister Hans-Christoph Seebohm, Federal Finance Minister

Rolf Dahngrün, Bavarian Prime Minister Alfons Goppel and the Bavarian Finance Minister Konrad Pöhner.

The last section to be built, between Nuremberg and Kelheim, became politically controversial in the 1970s and 1980s, mainly because of the 34 km long section through the Altmühl valley. On 25 September 1992, the canal was completed. The equivalent of some 2.3 billion euros were invested in the construction from 1960 to 1992. Almost 20 percent of that went for environmental protection projects.

Dimensions

The length of the canal is 171 km; the summit attitude (between the Hilpoltstein and Bachhausen locks) is 406 m above sea level. Along the course of the canal are 16 lock with lifting heights of up to 25 meters, of which thirteen are designed to conserve water.

The height difference along the north ramp of the canal — from the Main at Bamberg to the crest attitude — is 175 m, with 11 locks. From the crest attitude down to the Altmühl at Dietfurt is a drop of 51 m in altitude, through three locks. The further difference in altitude of 17 m along the Altmühl, with two more locks, makes a total of 68 m for the south ramp. This means that the Danube end of the canal is 107.3 m above the level of the Main end.

The cross-section of the waterway is normally trapezoidal, with 31 meters width at the bottom, 55 meters wide at the water surface, 4 meters of water depth, and a side grade of 1:3. The channel is a Waterway Class Vb; the largest authorized vessels are 190 m in length and 11.45 m wide. The channel in the Kelheim-bound Bamberg lock has a depth of 2.70 m. Some sections of the canal are conducted in an above-ground concrete bed, similar to aqueduct. Concrete sections are 5, steel water bridges are three on the route. Canal is bridged by a total of 115 bridges: highway, road, rail or pedestrian walkways.

In 2005 was transported through the canal 6.24 million tons of goods and a year earlier it was 7.59 million tons. In these years, the canal used a 5280 (6467) vessels per year.



~~Geographical challenges to the Danube waterway. On the sides of the waterway were~~
Positives

Improving the water balance in Upper Bavaria - at the request of the German Ministry for Regional Development and Environment was originally designed neutral water balance changed by pumping water through the canal in the dry periods and increase flow in streams in the watershed of the Rhine, which is in northern Bavaria ensure irrigation and drinking water supplies in dry periods. Interestingly, the water is pumped into the top canal basins is rendered in a descending part of the canal used in hydroelectric power plants in navigation steps to generate electricity. Because the northern part of Bavaria lies at a lower altitude than at the mouth of the Danube Canal, is produced more energy than it consumes in the drawing. Improvement of water balance by pumping water through canal not only that nothing cost, but even produces clean electricity.

More information about the project can be found here:

[Website of Rhein-Main-Donau AG](#)

[Website of Water and Shipping Authority Nuremberg](#)

[Pictures of Rhine–Main–Danube Canal](#)