

Incrementally launched bridges along the A 71/73 – Special Features

Dr. Roland von Wölfel
Director of Branch Office
Leonhardt, Andrä und Partner
Erfurt, Germany



Dr. Roland von Wölfel, born 1949, received his civil engineering degree from Weimar University in 1972, and a doctorate in 1976. He received another doctorate from the Berlin Bauakademie in 1986. After working 15 years as a bridge engineer Dr. von Wölfel has been the director of the Leonhardt, Andrä und Partner branch office Erfurt since 2004.

Summary

Approximately half of the major bridges (length of more than 250m) along the motorway A 71 and A 73 through the Thuringian Forest were incrementally launched. This is true for reinforced concrete box girder bridges as well as for steel composite bridges. By means of a statistic analysis spans and construction depths are presented and conclusions are drawn for the design and the construction of the bridges. Special features are addressed in particular examples of selected bridges, thereby concentrating on some distinctively German characteristics.

Keywords: incrementally launched bridges, prestressing, external prestressing

1. Introduction

The implementation of the motorway crossing the Thuringian Forest as number 16 of the “Traffic Projects German Unification” (VDE) has been and continues to be a demanding task in terms of engineering as well as logistics. It is one of seven highway projects that the German government has decided upon in 1991 and holds a key function in the growing together of Eastern and Western Germany. It connects Erfurt, the capital of Thuringia, to the Franconian towns of Schweinfurt/Wurzburg (A71) and Lichtenfels / Coburg (A73), see Fig1. Over a distance of 220 km the topology requires six tunnels totalling a length of 14 km (Rennsteig tunnel: 7.9 km long) and more than 50 major bridges, with a length of up to 1187 m and a height above ground of up to 110 m. Approximately half of the major bridges were incrementally launched, because this construction method allows the valleys to be crossed while reducing the environmental impact to a minimum. Table 1 shows the launched prestressed concrete bridges, Table 2 the launched steel composite ones. The composite bridges are not addressed any further in this report.

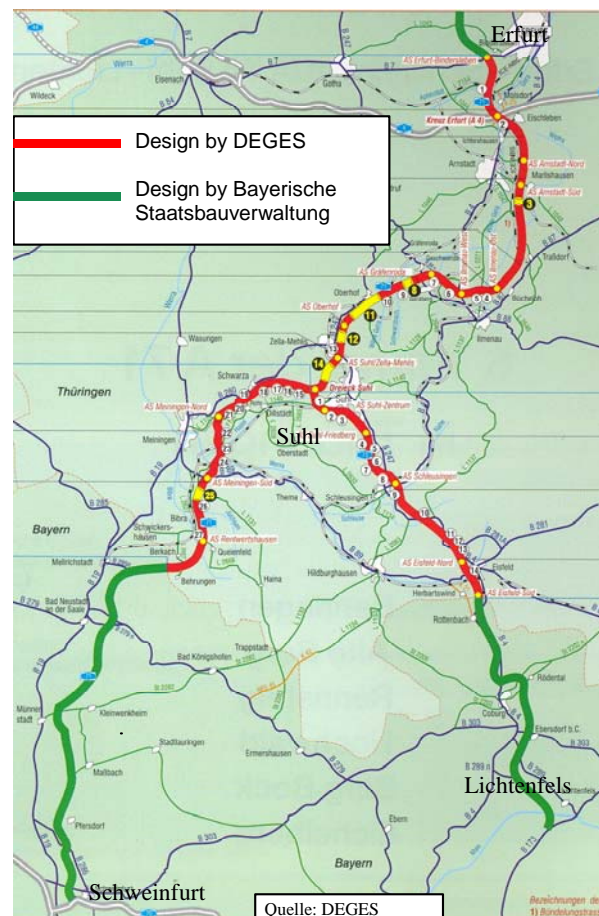


Fig. 1 Traffic Project German Unification No. 16