The High-performance, Height-adjustable, Load-measuring Bearings of the New Route du Littoral Offshore Viaduct in La Réunion

Adel Yousfi

Mageba SA, Cugy, Switzerland

Thomas Spuler, Colm O'Suilleabhain

Mageba SA, Bulach, Switzerland

Contact: ayousfi@mageba.ch

Abstract

A new highway, the "Nouvelle Route du Littoral", is currently being constructed on the French island of La Réunion in the Indian Ocean – partially on a viaduct in the sea, following the shoreline. This structure required a large number of high-capacity bearings to support its deck while accommodating movements as required. All of these "high performance" pot bearings were designed to be height-adjustable by injection of a special hardening material when required following ground movements/settlements etc. Each bearing is also equipped with a pressure sensor enabling the load it is carrying to be established at any time – a very useful feature during inspections, which enables the correct and safe distribution of loads among the viaduct's piers to be verified. The design and supply of the bearings is described.

Keywords: Bearings; load-measuring; height-adjustable, bridge; viaduct.

1 Introduction

The French island of La Réunion in the Indian Ocean, east of Madagascar and southern Africa, is located above a hotspot in the Earth's crust, and experiences frequent volcanic activity. With much of the island mountainous and largely unpassable, most of its major roads are located along its coast. The "Route du Littoral", which follows the coastline between Saint-Denis, the capital, and La Possession, the island's main port, is subject to frequent landslides and to flooding from the sea during tropical storms. Therefore, an alternative route, the "Nouvelle Route du Littoral" is being

constructed – partially on a viaduct in the sea, close to the shore (Figures 1 and 2).

Figure 1. Part of the "Nouvelle Route du Littoral" during construction on a viaduct along the shoreline of La Reunion in the Indian Ocean