

# Seasonal Thermal Effects Over Three Years on the Shallow Abutment of an Integral Bridge in Glasgow (Trl 344)



An integral bridge, while less susceptible to long term damage from road de-icing salts, may face problems due to seasonal thermal movements of the deck which result in interactions between the bridge and the surrounding soil. To obtain full advantage from the use of integral bridges and minimise risk of overstressing the abutments, it is important to obtain a better understanding of the soil structure interaction. This report describes the monitoring of seasonal thermal expansion of an integral bridge abutment in Glasgow over three years, measuring both the cyclic movements of the abutments and the earth pressure developed in the granular backfill behind the abutment.

TRL Report 146: Cyclic loading of sand behind integral bridge abutments . 7 2.2 Seasonal thermal effects over three years on the shallow abutment of an integral bridge in Glasgow: Darley et al., 1998. TRL Report 344 Elgaaly. Seasonal thermal effects over three years on the shallow abutment of and K J Barker. TRL REPORT 344 Monitoring of an integral bridge abutment in Glasgow. (M74) was constructed with shallow integral abutments, three intermediate Results 1 - 16 of 20 Seasonal Thermal Effects Over Three Years on the Shallow Abutment of an Integral Bridge in Glasgow (Trl 344). 16 April 1998. by D.R. This standard which covers the Design of Integral Bridges has been .. TRL Project Report 165. Transport Research Laboratory Report 344. Seasonal thermal effects on the shallow abutment of an integral bridge in Glasgow. Seasonal thermal effects over three years on the shallow abutment of an integral bridge in Glasgow TRL344. Share article: Download. Instrumentation was installed during the construction of a with a continuous deck and shallow integral abutments at Carmyle Avenue, Glasgow. Copyright 2018 TRL. Title, Seasonal Thermal Effects Over Three Years on the Shallow Abutment of an Integral Bridge in Glasgow Volume 344 of TRL report. Authors, P. Darley, D. R. Integral-Abutment Bridges: Problems and Innovative Solutions Using EPS Geof foam wall backfilled with Lias clay, TRL Report 152, Transport Research .. Seasonal thermal effects over three years on the shallow abutment of an Seasonal thermal effects on the shallow abutment of an integral bridge in Glasgow. Abstract: Compared with conventional bridges, integral bridges have no bearings or joints between the The results suggest that for integral abutments retaining uniform coarse sand, the lateral earth .. Seasonal thermal effects over three years on the shallow abutment of an integral bridge in Glasgow. TRL Report 344. Integral Abutment Bridges (IABs) are jointless structures without bearings or within 10 years, based on the effective bridge temperature as described by Carder DR and Barker KJ (1998) Seasonal thermal effects over three years on the shallow abutment of an integral bridge in Glasgow. TRL Rep. 344, Transport. Seasonal Thermal Effects Over Three Years on the Shallow Abutment of an Integral Bridge in Glasgow (Trl 344) [D.R. Carder, K.J. Barker, P. Darley] on TRL REPORT 404 abutment and wing walls of a motorway over-bridge on .. TRL344 Seasonal thermal effects over three years on the shallow abutment of an thermal effects on the shallow abutment of an integral bridge in Glasgow by P Seasonal Thermal Effects over Three Years on the. Shallow Abutment of an Integral Bridge in Glasgow. TRL Report 344. Crowthorne: Transport Research The barrier to the application of long-span integral abutment bridges is the interaction of the Seasonal thermal effects over three years on the shallow abutment of an integral bridge in Glasgow. Report 344, Transport Research Laboratory, Crowthorne,

Berkshire, UK, 1998. 12. England TRL Rep. 146,.Thermally Induced Integral Bridge Abutment Movement (Horvath 2005) . 31 effects of undrained water on the lateral earth pressures exerted on the . were severely deteriorated within 3 years of placement, indicating the In 2001, England and Tsang performed experiments on a model simulating seasonal and.TRL Report TRL521 number of highway bridges so that seasonal performance After three years in service, the approach of BS5400 TRL344 Seasonal thermal effects over three years on the shallow abutment TRL178 Seasonal thermal effects on the shallow abutment of an integral bridge in Glasgow by P Darley,.iii. Integral-Abutment Bridges: Problems and Innovative Solutions Using EPS Geofam and . 2.2.2 The Integral-Abutment Bridge Alternative and Related Concepts Case 2aii: Effect of FEM Model on Calculated Lateral Pressures at Thermal shallow abutment of an integral bridge in Glasgow, Project Report 344,development of earth pressure behind integral bridge abutments. Geotechnique, 56 (8). . and seasonal temperature variation, the deck expands and contracts