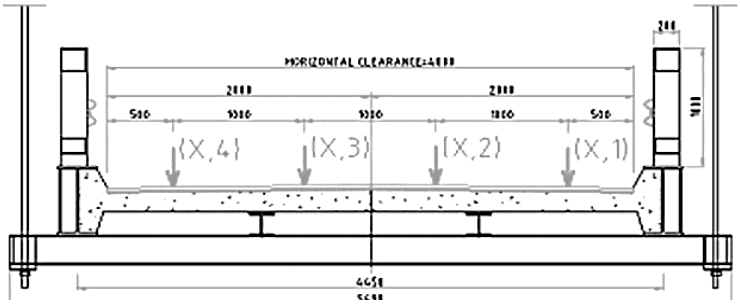
NDTitans in action

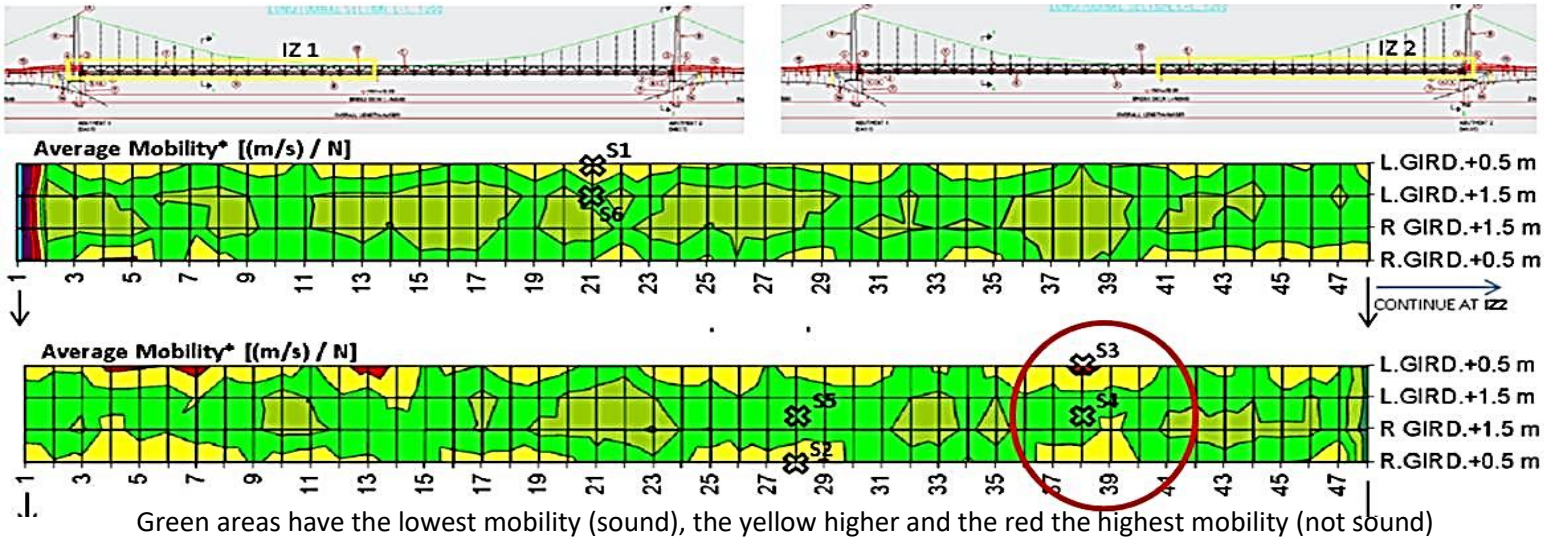
Case 10.6 Quality Assurance of newly repaired bridge deck, Finland



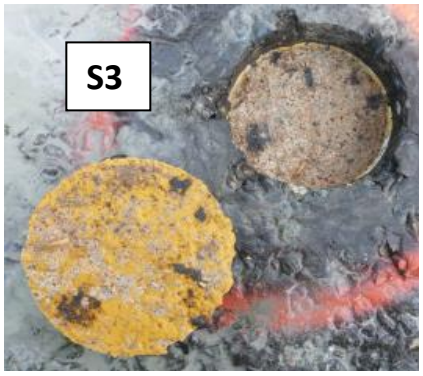
Cross-section of the bridge. Deck: 50 mm asphalt on 250 mm concrete slab with waterproofing layer in between, area 350 m² Arrows indicate the s´MASH test points across

One year after completion of renewal the deck surface of the suspension bridge at the Åland islands (belonging to Finland), the deck showed localized deformations and damages.

s`MASH Impulse Response testing was selected as the primary test system to detect defects, followed up by BOND-TEST in areas pin-pointed by the s´MASH. Results are given below showing the s`MASH dynamic mobility.



Green areas have the lowest mobility (sound), the yellow higher and the red the highest mobility (not sound)
For calibration to the mobility, BOND-TEST´s were made at test poinr S4 and S3, examples below.



Validation points S4 and S3

S4 (green area) bonded waterproofing, BOND-Strength f_t=1.0 MPa (req. ≥ 1.0 MPa)
S3 (red area) waterproofing debonded.

Conclusion & Recommendation: Renewed repair in the red areas, followed up by re-testing.

Testing and reporting by NDTitan Guy Rapaport