

Cables on Queensferry Crossing to be cleaned

One of the problems encountered on the new Queensferry Crossing in the four years since it opened has been the ice falling from the cables. Now the cables on the north tower will be cleaned as part of a trial to mitigate the impact of soiling on the formation of ice.

Teams of rope access technicians will abseil from the top of the 207-metre high concrete tower and give the cables a wash and brush up with soap and water. This will clean the polyethylene sheaths which encase the steel strands of the cables.

The work will begin on Monday 30 August and will take around six weeks. There are 96 cables to be cleaned ranging from 94 metres to 420 metres long. The total distance to be cleaned is 24 kilometres. There will be a 40 mph speed limit in place during the works from Monday to Friday 7am to 6pm.

Chris Tracey, BEAR Scotland's Unit Bridges Manager for South East Scotland, explains: "Since the Queensferry Crossing opened to traffic, dust and dirt has accumulated on the cables. These tiny particles may be helping ice to accrete as crystals form around them.

"The first cables were installed in 2015 and there are no

records of any ice forming on them until 2019.

“By cleaning the cables on one tower we will be able to measure the impact this has. As part of the project, thermal cameras are being installed at the top of each tower to monitor and measure any formation of ice.

“On this occasion the cleaning will be carried out by rope access technicians, however work is also progressing on the design of a machine to carry out this task in future, should the trial prove successful.

“We appreciate that some drivers may find the reduced speed limit during the works frustrating, however this is an essential safety measure and will only be implemented when necessary.”

The Queensferry Crossing has had to close to traffic in adverse weather three times since it opened in 2017, due to a risk of ice falling from the cables and towers. Since then, a team of engineers led by Transport Scotland’s operating company BEAR Scotland has been investigating potential measures to mitigate or prevent the problem.

The team identified soiling of the cables as a potential catalyst for the formation of ice and is now to test the theory.

In parallel to the trial taking place on the bridge, tests are also scheduled in October at the Jules Verne climatic wind tunnel, a research facility at the Scientific and Technical Centre for Building (CSTB) in Nantes, France. This major research facility can replicate all kinds of weather conditions, including different atmospheric phenomena occurring simultaneously. This will allow the BEAR Scotland team to test the impact of cleaning and of specialised coatings and deicing compounds on a full-size section of Queensferry Crossing cable.

Chris Tracey said: “We’ve already installed a range of sensors to measure the conditions in which ice forms, and these trials will further improve our understanding of the process. The ultimate aim is to design measures to mitigate or prevent the problem.”



The final touches being put to the Queensferry Crossing on 23, August 2017 Credit: Ian Jacobs