



# CASE STUDY

## SGS INSPECTS MATERIALS AND STEEL WIRE ROPES OF THE LONGEST SEA LINK BRIDGE IN INDIA

The Bandra-Worli Sea Link is the first and longest sea link bridge in India. To ensure safety and reliability, SGS verified the quality of the steel wire ropes used for the construction in accordance with the project specification and quality plan.

The Bandra-Worli Sea Link (BWSL) is the first and longest sea link bridge in India, which links Bandra and the Western suburbs of Mumbai with Worli and central Mumbai. So far, Mahim Causeway was the only link connecting Western suburbs to Worli but it was highly congested and resulted in a bottleneck during peak hours.

The new bridge acts as an alternate route between central Mumbai to the Western suburbs not only to reduce traffic on existing roads, but also to cut travel time as well as to decrease accidents, Carbon Monoxide and Nitrogen Oxide Levels along existing roads and noise pollution. The Sea Link is the first phase of the West Island Freeway system, an ambitious project to connect the suburbs of Mumbai with downtown Mumbai.

The Bandra-Worli Sea Link is a 5.6 km long 8-lane cable-stayed bridge, spanning about 600 m in length and towering to a height of 126 metres, equivalent to the height of a 43-storied building. The cable-stay system comprises 2,250 km of high strength galvanised steel wires which support the cable-stay bridge weighing 20,000 tons.

### QUALITY AND RELIABILITY ARE CRUCIAL FOR BRIDGE CONSTRUCTION AND MAINTENANCE

The quality and reliability of the steel wire ropes are crucial to safe construction and maintenance of the cable-stayed bridge. Hidden flaws in the material can lead to catastrophes and substantial loss of lives and property. The detection of defects by an independent third party can prevent serious accidents.

In May 2008, Hindustan Construction Company (HCC), the constructor of the Bandra-Worli Sea Link, awarded SGS Industrial Services China the contract for steel wire rope inspection and documentation review. SGS China performed the inspection of the steel wire ropes during the manufacturing process. Forged anchor cups and nuts were checked by using Magnetic Flux Leakage Testing.

CONSTRUCTION



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Magnetic Flux Leakage (MFL) is a Non-Destructive Testing (NDT) method used to detect flaws, corrosion and pitting on the surface and sub-surface of steel structures. The basic principle of this Non-Destructive Testing method is that a strong magnet induces a magnetic field in the material, and in areas with imperfections, such as corrosion or missing metal, a leakage field will arise and thus bad spots can easily be identified and repaired.

SGS Industrial Services is a global service provider for technical verification, inspection, testing and conformity assessment. To ensure that installations, materials, equipment and facilities meet all quality requirements, SGS offers Non-Destructive Testing Services provided by qualified inspectors to international standards. SGS understands better than most that excellence in any inspection service starts with quality and the implementation of detailed and effective inspection procedures.

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