

Collapse of an erection girder during bridge construction

Type of Insurance:

CAR

Description of damaged item:

Collapse of an erection girder during bridge construction

Cause of Loss:

(3) Faulty design

Claim Cost

4.3 million USD

Description of Incident and Loss Prevention Measures initiated:

The structural system of the bridge consists of reinforced concrete piers and a precast segmental box girder deck system. The erection girder, also known as the launching truss (180m long and about 800 tons in weight), is one of the key temporary structures used in the construction of the box girder deck system. The erection girder is supported by a system of temporary and permanent structures. A gantry traversing the length of the girder is used to carry and position the pre-cast deck segments.

On July 22, 2005, the erection girder suddenly collapsed when the gantry crane carrying a load of about 52 tons was approaching temporary support TS-2. Ten site staff perished in the accident, including most of the senior management of the contractor's site team. The erection girder was badly damaged. Significant damage was also inflicted on the concrete deck.

Outline the interesting or unusual aspects of this claim or problems experienced during settlement:

After the loss, the insured decided not to replace the erection girder but rather use an alternative construction method, mainly to catch up time lost due to the accident.

Three independent experts had been appointed by involved parties, of which two established "Faulty Design" as being the cause of the loss. Defective design of the infill trestle at the top of TS-2 was considered to be the root cause of the claim. The point of failure originated at the transom beam webs which were non-stiffened. Apparently, the design contravened several clauses of the applicable Building Code, the most important of which being that it omitted any consideration of the effect of horizontal loading which should have been included.



Source:

Bridges – Construction, Insurance and Risk Management –
IMIA Paper WGP59 (08)
6.1 of Loss Examples

http://www.imia.com/downloads/imia_papers/WGP59_2008.pdf