

Exercise 4: condition survey of a footbridge

Background and objective

The footbridge over M1 railway tracks is located in EPFL. It was erected in 2013.



Figure 1: EPFL footbridge over M1 tracks, photo from Willi SA.

https://www.sottas.ch/portfolio_page/epfl-ccr-passerelle-2/

The cross section of the footbridge is formed of two longitudinal steel girders attached to a composite steel concrete construction with transverse steel girders with a spacing of around 2 m, see the following figure (mid span). The concrete slab was cast on a lost formwork formed of a corrugated metal sheet. It is linked to the transverse metal girders with dowels.

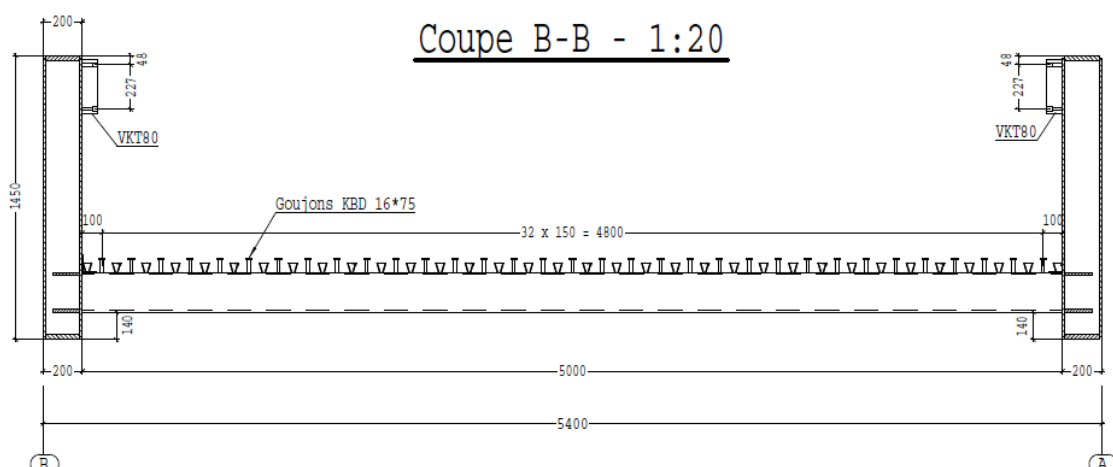


Figure 2: agreement plan, courtesy form Sottas SA / Bulle.

The **aim** of this exercise is to perform a condition survey of the structure on the basis of the file of visual observations and sample plans, and to discuss the results in terms of examination situations (risk scenarios).

Question 1

Determine examination situations (risk scenarios) for the structure.

Question 2

Classify the structural parts in view of the condition survey (priorities).

Question 3

Perform a condition survey on the basis of the provided file of visual observations (“M1 footbridge – photographic survey”), per structural part and determine a condition value per the scale used by FEDRO (see course slides). Give a global ranking for the overall condition of the structure.

Question 4

Propose any further investigations (specific locations) needed to complete the condition survey.

Question 5

Are urgent safety measures needed?

Annexes (see Moodle folder):

- File: “M1 footbridge – photographic survey”
- Sample plans

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