

Risk analysis for the impact on structures near railway lines



It may be necessary to analyze the collision risk for structures near railway lines. The aim of such analyses is to determine whether the risk of collision is acceptable or whether additional safety measures need to be taken.

Structures that are near railway lines must be positioned a minimum distance from the tracks and they must be able to resist defined impact forces to collisions from railway vehicles. The specifications are outlined in Annex 1 of the Implementation Regulations to the Railway Ordinance (IR RailO). If the specifications cannot be met, then it is necessary as per Article 27 of the IR RailO to carry out a risk analysis.

The analysis of the collision risk is based on UIC Code 777-2 and the specifications outlined in Annex 1 of the IR RailO.

In the framework of collision risk analysis, the risks at the specific location in question are quantified. The determination as to whether the risks are acceptable is based on the proportionality of additional safety measures. If no other cost-effective measures are available, then the risk is assessed as sufficiently small. The typical measures include the installation of guiding edges or low guiding walls, increasing the distance between the structures and tracks, the removal of track switches in close proximity and increasing the resistance of structures.

The constructions in question typically include:

- Bridges over railways that have abutments or columns near to the tracks
- Buildings positioned in very close proximity to the tracks
- Galleries with rows of columns

Client

SBB, BLS, FEDRO and various Swiss cantons and municipalities

Facts

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EBP has worked on numerous collision-risk analyses for various collision objects, carried out numerous expert examinations and drafted a guideline to streamline the evaluation process.