INSPECTIONS OF PEDESTRIAN BRIDGES IN PREŠOV

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The construction type of pedestrian bridges in Prešov is very diverse from prefabricated atypical beams, additionally prestressed segments, prestressed roof panels used in civil constructions up to combined steal and steel-concrete bridges with monolithic panels and ledges. Main inspections have been carried out in the first half of 2021 by the company ProPonti s.r.o, in cooperation with the Department of Concrete Structures and Bridges, STU in Bratislava.

Based on the executed main inspections of bridges in the city of Prešov, we can sum up the following findings:

- the majority of discovered primary and secondary faults are the result of neglected maintenance that has not been executed properly due to missing structure inspections;
- in the case of post-tensioned I-beams, the secondary manifestation of the unbounded, corroding prestressing reinforcement are cracks in the beam web copying straight or polygonal prestressing reinforcement cables. It may occur before the actual corrosion of the prestressing reinforcement itself since the freezing water in the cable duct can expand and create cracks on the web surface;
- immediate grouting and repassivation of the prestressing reinforcement can prevent a significant shortening of the service life, despite a substantial manufacturing error;
- in the case of segmental structures, a regular detailed inspection of the inside of the chambers, as well as the condition of the prestressing reinforcement in the cement mortar, is necessary. The condition of the mortar should be checked at least at the level of chloride content and depth of carbonation, which best indicate its protective ability;
- the joints opening between the segments is considered an emergency and indicates advanced corrosion of the prestressing cables;
- for all types of structures, it is important to monitor the function of the bridge drainage system and any water penetration manifested by wet stains and efflorescence. This problem must be solved immediately, which will significantly reduce the contamination of concrete with salts and greatly extend the service life of the bridge.