APPLICATION OF FIBRE CONCRETE BY REALIZATION OF INDUSTRIAL FLOOR CONSTRUCTION

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Abstract

The paper describes the experiences with design and realization of industrial floor construction of shopping centre additions store. For the realization of industrial floor construction have been proposed two alternatives for concrete reinforcement. The reinforcing by steel fibres was the first alternative and using of polypropylene fibres reinforcement was the second alternative. The testing of fresh and hardened concrete was implemented in both of these alternatives. More suitable alternative for a specific industrial operation has been chosen according to test results of fresh and hardened concrete and floor contractor experiences.

Keywords: fibre concrete, steel fibres, polypropylene fibres, industrial floor

Brief description

The designation „industrial floor“ is used mainly with industrial construction directly in the production or storage. This type of floors are also used in polyfunctional-administrative buildings, residential buildings and where are requirements at high serviceability in its technological parts, as are for example garages, technological rooms, or rooms with special requirements on floor structure and its following surface treatment.

The floors are the only one structural type at building object, which are directly loaded. The exact complex design and professional realisation of industrial floor are unavoidable to fulfil expected ability to transfer the all loads. The reinforcement bars, smeared reinforcement (metallic or non-metallic) or their combination are used for floors reinforcing [1, 2].

The paper is focused on design of the floor skeleton in term of its static resistance and following tests of fresh and hardened concrete. The knowledge from industrial floor structure realisation is shown in conclusion.

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Conclusions

The floors in industrial objects are realised in our country due to large construction of industrial parks and due to flow of foreign investors. This branch is still changed. It is caused mainly by variable technology and by delivering of new materials. In the last, the industrial floors were explicitly hand-made. New concrete plants at good condition are built with new technology flow. Also, the realisation of big areas as industrial parks is changed. At this time, the machine realisation is used. This technology allows processing more concrete volume. Therefore, the faster realisation of floor is ensured. The quality of industrial floors is developed by great speed. It is caused by more quality materials as cement powder or used reinforcement fibres. Last but not least, it is caused also by higher quality of concrete and using of concrete higher strength.

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References