

USING SMALL CELLULAR CONCRETE BLOCKS TO MAKE BEARING WALLS OF MID-RISE BUILDINGS

The authors argue that bearing walls of buildings that have up to four stories can be designed and made of small cellular concrete blocks. These walls demonstrate advantages specific to solid masonry walls. For example, they have high water vapor permeability. Whenever the internal humidity increases, half of the moisture content can be extracted from the masonry due to the water vapour permeability of external walls, while the other half of the moisture content can go back into the room (due to the sorption capacity of the wall material). Furthermore, any lower density wall material has smaller heat absorption capacity to ensure a comfortable environment.

The application of small cellular concrete blocks as a wall material is an alternative to thoroughly insulated multi-layer external walls. The authors present options of structural solutions of external walls of buildings.

It is noteworthy that due to the relatively low strength of cellular concrete, walls have a low bearing capacity. Cellular concretes are brittle.

Control tests of small cellular concrete blocks made in the natural environment do not always prove the desired compressive strength. In addition, strength properties of small cellular concrete wall blocks may vary. The authors present their findings in terms of their examination of the technical condition of mid-rise buildings that have walls made of small cellular concrete blocks. The authors consider the reasons for the defects of walls made of small cellular concrete blocks.

Key words: small-size concrete blocks, cellular concretes, buildings, structural solutions of walls, examination of buildings, technical condition.

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About the authors: **Malakhova Anna Nikolaevna** — Candidate of Technical Sciences, Associate Professor, Department of Reinforced Concrete Structures, Department of Architectural and Structural Design, **Moscow State University of Civil Engineering (MGSU)**, 26 Yaroslavskoe shosse, Moscow, 129337, Russian Federation; gbk@mgsu.ru, asp@mgsu.ru; +7 (495) 287-49-14, ext. 30-35; +7 (495) 583-07-65, ext. 17-65;

Balakshin Andrey Sergeevich — Candidate of Technical Sciences, General Director, **Stroitel'no-tekhnicheskiy kontrol' Limited Liability Company**; Mytishchi, Moscow Region, Building 19, 50 Olimpiyskiy prospect, +7 (495) 926-07-07.

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