

FEATURES OF INTERNAL WATER SUPPLY AND WATER DISPOSAL OF SHOPPING CENTERS

Pipeline from an external system should be inlet in the part of the building where a large number of water folding devices will be concentrated. As a rule, for shopping centers with a lot of water consumers it is necessary to make not less than three inputs, each of them should be connected to different areas of an external ring water supply system in order to make the work of the system more reliable.

The places for water folding fittings in shopping centers are the following. The water folding devices: mixers are placed in sanitary cabins of shopping centers. Usually, for water saving in buildings with a big pass-through capacity per hour it is reasonable to use contactless mixers, which are turned on upon raising a hand with a help of motion sensor or light sensor. Another important argument in favor of such mixers is prevention of infections spread for the reason that the consumer doesn't touch the device, so, the risk of bacteria transmission via the device decreases. Such mixer supplies water with a demanded expense and temperature. As a rule, water for such mixers moves from the centralized internal water supply system of hot water, mixing up with cold water. If there is no centralized hot water supply system, it is possible to use hot water storage heaters in case of a small number of visitors or to reject mixers at all in favor of the cranes giving water of only one temperature (cold), which is also practiced.

For the branch of economic and household the water receivers are used, which are present in sanitary cabins in most cases by toilet bowls, wash basins, urinals.

Key words: sanitary cabin, fireplug, water supply system, water receiver, water consumption, water folding fittings, grease-trap, shopping center.

References

1. Shonina N.A. Vodosnabzhenie i vodootvedenie v usloviyakh kraynego severa [Water Supply and Water Disposal in the Far North]. *Santekhnika* [Sanitary Engineering]. 2012, no. 5, pp. 32—44.
2. Brodach M.M. Zelenoe vodosnabzhenie i vodootvedenie [Green Water Supply and Water Disposal]. *Santekhnika* [Sanitary Engineering]. 2009, no. 4, pp. 6—10.
3. Orlov E.V. Vodo- i resursosberezhenie. Zhilye zdaniya kottedzhnykh i dachnykh poselkov [Water and Resource-saving. Residential Buildings of Cottage and Housing Estates]. *Tekhnologii mira* [Technologies of the World]. 2012, no. 10, pp. 35—41.
4. Isaev V.N. Sotsial'no-ekonomicheskie aspekty vodosnabzheniya i vodootvedeniya [Social and Economic Aspects of Water supply and Water Disposal]. *Santekhnika* [Sanitary Engineering]. 2007, no. 1, pp. 8—17.
5. Naumov A.L., Brodach M.M. Resursosberezhenie v sistemakh vodosnabzheniya i vodootvedeniya [Resource-saving in Water Supply and Water Disposal Systems]. *Santekhnika* [Sanitary Engineering]. 2012, no. 1, pp. 14—20.
6. Isaev V.N., Chukhin V.A., Gerasimenko A.V. Resursosberezhenie v sisteme khozyaystvenno-pit'evogo vodoprovoda [Resource-saving in the System of Utility and Drinking Water Supply]. *Santekhnika* [Sanitary Engineering]. 2011, no. 3, pp. 14—17.
7. Brodach M.M. Ot vodosberezheniya k zdaniyu s nulevym vodopotrebleniem [From Water Savings to a Building with Zero Water Consumption]. *Santekhnika* [Sanitary Engineering]. 2010, no. 6, pp. 32—37.
8. Shonina N.A. Osobennosti proektirovaniya sistem vodosnabzheniya i kanalizatsii maloetazhnykh zdaniy [Design Features of Water supply and Sewerage Systems of Low-rise Buildings]. *Santekhnika* [Sanitary Engineering]. 2010, no. 3, pp. 56—58.
9. Peter-Varbanets M., Zurbrugg C., Swartz C., Pronk W. Decentralized Systems for Potable Water and the Potential of Membrane Technology. *Water Research*. 2009, vol. 43, no. 2, pp. 245—265.
10. Tabunshchikov Yu.A., Naumov A.L., Miller Yu.V. Kriterii energoeffektivnosti v «zelenom» stroitel'stve [Criteria of Energy Efficiency in "Green" Engineering]. *Energoberezhenie* [Energy Saving]. 2012, no. 1, pp. 23—26.
11. Pugachev E.A., Isaev V.N. *Effektivnoe ispol'zovanie vody* [Efficient Use of Water]. Moscow, ASV Publ., 2012, 432 p.

About the author: **Orlov Evgeniy Vladimirovich** — Candidate of Technical Sciences, Associate Professor, Department of Water Supply, **Moscow State University of Civil Engineering (MGSU)**, 26 Yaroslavskoe shosse, Moscow, 129337, Russian Federation; +7 (499) 183-36-29; viv-k@yandex.ru.

For citation: Orlov E.V. Osobennosti vnutrennego vodosnabzheniya i vodootvedeniya torgovykh tsentrov [Features of Internal Water Supply and Water Disposal of Shopping Centers]. *Vestnik MGSU* [Proceedings of Moscow State University of Civil Engineering]. 2014, no. 1, pp. 139—145.