

SMOOTH MOVEMENT OF FLOW IN IRRIGATION SYSTEMS

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ABSTRACT

The change of water consumption in canals according to the water depth is given in this article by giving several values to the water depth $-h-$ in order to create a graph of the working characteristics of the canal, and the method of determining the water consumption corresponding to them by the method of selection from the basic equation of the plane movement is presented in this article. Hydraulic element values for the channel, using b, m, n, i, h - to determine the water consumption corresponding to each accepted water depth value in the channel and to determine the value of the depth h_0 corresponding to the given consumption in this graph are mentioned in the article.

Keywords: Hydraulics, water, flow, statics, motion, pressure, consumption, live section, live surface, flow tube, planar motion.

Introduction. In recent years, consistent reforms have been carried out on effective use of land and water resources, improvement of the water resources management system, modernization and development of water management facilities. At the same time, due to the global climate change, the sharp increase in the population and the growth of economic sectors, their demands for water are increasing day by day, the demand for water resources is increasing. The average amount of water used was 51-53 billion cubic meters, including 97.2 percent in rivers, 1.9 percent in collector networks, and 0.9 percent underground, reducing by 20 percent compared to the allocated water intake limit. Modernization and development of water management facilities, except for drinking and sewage systems, automation of management of large water management facilities based on digital technologies, widespread introduction of modern technologies that save electricity and other resources, attracting foreign

investors to the sector, and allocated ensuring the purposeful and effective use of funds through the development strategies of the water industry of the Republic of Uzbekistan.

Irrigation has been developed since ancient times in hot regions where crops cannot be harvested without irrigation, and later in areas with uneven rainfall, as a result of which agricultural crops cannot be harvested. In the dry climate of Egypt, Mesopotamia, Central Asia, Mexico, and Iran, people learned to grow edible plants in floodplains. Later, such lands are surrounded by marzas, where water can be preserved for a long time and agriculture is carried out. It was possible to get a regular harvest from crops. Archaeological excavations conducted in the Surkhandarya oasis, the eastern part of the Fergana valley, the Amudarya delta, and the Zarafshan river basin indicate that regular irrigation began in Central Asia in the 2nd millennium BC. In the lower reaches of Amudarya, from the 8th-7th century BC to the 3rd century AD, irrigation was very advanced. With the development of irrigation and the expansion of irrigated areas, there was a need to transport water over long distances. The construction of the first canals with a simple main structure dates back to the middle of the 1st millennium BC. In the Middle Ages, a great discovery in irrigated agriculture was made - the first water lifter - chighir. As a result, it became possible to irrigate smaller plots of land located higher than ditches or natural water sources. Irrigation methods and types. Irrigation consists of a set of technical, agrotechnical and organizational measures based on the rules of hydrotechnics, which provide the soil with a fixed amount of water. Depending on the time of irrigation, it is divided into regular and periodic types. Depending on the purpose of irrigation, it is divided into irrigated, saline, vegetative, nutrient juice and other types. In some cases, one type of Irrigation can be used for several purposes. The long-known methods of trickling water were pressed, divided into boards, and gradually improved by taking egates. In Central Asia, where the climate is dry, crops require a large amount of water, therefore, in irrigated areas, the method of watering is mainly applied by running water over the soil and partly by raining.

A closed irrigation system is a network of pipes that conveys water to irrigated areas. Pipes are laid at a depth of 0.6-1.5 m up to the pipe, or on the ground surface. Underground pipelines are laid in sandy, gravel and solid soils that do not settle and do not expand. In the soils that sit when the water is sitting, a trench is first dug and water is poured, and in the soils that are abundant, sand is placed at the bottom of the pipe with a thickness of not less than 20 cm. Asbestos cement, reinforced concrete, polyethylene, metal and similar pipes are used. According to the water transfer method, pressurized water is supplied by a pump, and pressure is generated due to the natural slope of the pressure area, which is divided into irrigation stations, usually this is achieved in places with a slope higher than 0.025. The minimum flow rate of water in

the pipes should ensure the flow of muddy sediments, and the maximum speed should ensure that the pipes are washed and removed from the sediments after the irrigation is stopped. Main elements under pressure: water source river, canal, reservoir, underground water and pumping stations, water distribution pipe network, sprinklers and irrigation machines, mobile or fixed water injection pipelines, pipeline structures and opening devices, water discharge and including sewers.

Summary. The long-known methods of trickling water were pressed, divided into boards, and gradually improved by talking egates. In Central Asia where the climate is dry, crops require a large amount of water, therefore, in irrigated areas, the method of watering is mainly applied by running water over the soil and partly by raining.

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