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ANALYSIS OF THE TECHNICAL CONDITION OF WATER PIPES IN THE RAILWAY NETWORK OF JSC "UZBEK RAILWAYS"

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Annotation. At present, there are a lot of waterproofing pipes that make up more than half of all artificial structures located in the railway network. At the same time, the role of assessing the technical condition of waterproofing structures increases, which does not remain unchanged with an increase in the duration of its operation. The purpose of the article is to analyze the technical condition of artificial structures on the Railways of JSC "Uzbek Railways".

Keywords: artificial structures; water-conducting pipes; technical condition; operational reliability.

Introduction. In ensuring the safe movement of cargo and passengers on the railway, the constant maintenance of all permanent devices and structures of the railway infrastructure in a workable condition is a profession of mukhitm

ISSN 2181-2632

akhamiyai. One of the main scientific and practical issues is to ensure the priority and independence of the railway land polotnos in various operational conditions.

The railway is an autonomous indicator that characterizes the supremacy and uniqueness of the Earth's polotnos, that is, the physico-mechanical properties of the grunt, is due to the moisture content of the grunt in the body of the Earth's polotnos. In this regard, the provision of non-accumulation of water due to various processes near the railway landfill depends on the engineering solutions adopted in the design process, that is, on the construction-technological parameters of the selected and placed artificial waterproofing structures[1,2,3].

Materials and methods. Depending on the depth of flooding of the embankment in front of the pipe , there may be 3 modes of water flow in the pipes:

-pressure-free, if the pressure H is less than the height of the htr pipe at the inlet, or exceeds it by no more than 20%.In this case, the flow has a free surface throughout the pipe, i.e. there is a gap between the upper forming pipe (ceiling) and the flow flowing in the pipe;

- semi-pressure mode, which occurs with the heads of conventional types (portal, bell) in cases where the support exceeds the height of the pipe at the inlet by more than 20%. In this case, the pipe works with a full cross-section at the inlet, and the rest of the flow has a free surface;

- pressure mode, which is installed with special inlet heads of a streamlined shape and when the top of the pipe is flooded at the inlet by more than 20%; for most of the length, the pipe operates with a full cross section and only at the outlet the flow can break away from the pipe ceiling[4,5].

Results. In order to assess the technical condition of water structures, the high-speed and high-speed routes of the Tashkent railway PCH-2 were selected as an experimental area. The PCH-2 Enterprise consists of a total of 378 water structures in the Tashkent-Samarkand direction. Of these, 61 grains are water-conducting pipes.

ISSN 2181-2632

Analysis of pipe breakage, materials, installed time and performance profiles are presented in the tables below[6,7].

Table 1

Types of waterproofing pipe fittings

№	Name	Number, pieces	Percent %
1.	Round	25	41%
2.	Straight triangle	20	33%
3.	Round, straight rectangle	16	26%

Table 2

Types of waterproofing pipes by material

№	Name	Number, pieces	Percent %
1.	Concrete	3	5%
2.	Bett	3	5%
3.	Reinforced concrete	46	75%
4.	Stonett reinforced concrete	6	10%
5.	Stonett	3	5%

Table 3

Types of waterproofing pipes by installed years

№	Years	Number, pieces	Percent %
1.	1915-1930	2	3
2.	1931-1945	5	8
3.	1946-1960	29	48

ISSN 2181-2632

4.	*1961-1975*	*10*	*16*
5.	*1976-1990*	*14*	*23*
6.	*1990-2005*	*0*	*0*
7.	*2005-2020*	*1*	*2*

Table 4

Types of waterproofing pipes in working condition

№	***Name***	***Number, pieces***	***Percent %***
1.	*Without pressure*	*2*	*3*
2.	*Half-baked*	*36*	*59*
3.	*Pressurized*	*23*	*38*

Conclusion. The operation of pipes is simpler and cheaper than the operation of bridges. The path above the pipes has the same design as on the attached embankment, which simplifies its maintenance. Pipes are less sensitive than bridges to dynamic effects and an increase in temporary mobile load. Due to their good construction and operational qualities, pipes are the most common culverts. As can be seen from the tables above, there are problems with the timing of installation and operation of water-conducting pipes. Because the service life of the waterproofing pipes requires 50-60 years, and when installing the waterproofing pipes are lohed in the case without pressure.

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ISSN 2181-2632

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ISSN 2181-2632