

Temirbeton ko'priklarning gidroziolyatsiyasi va undagi nuqsonlar

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Annotatsiya: Ushbu maqolada temirbeton ko'priklarda gidroizolyasiyaning ahamiyati haqida ma'lumotlar berilgan va tahlil natijalari keltirilgan.

Annotation: This article provides information on the importance of waterproofing in reinforced concrete bridges and presents the results of the analysis.

Kalit so'zlar: ko'prik; konstruksiya; gidroizolyasiya; izolyasiya; darz.

Keywords: bridge; construction; waterproofing; insulation; crack.

Temirbeton ko'priklar elementlarining uzoqqa chidamliligini ta'minlash uchun, ularning konstruksiyasi betonga suv kirishidan himoyalangan bo'lishi lozim. Suvning betonga davomli ta'siri ohakning erishi va yuvilishiga olib keladi. Bu esa o'z navbatida beton mustahkamligini pasaytiradi va uning asta-sekin yemirilishiga olib keladi (1-rasm). Bu jarayon ayniqsa navbatma-navbat muzlab – erishda tez kuzatiladi [1].

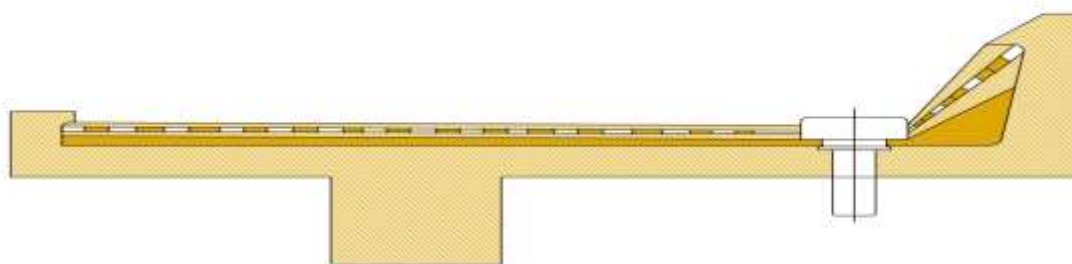


1-rasm. Temirbeton ko'prik konstruktiv elementlarining yemirilishi

Betanni suv ta'siridan himoyalash uchun u gidroizolyasiya bilan qoplanadi. Gidroizolyasiya ballast koritasi plitasi yuzasiga qilinadi (2-rasm). Suvning oqishi uchun plita yuzasiga qiyalik beriladi. Izolyasiyaning chetlari bortlarning maxsus chuqurchalariga mahkamlanadi [2-5].

Ballast koritasining gidroizolyasiyasi butun izolyasiya qilingan yuza bo'yicha suv o'tkazmaydigan bo'lishi, suvga, biologik va kimyoviy ta'sirlarga bardoshli bo'lishi, issiq-sovuqqa bardoshli bo'lishi, vaqt davomida va hisobiy haroratlar

intervalida elastikligini yo'qotmasligi, betonning izolyasiya qilingan yuzasida ruxsat etilgan darzlar paydo bo'lganida yaxlitligini saqlashi kerak [6-8,16].



2-rasm. Ballast koritasining gidroizolyasiyasi ko'ndalang kesimi

Ballast koritasining izolyasiyasi quyidagi talablarni bajarishi shart:



Gidroizolyasiya sement-qum qorishmasi yoki mayda donali betondan iborat bo'lgan tayyorlov (tekislov) qatlami ustiga surtiladi [1, 9]. Gidroizolyasiyani yotqizishdan oldin tayyorlov qatlami gruntovka bilan qoplanadi (3-rasm).

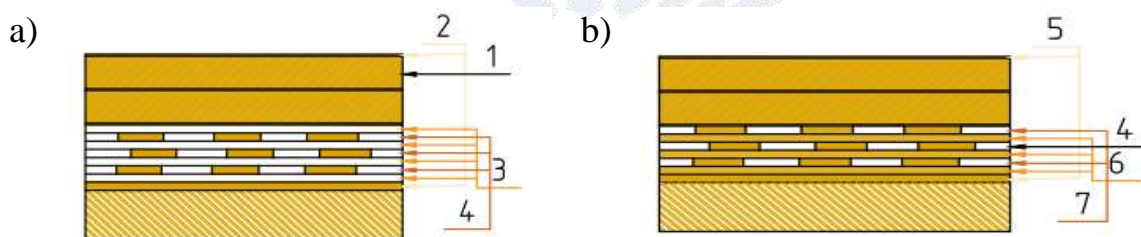
Qurilish hududining klimatik sharoitlariga bog'liq holda gidroizolyasiyaning turli tiplari qo'llaniladi. Bitum mastikali BM-1 indeksli gidroizolyasiya barcha klimatik zonalarda qo'llanilishi mumkin [10,11]. Bu gidroizolyasiya qaynoq holda surtiladigan to'rt qatlam bitum mastikasidan va uch qatlam shishamato yoki lyon – jut-kanop matosidan iborat.



3-rasm. Ko‘prik poltnosida gidroizolyatsiyani yotqizilish jarayonlari

Bitum mastikasining oxirgi (tekislovchi) qatlami ustiga **sement – qum** qorishmasi yoki mayda donali betondan iborat himoya qatlami yotqiziladi. Bu qatlam diametri $2\div 4\text{mm}$, yacheyka o‘lchamlari $45\div 75\text{mm}$ bo‘lgan simdan tayyorlangan setka bilan armaturalanadi [12-15]. Himoya qatlamining tayyor bo‘lgan yuzasiga bitum gruntovkasi surtiladi.

Izol rulonli gidroizolyasiya (indeksi IR) yumshoq iqlimli hududlarda qo‘llaniladi. Bu izolyasiya asosiy bo‘lmagan rulonli izol va sovuq izol mastikadan iborat [21, 22]. Izol mastikaning ichida armaturalangan qatlam bo‘ladi va u rulon qatlamlari orasiga yopishtiriladi (4, *b*-rasm).



4-rasm. Izolyasiya qilishning variantlari: a) – bitum mastika (BM-1);
b) – rulonli izolyasiya (IR); 1 – himoya qatlami; 2 – bitumli gruntovka;
3 – bitumli mastika; 4 – armaturalovchi material; 5 – izolli gruntovka;
6 – rulonli izol; 7 – izolli mastika

Suv ballast koritasidan plitaning chetlarida joylashgan suv qochiruvchi quvurchalar (4, a-rasm) orqali tushirib yuboriladi. Diametri eng kamida 15sm bo'lgan quvurchalar cho'yandan tayyorlanadi va uning qadami (bir-biridan uzoqligi) suv to'planadigan yuzaning $1m^2$ ga quvurchaning $5sm^2$ to'g'ri kelishi hisobidan olinadi [17-19]. Quvurchalar teshiklari bo'lgan cho'yan qopqoqlar bilan berkitib qo'yiladi.

Xulosa qilib shuni aytish mumkinki, temirbeton ko'priklarning eng ko'p takrorlanadigan nuqsonlari va kamchiliklari quyidagilardir: ko'priknining osti gabaritining o'lchami yetarli darajada emasligi, ko'prik polotnosi va deformatsion choklardagi yoriqlar, hamda gidroizolyatsiyaning talab darajasida emasligi. Buning oqibatida ko'priknining asosiy konstruksiyalarini yuk ko'taruvchanligi pasaytiradi hamda konstruksiyaning uzoq ishlashini kamaytirishga olib kelishi mumkin.

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