CHEMICAL COMPOSITION AND STRUCTURE OF BITUMENS

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Annotation: In this article, we can focus on the general structure of bitumen, given the rapid development of the road construction industry today. A number of properties are discussed. Due to the shortage of bitumen in the road sector, a number of measures are being taken today, mainly to convert the internal roads to cement concrete paving.

Keywords: Shale bitumen, viscosity, alkalinity, complexity of extraction, service life, service life, performance, properties, composition,

Introduction

Bitumen production technology. The production technology of bitumen is based on the chemical composition, structure, physical and mechanical properties of bitumen, the formation of physical and mechanical properties, the attenuation of air, oxygen, various solvents, surfactants: and the effect of polymeric substances on petroleum products. Bitumen production technology is based on the oxidation of tar (a black flame product formed from oil residues, used in various technical works) or a mixture of tar with other petroleum products in tubular reactors, oxidizing cubes under periodic or regular forces. Oxidized bitumens are obtained by this technological process. In vacuum devices, oil residues that meet the requirements for adhesive bitumens are obtained by sorting the oil fractions in fuel oil.

The main part

Organic binders are materials made up of several groups and different compounds in which the atoms in their molecules are joined together in a specific order. Bitumen has the ability to bind carbon, hydrogen, chlorine, hydroxide group, nitrogroup, aminogroup and so on. Bitumen consists of the following elements:

Carbon 80-87%;

Hydrogen 10-12%;

Oxygen 5-10%;

Sulfur 2-5%;

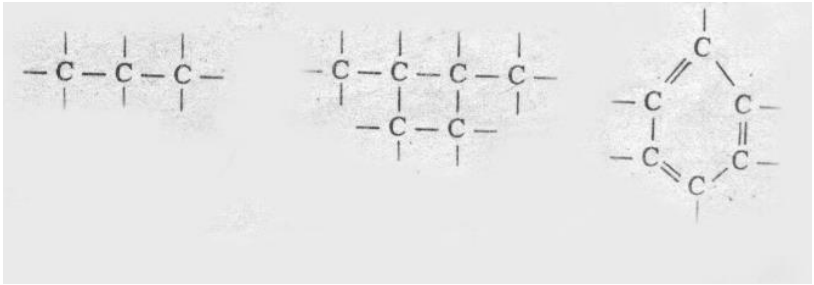
Nitrogen 3%;

Carbon atoms combine to form a "carbon skeleton". Carbons belong to the group of organic compounds according to their structure and play a key role in changing the chemical composition of molecules.

The group of organic compounds is as follows:

ON- hydroxyl	-OO - complex ether.
SkO carbonyl	SN2- methylene
-S -polar carbook	SN- methyl, SN- methyl
-S- aldehyde.	R- radicals, -S k S- Kush bonded carbon.

Organic compounds have three different structures depending on the type of bond.



Binding of organic compounds { a) chain b) network c) stepped)}

Adhesive bitumens: - There are several brands: BND-40/60, BND-60/90; BND 90/130 BND-130/200; BND-200/300.

The choice of the brand and type of bitumen, taking into account the climatic conditions of the construction site, will ensure the longevity of the road surface. In

hot climates, adhesive bitumens are used because in hot climates, high temperature strength and heat resistance are the factors that determine the service life of the road surface. Bitumens with poor adhesion are used in cold and cold climates, as elongation and flexibility in cool and cold regions indicate the long-term durability of the road surface. The following brands of petroleum bitumen are used to cover the roofs of buildings and buildings: BNK45 / 80, BNK 90/40; BNK 90/30, 3 types of bitumen BNI-1U-3, BNI-1U, BNI-U are used to protect pipes from corrosion. Liquid bitumens are suitable for the preparation, deposition and compaction of asphalt concrete mixes at normal temperatures and are characterized by wear resistance and flexibility at low temperatures. The viscosity of liquid bitumen is determined by means of a viscometer, and the allowable viscosity of liquid bitumen is in the range S560k200 (diameter of the hole through which the top flows, the lower test temperature). Depending on the structure of the liquid bitumen and the rate of solidification,

According to GOST 11955-82 is divided into 2 classes, of which**:**

1. Average Concentrator (SG)
2. Slow condenser (MGO. And MG)

In turn, they are divided into several brands depending on the viscosity: UK (SG) - SG40 / 70, UK70 / 30; UK130 / 200 SK GO-40/70 ,; SK 70/130, SK130 / 200.

To obtain liquid bitumens, it is recommended to mix viscous petroleum bitumens with products obtained by extraction from shale and coal. The following diluents can be used;

Types and structure of bitumen include the following. Today it is shale oil, coal oil, kerosene, ligroin, coal tar, fuel oil and so on.

The operating temperature of UK and SK bitumens used for the preparation of liquid bitumens should not exceed 1200.

When mixing adhesive bitumens with waterproofing, bitumens of UK 40/70 and SK 40/70 classes should be applied at 70-800, and the remaining grades at 80-1000. The field of application of the liquid bitumen brand is given in the following

table: Flammable shales belong to sedimentary rocks and are composed of kerogen. Kerogen consists of 65-80% carbon, 8-11% hydrogen, 5-12% oxygen and other elements, kerogen is insoluble in organic binders and decomposes at temperatures above 2000C. This product is used in the elimination of pests, increasing the yield of cotton and the production of durable building materials (bricks, blocks) and so on. Shale bitumens are similar in properties to resins derived from oil, bitumen and coal.

In special generators, shale bitumen is obtained from combustible shales by airless heating at a temperature of 500-550 degrees.

Shale bitumen contains: Asphalten 12-30% Smola-18-27%

The oil content is 46-60%

Shale bitumen contains large amounts of oxygen, nitrogen and polar compounds. They are more brittle than petroleum bitumen due to their softening temperature and wear out quickly. Shale bitumen is used in road construction to make emulsions, pastes and filler binders.

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