

Temperature Tests of Varnish-Paint Materials

Sobirov Ma'murjon Marufjonvich
Andijan Machine-Building Institute

Annotation. Among the users of cars there is an opinion that the metal does not burn, of course, so there is no need to protect it from fire and heat. This is partly true. Metal structures do not burn at Fire temperature, but they lose their strength significantly. But the varnish on the top of the metal can melt, move, even burn the coatings at high temperature.

Keywords: varnish-paint coating, hydrocarbon, cellulose fires, powder, Coke layer, heat insulator.

Introduction.

General information on varnish-paint materials.

Varnish coatings not only protect metals from corrosion, but also protect the wood from corrosion and moisture, making their appearance more beautiful. More than 85 percent of cars, agricultural machinery and various technological equipment are stained with varnish and paints. In addition, painted parts will have electrical insulation and heat preservation properties. Varnish-paint materials serve to cover the surfaces of the details with a thin layer. This layer is referred to as a varnish-paint layer. A layer of lacquer paint also serves to protect items and structures such as other types of metallmas and metal coatings from the effects of the external environment and give them a look of splendor. Corrosion of metals from them in automotive industry, it is used to protect the wood from rotting and to enhance their appearance. The resulting layers must meet the requirements laid down in them and meet the following requirements for long-term operation:

- strong bonding with the dyed surface, that is, the top it should have the property of adgesia;
 - must have a sufficiently high consistency, hardness and necessary elasticity. In cases where the elasticity is insufficient, cracks and cracks appear on the coating as a result of deformation caused by mechanical or temperature effects;
 - opportunity level wet, liquid and gas vapors, solar it is necessary that the light passes poorly and they do not lose their properties in effect. The resistance of the coating to the action of water and its vapor, air and sunlight is called atmospheric resistance;
 - coating easy in auto accident condition when injured must be restored;
- can be used in bulk and should be inexpensive.

The varnish materials available at the moment do not fully meet all of the requirements listed above. For this and other reasons, in most cases, the coating is prepared as multilayer. Each layer that forms the coating should meet one or more requirements. For these purposes, mechanical, chemical, electrochemical, thermal, ultrasonic and other methods are used in most boilers. In the sentence of simple operations of preparing the paint for the details that can be applied at the auto transport enterprise, the following are included: degreasing the surface with the help of solvents: removing the rusted surfaces with the help of a metal brush and polishing paper. The surface prepared for the formation of a varnish-paint coating is given the first layer of the coating – grunt. Primer serve for better bonding of varnish or enamels, they serve as a bonding layer between the painted surface (metal, wood) and the varnish coatings. Primer's perform an important function in the varnish coating, that is, on account of the high resistance of the curtain, it keeps the metal from corrosion. Primer material consisting of primer, is usually made by means of a cyst, a paint-spraying device or immersion. It is desirable that the time between the preparation and grounding of the surface to paint is very short, because at this time the dust will sit on the surface, or the surface will rust. When the primer is dried, it acquires a non-uniform thickness (15-20 microns). The creased lines on the grunted surface, the formed rags are kept completely. When preparing the details, it is necessary to avoid the presence of scratches and various irregularities on the surface, while the existing ones are eliminated by mechanical processing. In it, too, if not possible, used local and general putty. When assessing the quality of varnish-paint materials is based on a number of indicators: the fluidity, viscosity, durability, speed of construction of the paint, etc.

The fluidity of the paint. When the paint is evenly applied to the same surface, the property of making the previous color of the same surface invisible, or when they are applied to a surface of black and white color, the difference between the White and black areas on it is lost, and the properties of making the surface look all the same, are called the adhesion. In terms of number, the fluidity of paints is expressed in grams of the amount of paint spent on painting until the previous color of the surface becomes invisible - to determine the impact of environmental resistance of varnish products, as well as to determine the effectiveness of the extruded parts and materials used in the automotive industry and other manufacturing industries, tests are. Thus, climate, temperature measurement allows the camera to determine whether the varnish coatings are prone to corrosion. The specific properties of the action of atmospheric pressure, its reaction to other chemical compounds, will also be determined with the help of climate tests.

The problem.

Automotive varnish-paint coating materials are subjected to mandatory consistency testing. In it, the detection of processes of resistance, temperature conditions, cooling, drying, heat resistance is carried out with the help of a climate camera. It is formed on the basis of an incomplete list of factors that determine the harrowing States of varnish coatings. This process is a process of analysis, which is carried out gradually at a temperature oshirish or at the expense of lowering the charoate. Today, there are several methods of checking the paint materials, which allow to determine their operational characteristics. In other words, when using Varnish materials in cars, it is necessary to take into account how long it will stand on the surface, without changing its properties in the influence of sunlight, wind, rain, snow, frost. Thus, the client should take into account the indicator of the durability of this coating when choosing paint and varnish material. One of the actual problems of today's Organization of coating tests of varnish coatings is the increase in demand of buyers from day to day. The period of use of cars is also increasing. Without a lump like that. The varnish coating on the surface is also provided with a high quality coating.

Analysis of previously performed works.

Fire-resistant varnish-paints testing using conventional methods does not give its effect at 100% accuracy. During the inspection, the product is sent for reconsideration, if the burning, decomposition time of the coatings do not meet the standards. Rati do standard sizes and pump them ISO-9001, Gost, Uzstandart and etc. It is based on the requirements. The analysis of powder coatings is checked by special methods, electrical insulating coatings are evaluated for their resistance to abrasion (elastic case) and cracking of coatings. Separate temperature tests are also carried out on the effects of afro environment, exposure to sunlight, corrosion on the amount of dust, air humidity, water content.

For example, a different approach to varnish paint used in road signs is used. Paint materials are tested for a long time in a humid environment. If the percentage of long-term retention does not exceed the permissible norm, the product is sent for sale. Anti-corrosion paint materials are tested by gravimetric method. Thermography is also used, which allows to determine the rate of overheating of the surface and the ability to prevent rust exposure. To determine the crack on the surface after applying the varnish-paint material, a method of detecting defects with magnetic powder is used. The introduction of electrochemical impedance method helps to measure the rate of corrosion.

In the automotive industry, the fluidity of varnish materials is also checked. In case of detection of uneven distribution on the surface of the car body, the varnish is returned for reconsideration. S. on the characteristics of the technology of application of varnish coatings used in mechanical engineering applications using ultrasound K.Sundukov, S. on improving the fire-fighting capabilities of coatings for oil and gas facilities A.Yashikova studied in their scientific studies. Rupesh Kumar from foreign countries has been working on studying temperature display quenching to measure surface temperature.

Purpose and function.

Before the release of any new products, the performance of paints and coatings according to the intended purpose must be checked. Accelerated testing formulators for varnish paints and coatings, designed to protect the assets of the environment, are one of the tools for assessing the specific performance characteristics for a variety of final uses. Transport-related varnish coatings (cars, trains, aircraft, ships,

bridges, marinas and other infrastructure) coatings used in the oil and gas, petrochemical and wastewater treatment industries require rigidity designed for heavy environments. So it is possible to assign these tasks:

- The study of varnish coatings used for cars; Separation of varnish-paint coatings into types of use;
- Determination of levels of use of the zone aspect;
- Analysis of humidity and hot-cold climatic conditions;
- Review the samples of varnish and paint used;
- Conducting tests in accelerated artificial seals;
- Obtaining and comparing analytical analysis results;
- Perform practical prohibitions using new types of chemical briquettes;

Examination and application of the samples obtained in the manufacturing industry. The content of the new work done. The test processes of varnish-paint coatings are determined by a specific test plan and time rolls. We measure these intervals with the lowest indicators for the public farm in the following time and temperature:

- a) increase in humidity in the humidity chamber 6% AT $t - 40^{\circ}\text{C}$ for 97 hours; b) slow cooling for 3 hours at $t - 45^{\circ}\text{C}$ in cold chamber; c) irradiation with UV rays in artificial weather Appar with spraying davriy for 7 hours;
- d) holding in the air at a temperature of $t - 15-30^{\circ}\text{C}$ for 6 hours at a humidity of not more than 80%.

We measure the normal parameters of varnish coatings for cars in the following time and temperature:

- Holding in the camera at $160-200^{\circ}\text{C}$ for 10-20 minutes;
- After surface preparation, the product is introduced into the drying chamber from moisture to 120°C , the processing time is 5 - 10 minutes.
- Testing the surface of the body exterior varnish coating with a method of degreasing at low temperature and accelerated phosphating with a solution of manganese monophosphate;
- After thoroughly washing, the body dries at 140°C for 20 minutes;
- Drying time at $180^{\circ}\text{C} - 15\text{ min}$, thickness 60-80 microns, at the bottom - 50-60 microns.

Result:

Samples of paliglass FM 024 RAL 1015, PaliPlast RP 202 RAL 8016, PaliPlast PL 240 RAL 8019 paint coatings have been tested for 45 cycles, which corresponds to 5 years service life in the open air.

Of course, in accordance with the technology of Use and use. Evaluation of the protective and decorative properties of the water-based paint coating was carried out according to the requirements of GOST 9.401-91, according to the methodology of GOST 9.407-84 "single system of anti-corrosion protection". Within the framework of the study of the climate, independent tests of several more parameters were conducted: drying time of the paint; latent power; washable case; resistance to light; number of layers of coating applied; resistance to static impact of water; impact strength of the coating; coefficient of diffusion.

Conclusion.

We can say that the corrosion resistance of 5 years when simple tests are conducted on the talabi and the compatibility with the lowest Corsair is certainly not suitable for a satisfactory steaming day. And today's request requires a higher level of resistance. In addition to useful in the national economy, varnish coatings applied in automotive industry are characterized with high temperature resistance.

Used literatures:

1. Химия и технология основного органического и нефтехимического синтеза (1971), [с.134].
2. Теория технологических процессов основного органического и нефтехимического синтеза Издание 2 (1975), [с.121].
3. Химия и технология полимеров Том 1 (1965), [с.111].

Internet sites:

1. <https://www.palina-coatings.ru>
2. <https://polyteg.ru>