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Areas of Creation, Promising Development and Use of Composite Material

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Abstract: *We have brought in this article the creation of composite materials, where they are used, their processing, development and materials. According to the article presented, it became clear that the large-scale application of composite materials serves a huge benefit.*

Keywords: *Composite material, plasticizers, reactoplasts, plastic, Matrix.*

Introduction

The development of modern technology has strengthened the requirements for the use of materials in technology, its effective use and their properties. It is no secret to whom Hech believes that the problems of Cosmonautics, nuclear technology and aviation industry, and their solutions, standing among modern technologies, remain dependent on the reliability of the material applied to the structure. Taking into account that the methods of creating modern composite materials based on the properties of the components, the production of strong, resistant composite materials is one of the main tasks set before today's manufacturers and engineers.[1]

And the solution to the problem is the preparation of composite materials that can maintain its working State in the long term,with stand external deformation , internal energy assemblies .The reduction and significant increase in the cost of products produced on the basis of composite materials consisting of metallic powder and short fiber materials, which can give the metal and its alloys special properties, is the reason for the full study and research of Sokha.[2]

Literature analysis and methodology on the topic

Plasticizers increase the plasticity of the upper t-rada plastic and make the molded product more Birch-like and frost-resistant. Thermoplasts are frost-resistant, quickly lose their consistency at a temperature above 60-100°C. But most thermoplasts differ from reactoplasts in their impact resistance, high dielectric characteristics, optical transparency, ease of molding complex shaped objects from them. Thermoplasts are used in the preparation of tool kisms (etrols, viniplast, polystyrene), as well as electrical and radio engineering products (polystyrene, polyethylene, polypropylene, fluoroplast), operating at an average strength and 60-100° t-R. Products made of thermoplasts will be extremely resistant to chemical influences (photoplasts, polystyrene, polyethylene, vinylplast), inedible (polyamides, polyethylene-refthalate), optically transparent (polymethyl-methacrylate, polystyrene).Reactoplastl ar contains polymers that solidify when heated or when exposed to catalysts (phenolformaldehyde and urea tar) as well as stiffeners (epoxide Tar,

polysiloxanes, unsaturated polyephyrs), forming polymers with a mesh tinge. It jumps its vitreous state until the products made from reactoplasts are damaged by heat after they have fallen. In the composition of reactoplasts there will be fillers, linear polymers: stiffeners, dyes, thermostabilizers, antiseptics of the hardening process. According to the type of fillers, reactoplasts are divided into powder (wood flour, asbestos powder, Quartz flour and yes casolar), fiber (ip-gasification, asbestos fiber, glass fiber), listli (Paper, ip-gasification, glass tissue, yogoch veneer) types.[3]

Hardened P. items made from 100-350°withstand the prolonged effect of strength (depending on the type of polymer and filler). Reactoplasts are used in the production of products that work at high power, withstand heat for a long time, withstand sharp atmospheric influences and have a good dielectric property.Natural Tar (canifol, shellac, bitumen and others.) on the basis of removable plastic has long been known. The artificial polymer is the earliest plastic celluloid made from nitrocellulose (cellulose nitrate), which is dated 1872.da began to be produced in the USA. 1906-10 y.in Russia and Germany, the production of removable materials based on the 1st reactoplasts-phenol-formaldehyde resins was established in experimental industry. In the 30s, the former USSR, the USA, Germany and so on. in industrialized countries, the production of thermoplasts, polyvinyl chloride, polymethylmethacrylate, polyamide, polystyrene was established. But P. the industry developed after the 2nd jahrn war-na, 20th A. In the 50s, a large number of polyethylene plastics began to be produced in most countries.[4]

RESEARCH PROGRESS

Plastics built on the basis of linear polymers also contain plasticizers, paints. Plasticizers increase the plasticity of plastics in the upper tire and make the molded product more Birch-like and frost-resistant. Thermoplasts are frost-resistant, quickly lose their T-rada strength above 60-100°. But most thermoplasts differ from reactoplasts in their impact resistance, high dielectric characteristics, optical transparency, ease of molding complex shaped objects from them. Thermoplasts are used in the preparation of tool kisms (etrols, viniplast, polystyrene), as well as electrical and radio engineering products (polystyrene, polyethylene, polypropylene, fluoroplast), operating at an average strength and 60-100° t-R. Products made of thermoplasts will be extremely resistant to chemical influences (photoplasts, polystyrene, polyethylene, vinylplast), inedible (polyamides, polyethylene-refthalate), optically transparent (polymethyl-methacrylate, polystyrene). Reactoplastl ar contains polymers that solidify when heated or when exposed to catalysts (phenolformaldehyde and urea tar) as well as stiffeners (epoxide Tar, polysiloxanes, unsaturated polyephyrs), forming polymers with a mesh tinge.[5]

It jumps its vitreous state until the products made from reactoplasts are damaged by heat after they have fallen. In the composition of reactoplasts there will be fillers, linear polymers: stiffeners, dyes, thermostabilizers, antiseptics of the hardening process. According to the type of fillers, reactoplasts are divided into powder (wood flour, asbestos powder, Quartz flour and yes casolar), fiber (ip-gasification, asbestos fiber, glass fiber), listli (Paper, ip-gasification, glass tissue, yogoch veneer) types. Products made of Qo-risen plastic withstand the prolonged, lasting effect of strength at 100-350°(depending on the type of polymer and filler). Reactoplasts are used in the production of products that work at high power, withstand heat for a long time, withstand sharp atmospheric influences and have a good dielectric property.[6]

RESULTS AND DISCUSSION

There is no slip on The Matrix — fiber border. Then the force is evenly divided between the Matrix and the fibers. The deformation of the composition, Matrix and fiber will be equal. The change in the strength of the fiber material depending on the amount of filler.Composition thoroughness in this case av.kom varies depending on the size of the fibers.When the volume of Hali fibers is large, the strength is interrupted by the tolariar reception, and the strength is received only by The Matrix. When the volume exceeds tK, (the strength takes fiber, and its thoroughness determines the thoroughness of the composition.The thoroughness of the composition increases until the category is up to 0.8—0.9.[7]

In this: deformation coagulation of the dew /demat Matrix. At the third (III) stage, the thoroughness of the composition drops sharply, since fragile fibers break off and The Matrix breaks.Category composites are considered anisotropic material. The mechanical properties depend on the location of the fiberglass according to the direction of force.[8]

It is necessary to choose volumetric zinc fibers, details in such a way that the strength is adjusted by the effect on the fiber, choosing a fiber material.Selective materials and the properties of the ulaming.High-strength for casting composite materials:steel wires, wires from tungsten, molybdenum, wires from their alloys and e.t.c.

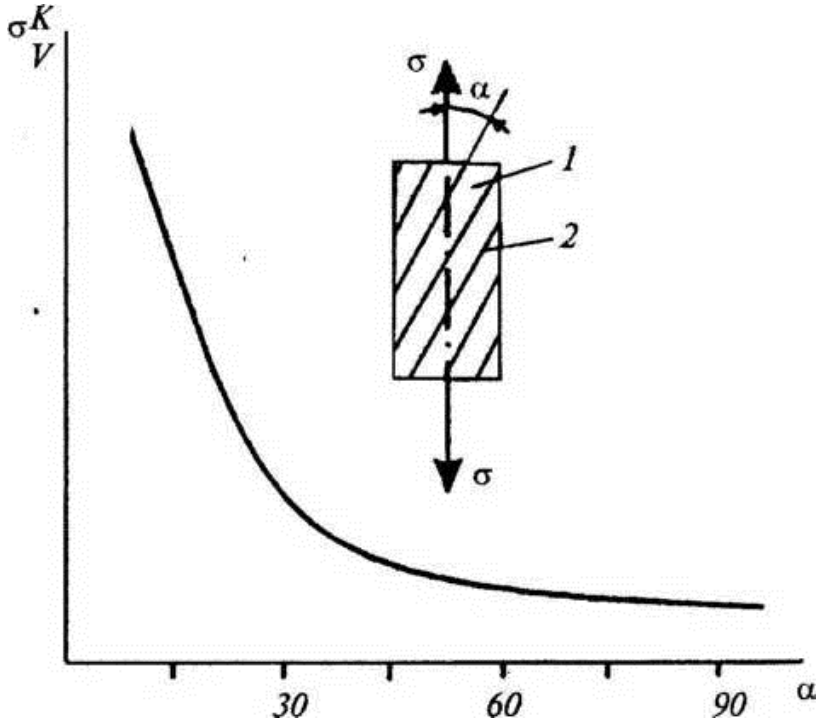

Figure 1.Change in the toial Composite consistency directed to one side towards the fiber direction angle:

1-Matrix; 2-fiber

Conclusions

In the later stages of construction, composite panels are also used. Even when covering the roof of the structure, modern sun-resistant, moisture-proof, Composite slate and various types of plastic panels are used. In our country, not only in housing construction, but also in automotive and wagon industry, composite materials are widely used in the production process and in stages.[9]

The interior salon of the car, seats in tarpaulin, external buffers, is also used in electrical insulation. Composite materials are widely used in the transportation of various loads, strengthening the internal spare parts and external sides of the wagons. Especially in the production of wagons designed to transport various types of chemical, toxic substances transported in wagons, the wagon is used in a very wide range of composite materials to make it durable. At the moment, plastic composite materials have been created that have very remarkable properties, the properties of which, such as their comparative strength, carroziabarthness, controllable magnetic and electrical properties, do not lag behind the properties of typical steel and cast-iron structural materials. Plastic composite materils are created, the working capacities of which are preserved even at 200-400°C. There is an opportunity to widely use such materials in the future in the automotive, ship and aircraft industry. Composition is also possible.[10]

Corrosive Composite alloys have also been developed and are used in industry. Examples of this are ferrotitanides. Their basis was leached iron alloys, to which 10-75% titanium carbide was added as an additive. Iron-based composite alloy, which contains 20-45% titanium carbide as a reinforcing

additive and is complex leached with chromium, molybdenum, tungsten, aluminum and nickel, is used in the preparation of the halls used in the mill of bearing tools for working in an aggressive environment.[11]

As a reinforcing body in composite materials, fibers or hard-soluble compounds of non-metallic elements (aluminum oxide, spirit oxide, silicon compounds, as well as wires made of metal, tungsten, molybdenum are used. The diameter of the fibers can range from 1mkm to 50mkm.[12]

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