

The effect of using of synthetic resin with different materials In the development of furniture and interior design elements

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Research Summary

The comping of the use of raw materials with each other in a deliberate manner in the interior design shall have the effect of bringing the raw materials to many specifications which increase their efficiency and eliminate some undesirable defects. These materials can be used in this field, It can be combined with many interior design materials such as wood, marble, stone, cloth, metal and others, benefiting from the great aesthetic, structural and technical integration. The resin can also be used to repair crumbling blocks from some of these materials and use them with suspicion Naturally without the slightest concern, with some also to give it aesthetic values through the integration process.

Research problem: -

- The absence of a clear methodology for the use of industrial resin with different interior design materials, and how to benefit from its properties to increase the efficiency of the use of these materials.

-The lack of use of resin ores in Egypt in the field of interior design for its role as objets, and the omission of many aspects used more deeply and more impact on the materials of various interior design.

research importance:-

The importance of this paper is to shed light on the importance of the study of the industrial resin material, and the effect of using it with other interior design materials to raise the specifications of these materials, and the effect of this integration on the design and manufacturing of interior design elements.

research goals : -

1. stand on the physical specifications of the strength of industrial resin, and the impact of those specifications on the use of that material in the manufacture of various interior design elements.
2. access to a clear methodology for the use of synthetic resin material with different interior design materials.
3. Highlight the effect of the merger between the use of synthetic resin and other materials on the design process and the manufacture of interior design elements

Research hypotheses : -

1. The industrial resin material has many physical and chemical specifications to allow it to raise the specifications of some other interior design materials when combined together.

2. Develop a methodology for the integration of resin material with different interior design materials allows the development of non - modular models of interior design elements in terms of design and manufacturing.

Research Methodology : -

The inductive approach to the physical specifications of the industrial resin and how to use it to support the specifications of other interior design materials, and then the methodological approach to reach a methodology to integrate the synthetic resin material and the different interior design materials.

Key words:-

Industrial resin - interior design materials - interior design elements - furniture manufacturing technology - restoration

Introduction

The tremendous scientific development in the field of raw materials technology has allowed designers to unleash their imagination and seek to use the products of this unlimited technology to add more to their designs and products as well as to provide them with additional specifications that were not available before or to deal with some defects of raw material that were not easy to deal with it, open the field for many areas on top of the field of design and restoration, and the most common of these raw materials in the two times is the so-called "composite materials".

Composite materials:

In the 1960s, the spread of composite materials, consisting of two different or different materials, began to spread. The first was a reinforcement material that could be made of fibers made of high resistance materials (such as carbon fibers and glass fibers). The second material is a plastic or colloidal polymer , Which gives the finished product its desired form and is called the incubator material. The mechanical properties of the final product are different from those of any composite materials. The compound materials have spread widely during the short period of life due to their excellent mechanical properties compared to their weight We went down and entered many engineering fields.

Natural Resin:

Resin is a natural or synthetic compound that begins with a high degree of viscosity and turns into a solid form when treated. Resin is a soluble and insoluble compound in water. The compound is classified in many classification methods, depending on its exact chemical composition or potential uses.

Synthetic Resins:

Synthetic resins are substances with characteristics similar to natural resins in that they are sticky liquids capable of solidification, usually made of organic compounds.

Polymers:

The origin of the word polymeros comes from the Greek language, which is composed of two parts: poly, which means multi and meros, which means part. Polymers are characterized by their molecular weights, which can range from 1000 to greater than 100,000. Polymers have been known since ancient times in the form of rubber extracted from the trees, which was called then the trees crying. (Crying Trees)

Polymers are used all over the world. Polymers are characterized by:

- Low cost where they are made from cheap raw materials and available.
- Light weight compared to other materials such as iron.
- The diversity of their properties such as flexibility, hardness, heat resistance and corrosion, which increases the areas of their uses.
- Easy molding and shaping.
- High thermal insulation.
- A large part of plastic products can be recycled and manufactured again.

Physical properties of polymers:

The various uses of polymeric materials are related to various physical properties, and to various physical and mechanical properties such as:

Some of them have rubber properties, others are converted into a paste by heat, which can be formed, and then by refrigeration hardens effectively, including hardening to the point of oxidation when treated with some solvents or when exposed to heating, some polymeric materials accept tensile strength.

Application

The idea of the study is based on the integration of raw synthetic resin and natural and industrial raw materials such as wood, marble, cloth and others to reach a superior product that combines the specifications of the two materials together and avoids the defects of the two raw materials in an ideal fusion model.

Through the study of these specifications, it is found that the most types of synthetic resin suitable for the student choice, which is already the most common resins of industrial resin and used in the field of interior design and furniture are "epoxy resins" because of its high technical and operational specifications.

Epoxy Resin

Epoxy resins are characterized by relatively high hardness and chemical resistance. In addition, the resin has high adhesion properties due to the chemical composition of the resin, which is the group of ethers, hydroxyl and polar groups, which gives high durability and adhesion. The material is hardened and strong, so it is used in applications that require high performance. These resins interact with the solidifiers during treatment and the reaction is not accompanied by water emission or the release of any by-products which makes the volume shrinkage very low (less than 2%). Resin acquires strength and high mechanical properties. Moreover, epoxy resins have high durability due to the distance between the bonding points Interconnectivity and the presence of integrated linguistic strings.

Applications of the use of resin resin (epoxy) in the fields of interior design and furniture:

For decades, the use of resin ores in interior design and furniture has been limited to paints and did not address what is beyond. Hence, the study attempts to open new horizons for the use of this material in the interior design and furniture so as to benefit from all the features used in a scientific method. In the following directions:

- Field of restoration.
- Treatment of poor wood properties and the addition of aesthetic side.
- Wood grafting.
- Highlight the aesthetics of natural wood in its organic form.
- Work as an alternative to the joints and the typical coils.
- Work as a holder and link (mosaic mosaic) .
- Allow the use of lighting inside the furniture and interior design elements in an innovative manner.
- Production of elements of interior design and furniture of a transparent nature.
- Utilizing the aesthetics of the raw material of the resin material.
- The creation of surface contactors and non-typical color configurations of interior design and furniture elements.
- Benefit from high technical and operational specifications of industrial resin.
- Soliding and cladding of fabric to produce elements of interior design and furniture.

From the above, it is clear how varied the use of industrial resin in interior design and furniture is, apart from being a mere paint, and how creative possibilities are allowed for the designer with flexible operating possibilities and unlimited usage specifications.

Results

- 1- Composite composite materials have higher operating and practical specifications than the materials involved in their formation alone.
- 2- The use of industrial resin in the field of interior design and furniture is not only a coating or a material only.
- 3- Additional specifications required for industrial resins may be added by adding certain materials to which these specifications are earned.
- 4- Epoxy resin is one of the most synthetic resins suitable for use in the field of interior design and furniture because of its mechanical specifications and high operating.
- 5- The synthetic resin material can be used effectively to repair some of the decaying natural materials such as wood, stone and marble.

6- Raw synthetic resin works effectively to raise the technical and operational characteristics of poor wood surfaces.

Achieving the maximum benefit of industrial resin depends on the skill of employing the designer to the technical and operational specifications of the material, hardness, durability, relative transparency, and others

Recommendations

- 1- The researchers in the field of interior design should take care of the quality of the resin industry, its types and compounds, because of the great diversity and wealth in the specifications, technical and operational as well as the relatively cheap price, which makes it distinctive material for use in the field.
- 2- Interest in the preparation of joint research with researchers in various sciences, especially chemistry, because of the scientific addition to the two fields.