

**Using Self-healing materials to raise the efficiency of kindergartens
(Educationally, aesthetically, healthily, economically, and environmentally)**

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Abstract

The function of preparing the internal environment for kindergartens is to provide a stable, organized, and rich internal space that encourages learning, kindergarten must achieve the needs of childhood. All its parts must be planned so that the child can learn and discover his abilities and tendencies.

At the age of 4-6 years, the child is full of energy and curious; He has a strong desire to test his environment and explore his surroundings with no regard for safety.

When choosing interior design materials and components for kindergartens, it is essential to pay attention to the physical integrity and safety of the child in this stage. Which requires the provision of materials characterized by durability and reliability to suit the activities carried out, and in a manner that does not conflict with the achievement of other economic and environmental aspects.

The research problem was that all the materials and components of the interior design deteriorate over time, which requires checks and detection of defects to treatment or maintenance, a process that may be difficult and expensive, so scientists began to search for materials that can sense the defect, work to stop it and then start the process of self-healing or repairing itself as quickly as possible, which is called self-healing materials.

This research aims to raise the efficiency of kindergartens by using self- healing materials to achieve educational, aesthetic, health, environmental, and economic aspects.

The research follows the descriptive and analytical approach, as it presents some of the reasons for the deterioration of materials in kindergartens, along with analyzing the damages resulting from the deterioration of materials, then the concept of self-healing materials, their mechanisms, some possible examples for use self-healing materials instead of traditional materials and analyze the benefit of their use in kindergartens.

Key words:

kindergartens, Self-healing materials, Self-repairing materials.