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WATERPROOFING SYSTEM SELECTION IN THE FLAT ROOF CONSTRUCTION.

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ABSTRACT

The walls and roof of a building are designed to endure wind, heat, cold, and precipitation, and a building's roof influences building steadiness and comfort. Flat roofs are popular in Malaysia because they make a home appear more modern and elegant. Consequently, the problems that arise if the quality of roof leaks, connection deficiencies, and reduced usage of waterproofing systems on the roof. If the problem is not highlighted, there is a possibility that the roof, ceiling, and water will absorb the structures. This study aims to identify the best type of waterproofing system for flat roof construction by analysing the factors that influence the selection of waterproofing systems. This study identify the different types of waterproofing system applied for flat roof construction and the factors outlined in choosing the best type of waterproofing are durability, economical, environmental and performance. The questionnaire assessing the knowledge about the waterproof systems on the building's roof represents the scope of the study. This study gathered information from grade G7 contractors in building construction and specialising in waterproofing installation (B08) regarding the best waterproofing systems for flat roof construction. Due to Malaysia's proximity to the equator, where weather and temperature variations are occasionally rainy and warm, every structure should examine the considerations involved in choosing a waterproofing system for flat roof construction. From the data that has been analysed, the bituminous membrane waterproofing was chosen as the best waterproofing system for flat roof construction because they were more workable, easy to handle and application, and cheaper than any waterproofing form.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF RESEARCH

A building's roof design is influenced by a wide range of elements, including its use and functionality, location, and available resources. Roofs with a small pitch or none and an impenetrable layer of material covering the entire surface are known as flat roofs. Flat roofs are made up of at least three layers: a load-bearing layer, an insulating layer, and a weather-resistant waterproof surface. These layers are arranged in different series and supplemented by other layers as required, depending on the form of design and usage specifications. While there are a number of flat roof rules and regulations, the majority of them only refer to some areas of flat roof design.

Roof leaking is a common quality issue in the construction industry, and it is a tough problem that has not been well solved. Water is the source of defects and ongoing construction and building materials issues. It can get into areas where it should not through moving freely through gravity, friction, soakage, capillary movement, or water vapour diffusion because of its physical properties of being watery and slippery. According to Latysheva and Smirnov (2003), the importance of waterproofing is very high since the major construction materials (concrete and reinforced concrete structures) have a porous structure. In order to prevent water from getting into the building, flat roofs are coated with a water-resistant material. This distinguishes them from pitched roofs, which are exempt from the waterproofing membrane rule (Bludau & Schunck, 2010).

Possible side waterproofing allows water to penetrate the structure's internal volume, where the drainage system discharges it. Several waterproofing products on the market have identical features and prices but different names. So that we can achieve