

Influence of Commonly Used Pipe Material in Housing Construction in Sri Lanka

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This study focuses on the frequently used pipe material and their standard sizes available in the market including the generally used sizes for the plumbing work of housing construction taking place in Sri Lanka. Both qualitative and quantitative approaches were used for the effective fulfilment of desired objectives. Three preliminary interviews and fifteen semi-structured interviews were conducted with professionals who are passionate about research areas of this nature. The collected data for common pipe sizes being used were analyzed through the relative importance index (RII) analysis. The collected data for regular material used in house construction were analyzed through the content analysis and summarized through relative percentage. No house would be complete without a proper plumbing system. Choosing the suitable pipe material for residential purpose is often determined by the client's needs and the project's nature. Several different materials are used in house construction in Sri Lanka, namely: polyvinyl chloride (PVC), polyethylene (PE), polypropylene (PP), and polybutylene (PB). However, it was highlighted that PVC is the most commonly used commodity in Sri Lankan housing construction for water supply, drainage and electrical insulations in domestic applications. The length of the standard sized pipes is being cut into pieces according to the requirement of each project. SLS 147 and SLS 659 are the Sri Lanka standards applied for PVC products such as pipework, joints, and fittings. The standard sizes of four and six meter long PVC pipe are available from the range of 20mm to 355mm diameters whereas, the pipe sizes being used are up to 110mm diameter in housing construction. As opposed to alternative materials viz PE, PP, and PB, the PVC is preferred due to it being relatively low cost, flexible, light in weight, moderate in toughness, strong, easily joinable, and chemically inert to water. However, the alternative materials also have their own significant characteristics. Therefore, the pipe manufacturers shall consider increasing the demand for such alternative pipe materials based on their unique characteristics.

Keywords: PVC; Alternatives; Standard sizes; Common sizes