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A Review of Adhesion Promotion Techniques for Solid Timber Substrates

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The use of primers, coupling agents, and other surface treatments to enhance adhesion is now common in the aerospace, automotive, and plastics industries, where they are used to develop highly durable bonds to metals, advanced composites, ceramics, and plastics. However, such treatments are virtually non-existent in the wood products industry although they could solve important adhesion problems. In particular, adhesion promoters can enhance the environmental durability of epoxy bonded joints, and they can enhance the reliability of bonds to timber treated with wood preservatives. A review of current findings is provided that attempts to gather the scarce and disperse information available in the literature about adhesion promotion techniques for bonded solid timber joints. A general overview of the research needs on this topic is also given.

Keywords: Adhesion promoters; Durability; Solid timber; Surface treatments

1. INTRODUCTION

Long-term environmental durability is one of the most important requirements of bonded joints. Although the degradation of the bond is likely to be inevitable, there are means by which to slow down the process. Proper design of a joint or structure is necessary to maximize

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