

Development and sustainability of steel and polymeric reinforcements for reinforced earth wall

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Abstract

Increased price and carbon footprint content of steel creates dissatisfaction to many consumers primarily in the construction industry as the overall supply chain process is disrupted. To ensure survival within the industry, other sustainable materials were proposed to replace steel. However, material properties need to be properly studied and analyzed before it can be introduced to the market. Over the years, Reinforced Earth developed several types of reinforcements for the RETAIN market. Initially, two kinds of steel reinforcements, High Adherence (HA) Steel reinforcement Strips and High Adherence Ladder reinforcement (HAL) strips were used. To ensure that Reinforced Earth remain competitive in the market, polymeric reinforcing strips – GEOSTRAP and ECOSTRAP or concrete reinforcing strips were introduced. This creates a wide array of reinforcement choices for consumers to choose from considering the type of environment the Retaining Wall system is placed in. Hence, it is crucial to create a design and site checklist to properly understand, obtain and verify relevant information to present a solution for the project. This solution termed as value engineering creates a cost savings and sustainable plan which is beneficial for the consumer.

Keywords: Lichen, antioxidant, scavengers, kinetic, lipophilicity.

Biography

Wong Hsui Han is a Civil Engineer who graduated with a master's degree from the University of Exeter, UK specializing in both Civil and Environmental engineering. He has over 6 years of both local and international experience in the field of Civil Engineering being involved in many roles in design, supervision works, quality control, marketing, ISO 9001 (Quality), ISO 14001 (Environmental), ISO 45001 (Safety), safety, operational excellence, project management, value engineering, research and development, business development, construction, and leadership. He undertook a half year abroad to the University of Lund, Sweden to undertake a degree project on "Experimentally studying corrosion of reinforcement embedded in clay brick masonry" whereby various environmental factors were researched to understand the lifespan of structures of corroded structures.