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Methods of assuring the quality and suitability of Euro Accessories Pin Anchor lifting system.

The Euro Accessories Pin Anchor lifting system provides a simple and intuitive means of lifting precast concrete elements in a timely and safe manner. Available in the following finishes: mild steel, hot dip galvanised, bright zinc plated and stainless steel, all grades of material are selected to ensure the products display ductile properties sympathetic to the requirements of lifting applications. As a matter of routine, Elite Precast Concrete utilise the hot dip galvanised option as this finish provides approximately fifty years of corrosion protection in moderately exposed environments. The highly ductile nature of the materials in turn provide high levels of toughness, predictable failure modes with desirable levels of extension at ultimate tensile strength. Euro Accessories ensure that any material used in the manufacture of our lifting range should be devoid of brittle characteristics. The use of materials with brittle characteristics can lead to sudden failure in the lifting system with little to no indication that high levels of stress are present in the lifting system.

The material specifications of Euro Accessories lifting systems ensure minimum breaking strengths of three times working load limit are achieved, routine testing during manufacturing shows that these minimum requirements are achieved by a significant margin. In addition to the routine ultimate tensile strength tests in the manufacturing process, tests are carried out by an independent testing house on every batch to verify our internal findings. All products are marked with the EA logo, the working load limit, the unique batch mark, CE mark and the UKCA mark. The application of the local conformity marks are in line with the requirements of the European machinery directive and the UK Supply of Machinery (safety) act 2008. The rigorous testing and routine testing procedures ensure that the material specification, raw material characteristics, raw material source and the characteristic behavior of the product can be identified for any batch of finished product and that the required technical file for lifting accessories is maintained in accordance with United Kingdom regulations.

In tests carried out in concrete blocks of circa 20 Nmm^{-2} the three times safe working load of 15t (5.0t x 3) was achieved without failure of the concrete. The typical concrete strength of the Legato blocks at 28 days is 50 Nmm^{-2} . The predicted concrete failure load by computational methods utilising a 5.0t x 180mm Pin Anchor at 50 Nmm^{-2} concrete cube strength is circa 18.0t, this value is derived from a model value subject to 2.5 reduction for uncertainties in concrete characteristics.

Traveling quickly and or traveling over rough terrain when carrying blocks or barriers should be avoided as excessive sudden jerking movements could damage the pin anchor.

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