ELASTIC THICK LAYER BONDING

INTRODUCTION

From the earliest of times, boat construction has relied upon the available technology. Structural members needed to be attached to one another and everything would depend on the reliability of the bond.

Trial and error would have exposed the weaknesses in design and construction and one of the costs would have been the loss of the vessel, if not of lives.

As knowledge and experience was shared, so technology improved and in a symbiotic advancement, boat building and other industries benefited.

Today, significant advances in adhesive technology have spurred a revolution in assembly techniques across all of industry. But none reap the benefits more than the marine industry.

APPLICATION DESCRIPTION

Elastic thick layer bonding in respect of this manual refers to the method of joining the main structural components or components that contribute to the strength and stability of the structure of the vessel.

Elastic thick layer bonding is responsible for a completely different approach to vessel design. Whereas earlier techniques worked from a rigid skeleton that had to be strong enough to support the deck, hull, superstructure, windows, and fittings, the new approach uses all of these major components as the primary structural members and uses the old skeletal parts in a lighter form to provide stiffening to the structure.

Each time that a screw was used to hold a major component to the skeleton, it introduced weaknesses in every part it passed through and became a focal point for stresses.

Marine architects had to take this into consideration during the design phase and ensure that there were sufficient fixings placed evenly along the joint lines in order to distribute the stresses. The location, size and type of every screw had to be specified, drawn onto the plans, bought in and stored.

The laminating method (taping) provides a far better alternative to this approach in most applications, with fewer components, a simplified design and better stress distribution. But this method is highly labour intensive and comes with numerous health and safety issues.

Elastic thick layer bonding from Sika is relatively simple to design, tolerant of dissimilar materials, very strong and durable, and besides having few health and safety requirements, takes a fraction of the time of other techniques to assemble.

In service, the inherent flexibility of the Sika structural adhesives evenly distributes the stresses and the lightweight construction techniques result in a major weight saving and corresponding buoyancy and performance increase in the vessel.

For every structural application, national and international rules, regulations and approvals must be observed.

DISCLAIMER
The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered.

The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Sika Product Datasheet for the product concerned, copies of which will be supplied on request.