

## **Case studies in adhesives selection**

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### **Abstract-**

**The selection of an adhesive for a particular application is not as easy as endeavour as it might originally appear. To achieve optimum performance when bonding two materials, one must carefully plan every stage of the bonding process. The selection of an adhesive is a critical factor that will influence each step. The adhesive selection will be dependent primarily on: •The type and nature of substrates to be bonded. •The method of curing that are available and practical. •The expected environments and stresses that the joint will undergo in service. The adhesive selection process is difficult because many factors must be considered, and there is no universal adhesive that will fulfil every application. It is usually necessary to compromise when selecting a practical adhesive system. Adhesive properties limit performance. We need a way of surveying properties, to get a feel for the values design-limiting properties can have. One property can be displayed as a ranked list or bar chart. But it is seldom that the performance of a component depends on just one property. Almost always it is a combination of properties, for instance, of the strength-to-shear modulus ratio. This suggests the idea of plotting one property against another, mapping out the fields in property-space occupied by each adhesive type. The resulting charts are helpful in many ways. They condense a large body of information into a compact but accessible form; they reveal correlations between adhesive properties, which aid in checking and estimating data. In this paper, we have also used the methodology from Professor Michael F. Ashby of Cambridge University in order to solve general practical cases where we had chosen adhesive bonding as a joining process.**

**Index Terms- Materials; Joints; Bonding; Adhesives; Selection**

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