DURABILITY OF RUBBER TO METAL BONDING

INTRODUCTION

The Gantrail products are based on designs developed in England by W S Atkins and Partners.

To ensure optimum performance and lifetime for the products, it is essential that the rubber and metal parts are strongly bonded together, so that movement of the rubber or ingress of dirt or oil into the rubber - metal interface is not possible. Gantrail have developed a unique method of production to ensure this.

GANTRAIL PRODUCTS: BONDING METHODS

Gantrail uses two different bonding systems in their products: one is the conventional, industry-wide method of in-mould bonding while vulcanisation under pressure, a method used to produce millions of reliable parts for industry every day, and the other is a special post-bonding process which is used for certain types of parts. This also is a much used process but Gantrail use a specially developed bonding agent adhesive from Lord Corporation (USA) which, coupled with good working practices, ensures a bond stronger than the rubber itself. The heat cured compound adhesive is itself highly resistant to attack from the environment and any oils or contaminants. The rubber is vulcanised before bonding and this allows optimum conditions for this process.

TESTING

Gantrail products are routinely tested above service limits to ensure that the failure mode is the rupture of the rubber itself, this is the best possible type of failure to occur on test.

CONCLUSIONS

The in-mould bonding system can, and does, produce first class, very strong, and highly durable bonds. However, to ensure that this is consistently the case, strict attention to quality procedures is absolutely necessary, since there are many factors contributing to the strength of the bond. The post-bonding system is, in fact, easier to control and has been shown to give more consistent results. Gantrail has for many years stringently controlled product quality both in their own and from their suppliers factories, and holds an ISO 9001:2000 Quality Systems Certificate.