



THE FASTENER AND ENGINEERING RESEARCH ASSOCIATION

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FERA SEMINAR – TUESDAY 23 MAY 2006

National Metalforming Centre - 9.30am

Acknowledged experts will address three subjects, firstly, by request a topic of growing interest, Aluminium Fasteners for Magnesium Components.

This will be followed by New Product Innovations, where FERA members bring to our attention recent product developments. On this occasion we shall hear about a study on the Reuse of Electro Zinc Plated Mechanical Fasteners, followed an interesting emerging product, High Joint Performance Fastening Solution for Sheet Metal Applications and Thin Walled Boxed and Closed Sections.

ALUMINIUM FASTENERS FOR MAGNESIUM COMPONENTS

The most universal technical barrier to significant design change is the lack of experience with the new materials and manufacturing processes that these designs require. In particular, these new materials and processes force changes in the way components are joined and fastened.

Lightweight materials with excellent strength characteristics are used in the European automotive industry. Technical advancement is indicating that a productive opportunity is about to take place.

Addressing the technical advantages, we have invited the leading exponent in this field, the Textron Fastening Systems who has perfected the technology.

- The joining of aluminium magnesium components and the experimental results
- Testing, joint relaxation and tightening performance
- Joint design principles and failure mode
- The aspects and application suitability with regard to galvanic corrosion and thermal expansion and clamp load behaviour
- The mechanical properties and coefficient of friction
- Applications and future developments

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FERA NEW PRODUCT INNOVATIONS - MEMBERS HIGHLIGHTS

The Fundamentals and Critical Requirements for the Design of a Bolted Joint

The fundamentals and critical requirements for the design of a bolted joint for the design engineer has to be well understood. The importance of the coefficient friction needs to be better understood; furthermore, approach strategies may need to be considered. Often the fundamentals can be misunderstood, so we have invited Atlas Copco Tools UK to add enlighten to our knowledge.

- The latest tensioning technology and equipment may produce better solutions for design engineers
- Case study
- Future developments

High Joint Performance Fastening Solutions for Sheet Metal Applications and Thin Walled Boxed and Closed Sections

The enemy of mechanic fasteners is vibration. Loosening can be annoying and at the extreme, perilous. In terms of the user such events are seen as poor design and many other reasons that could have contributed to the failure are also blamed. Whilst the variations of bolted joints are prolific, so are the types of assemblies!

Sheet metal fasteners have been specified in considerable applications for a number of years and have proven to be acceptable in numerous industries. The resistance to vibration can be variable by application and over time loosening may occur. Industry statistics have shown that up to 37% of applications fail due to thread stripping problems, thus requiring rework and refurbishment plus the inevitable variable costs of down time and re-assembly.

The High Torque Fastener System can overcome the problems of thread stripping in several material types and is flexible for design engineers to use in a variety of applications when constructing sheet metal panels or enclosures.

- Case study and technical attributes
- Future developments

**£££: FERA/CBM members & members' guests £25+VAT
Non members £50+VAT**





FERA Seminar

Date: Tuesday 23 May 2006

Time: 9.30am – 1.00pm

Venue: National Metalforming Centre

£££: FERA/CBM Members & members' guests
£25 + vat inc lunch

Non members £50 + vat inc lunch

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