

APPENDIX 2.

PRIORITIES FOR DEVELOPMENT OF MAGNESIUM TECHNOLOGY AND APPLICATIONS IN UK

1) MAGNESIUM IN COMMERCIAL TRANSPORTATION

a) CASTINGS:

- Modelling of casting processes to generate better understanding of specific characteristics of Mg (particularly for HPDC) to optimise die design, running systems etc.
- Low cost alloys with improved mechanical properties up to 180°C. (particularly HPDC)
- Definition of casting parameter and property relationships for Mg alloys using semi-solid forming techniques.

b) EXTRUSIONS/FORGINGS:

- Alloys with faster extrudability and satisfactory combination of strength, ductility and crash behaviour.
- Application of state-of-art forming processes used on other materials to Mg
- Development of Rheoforming technologies for Mg alloys to make high integrity components for both automotive and aerospace applications.

c) SHEET/ROLLED PRODUCTS:

- Alloy development to increase formability.
- Joining techniques for mg alloy to Mg alloy and other materials.
- Address potential corrosion and galvanic corrosion issues.

2) MAGNESIUM IN AEROSPACE/HIGH PERFORMANCE

- Minimisation or elimination of galvanic corrosion potentials in Mg component assemblies for airframes.
- Performance databases for Mg components in aircraft service conditions using state of the art alloys and protection technology
- Development of Rheoforming technologies for Mg alloys to make high integrity components for both automotive and aerospace applications.

3) MAGNESIUM IN MEDICAL AND PERSONAL MOBILITY USES

- Exploit biocompatibility of magnesium to develop medical devices (eg, soluble stents, implants etc.
- Exploit light weight for mobility aids for ageing population