Luxfer MEL Technologies extrusions: A summary

Luxfer MEL Technologies is a world leader in the development and supply of high quality extruded products. These lightweight alloys are used as forging feedstock, as base material from which to machine components or as custom shapes to integrate directly into a component. Luxfer MEL Technologies operates two dedicated presses to supply a full range of extruded magnesium alloys and we continue to develop new alloys for future applications.

Specifications

- ASTM B107-13
- ASTM B91
- AMS 4352H
- AMS 4350M
- AMS 4485
- Customer defined specifications

Ultrasonic Inspection to AMS 2154 Class B, A, AA and AAA.

Luxfer MEL Technologies has state of the art, custom built immersion ultrasonic testing equipment.

Sizes

Lengths

- 25 mm to 6 m
- 1 inch to 20 ft

Square/rectangular sections

Thickness: 10 mm to 280 mm
- 3/8 inch to 11 inches

Width: 10 mm to 280 mm
- 3/8 inch to 11 inches

Thickness and width are inter-dependent. Please see Figure 1.

Round bar diameters

- 1.6 mm to 200 mm
- 1/16 inch to 8 inches

Applications

-Forging feedstock
-Machining feedstock
-Solid, hollow or multi-hollow custom
-Profile shapes
-Near net shapes

Alloys

Where appropriate, alloys are also available heat treated.

- Elektron® 43, Elektron® 675
- Elektron® 21, Elektron® WE43, Elektron® WE54
- ZK60A, ZW3
- AZ80A, AZ61A, AZM, AZ31B
- M1A, ZM21
- Pure Mg
- Custom alloys

Custom profiles

Luxfer MEL Technologies manufactures complex solid and hollow profiles using the latest extrusion die technology within the scope of our size capability. Why not get in touch with us to discuss your exact requirements?
Properties

The minimum expected properties of common magnesium extrusion alloys are shown in the table below.

Table 1. ASTM B107-13 specification minimums for common magnesium extrusion alloys – solid extrusions.

<table>
<thead>
<tr>
<th></th>
<th>UTS MPa</th>
<th>UTS ksi</th>
<th>Yield MPa</th>
<th>Yield ksi</th>
<th>Elongation %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elektron 43-T5</td>
<td>340</td>
<td>49</td>
<td>225</td>
<td>33</td>
<td>12</td>
</tr>
<tr>
<td>Elektron 675 –T5a</td>
<td>350</td>
<td>51</td>
<td>230</td>
<td>33</td>
<td>5</td>
</tr>
<tr>
<td>ZK60A-T5</td>
<td>310</td>
<td>45</td>
<td>250</td>
<td>36</td>
<td>4</td>
</tr>
<tr>
<td>AZ80A-T5</td>
<td>310</td>
<td>45</td>
<td>205</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>AZ61A-F</td>
<td>275</td>
<td>40</td>
<td>150</td>
<td>22</td>
<td>7</td>
</tr>
<tr>
<td>AZ31B-F</td>
<td>220</td>
<td>32</td>
<td>140</td>
<td>20</td>
<td>7</td>
</tr>
</tbody>
</table>

Figure 1. Extrusion press size capability.