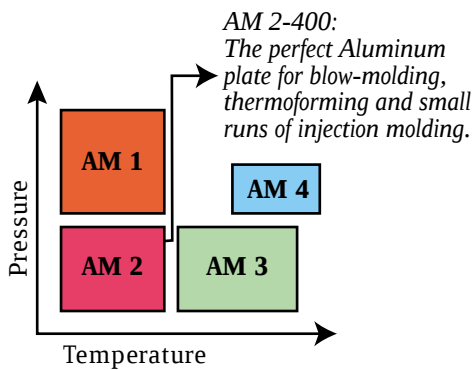


# ALUMOLD®

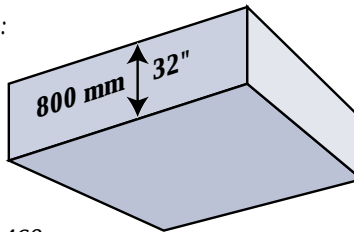
## ALUMOLD 2-400 FORGED

### Extreme gauge and high properties

AM 2-400 Forged gives good mechanical properties, high elongation and a nice through thickness strength consistency. Available within a large range of thickness, its special chemistry offers great corrosion resistance.

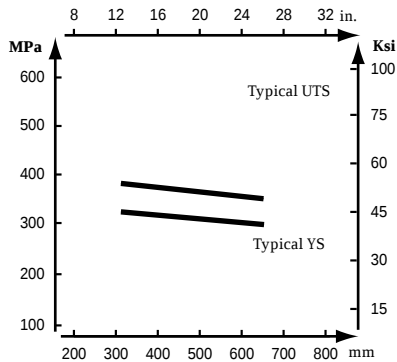


Now available in:  
thickness  
325-800 mm  
12-32 inch

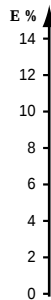


widths  
1050, 1220 & 1460 mm  
41, 48 & 57.4 inch

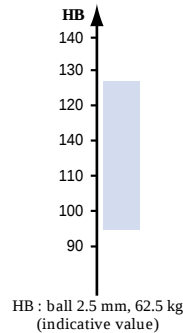
### Mechanical properties



### Elongation



### Brinell Hardness



From Pechiney specification IS 5506A

| Thickness<br>mm | Minimum values |     |     | Typical values |     |     |
|-----------------|----------------|-----|-----|----------------|-----|-----|
|                 | MPa            |     | %   | MPa            |     | %   |
|                 | UTS            | YS  | E%* | UTS            | YS  | E%* |
| 325-400         | 320            | 260 | 11  | 370            | 320 | 14  |
| 400-500         | 310            | 250 | 10  | 360            | 310 | 13  |
| 500-600         | 300            | 240 | 9   | 350            | 300 | 12  |
| 600-700         |                |     |     |                |     |     |
| 700-800         |                |     |     |                |     |     |

UTS, YS 0.2, E% value at 1/4 thickness (LT direction)

| Thickness<br>inch | Minimum values |      |     | Typical values |      |     |
|-------------------|----------------|------|-----|----------------|------|-----|
|                   | Ksi            |      | %   | Ksi            |      | %   |
|                   | UTS            | YS   | E%* | UTS            | YS   | E%* |
| 12-15             | 46.7           | 37.9 | 11  | 54             | 46.7 | 14  |
| 15-19             | 45.2           | 36.5 | 10  | 52.5           | 45.2 | 13  |
| 19-23             | 43.8           | 35   | 9   | 51             | 43.8 | 12  |
| 23-27             |                |      |     |                |      |     |
| 27-31             |                |      |     |                |      |     |

**PECHINEY**

## Heat treatment and internal stress relieving

Plates are delivered after complete thermal treatment and internal stress relieving. No further treatment is recommended. After a special quenching, all plates are stress relieved by a unique compression process.

## Physical properties

| EUROPE                                      | AM 2 - 400                       | FORGED US                                    |
|---------------------------------------------|----------------------------------|----------------------------------------------|
| 2.79 kg / dm <sup>3</sup>                   | Specific gravity                 | 0.101 lbm / in <sup>3</sup>                  |
| 23.5 10 <sup>-6</sup> / °C                  | Coefficient of thermal expansion | 13.1.10 <sup>-6</sup> / °F                   |
| 122 W / m.°C                                | Thermal conductivity             | 71 Btu / h.ft. °F                            |
| 960 J / kg.°C                               | Specific heat                    | 0.229 Btu / lb.°F                            |
| 45.5. 10 <sup>-6</sup> m <sup>2</sup> / sec | Thermal diffusivity              | 4.2. 10 <sup>-6</sup> ft <sup>2</sup> / sec. |
| 72 000 MPa                                  | Tensile modulus                  | 10 400 ksi                                   |
| 73 000 MPa                                  | Compression modulus              | 10 600 ksi                                   |
| 0.33                                        | Poisson's coefficient            | 0.33                                         |
| 610 - 650 °C                                | Melting range                    | 887 - 1166 °F                                |

## Usage properties

| AM 2 - 400 FORGED   |                                                                                                      |                                                                                                                                                              |
|---------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Milling             | Swarf breaking<br>Surface brightness                                                                 | Very good<br>Good                                                                                                                                            |
| Polishing           | Aesthetic<br>Optical                                                                                 | Good<br>Difficult (Switch to Alumold 1-500)                                                                                                                  |
| Engraving / Etching | Chemical etching<br>Laser etching                                                                    | Good<br>Perfect                                                                                                                                              |
| Surface treatments  | Hard Anodizing<br>Nickel, Chromium Plating<br><br>PVD / PA CVD<br><br>Thermal spraying / Laser spray | Excellent<br>Excellent for cavity :<br>abrasion resistance<br>Dedicated for aluminum :<br>high hardness<br>Thick and hard layer :<br>parting line resistance |
| Welding             | Refilling (TIG)                                                                                      | Good: DC / Helium /<br>rod 5180 or 4145                                                                                                                      |



The present brochure is not contractual, and shall, in no way, incur the liability of Pechiney on account of the information contained herein. This information is given purely as a guide. It is up to readers to check that it is accurate and to consult the Pechiney Group and other specialists before design, conception or use.