

## Supplemental Information

**Table 1. Properties of Aluminum Alloys**

Type of aluminum alloy	Kobe's new alloy	Weldalite 49-T8*	7075-T6*
Density (specific gravity g/cm <sup>3</sup> )	2.9	2.6	2.8
Tensile strength (MPa)	780	710	573
Elongation (%)	14	5	11
Lightness	⊙	⊙	○
Strength	⊙	⊙	△
Ductility	⊙	×	○
Application	--	Space Shuttle External Fuel Tank	Aircraft stringers & frames

⊙excellent    ○good    △fair    ×not good  
 \* T8 and T6 denote heat-treated materials.

**Sample bars**

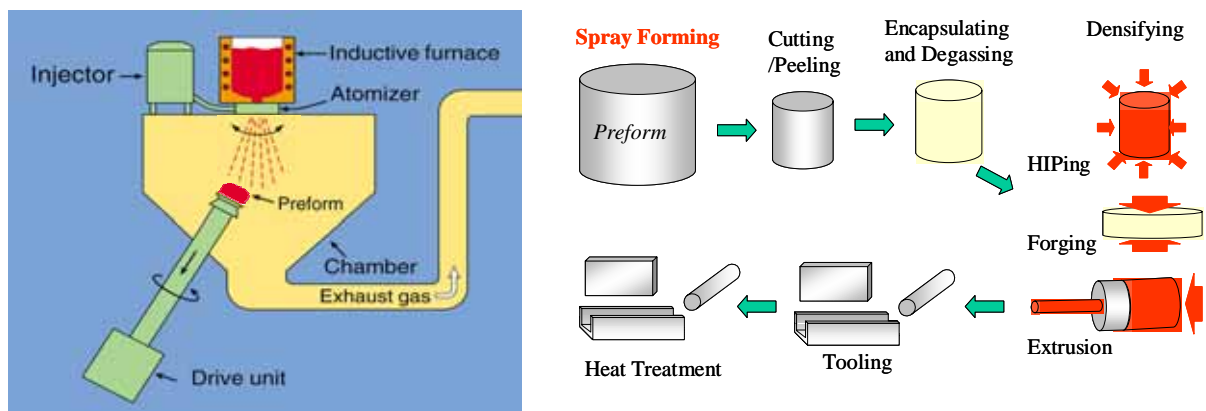


**Preform undergoing spray forming**

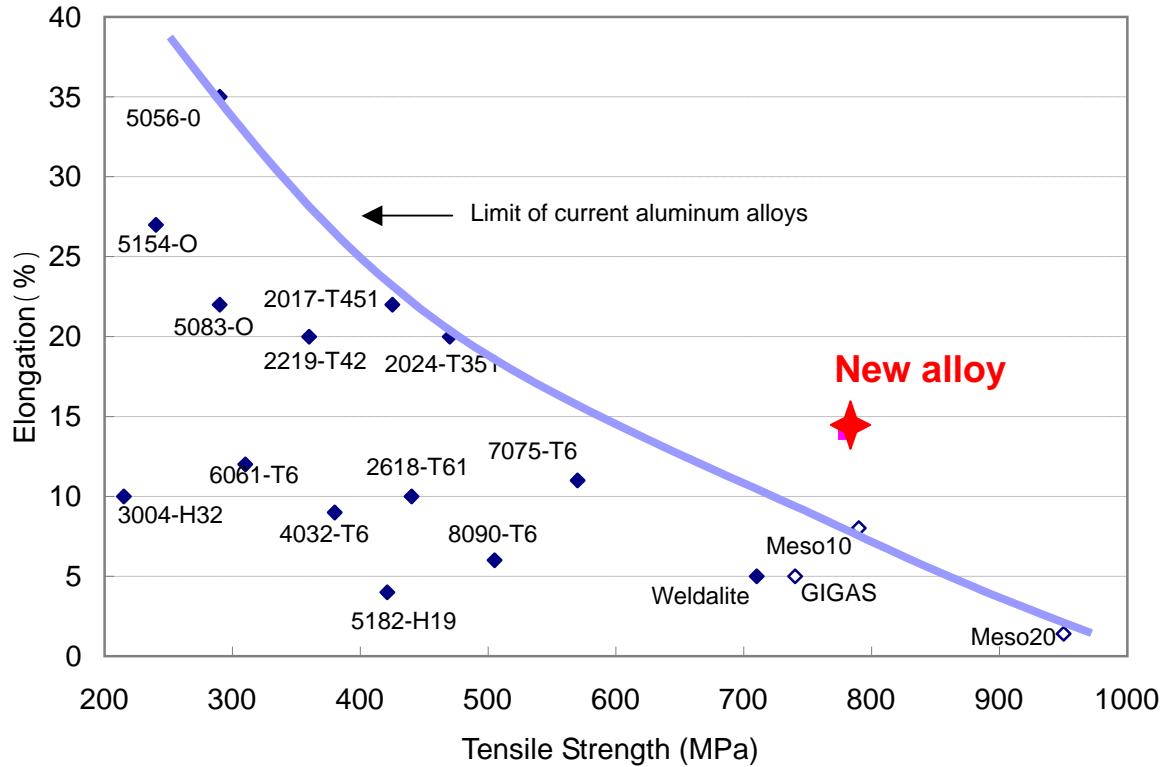


(For demonstration purposes, file photo shows spray forming of Fe-based alloy.)

**Fig. 1. Kobe Steel's Spray Forming Process**



**Fig. 2. Tensile strengths and ductility (elongation) of aluminum alloys**



Notes:

- ◆ JIS-standard aluminum alloys and commercial aluminum alloys.
- ◇ Alloys reported in papers and articles. (GIGAS and Meso are powder metallurgy materials.)

**Fig. 3. Comparison of specific strength and elongation of various metals**

