

## Aluminum Welding TiCaps™



Successfully welding aluminum sheet metal with conventional electrodes is difficult due to its low electrical resistance, high thermal conductivity, and due to the presence of the hard aluminum oxide layer on the surface of the worksheet .

Huys' next generation TiCaps™ were created specifically to make spot welding aluminum reliable, consistent, and affordable.

### HOW THEY DIFFER

#### SPECIAL NOSE GEOMETRY

- Maximizes the application of current
- Efficiently focuses the distribution of force
- Improves weld strength

#### TRIPLE TITANIUM CARBIDE COATING

- All the Benefits of traditional TiCaps™
- Thicker, more durable coating
- Rough contact surface for more effective force application through the oxide surface

### PROVEN RESULTS

#### THEIR SUCCESS

- In use at OEMs and key Tier suppliers
- Up to 3000 welds without Tip dressing
- Larger, rounder, and more consistent welds
- Longer Electrode Life
- Additional flexibility in welding parameters
- Shorter Down Time

When used properly with current stepping techniques, the coating on our aluminum welding TiCaps™ has been proven not only to increase electrode life, but also to improve nugget stability.

The TiC serves as an interfacial layer providing electrical resistance and thermal insulation for the aluminum worksheets.

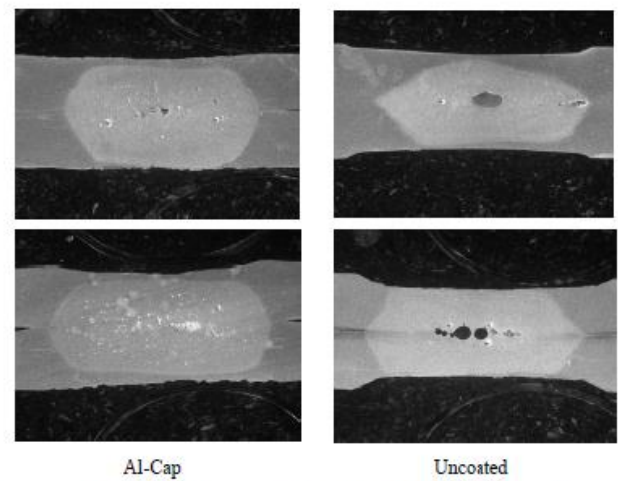
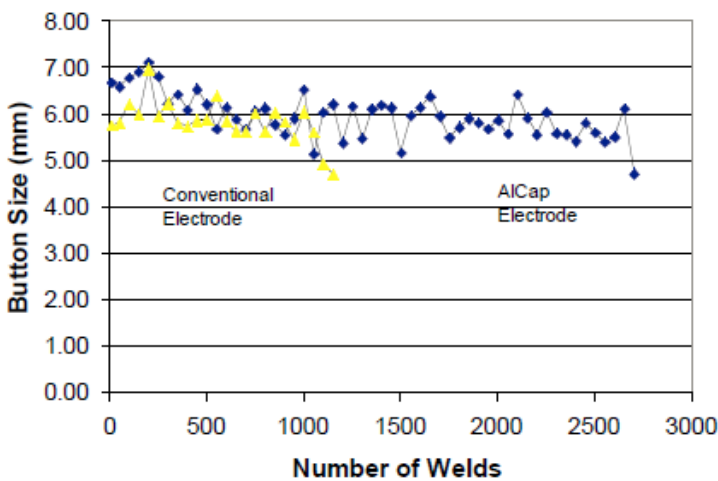


Figure 4: Cross sectioned aluminum welds at 20kA and 24kA of the Current Test

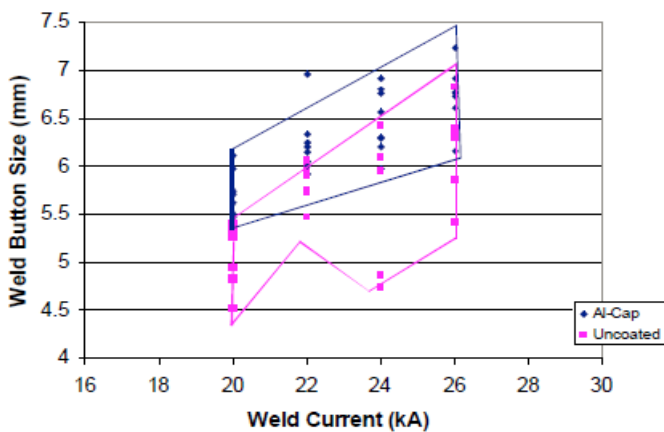


Figure 2: Weld current windows for the coated AlCap(TM) and uncoated electrode

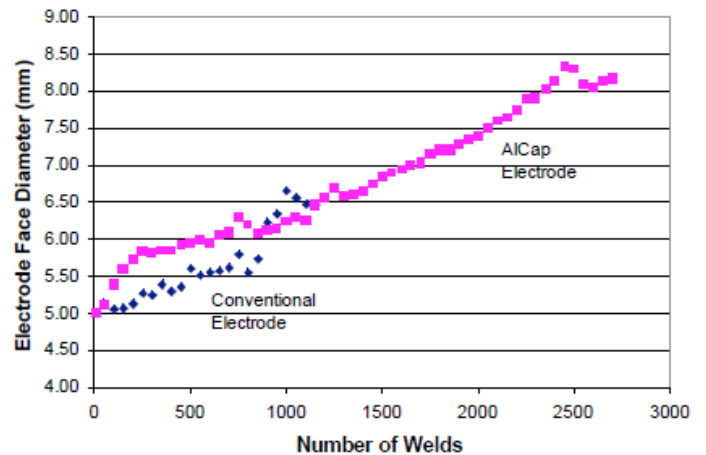


Figure 6: Electrode tip face diameter growth curves for the conventional uncoated electrode and the Al-Cap(TM) for life testing results.

\*Chan, K. R. and Scotchmer, N.S., "Quality and Electrode Life Improvements to Automotive Resistance Welding of Aluminum Sheet", Sheet Metal Welding Conference XIII, AWS, May 2008