

**SECTION 965**  
**GENERAL PROVISIONS FOR ALUMINUM ITEMS**  
**(INCLUDING WELDING)**

**965-1 Surface Appearance and Protection.**

The exterior surfaces of aluminum castings, pipes, tubes, formed sheets, and structural shapes shall, when placed in the work, have a clean, uniform silvery appearance, free of dark streaks and discoloration.

Aluminum members (including specifically aluminum light poles and signs poles) which are of such size or shape that the surfaces might be marred during transit and prior to their being installed, shall be appropriately and adequately protected against such damage, by wrapping with paper or by other effective means.

**965-2 Certification and Mill Analysis.**

For aluminum materials used, submit to the Engineer, prior to installation, a certified mill analysis and certification by the producer that the parts and components are of the alloys specified and comply with the requirements of this Section.

**965-3 Welding Aluminum Sign Structures.**

The proportioning of weld details and the operation of welding, for aluminum sign structure, shall be in accordance with Section 5 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals; ANSI and AWS D1.2 “Structural Welding Code - Aluminum”, including the requirements for qualifications of procedures and welders, as specified therein.

(a) Alloys: The aluminum alloys to welded under these specifications may be any of the following alloys:

Wrought Nonheat-treatable Alloys:

- Alloy 3003
- Alloy Alclad 3004
- Alloy 5052
- Alloy 5083
- Alloy 5086
- Alloy 5456

Wrought Heat-treatable Alloys:

- Alloy 6061
- Alloy 6063
- Cast Heat-treated Alloy
- Alloy SG-70A (ASTM Designation)

(b) Filler Metals: The filler metals to be used with particular base metals shall be as shown in the table below except that other filler metals may be used if approved by the Engineer.

| Base Metal                 | Filler Metal |
|----------------------------|--------------|
| 3003 to 3003               | ER1100       |
| Alclad 3004 to Alclad 3004 | ER4043       |

| Base Metal     | Filler Metal |
|----------------|--------------|
| 5052 to 5052   | ER5356*      |
| 5083 to 5083   | ER5183       |
| 5086 to 5086   | ER5356*      |
| 5456 to 5456   | ER5556       |
| 6061 to 6061   | ER5356*      |
| 6063 to 6063   | ER5356*      |
| SG-70A to 6061 | ER4043       |
| SG-70A to 6063 | ER4043       |

\*ER5183, ER5356, and ER5556 may be used interchangeably for these base metals.

**965-4 Welding Aluminum Structures Other Than Sign Structures.**

The welding of aluminum structures, other than sign structures, such as aluminum bridge and railing structures and their aluminum components, shall be in accordance with ANSI and AWS D1.2 “Structures Welding Code-Aluminum”, including the requirements for qualifications of procedures and welders, as specified therein.