

AMERICAN SOCIETY FOR TESTING MATERIALS
COMMITTEE B-2 ON NON-FERROUS METALS AND ALLOYS

PRELIMINARY DRAFT DATED JUNE 25, 1952
PROPOSED SPECIFICATION FOR
ROSIN FLUX CORED SOLDER

Metal Composition

Alloys shall conform to ASTM Tentative Specification for Soft Solder Metal, B32-48T or latest issue thereof.

Core Size

The tubular metal wire shall have one central hole or more than one hole symmetrically spaced, unless otherwise specified. These cavities are to be filled with the specified flux. The size of the core or cores is based on the specified weight of flux:

2.2% desired, limits 1.76 to 2.64
(for Grades 35 and higher)

3.3% desired, limits 2.64 to 3.94
(for Grades 30 and lower)

Size of Wire

The size of wire is to be specified preferably from commercially available sizes. Diameters are to be specified in inches as for example:

0.155"	0.083"
0.125"	0.072"
0.120"	0.065"
0.109"	0.060"
0.095"	0.031"

Flux Types

1. Rosin

The flux shall be at least equivalent to commercial grade WW (Water White) rosin. Additive agents are prohibited.

2. Plastic Rosin

Flux similar to No. 1 to which is added 8 to 14% by weight of turpentine.

3. Modified Rosin

Composition and/or performance are to be as specified by mutual agreement between producer and consumer. It shall be free from any materials which will have a toxic effect on persons using these solders in production soldering, unless otherwise agreed upon.

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ASTM

PackagingCommercially Available Spools, Coils and Segments

1. 1, 5, 10, 25, 50 and 65 pound spools.
2. 5, 10, and 25 pound coils.
3. Segments cut from wire.

Method of Sampling

One test end from each of 3 spools per lot of 1,000 lbs. or less.

One test end from each of 5 spools per lot of 1,001 to 10,000 lbs.
incl.

One test end from each of 10 spools per lot of 10,001 lbs. or more.

A test end is obtained by cutting back six feet of wire from the free end of the spool and then taking the next six feet for the test end.

Method For Determining Weight of FluxApparatusPorcelain CrucibleReagent

Silicone Oil (High flash and boiling point, low volatility)

Procedure

Select a 20 gram sample of a cored solder and wipe the surface with a clean cloth. Determine the weight of the sample to 0.01 gram. Roll the solder into a small ball by winding it on itself around a clean glass rod. Place the ball of solder in a clean crucible, add sufficient oil to completely cover the solder and heat at the liquidus temperature ($+50^{\circ}$ - 0° F) of the solder until it is completely molten. Carefully stir the molten solder a few times to free any entrapped flux. Allow the solder to cool until it solidifies, then remove it from the crucible, wash thoroughly with alcohol, dry and weigh the solder slug.

CALCULATION

$$\text{Per cent of Flux} = \frac{\text{Initial Weight of Cored Solder} - \text{Final Weight of Solder}}{\text{Initial Weight of Cored Solder}} \times 100$$

REQUIREMENTS

1. The flux is to be permanently contained in the wire until heated for application.
2. Thirty minutes after solder is applied, the residual flux (applicable to Type 1): (A) shall not be readily indented by the fingernail, (B) shall permit easy removal of applied powdered chalk or cotton wool with light brushing.

* See ASTM B32-48T