



# Solderability Specification Parameter Comparison

***Rockwell  
Collins***

## JSTD-002 Versus JEDEC B102 Comparison:

- **JSTD-002 Requirement:**
  - **Conditioning**
    - **Steam: 1/8 hours**
- **JEDEC B102 Requirement:**
  - **Conditioning**
    - **Steam: 1/4/8/16 hours**
    - **Bake: 16 hrs at 150C**

### **Win/Win Position:**

- **Dependent on outcome of IPC/STC Round Robin**
- **Some multi-listing with a default condition**

## JSTD-002 Versus JEDEC B102 Comparison:

- **JSTD-002 Requirement:**
  - **Test Temperature**
    - 245C SnPb
    - 255C SAC305
    - 260 Dissolution
- **JEDEC B102 Requirement:**
  - **Test Temperature**
    - 245C SnPb Wave
    - 215C SnPb Reflow
    - 245C SAC305

### Win/Win Position:

- Discussion of the data rationale for the 002 values
- A default temperature

## JSTD-002 Versus JEDEC B102 Comparison:

- **JSTD-002 Requirement:**
  - **Solder Alloy**
    - SnPb 60/40 or 63/37
    - SAC305
- **JEDEC B102 Requirement:**
  - **Solder Alloy**
    - SAC396 but has Ag 3-4 and Cu 0.5-1.0 tolerances

### Win/Win Position:

- Discussion of the data rationale for the 002 values
- A default alloy

## JSTD-002 Versus JEDEC B102 Comparison:

- **JSTD-002 Requirement:**

- **Test Flux**

- standard activated rosin flux #1 having a composition of 25%  $\pm$  0.5% by weight of colophony and 0.15%  $\pm$  0.01% by weight diethylammonium hydrochloride (CAS 660-68-4), in 74.85%  $\pm$  0.5% by weight of isopropyl alcohol (see Table 3–1).
- The flux for lead-free solderability tests **shall** be standard activated rosin flux #2 having a composition of 25%  $\pm$  0.5% by weight of colophony and 0.39%  $\pm$  0.01% by weight diethylammonium hydrochloride (CAS 660-68-4), in 74.61%  $\pm$  0.5% by weight of isopropyl alcohol (see Table 3–1).

- **JEDEC B102 Requirement:**

- **Test Flux**

- standard activated rosin flux #1 having a composition of 25%  $\pm$  0.5% by weight of colophony and 0.15%  $\pm$  0.01% by weight diethylammonium hydrochloride (CAS 660-68-4), in 74.85%  $\pm$  0.5% by weight of isopropyl alcohol (see Table 3–1).

### Win/Win Position:

- **Discussion of the data rationale for the 002 values**

## **JSTD-002 Versus JEDEC B102 Comparison:**

- **JSTD-002 Requirement:**
  - **Inspection Criteria**
- **JEDEC B102 Requirement:**
  - **Inspection Criteria**

### **Win/Win Position:**

- **JSTD-002 is much more comprehensive and we would need to conduct a device by device assessment**

## JSTD-002 Versus JEDEC B102 Comparison:

- **JSTD-002 Requirement:**
  - **Test Methods**
    - Test A – Solder Bath/Dip and Look Test (Leaded Components and Stranded Wires)
    - Test B – Solder Bath/Dip and Look Test (Leadless Components)
    - Test C – Wrapped Wires Test (Lugs, Tabs, Hooked Leads, and Turrets)
    - Test D – Resistance to Dissolution/Dewetting of Metallization Test
    - Test S – Surface Mount Process Simulation Test
    - Test E – Wetting Balance Solder Pot Test (Leaded Components)
    - Test F – Wetting Balance Solder Pot Test (Leadless Components)
    - Test G – Wetting Balance Globule Test
- **JEDEC B102 Requirement:**
  - **Test Methods**
    - **Dip & Look**
    - **Surface Mount Simulation**

### Win/Win Position:

- **JSTD-002 is much more comprehensive – need have discussions**

# JSTD-002 Versus JEDEC B102 Comparison:

- **JSTD-002 Requirement:**
  - Contamination Limits
- **JEDEC B102 Requirement:**
  - Contamination Limits

Contaminant	Maximum Contaminant Weight Percentage Limit Sn Pb Alloys <sup>(1,2)</sup>	Maximum Contamination Weight Percentage Limit Lead-free Alloys <sup>(3,4)</sup>
Copper	0.300	1.000
Gold	0.200	0.200
Cadmium	0.005	0.005
Zinc	0.005	0.005
Aluminum	0.006	0.006
Antimony	0.500	0.500
Iron	0.020	0.020
Arsenic	0.030	0.030
Bismuth	0.250	0.250
Silver	0.100	4.000
Nickel	0.010	0.010
Lead	N/A	0.100

Table 2 — Maximum limits of solder bath contaminant

Maximum Contaminant	Contaminant Weight Percentage Limit	
	SnPb Solder	SnAgCu Solder
Copper	0.300	NA
Gold	0.200	0.200
Cadmium	0.005	0.005
Zinc	0.005	0.005
Aluminum	0.006	0.006
Antimony	0.500	0.500
Iron	0.020	0.020
Arsenic	0.030	0.030
Bismuth	0.250	0.250
Silver	0.100	NA
Nickel	0.010	0.010
Lead (Pb)	NA	0.1

## Win/Win Position:

- Discussion of the data rationale for the 002 values