

technical information



〈Abrasion resistance test of "R tools" for CIB/Clip Ingot Bonding〉

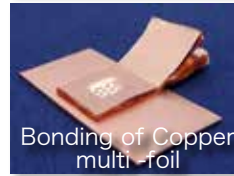
[Abrasion resistance test method of R shaped tool for CIB] A 〈R shaped tool〉 is set in 〈15kHz SoundBonding Lab system〉. 50 sheets of Copper foil (every thickness=10 μ m) are laid on Copper plate (t=1.0mm) and 3000 samples are made under the condition as shown at bottom left. Shape of tip of a tool was measured and observed every 1000 shots, but there was no change. So the test has been finished. 〈Patents pending〉



15MZi SoundBonding Lab system

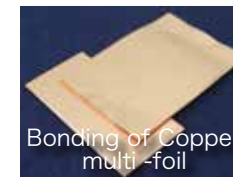


Tip of a mesh-patterned tool



Bonding of Copper multi-foil

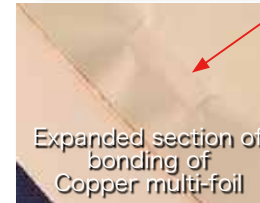
[Bonding with a standard tool]



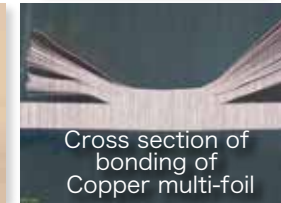
Bonding of Copper multi-foil



Tip of a R shaped tool before test



Expanded section of bonding of Copper multi-foil



Cross section of bonding of Copper multi-foil

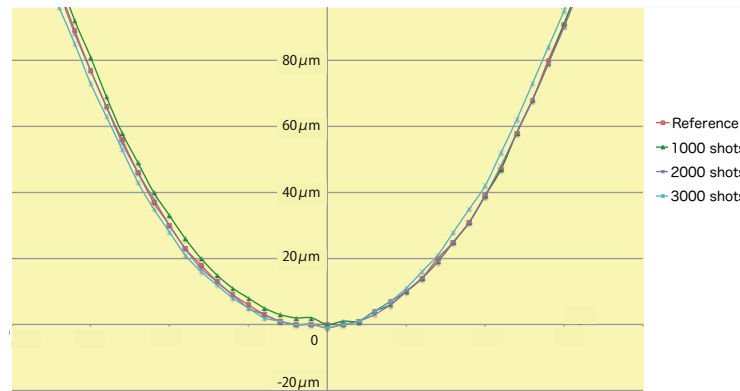
[Bonding with a R shaped tool for CIB]

[Bonding sample]

[Materials] Copper foil and Copper plate
[Copper foil] t=10 μ m x 50 sheets
[Copper plate] t=1.0mm x 1 sheet
[Protect sheet] None

[Bonding condition for CIB]

[Type of system] 15MZ4800i
[Frequency] 15kHz
[Pressure] 500 → 2000N
[Trigger] 450N
[Vibration amplitude] 30 μ m
[Max time during transmission] 1.0 sec.
[Control] Weld distance of horn 0.12 mm



[Measurement of tip of a 〈R shaped tool〉 for CIB]

[Photos of tip of a tool viewed from directly above]



Tip of a R shaped tool after 3000 shots



Before test
1000 shots
2000 shots
3000 shots