all flex SOLUTIONS

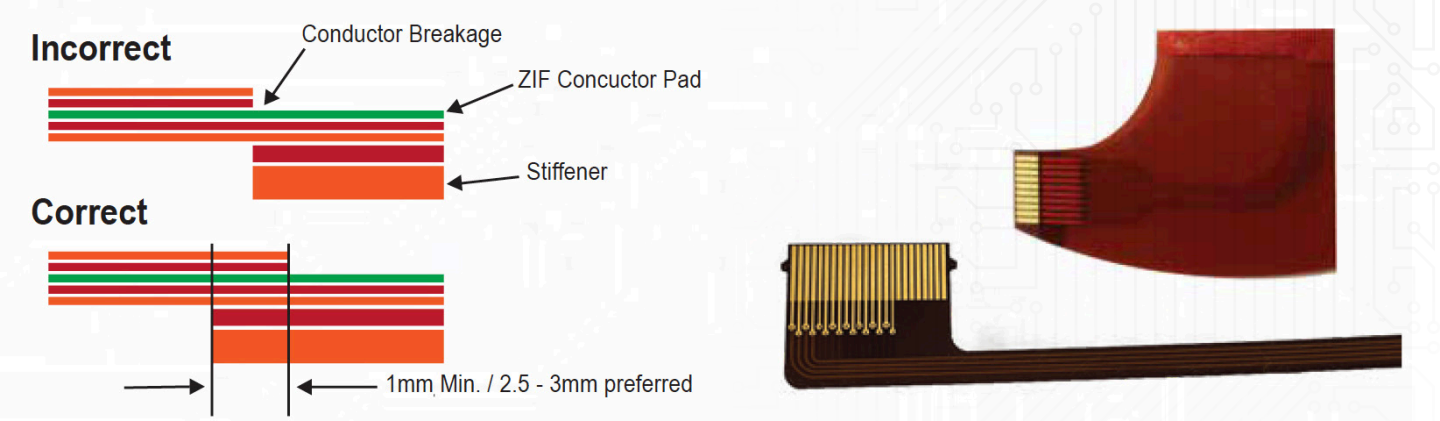
ZIF Connectors for Flexible Circuits

FLEX | RIGID FLEX | HEATERS | ASSEMBLY

All Flex Solutions Inc. | Phone: (612) 351-6009 | Toll-Free: (866) 341-4815

Application: Advantages and Information About ZIF Connectors and All Flex's Capabilities.

There are many types of connectors and termination methods available when designing a flexible circuit, one of the most common is the ZIF or Zero Insertion Force connector. The reason why the ZIF connector is so popular is that they eliminate the requirement for an added connector. They create a direct connection from the circuit to the mating connector reducing overall weight and cost. Below are a few general facts about ZIF connectors and a few of All Flex's specific capabilities.



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ZIF Connectors (Zero Insertion Force) Capabilities/Requirements

Our equipment allows us to hold +/- .002" tolerance on overall width.

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Specialized material sets have allowed us to hold +/- .001" thickness tolerance on .012" requirement applications verified through multiple capability studies.

Finishes of ZIF Connectors and Matching with Mating Connectors.

Finishes of ZIF Connectors and Matching with Mating Connector Applications that require multiple insertions or greater mechanical force applications (membrane switches) should use Hard Electrolytic Nickel Gold (Ni/Au).

Applications that are Static or Flex-to-Install only may use ENIG/Tin/HASL dependent on mating connector. It is important to match surface finishes with the contact finishes to inhibit corrosion, especially with tin and gold.

ENIG (Electroless Nickel/Immersion Gold) is our most common ZIF plating method and allows for solderability and one surface finish across the entire flex board.

ZIF Stiffeners

Polyimide is the most common material added to our standard flex circuit (polyimide) stack-up in order to meet the final ZIF thickness requirement, which is typically .012". Many ZIF connectors have some type of latching mechanism that allows the flex to be inserted and then ultimately clamped down using this latching mechanism.

For ZIF connectors that do not have a latching mechanism, we have utilized an FR4 (rigid) material as the increased thickness material. The rigid material has the copper etched off which creates a "tooth" for the connector to grab onto versus the polyimide material which is a smooth material.

ZIF Stiffeners are designed to overlap the conductors, 1 mm is the minimum requirement but 2.5 mm- 3 mm is recommended. This provides a "finger hold" for insertion to the connector and prevents mechanical stress and cracking of the conductors. Photos of the correct design are included in the PDF.

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