RELTEK

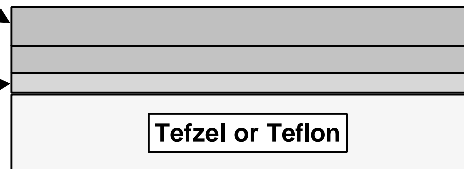
Adhesives and Coatings for Harsh Environments

Bonding Tefzel and Teflon Using BONDiT™ A-43 and BONDiT B-2

Various substrates and overmolds
Materials may be bonded using the B-X adhesive, including many polymers, plastics, metals, glass and ceramics. Depending on performance criteria the B-2 may be sufficient without use of the B-X.

BONDiT™ B-X [X = 1, 11, 12, 13, 14, 15, 45, 46]
Mix ratio 1:1 and cured at 200°F for 2 hours to form flexible bond to B-2. Cure temperature and time may be varied. Chose B-(X) to optimize the desired performance parameters, such as harness, flex modulus and elongation. Thin film to thick potted encapsulation may be employed to meet various design criteria. The combination creates an extremely high moisture barrier, and chemical resistant system in a range from semi-rigid to approximately 50% elongation.

BONDiT™ B-2
Cure at 350°F to 400 °F for 3-5 min. to cohesively bond with the Tefzel, the A-43 being the reaction activator to cause the bond which would not normally take place. This forms a bondable surface on the fluoropolymer.*



BONDiT™ A-43
Film of .001" cured to Tefzel at 350°F - 400°F. for 3-5 min. Matt finish or abrasion of substrate is required for proper wetting. Use IPA wipes to remove oils.

Example application sealing electrical cables, electronic housings, and acoustic devices with extremely high moisture and chemical resistant barrier

- Prep the fluoropolymer wire and cable with A-43/B-2 to form a single primer system for all cable material surfaces. This includes wires with insulation pre-stripped.
- Prep the electronic module fluoropolymer housing and terminals. Note the A-43/B-2 is solder through, so the terminals can be primed before the electronics is attached.
- Prep the fluoropolymer film for the ceramic acoustic device window with A-43/B-2.
- Most fluoropolymer insulation materials will handle up to 400°F without melting. The melt is typically above 420°F+. Insulation melting is not necessarily a problem, since the B-2 is a high dielectric even in its melt state—above 65°C.
- After system assembly, pot the B-(X) direct over the B-2 and cure below 180°F limit for electronic components. The system is now high pressure sealed from moisture with a flexible breakout.
- Overmold acoustic grade polyurethane as needed to the B-2 for the acoustic window.

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It is also possible only the B-2/A-43 system is needed for the whole job. The system is solder through and the heat of the solder will drive off the B-2 from the solder joint. The joint must be sealed with a spot coat of the B-2. The B-2 provides the system priming for fluoropolymer materials. The B-(X) products and other products such as polyurethane will bond to it as needed. Adding the B-(X) option allows a cure temperature below the 180°F limit with the electronics assembled. It also provides the option of potting a thick cross section and encapsulating the entire assembly in a homogeneous moisture seal.

*With Teflon the bond will be adhesive rather than cohesive. Tefzel offers much tougher mechanical properties than Teflon, with a small sacrifice in chemical resistance. Tefzel and Teflon are trade names of Dupont.