



# DUAL CARTRIDGE EPOXY ADHESIVE KIT USAGE GUIDELINE

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## Storage temperature (adhesive):

	<u>ES2501 (FRE # 20-0163)</u>	<u>ES1904 (FRE # 20-0164)</u>
• Recommended:	68-77° F	68-77° F
• Lower temperature limit:	41° F +/-2° F	41° F +/-2° F
• Higher temperature limit:	90° F +/-2° F	90° F +/-2° F

## Usage temperature (adhesive):

	<u>ES2501 (FRE # 20-0163)</u>	<u>ES1904 (FRE # 20-0164)</u>
• Recommended:	68-77° F	68-77° F
• Lower temperature limit:	41° F +/-2° F	41° F +/-2° F
• Higher temperature limit:	90° F +/-2° F	90° F +/-2° F

*Notes: When the adhesive material temperature falls lower than the recommended temperature limit, material shall be reheated, for example by use of a heating container or blanket, till the temperature reaches the recommended temperature level. No restriction is imposed on the number of times the material is required to be heated back to recommended usage temperature. Heating and reheating temperature shall not exceed the higher storage temperature recommended limit (90° F +/-2° F).*

## Substrate temperature (parts to be bonded):

	<u>ES2501 (FRE # 20-0163)</u>	<u>ES1904 (FRE # 20-0164)</u>
• Recommended:	68-77° F	68-77° F
• Lower temperature limit:	41° F +/-2° F	41° F +/-2° F
• Higher temperature limit:	90° F +/-2° F	90° F +/-2° F

## Cartridge dispensing instructions:

Static mix nozzle supplied with the kit shall not be altered in anyway.  
 Static mix nozzle shall be changed as soon as dispensing become more difficult.

### Most probable causes:

- Mixed material inside the nozzle has cured enough to prevent normal flow of material down the nozzle;
- Material in cartridge is too low in temperature.

Time allotment for material in static mix nozzle (to remain idle):

Maximum time allowed:

	<u>ES2501 (FRE # 20-0163)</u>	<u>ES1904 (FRE # 20-0164)</u>
• At recommended temperature:	3 to 5 minutes	8 to 10 minutes
• At lower temperature limit:	20 to 30 minutes	45 to 60 minutes
• At higher temperature limit:	1.5 to 3 minutes	4 to 6 minutes

*Notes: Dispensing instructions apply to ES1904 (FRE# 20-0164) and ES2501 (FRE# 20-0163). The time allotments above are intended as reference only.*

There is no ambient temperature or humidity restrictions on the use of either epoxy adhesive systems provided material usage and substrate conditioning comply with recommendations (Consult ES1904 & ES2501 Technical Data Sheet for more details).

*Notes: Substrate or the material to be bonded shall be clean and dry. When the substrate temperature falls lower than the recommended temperature limit, substrate shall be heated up to recommended temperature level.*

**Expected working times:**

Material T (°F)	Substrate T (°F)	ES2501/20-0163	ES1904/20-0164
		Working time (minutes)	
Recommended	Recommended	3 to 5	8 to 10
Recommended	Lower	3 to 6+	8 to 12+
Recommended	Higher	3 to 4	8 to 9
Lower	Lower	20 to 30	45 to 60
Lower	Recommended	20 to 27+	45 to 55+
Lower	Higher	20 to 25	45 to 50+
Higher	Higher	1.5 to 3	4 to 6
Higher	Recommended	1.5 to 4	4 to 6+
Higher	Lower	1.5 to 5+	4 to 7+

*Notes: These values are generic for epoxy adhesive and not actually based on testing to end users conditions.*

**Potential causes of “sticky” material:**

Ratio of part A to Part B not correct

- Clogged nozzles on cartridges
- Air bubbles in cartridge and/or nozzle

Incomplete/inadequate mixing of part A and part B

- Incorrect mix nozzle
- Modified/altered mix nozzle
- Material too thick to mix together

*Notes: If the mix ratio is correct and the proper mix nozzle is used and it is use as directed then we would expect the material perform properly.*