

Aerospace Fiber Optics

AFO 101, Session 5

Fiber Optic Cleaning

Session Objectives

At the completion of this session, you should be able to:

- Properly clean fiber optic termini.
- Examine fiber optic end faces
- Evaluate fiber optic end faces
- Clean fiber optic end faces
- Reevaluate fiber optic end faces
- Mate connectors used with fiber optic cables

Session Agenda

Cleaning Procedures, Termini End Face Cleaning

- Clean Blast
- Dry Swab
- Wet Swab
- Pen

Alignment Sleeve

- Inspection
- Cleaning

End Face Cleaning

Cleaning with the Westover CleanBlast system

1. Prime the handset if the system has been off or more than 4 hours or if it was just refilled.
 - Attach the appropriate cleaning tip to the handset, the FCLT-U125 will be used for this step.
 - Aim the tip at the floor.
 - Push the prime button quickly two times.
 - Press the run button on the handset.
 - Watch to see if you have a steady stream of cleaning fluid.
 - Repeat if necessary.
2. Select the appropriate barrel assembly (lens) from the Table.

End Face Cleaning

Cleaning with the Westover CleanBlast system; cont

3. Select the appropriate barrel assembly from the Table.
4. Attach the barrel assembly to the probe microscope (video scope).
5. Select the appropriate adapter from the Table for the connector / terminus.
6. Insert the probe into the mating adapter.
7. Focus the image to inspect the end face.
8. If the end face is clean, move to the next terminus, immediately mate the connector or install dust cap.
9. If the end face is dirty install the cleaning tip into the appropriate cavity.
10. Push the hand set into the connector to disengage the safety (the Power/Ready light will turn Green) push and release the run button.

Connector		Adapter Part Number	Disply	Scope	Barrel Assembly
Shell Type	Insert / Size				
		FBPT-A801-2-001-P	HD1-1	FBP-P5 (200X - 400X)	FBPP-BAP3 (Narrow Body)
		FBPT-A801-2-002-P			
		FBPT-A801-2-001-P			
		FBPT-A801-2-002-P			
		FBPT-A801-2-002-R			
		FBPT-A801-2-001-R			
		FBPT-A801-2-002-R			
		FBPT-A801-2-001-R			
	15-06	FBPT-A801-1-002-R			
	15-06	FBPT-A801-1-002-P			
	13-04	FBPT-A801-1-001-P			
	13-04	FBPT-A801-1-001-R			
D38999	Pin	FBPP-MILP			
	Socket	FBPP-MILS			
SC		FBPP-U25M	FBPP-BAP1 (Wide Body)		
ST					
LC				FBPP-12M	

Check Your Understanding

What can you say about Cleaning with the Westover CleanBlast system?

What do you do if the end face is still dirty?

End Face Cleaning

Particle Removal with a lint free wipe:

1. This process will only be used on uninstalled termini or test leads.
2. Lay a clean wipe on a clean flat surface, try not to touch much the wipe.
3. Keeping the terminus perpendicular to the wipe lightly wipe the end face of the termini on the wipe.
4. Never wipe in a spot that has already been used.
5. Re-examine, if the end face is still dirty, repeat the cleaning procedure in a spot.
6. If the end face is clean, immediately install a clean dust cap or place in a clean plastic bag.

End Face Cleaning

Particle Removal with a moist lint free wipe:

1. This process will only be used on uninstalled termini or test leads.
2. Lay a clean wipe on a clean flat surface, try not to touch much the wipe.
3. Put a drop or two of isopropyl alcohol in an unused corner of the wipe.
4. Keeping the terminus perpendicular to the wipe lightly wipe the end face of the termini through the moistened portion of the wipe.
5. Keeping the terminus perpendicular to the wipe lightly wipe the end face of the termini on a dry portion the wipe.
6. Never wipe in a spot that has already been used.
7. Re-examine, if the end face is still dirty, repeat the cleaning procedure.
8. If the end face is clean, immediately install a clean dust cap or place in a clean plastic bag.

End Face Cleaning

Particle Removal with a fiber optic cleaning Swab:

1. If the connector has an alignment sleeve holder, remove it.
2. Place alignment sleeve holder in a clean plastic bag.
3. Use a circular motion to lightly rub the end face of the termini with the swab.

Note: Each swab is used once only.

Caution: Too much force can cause scratches on the end face of termini.

4. Re-examine, if the end face is still dirty, repeat the cleaning procedure with a new swab or try another cleaning Method.
5. If all of the end faces are clean, clean and install the alignment sleeve if it has one, and immediately install a clean dust cap or place in a clean plastic bag.

End Face Cleaning

Particle Removal with a moist fiber optic cleaning Swab:

1. If the connector has an alignment sleeve holder, remove it and place it in a clean plastic bag.
2. Moisten, don't soak the tip of a swab with alcohol.

Note: Each swab is used once only.

3. Use a circular motion to lightly rub the end face of the termini with the swab.

Caution: Too much force can cause scratches on the end face of termini.

4. After using a moist swab on the end face the process must be repeated with a dry swab.
5. Re-examine the end face. If the end face is still dirty, repeat the cleaning procedure above.
6. If the end face is clean, clean and install the alignment sleeve if it has one, and immediately mate the connector to the equipment, install a clean dust cap or place in a clean plastic bag.

End Face Cleaning

1. Select your Cleaning Pen for the ferrule size
2. If the fiber termini is in a socket insert remove the colored guide from the end.
3. If the fiber termini is a pin insert remove the colored cap from the end.
4. Push the pen straight in until it makes a click.

CAUTION If the pen and the termini are not aligned the ferrule may break

5. Re-inspect and repeat if necessary.

Check Your Understanding

What can you say about Particle Removal?

What are the uses of a moist fiber optic cleaning swab?

Cleaning: Alignment Sleeve

Inspect the alignment sleeves as follows:

1. Visually examine the alignment sleeve holder for contamination or broken alignment sleeves.
2. If the alignment sleeves are clean and not broken, install them.
3. If an alignment sleeve is broken, replace the alignment sleeve holder with an equivalent one.
4. If the alignment sleeves are contaminated, clean them per the following instructions.

Cleaning: Alignment Sleeve

Clean the alignment sleeves as follows:

1. Try to remove the contamination with canned air.
2. If canned air does not clean the alignment sleeve:
 - a. Obtain a clean container.
 - b. Put the insert in the container and immerse it in isopropyl alcohol. Shake the container lightly for approximately one minute.
 - c. Dry the insert with canned air.
 - d. Re-examine if the debris is still present replace the alignment sleeve holder.

Exercise: Cleaning Practice

Practice cleaning the end face of fiber optic termini.

- You will use the fiber optic cables that are on your boards.
- Inspect the end faces of the termini and evaluate.
- Clean the end faces that you determined were contaminated.
- After cleaning the end faces, re-examine.
- Do they need additional cleaning?
- Record results.

Conclusion

Any Final Questions?