

MTube® Handling Guidelines

Dry Tub Handling

Avoid handling equipment that can produce cuts or tears in the tube:

- Fork lifts
- Poor-condition pallets or roller beds
- Cables

Do not drag tube across rough ground or surfaces.

Do not walk across tube.

Store dry tube indoors if possible. If tube must be stored outdoors, keep covered to avoid exposure to sunlight. Move tube indoors for 24 hours if stored outside before wetout to ensure tube temperature is below 80 degrees during wetout.

All patches of MTube® should be applied using a Drader gun and polypropylene welding rods.

Drader Guidelines

DISCLAIMER: These guidelines are general in nature. Because operator technique, training, and experience as well as field installation conditions all vary greatly, Mississippi Textiles Corp. (MTC) does not warrant or guarantee the results that may be achieved by the operator in following these guidelines.

WARNING! Drader guns produce high heat and the operator must handle with care to avoid burns and fire.

REQUIRED TOOLS AND MATERIALS

- Acetone
- Duct tape
- Clean rags
- Drader gun (welder)
- Modified extruder head (part number 3900002)
- Ice filled bag or aerosol refrigerant
- MTube® (tube)
- Pliers
- Razor knife
- Silicone rubber roller
- Wire brush (brass)
- Tape measure
- Polypropylene (PP) welding rods (part number 3600106)
- Digital temperature display (part number 3900046) with thermocouple wire (part number 3900045)
- Masking tape

PROCESS STEPS

Equipment Start-Up and Preparation

- 1 Attach the modified extruder head to the hand-held weld gun.
- 2 The recommended welding head design includes a thermocouple mounted in the tip of the head that allows the melt temperature to be precisely measured. The gun temperature settings outlined in this work instruction reference the recommended temperature settings using the digital display attached to the thermocouple.
- 3 Set gun temperature to about 450° F.
- 4 Plug the welder into the appropriate electrical and pneumatic outlets and set power switch to “ON”.
- 5 Allow the welder to warm up for several minutes until the red heating indicator cycles off, indicating the set temperature has been reached. Allow the unit to cycle on and off several times to ensure the temperature equalizes across the weld head.
- 6 Use the digital thermometer to verify the weld head reaches at least 450°F before attempting to weld. To ensure acceptable bonding, the temperature of the weld head should be maintained between 425° and 450°F throughout the welding process.



Making a Weld

- 1 Prepare surface area for welding by removing all spray-on release agents (i.e. silicone, teflon, etc.), dirt, resin, or other foreign matter from the area to be patched. Acetone applied to a dry rag can be used to dissolve and wipe away residual resin from the surface.
- 2 After cleaning, allow weld area to dry for 2-3 minutes before attempting to weld. The work area should be clean and dry before proceeding.
- 3 To begin the weld, while triggering, lightly touch the tip of the gun to the coating 1/2 inch to 1 inch before the area to be patched so the flat portion on the underside of the weld tip is in full contact with the coating.
- 4 Moving steadily across the patch area, the deposited material should be approximately 1/16 inch thick.
- 5 Once past the patch, continue to draw the weld bead across the surface approximately 1 inch beyond the repair while releasing the trigger.
- 6 Smooth the weld surface and edges using the silicone rubber roller and rolling from each end toward the middle, while applying light pressure.

IMPORTANT NOTE: There is an inherent tendency to use faster application speeds when welding catalyzed tubes. This may result in the applied extrudate being too thin or a poor bond between the extruded patch and the coating surface. It is important that a consistent application speed and thickness is used for all welding applications.

NOTE: Do not roll the molten material outside of the area of the original weld, as it will not stick, and the edge can be peeled from the coating.

Cooling the Weld

To minimize the risk associated with welding a tube impregnated with catalyzed resin, each welded area should be quickly cooled immediately after the weld. MTC recommends the application of ice bags to each patch or the use of an aerosol refrigerant to accelerate the cool-down process.



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- 7 Check the extruder head to ensure it is clean and free of old, oxidized material, which typically appears as a brown crusty film. If necessary, clean the head using a wire brush (brass) or equivalent.
- 8 Trigger the extruder to purge any old material from the barrel until the flow of PP extrudate is clear and free of debris. Wipe excess PP extrudate off the extruder head tip using a clean cotton rag or dry polyester felt. NOTE: Do not attempt to weld until the extrudate is clear in color.
- 9 Ensure there is adequate welding rod to continuously feed into the gun. The length required will depend on the size of the repair being performed. NOTE: DO NOT let the rod feed all the way into the feed tubes, as running the hand held extruder gun without rod may result in roller mechanism damage.
- 10 Repeat this process before each repair.