

# ***Flying W Plastics***

## **Recommended Butt Fusion Procedure**

The following is general instructions recommended by FWP and is not intended to replace or supersede the specific instructions furnished by fusion equipment manufacturer. FWP recommends an interfacial pressure of 75 psi +/- 10% and a heater plate temperature of 425° F +/- 25 degrees. It is necessary to consult the particular machine manufacturer's instructions regarding machine settings to achieve this condition. 75 PSI interfacial pressure **IS NOT** the hydraulic gauge pressure on the fusion machine. It is critical that the operator has a full understanding of the particular machine involved and should be trained by the fusion equipment manufacturer or his representative.

1. Load the pipe in the fusion machine. Insure the pipe ends are clean (utilize a clean, lint free cotton cloth if required). Make sure the clamps are properly tightened to avoid any pipe slippage through the fusion operation.
2. Face the ends of the pipe to the machine stops. After facing if there is any debris present it should be removed with a lint free cotton cloth. At this point, lack of contamination is critical. Make sure anything in contact with the pipe ends is free of contamination. Any cloth used must be free of contaminants, cleaning solvents, etc. Do not touch with bare hand as the oil from your skin can be a contaminant. Make sure your facer blades on the fusion equipment are free of contaminants. A residue free material like isopropyl alcohol can be used to clean equipment facer blades if necessary.
3. Check for high/low alignment. Misalignment should not exceed 10% of the wall thickness. If misalignment exist clamps can be readjusted, pipe rotated, etc. Re-face pipe as required.

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4. Check the heater plate temperature. (425° F +/- 25 deg.) Allowance may be made for extreme conditions. (Example: a sub-zero condition would benefit from heater plate temperature on the high side of the range)
5. Insert the heater plate between the ends of the pipe and bring ends firmly in contact with the ends of the pipe. Fusion pressure is not applied at this point. Apply only enough pressure to ensure full contact with the ends of the pipe and watch for the proper melt bead.

Approximate Melt Bead Size / Wall Thickness

1/16"	Less than .3" wall
1/8" – 3/16"	.3" wall - .75" wall
1/4" – 5/16"	.75" wall – 1.5" wall

6. After the proper melt bead has been achieved, move the pipe ends away from the heater plate, remove the heater plate, and quickly move the pipe ends together and apply the proper fusion pressure. Do not slam the ends together. Fusion pressure is applied to form a double roll-back bead and pressure is held through the cool down time.

*Note: When fusing two long pieces of pipe make sure the drag factor is taken into account. Drag factor will affect the hydraulic gauge pressure.*

7. Allow the joint to cool until your finger can remain comfortably on the fusion bead. (*Below 110° F*) **Do not touch hot molten plastic!** A straight blade screwdriver can be used to test the bead to insure it has hardened and has substantially cooled. Typical cool down time is one minute per inch diameter but will vary with wall thickness and ambient temperature.

*Do not pressure test, install, or rough handle for an additional 30 minutes.*