HDPE PIPE FUSION TROUBLESHOOTING GUIDES

BUTT FUSION TROUBLESHOOTING GUIDE	
Observed Condition	**Possible Cause**
• Excessive double bead width	• Overheating • Excessive joining force
• Double bead v-groove too deep	• Excessive joining force • Insufficient heating • Pressure during heating
• Flat top on bead	• Excessive joining force • Overheating
• Non-uniform bead size around pipe	• Misalignment • Defective heating tool • Worn equipment • Incomplete facing
• One bead larger than the other	• Misalignment • Component slipped in clamp • Worn equipment • Heating iron does not move freely in the axial direction • Defective heating tool • Incomplete facing • Also possible when fusing bimodal pipes to unimodal pipes
• Beads too small	• Insufficient heating • Insufficient joining force
• Bead not rolled over to surface	• Shallow v-groove – Insufficient heating & insufficient joining force • Deep v-groove – Insufficient heating & excessive joining force • Bead on bimodal pipe may have slight gap to the pipe surface
• Beads too large	• Excessive heating time
• Square type outer bead edge	• Pressure during heating
• Rough, sandpaper-like, bubbly, or pockmarked melt bead surface	• Hydrocarbon (gasoline vapors, spray paint fumes, etc.) contamination

ISO 17025 ACCREDITED LABORATORY

ExcelPlas

SADDLE FUSION TROUBLESHOOTING GUIDE	
Observed Condition	**Possible Cause**
• Non-uniform bead size around fitting base	• Misalignment • Defective heating tool • Fitting not secured in heating tool • Heating temperature not within specified range
• One bead larger than the other	• Misalignment • Heating temperature not within specified range • Fitting slipped in clamp • Defective or worn equipment
• Beads too small	• Insufficient heating • Insufficient joining force
• Beads too large	• Excessive heating time • Excessive joining force
• Absence of third bead, or third bead widely separated from center bead	• Incorrect pipe main heating tool Insufficient joining force
• Pressurized main blowout (beside base or through fitting base)	• Excessive heating • Heating temperature not within specified range • Incorrect heating tool faces • Excessive time to start heating or in joining the fitting to the main pipe after heating time cycle
• Rough, sandpaper-like, bubbly, or pockmarked melt bead surface	• Hydrocarbon (gasoline vapors, spray paint fumes, etc.) contamination

ISO 17025
ACCREDITED LABORATORY

ExcelPlas

SOCKET FUSION TROUBLESHOOTING GUIDE

Observed Condition	Possible Cause
• No evidence of cold-ring impression in socket fitting melt bead	• Insufficient heating time •Depth gauge not used • Cold ring not used • Cold ring set at incorrect depth
• Gaps or voids around the pipe at the socket fitting edge	• Pipe or fitting not removed straight from heater face • Components not joined together straight when fusing • Cold ring not used • Cold ring set at incorrect depth
• Wrinkled or collapsed pipe end	• Cold ring not utilized • Cold ring set at incorrect depth • Incorrect heating sequence
• Voids in fusion bond area	• Pipe or fitting not removed straight from heater face • Components not joined together straight when fusing • Cold ring not used • Cold ring set at incorrect depth
• Unbonded area on pipe at end of pipe	• Cold ring not used • Cold ring set too deep
• Socket melt extends past end of pipe	• Cold ring set too shallow
• Rough, sandpaper-like, bubbly, or pockmarked melt bead surface	• Hydrocarbon (gasoline vapors, spray paint fumes, etc.) contamination

ISO 17025
ACCREDITED LABORATORY

ExcelPlas