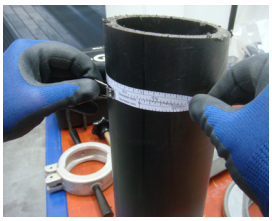
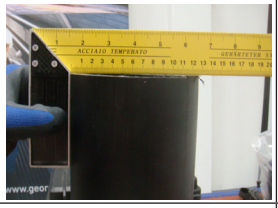
PE Electrofusion Welding Process Checklist (step-by-step)

Project Name		Installation Date	
Welder's Name		Welder's ID	
Company Name		Pipe Brand	
Welding Machine Model		Pipe Date	
Welding Machine S/N		Fitting Brand	
Is the machine calibrated? Yes / No (please circle)		Fitting Batch No.	

Process	Action 1	Action 2	Action 3	Action 4
1. Clean pipe surface	Weather Concerns: - Rainy? (Yes / No) - Windy? (Yes / No)	Environmental Concerns: Clay, dirt, bentonite etc. present? (Yes / No)	Wash pipe with clean water and clean rag.	
2. Pipe inspection 	**2.1 Dimensions** Tooling: use Diameter / Pi tape to measure. • Pipe OD: _____mm • Pipe SDR: _____ Min OD: _____mm Max OD: _____mm Reject under-size pipe.	**2.2 Pipe Surface** • Check for flat spots, using an ovality gauge: (Yes / No) If Yes, reject all pipes with flat spots. • Pipe gouges or damaged: reject or cut pipe	**2.3 Pipe Ovality** Must use re-rounding tools, if ovality exceeds: • 3mm or 1.5%xDN for pipe ≤ 315mm OD • 5mm or 1%x DN for pipe ≥ 355 -800mm OD	**2.4 Pipe Reversion** Check pipe end reversion using a steel ruler or sprit level (straight edge). Pipe ends with toe-in (tapered edge) must be cut off.
3. Square pipe end 	3.1 Cut pipe square at 90° angle, checked using a builders square.	3.2 Use deburring tool to remove swarf and sharp edges from the pipe end.		
4. PE Fitting inspection	Fitting's SDR:_____	Check SDR Range / Pipe Compatibility: (Yes / No)	Fitting Resistance (Ohms):_____	
5. Pipe peeling length 	Measure half the length of the fitting, plus an additional 20 mm and mark on the pipe.	_____mm + 20mm = _____mm (half length of the fitting) (pipe peeling length)		
6. Peel pipe: **minimum 2 peels** **CRITICAL FACTOR**  *Use GF Rotary Peeler to ensure the peeling quality.*	6.1 Check: The peeling tool blade is sharp. Replace the blade if necessary.  *Measure 1st peel thickness.*	6.2 Measure peel strip thickness with Micrometre or Vernier Callipers (+0.01 mm tolerance) • d63-d315 Pipe: 0.3 - 0.5mm • >d315 Pipe: 0.4-0.6mm  *Measure 2nd peel thickness.*	6.3 Never peel more than the minimum peeled pipe OD, as measured using Diameter tape.	6.4 Peeling records: • 1st peel: _____mm • 2nd peel: _____mm • 3rd peel: _____mm (if necessary) • 4th peel: _____mm (if necessary)

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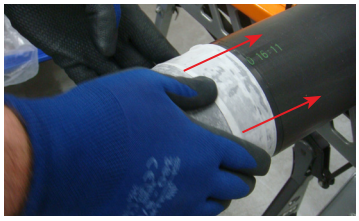
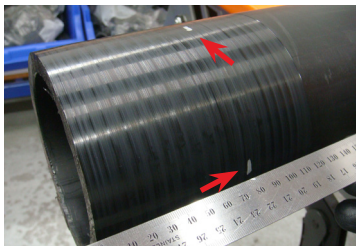
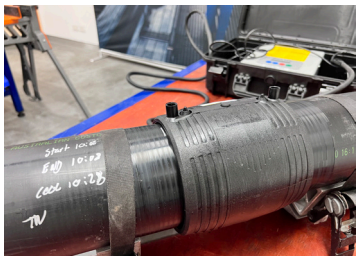
7. Clean peeled area only, using manufacturer approved > 90% Alcohol wipes 	7.1 Only wipe inside the peeled zone to prevent introducing contamination, outside the unpeeled area. **CRITICAL FACTOR**	7.2 Wipe away from the pipe end in one direction - not back and forth.	7.3 Alcohol solution must fully evaporate / flash off prior to joint assembly.
8. Mark pipe insertion depth 	8.1 Using a marking pen, measure half the length of the fitting.	8.2 Measure and mark the pipe end, at 4 points around the pipe circumference.	If necessary, pipe rerounding clamps can be installed at the pipe insertion depth mark.
9. Insert pipe into fitting and check annular gap, with alignment clamps fitted 	9.1 Note gaps? (Yes / No) If Yes, how big is the gap? _____mm	9.2 Check: annular gap should be evenly distributed around the socket mouth.	Straightening clamps can be used when pipe curvature (i.e. coiled pipe) prevents smooth insertion into the fitting, including prevention of pipe misalignment.
10. Electrofusion Welding	• Is manufacturer's welding time completed? (Yes / No) • Are there any Welding Machine Error Message? (Yes / No) If Yes, what are the error messages? _____ _____	**DO NOT** remove alignment clamps until cooling time elapses: (Yes / No)	Is manufacturer's cooling time completed? (Yes / No)
11. Post Weld Inspection 	11.1 Inspect the fitting to ensure molten polymer has not extruded from the socket mouth, or visible heating wires displaced between the joint annular gap.	11.2 Check that the melt fusion indicator pins have fully risen.	11.3 Check the pipe has not moved during welding by ensuring the insertion depth mark is in the same position as marked on the pipe surface during joint assembly.

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