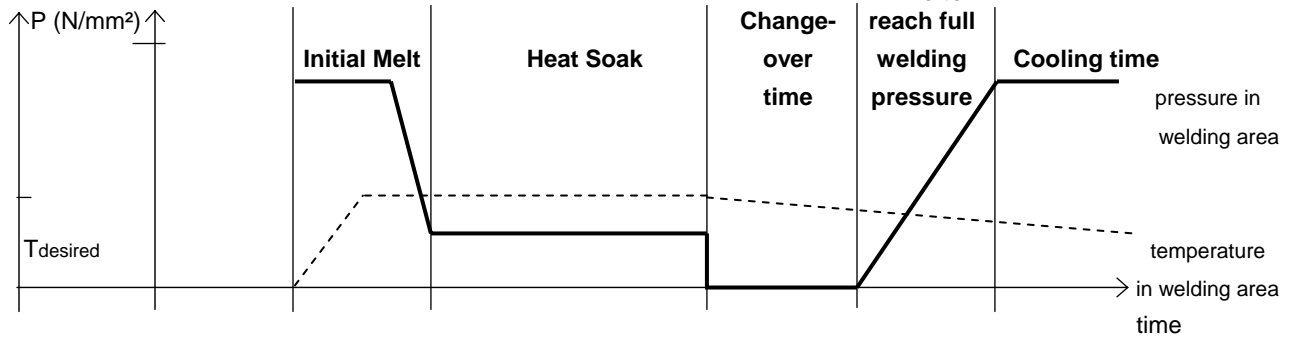


Section V - Welding Parameters for Field 12 W4900

Example Graph



Single Wall Butt Fusion

| PIPE SIZE (INCHES) | INITIAL MELT PRESSURE BAR (PSI) | MELT PRESSURE | HEATSOAK TIME (SEC) | CHANGE OVER TIME (SEC) | WELDING PRESSURE BAR (PSI) | COOLING TIME (MIN) |
|-----------------------|------------------------------------|---------------|------------------------|---------------------------|-------------------------------|-----------------------|
| Pro 150 | | | | | | |
| 3 | 3.5 (51) | | 60 | 8 | 3.5 (51) | 10 |
| 4 | 5.2 (76) | Almost | 80 | 9 | 5.2 (76) | 13 |
| 6 | 11.2 (164) | | 100 | 10 | 11.2 (164) | 16 |
| 8 | 17.3 (255) | Zero | 160 | 10 | 17.3 (255) | 23 |
| 10 | 27.1 (398) | | 200 | 10 | 27.1 (398) | 29 |
| 12 | 42.9 (630) | | 260 | 12 | 42.9 (630) | 37 |
| Pro 45 | | | | | | |
| 4 | 2.0 (29) | | 35 | 5 | 2.0 (29) | 5 |
| 6 | 4.1 (60) | Almost | 45 | 5 | 4.1 (60) | 5 |
| 8 | 6.2 (91) | | 60 | 8 | 6.2 (91) | 8 |
| 10 | 10.0 (146) | Zero | 80 | 8 | 10.0 (146) | 10 |
| 12 | 15.8 (232) | | 100 | 8 | 15.8 (232) | 12 |
| Air Pro | | | | | | |
| 4 (230 psi) | 5.3 (78) | Almost | 100 | 9 | 5.3 (78) | 13 |
| 6 (150 psi) | 16.6 (244) | Zero | 200 | 10 | 16.6 (244) | 15 |
| PVDF* | | | | | | |
| 3 (150 psi) | 1.7 (24) | | 30 | 4 | 1.7 (24) | 6 |
| 4 (150 psi) | 2.6 (38) | Almost | 40 | 4 | 2.6 (38) | 7 |
| 6 (150 psi) | 5.3 (78) | | 60 | 4 | 5.3 (78) | 10 |
| 8 (150 psi) | 8.1 (120) | Zero | 80 | 6 | 8.1 (120) | 12 |
| 10 (150 psi) | 13.0 (191) | | 100 | 8 | 13.0 (191) | 14 |
| 12 (150 psi) | 20.5 (301) | | 140 | 10 | 20.5 (301) | 20 |

*For 230 psi parameters, please consult the factory.

Welding Temperatures

| | | |
|------|-------------|-------------|
| HDPE | 420°F-446°F | 215°C-230°C |
| PP | 393°F-410°F | 200°C-210°C |
| PVDF | 436°F-446°F | 225°C-230°C |

Field 12 Widos 4900
Single Wall Butt Fusion

| PIPE SIZE (INCHES) | INITIAL MELT PRESSURE | | MELT PRESSURE | HEATSOAK TIME (SEC) | CHANGE OVER TIME (SEC) | WELDING PRESSURE | | COOLING TIME (MIN) |
|----------------------------------|-----------------------|-------|---------------|------------------------|---------------------------|------------------|-------|-----------------------|
| | BAR | (PSI) | | | | BAR | (PSI) | |
| HDPE SDR 11 (IPS PE 80) | | | | | | | | |
| 3 | 5 | (74) | | 81 | 5 | 5 | (74) | 16 |
| 4 | 9 | (135) | Almost | 104 | 6 | 9 | (135) | 16 |
| 6 | 19 | (280) | | 153 | 8 | 19 | (280) | 24 |
| 8 | 33 | (490) | Zero | 204 | 10 | 33 | (490) | 24 |
| 10 | 49 | (725) | | 248 | 10 | 49 | (725) | 32 |
| HDPE SDR 17 (IPS PE 80) | | | | | | | | |
| 3 | 3 | (45) | | 52 | 5 | 3 | (45) | 7 |
| 4 | 6 | (90) | Almost | 67 | 5 | 6 | (90) | 10 |
| 6 | 13 | (190) | | 99 | 6 | 13 | (190) | 16 |
| 8 | 22 | (325) | Zero | 132 | 8 | 22 | (325) | 17 |
| 10 | 33 | (490) | | 161 | 8 | 33 | (490) | 24 |
| HDPE SDR 26 (IPS PE 80) | | | | | | | | |
| 3 | 2 | (30) | | 34 | 3 | 2 | (30) | 6 |
| 4 | 4 | (60) | Almost | 44 | 4 | 4 | (60) | 6 |
| 6 | 8 | (120) | | 65 | 5 | 8 | (120) | 10 |
| 8 | 15 | (220) | Zero | 86 | 6 | 15 | (220) | 12 |
| 10 | 22 | (325) | | 105 | 6 | 22 | (325) | 14 |
| HDPE SDR 32.5 (IPS PE 80) | | | | | | | | |
| 3 | 2 | (30) | | 27 | 3 | 2 | (30) | 5 |
| 4 | 3 | (45) | Almost | 35 | 3 | 3 | (45) | 5 |
| 6 | 7 | (105) | | 52 | 5 | 7 | (105) | 6 |
| 8 | 12 | (175) | Zero | 69 | 5 | 12 | (175) | 10 |
| 10 | 18 | (265) | | 84 | 6 | 18 | (265) | 13 |

Welding Temperatures

| | | |
|------|-------------|-------------|
| HDPE | 420°F-446°F | 215°C-230°C |
| PP | 393°F-410°F | 200°C-210°C |
| PVDF | 436°F-446°F | 225°C-230°C |

Field 12 Widos 4900
Double Containment Butt Fusion

| PIPE SIZE (INCHES) | INITIAL MELT PRESSURE BAR (PSI) | MELT PRESSURE | HEATSOAK TIME (SEC) | CHANGE OVER TIME (SEC) | WELDING PRESSURE BAR (PSI) | COOLING TIME (MIN) |
|-------------------------------|------------------------------------|---------------|------------------------|---------------------------|-------------------------------|-----------------------|
| Pro 45 x Pro 45 | | | | | | |
| 4 x 8 | 8.1 (120) | Almost | 60 | 5 | 8.1 (120) | 8 |
| 6 x 10 | 14.0 (206) | | 80 | 5 | 14.0 (206) | 10 |
| 8 x 12 | 22.0 (323) | Zero | 100 | 8 | 22.0 (323) | 12 |
| Pro 150 x Pro 45 | | | | | | |
| 3 x 6 | 7.5 (111) | | 80 | 5 | 7.5 (111) | 10 |
| 4 x 8 | 11.4 (167) | Almost | 100 | 8 | 11.4 (167) | 13 |
| 6 x 10 | 21.1 (310) | Zero | 130 | 8 | 21.1 (310) | 16 |
| 8 x 12 | 33.1 (486) | | 180 | 8 | 33.1 (486) | 23 |
| Pro 150 x Pro 150 | | | | | | |
| 3 x 6 | 14.6 (215) | | 130 | 8 | 14.6 (215) | 16 |
| 4 x 8 | 22.5 (331) | Almost | 180 | 9 | 22.5 (331) | 23 |
| 6 x 10 | 38.2 (562) | Zero | 230 | 10 | 38.2 (562) | 29 |
| 8 x 12 | 60.2 (885) | | 290 | 10 | 60.2 (885) | 37 |
| PVDF x PVDF | | | | | | |
| 3 x 6 | 6.9 (102) | | 70 | 4 | 6.9 (102) | 10 |
| 4 x 8 | 10.7 (157) | | 90 | 4 | 10.7 (157) | 12 |
| 6 x 10 | 18.2 (268) | Zero | 120 | 4 | 18.2 (268) | 14 |
| 8 x 12 | 28.6 (421) | | 150 | 6 | 28.6 (421) | 20 |
| Poly-Flo Polypropylene | | | | | | |
| 4 x 6 | 7 (102) | Almost Zero | 80 | 8 | 7 (102) | 10 |
| Poly-Flo HDPE | | | | | | |
| 4 x 6 | 10.5 (153) | Almost Zero | 50 | 8 | 10.5 (153) | 15 |

Welding Temperatures

| | | |
|------|-------------|-------------|
| PP | 393°F-410°F | 200°C-210°C |
| HDPE | 420°F-446°F | 215°C-230°C |
| PVDF | 436°F-446°F | 225°C-230°C |

Field 12 Widos 4900
Double Containment Butt Fusion

| PIPE SIZE (INCHES) | INITIAL MELT PRESSURE BAR (PSI) | MELT PRESSURE | HEATSOAK TIME (SEC) | CHANGE OVER TIME (SEC) | WELDING PRESSURE BAR (PSI) | COOLING TIME (MIN) |
|---|------------------------------------|---------------|------------------------|---------------------------|-------------------------------|-----------------------|
| HDPE SDR 11 x SDR 11 (IPS PE 80) | | | | | | |
| 3 x 6 | 24 (355) | Almost | 153 | 5 | 24 (355) | 24 |
| 4 x 8 | 42 (621) | | 204 | 6 | 42 (621) | 24 |
| 6 x 10 | 68 (1005) | Zero | 248 | 8 | 68 (1005) | 32 |
| HDPE SDR 11 x SDR 17 (IPS PE 80) | | | | | | |
| 3 x 6 | 18 (256) | Almost | 99 | 5 | 18 (256) | 16 |
| 4 x 8 | 31 (460) | | 132 | 5 | 31 (460) | 17 |
| 6 x 10 | 52 (770) | Zero | 161 | 6 | 52 (770) | 24 |
| HDPE SDR 17 x SDR 17 (IPS PE 80) | | | | | | |
| 3 x 6 | 16 (235) | Almost | 99 | 5 | 16 (235) | 16 |
| 4 x 8 | 28 (415) | | 132 | 5 | 28 (415) | 17 |
| 6 x 10 | 45 (665) | Zero | 161 | 6 | 45 (665) | 24 |
| HDPE SDR 17 x SDR 26 (IPS PE 80) | | | | | | |
| 3 x 6 | 12 (175) | Almost | 65 | 5 | 12 (175) | 10 |
| 4 x 8 | 21 (310) | | 86 | 5 | 21 (310) | 12 |
| 6 x 10 | 35 (520) | Zero | 105 | 6 | 35 (520) | 14 |

Welding Temperatures

| | | |
|------|-------------|-------------|
| HDPE | 420°F-446°F | 215°C-230°C |
| PP | 393°F-410°F | 200°C-210°C |
| PVDF | 436°F-446°F | 225°C-230°C |