



# Standard Welding Procedure Specification (SWPS)

SWPS Package for automated steel applications

qualified as per ISO 15612:2018

parent metal group 1.1, 1.2

*Art. No.: 4,101,504*

| Page | Weld seam profile/Joint Type: | Weld Details: | Parent Metal thickness - t [mm] | Parent Metal-Outer-Ø [mm] | Welding Position: | Particle transfer | Filler material-Ø [mm] |
|------|-------------------------------|---------------|---------------------------------|---------------------------|-------------------|-------------------|------------------------|
| 7    | Fillet weld; FW               | sl            | 1,5 - 4,0                       | ≥500                      | PA, PB            | D                 | 1,0                    |
| 8    | Fillet weld; FW               | sl            | 1,5 - 3,0                       | ≥500                      | PC                | D                 | 1,0                    |
| 9    | Fillet weld; FW               | sl            | 1,5 - 4,0                       | ≥500                      | PG                | D                 | 0,8                    |
| 10   | Fillet weld; FW               | sl            | 2,0 - 4,0                       | ≥500                      | PC                | D                 | 1,0                    |
| 11   | Fillet weld; FW               | sl            | 1,5 - 4,0                       | ≥500                      | PA, PB, PC        | D                 | 1,0                    |
| 12   | Fillet weld; FW               | sl            | 1,5 - 4,0                       | ≥500                      | PG                | D                 | 1,0                    |
| 13   | Fillet weld; FW               | sl            | 3,0 - 6,0                       | ≥500                      | PA, PB, PC        | P                 | 1,0                    |
| 14   | Fillet weld; FW               | sl            | 3,0 - 6,0                       | ≥500                      | PG                | P                 | 1,0                    |
| 15   | Fillet weld; FW               | sl            | 6,0 - 12,0                      | ≥500                      | PA, PB, PC        | P                 | 1,0                    |
| 16   | Fillet weld; FW               | sl            | 6,0 - 12,0                      | ≥500                      | PG                | P                 | 1,0                    |
| 17   | Fillet weld; FW               | ml            | 5,0 - 25,0                      | ≥500                      | PA                | P                 | 1,0                    |
| 18   | Fillet weld; FW               | ml            | 20,0 - 50,0                     | ≥500                      | PA                | P                 | 1,0                    |
| 19   | Fillet weld; FW               | ml            | 10,0 - 50,0                     | ≥500                      | PA, PB, PC        | P                 | 1,0                    |
| 20   | Tube/Plate-Fillet weld        | sl            | 2,0 - 5,7                       | ≥24,15                    | PA, PB, PC        | D                 | 1,0                    |
| 21   | Tube/Plate-Fillet weld        | sl            | 2,0 - 5,7                       | ≥24,15                    | PA, PB, PC        | P                 | 1,0                    |
| 22   | Tube/Plate-Fillet weld        | sl            | 3,0 - 8,0                       | ≥24,15                    | PA, PB, PC        | P                 | 1,0                    |
| 23   | Tube/Plate-Fillet weld        | ml            | 5,0 - 25,0                      | ≥44,45                    | PA, PB, PC        | P                 | 1,0                    |
| 24   | Tube/Plate-Fillet weld        | ml            | 20,0 - 50,0                     | ≥44,45                    | PA, PB, PC        | P                 | 1,0                    |

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|------|-------------------------------|---------------|---------------------------------|---------------------------|-------------------|-------------------|------------------------|
| 25   | Corner joint;<br>FW-CJ        | sl            | 1,5 - 3,0                       | ≥500                      | PA, PB, PC        | D                 | 1,0                    |
| 26   | Corner joint;<br>FW-CJ        | sl            | 1,5 - 3,0                       | ≥500                      | PG                | D                 | 1,0                    |
| 27   | Corner joint;<br>FW-CJ        | sl            | 1,5 - 3,0                       | ≥500                      | PA, PB, PC        | D                 | 1,0                    |
| 28   | Corner joint;<br>FW-CJ        | sl            | 1,5 - 3,0                       | ≥500                      | PG                | D                 | 1,0                    |
| 29   | Corner joint;<br>FW-CJ        | sl            | 3,0 - 8,0                       | ≥500                      | PA, PB, PC        | P                 | 1,0                    |
| 30   | Angle joint 60°;<br>FW-AJ60   | sl            | 1,5 - 3,0                       | ≥500                      | PA, PB            | D                 | 1,0                    |
| 31   | Angle joint 60°;<br>FW-AJ60   | sl            | 1,5 - 3,0                       | ≥500                      | PC                | D                 | 1,0                    |
| 32   | Angle joint 60°;<br>FW-AJ60   | sl            | 3,0 - 12,0                      | ≥500                      | PA, PB, PC        | P                 | 1,0                    |
| 33   | Angle joint 60°;<br>FW-AJ60   | sl            | 3,0 - 12,0                      | ≥500                      | PG                | P                 | 1,0                    |
| 34   | Angle joint 135°;<br>FW-AJ35  | sl            | 1,5 - 4,0                       | ≥500                      | PA, PB            | D                 | 1,0                    |
| 35   | Angle joint 135°;<br>FW-AJ35  | sl            | 3,0 - 12,0                      | ≥500                      | PA, PB            | P                 | 1,0                    |
| 36   | Angle joint 135°;<br>FW-AJ35  | sl            | 3,0 - 12,0                      | ≥500                      | PG                | P                 | 1,0                    |
| 37   | lap joint; FW-LJ              | sl            | 1,5 - 5,7                       | ≥500                      | PA, PB, PC        | D                 | 1,0                    |
| 38   | lap joint; FW-LJ              | sl            | 1,5 - 5,7                       | ≥500                      | PG                | D                 | 1,0                    |

| Page | Weld seam profile/Joint Type:    | Weld Details: | Parent Metal thickness - t [mm] | Parent Metal-Outer-Ø [mm] | Welding Position: | Particle transfer | Filler material-Ø [mm] |
|------|----------------------------------|---------------|---------------------------------|---------------------------|-------------------|-------------------|------------------------|
| 39   | lap joint; FW-LJ                 | sl            | 1,5 - 5,7                       | ≥500                      | PA, PB, PC        | D                 | 1,0                    |
| 40   | lap joint; FW-LJ                 | sl            | 1,5 - 5,7                       | ≥500                      | PG                | D                 | 1,0                    |
| 41   | lap joint; FW-LJ                 | sl            | 3,0 - 6,0                       | ≥500                      | PA, PB, PC        | P                 | 1,0                    |
| 42   | lap joint; FW-LJ                 | sl            | 3,0 - 6,0                       | ≥500                      | PG                | P                 | 1,0                    |
| 43   | lap joint; FW-LJ                 | sl            | 6,0 - 12,0                      | ≥500                      | PA, PB, PC        | P                 | 1,0                    |
| 44   | lap joint; FW-LJ                 | sl            | 6,0 - 12,0                      | ≥500                      | PG                | P                 | 1,0                    |
| 45   | Butt joint, square butt weld; BW | sl; ss; nb    | 1,0 - 3,0                       | ≥500                      | PG                | D                 | 1,0                    |
| 46   | Butt joint, square butt weld; BW | sl; ss; nb    | 1,0 - 2,0                       | ≥500                      | PA, PC            | D                 | 1,0                    |
| 47   | Butt joint, square butt weld; BW | sl; ss; nb    | 1,0 - 2,0                       | ≥500                      | PG                | D                 | 1,0                    |
| 48   | Butt joint, square butt weld; BW | sl; ss; nb    | 2,0 - 4,0                       | ≥500                      | PA, PC            | D                 | 1,0                    |
| 49   | Butt joint, square butt weld; BW | sl; ss; nb    | 2,0 - 3,0                       | ≥500                      | PG                | D                 | 1,0                    |
| 50   | Fillet weld; FW                  | sl            | 1,5 - 4,0                       | ≥500                      | PA, PB            | D                 | 1,2                    |
| 51   | Fillet weld; FW                  | sl            | 1,5 - 4,0                       | ≥500                      | PC                | D                 | 1,2                    |
| 52   | Fillet weld; FW                  | sl            | 1,5 - 4,0                       | ≥500                      | PA, PB, PC        | D                 | 1,2                    |
| 53   | Fillet weld; FW                  | sl            | 1,5 - 4,0                       | ≥500                      | PG                | D                 | 1,2                    |
| 54   | Fillet weld; FW                  | sl            | 3,0 - 6,0                       | ≥500                      | PA, PB            | P                 | 1,2                    |
| 55   | Fillet weld; FW                  | sl            | 3,0 - 6,0                       | ≥500                      | PG                | P                 | 1,2                    |

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|------|-------------------------------|---------------|---------------------------------|---------------------------|-------------------|-------------------|------------------------|
| 56   | Fillet weld; FW               | sl            | 6,0 - 12,0                      | ≥500                      | PA, PB, PC        | P                 | 1,2                    |
| 57   | Fillet weld; FW               | sl            | 5,0 - 12,0                      | ≥500                      | PG                | P                 | 1,2                    |
| 58   | Fillet weld; FW               | ml            | 10,0 - 50,0                     | ≥500                      | PA, PB, PC        | P                 | 1,2                    |
| 59   | Tube/Plate-Fillet weld        | sl            | 2,0 - 5,7                       | ≥24,15                    | PA, PB, PC        | D                 | 1,2                    |
| 60   | Tube/Plate-Fillet weld        | sl            | 2,0 - 5,7                       | ≥24,15                    | PA, PB, PC        | P                 | 1,2                    |
| 61   | Tube/Plate-Fillet weld        | sl            | 3,0 - 8,0                       | ≥24,15                    | PA, PB, PC        | P                 | 1,2                    |
| 62   | Tube/Plate-Fillet weld        | ml            | 5,0 - 25,0                      | ≥44,45                    | PA, PB, PC        | P                 | 1,0                    |
| 63   | Tube/Plate-Fillet weld        | ml            | 10,0 - 50,0                     | ≥44,45                    | PA, PB, PC        | P                 | 1,2                    |
| 64   | Ecknaht; FW-CJ                | sl            | 1,5 - 3,0                       | ≥500                      | PA, PB, PC        | D                 | 1,2                    |
| 65   | Ecknaht; FW-CJ                | sl            | 1,5 - 3,0                       | ≥500                      | PG                | D                 | 1,2                    |
| 66   | Ecknaht; FW-CJ                | sl            | 1,5 - 3,0                       | ≥500                      | PA, PB, PC        | D                 | 1,2                    |
| 67   | Ecknaht; FW-CJ                | sl            | 3,0 - 8,0                       | ≥500                      | PA, PB, PC        | P                 | 1,2                    |
| 68   | Angle joint 60°;<br>FW-AJ60   | sl            | 1,5 - 3,0                       | ≥500                      | PA, PB            | D                 | 1,2                    |
| 69   | Angle joint 60°;<br>FW-AJ60   | sl            | 1,5 - 3,0                       | ≥500                      | PC                | D                 | 1,2                    |
| 70   | Angle joint 60°;<br>FW-AJ60   | sl            | 3,0 - 12,0                      | ≥500                      | PA, PB            | P                 | 1,2                    |
| 71   | Angle joint 60°;<br>FW-AJ60   | sl            | 3,0 - 12,0                      | ≥500                      | PC                | P                 | 1,2                    |

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|------|----------------------------------|---------------|---------------------------------|---------------------------|-------------------|-------------------|------------------------|
| 72   | Angle joint 60°; FW-AJ60         | sl            | 3,0 - 12,0                      | ≥500                      | PG                | P                 | 1,2                    |
| 73   | Angle joint 135°; FW-AJ35        | sl            | 1,5 - 4,0                       | ≥500                      | PA, PB, PC        | D                 | 1,2                    |
| 74   | Angle joint 135°; FW-AJ35        | sl            | 3,0 - 12,0                      | ≥500                      | PA, PB            | P                 | 1,2                    |
| 75   | Angle joint 135°; FW-AJ35        | sl            | 3,0 - 12,0                      | ≥500                      | PC                | P                 | 1,2                    |
| 76   | lap joint; FW-LJ                 | sl            | 1,5 - 5,7                       | ≥500                      | PA, PB, PC        | D                 | 1,2                    |
| 77   | lap joint; FW-LJ                 | sl            | 1,5 - 5,7                       | ≥500                      | PA, PB            | D                 | 1,2                    |
| 78   | lap joint; FW-LJ                 | sl            | 1,5 - 5,7                       | ≥500                      | PC                | D                 | 1,2                    |
| 79   | lap joint; FW-LJ                 | sl            | 1,5 - 5,7                       | ≥500                      | PG                | D                 | 1,2                    |
| 80   | lap joint; FW-LJ                 | sl            | 3,0 - 6,0                       | ≥500                      | PA, PB, PC        | P                 | 1,2                    |
| 81   | lap joint; FW-LJ                 | sl            | 3,0 - 6,0                       | ≥500                      | PG                | P                 | 1,2                    |
| 82   | lap joint; FW-LJ                 | sl            | 6,0 - 12,0                      | ≥500                      | PA, PB            | P                 | 1,2                    |
| 83   | lap joint; FW-LJ                 | sl            | 6,0 - 12,0                      | ≥500                      | PC                | P                 | 1,2                    |
| 84   | lap joint; FW-LJ                 | sl            | 6,0 - 12,0                      | ≥500                      | PG                | P                 | 1,2                    |
| 85   | Fillet weld; FW                  | sl            | 3,0 - 6,0                       | ≥500                      | PC                | P                 | 1,2                    |
| 86   | Butt joint, square butt weld; BW | sl; ss; nb    | 1,0 - 2,0                       | ≥500                      | PG                | D                 | 1,2                    |
| 87   | Butt joint, square butt weld; BW | sl; ss; nb    | 1,0 - 2,0                       | ≥500                      | PA, PC            | D                 | 1,2                    |

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|------|----------------------------------|---------------|---------------------------------|---------------------------|-------------------|-------------------|------------------------|
| 88   | Butt joint, square butt weld; BW | sl; ss; nb    | 1,0 - 2,0                       | ≥500                      | PG                | D                 | 1,2                    |
| 89   | Butt joint, square butt weld; BW | sl; ss; nb    | 2,0 - 4,0                       | ≥500                      | PA, PC            | D                 | 1,2                    |
| 90   | Butt joint, square butt weld; BW | sl; ss; nb    | 2,0 - 3,0                       | ≥500                      | PG                | D                 | 1,2                    |
| 91   | Fillet weld; FW                  | ml            | 5,0 - 25,0                      | ≥500                      | PA                | P                 | 1,2                    |
| 92   | Fillet weld; FW                  | sl            | 5,0 - 12,0                      | ≥500                      | PA, PB            | P                 | 1,2                    |
| 93   | Angle joint 135°; FW-AJ35        | sl            | 1,5 - 4,0                       | ≥500                      | PC                | D                 | 1,0                    |
| 94   | Angle joint 135°; FW-AJ35        | sl            | 3,0 - 12,0                      | ≥500                      | PC                | P                 | 1,0                    |