

## Purus 42

Purus 42, AWS ER70S-6 wire, is specially formulated to reduce post-welding cleaning. The superior wire composition reduces silica islands and spatter. Purus has excellent arc start ignition, arc stability and significantly less spatter. In robotic and high volume operations, Purus can significantly reduce post welding cleaning time by reducing silica islands and unplanned downtime in multipass welding. It can also increase uptime with longer tip life. With exceptional control of wire composition and the manufacturing process, Purus maintains a stable process between batches.

### Specifications

|                        |                                                    |
|------------------------|----------------------------------------------------|
| <b>Classifications</b> | EN ISO 14341-A : G 3Si1<br>SFA/AWS A5:18 : ER70S-6 |
| <b>Approvals</b>       | CWB : CSA W48-14<br>VdTÜV : 19190<br>CE EN : 13479 |

Approvals are based on factory location. Please contact ESAB for more information.

|                      |                                        |
|----------------------|----------------------------------------|
| <b>Alloy Type</b>    | Carbon-manganese steel (Mn/Si-alloyed) |
| <b>Shielding Gas</b> | M20, M21, C1 (EN ISO 14175)            |

### Typical Tensile Properties

| Condition                          | Yield Strength     | Tensile Strength   | Elongation |
|------------------------------------|--------------------|--------------------|------------|
| <b>100% CO<sub>2</sub></b>         |                    |                    |            |
| As Welded                          | 430 MPa ( 62 ksi ) | 530 MPa ( 77 ksi ) | 24 %       |
| <b>80% Ar - 20% CO<sub>2</sub></b> |                    |                    |            |
| As Welded                          | 470 MPa ( 68 ksi ) | 560 MPa ( 81 ksi ) | 25 %       |

### Typical Charpy V-Notch Properties

| Condition                          | Testing Temperature | Impact Value       |
|------------------------------------|---------------------|--------------------|
| <b>100% CO<sub>2</sub></b>         |                     |                    |
| As Welded                          | 20 °C ( 68 °F )     | 110 J ( 81 ft-lb ) |
| As Welded                          | -30 °C ( -22 °F )   | 75 J ( 55 ft-lb )  |
| As Welded                          | -40 °C ( -40 °F )   | 65 J ( 48 ft-lb )  |
| <b>80% Ar - 20% CO<sub>2</sub></b> |                     |                    |
| As Welded                          | -40 °C ( -40 °F )   | 80 J ( 59 ft-lb )  |
| As Welded                          | -30 °C ( -22 °F )   | 90 J ( 66 ft-lb )  |
| As Welded                          | 20 °C ( 68 °F )     | 130 J ( 96 ft-lb ) |

### Typical Wire Composition %

| C     | Mn   | Si   | S     | P     |
|-------|------|------|-------|-------|
| 0.085 | 1.45 | 0.85 | 0.020 | 0.020 |

### Deposition Data

| Diameter                | Current   | Voltage | Wire Feed Speed                     | Deposition Rate                    |
|-------------------------|-----------|---------|-------------------------------------|------------------------------------|
| 1.6 mm<br>( 1/16 in. )  | 225-550 A | 28-38 V | 2.3-10 m/min<br>( 90-395 in./min )  | 2.1-9.4 kg/h<br>( 4.6-20.7 lbs/h ) |
| 1.4 mm<br>( 0.052 in. ) | 150-420 A | 22-36 V | 2.3-12 m/min<br>( 90-470 in./min )  | 1.6-8.7 kg/h<br>( 3.5-19.2 lbs/h ) |
| 1.2 mm<br>( 0.045 in. ) | 120-380 A | 18-35 V | 2.5-15 m/min<br>( 100-590 in./min ) | 1.3-8.0 kg/h<br>( 2.9-17.6 lbs/h ) |
| 1.0 mm<br>( 0.040 in. ) | 80-300 A  | 18-32 V | 2.7-15 m/min<br>( 105-590 in./min ) | 1.0-5.5 kg/h<br>( 2.2-12.1 lbs/h ) |
| 0.9 mm<br>( 0.035 in. ) | 70-250 A  | 18-26 V | 3.0-12 m/min<br>( 120-475 in./min ) | 0.9-3.5 kg/h<br>( 2.0-7.7 lbs/h )  |

MILD STEEL

MIG WIRES / TIG RODS (GMAW/GTAW)



## Purus 42

### Deposition Data

| Diameter                | Current  | Voltage | Wire Feed Speed                     | Deposition Rate                   |
|-------------------------|----------|---------|-------------------------------------|-----------------------------------|
| 0.8 mm<br>( 0.030 in. ) | 60-200 A | 18-24 V | 3.2-10 m/min<br>( 125-395 in./min ) | 0.8-2.3 kg/h<br>( 1.8-5.1 lbs/h ) |