

## Basic electrode

### Classification

AWS A5.1-91 : E7018 H8  
 EN 499-94 : E 46 3 B 32 H5

### General description

**Basic low hydrogen electrode**  
**Very good weldability, in all positions**  
**Excellent for pipe welding**  
**Stable arc, also at low amperage**  
**Good mechanical and impact properties down to -30°C**

### Welding positions



ISO/ASME PA/1G PB/2F PC/2G PF/3G up PE/4G PF/5G up

### Current type

AC / DC electr. + / -

### Approvals

| ABS     | BV      | DB      | DNV     | GL      | LR      | TÜV     |
|---------|---------|---------|---------|---------|---------|---------|
| Pending | Pending | Pending | Pending | Pending | Pending | Pending |

### Chemical composition (w%), typical, all weld metal

| C    | Mn  | Si  | P     | S    | H <sub>DM</sub> |
|------|-----|-----|-------|------|-----------------|
| 0.06 | 1.3 | 0.5 | 0.015 | 0.01 | 5 ml/100 g      |

### Mechanical properties, all weld metal

|                       | Condition | Yield Strength<br>(N/mm <sup>2</sup> ) | Tensile Strength<br>(N/mm <sup>2</sup> ) | Elongation<br>(%) | Impact ISO-V (J) |        |        |
|-----------------------|-----------|--|--|-------------------|------------------|--------|--------|
|                       |           |  |  |                   | -20 °C           | -29 °C | -30 °C |
| Required: AWS A5.1-91 |           | min. 399                               | min. 482                                 | min. 22           | min. 27          |        |        |
| EN 499-94             |           | min. 460                               | 530 - 680                                | min. 20           | min. 47          |        |        |
| Typical values        | AW        | 510                                    | 600                                      | 27                | 90               | 70     |        |

### Packaging, available sizes and identification

|           | Diameter (mm)           | 2.5 | 3.2 | 3.2 | 4.0 | 4.0 | 5.0 |
|-----------|-------------------------|-----|-----|-----|-----|-----|-----|
|           | Length (mm)             | 350 | 350 | 450 | 350 | 450 | 450 |
| Unit: box | Pieces / unit (nominal) | xx  | xx  | xx  | xx  | xx  | xx  |
|           | Net weight / unit (kg)  | xx  | xx  | xx  | xx  | xx  | xx  |

Identification Imprint: 7018/Baso 51P Tip colour: none

Baso® 51P: rev. EN 15

## Materials to be welded

| Steel                          | Code                      | Type                                    |
|--------------------------------|---------------------------|---|
| General structural steel       | EN 10025                  | S185, S235, S275, S355                  |
| Ship plates                    | ASTM A131                 | Grade A, B, D, AH32 to EH40             |
| Cast steel                     | EN 10213-2                | GP240R                                  |
| Pipe material                  | EN 10208-1                | L210, L240, L290, L360                  |
|                                | EN 10208-2                | L240, L290, L360, L415                  |
|                                | API 5LX                   | X42, X46, X52, X60                      |
|                                | EN 10216-1/<br>EN 10217-1 | P235T1, P235T2, P275T1<br>P275T2, P355N |
|                                | EN 10028-2                | P235GH, P265GH, P295GH, P355GH          |
| Boiler & pressure vessel steel | EN 10028-2                | P235GH, P265GH, P295GH, P355GH          |
| Fine grained steel             | EN 10113-2                | S275, S275, S355, S420                  |
|                                | EN 10113-3                | S275, S355, S420, S460                  |

## Calculation Data

| Sizes<br>Diam. x length<br>(mm) | Current<br>range<br>(A) | Current<br>type<br>(s)* | Arc time<br>- per electrode at max. current -<br>E(kJ) | Energy<br>H(kg/h) | Dep.rate<br>at max. current -<br>(kg) | Weight/<br>1000 pcs.<br>B | Electrodes/<br>kg weldmetal<br>1/N | kg Electrodes/<br>kg weldmetal |
|---------------------------------|-------------------------|-------------------------|--|-------------------|---------------------------------------|---------------------------|------------------------------------|--------------------------------|
| 2.5 x 350                       | 50 - 85                 | AC                      | 48   | 104               | 0.9                                   | 19.4                      | 82                                 | 1.6                            |
| 3.2 x 450                       | 85 - 135                | AC                      | 75   | 273               | 1.1                                   | 41.0                      | 42                                 | 1.72                           |
| 4.0 x 450                       | 135 - 190               | AC                      | 95   | 487               | 1.6                                   | 64.6                      | 24                                 | 1.55                           |
| 5.0 x 450                       |                         |                         |  |                   |                                       |                           |                                    |                                |

\* stub end 35 mm

## Welding parameters, optimum fill passes

| Welding position<br>Diameter (mm) | PA/1G<br>Current (A) | PB/2F | PC/2G | PF/3G up | PE/4G | 5G  |
|-----------------------------------|----------------------|-------|-------|----------|-------|-----|
| 2.5                               | 95                   | 95    | 90    | 90       | 85    | 85  |
| 3.2                               | 140                  | 130   | 130   | 120      | 120   | 110 |
| 4.0                               | 180                  | 180   | 180   | 160      | 150   | 160 |
| 5.0                               | 230                  | 230   | 230   | 180      |       |     |

## Application Advice

Electrodes after removal from cardboard boxes redry 2-4h 350 ± 25°C