

## OK Flux 10.71

OK Flux 10.71 is a neutral, bonded flux intended primarily for multipass butt and fillet welding of carbon and low alloy steels. It combines outstanding welding performance with excellent weld properties. OK Flux 10.71 is suitable for use with AC and DC, single and multiwire systems at currents up to 1000 amps. It should not be used in applications where there is heavy rust or mill scale on the base plate. Among the many areas where OK 10.71 is used are general structural welding, bridge fabrication, heavy equipment fabrication, and line pipe welding.

### Specifications

|                        |                                                                                                                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Classifications</b> | AWS A5.17 : F7P5- EH12K<br>AWS A5.17 : F7P4-EM14K<br>AWS A5.17 : F7A5-EH12K<br>AWS A5.17 : F7A4-EM13K<br>AWS A5.17 : F7A4-EM12K<br>AWS A5.17 : F7A2-EM14K<br>AWS A5.23 : F8A4-ENi1K-Ni1<br>AWS A5.23 : F8A2-EA2-A4<br>AWS A5.23 : F7P0-EA2-A4 |
| <b>Approvals</b>       | CWB : AWS A5.23 F9A6-ENi4-Ni4-H8<br>CWB : AWS A5.23 F8A4-ENi1K-Ni1-H8<br>CWB : CSA W48 F49A4-EM12K-H8<br>DB : 51.039.05<br>NAKS/HAKC : RD 03-613-03<br>CE EN : 13479                                                                          |

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

|                            |                                                    |
|----------------------------|----------------------------------------------------|
| <b>Diffusible Hydrogen</b> | max 5 ml H/100g weld metal (Redried flux)          |
| <b>Slag Type</b>           | Aluminate-basic                                    |
| <b>Alloy Transfer</b>      | Slightly Silicon and moderately Manganese alloying |
| <b>Density</b>             | nom: 1.2 kg/dm <sup>3</sup>                        |
| <b>Basicity Index</b>      | nom: 1.5                                           |

### Flux Consumption

| Volts | kg Flux / kg Wire DC+ | kg Flux / kg Wire AC |
|-------|-----------------------|----------------------|
| 34 V  | 1.3 kg                | 1.2 kg               |
| 30 V  | 1.0 kg                | 0.9 kg               |
| 26 V  | 0.7 kg                | 0.6 kg               |
| 38 V  | 1.6 kg                | 1.4 kg               |

Conditions : Dimension Ø 4.0 mm , Amps 580 A , Travel speed 55 cm/min

### Classifications

| Wire         | AWS/EN           | AWS - As Welded | AWS - PWHT |
|--------------|------------------|-----------------|------------|
| Spoolarc 29S | AWS A5.17: EM13K | F7A4-EM13K      | -          |
| Spoolarc 53  | AWS A5.17: EH12K | F7A5-EH12K      | F7P5-EH12K |
| Spoolarc 71  | AWS A5.17: EM14K | F7A2-EM14K      | F7P4-EM14K |
| Spoolarc 75  | AWS A5.23: ENi1K | F8A-ENi1K-Ni1   | -          |
| Spoolarc 81  | AWS A5.17: EM12K | F7A4-EM12K      | -          |

### Approvals

| Combined with Wire | DNV | IBR | IRS | LR | M N Dastur | CE | CWB | VdTÜV | ABS | BV | DB | GL | RINA | PRS | RS | ClassNK |
|--------------------|-----|-----|-----|----|------------|----|-----|-------|-----|----|----|----|------|-----|----|---------|
| OK Autrod 12.08L   | -   | -   | •   | -  | -          | -  | -   | -     | •   | -  | -  | -  | -    | -   | -  | -       |
| OK Autrod 12.10    | •   | -   | -   | •  | -          | •  | -   | •     | •   | •  | •  | •  | -    | •   | •  | -       |
| OK Autrod 12.20    | •   | -   | -   | •  | -          | •  | -   | •     | •   | •  | •  | •  | •    | •   | •  | -       |
| OK Autrod 12.22    | •   | -   | -   | •  | -          | •  | -   | •     | •   | •  | •  | •  | -    | -   | •  | •       |
| OK Autrod 12.22L   | -   | -   | -   | •  | -          | -  | -   | -     | -   | -  | -  | -  | -    | -   | -  | -       |

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|--------------------|-----|-----|-----|----|------------|----|-----|-------|-----|----|----|----|------|-----|----|---------|
| OK Autrod 12.24    | •   | -   | -   | •  | -          | •  | -   | •     | •   | •  | •  | •  | •    | •   | •  | •       |
| OK Autrod 12.30    | -   | -   | -   | -  | -          | •  | -   | •     | -   | -  | •  | -  | -    | -   | -  | -       |
| OK Autrod 12.32    | -   | -   | -   | -  | -          | •  | -   | •     | -   | -  | •  | -  | -    | -   | -  | -       |
| OK Autrod 12.40L   | •   | •   | •   | •  | •          | -  | -   | -     | -   | -  | -  | -  | -    | -   | -  | -       |
| OK Autrod 13.27    | -   | -   | -   | -  | -          | -  | -   | •     | -   | -  | -  | -  | -    | -   | -  | -       |
| OK Autrod 13.36    | -   | -   | -   | -  | -          | •  | -   | -     | -   | -  | -  | -  | -    | -   | -  | -       |
| Spoolarc 75        | -   | -   | -   | -  | -          | -  | •   | -     | -   | -  | -  | -  | -    | -   | -  | -       |
| Spoolarc 81        | -   | -   | -   | -  | -          | -  | •   | -     | -   | -  | -  | -  | -    | -   | -  | -       |

### Typical Weld Metal Analysis %

| C                   | Mn   | Si   | S     | P     | Ni   |
|---------------------|------|------|-------|-------|------|
| <b>Spoolarc 29S</b> |      |      |       |       |      |
| 0.06                | 1.80 | 0.80 | 0.007 | 0.014 | -    |
| <b>Spoolarc 53</b>  |      |      |       |       |      |
| 0.07                | 1.80 | 0.50 | 0.010 | 0.022 | -    |
| <b>Spoolarc 71</b>  |      |      |       |       |      |
| 0.06                | 1.70 | 0.60 | 0.009 | 0.018 | -    |
| <b>Spoolarc 75</b>  |      |      |       |       |      |
| 0.07                | 1.70 | 0.70 | 0.012 | 0.016 | 0.90 |
| <b>Spoolarc 81</b>  |      |      |       |       |      |
| 0.07                | 1.50 | 0.50 | 0.011 | 0.020 | -    |

### Typical Mechanical Properties

| Combined with Wire | Condition                                | Yield Strength     | Tensile Strength   | Elongation | Charpy V-Notch                          |
|--------------------|------------------------------------------|--------------------|--------------------|------------|-----------------------------------------|
| Spoolarc 29S       | As Welded                                | 505 MPa ( 73 ksi ) | 600 MPa ( 87 ksi ) | 30 %       | 41 J @ -40 °C<br>( 30 ft-lb @ -40 °F )  |
| Spoolarc 53        | As Welded                                | 530 MPa ( 77 ksi ) | 625 MPa ( 91 ksi ) | 28 %       | 61 J @ -46 °C<br>( 45 ft-lb @ -50 °F )  |
| Spoolarc 53        | Stress Relieved 621C (1150F) (1 hour(s)) | 448 MPa ( 65 ksi ) | 545 MPa ( 79 ksi ) | 32 %       | 108 J @ -46 °C<br>( 80 ft-lb @ -50 °F ) |
| Spoolarc 71        | Stress Relieved 621C (1150F) (1 hour(s)) | 510 MPa ( 74 ksi ) | 635 MPa ( 92 ksi ) | 30 %       | 51 J @ -40 °C<br>( 38 ft-lb @ -40 °F )  |
| Spoolarc 71        | As Welded                                | 525 MPa ( 76 ksi ) | 600 MPa ( 87 ksi ) | 27 %       | 67 J @ -29 °C<br>( 48 ft-lb @ -20 °F )  |
| Spoolarc 71        | Stress Relieved 621C (1150F) (8 hour(s)) | 510 MPa ( 74 ksi ) | 625 MPa ( 91 ksi ) | 30 %       | 47 J @ -40 °C<br>( 35 ft-lb @ -40 °F )  |
| Spoolarc 75        | As Welded                                | 540 MPa ( 78 ksi ) | 625 MPa ( 91 ksi ) | 28 %       | 58 J @ -40 °C<br>( 43 ft-lb @ -40 °F )  |
| Spoolarc 81        | As Welded                                | 470 MPa ( 68 ksi ) | 560 MPa ( 81 ksi ) | 30 %       | 60 J @ -40 °C<br>( 44 ft-lb @ -40 °F )  |