

## OK Flux 10.72

Agglomeriertes, aluminatbasisches Pulver. Höherbasisch, geeignet für Anwendungen mit hoher Zähigkeit bis -50°C und unbegrenzte Wand- bzw. Blechdicken. Mit OK Autrod 13.27 auch bis -60°C. Ausgezeichnete Schlackenlöslichkeit, auch aus engeren Fugen, z.B. ab V = 50°. Sehr hohe Strombelastbarkeit, deshalb bestens geeignet auch für Mehrdrahtprozesse. Sehr gute Schweißigenschaften an Gleich- und Wechselstrom. Für unlegierte, warmfeste und Feinkornstähle universell anwendbar, z.B. im Stahl- und Behälterbau, Windkraftanlagen im Binnen- und Offshore-Bereich usw.

| Spezifikationen  |                                                    |
|------------------|----------------------------------------------------|
| Klassifikationen | EN ISO 14174 : S A AB 1 57 AC H5                   |
| Zulassungen      | CE : EN 13479<br>DB : 51.039.12<br>UKCA : EN 13479 |

Zulassungen basieren auf dem Werksstandort. Bitte kontaktieren Sie ESAB für weitere Informationen.

|                              |                                              |
|------------------------------|----------------------------------------------|
| Diffusibler Wasserstoff      | max 5 ml/100g weld metal (Redried flux)      |
| Schlackentyp                 | Aluminate-basic                              |
| Metallurgische Eigenschaften | No Silicon and moderately Manganese alloying |
| Dichte                       | nom: 1.2 kg/dm <sup>3</sup>                  |
| Basizitätsgrad               | nom: 1.9                                     |

| Pulververbrauch |                                           |                                          |
|-----------------|-------------------------------------------|------------------------------------------|
| Spannung        | Pulververbrauch / 1 kg (2,2 lb) Draht DC+ | Pulververbrauch / 1 kg (2,2 lb) Draht 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                                   |

Zustand : Abmessung Ø 4.0 mm , A 580 A , Fahrgeschwindigkeit 55 cm/min

| Klassifikationen |                                         |                          |                      |                      |
|------------------|-----------------------------------------|--------------------------|----------------------|----------------------|
| Draht            | EN/ISO/AWS                              | EN - unbehandelt         | AWS - unbehandelt    | AWS - nach WNB       |
| Spoolarc 29S     | A5.17:EM13K                             | -                        | -                    | -                    |
| OK Autrod 12.20  | A5.17:EM12/ 14171-A:S2                  | 14171-A: S 38 5 AB S2    | A5.17: F7A8-EM12     | A5.17: F6P8-EM12     |
| OK Autrod 12.22  | A5.17:EM12K/ 14171-A:S2Si               | 14171-A: S 42 5 AB S2Si  | A5.17: F7A8-EM12K    | A5.17: F6P8-EM12K    |
| OK Autrod 12.24  | A5.23:EA2/ 14171-A:S2Mo; 24598-A:S S Mo | 14171-A: S 46 3 AB S2Mo  | A5.23: F8A5-EA2-A3   | A5.23: F8P5-EA2-A3   |
| OK Autrod 13.24  | A5.23:ENi6/ 14171-A:S3Ni1Mo0,2          | -                        | -                    | -                    |
| OK Autrod 13.27  | A5.23:ENi2/ 14171-A:S2Ni2               | 14171-A: S 46 6 AB S2Ni2 | A5.23: F8A8-ENi2-Ni2 | A5.23: F7P8-ENi2-Ni2 |
| OK Autrod 13.62  | A5.23:EG/ 14171-A:SZ3TiB                | -                        | -                    | -                    |
| OK Autrod 13.64  | A5.23:EA2TiB/ 14171-A:S2MoTiB           | -                        | A5.23: F8TA8-EA2TiB  | -                    |

| Zulassungen/Eignungsprüfungen |     |    |    |       |     |     |
|-------------------------------|-----|----|----|-------|-----|-----|
| Draht                         | CWB | CE | DB | VdTÜV | ABS | DNV |
| Spoolarc 81                   | •   | -  | -  | -     | -   | -   |
| OK Autrod 12.20               | -   | •  | •  | •     | -   | -   |
| OK Autrod 12.22               | -   | •  | •  | •     | •   | •   |
| OK Autrod 12.24               | -   | •  | •  | •     | -   | -   |
| OK Autrod 13.27               | -   | •  | -  | -     | -   | -   |

## OK Flux 10.72

| Typische Schweißgutrichtanalyse %                  |      |      |       |       |      |      |      |       |       |
|----------------------------------------------------|------|------|-------|-------|------|------|------|-------|-------|
| C                                                  | Mn   | Si   | S     | P     | Ni   | Cr   | Mo   | V     | Al    |
| <b>Spoolarc 29S As Welded</b>                      |      |      |       |       |      |      |      |       |       |
| 0.06                                               | 1.96 | 0.56 | 0.012 | 0.017 | 0.05 | 0.08 | 0.03 | 0.005 | 0.016 |
| <b>Spoolarc 29S Stress Relieved 1 hr. @ 1150°F</b> |      |      |       |       |      |      |      |       |       |
| 0.06                                               | 1.96 | 0.56 | 0.012 | 0.017 | 0.05 | 0.08 | 0.03 | 0.005 | 0.016 |
| <b>Spoolarc 75 As Welded</b>                       |      |      |       |       |      |      |      |       |       |
| 0.07                                               | 1.84 | 0.55 | 0.005 | 0.016 | 0.84 | 0.04 | 0.01 | 0.008 | -     |
| <b>Spoolarc ENi4 As Welded</b>                     |      |      |       |       |      |      |      |       |       |
| 0.08                                               | 1.47 | 0.34 | 0.006 | 0.013 | 1.62 | 0.05 | 0.15 | -     | -     |
| <b>OK Autrod 12.20 AC, 580A, 29V</b>               |      |      |       |       |      |      |      |       |       |
| 0.06                                               | 1.4  | 0.2  | -     | -     | -    | -    | -    | -     | -     |
| <b>OK Autrod 12.20 DC+, 580A, 29V</b>              |      |      |       |       |      |      |      |       |       |
| 0.05                                               | 1.5  | 0.2  | -     | -     | -    | -    | -    | -     | -     |
| <b>OK Autrod 12.22 DC+, 580A, 29V</b>              |      |      |       |       |      |      |      |       |       |
| 0.05                                               | 1.5  | 0.3  | -     | -     | -    | -    | -    | -     | -     |
| <b>OK Autrod 12.22 AC, 580A, 29V</b>               |      |      |       |       |      |      |      |       |       |
| 0.08                                               | 1.4  | 0.3  | -     | -     | -    | -    | -    | -     | -     |
| <b>OK Autrod 12.24 AC, 580A, 29V</b>               |      |      |       |       |      |      |      |       |       |
| 0.06                                               | 1.5  | 0.2  | -     | -     | -    | -    | 0.5  | -     | -     |
| <b>OK Autrod 12.24 DC+, 580A, 29V</b>              |      |      |       |       |      |      |      |       |       |
| 0.05                                               | 1.6  | 0.2  | -     | -     | -    | -    | 0.5  | -     | -     |
| <b>OK Autrod 13.27 AC, 580A, 29V</b>               |      |      |       |       |      |      |      |       |       |
| 0.07                                               | 1.4  | 0.30 | -     | -     | 2.2  | -    | -    | -     | -     |
| <b>OK Autrod 13.27 DC+, 520A, 29V</b>              |      |      |       |       |      |      |      |       |       |
| 0.05                                               | 1.4  | 0.30 | -     | -     | 2.2  | -    | -    | -     | -     |

| Typische Schweißgutrichtanalyse %                  |       |       |       |
|----------------------------------------------------|-------|-------|-------|
| Cu                                                 | Nb    | Ti    | Co    |
| <b>Spoolarc 29S As Welded</b>                      |       |       |       |
| 0.122                                              | 0.002 | 0.004 | 0.009 |
| <b>Spoolarc 29S Stress Relieved 1 hr. @ 1150°F</b> |       |       |       |
| 0.122                                              | 0.002 | 0.004 | 0.009 |
| <b>Spoolarc 75 As Welded</b>                       |       |       |       |
| 0.080                                              | -     | 0.002 | -     |
| <b>Spoolarc ENi4 As Welded</b>                     |       |       |       |
| 0.060                                              | -     | -     | -     |

| Drahtzusammensetzung |      |      |       |       |      |      |      |      |      |
|----------------------|------|------|-------|-------|------|------|------|------|------|
| C                    | Mn   | Si   | S     | P     | Ni   | Cr   | Mo   | Cu   | Ti   |
| <b>Spoolarc 29S</b>  |      |      |       |       |      |      |      |      |      |
| 0.08                 | 1.15 | 0.5  | 0.006 | 0.013 | -    | -    | -    | 0.06 | -    |
| <b>Spoolarc 71</b>   |      |      |       |       |      |      |      |      |      |
| 0.10                 | 1.22 | 0.55 | 0.01  | 0.01  | -    | -    | -    | -    | 0.07 |
| <b>Spoolarc 75</b>   |      |      |       |       |      |      |      |      |      |
| 0.08                 | 0.89 | 0.46 | 0.01  | 0.00  | 0.98 | 0.04 | 0.01 | 0.07 | -    |
| <b>Spoolarc 81</b>   |      |      |       |       |      |      |      |      |      |
| 0.09                 | 0.95 | 0.26 | 0.01  | 0.01  | -    | -    | -    | -    | -    |

## OK Flux 10.72

### Drahtzusammensetzung

| C                      | Mn   | Si   | S    | P    | Ni   | Cr | Mo   | Cu   | Ti   |
|------------------------|------|------|------|------|------|----|------|------|------|
| <b>Spoolarc ENi4</b>   |      |      |      |      |      |    |      |      |      |
| 0.17                   | 0.73 | 0.19 | 0.00 | 0.00 | 1.74 | -  | 0.17 | 0.06 | -    |
| <b>OK Autrod 12.20</b> |      |      |      |      |      |    |      |      |      |
| 0.10                   | 1.06 | 0.07 | -    | -    | -    | -  | -    | -    | -    |
| <b>OK Autrod 12.22</b> |      |      |      |      |      |    |      |      |      |
| 0.09                   | 1.01 | 0.19 | -    | -    | -    | -  | -    | -    | -    |
| <b>OK Autrod 12.24</b> |      |      |      |      |      |    |      |      |      |
| 0.09                   | 1.08 | 0.14 | -    | -    | -    | -  | 0.48 | -    | -    |
| <b>OK Autrod 13.24</b> |      |      |      |      |      |    |      |      |      |
| 0.12                   | 1.52 | 0.23 | -    | -    | 0.88 | -  | 0.19 | -    | -    |
| <b>OK Autrod 13.27</b> |      |      |      |      |      |    |      |      |      |
| 0.10                   | 1.02 | 0.14 | -    | -    | 2.19 | -  | -    | -    | -    |
| <b>OK Autrod 13.62</b> |      |      |      |      |      |    |      |      |      |
| 0.07                   | 1.55 | 0.28 | -    | -    | -    | -  | 0.01 | -    | 0.14 |
| <b>OK Autrod 13.64</b> |      |      |      |      |      |    |      |      |      |
| 0.07                   | 1.22 | 0.28 | -    | -    | -    | -  | 0.49 | -    | 0.14 |

### Drahtzusammensetzung

|                        |  |  |  |  |  |  |  |  |  |
|------------------------|--|--|--|--|--|--|--|--|--|
| <b>B</b>               |  |  |  |  |  |  |  |  |  |
| <b>OK Autrod 13.62</b> |  |  |  |  |  |  |  |  |  |
| 0.013                  |  |  |  |  |  |  |  |  |  |
| <b>OK Autrod 13.64</b> |  |  |  |  |  |  |  |  |  |
| 0.013                  |  |  |  |  |  |  |  |  |  |

### Typische mech. Eigenschaften

| Draht           | Zustand             | Streckgrenze | Zugfestigkeit | Dehnung | Kerbschlagarbeit KV                                                |
|-----------------|---------------------|--------------|---------------|---------|--------------------------------------------------------------------|
| Spoolarc 29S    | Unbehandelt         | 532 MPa      | 622 MPa       | 25 %    | 57 J @ -40 °C<br>43 J @ -46 °C<br>41 J @ -51 °C                    |
| Spoolarc 75     | Unbehandelt         | 556 MPa      | 646 MPa       | 28 %    | 91 J @ -40 °C<br>83 J @ -51 °C                                     |
| Spoolarc 81     | Unbehandelt         | 415 MPa      | 500 MPa       | 30 %    | 119 J @ -29 °C<br>100 J @ -40 °C<br>71 J @ -51 °C<br>50 J @ -62 °C |
| Spoolarc ENi4   | Unbehandelt         | 607 MPa      | 677 MPa       | 27 %    | 141 J @ -40 °C<br>107 J @ -51 °C<br>88 J @ -62 °C                  |
| OK Autrod 12.20 | Unbehandelt AWS DC+ | 415 MPa      | 500 MPa       | 30 %    | 125 J @ -30 °C<br>100 J @ -40 °C<br>70 J @ -50 °C<br>50 J @ -62 °C |
| OK Autrod 12.20 | Unbehandelt EN AC   | 420 MPa      | 500 MPa       | 33 %    | 140 J @ -30 °C<br>130 J @ -40 °C<br>80 J @ -50 °C                  |
| OK Autrod 12.22 | Unbehandelt AWS DC+ | 440 MPa      | 530 MPa       | 31 %    | 120 J @ -30 °C<br>100 J @ -40 °C<br>70 J @ -50 °C<br>50 J @ -62 °C |
| OK Autrod 12.22 | Unbehandelt EN AC   | 425 MPa      | 560 MPa       | 27 %    | 140 J @ -30 °C                                                     |

## OK Flux 10.72

| Typische mech. Eigenschaften |                                                                                                                                     |              |               |         |                                                                    |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------|---------|--------------------------------------------------------------------|
| Draht                        | Zustand                                                                                                                             | Streckgrenze | Zugfestigkeit | Dehnung | Kerbschlagarbeit KV                                                |
|                              |                                                                                                                                     |              |               |         | 130 J @ -40 °C<br>80 J @ -50 °C                                    |
| OK Autrod 12.24              | Unbehandelt AWS DC+                                                                                                                 | 500 MPa      | 590 MPa       | 25 %    | 60 J @ -30 °C<br>40 J @ -40 °C<br>35 J @ -46 °C                    |
| OK Autrod 12.24              | Unbehandelt EN AC                                                                                                                   | 535 MPa      | 600 MPa       | 24 %    | 70 J @ -30 °C<br>50 J @ -40 °C<br>40 J @ -50 °C                    |
| OK Autrod 13.24              | Unbehandelt AWS DC+                                                                                                                 | 530 MPa      | 660 MPa       | 28 %    | 90 J @ 0 °C<br>35 J @ -40 °C                                       |
| OK Autrod 13.27              | Unbehandelt EN AC                                                                                                                   | 520 MPa      | 610 MPa       | 27 %    | 120 J @ -30 °C<br>100 J @ -40 °C<br>80 J @ -50 °C<br>60 J @ -60 °C |
| OK Autrod 13.27              | Unbehandelt AWS DC+                                                                                                                 | 490 MPa      | 610 MPa       | 30 %    | 100 J @ -40 °C<br>80 J @ -51 °C<br>50 J @ -62 °C                   |
| OK Autrod 13.62              | Unbehandelt (acc. AWS) Plate thickness: 12mm; Heat Input: 2.2 kJ/mm; Side 1: 600A, 32V, 53cm/min; Side 2: 700A, 32V, 60cm /min; DC+ | 500 MPa      | 610 MPa       | 27 %    | 50 J @ -62 °C                                                      |
| OK Autrod 13.64              | Unbehandelt (acc. to AWS) Plate thickness 12mm Heat input 2.2kJ /mm 700A, 32V, 60cm /min DC+                                        | 560 MPa      | 660 MPa       | 27 %    | 50 J @ -62 °C                                                      |