

## MMA Electrodes C-Mn and low-alloy steels

TENAX 35S is a general purpose basic coated low hydrogen electrode containing iron powder additions, suitable for positional welding. The weld appearance is excellent and spatter levels minimal. The excellent mechanical properties also make this electrode suitable for critical applications in such industries as offshore, nuclear and pressure vessels as well as the general construction industry. "DRY" version (E7018.1 H4R) available on request. Very good x ray quality. Efficiency 120%.

| Classification |                        |
|----------------|------------------------|
| AWS            | A5.1: E 7018-1 H4      |
| EN             | 499: E 42 5 B 32 H5    |
| EN ISO         | 2560-A: E 42 5 B 32 H5 |

| Approvals | Grades |
|-----------|--------|
| ABS       |        |
| BV        |        |
| DB        |        |
| DNV       |        |
| GL        |        |
| LRS       |        |
| MMI       |        |
| RINA      |        |
| TÜV       |        |

see Appendix, Classification Society Approvals, for details pag. 521

### Analysis of all-weld metal (Typical values in %)

| C     | Mn   | Si   | P       | S       | Cr | Ni | Mo | Nb | V | N | Cu |
|-------|------|------|---------|---------|----|----|----|----|---|---|----|
| 0.075 | 1.35 | 0.35 | ≤ 0.020 | ≤ 0.015 | -  | -  | -  | -  | - | - | -  |

### All-weld metal Mechanical Properties

| Heat Treatment  | Yield Strength<br>N/mm <sup>2</sup> | Tensile Strength<br>N/mm <sup>2</sup> | Elongation<br>A5 (%) | Impact Energy<br>ISO - V (J)<br>-50°C | Hardness |
|-----------------|-------------------------------------|---------------------------------------|----------------------|---------------------------------------|----------|
| PWHT 620°C x 1h | ≥ 400                               | 490 - 560                             | ≥ 22                 | ≥ 100                                 | -        |
| As Welded       | ≥ 420                               | 510 - 640                             | ≥ 22                 | ≥ 100                                 | -        |

### Materials

S(P)235-S(P)420, GP240-GP280

SA 516 gr.60; SA 516 gr.70; SA 106 gr.B

### Storage and redrying

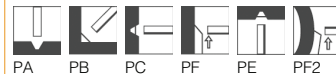
Keep dry and avoid condensation.

HD ≤ 5: Re-dry at 400-420 °C for 1 hour, 3 times max.

HD ≤ 10: Re-dry at 350-370 °C for 1 hour, 3 times max

### Current condition and welding position

**DC+; AC**



### Packaging data

| Diameter<br>(mm) | Length<br>(mm) | Current<br>(A) | Electrode<br>average weight (g) | Weld metal weight<br>per electrode (g) |
|------------------|----------------|----------------|---------------------------------|--|
| 2,0              | 300            | 25-50          | 13,0                            | 7,8                                    |
| 2,5              | 300            | 70-100         | 20,1                            | 12,1                                   |
| 2,5              | 350            | 70-100         | 23,5                            | 14,1                                   |
| 3,2              | 450            | 90-130         | 49,5                            | 29,8                                   |
| 4,0              | 450            | 110-170        | 70,9                            | 42,6                                   |
| 5,0              | 450            | 170-220        | 106,5                           | 63,9                                   |
| 6,0              | 450            | 210-280        | 150,3                           | 90,1                                   |