

Outershield® 690-H

TOP FEATURES

- All position gas shielded rutile flux cored wire, for high strength steel grades like grade S690.
- Outstanding operator appeal.
- Excellent mechanical properties (CVN >50J) at -40°C).

TYPICAL APPLICATIONS

- Steel construction
- Offshore
- Pipeline

CLASSIFICATION

AWS A5.29E 111T1-K3M-JH4

EN ISO 18276-AT 69 4 Z P M 2 H5

CURRENT TYPE

DC+

WELDING POSITIONS

All except vertical down

SHIELDING GASES (ACC. EN ISO 14175)

M21Mixed gas Ar+ 15-25% CO₂

Flow rate15-25 l/min

CHEMICAL COMPOSITION (WEIGHT %), TYPICAL, ALL WELD METAL

| Shielding gas | C | Mn | Si | P | S | Ni | Mo | HDM |
|---------------|------|-----|-----|-------|-------|-----|-----|------------|
| M21 | 0.06 | 1.5 | 0.2 | 0.015 | 0.010 | 2.0 | 0.3 | 3 ml/100 g |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition* | Yield strength (MPa) | Tensile strength (MPa) | Elongation (%) | Impact ISO-V (J) | | |
|---------------------|---------------|------------|----------------------|------------------------|----------------|------------------|---------|-------|
| | | | | | | -30°C | -40°C | -46°C |
| Required: AWS A5.29 | | | min. 680 | 760-900 | min. 15 | min. 27 | | |
| EN ISO 18276-A | | | min. 690 | 770-940 | min. 17 | | min. 47 | |
| Typical values | M21 | AW | 780 | 810 | 18 | 85 | 80 | 65 |

* AW = As welded

PACKAGING AND AVAILABLE SIZES

| Wire diameter (mm) | Packaging | Weight (kg) | Item number |
|--------------------|--------------|-------------|-------------|
| 1.2 | SPOOL (S200) | 4.5 | 942415 |
| | SPOOL (B300) | 16.0 | 942422N |
| | SPOOL (S300) | 16.0 | 942453EN |
| 1.6 | SPOOL (S300) | 16.0 | 942447N |

TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application

Safety Data Sheets (SDS) are available here:



Subject to Change – The information is accurate to the best of our knowledge at the time of printing.
Please refer to www.lincolnelectric.eu for any updated information.