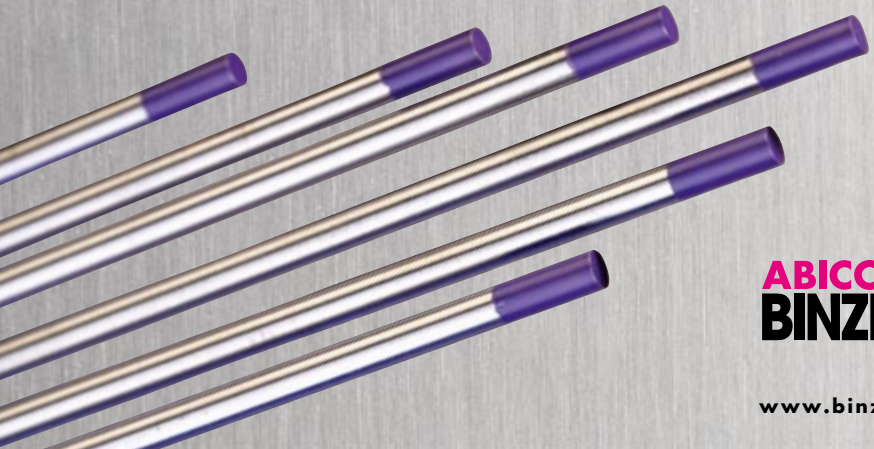
TECHNOLOGY FOR THE WELDER'S WORLD.

# Tips for TIG welders
# Electrodes: selection & handling



ABICOR BINZEL®

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# Choosing the right electrode

| | E3® purple | WLa 15 gold | WLa 20 blue | WCe 20 grey | WP green | WZr 08 white |
|---|---|---|---|---|---|---|
| DC negative | **+++** | ++ | **+++** | + | – | – |
| Alternating current | **+++** | + | + | + | + | ++ |
| Arc stability | **++** | + | **++** | + | – | **++** |
| Ignitability | **++++** | ++ | +++ | + | – | + |
| Service life | **++++** | ++ | +++ | + | + | ++ |
| High-alloy steels suitability | **++++** | +++ | +++ | +++ | – | – |
| Aluminium suitability | **++++** | + | + | + | ++ | ++ |

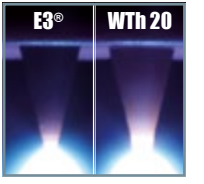

WP electrodes are not suitable for alternating current welding with the rectangular pulse waveform. In contrast, E3® electrodes achieve best welding results with high service life if the following parameters are complied with:

**Rectangular/sinusoidal pulse**

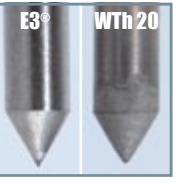
- Grinding angle: 60°
- Smallest possible igniting current

**Rectangular pulse**

- Frequency: max. 75 Hz
- Balance: 25 % + / 75 % –



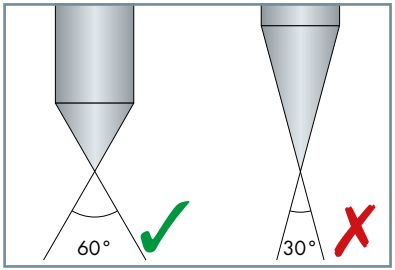

E3® electrodes remain approx. 900 °C colder than WTh 20 electrodes with the same load.




After 150 strikings the E3® electrode displays considerably less wear.

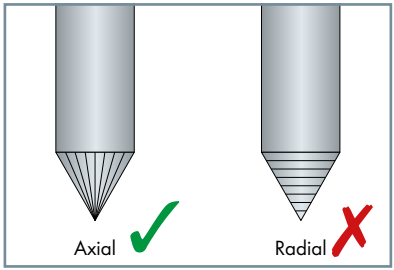
# Recommendation for the grinding of E3® electrodes

**Important for best results: angle and direction of grinding**




E3® electrodes generate the best welding result if they are ground at an angle of 60° and are used within their amperage-range.

More acute angles should only be used in low current ranges. However, changing to a thinner electrode would be better.




Along with the grinding quality, the arc is influenced by the direction of grinding.

The arc can break off with a radial grinding direction. In addition, this considerably reduces the service life of the electrodes.

### Advantages of obtuse angles

- Narrow weld pool
- High current carrying capacity
- Longer service life

### Advantages of axial grinding direction

- Good starting property
- More favourable electron exit
- Stable arc

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