



Ingenieurbetrieb für  
Materialprüfung, Qualitätssicherung  
und Schweißtechnik GmbH

## Reference Block NE Test Set according to GO1N 27/72, 2015

### Scope of delivery

NE Test Set  
comprising 11, 51 or 151 identic reference blocks

Material: carburized steel (58 HRC)  
Dimensions: 50 mm x 20 mm x 10 mm

Deviant material and dimensions on request.

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**NE TEST SET**  
**REFERENCE BLOCK FOR INSPECTION OF GRINDING**  
**BURN ETCHING ACCORDING TO ISO 14104**  
**AND AMS 2649**

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## FOCUS

Inspection of grinding burn by means of nital etching is performed according to ISO 14 104 und AMS 2649 standards. During the process it is required to ensure efficacy of the test procedure.

This is achieved by regular inspection of the etching solution and of the performance conditions. The standards require suitable reference blocks for application.

### BY MEANS OF THESE REFERENCE BLOCKS

- › the **correct performance of nital etching** is monitored (process steps, etching times, temperature of etching solution)
- › **efficacy of the etching solution** is checked
  - » **Potential savings** by avoiding premature exchange of etching solution
  - » **Monitoring** even with automated etching systems
- › **qualification and examination of suppliers** can be optimized by clearly demonstrating the required nital etching results based on the reference block



#### Example for the operation of the reference bodies:

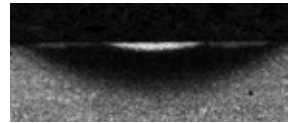
using worn etching solution not all laser-inserted grinding burn zones can be detected. Deviation from ideal etching image provides information on the state of the etching bath.

## NE TEST SET

The reference bodies were purpose-developed for the inspection of grinding burn etching according to ISO 14 104 and AMS 2649.

The laser-inserted, precisely graded tempering zones and new curing zones feature comparable properties to real grinding burn. This was proven by extensive examination.

The set comprises a series of identic reference blocks. Their properties are verified by a manufacturer certificate.



New curing zone  
(metallographic cross section)



Tempering zone

## APPLICATION

1. Under optimum etching conditions a reference body is exposed to nital etching and a master is produced. This is preserved and stored.
2. For inspection and examination another reference body is exposed to the nital etching conditions to be checked and this result is compared with the etching image of the master.
3. The etching image has to match that of the master.

Further fields of application:

- » Seminars
- » Supplier audits
- » Round robin tests