



Certificate

Nº: BAM/ZBF/003/17



Bundesanstalt für
Materialforschung
und -prüfung

Hereby it is confirmed by the BAM Certification Body, that the

Material "Beryllium-copper alloy"

of the manufacturer

WEDO TOOLS GmbH
Ludwig-Richter-Straße 6
42329 Wuppertal
Deutschland

meets the requirements of **BAM Standard operating procedure „StAA-NEG-005“:**
„StAA zur Schlagfunkenprüfung von Werkstoffpaarungen“ dated 2017-03-01
and thus the non-sparking tools made of this material are appropriate for use in
potentially explosive atmospheres of zone 1 and/or 21 according to Directive
1999/92/EC of all explosion groups (I, IIA, IIB & IIC) according to IEC 60079-20-1
(2010), if the terms and conditions set out in the annex to this certificate are met.

The certification is based on certification contract N° **BAM-ZBF-0003-2017-WEDO
TOOLS** and comprises according to standard ISO/IEC 17065:2012 a design-type test
with the manufacturer's declaration of conformity (BAM Certification system I).
The products certified by BAM may be labelled with the certification mark
"BAM design-type tested" / "BAM Baumustergeprüft".

The certificate is valid until November 16th, 2022.

BAM test report 17043458 dated 2017-11-06 as well as procedure N° BZS-GS/033/17
form the basis of this certificate.

For Bundesanstalt für Materialforschung und -prüfung (BAM)
Unter den Eichen 87,12205 Berlin, **2017-11-17**

Dr. R. Schmidt
BAM Certification Body



Dr. R. Grätz
BAM Assessor

Distribution list: 1st Certificate holder

2nd BAM Certification Body

This certificate may only be published in full wording and without any additions. A revocable written consent shall be obtained from BAM beforehand for any amended reproduction or the publication of any excerpts. The German version is legally binding, except an English version is issued exclusively. Place of jurisdiction is Berlin.

CERTIFICATE

Conditions for use of the certified material

The non-sparking tools made of the certified material "Beryllium-copper alloy" are appropriate for use in potentially explosive atmospheres of the zones 1 and/or 21 of all explosion groups (I, IIA, IIB & IIC), if the following terms and conditions are met:

- The material composition of this material shall comply with the material composition of the tested sample, namely:
 - o Beryllium-Copper Alloy:
≥ 99.0 % Cu+Be+Co+Ni+Fe;
1.8 % to 2.3 % Be; ≥ 0.2 % Co+Ni; ≤ 1.2 % Co+Ni+Fe; hardness: 283-365 HB (see letter from WEDO TOOLS GmbH dated August 23rd, 2017)
- The intended use of the tools made of the certified material shall be described by the certificate holder in such a manner that the max. absorption of mechanical energy during a possible impact of the tools on steel with the composition set out in the following does not exceed 61 Nm. This corresponds to a falling height of 10 metres of a tool with a weight of for example 6 N (approx. 600 g).

Composition of the steel: mild steel/heat treatable steel, steel grade 45, material no. 1.0503, hardened, hardness degree HRC20-HRC30, surface sandblasted, according to letter from WEDO TOOLS GmbH dated August 23rd, 2017:

- o 0.42 % to 0.5 % C, 0.5 % to 0.8 % Mn, 0.17 % to 0.37 % Si, < 0.3 % Ni,
< 0.04 % S, < 0.035 % P, < 0.25 % Cr, < 0.3 % Cu.

The impact plates used for testing in our laboratory were made of steel with the composition set out above.

- the carbon content of the mild steel/heat treatable steel as well as its hardness have a great influence on the generation of mechanically generated impact sparks. They must not be modified nor must the carbon content of 0.49 % be exceeded. The hardness degree of max. HRC 30 must not be exceeded.

Berlin, 2017-11-17

Place, Date



R. Althoff

Signature BZS