



Certificate

N^o: **BAM/ZBF/001/13**
1st Revised version



Bundesanstalt für
Materialforschung
und -prüfung

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

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Material copper-aluminum and copper-beryllium

of the manufacturer

Endres Tools GmbH
Am Eichholz 12
42897 Remscheid
Germany

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 these materials are appropriate for use in potentially explosive atmospheres of zone 1 and/or 21 according to Directive 1999/92/EC of all explosion groups according to IEC 60079:2004 Part 0, if the terms and conditions set out in the annex to this certificate are met.

The certification is based on certification contract N^o **BAM-ZBF-0001-2013-ENDRES** 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 17 March 2023.

BAM test report **2-2561/2012 dated 2013-02-22 as well as procedure N^o BZS-GS/023/17** are constituent parts of this certificate.

for Bundesanstalt für Materialforschung und -prüfung (BAM)
Unter den Eichen 87,12205 Berlin, **2018-03-18**

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. The revocable written consent shall be obtained from BAM beforehand for changed reproduction and excerpts. The German version is legally binding, except an English version is issued exclusively. Place of jurisdiction is Berlin.

Conditions for use of the certified materials

The non-sparking tools made of the certified materials copper-aluminum and/or copper-beryllium are appropriate for use in potentially explosive atmospheres of the zones 1 and/or 21 of all explosion groups, if the following terms and conditions are met:

- The material composition of these materials shall comply with the material composition of the tested samples, namely:
 - o Copper-aluminum:
79 % Cu, 10 % Al, 5 % Ni, 4 % Fe, 1.7 % Mn, and 0,3 % Sn, Pb, Zn, Cr (according to the analyzing from Vincent Seidewinkel in 22880 Wedel dated August 2, 2012, receipt on January 28, 2012, BAM-Tgb.-No.: 2-447/2013)
and
 - o Copper-beryllium:
97.7 % Cu, 1.84 % Be, and 0.46 % Fe, Si, Al, Pb, (according to the analyzing from Materion Brush GmbH in 70499 Stuttgart dated January 16, 2013, receipt on January 28, 2012, BAM-Tgb.-No.: 2-447/2013)

- The intended use of the tools made of the certified materials 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 the ground does not exceed 72 Nm. This corresponds to a falling height of 10 metres of a tool with a weight of for example 7,2 N (approx. 730 g). This statement is only valid for a floor screed quality of the following composition:
 - Floor screed quality 290/8, 45 % gravel, d/D 2/8 mm, from Rheinkies, and 55 % Sand, d/D 0/1 mm, from Rheinkies, (according to letter from Vestland Gesellschaft für Baustoffprüfungen mbH in 45472 Mülheim an der Ruhr, dated January 15, 2011, receipt on January 28, 2012, BAM-Tgb.-No.: 2-447/2013)

Berlin, 2018-03-18

Place, Date

Signature BZS

