



CERTIFICATE

BAM/ZBF/008/24 1st version

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

Copper-Beryllium Alloy of the manufacturer Beta Utensili S.p.A. Via Volta 18 20845 Sovico (MB) Italy			
for impacts against	<input type="checkbox"/>	steel	
	<input checked="" type="checkbox"/>	concrete	
with a maximal impact energy of	61	Nm	
in potentially explosive atmospheres with the fuel gases	<input checked="" type="checkbox"/>	of explosion groups I, IIA, IIB	Explosion groups according to DIN EN ISO/IEC 80079-20-1:2020-09
	<input checked="" type="checkbox"/>	acetylene	
	<input type="checkbox"/>	of explosion group IIC	

meets the requirements of **BAM Standard operating procedure StAA-GAS-005 „StAA zur Schlagfunkenprüfung von Werkstoffpaarungen“** approved April 2023 and thus non-sparking tools made of this material are appropriate for use in potentially explosive atmospheres of zone 1 and/or 21 (in accordance with the European Directive 1999/92/EC) for the fuel gases listed above, if the terms and conditions set out in the annex to this certificate are complied with.

The certification is based on certification contract **BAM-ZBF-0003-2024-BETA** dated May 8th, 2024, and comprises according to standard DIN EN ISO/IEC 17065:2013 a design-type test with the manufacturer’s declaration of conformity (BAM Certification system I).

The materials certified by BAM may be labelled with the certification mark “BAM Design-type tested” and/or “BAM Baumustergeprüft”.

The certificate is valid until December 31st, 2028.

BAM test report **24006805** dated July 3rd, 2024 and procedure No. BZS-GS/036/23 are a constituent part of this certificate.

Bundesanstalt für Materialforschung und -prüfung (BAM)

Unter den Eichen 87, 12205 Berlin, **July 4th, 2024**

By order

Dr. J. Sunderkötter
BAM Certification Officer

By order

Dr. M. Schmidt
BAM Assessor



Please check this certificate's validity in our Certification Register:
<https://netzwerke.bam.de/Netzwerke/Content/DE/Downloads/Bzs/Zertifizierungsregister.html>

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Conditions for use of the certified material

The certification of the material **Copper-Beryllium Alloy** is only valid if the following terms and conditions are met.

Already smallest modifications of the properties of the material and the impact partner can alter fundamentally the spark pattern and thus the ignition probability. Thus, it is not possible to transfer the test results to other materials.

Certified material pairing

Material: Copper-Beryllium Alloy

The properties of this material shall comply with the material composition of the tested sample, namely:

- Material composition:
 - o > 99 % Cu+Be+Co+Ni+Fe
 - o 1,8 %-2,3 % Be
 - o > 0,2 % Co+Ni
 - o < 1,2 % Co+Ni+Fe
- Hardness: 283-365 HRC 30-40
- Reference: Letter from Beta Utensili, material composition and hardness of the impact pins ("Beryllium-copper alloy"), dated June 27th, 2024

Impact Partner: Screed concrete, reinforced

- Material recipe: Cement E290, flux material 5,8 %, gravel; corundum 5 %, steel reinforced wire, recipe according to BAM Certification Scheme BZS-ZP/2.8 and test report 24006805 dated July 3rd, 2024

Use of the tools made of the certified material

During a possible impact of the tools on the above-mentioned impact partner the **maximum absorption of mechanical energy must not exceed 61 Nm.**

This corresponds to a falling height of 10 metres of a tool with a maximum weight of approx. **600 g.**