



**SLOVENSKI STANDARD**  
**oSIST prEN ISO 14919:2023**

**01-marec-2023**

**Nadomešča:**  
**SIST EN ISO 14919:2015**

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**Vroče brizganje - Žice, palice in vrvi za plamensko in obločno brizganje -  
Klasifikacija - Tehnični dobavni pogoji (ISO/DIS 14919:2023)**

Thermal spraying - Wires, rods and cords for flame and arc spraying - Classification -  
Technical supply conditions (ISO/DIS 14919:2023)

Thermisches Spritzen - Drähte, Stäbe und Schnüre zum Flammsspritzen und  
Lichtbogenspritzen - Einteilung - Technische Lieferbedingungen (ISO/DIS 14919:2023)

Projection thermique - Fils, baguettes et cordons pour projection thermique à l'arc et au  
pistolet dans une flamme - Classification - Conditions techniques d'approvisionnement  
(ISO/DIS 14919:2023)

**Ta slovenski standard je istoveten z: prEN ISO 14919**

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**ICS:**

25.220.20      Površinska obdelava      Surface treatment

**oSIST prEN ISO 14919:2023**      **en,fr,de**



# DRAFT INTERNATIONAL STANDARD

## ISO/DIS 14919

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## Thermal spraying — Wires, rods and cords for flame and arc spraying — Classification — Technical supply conditions

*Projection thermique — Fils, baguettes et cordons pour projection thermique à l'arc et au pistolet dans une flamme — Classification — Conditions techniques d'approvisionnement*

ICS: 25.220.20

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## ISO/DIS 14919:2022(E)

### Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

ISO 14919 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 240, *Thermal spraying and thermally sprayed coatings*, in collaboration with ISO Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 14919:2015), which has been technically revised.

## Introduction

Requests for official interpretations of any aspect of this standard should be directed to the secretariat of ISO/TC 107/WG 1 via your national standards body; a complete listing can be found at [www.iso.org](http://www.iso.org).

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# Thermal spraying — Wires, rods and cords for flame and arc spraying — Classification — Technical supply conditions

## 1 Scope

This International Standard specifies requirements for classification of metal and non-metal wires (solid and cored), rods, cords processed by means of thermal spraying, especially by arc and flame spraying.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10474:2013, *Steel and steel products — Inspection documents*

ISO 544:2011, *Welding consumables — Technical delivery conditions for filler materials and fluxes — Type of product, dimensions, tolerances and markings*

## 3 Classification

### 3.1 Classification according to the manufacturing process and resulting structure

The thermal spray materials are classified according to the manufacturing process and the resulting structure, as given in [Table 1](#).

**Table 1 — Classification of thermal spraying material and resulting structure**

Number	Term	Manufacturing process	Structure
1	solid wire/rod	metallurgical manufacturing and forming	homogeneous composition
2	solid wire/rod	powder metallurgical manufacturing and forming	homogeneous composition
3	cored wire (tube shaped wire)	filling up a metal tube and compressed by means of forming	seamless metal shell with powder filling
4	cored wire (folded wire)	forming a metal sheet with powder filling, binder and compressed by means of drawing	metal shell with powder filling
5	cords	simultaneous extruding of powder, binder and organic sheath	plastic shell with powder filling
6	oxide ceramic rods	extruding and sintering respectively drying of ceramic material	porous rod consisting of bonded ceramic particles

### 3.2 Classification according to material groups and chemical composition

The material groups are given in [Table 2](#), and the chemical composition shall comply with [Tables 3](#) to [10](#).

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Table 2 — Classification according to material groups

Code Number	Term
1	tin and tin alloys
2	zinc and zinc alloys
3	aluminium and aluminium alloys
4	copper and copper alloys
5	iron and iron alloys
6	nickel and nickel alloys
7	molybdenum
8	oxide ceramics

## 3.2.1 Tin and tin alloys

Table 3 — Tin and tin alloys

Code number	Symbol	Alloying elements mass fraction in %	Other elements mass fraction in %	Manufacturing process
1.1	Sn99	Sn ≥ 99,95	total ≤ 0,05 Sb ≤ 0,02 Ag ≤ 0,01 Bi ≤ 0,002 Cu ≤ 0,01 Fe ≤ 0,01 Pb ≤ 0,02 Al+Cd+Zn ≤ 0,002	1
1.2	SnSbCu84	Sb 7 to 8 Cu 3 to 4 remainder Sn	Pb ≤ 0,35 As ≤ 0,1 Bi ≤ 0,08 Fe ≤ 0,1 Al ≤ 0,01 Zn ≤ 0,01 other: total ≤ 0,2	1

## 3.2.2 Zinc and zinc alloys

Table 4 — Zinc and zinc alloys

Code number	Symbol	Alloying elements mass fraction in %	Other elements mass fraction in %	Manufacturing process
2.1	Zn99,99	Zn ≥ 99,99	total ≤ 0,010 Pb ≤ 0,007 Cd ≤ 0,004 Pb+Cd ≤ 0,011 Sn ≤ 0,001 Fe ≤ 0,005 Cu ≤ 0,002	1

Table 4 (continued)

Code number	Symbol	Alloying elements mass fraction in %	Other elements mass fraction in %	Manufacturing process
			other: total ≤ 0,12	
2.2	Zn99	Zn ≥ 99	total ≤ 1,0 Pb ≤ 0,05 Cd ≤ 0,005 Pb+Cd ≤ 0,06 Sn ≤ 0,001 Fe ≤ 0,01 Cu ≤ 0,7 Mo ≤ 0,01 Ti ≤ 0,16 Mg ≤ 0,01 Al ≤ 0,01 other: total ≤ 0,12	1
2.3	ZnAl15	Zn 84 to 86 Al 14 to 16	total ≤ 0,17 Pb ≤ 0,007 Cd ≤ 0,004 Pb+Cd ≤ 0,011 Sn ≤ 0,001 Fe ≤ 0,02 Cu ≤ 0,01 Si ≤ 0,12	1
2.4	ZnAl2	Zn 97,5 to 98,5 Al 1,5 to 2,5	total ≤ 0,17 Pb ≤ 0,007 Cd ≤ 0,004 Pb+Cd ≤ 0,011 Sn ≤ 0,001 Fe ≤ 0,02 Cu ≤ 0,01 Si ≤ 0,12	1
2.5	ZnAl4	Zn 95,5 to 96,5 Al 3,5 to 4,5	total ≤ 0,17 Pb ≤ 0,007 Cd ≤ 0,004 Pb+Cd ≤ 0,011 Sn ≤ 0,001 Fe ≤ 0,02 Cu ≤ 0,01 Si ≤ 0,12	1