

## BUREAU OF INDIAN STANDARDS

### Program of Work

#### MTD 25 : Powder Metallurgical materials and Products Sectional Committee

Scope: Standardization in the field of powder metallurgical materials

Liaison: **ISO TC-119 (P): Powder metallurgy ISO TC-119 SC-2 (O): Sampling and testing methods for powders (including powders for hardmetals) ISO TC-119 SC-3 (O): Sampling and testing methods for sintered metal materials (excluding hardmetals) ISO TC-119 SC-4 (O): Sampling and testing methods for hardmetals ISO TC-119 SC-5 (O): Specifications for powder metallurgical materials (excluding hardmetals)**

### Published Standards

S.No	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS 10035 : 2023	BRONZE POWDER FOR METALLIC FILTERS - SPECIFICATION		-	Indigenous
2	IS 10385 : 2019 ISO 2739 : 2012 <span style="color: green;">Reviewed In : 2024 ISO 2739 : 2012</span>	Sintered metal bushings - Determination of radial crushing strength (First Revision)	January, 2024	-	Identical under dual numbering
3	IS 11110 : 2023	Copper - Lead powder - Specification		-	Indigenous
4	IS 11111 : 2023	Leaded bronze powders - Specification		-	Indigenous
5	IS 11506 : 2019 ISO 13944 : 2012 <span style="color: green;">Reviewed In : 2024 ISO 13944 : 2012</span>	Lubricated metal-powder mixes - Determination of lubricant content - Modified Soxhlet extraction method	January, 2024	-	Identical under dual numbering
6	IS 11518 : 2023	Method for determination of The Magnetization coercivity in hardmetals		-	Indigenous
7	IS 11520 : 2023	Metallographic Sample Preparation of Hardmetals $\bar{i}_c^{1/2}$ Method ( First Revision )		-	Indigenous
8	IS 11627 : 2023 <span style="color: green;">ISO 3923-2</span>	Determination of Apparent Density of Metallic Powders by Scott Volumeter - Method ( First Revision )		-	Not Equivalent
9	IS 11959 : 2023 <span style="color: green;">ISO 4499</span>	Metallographic Determination of Microstructure in Hard Metals $\bar{i}_c^{1/2}$ Method ( First Revision )		-	Not Equivalent
10	IS 11960 : 2023 <span style="color: green;">ISO 4505</span>	Metallographic Determination of Apparent Porosity and Uncombined Carbon in Hard Metals - Method ( First Revision )		-	Not Equivalent
11	IS 12279 : 2005 ISO 3325:1996	Sintered metal materials, excluding hardmetals - Determination of	July, 2022	-	Identical under dual numbering

	Reviewed In : 2022 ISO 3325:1996	transverse rupture strength (First Revision)			
12	IS 12286 : 1988 Reviewed In : 2024 ISO 28080:2011	Method for determination of abrasive wear resistance of hardmetals	February, 2024	-	Not Equivalent
13	IS 12473 (Part 1) : 1988 Reviewed In : 2023 ISO 7627-1	Chemical analysis of hardmetals by flame atomic absorption spectrometry: Part 1 general requirements	November, 2023	-	Not Equivalent
14	IS 12473 (Part 2) : 1988 Reviewed In : 2023 ISO 7627-2	CHEMICAL ANALYSIS OF HARDMETALS BY FLAME ATOMIC ABSORPTION SPECTROMETRY PART 2 DETERMINATION OF CALCIUM, POTASSIUM, MAGNESIUM AND SODIUM IN CONTENTS FROM 0.001 TO 0.02 PERCENT	October, 2023	-	Not Equivalent
15	IS 12473 (Part 3) : 1988 Reviewed In : 2024 ISO 7627-3	Chemical analysis of hardmetals by flame atomic absorption spectrometry: Part 3 determination of cobalt, iron, manganese and nickel in contents from 0.01 to 0.5 percent (M/m)	January, 2024	-	Not Equivalent
16	IS 12473 (Part 4) : 1988 Reviewed In : 2024 ISO 7627-4	Chemical analysis of hardmetals by flame atomic absorption spectrometry: Part 4 determination of molybdenum, titanium and vanadium in contents from 0.01 to 0.5 percent (M/m)	February, 2024	-	Not Equivalent
17	IS 12473 (Part 5) : 1988 Reviewed In : 2023 ISO 7627-5	Chemical analysis of hardmetals by flame atomic absorption spectrometry: Part 5 determination of cobalt, iron, manganese, molybdenum, nickel, titanium and vanadium in contents from 0.5 to 2 percent (M/m)	September, 2023	-	Not Equivalent
18	IS 12473 (Part 6) : 1988 Reviewed In : 2023 ISO 7627-6	Chemical analysis of hardmetals by flame atomic absorption spectrometry: Part 6 determination of chromium in contents from 0.01 to 2 percent (M/m)	December, 2023	-	Not Equivalent
19	IS 12483 : 1988 Reviewed In : 2024 ISO 4501	Determination of titanium in hardmetals by spectrophotometric method	February, 2024	-	Not Equivalent
20	IS 12513 : 1988 Reviewed In : 2024 ISO 3909	Determination of cobalt in hardmetals by potentiometric method	February, 2024	-	Not Equivalent
21	IS 12539 : 2022 ISO 3907:2009 ISO 3907:2009	Hardmetals Determination of total carbon Gravimetric method (First Revision)		-	Identical under dual numbering
22	IS 12548 : 2022 ISO 3908:2009 ISO 3908:2009	Hardmetals Determination of insoluble free carbon Gravimetric method		-	Identical under dual numbering
23	IS 12570 : 2022 ISO 4492:2017 ISO 4492:2017	Metallic powders excluding powders for hardmetals Determination of dimensional changes associated with compacting and sintering		-	Identical under dual numbering

24	IS 12571 : 1988 Reviewed In : 2024 ISO 3995	DETERMINATION OF GREEN STRENGTH BY TRANSVERSE RUPTURE OF RECTANGULAR COMPACTS OF METALLIC POWDER - METHODS	February, 2024	-	Not Equivalent
25	IS 12783 : 1989 Reviewed In : 2024	Hardmetals - Vickers hardness test	February, 2024	-	Indigenous
26	IS 13780 : 2020 ISO 4506 : 2018 4506 : 2018	Hardmetals — Compression Test ( First Revision )	-	-	Identical under dual numbering
27	IS 13781 : 1993 ISO 4003:1977 Reviewed In : 2024 ISO 4003:1977	Permeable sintered metal materials - Determination of bubble test pore size	February, 2024	-	Identical under dual numbering
28	IS 13782 : 2023 ISO 4022 : 2018 ISO 4022 : 2018	PERMEABLE SINTERED METAL MATERIALS - DETERMINATION OF FLUID PERMEABILITY (First Revision)		-	Identical under dual numbering
29	IS 13803 : 1993 ISO 3312:1987 Reviewed In : 2024 ISO 3312:1987	Sintered metal materials and hardmetals - Determination of young modulus	February, 2024	-	Identical under dual numbering
30	IS 15554 : 2018 ISO 2740:2009 Reviewed In : 2022 ISO 2740: 2009	Sintered metal materials, excluding hardmetals - Tensile test pieces (First Revision)	October, 2022	-	Identical under dual numbering
31	IS 15567 : 2020 ISO 3928 : 2016 3928 : 2016	Sintered Metal Materials, Excluding Hardmetals — Fatigue Test Pieces ( First Revision )	-	-	Identical under dual numbering
32	IS 15574 : 2022 ISO 5754:2017 ISO 5754:2017	Sintered metal materials excluding hardmetals Unnotched impact test piece		-	Identical under dual numbering
33	IS 15585 : 2018 ISO 5755:2012 Reviewed In : 2022 ISO 5755 : 2012	Sintered metal materials - Specifications (First Revision)	October, 2022	-	Identical under dual numbering
34	IS 15703 : 2018 4498:2010 Reviewed In : 2022 ISO 4498:2010	Sintered metal materials, excluding hardmetals - Determination of apparent hardness and microhardness (First Revision)	October, 2022	-	Identical under dual numbering
35	IS 17074 : 2023 ISO 13517: 2020 ISO 13517: 2020	Metallic powders Determination of flow rate by means of a calibrated funnel Gustavsson flowmeter		-	Identical under dual numbering
36	IS 17074 : 2019 ISO 13517 : 2013 ISO 13517: 2020	Metallic powders - Determination of flow rate by means of a calibrated funnel (Gustavsson Flowmeter)		-	Identical under dual numbering
37	IS/ISO 4507 : 2000 ISO 4507:2000 Reviewed In : 2021 ISO 4507:2000	Sintered ferrous materials, carburized or carbonitrided - Determination and verification of case - Hardening depth by a micro - Hardness test	March, 2021	-	Identical under single numbering
38	IS 4840 : 2022 ISO 4490:2018 ISO 4490:2018	Metallic powders Determination of flow rate by means of a calibrated funnel Hall flowmeter		-	Identical under dual numbering
39	IS 4841 : 2022 ISO 3369:2006 ISO 3369:2006	Impermeable sintered metal materials and hardmetals Determination of density		-	Identical under dual numbering
40	IS 4842 : 2018	Hardmetals - Determination of	October, 2022	-	Identical under dual

	ISO 3327 : 2009 Reviewed In : 2022 ISO 3327	transverse rupture strength (Second Revision)			numbering
41	IS 4848 : 2022 ISO 3923-1: 2018 Reviewed In : 2022 ISO 3923-1: 2018	Metallic powders Determination of apparent density: Funnel method	-	-	Identical under dual numbering
42	IS 4857 : 2020 ISO 3927 : 2017 3927 : 2017	Metallic Powders, Excluding Powders for Hardmetals — Determination of Compressibility in Uniaxial Compression ( Fifth Revision )	-	-	Identical under dual numbering
43	IS 5432 : 2022 ISO 3252 : 2019 ISO 3252 : 2019	POWDER METALLURGY- VOCABULARY		-	Identical under dual numbering
44	IS 5461 : 2024 ISO 4497: 2020 ISO 4497: 2020	Metallic powders $\bar{d}_v^{1/2}$ Determination of particle size by dry sieving ( Second Revision )		-	Identical under dual numbering
45	IS 5642 : 2014 ISO 2738 Reviewed In : 2020 ISO 2738	Sintered metal materials, excluding hardmetals - Permeable sintered metal materials - Determination of density, oil content and open porosity (Third Revision)	July, 2020	-	Identical under dual numbering
46	IS 5644 (Part 1) : 1993 ISO 4491-1:1997 Reviewed In : 2024 ISO 4491-1:1989	Metallic powders - Determination of oxygen content by reduction methods: Part 1 general guidelines (Third Revision)	February, 2024	-	Identical under dual numbering
47	IS 5644 (Part 2) : 2005 ISO 4491-2:1997 Reviewed In : 2022 ISO 4491-2:1997	Metallic powders - Determination of oxygen content by reduction methods: Part 2 loss of mass on hydrogen reduction (Hydrogen Loss) (Fourth Revision)	July, 2022	-	Identical under dual numbering
48	IS 5644 (Part 3) : 2005 ISO 4491-3:1997 Reviewed In : 2022 ISO 4491-3:1997	Metallic powders - Determination of oxygen content by reduction methods: Part 3 hydrogen - Reducible oxygen (Fourth Revision)	July, 2022	-	Identical under dual numbering
49	IS 5644 (Part 4) : 2023 ISO 4491-4 : 2019 ISO 4491-4 : 2019	Metallic powders Determination of oxygen content by reduction methods Part 4: Total oxygen by reduction-extraction Fifth Revision		-	Identical under dual numbering
50	IS 5652 (Part 1) : 1993 ISO 3738-1:1982 Reviewed In : 2024 ISO 3738-1:1982	Hardmetals - Rockwell hardness test (Scale A): Part 1 test method (Second Revision)	February, 2024	-	Identical under dual numbering
51	IS 6492 : 2020 ISO 3954 : 2007 ISO 3954 : 2007	Powders for Powder Metallurgical Purposes — Sampling ( First Revision )	-	-	Identical under dual numbering
52	IS 7438 : 2022 ISO 4496:2017 ISO 4496:2017	Metallic powders Determination of acid-insoluble content in iron copper tin and bronze powders		-	Identical under dual numbering
53	IS 7505 : 2024	Cobalt Powder for Hardmetals "â€” Specification (Second Revision)		-	Indigenous
54	IS 7505 : 1985 Reviewed In : 2023	Specification for cobalt powder for hardmetals (First Revision)	January, 2023	-	Indigenous
55	IS 7506 : 1987 Reviewed In : 2024	Specification for nickel powder (First Revision)	February, 2024	-	Indigenous

56	IS 7512 : 2006 Reviewed In : 2022 ISO 10070	Method for the determination of average particle size of metal powders by fisher sub-sieve sizer (First Revision)	July, 2022	-	Not Equivalent
57	IS 7970 : 2024	Tantalum powder for capacitors - Specification ( Second Revision )		-	Indigenous
58	IS 7970 : 1987 Reviewed In : 2024	Specification for tantalum powder for capacitors (First Revision)	February, 2024	1	Indigenous
59	IS 8367 : 2023	TIN POWDER $i_c^{1/2}$ SPECIFICATION		-	Indigenous
60	IS 8368 : 2010 Reviewed In : 2024	Tungsten carbide powder for hardmetals - Specification (Second Revision)	February, 2024	-	Indigenous
61	IS 8369 : 2010 Reviewed In : 2024	Titanium carbide powder for hardmetals - Specification (Second Revision)	March, 2024	-	Indigenous
62	IS 8370 : 2018 Reviewed In : 2022	Iron powder for powder metallurgical applications (First Revision)	October, 2022	-	Indigenous
63	IS 8392 : 2023	TUNGSTEN POWDER FOR HARDMETALS $i_c^{1/2}$ SPECIFICATION(Second revision)		-	Indigenous
64	IS 8485 : 2018 Reviewed In : 2022	Copper powder for powder metallurgical applications (First Revision)	October, 2022	-	Indigenous
65	IS 8871 : 2018 ISO 3953:2011 Reviewed In : 2022 ISO 3953: 2011	Metallic powders - Determination of tap density (Third Revision)	July, 2022	-	Identical under dual numbering
66	IS 8876 : 2023	METHODS FOR DETERMINATION OF RESIDUE ON CHLORINATION OF TUNGSTEN METAL POWDER (First Revision)		-	Indigenous

### Standards under Development

#### Projects Approved

Sl. No.	Doc No.	Title
<i>No Records Found</i>		

#### Preliminary Draft Standards

Sl. No.	Doc No.	Title
1	MTD 25 (23788) <span style="color: green;">Revision of: IS 12473:1988</span>	Chemical analysis of hardmetals by flame atomic absorption spectrometry Part 1 general requirements
2	MTD 25 (23789) <span style="color: green;">Revision of: IS 12473:1988</span>	CHEMICAL ANALYSIS OF HARDMETALS BY FLAME ATOMIC ABSORPTION SPECTROMETRY PART 2 DETERMINATION OF CALCIUM POTASSIUM MAGNESIUM AND SODIUM IN CONTENTS FROM 0001 TO 002 PERCENT mm
3	MTD 25 (23790) <span style="color: green;">Revision of: IS 12473:1988</span>	CHEMICAL ANALYSIS OF HARDMETALS BY FLAME ATOMIC ABSORPTION SPECTROMETRY PART 3 DETERMINATION OF COBALT IRON MANGANESE AND NICKEL IN CONTENTS FROM 001 TO 05 PERCENT min First Revision of IS 12473 PART - 3
4	MTD 25 (24244) <span style="color: green;">Revision of: IS 12473:1988</span>	CHEMICAL ANALYSIS OF HARDMETALS BY FLAME ATOMIC ABSORPTION SPECTROMETRY PART 4 DETERMINATION OF MOLYBDENUM TITANIUM AND VANADIUM IN CONTENTS FROM 001 TO 05 PERCENT mm

5	MTD 25 (24245) Revision of: IS 12473:1988	Chemical analysis of hardmetals by flame atomic absorption spectrometry Part 5 determination of cobalt iron manganese molybdenum nickel titanium and vanadium in contents from 05 to 2 percent Mm
6	MTD 25 (24247) Revision of: IS 12473:1988	Chemical analysis of hardmetals by flame atomic absorption spectrometry Part 6 determination of chromium in contents from 001 to 2 percent Mm
7	MTD 25 (26915) Revision of: IS 7506:1987	NICKEL POWDER FOR HEAVY ALLOYS AND HARD METALS - SPECIFICATION Second Revision

### Drafts Standards in WC Stage

SI. No.	Doc No.	Title
1	MTD 25 (24972) Revision of: IS 12483:1988	DETERMINATION OF TITANIUM IN HARDMETALS BY SPECTROPHOTOMETRIC - METHOD First Revision
2	MTD 25 (24973) Revision of: IS 12513:1988	DETERMINATION OF COBALT IN HARDMETALS BY POTENTIOMETRIC METHOD First Revision

### Draft Standards Completed WC Stage

SI. No.	Doc No.	Title
1	MTD 25 (24978) Revision of: IS 12513:1988	HARDMETALS- VICKERS HARDNESS TEST First Revision

### Finalized Draft Indian Standard

SI. No.	Doc No.	Title
<i>No Records Found</i>		

### Finalized Draft Indian Standards under Print

SI. No.	Doc No.	Title
1	MTD 25 (21872) Revision of: IS 12286:1988	Determination of Abrasive Wear Resistance of Hard Metals Methods First Revision
2	MTD 25 (24982) Revision of: IS 12571:1988	Methods for Determination of Green Strength by Transverse Rupture of Rectangular Compacts of Metallic Powder First Revision

**Total Published Standards:63 Total Standards Under development:12**

### Aspect Wise Report

Product : 13  
Code of Practices : 1  
Methods of Test : 47  
Terminology : 1  
Dimensions : 0  
System Standard : 0  
Safety Standard : 0  
Others : 1  
Service Specification : 0  
Process Specification : 0  
Unclassified : 0

### Annexure-I :List of Indian Standards Withdrawn/Superseded

SI. No.	IS No. & Year	Title
1	IS 10441 : 1991	Metallic powders - determination of apparent density - oscillating funnel method
2	IS 12216 : 1987	Tantalum Carbide Powder

3	IS 12217 : 1987	Niobium Carbide Powder
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<b>Annexure-II :List of Indian Product Standards</b>
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SI. No.	IS No. & Year	Title
1	IS 10035 : 2023	BRONZE POWDER FOR METALLIC FILTERS - SPECIFICATION
2	IS 11110 : 2023	Copper - Lead powder - Specification
3	IS 11111 : 2023	Leaded bronze powders - Specification
4	IS 15585 : 2018 ISO 5755:2012 Reviewed In : 2022 ISO 5755 : 2012	Sintered metal materials - Specifications First Revision
5	IS 7505 : 2024	Cobalt Powder for Hardmetals Specification Second Revision
6	IS 7506 : 1987 Reviewed In : 2024	Specification for nickel powder First Revision
7	IS 7970 : 2024	Tantalum powder for capacitors - Specification Second Revision
8	IS 8367 : 2023	TIN POWDER SPECIFICATION
9	IS 8368 : 2010 Reviewed In : 2024	Tungsten carbide powder for hardmetals - Specification Second Revision
10	IS 8369 : 2010 Reviewed In : 2024	Titanium carbide powder for hardmetals - Specification Second Revision
11	IS 8370 : 2018 Reviewed In : 2022	Iron powder for powder metallurgical applications First Revision
12	IS 8392 : 2023	TUNGSTEN POWDER FOR HARDMETALS SPECIFICATION Second revision
13	IS 8485 : 2018 Reviewed In : 2022	Copper powder for powder metallurgical applications First Revision