

# 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) 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 $i_{\frac{1}{2}}$ 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 $i_{\frac{1}{2}}$ Method ( First Revision )		-	Not Equivalent

10	IS 11960:2023 ISO 4505	Metallographic Determination of Apparent Porosity and Uncombined Carbon in Hard Metals - Method ( First Revision )		-	Not Equivalent
11	IS 12279:2005 ISO 3325:1996 Reviewed In : 2022 ISO 3325:1996	Sintered metal materials, excluding hardmetals - Determination of transverse rupture strength (First Revision)	July, 2022	-	Identical under dual numbering
12	IS 12286:2025 ISO 28080 : 2011 ISO 28080 : 2011	Determination of Abrasive Wear Resistance of Hard Metals - Methods of Test ( First Revision )		-	Identical under dual numbering
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	Hardmetals Determination of insoluble free carbon Gravimetric		-	Identical under dual numbering

	ISO 3908:2009	method			
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 12571:2025 ISO 3995 : 2023 ISO 3995 : 2023	Methods for Determination of Green Strength by Transverse Rupture of Rectangular Compacts of Metallic Powder ( First Revision )		-	Identical under dual numbering
25	IS 12783:1989 Reviewed In : 2024	Hardmetals - Vickers hardness test	February, 2024	-	Indigenous
26	IS 13780:2020 ISO 4506 : 2018 Reviewed In : 2025 4506 : 2018	Hardmetals — Compression Test ( First Revision )	January, 2025	-	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 Reviewed In : 2025 3928 : 2016	Sintered Metal Materials, Excluding Hardmetals — Fatigue Test Pieces ( First Revision )	January, 2025	-	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/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
37	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

38	IS 4841:2022 ISO 3369:2006 ISO 3369:2006	Impermeable sintered metal materials and hardmetals Determination of density		-	Identical under dual numbering
39	IS 4842:2018 ISO 3327 : 2009 Reviewed In : 2022 ISO 3327	Hardmetals - Determination of transverse rupture strength (Second Revision)	October, 2022	-	Identical under dual numbering
40	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
41	IS 4857:2020 ISO 3927 : 2017 Reviewed In : 2025 3927 : 2017	Metallic Powders, Excluding Powders for Hardmetals — Determination of Compressibility in Uniaxial Compression ( Fifth Revision )	January, 2025	-	Identical under dual numbering
42	IS 5432:2022 ISO 3252 : 2019 ISO 3252 : 2019	POWDER METALLURGY- VOCABULARY		-	Identical under dual numbering
43	IS 5461:2024 ISO 4497: 2020 ISO 4497: 2020	Metallic powders $\bar{x}_d^{1/2}$ Determination of particle size by dry sieving ( Second Revision )		-	Identical under dual numbering
44	IS 5642:2014 ISO 2738 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
45	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
46	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
47	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
48	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
49	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
50	IS 6492:2020 ISO 3954 : 2007 Reviewed In : 2025 ISO 3954 : 2007	Powders for Powder Metallurgical Purposes — Sampling ( First Revision )	January, 2025	-	Identical under dual numbering
51	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
52	IS 7505:2024	Cobalt Powder for Hardmetals â€”		-	Indigenous

		Specification (Second Revision)			
53	IS 7506:1987 Reviewed In : 2024	Specification for nickel powder (First Revision)	February, 2024	-	Indigenous
54	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
55	IS 7970:2024	Tantalum powder for capacitors - Specification ( Second Revision )		-	Indigenous
56	IS 8367:2023	TIN POWDER $i_c^{1/2}$ SPECIFICATION		-	Indigenous
57	IS 8368:2010 Reviewed In : 2024	Tungsten carbide powder for hardmetals - Specification (Second Revision)	February, 2024	-	Indigenous
58	IS 8369:2010 Reviewed In : 2024	Titanium carbide powder for hardmetals - Specification (Second Revision)	March, 2024	-	Indigenous
59	IS 8370:2018 Reviewed In : 2022	Iron powder for powder metallurgical applications (First Revision)	October, 2022	-	Indigenous
60	IS 8392:2023	TUNGSTEN POWDER FOR HARDMETALS $i_c^{1/2}$ SPECIFICATION(Second revision)		-	Indigenous
61	IS 8485:2018 Reviewed In : 2022	Copper powder for powder metallurgical applications (First Revision)	October, 2022	-	Indigenous
62	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
63	IS 8876:2023	METHODS FOR DETERMINATION OF RESIDUE ON CHLORINATION OF TUNGSTEN METAL POWDER (First Revision)		-	Indigenous

### Standards under Development

#### Projects Approved

SI. No.	Doc No.	Title
1	MTD 25 (28114)	Hardmetals Palmqvist toughness test

#### Preliminary Draft Standards

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

#### Drafts Standards in WC Stage

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

#### Draft Standards Completed WC Stage

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

## Finalized Draft Indian Standard

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

## Finalized Draft Indian Standards under Print

Sl. No.	Doc No.	Title
1	MTD 25 (05248) Revision of: IS 8370:2018	Iron powder for powder metallurgical applications
2	MTD 25 (05249) Revision of: IS 8485:2018	Copper Powder For Powder Metallurgical Applications
3	MTD 25 (05324) Revision of: IS 15554:2018	Sintered Metal Materials Excluding Hardmetals - Tensile Test Pieces
4	MTD 25 (05327) Revision of: IS 8871:2018	Metallic Powders - Determination of tap density
5	MTD 25 (05328) Revision of: IS 15703:2018	Sintered metal materials excluding hardmetals - determination of apparent hardness and microhardness
6	MTD 25 (05329) Revision of: IS 4842:2018	Hard metals Determination of transverse rupture strength
7	MTD 25 (11359) Revision of: IS 10385:2019	Sintered Metal Bushings - Determination of Radial Crushing Strength
8	MTD 25 (11361) Revision of: IS 5644:2018	Metallic powders - Determination of oxygen content by reduction methods - Part 4 Total oxygen by reduction-extraction
9	MTD 25 (11364) Revision of: IS 11506:2019	Lubricated metal-powder mixes - Determination of lubricant content - Soxhlet extraction method
10	MTD 25 (11365) Revision of: IS 15585:2018	Sintered metal materials - Specifications
11	MTD 25 (11370)	Metallic powders - Determination of flowrate by means of a calibrated funnel Gustavsson flowmeter
12	MTD 25 (13608) Revision of: IS 5432:1982	POWDER METALLURGY-VOCABULARY
13	MTD 25 (13614) Revision of: IS 6492:2020	POWDERS FOR POWDER METALLURGICAL PURPOSES-SAMPLING
14	MTD 25 (15560) Revision of: IS 4857:2020	Metallic powders excluding powders for hardmetals - Determination of compressibility in uniaxial compression Fourth Revision
15	MTD 25 (15561) Revision of: IS 13780:2020	Hardmetals - Compression test
16	MTD 25 (15562) Revision of: IS 15567:2020	Sintered metal materials excluding hardmetals - Fatigue test pieces
17	MTD 25 (17346) Revision of: IS 7438:1985	Metallic powders Determination of acid-insoluble content in iron copper tin and bronze powders
18	MTD 25 (17347) Revision of: IS 15574:2005	Sintered metal materials excluding hardmetals Unnotched impact test piece
19	MTD 25 (17348) Revision of: IS 4841:1982	Impermeable sintered metal materials and hardmetals Determination of density
20	MTD 25 (17349) Revision of: IS 4848:1981	Metallic powders Determination of apparent density Funnel method
21	MTD 25 (17350) Revision of: IS 4840:2006	Metallic powders Determination of flow rate by means of a calibrated funnel Hall flowmeter
22	MTD 25 (17351) Revision of: IS 12539:1988	Hardmetals Determination of total carbon Gravimetric method
23	MTD 25 (17352) Revision of: IS 12570:1988	Metallic powders excluding powders for hardmetals Determination of dimensional changes associated with compacting and sintering
24	MTD 25 (17353) Revision of: IS 12548:1988	Hardmetals Determination of insoluble free carbon Gravimetric method
25	MTD 25 (20352) Revision of: IS 11518:1985	Method for determination of The Magnetization coercivity in hardmetals

26	MTD 25 (20357) Revision of: IS 8876:1978	METHODS FOR DETERMINATION OF RESIDUE ON CHLORINATION OF TUNGSTEN METAL POWDER
27	MTD 25 (20388) Revision of: IS 17074:2019	Metallic powders Determination of flow rate by means of a calibrated funnel Gustavsson flowmeter
28	MTD 25 (21020) Revision of: IS 11111:1984	Leaded bronze powders - Specification
29	MTD 25 (21021) Revision of: IS 11110:1984	Copper - Lead powder - Specification
30	MTD 25 (21687) Revision of: IS 10035:1993	BRONZE POWDER FOR METALLIC FILTERS - SPECIFICATION
31	MTD 25 (21708) Revision of: IS 8392:1985	TUNGSTEN POWDER FOR HARDMETALS SPECIFICATION Second revision
32	MTD 25 (21714) Revision of: IS 11520:1985	Metallographic Sample Preparation of Hardmetals Method First Revision
33	MTD 25 (21715) Revision of: IS 11627:1986	Determination of Apparent Density of Metallic Powders by Scott Volumeter - Method First Revision
34	MTD 25 (21716) Revision of: IS 11959:1987	Metallographic Determination of Microstructure in Hard Metals Method First Revision
35	MTD 25 (21717) Revision of: IS 11960:1987	Metallographic Determination of Apparent Porosity and Uncombined Carbon in Hard Metals - Method First Revision
36	MTD 25 (21727) Revision of: IS 5644:2018	Metallic powders Determination of oxygen content by reduction methods Part 4 Total oxygen by reduction-extraction Fifth Revision
37	MTD 25 (21872) Revision of: IS 12286:1988	Determination of Abrasive Wear Resistance of Hard Metals Methods of Test First Revision
38	MTD 25 (22072) Revision of: IS 13782:1993	PERMEABLE SINTERED METAL MATERIALS - DETERMINATION OF FLUID PERMEABILITY First Revision
39	MTD 25 (22266) Revision of: IS 5461:1984	Metallic powders Determination of particle size by dry sieving Second Revision
40	MTD 25 (22359) Revision of: IS 8367:1993	TIN POWDER SPECIFICATION
41	MTD 25 (23743) Revision of: IS 7505:1985	COBALT POWDER FOR HARDMETALS - SPECIFICATION Second Revision
42	MTD 25 (23768) Revision of: IS 7970:1987	Tantalum powder for capacitors - Specification Second Revision
43	MTD 25 (23788) Revision of: IS 12473:1988	Chemical analysis of hardmetals by flame atomic absorption spectrometry Part 1 general requirements
44	MTD 25 (23789) Revision of: IS 12473:1988	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
45	MTD 25 (23790) Revision of: IS 12473:1988	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
46	MTD 25 (24244) Revision of: IS 12473:1988	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
47	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
48	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
49	MTD 25 (24972) Revision of: IS 12483:1988	DETERMINATION OF TITANIUM IN HARDMETALS BY SPECTROPHOTOMETRIC - METHOD First Revision
50	MTD 25 (24973) Revision of: IS 12513:1988	DETERMINATION OF COBALT IN HARDMETALS BY POTENTIOMETRIC METHOD First Revision
51	MTD 25 (24978) Revision of: IS 12783:1989	HARDMETALS- VICKERS HARDNESS TEST First Revision
52	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

53	MTD 25 (26915) Revision of: IS 7506:1987	NICKEL POWDER FOR HEAVY ALLOYS AND HARD METALS - SPECIFICATION Second Revision
----	--	--

Total Published Standards:63 Total Standards Under development:54

### 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

### Annexure-II :List of Indian Product Standards

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
----	------------------------------------	--