

# BUREAU OF INDIAN STANDARDS

## Program of Work

### MTD 22 : Metallography and Heat-Treatment Sectional Committee

Scope: Standardization in the field of metallography and heat-treatment of ferrous and non-ferrous metals and alloys

Liaison: **ISO TC-17 SC-7 (P):** *Methods of testing (other than mechanical tests and chemical analysis)*

## Published Standards

S.No	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS 10138 : 2010 <span style="color: green;">Reviewed In : 2022</span> ISO 3763:1976	Macroscopic methods for determination of non-metallic inclusion content in wrought steels (Second Revision)	March, 2022	-	Not Equivalent
2	IS 11371 : 2022	Method for macroetch testing inspection and rating of wrought steel products (First Revision)		-	Indigenous
3	IS 12037 : 2023 ISO 4968 : 2022 <span style="color: green;">ISO 4968 : 2022</span>	Steel - Macrographic examination by sulphur print (Baumann method) (First Revision)		-	Identical under dual numbering
4	IS 12211 : 1987 <span style="color: green;">Reviewed In : 2023</span> ISO 5949 :1983	Specification for micrographic method for assessing the distribution of carbides in tool steels and bearing steels using reference photomicrographs	March, 2023	-	Not Equivalent
5	IS 12366 : 1988 <span style="color: green;">Reviewed In : 2023</span>	Recommended practice for heat treatment of titanium and titanium alloys	March, 2023	-	Indigenous
6	IS 12378 : 1988 <span style="color: green;">Reviewed In : 2023</span>	Method for macroetch test for titanium alloys	March, 2023	-	Indigenous
7	IS 12573 : 2010 <span style="color: green;">Reviewed In : 2022</span>	Method for macroetch test for wrought aluminium and aluminium alloy products (First Revision)	March, 2022	-	Indigenous
8	IS 13417 : 1992 <span style="color: green;">Reviewed In : 2023</span>	Code of practice for heat treatment of steels	March, 2023	-	Indigenous
9	IS 13484 : 1992 <span style="color: green;">Reviewed In : 2023</span>	Method for macroetch test for copper and copper alloys	February, 2023	-	Indigenous
10	IS 13605 : 1992 <span style="color: green;">Reviewed In : 2023</span>	Method for macroetch test for zinc and zinc alloys	February, 2023	-	Indigenous
11	IS 13655 : 1993 <span style="color: green;">Reviewed In : 2023</span>	Guidelines for heat treatment of cast iron	March, 2023	-	Indigenous
12	IS 13691 : 1993 ISO 4970:1979 <span style="color: green;">Reviewed In : 2023</span> Reaffirmed but not taken up for revision <span style="color: green;">ISO 4970:1979</span>	Steel - Determination of total or effective thickness of thin surface - Hardened layers	March, 2023	-	Identical under dual numbering
13	IS 14598 : 1998	Heat treatment of maraging steel -	February, 2023	-	Indigenous

	Reviewed In : 2023	Code of practice			
14	IS 15426 : 2004 ISO 14250:2000 Reviewed In : 2022 ISO 14250:2000	Steel - Metallographic characterization of duplex grain size and distributions	March, 2022	-	Identical under dual numbering
15	IS 15839 : 2021 ISO 13520:2015 ISO 13520:2015	Determination of ferrite content in austenitic stainless steel castings (First Revision)		-	Identical under dual numbering
16	IS 17174 : 2020 ISO 16574 : 2015 ISO 16574:2015	Determination of Percentage of Resolvable Pearlite in High Carbon Steel Wire Rod		-	Identical under dual numbering
17	IS 18715 : 2024 ISO 9042:1988 ISO 9042:1988	Steels - Manual Point Counting Method for Statistically Estimating the Volume Fraction of a Constituent with a Point Grid		-	Identical under dual numbering
18	IS 1956 (Part 1) : 1976 Reviewed In : 2023	Glossary of terms relating to iron and steel: Part 1 general metallurgy, heat treatment and testing (First Revision)	March, 2023	-	Indigenous
19	IS 3848 : 2024 ISO 642:1999 ISO 642:1999	Steel " Hardenability Test by End Quenching (Jominy Test) (Second Revision)		-	Identical under dual numbering
20	IS 4075 : 1985 Reviewed In : 2023	Method for macrostreak flaw test for steel (First Revision)	February, 2023	-	Indigenous
21	IS 4163 : 2021 ISO 4967:2013 ISO 4967:2013	Steel - Determination of content of non-metallic inclusions - Micrographic method using standard diagrams (Fourth Revision)		-	Identical under dual numbering
22	IS 4748 : 2021 ISO 643:2019 ISO 643 : 2019	Steel - Micrographic determination of the apparent grain size (Third Revision)		-	Identical under dual numbering
23	IS 5699 : 1970 Reviewed In : 2023	Methods for chill testing of cast iron	March, 2023	-	Indigenous
24	IS 6396 : 2023 ISO 3887 : 2017 ISO 3887 : 2017	Steels - Determination of the depth of decarburization (Third Revision)		-	Identical under dual numbering
25	IS 6396 : 2000 Reviewed In : 2023 ISO 3887 : 2017	Methods of measuring decarburized depth of steel (Second Revision)	March, 2023	-	Identical under dual numbering
26	IS 6416 : 2022	Method for measuring case-depth of steel (Second Revision)		-	Indigenous
27	IS 7739 (Part 1) : 1975 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 1 general features	February, 2023	-	Indigenous
28	IS 7739 (Part 2) : 1975 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 2 electrolytic polishing	March, 2023	-	Indigenous
29	IS 7739 (Part 3) : 1975 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 3 aluminium and its alloys and their examination	March, 2023	-	Indigenous
30	IS 7739 (Part 4) : 1975 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 4 copper and its alloys and their examination	February, 2023	-	Indigenous
31	IS 7739 (Part 5) : 1976 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 5 iron and steel and their	March, 2023	-	Indigenous

		examination			
32	IS 7739 (Part 6) : 1975 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 6 lead and its alloys and their examination	February, 2023	-	Indigenous
33	IS 7739 (Part 7) : 1975 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 7 magnesium and its alloys and their examination	February, 2023	-	Indigenous
34	IS 7739 (Part 8) : 1975 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 8 nickel and its alloys and their examination	February, 2023	-	Indigenous
35	IS 7739 (Part 9) : 1975 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 9 gold, silver, platinum, palladium and their alloys	February, 2023	-	Indigenous
36	IS 7739 (Part 10) : 1975 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 10 tin and its alloys and their examination	February, 2023	-	Indigenous
37	IS 7739 (Part 11) : 1976 Reviewed In : 2023	Code of practice for preparation of metallographic specimens: Part 11 zinc and its alloys and their examination	February, 2023	-	Indigenous
38	IS 7754 : 2024 ISO/TR 945-2 : 2011 ISO 945-4 : 2019	Microstructure of cast irons Part 2 Graphite classification by image analysis (First Revision)		-	Identical under dual numbering
39	IS 7754 (Part 1) : 2022 ISO 945-1:2019 ISO 945-4 : 2019	Microstructure of Cast Irons Part 1 Graphite Classification by Visual Analysis ( First Revision )		-	Identical under dual numbering
40	IS 8860 : 1978 Reviewed In : 2023	Code of practice for heat treatment of aluminium alloys	February, 2023	-	Indigenous
41	IS 9415 : 2024	Method for Determination of Hardenability and Grain Size of Tool Steels by Penetration Fracture Test (First Revision)		-	Indigenous
42	IS 9415 : 1980 Reviewed In : 2023	Method for determination of hardenability and grain size of tool steels by penetration fracture test	February, 2023	-	Indigenous

### Standards under Development

#### Projects Approved

SI. No.	Doc No.	Title
1	MTD 22 (21992) Revision of: IS 12366:1988	Recommended practice for heat treatment of titanium and titanium alloys first revision
2	MTD 22 (21993) Revision of: IS 12378:1988	Method for macroetch test for titanium alloys first revision
3	MTD 22 (21995) Revision of: IS 5699:1970	Methods for chill testing of cast iron first revision
4	MTD 22 (21997) Revision of: IS 7739:1975	Code of practice for preparation of metallographic specimens Part 3 aluminium and its alloys and their examination first revision

#### Preliminary Draft Standards

SI. No.	Doc No.	Title
1	MTD 22 (21840) Revision of: IS 13655:1993	Guidelines for heat treatment of cast iron First Revision
2	MTD 22 (26066) Revision of: IS 1956:1976	Glossary of Terms Relating to Iron and Steel Part 1 General Metallurgy Heat Treatment and Testing Second Revision
3	MTD 22 (26067) Revision of: IS 7739:1975	Code of practice for preparation of metallographic specimens Part 2 electrolytic polishing first revision
4	MTD 22 (26068) Revision of: IS 7739:1976	Code of practice for preparation of metallographic specimens Part 5 Ferrous alloys first revision

### Drafts Standards in WC Stage

SI. No.	Doc No.	Title
1	MTD 22 (21981) Revision of: IS 13691:1993	Steel - Determination of total or effective thickness of thin surface - Hardened layers First Revision

### Draft Standards Completed WC Stage

SI. No.	Doc No.	Title
1	MTD 22 (21980) Revision of: IS 13691:1993	Code of practice for heat treatment of aluminium alloys first revision
2	MTD 22 (21986) Revision of: IS 13691:1993	Heat treatment of maraging steel - Code of practice first revision
3	MTD 22 (21991) Revision of: IS 13691:1993	Code of practice for preparation of metallographic specimens Part 1 general features first revision

### Finalized Draft Indian Standard

SI. No.	Doc No.	Title
1	MTD 22 (25015) Revision of: IS 15839:2021	Determination of Ferrite Content in Austenitic Stainless Steel Castings Second Revision
2	MTD 22 (25480)	Copper and copper alloys - Estimation of average grain size

### Finalized Draft Indian Standards under Print

SI. No.	Doc No.	Title
1	MTD 22 (21791) Revision of: IS 13417:1992	Heat treatment of steel - Code of practice First Revision
2	MTD 22 (21973) Revision of: IS 4075:1985	Macroscopic Flaw Test for Steel Method of Test Second Revision
3	MTD 22 (21985) Revision of: IS 13484:1992	Method for Macroetch Test for Copper and Copper Alloys First Revision
4	MTD 22 (21988) Revision of: IS 13605:1992	Macroetch Test for Zinc and Zinc Alloys Method of Test First Revision
5	MTD 22 (21994) Revision of: IS 12211:1987	Tool steels and bearing steels Micrographic method for assessing the distribution of carbides using reference photomicrographs First revision
6	MTD 22 (23089) Revision of: IS 7754:1975	Microstructure of cast irons - Part 2 Graphite classification by image analysis First Revision

**Total Published Standards:38 Total Standards Under development:20**

### Aspect Wise Report

Product : 0  
Code of Practices : 16  
Methods of Test : 21  
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 10138 (Part 1) : 1992 Reviewed In : 2007	Macroscopic Method For Determination Of Non-metallic Inclusion Content In Wrought Steels Part 1 Blue Fracture Test Method
2	IS 10138 (Part 2) : 1983 Reviewed In : 2007	Macroscopic Methods for Determination of Non-metallic Inclusion Contents in Wrought Steels - Part 2 Step Machined Test Method
3	IS 10138 (Part 3) : 1983 Reviewed In : 2007	Macroscopic Methods for Determination of Non-metallic Inclusion Content in Wrought Steels - Part 3 Magnetic Particle Inspection Method
4	IS 13015 : 1991 Reviewed In : 2018	Steel products - Macroetch testing inspection and rating - Specification
5	IS 2756 : 1965	Method for estimating the average grain size of wrought copper and copper base alloys
6	IS 2853 : 1964	Methods of determining austenitic grain size in steel
7	IS 8795 : 1978 Reviewed In : 2018	Method for determining case depth of carburized steel by fracture test

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

SI. No.	IS No. & Year	Title
<i>No Records Found</i>		