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BUREAU OF INDIAN STANDARDS

AGENDA

Name of the Committee	No. of Meeting	Day	Date	Time	Venue
Rotating Machinery Sectional Committee ETD 15	34nd	**Friday**	**22 March 2024**	14:30 AM	**WebEx (Online)**

CHAIRMAN : Shri Mukesh Maravi **MEMBER SECRETARY** : Ms. Jatin Tiwari

Item 0 GENERAL

0.1 Welcome and Opening Remarks by the Chairman

Item 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING

1.1 The minutes of the 33st meeting of the Rotating Machinery Sectional Committee, ETD 15 held on 17th Nov 2023 were circulated on 22 Nov 2023.

No comments received.

The Committee may note and formally confirm the minutes of the last meeting.

ITEM 2- COMPOSITION

Composition with attendance in last two meetings is in Annexure-1

The Efficiency Index is being calculated for all BIS committees . Details are given in Annex-2

Co Option request- Rabindra Sahoo from PICL. CV and authorisation is attached in Annexure -3

ITEM 3- RECENT ISSUES

IEEMA had forwarded a letter regarding non-compliance of certification to BIS and requested to discuss it in the meeting.

ITEM 4- ACTIONS ARISING OUT OF PREVIOUS MEETINGS

Sl. No.	Item No. of Last Minutes	Subject	Decision taken during the last meeting	Action/Remarks
1.	1.2 (1)	**Revision of IS 9283: 2013/ Motors** for Submersible Pump sets – Specification (Second Revision) ETD 15 (17922)/ P Draft circulated vide email dated 18 August 2021 with last date of comments as 17 Sep 2021.	The WC draft received many comments both editorial and technical. Corrected draft will be recirculated for WC	
2.	1.2 (2)	**Revision of IS 12075: 2008** Mechanical Vibration of Rotating Electrical Machines with Shaft Heights 56 mm and Higher - Measurement, Evaluation and Limits of Vibration Severity	ETD/15/23815 was wide circulated on 17/10/23. 2 Comments were received from Mr. Ashish Shere. 1 was a mistake in typing. It has been corrected. The committee may deliberate on 2nd comment and approve for printing or 2nd WC	
3.	1.2 (5)	Revision of IS 12065	Draft received from Mr. Ashish Shere. The committee may approve for WC. The same WG was also requested to review IS 4758: 1968 ‘Methods of measurement of noise emitted by machines’ and recommend for withdrawal, if requirements are already covered in IS 12065.	Reply is awaited.

5.	**1.2 (4)**	NWIP- PERMANENT MAGNET PMAC / DC / PMSM MOTORS FOR SUBMERSIBLE PUMPSETS - SPECIFICATION	Mail Received from Mr. Ravi Singh to not merge the two standards. Members may update/finalize the two drafts to do P draft.	
6.	**1.2 (3)**	**ETD 15 (15753) (Third Revision of IS 996: 2009)** Single phase ac induction motors for general purpose	The committee discussed that its not possible to achieve efficiency in single phase motors as in 3-phase motors. Therefore, here efficiency can not be aligned with IEC 60034-30-1. In addition, IEC 60034-30-1 does not define frame to output ratio also. IEEMA was also requested to share the draft with the leading manufacturer of single phase ac motors for obtaining comments.	
7.		Revision of IS 8151 'Specification for single - Speed three - Phase induction motors for driving lifts'	Chair approval for printing is awaited. Approval may be done during meeting and will be circulated with resolution and minutes	
9.		Revision of IS 12615: 2018 Line operated three phase AC motors (IE Code) "Efficiency classes and performance specification" (Third Revision)	The committee decided to revise IS 12615: 2018 in order to bring more clarity in the scope as well as to incorporate all the suggestions received during the last meeting of ETD 15. ETD received mail from Siemens regarding the IS 12615	The committee may decide the future course of action in this regard.

Item 5 REVIEW OF PROGRAM OF WORK OF ETD 15

The Programme of work of ETD 15 is given in **Annex 2**. Committee members may give their suggestions.

5.1 Review of Standards - Taking up Revision of Pre-2000 Standards

BIS has identified a list of standards which are very old (pre year 2000). Such Standards are to either be revised with new year or withdrawn . Kindly volunteer to form a working group (4-5 members) to make reports about pre 2000 standards and submit action to be taken.

Standards to be approved for withdrawal

IS No.	Title	Reaffirmation Details	Degree of Equivalence	YEAR	ACTION TO BE TAKEN
IS 12066 : 1987	Specification for three - Phase induction motors for machine tools	March, 2019	Modified/Technically Equivalent	1987	DECIDED FOR WITHDRAWAL Approved by DG CPRI, in 2002,written in 32 Agenda (based on IEMA: I-1978 IEMA)
IS 13584 : 1993	Brush materials for electrical machinery - Specification	March, 2019	Modified/Technically Equivalent	1993	IEC 60773: 2021 IEC 60413: 1972 Permission for Wide circulation of IEC
IS 4889 : 1968	Methods of determination of efficiency of rotating electrical machines	2017	Modified/Technically Equivalent	1968	IS 15999 (Part 2/Sec 1) : 2023 60034-2-1 (Active) adopted . Permission to withdraw
IS 5422 : 1996	Turbine type generators - Specification (First Revision)	2017	Modified/Technically Equivalent	1996	IS 15999 (Part 3): 2023/ IEC 60034-3: 2020 “Specific Requirements for Synchronous Generators Driven by Steam Turbines or Combustion Gas Turbines and for Synchronous Compensators” is published. In view of above, the committee may approve withdrawal of IS 5422.

IS 7132 : 1973	Guide for testing synchronous machines	2017	Modified/Technically Equivalent	1973	Requirements already covered in IS 15999 (Part 4)/ IEC 60034-4. Permission to withdraw
IS 7306 : 1974	Methods for determining synchronous machine quantities from tests	2017	Modified/Technically Equivalent	1974	Requirements already covered in IS 15999 (Part 4)/ IEC 60034-4. Permission to withdraw
IS 9628 : 1980 BS 5000 : Part 16 : 1972	Three-phase induction motors with type of protection 'n'	March, 2019	Identical under dual numbering	1980	IS/ IEC 60079-15 2019 covers the requirements of IS 9628. Therefore, decided for withdrawal of IS 9628

The committee may consider.

5.2 Scientific and Periodic Journals to be subscribed

The committee may suggest scientific and periodic journals which may be subscribed by BIS to discover latest technological developments taking place in the field of rotating machinery and its related activities all over the world.

5.3 Participation in National and International events related to Rotating Machinery

The committee may suggest national and international events / training program planned in the field of rotating machinery for participation.

Item 6 INTERNATIONAL ACTIVITIES

6.1 The present position of work of the corresponding IEC Technical Committee IEC/ TC 2 on Rotating Machinery is given at **IEC TCs mapped onto ETD 15 or https://www.iec.ch/dyn/www/f?p=103:22:600961044507047::::FSP_ORG_ID,FSP_LANG_ID:1221,25**

The committee may look into all the topics and suggest standards to be adopted. Expert list nominations

may also be send.

Item related to SNAP

1. IEC 60034-23:2019-Edition 1.0 (2019-01-24)-Rotating electrical machines - Part 23: Repair, overhaul and reclamation
   COMMITTEE MAY APPROVE FOR WIDE CIRCULATION

Committee may approve to wide circulate the said IEC standards

Item 7 DATE AND PLACE OF NEXT MEETING

Item 8 ANY OTHER BUSINESS

ANNEX 1
COMPOSITION

ETD-15 Rotating Machinery Sectional Committee						
Sn.	**Organization**	**Member Name**	**Member Email**	**Member Phone**	**Attendance out of Last 2 Meeting**	
					32nd	**33rd**
1	Bharat Heavy Electricals Limited, Bhopal	Shri Mukesh Kumar Maravi (Chairperson)	mkmaravi@bhel.in	9425604719	_	Y
2	Asea Brown Boveri Limited, Faridabad	Shri Sumit Tyagi (Alternate Member)	sumit.tyagi@in.abb.com	9811235377	Y	N
		Shri Lokesh B M (Principal Member)	lokesh.b.m@in.abb.com	9901490175		
3	Bharat Bijlee Limited, Mumbai	Shri Salil Kumar (Principal Member)	salil.kumar@bharatbijlee.com	9867407257	Y	N
		Shri Bhagyashree Sanjay Pawar (Alternate Member)	bhagyashree.pawar@bharatbijlee.com	9870105374		
4	Bharat Heavy Electrical Limited, New Delhi	Shri Krushna Chandra Panda (Principal Member)	kcpanda@bhel.in	9490746762	N	Y
		Shri P Dali Naidu (Alternate Member)	dalinaidu@bhel.in	9490473788		
5	CG Power and Industrial Solutions, Mumbai	Shri A. Sudhakaran (Principal Member)	sudhakaran.achuthan@cgglobal.com	9168129444	Y	N
		Shri Prashant Ankalhope (Alternate Member)	prashant.ankaikhope@cgglobal.com			
		Shri Bhupendra Nema (Alternate Member)	Bhupendrs.nema@cgglobal.com			

6	Central Electricity Authority, New Delhi	Shri Jitesh Shrivas (Principal Member)	jitesh.cea@gmail.com	9755217472	N	Y
		Shri Rishabh Gaur (Alternate Member)	rishabh.cea1@gov.in	9795922240		
7	Central Power Research Institute, Bengaluru	Shri S Prashob (Principal Member)	prashob@cpri.in	8089025027	_	Y
8	Electrical Research and Development Association, Vadodara	Shri Ravi Singh (Principal Member)	ravi.singh@erda.org	9978940998	Y	Y
		Shri Jitendra Tahilwani (Alternate Member)	j.tahilwani@erda.org			
9	Engineers India Limited, New Delhi	Shri S Srihari (Alternate Member)	srihari.s@eil.co.in	9717855711	N	Y
		Shri Raman Sood (Principal Member)	raman.sood@eil.co.in	9818688709		
		Shree Ravish K. Raman (Alternate Member)	ravish.raman@eil.co.in	9953198847		
10	Havells India Limited, Noida	Shri Anil Sukumar Akole (Alternate Member)	anil.akole@havells.com	9766358333	Y	Y
		Shri Vinayak Atre (Principal Member)	vinayak.atre@havells.com	9866072851		
11	Hindustan Electric Motors, Mumbai	Shri Sanjay P. Jadia (Principal Member)	spjadia@hindmotors.com	9820026739	N	Y
		Shri Dilip Bhave (Alternate Member)	dilipnbhave@gmail.com			
12	Integrated Electric Company Private Limited, Bengaluru	Dr. Praveen Vijayraghavan (Principal Member)	praveen1@int-elec.com		Y	Y
13	Indian Electrical and	Shri Seetharaman	k.seetharaman@ieem	998000498	Y	Y

	Electronics Manufacturers Association, New Delhi	K. (Principal Member)	a.org	2		
		Shri Praveen kumar (Alternate Member)	praveen.kumar@rotomotive.com			
14	Indian Pump Manufacturers Association, Mumbai	Shri Utkarsh Chaya (Alternate Member)	be@watermanpump.com	9978900506	Y	Y
		Shri K.V. Karthik (Principal Member)	karthik@deccanindustries.com	9894296960		
		Shri Anoop Agarwal (Alternate Member)	anoop.agarwal@plugga.com	7226052757		
15	Ingersoll Rand India Limited, Ahmedabad	Shri Kaushal Pandya (Principal Member)	kaushal_pandya@irco.com	9978995544	N	Y
		Shri Harsh Shukla (Alternate Member)	harsh.shukla@irco.com	9924483098		
16	International Copper Association India, Mumbai	Shri K N Hemanth Kumar (Principal Member)	hemanth.kumar@copperalliance.org	9582236644	Y	Y
		Shri Jyotish Pande (Alternate Member)	jyotish.pande@copperalliance.org	9810023544		
		Shri Sanjay Namdeo (Alternate Member)	Sanjay.namdeo@copperalliance.org	9915593898		
17	KSB Pumps Limited, Pune	Shri Rajesh B Gote (Principal Member)	rajesh.gote@ksb.com	9881266160	Y	N
		Shri Dattatray Katkar (Alternate Member)	dattatray.katkar@ksb.com	8424005635		
18	Marathon Electric Motors (India) Limited, Kolkata	Shri Rajiv Ranjan (Principal Member)	rajiv.ranjan@marathonelectric.com	9903900820	Y	N
19	NTPC Limited, New Delhi	Shri S. N. Tripathi (Alternate Member)	shaktintripathi@ntpc.co.in	9650999688	N	Y

		Shri BVVS Ganesh (Principal Member)	bvvsganesh@ntpc.co.in	9650999581		
20	Scientific and Industrial Testing and Research Centre, Coimbatore	Shri A. M. Selvaraj (Principal Member)	jd@sitarc.com	9487600473	Y	Y
		Dr. K Ulaganathan (Principal Member)	director@sitarc.com	9487740473		
		Shri V.Krishnamoorthy (Alternate Member)	sitarcinfo@sitarc.com			
21	Siemens Limited, Mumbai	Shri Ashish Shere (Alternate Member)	ashish.shere@siemens.com	9833954795	Y	N
		Shri Pradeep Ranade (Principal Member)	pradeep.ranade@siemens.com			
		Shri Prasad Hardikar (Alternate Member)	prasad.hardikar@siemens.com			
22	Southern India Engineering Manufacturers Association, Coimbatore	Dr. R. Subramanian (Principal Member)	rama.smani@gmail.com		Y	Y
		Shri S. Arunkumar (Alternate Member)	arunkumars@deccanindustries.com	9865809696		
23	Thyssenkrupp Industrial Solutions (India) Private Limited, Mumbai	Shri Vaijnath G. Sangekar (Alternate Member)	vaijanath.sangekar@thyssenkrupp.com	7030210168	Y	N
		Shri Charuta Vikram Mulay (Principal Member)	charuta.mulay@thyssenkrupp.com	9001101814		
24	Toshiba Mitsubishi-Electric Industrial Systems Corporation,	Shri Sudheer Tapaskar (Principal Member)	Sudheer.tapaskar@tmeic.in	7042342266	Y	Y
		Ms. Manish Joshi	manish.joshi@tmeic.	981017254		

	Bengaluru	(Alternate Member)	in	6		
		Shri Venkatesulu Thumbur (Alternate Member)	Venkatesulu.Thumbur@tmeic.in			
25	Nuclear Power Corporation of India Limited, Mumbai Central Ministry/Dept.	Shri Ritesh M. Chovatia (Principal)	critesh@npcil.co.in	9833696829	N	N
		Jayant Kumar Boppa (Alternate)	jkboppa@npcil.co.in	9869669140	N	N

ANNEX 2
EFFICIENCY INDEX

An Advanced Dashboard is developed to give deeper insights of standard formulation related activities; also an Efficiency Index is published for comparative assessment of various Sectional Committees which is based on 6 KPIs currently. The details of various KPIs and the logic used for calculating the efficiency index is as following:

KPI Description

1. % of Meetings Held For calculating this KPI number of TC meetings planned and number of TC meetings held (meetings for which attendance is recorded) are used.

2. Meetings Attendance % Average number of attendance in various meetings of a TC is used as KPI here.

3. Published Standards - Timeframe % Categorization of standards is as following:

- a = No. of Standards Published in 0 to <=6 months
- b = No. of Standards Published in >6 to <=9 months
- c = No. of Standards Published in >9 to <=12 months
- d = No. of Standards Published in >12 to <=18 months
- e = No. of Standards Published in >18 to <=24 months
- f = No. of Standards Published in >24 months
- g = Total no. of Standards
- Published Marks given are as following
- Category a= 100
- Category b = 90
- Category c = 80
- Category d = 60
- Category e = 40
- Category f = 0
- Formula used for calculating this is as following:

- ((a*100) + (b*90) + (c*80) + (d*60) + (e*40) + (f*0))/g

4. Reviews Completed %
- For calculating this KPI number of standards reviewed against the number of standards planned for review (as per annual action plan) are used.
5. Inactive Members
- Removed % Number of inactive TC members (who have not attended two consecutive meetings) removed against the total number of inactive members currently present in the TC.
6. Comments on P-drafts
- % Comments received from how many TC members against total number of TC members is used for calculating this. More than one comment received from a TC member is treated as one comment.
8. Final score is calculated by adding marks received in each KPI divided by 600 (total maximum marks).

ANNEXURE-3

1. **Authorization-** https://docs.google.com/document/d/1f2dVTXAj5YZx32R3VWaU5xViUXebevvW/edit?usp=drive_link&ouid=101571559841305049808&rtpof=true&sd=true
2. **CV-** https://docs.google.com/document/d/1hVZ-BrnUbyoK-Mkkv589kPqtlOS4o5zw/edit?usp=drive_link&ouid=101571559841305049808&rtpof=true&sd=true

ANNEX - 4

Program of Work- ETD 15

Scope: To prepare standards on rotating electrical machines like induction, synchronous, motors, generators, dc machines and turbines including carbon brushes for electrical machines (with the exception of traction machines and rotating machinery coming under the purview of other Committees)

Sl. No.	IS No.	Title	Reaffirmation Details	Due in 23-24	Due in 24-25
1	IS 11537 : 1985	Specification for centrifugal switch for single - Phase induction motors	2017	Y	Y
2	IS 12065 : 1987	Permissible limits of noise levels for rotating electrical machines	March, 2019	N	Y
3	IS 12066 : 1987	Specification for three - Phase induction motors for machine tools	March, 2019	N	Y
4	IS 12075 : 2008	Mechanical vibration of rotating electrical machines with shaft heights 56 mm and higher -	July, 2018	Y	Y

		Measurement, evaluation and limits of vibration severity (First Revision)			
5	IS 1231 : 2019	Dimensions and Output Series of Foot Mounted Induction Motors — Frame Numbers 56 to 315 L (Fourth Revision)		N	N
6	IS 12615 : 2018	Line operated three phase AC motors (IE Code) "Efficiency classes and performance specification" (Third Revision)	-	Y	Y
7	IS 12642 : 1989 Reaffirmed but not taken up for revision	Brush - Holders for slip rings group R, type RA - Specification	March, 2019	N	Y
8	IS 12998 : 2024 1680	Acoustics Test Code for the Measurement of Airborne Noise Emitted by Rotating Electrical Machines		N	N
9	IS 12998 (Part 1) : 1991 ISO 1680/1 :1986	Methods of measurement of airborne noise emitted by rotating electrical machinery: Part 1 engineering method for free - Field conditions over a reflecting plane	November, 2022	N	N
10	IS 12998 (Part 2) : 1991 ISO 1680/2 :1987	Methods of measurement of airborne noise emitted by rotating electrical machinery: Part 2 survey method	2018	Y	Y
11	IS 13079 : 1991	Stepping motors - Specification	2017	Y	Y
12	IS 13364 (Part 1) : 1992	Ac generators driven by reciprocating internal combustion engines - Specification: Part 1 alternators rated up to 20 kVa	2018	Y	Y
13	IS 13364 (Part 2) : 1992	Ac generators driven by reciprocating internal combustion engines - Specification: Part 2 alternators rated above 20 kVa and up to 1250 kVa	2018	Y	Y
14	IS 13466 : 1992 Reaffirmed but not taken up for revision	Brushes for electrical machines - Specification	2019	N	Y
15	IS 13525 : 1992	Flexible conductors for carbon brushes - Specification	2019	N	Y
16	IS 13529 : 2021	ROTATING ELECTRICAL MACHINES PART 26 EFFECTS OF UNBALANCED VOLTAGES ON THE PERFORMANCE OF THREE-PHASE CAGE		N	N

		INDUCTION MOTORS			
17	IS 13555 : 1993	Guide for selection and appltcation of 3 - Phase AC induction motors for different types of driven equipment	March, 2019	N	Y
18	IS 13584 : 1993	Brush materials for electrical machinery - Specification	March, 2019	N	Y
19	IS 13586 : 2023 60276: 2018	Carbon Brushes Brush Holders Commutators and Slip-Rings Definitions and Nomenclature		N	N
20	IS 13937 (Part 1) : 1994 ISO 7574/1	Statistical methods of determining and verifying stated noise emission values of machinery and equipment: Part 1 general considerations and definitions	November, 2022	N	N
21	IS 13937 (Part 2) : 1994 ISO 7574/2	Statistical methods of determining and verifying stated noise emission values of machinery and equipment: Part 2 methods for stated values for individual machines	2017	Y	Y
22	IS 13937 (Part 3) : 1994 ISO 7574/3	Statistical methods for determining and verifying stated noise emission values of machinery and equipment: Part 3 simple (Transition) method for stated values for batches of machines	November, 2022	N	N
23	IS 13937 (Part 4) : 1994 ISO 7574/4	Statistical methods of determining and verifying stated noise emission values of machinery and equipment: Part 4 methods for stated values for batches of machines	November, 2022	N	N
24	IS 14195 : 1994 IECPub 1015: 1990 z	Brush - Holders for electrical machines - Guide to the measurement of the static thurst applied to brushes	2017	Y	Y
25	IS 14196 : 1994 IEC Pub 560 : 1977	Definitions and terminology of brush holders for electrical machines	March, 2023	N	N
26	IS 14197 : 2023 60193: 2019	Hydraulic Turbines Storage Pumps and Pump-Turbines - Model Acceptance Tests	2017	Y	Y
27	IS 14376 : 1996 Reaffirmed but not taken up for revision	Brush holders for electrical machines - Specification	2017	Y	Y
28	IS 14377 : 1996	Specification for three - Phase induction motors for fans used in air - Conditioning and ventilation	2017	Y	Y
29	IS 14568 (Part 2) : 1998	Dimensions and output series for rotating electrical machines: Part 2 frame numbers 355 to 1000 and flange numbers 1180 to 2360	November, 2022	N	N

	IEC 72-2 (1990)				
30	IS 14569 : 1999 Reaffirmed but not taken up for revision	Commutators for electrical machines - Specification	2019	N	Y
31	IS 14578 : 1999 Reaffirmed but not taken up for revision	Three - Phase induction motors for use in nuclear power plants - Specification	March, 2019	N	Y
32	IS 14582 : 2021	Single-phase small ac electric motors for centrifugal pumps for agricultural applications		N	N
33	IS 14889 : 2000	Copper tamping powder for carbon brushes - Specification	December, 2015	Y	Y
34	IS 15429 : 2004	Storage, installation and maintenance of DC motors - Code of practice	2019	N	Y
35	IS 15880 : 2009 IEC 60034-17	Three phase cage induction motors when fed from IGBT converters - Application guide	2019	N	Y
36	IS 15881 : 2009	Three phase cage induction motors specifically designed or IGBT converter supply - Specification	June, 2019	N	Y
37	IS 15999 (Part 1) : 2021 IEC 60034-1: 2017	Rotating electrical machines - Part 1 : Rating and performance		N	N
38	IS 15999 (Part 2/Sec 1) : 2023 60034-2-1	Rotating Electrical Machines Part 2-1: Standard Methods for Determining Losses and Efficiency from Tests Excluding Machines for Traction Vehicles		N	N
39	IS 15999 (Part 3) : 2023 60034-3	ROTATING ELECTRICAL MACHINES Part 3: Specific requirements for synchronous generators driven by steam turbines or combustion gas turbines and for synchronous compensators first revision		N	N
40	IS 15999 (Part 4/Sec 1) : 2023 60034-4-1	ROTATING ELECTRICAL MACHINES Part 4 Electrically excited synchronous machine quantities Section 1 Test methods first revision		N	N

41	IS 15999 (Part 15) : 2017 IEC 60034-15 : 2009	Rotating Electrical Machines Part 15 Impulse Voltage Withstand Levels of Form-Wound Stator Coils for Rotating ac Machines		Y	Y
42	IS 15999 (Part 18/Sec 41) : 2018 IEC 60034-18-41 : 201	Rotating electrical machines: Part 18 partial discharge free electrical insulation systems (Type I) used in rotating electrical machines fed from voltage converters Sec 41 qualification and quality control tests		Y	Y
43	IS 15999 (Part 18/Sec 42) : 2018 IEc 60034-18-42 : 20	Rotating Electrical Machines Part 18 Partial Discharge Free Electrical Insulation Systems (Type I) Used in Rotating Electrical Machines Fed From Voltage Converters Section 41 Qualification and quality control tests		Y	Y
44	IS 15999 (Part 20/Sec 1) : 2023 60034-20-1: 2002	Rotating Electrical Machines Part 20-1: Control Motors Stepping Motors		N	N
45	IS 15999 (Part 26) : 2016 IEC 60034-26 : 2006	Rotating Electrical Machines Part 26 Effects of Unbalanced Voltages on the Performance of Three-Phase Cage Induction Motors		Y	Y
46	IS 2223 : 1983	Dimensions of flange mounted AC induction motors	2017	Y	Y
47	IS 2253 : 1974 IEC Pub 34-7 (1972)	Designations for types of construction and mounting arrangements of rotating electrical machines (First Revision)	2017	Y	Y
48	IS 2254 : 1985	Dimensions of vertical shaft motors for pumps (Second Revision)	2017	Y	Y
49	IS 2968 : 1964 DIN 42923 Reaffirmed but not taken up for revision	Dimensions of slide rails for electric motors	2017	Y	Y

50	IS 2972 (Part 1) : 1979 Reaffirmed but not taken up for revision	Specification for textile motors: Part 1 loom motors (First Revision)	2017	Y	Y
51	IS 2972 (Part 2) : 1979 Reaffirmed but not taken up for revision	Specification for textile motors: Part 2 card motors (First Revision)	2017	Y	Y
52	IS 4029 : 2010	Guide for testing three phase induction motors (First Revision)	March, 2016	Y	Y
53	IS 4665 (Part 1) : 2023 60745-1: 2006	Hand-Held Motor-Operated Electric Tools Safety Part 1: General requirements Second Revision		N	N
54	IS 4665 (Part 2/Sec 1) : 2023 60745-2-1	Hand-Held Motor-Operated Electric Tools Safety Part 2 Particular requirements Section 1 drills and impact drills		N	N
55	IS 4665 (Part 2/Sec 2) : 2023 60745-2-2	Hand-held motor-operated electric tools - Safety - Part 2 Particular requirements Section 2 screwdrivers and impact wrenches		N	N
56	IS 4665 (Part 2/Sec 3) : 2023 60745-2-3	Hand-held motor-operated electric tools - Safety Part 2 Particular requirements Section 3 grinders polishers and disk-type sanders		N	N
57	IS 4665 (Part 2/Sec 5) : 2023 60745-2-5	Hand-Held Motor-Operated Electric Tools Safety Part 2 Particular Requirements Section 5 Circular Saws		N	N
58	IS 4665 (Part 2/Sec 6) : 2023 60745-2-6	Hand-Held Motor-Operated Electric Tools - Safety Part 2 Particular Requirements Section 6 Hammers		N	N
59	IS 4665 (Part 2/Sec 7) : 2023 60745-2-7	Safety of Hand-Held Motor-Operated Electric Tools Part 2 Particular Requirements Section 7 Spray Guns for Non-Flammable Liquids		N	N
60	IS 4758 : 1968	Methods of measurement of noise emitted by machines	2017	Y	Y

61	IS 4889 : 1968	Methods of determination of efficiency of rotating electrical machines	2017	Y	Y
62	IS 5422 : 1996	Turbine type generators - Specification (First Revision)	2017	Y	Y
63	IS/IEC 60034-5 : 2000	Rotating electrical machines: Part 5 degrees of protection provided by the integral design of rotating electrical machines (IP Code) - Classification (Second Revision)	May, 2018	Y	Y
64	IS/IEC 60034-8 : 2014 IEC 60034-8: 2014	Rotating Electrical Machines Part 8 Terminal Markings and Direction of Rotation (Third Revision)	August, 2018	Y	Y
65	IS/IEC 60034-27-4) : 2018 IEC 60034-27-4	Rotating Electrical Machines Part 27 Winding Insulation of Rotating Electrical Machines Section 4 Measurement of insulation resistance and polarization index		Y	Y
66	IS 6362 : 1995 IEC Pub 34-6 : 1991 zy	Designation of methods of cooling of rotating electrical machines (First Revision)	November, 2022	N	N
67	IS 7132 : 1973	Guide for testing synchronous machines	2017	Y	Y
68	IS 7306 : 1974	Methods for determining synchronous machine quantities from tests	2017	Y	Y
69	IS 7538 : 1996	Three - Phase squirrel cage induction motors for centrifugal pumps for agricultural application - Specification (First Revision)	2017	Y	Y
70	IS 7572 : 1974	Guide for testing single - Phase AC and universal motors	2017	Y	Y
71	IS 8151 : 1976	Specification for single - Speed three - Phase induction motors for driving lifts	2017	Y	Y
72	IS 8223 : 1999	Dimensions and output series for rotating electrical machines (First Revision)	November, 2022	N	N
73	IS 8789 : 2021	Values of performance characteristics for three-phase induction motors with degree of protection 2X		N	N
74	IS 900 : 2019	Code of Practice for Storage, Installation and Maintenance of Induction Motors (Third Revision)	-	N	N
75	IS 9283 : 2013	Motors for submersible pumpsets - Specification (Second Revision)	May, 2018	Y	Y
76	IS 9320 : 1979	Guide for testing direct - Current (DC) machines	March, 2017	Y	Y

77	IS 9582 (Part 1) : 1980	Specification for single - Phase electric motors for definite purposes: Part 1 domestic laundry machine motors	March, 2018	Y	Y
78	IS 9628 : 1980 BS 5000 : Part 16 : 1972	Three-phase induction motors with type of protection 'n'	March, 2019	N	Y
79	IS 9670 : 1980	Specification for direct current micromotor for cassette tape recorders and other applications	March, 2019	N	Y
80	IS 9919 : 1999 Reaffirmed but not taken up for revision	Guide for selection and use of carbon brushes in electrical rotating machines (First Revision)	February, 2018	Y	Y
81	IS 996 : 2009 IEC 34-1 (1969 BS 170: 1962 JIS 4203-1973 BS 1608 : 1966	Single phase a.c. induction motors for general purpose (Third Revision)	2019	N	Y

ANNEX 3
ETD 15 Rotating Machinery/ Pre 2000 Status

IS No.	Title	Reaffirmation Details	Degree of Equivalence	YEAR	ACTION TO BE TAKEN	LATEST IEC (IF PRESENT
IS 11537 : 1985	Specification for centrifugal switch for single - Phase induction motors	2017	Indigenous	1985	Dr C Murugesan, SIEMA kindly agreed to review and provide revised draft. Draft is awaited.	
IS 12065 : 1987	Permissible limits of noise levels for rotating electrical machines	March, 2019	Modified/Technically Equivalent	1987	P draft approval	
IS 12066 : 1987	Specification for three - Phase induction motors for machine tools	March, 2019	Modified/Technically Equivalent	1987	DECIDED FOR WITHDRAWAL	
IS 12642 : 1989 Reaffirmed but not taken up for revision	Brush - Holders for slip rings group R, type RA - Specification	March, 2019	Modified/Technically Equivalent	1989		
IS 12998 (Part 1) : 1991 ISO 1680/1 :1986	Methods of measurement of airborne noise emitted by rotating electrical machinery: Part 1 engineering method for free - Field conditions over a reflecting plane	November, 2022	Identical under dual numbering	1991	Revised edition of ISO 1680 covers requirement of both parts of IS 12998. Therefore, ISO 1680 may be adopted replacing	

					both IS. Published.	
IS 12998 (Part 2) : 1991 ISO 1680/2 :1987	Methods of measurement of airborne noise emitted by rotating electrical machinery: Part 2 survey method	2018	Identical under dual numbering	1991	Revised edition of ISO 1680 covers requirement of both parts of IS 12998. Therefore, ISO 1680 may be adopted replacing both IS. Published. IS 12998 : 2024	
IS 13079 : 1991	Stepping motors - Specification	2017	Modified/Technically Equivalent	1991	IEC 60034-20-1 may be adopted. UNDER PRINT	
IS 13364 (Part 1) : 1992	Ac generators driven by reciprocating internal combustion engines - Specification: Part 1 alternators rated up to 20 kVa	2018	Modified/Technically Equivalent	1992	ARP circulated	
IS 13364 (Part 2) : 1992	Ac generators driven by reciprocating internal combustion engines - Specification: Part 2 alternators rated above 20 kVa and up to 1250 kVa	2018	Modified/Technically Equivalent	1992	ARP circulated	
IS 13466 : 1992 Reaffirmed but not taken up for revision	Brushes for electrical machines - Specification	2019	Modified/Technically Equivalent	1992	Dr Praveen Vijayragvan, kindly agreed to review and provide revised drafts. Draft is awaited.	
IS 13525 : 1992	Flexible conductors for carbon brushes - Specification	2019	Modified/Technically Equiv	1992	Dr C Murugesan, SIEMA kindly agreed to review and provide revised	

			alent		draft. Draft is awaited.	
IS 13555 : 1993	Guide for selection and appltcation of 3 - Phase AC induction motors for different types of driven equipment	March, 2019	Indige nous	1993	I	
IS 13584 : 1993	Brush materials for electrical machinery - Specification	March, 2019	Modifi ed/Te chnic ally Equiv alent	1993	IEC 60773: 2021 IEC 60413: 1972 Permission for Wide circulation of IEC	
IS 13937 (Part 1) : 1994 ISO 7574/1	Statistical methods of determining and verifying stated noise emission values of machinery and equipment: Part 1 general considerations and definitions	Novemb er, 2022	Identi cal under dual numb ering	1994		
IS 13937 (Part 2) : 1994 ISO 7574/2	Statistical methods of determining and verifying stated noise emission values of machinery and equipment: Part 2 methods for stated values for individual machines	2017	Identi cal under dual numb ering	1994		
IS 13937 (Part 3) : 1994 ISO 7574/3	Statistical methods for determining and verifying stated noise emission values of machinery and equipment: Part 3 simple (Transition) method for stated values for batches of machines	Novemb er, 2022	Identi cal under dual numb ering	1994		
IS 13937 (Part 4) : 1994 ISO 7574/4	Statistical methods of determining and verifying stated noise emission values of machinery and equipment: Part 4 methods for stated values for batches of machines	Novemb er, 2022	Identi cal under dual numb ering	1994		
IS 14195 : 1994 IECPub 1015: 1990 z	Brush - Holders for electrical machines - Guide to the measurement of the static thurst applied to brushes	2017	Identi cal under dual numb	1994	IEC identical to 1990	

			ering			
IS 14196 : 1994 IEC Pub 560 : 1977	Definitions and terminology of brush holders for electrical machines	March, 2023	Identical under dual numbering	1994		
IS 14376 : 1996 Reaffirmed but not taken up for revision	Brush holders for electrical machines - Specification	2017	Modified/Technically Equivalent	1996	Dr Praveen Vijayragvan, kindly agreed to review and provide revised drafts. Draft is awaited	
IS 14377 : 1996	Specification for three - Phase induction motors for fans used in air - Conditioning and ventilation	2017	Modified/Technically Equivalent	1996	(IEEMA 8 : 1987)	
IS 14568 (Part 2) : 1998 IEC 72-2 (1990)	Dimensions and output series for rotating electrical machines: Part 2 frame numbers 355 to 1000 and flange numbers 1180 to 2360	November, 2022	Identical under dual numbering	1998		
IS 14569 : 1999 Reaffirmed but not taken up for revision	Commutators for electrical machines - Specification	2019	Indigenous	1999	Dr Praveen Vijayragvan, kindly agreed to review and provide revised drafts. Draft is awaited.	
IS 14578 : 1999 Reaffirmed but not taken up for revision	Three - Phase induction motors for use in nuclear power plants - Specification	March, 2019	Indigenous	1999	Review to be allotted to NPCIL	
IS 2223 : 1983	Dimensions of flange mounted AC induction motors	2017	Modified/Technically	1983	Shri Dilip Bhave kindly	

			Equivalent		agreed to review and provide the revised draft. Draft is awaited	
IS 2253 : 1974 IEC Pub 34-7 (1972)	Designations for types of construction and mounting arrangements of rotating electrical machines (First Revision)	2017	Identical under dual numbering	1974		
IS 2254 : 1985	Dimensions of vertical shaft motors for pumps (Second Revision)	2017	Identical under dual numbering	1985	Shri K V Karthik, IPMA was requested to review and provide revised draft. Draft is awaited.	
IS 2968 : 1964 DIN 42923 Reaffirmed but not taken up for revision	Dimensions of slide rails for electric motors	2017	Identical under dual numbering	1964		
IS 2972 (Part 1) : 1979 Reaffirmed but not taken up for revision	Specification for textile motors: Part 1 loom motors (First Revision)	2017	Indigenous	1979	Shri Prasad Hardikar, Siemens kindly agreed to review and provide the revised drafts	
IS 2972 (Part 2) : 1979 Reaffirmed but not taken up for	Specification for textile motors: Part 2 card motors (First Revision)	2017	Indigenous	1979	Shri Prasad Hardikar, Siemens kindly agreed to review and provide the revised drafts	

revision						
IS 4758 : 1968	Methods of measurement of noise emitted by machines	2017	Modified/Technically Equivalent	1968	The same WG was also requested to review IS 4758: 1968 'Methods of measurement of noise emitted by machines' and recommend for withdrawal, if requirements are already covered in IS 12065.	
IS 4889 : 1968	Methods of determination of efficiency of rotating electrical machines	2017	Modified/Technically Equivalent	1968	IS 15999 (Part 2/Sec 1) : 2023 60034-2-1 (Active) adopted . Permission to withdraw	
IS 5422 : 1996	Turbine type generators - Specification (First Revision)	2017	Modified/Technically Equivalent	1996	IS 15999 (Part 3): 2023/ IEC 60034-3: 2020 "Specific Requirements for Synchronous Generators Driven by Steam Turbines or Combustion Gas Turbines and for Synchronous Compensators" is published. In view of above, the	

					committee may approve withdrawal of IS 5422.	
IS 6362 : 1995 IEC Pub 34-6 : 1991 zy	Designation of methods of cooling of rotating electrical machines (First Revision)	November, 2022	Identical under dual numbering	1995		IEC 60034-6:1991
IS 7132 : 1973	Guide for testing synchronous machines	2017	Modified/Technically Equivalent	1973	Requirements already covered in IS 15999 (Part 4)/ IEC 60034-4. Permission to withdraw	
IS 7306 : 1974	Methods for determining synchronous machine quantities from tests	2017	Modified/Technically Equivalent	1974	Requirements already covered in IS 15999 (Part 4)/ IEC 60034-4. Permission to withdraw	
IS 7538 : 1996	Three - Phase squirrel cage induction motors for centrifugal pumps for agricultural application - Specification (First Revision)	2017	Indigenous	1996	UNDER REVISION	
IS 7572 : 1974	Guide for testing single - Phase AC and universal motors	2017	Modified/Technically Equivalent	1974	UNDER REVISION	
IS 8151 : 1976	Specification for single - Speed three - Phase induction motors for driving lifts	2017	Modified/Technically Equivalent	1976	Revision Under Print	
IS 8223 : 1999	Dimensions and output series for rotating electrical machines (First Revision)	November, 2022	Modified/Technic	1999	Earlier P draft had been dropped	

			ally Equivalent			
IS 9320 : 1979	Guide for testing direct - Current (DC) machines	March, 2017	Modified/Technically Equivalent	1979	Dr Praveen Vijayragvan, kindly agreed to review and provide revised drafts. Draft is awaited	
IS 9582 (Part 1) : 1980	Specification for single - Phase electric motors for definite purposes: Part 1 domestic laundry machine motors	March, 2018	Indigenous	1980		
IS 9628 : 1980 BS 5000 : Part 16 : 1972	Three-phase induction motors with type of protection 'n'	March, 2019	Identical under dual numbering	1980	IS/ IEC 60079-15 2019 covers the requirements of IS 9628. Therefore, decided for withdrawal of IS 9628	
IS 9670 : 1980	Specification for direct current micromotor for cassette tape recorders and other applications	March, 2019	Indigenous	1980	Phase-2 review Document circulated	
IS 9919 : 1999 Reaffirmed but not taken up for revision	Guide for selection and use of carbon brushes in electrical rotating machines (First Revision)	February, 2018	Indigenous	1999	Dr Praveen Vijayragvan, kindly agreed to review and provide revised drafts. Draft is awaited	