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BUREAU OF INDIAN STANDARDS

MINUTES

Name of the Committee	No. of Meeting	Day	Date	Time	Venue
Rotating Machinery Sectional Committee ETD 15	35th	**Thursday**	**20th june 2024**	10:00	**hybrid**

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

Item 0 GENERAL

0.1 Welcome and Opening Remarks by the Chairman

The chairman welcomed all members to the meeting.

Item 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING

1.1 The minutes of the 34st meeting of the Rotating Machinery Sectional Committee, ETD 15 held on 22th March 2024 were circulated on 6 May 2024

No comments received.

ACTION- Minutes were confirmed.

ITEM 2- COMPOSITION

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

New Nomination - Mr Umesh Balani, Rotomag. The committee may advise.

Nomination was approved.

ITEM 3- ACTIONS ARISING OUT OF PREVIOUS MEETINGS

Sl. No.	Subject	Decision taken during the last meeting	Action/Remarks
1.	**ETD 15 (25631) Rotating electrical machines - Part 1: Rating and performance**	P draft circulated , comments may be reviewed approve for WC -Annex 4	Comments discussed. Decision on comments in Annex 4. Approved for WC.
2.	**ETD 15 (25633) Rotating electrical machines - Part 2-1: Standard methods for determining losses and efficiency from tests excluding machines for traction vehicles**	P draft circulated , comments may be reviewed approve for WC -Annex 5	Comments discussed. Decision on comments in Annex 5. Approved for WC.
3	**ETD 15 (25634) Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines IP code - Classification**	P draft circulated , comments may be reviewed approve for WC -Annex 6	Comments discussed. Decision on comments in Annex 6. Approved for WC.
4	**Revision of IS 12065**	Committee may see the comments Annex 3 and approve for WC	Comments discussed. Decision on comments in Annex 3.Pending comments shall be resolved with Ashish Shere and Salil Kumar Approved for WC.
5	**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	WC complete, Document in printing, Approval for finalization.	Approved for final printing and gazetting.
6	**ETD 15 (15753) (Third Revision of IS 996: 2009)** Single phase ac induction motors for general purpose	Comments may be reviewed Annex 2 and approve for WC	Comments discussed. Decision on comments in Annex 2. Approved for WC.

7	**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.	Committee may discuss the technical comments received attached in Annex 7 and comments from MED may also be reviewed.	Comments discussed. Decision on comments in Annex 7. Approved for printing after incorporating comments.
8.	NWIP- PERMANENT MAGNET PMAC / DC / PMSM MOTORS FOR SUBMERSIBLE PUMPSETS - SPECIFICATION		Umesh Balani to provide draft standard. MTD department to be contacted for permanent magnet standards.
9.	Revision of IS 8151 'Specification for single - Speed three - Phase induction motors for driving lifts'	DC approval is awaited.	
10	Revision of IS 12615: 2018 Line operated three phase AC motors (IE Code) "Efficiency classes and performance specification" (Third Revision)	Working group was reconstituted in last meeting as follows: Shri Prasad Hardikar, Siemens- Convener Shri Dilip Bhave, In personal capacity Shri Praveen Vijayraghavan,Integrated Electric Shri Ravi Singh, ERDA V Krishnamoorthy, SITARC Shri Praveen Kumar, IEEMA Working group may advise further.	Amendment approved for WC. Standard may be reaffirmed until revised draft is prepared.

11	IEC 60034-23:2019-Edition 1.0 (2019-01-24)-Rotating electrical machines - Part 23: Repair, overhaul and reclamation	Approval for Wide Circulation	Approved for Wide circulation

Item 4 REVIEW OF PROGRAM OF WORK OF ETD 15

Annual Action Plan may be seen by all members . (website presentation)

-Standards pre 2000 are either to be withdrawn or revised

- Standards post 2000 that are due for 5 year reaffirmation are either to be reaffirmed or revised

Entire program of work (earlier circulated) and action to be taken is given in excel circulated via email dated 10 May and 27 May - ETD 15 complete Pending Reviews and recommendation . (Linked Excel to be presented and discussed.)

Action- Plan submitted on the BIS portal was presented to the committee. Committee was briefed on the pending reaffirmation, revision , and archiving of each standard. Prior to the meeting the entire list was also circulated. Committee deliberated on each standard. Standard by standard decisions taken are given in Annex 8.

Item 5 Archiving

ACTION-Following standards are archived. However if any draft/input or IEC harmonization input is received or prepared in the meantime for archived standard by interns or any member. It may be floated for the P draft.

a) IS 2972 (Part 1) : 1979- Specification for textile motors: Part 1 loom motors (First Revision)

b) IS 2972 (Part 2) : 1979- Specification for textile motors: Part 2 card motors (First Revision)

c) IS 9919 : 1999- Guide for selection and use of carbon brushes in electrical rotating machines (First Revision)

d) IS 11537 : 1985 Specification for centrifugal switch for single - Phase induction motors

e) IS 13466 : 1992- Brushes for electrical machines - Specification

f) IS 14376 : 1996- Brush holders for electrical machines - Specification

g) IS 14569 : 1999- Commutators for electrical machines - Specification

h) IS 14578 : 1999- Three - Phase induction motors for use in nuclear power plants - Specification

i) IS 13555 : 1993 Guide for selection and application of 3 - Phase AC induction motors for different types of

driven equipment

j) IS 13525 : 1992 Flexible conductors for carbon brushes - Specification

k) IS 13584 : 1993 Brush materials for electrical machinery - Specification

l) IS 14889 : 2000 Copper tamping powder for carbon brushes - Specification

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**

ACTION- Member Secretary -Jatin Tiwari was approved to replace Neha Agarwal in TC 2 working groups
-WG 12 Rating, performance, Mechanical Ix Configurations and general support
-WG 28 Performance as determined by tests
-WG 31 Efficiency classes
Documents for voting and comments:

Reference, Title	Downloads	Circulation Date	Closing Date	Of interest to Committees
2/2202/CD IEC 60034-8 ED4: Rotating electrical machines - Part 8: Terminal markings and direction of rotation	459 kB	2024-06-14	2024-08-09	
2/2200/CD IEC 60034-27-8 ED1: Rotating machinery - Part 27-8: Detection of interturn short-circuits in rotor windings of cylindrical rotor synchronous generator	1811 kB	2024-06-07	2024-08-02	

2/2192/CD IEC 60072-3 ED2: Dimensions and output series for rotating electrical machines - Part 3: Small built-in motors - Flange numbers BF10 to BF50		231 kB	2024-05-03	2024-07-26
2/2186/CD IEC 60034-18-41 ED2: Rotating electrical machines - Part 18-41: Partial discharge free electrical insulation systems (Type I) used in rotating electrical machines fed from voltage converters - Qualification and quality control tests		979 kB	2024-03-29	2024-06-21
2/2187/NP PNW 2-2187 ED1: Rotating electrical machines - Part 37: Product data and properties for information exchange		897 kB	2024-03-29	2024-06-21

The committee noted the documents and agreed to comment continuously on documents. These documents were approved to be adopted when published.

Item 6 DATE AND PLACE OF NEXT MEETING

Committee recommended to hold following meetings

1. **September 2024 Meeting- Virtual, and**

2. **December 2024 meeting- Physical**

Item 7 ANY OTHER BUSINESS

1. Clarification on the BIS Applicability for Motor 0.74kW 3PH Star 400V -Eff2 (3 phase Flameproof motor)- TOKHEIM INDIA PVT.LTD- Technically, the motors described in V80-V90 induction motor specifications with power , pole ranges described in the sheet are covered under the standard IS 12615:2018 if they are intended to be used in India.

2. Honda Pvt. Ltd. - Permission for one time import of three phase induction motor (Model-SF-TH 280MD)– reg.

The members said although 60 Hz motors have to be tested at 50 Hz , as this motor is a part of a larger machine according to CL.1.4 (e) of Is 12615:2018 this machine may be exempted from the scope of the standard.

Members suggested to verify the machine may only be used within the setup with VFD and this case should not automatically set precedent to import 60 Hz motors into India as it will cause major energy losses.

Hence, committee's recommendation is that this motor is not covered within the scope of IS 12615:2018.

ANNEX 1
COMPOSITION

S.no	Organization	Attend/Total
1	Bharat Heavy Electricals Limited, Bhopal	1/3
2	Asea Brown Boveri Limited, Faridabad	2/3
3	Bharat Bijlee Limited, Mumbai	2/3
4	Bharat Heavy Electrical Limited, New Delhi	0
5	CG Power and Industrial Solutions, Mumbai	1/3
6	Central Electricity Authority, New Delhi	1/3
7	Central Power Research Institute, Bengaluru	1/3
8	Electrical Research and Development Association, Vadodara	2/3
9	Engineers India Limited, New Delhi	1/3
10	Havells India Limited, Noida	2/3
11	Hindustan Electric Motors, Mumbai	1/3
12	INTEGRATED ELECTRIC COMPANY PRIVATE LIMITED, Bengaluru	1/3
13	Indian Electrical and Electronics Manufacturers Association, New Delhi	1/3
14	Indian Pump Manufacturers Association, Mumbai	2/3
15	Ingersoll Rand India Limited, Ahmedabad	0
16	International Copper Association India, Mumbai	1/3
17	KSB Pumps Limited, Pune	1/3
18	Marathon Electric Motors (India) Limited, Kolkata	1/3
19	NTPC Limited, New Delhi	1/3
20	Nuclear Power Corporation of India Limited, Mumbai	1/3
21	Scientific and Industrial Testing and Research Centre, Coimbatore	2/3
22	Siemens Limited, Mumbai	2/3

23	Southern India Engineering Manufacturers Association, Coimbatore	2/3
24	Thyssenkrupp Industrial Solutions (India) Private Limited, Mumbai	2/3
25	Toshiba Mitsubishi-Electric Industrial Systems Corporation, Bengaluru	2/3

ANNEX 2 IS 996 comments

SNo.	Basic Details	Clause/Subclause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings	Remarks
1	Name: Shri Ravi Singh Organisation: N/A Email: ravi.singh@erda.org	5.13 N/A	full	Technical	The cooling air temperature upper limit shall be increase to 45 Degree celcius. as the ambient temperature of India is going upto 45 degree also.	The cooling air temperature not exceeding 40 C	Comment dropped
	Mobile: 9978940998 Comment ID #: ETD_2024-05-106399	12.4 N/A	first	Technical	IS 7572 shall also be reviewd, as the methos of testing is old and requires many changes.	may be discuss in committee meeting.	Review being taken
		ANNEX E N/A	full	General	ANNEX E tital shall include testing also.	GUIDELINES FOR SELECTION and Testing OF FAN DUTY MOTORS	Incorporated
2	Name: Bhagyashree Sanjay Pawar Organisation: N/A Email: BHAGYASHREE.PAWAR@BHARATBIJLEE.COM	Standard N/A	Standard	General	No comments since we do not have expertise in this field.		

	Mobile: 9870105374						
	Comment ID #: ETD_2024-05-244478						
	Name: Bhagyashree Sanjay Pawar	Standard					
	Organisation: N/A	N/A					
	Email: BHAGYASHREE.PAWAR@BHARATBIJLEE.COM						
	Mobile: 9870105374				No comments since we do not have expertise in this field.		
3	Comment ID #: ETD_2024-05-244144		Standard	General			
	ANNEX 3 IS 12065 comments						

SNo.	Basic Details	Clause/Subclause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings	Remarks
	Name: Shri Ravi Singh	1			Earlier IS 12065 is describes the test method for the Rotating machines and its limit.		
	Organisation: N/A	N/A					
	Email: ravi.singh@erda.org				Here in IS/IEC 60034-9 the standard is refering many ISO stsndard and many test methods.		
	Mobile: 9978940998						
1			1	General		Proposed to discuss in Technial committee meeting.	Comment dropped.

	Comment ID #: ETD_2024-05-209511				here sampel is fixed i.e. zrotating electrical machine so we shhould fix a the testing mehod, instead of refering various ISO standards. We should go with review and reprint of IS 12065 instead of adopting IEC 60034-9.		
2	Name: Shri Salil Kumar Organisation: N/A Email: salil.kumar@bharatbijlee.com Mobile: 9867407257	5.2 cmt_1716635436_6651c72c64852.pdf 5.2 cmt_1716635436_6651c72c64852.pdf	7 7	Technical Technical	Add clause no. 5.3 Add clause no. 5.3.1	5.3 Background noise : The background noise reading when the machine is not on test shall be determined at the same points as for the test. The reading at each point with the machine on test ought to exceed that due to the background alone by at least 10 dB. When the differences are less than 10 dB, corrections can be obtained from the background correction curve shown in Fig. 1. 5.3.1 In the case of rapidly fluctuating background noise a difference of 10 dB between the maximum background level and the machine on test is	Final Text to be proposed by Ashish Shere and Salil Kumar.

						essential.	
	Comment ID #: ETD_2024-05-254535	5.2				5.3.2 When corrections of 3 dB or greater are applied, the corrected levels should be indicated in	
		cmt_1716635436_6651c72c64852.pdf	7	Technical	Add clause no. 5.3.2	brackets.	
		5.2				5.3.3 When the increase in noise level due to the machine is less than 3 dB, measurements, in	
		cmt_1716635436_6651c72c64852.pdf	7	Technical	Add clause no. 5.3.3	general cases to have any significance.	
	Name: Shri BVVS Ganesh	1			As per the latest Ministry of Environment&Forest guidelines and CEA guidelines, the allowable noise limits are far lesser than those in standards.		
	Organisation: N/A	N/A					
	Email: bvvsganesh@ntpc.co.in				For Thermal power plants, limit of 85dB was mentioned for most of the rotating machines and maximum of 90dB for Turbo generators, crushers etc.,	Note 3: For Thermal power plants, 85dB shall be limit for the rotating machines and maximum of 90dB for Turbo generators, crushers etc.	
	Mobile: 9650999581						
3			Last	General			Comment dropped.

	Comment ID #: ETD_2024-05-284812				In view of above, the limits needs to be reviewed and revised and accordingly a note may be added.		
	ANNEX 4 IEC 60034 - 1 comments						
SNo.	**Basic Details**	**Clause/Subclause No.& Attachment**	**Paragraph No./Figure No./Table No.**	**Type of Comment**	**Comments/Suggestions along with Justification for the Proposed Change**	**Proposed Change/Modified Wordings**	**Remarks**
	Name: Shri Ravi Singh	6.3			Most of the Motors running in India in out door condition the ambient temperature goes beyound 40 °C. also most of the manufacturers declares as 50°C on name plate.	Proposed to discuss in technical committee and the change shall be as follow	
	Organisation: N/A	N/A					
	Email: ravi.singh@erda.org				We should change the ambienttemperature up to 45 °C..	The ambient air temperature shall not exceed 45 °C.	
	Mobile: 9978940998						
1	Comment ID #: ETD_2024-05-205224		1	Technical			Comment dropped
	Name: Shri BVVS Ganesh	6.3			Maximum Ambient air temperature has been mentioned as 40 deg.C.		
	Organisation: N/A	N/A				The ambient air temperature shall not exceed 50 deg.C	
2			1	General			Comment dropped

	Email: bvvsganesh@ntpc.co.in				As per Indian conditions same may be revised to 50 deg.C		
	Mobile: 9650999581						
	Comment ID #: ETD_2024-05-288388	9.5	1	Technical	Pull up torque (minimum) mentioned as 0.3pu.	Unless otherwise specified (for example machines according to IEC 60034-12), the pull-up torque of cage induction motors under full voltage shall be not less than 0,5 times the rated torque.	Comment dropped
		N/A					
					However, as per IS 12615:2018, same is mentioned as 0.5pu.		
					Discrepancy shall be suitably addressed.		

ANNEX 5 IEC 60034 2- 1 comments

SNo.	Basic Details	Clause/Subclause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings	Remarks
1	Name: Shri Ravi Singh	6.1.2	Table 2, Column 5	Technical	For small motors having torque below 1 Nm shall be tested as per direct torque method, as getting low value torque transduced in 0.2 class is difficult.	All single phase machines & machines below 1 Nm rated torque.	Comment dropped.
	Organisation: N/A	N/A					
	Email: ravi.singh@erda.org				Earlier it was 1 kW , and now all motors are to be tested as per load		

					curve method.		
	Mobile: 9978940998						
	Comment ID #: ETD_2024-05-216229						
	ANNEX 6 IEC 60034 - 5 comments						

SNo.	Basic Details	Clause/Subclause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings	Remarks
1	Name: Shri BVVS Ganesh	8.1	2	Technical	IP test conducted by some vendors with joints applied with silicone sealant (or any other sealant). Sealant application is over and above the general design and it is not generally mentioned in notes of the vendors documents.	No Sealants in the joint areas shall be applied before testing.	Comments dropped
	Organisation: N/A	N/A					
	Email: bvvsganesh@ntpc.co.in				So, testing shall be conducted without any sealants applied in the joint areas as the purpose of the test is to prove the inherent IP of that design.		
	Mobile: 9650999581						
	Comment ID #: ETD_2024-05-288218						

	ANNEX 7 IS 9283 comments						
	Offline comments from Shri Dilip Bhave and MED department were also discussed and have been incorporated in the IS revision						
SNo.	Basic Details	Clause/Subclause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings	Remarks
1	Name: Mallika Gope Organisation: N/A Email: mallika@nabl.qcin.org Mobile: Comment ID #: ETD_2023-07-081109	5.1 N/A 16.1 N/A 16.2 N/A 18.1 N/A	1 Note Note 1	Technical Editorial Editorial General	Earthing should be made mandatory. Editorial correction Editorial correction Punctuation added	In case GI pipes are used for the purpose of earthing the motor, earthing connection shall be made to the discharge pipe clamps. This test may be conducted at a reduced voltage, when a current at least equivalent to full load current is being taken by the motor. This test may be conducted at reduced voltage, when a current at least equivalent to full load current is being taken by the motor. The motor shall, whatever their type of construction, be capable of with standing for 10 s without stalling or abrupt change in speed (under gradual increase of	Dropped Incorporated Incorporated Incorporated

						torque) an excess torque of 60 percent of the rated torque, the voltage and frequency being maintained at their rated value.	
		19.1 N/A	1	Editorial	typographical correction	The temperature rise test of the motor at rated voltage and supply frequency shall be carried out with the motor coupled to a suitable pump for the full load current and the set run continuously for 1 h till steady state temperature is achieved.	Incorporated
		20.3 N/A	1	General	Text rearranged for clarity	Since the test is already conducted on the windings for acceptance, it shall, as far as possible, not be repeated. If however it is tested a second time at the laboratory or at the special request of the purchaser, the test voltage shall be 80 percent of the voltage (1200 V) given in 20.2.	Incorporated
		21.1 N/A	1	Technical	Mega Ohm to be mentioned	The insulation resistance, when the high voltage test is applied, shall be not less than 5 MΩ.	Incorporated
2	Name: Shri P. K. Dalwadi Organisation: N/A Email: system@dukeplasto.	5.2.3 N/A	1	Editorial	Clause 5.2.3 is not mentioned in Draft, which is required for Table 1	Proper Clause Number needs to Provide in all parameters	Incorporated

	com Mobile: 9408701741 Comment ID #: ETD_2023-08-051216						
3	Name: Shri P. K. Dalwadi Organisation: N/A Email: system@dukeplasto.com Mobile: 9408701741 Comment ID #: ETD_2023-08-051121	7.1 N/A	1	Editorial	19.4mm & 19.6mm need to change	194mm & 196mm need to write there	Incorporated
4	Name: Shri P. K. Dalwadi Organisation: N/A Email: system@dukeplasto.com Mobile: 9408701741 Comment ID #: ETD_2023-08-052775	12 N/A	1	Editorial	Clause No. 12 needs a separate line, then all Clause numbers after that need to change.	Clause No. 12 needs a separate line, then all Clause numbers after that need to change.	Incorporated
5	Name: Shri P. K. Dalwadi Organisation: N/A Email: system@dukeplasto.com Mobile: 9408701741 Comment ID #: ETD_2023-08-052327	11.2 N/A	2	Editorial	"9" need remove from the sentence	The tolerance on the declared values	Incorporated
6	Name: Shri P. K. Dalwadi Organisation: N/A Email: system@dukeplasto.com Mobile: 9408701741 Comment ID #: ETD_2023-08-057797	0 N/A	0	Technical	Fig 11, 12 & 13 are provided but there are not any details provided in any clause number	Fig 11, 12 & 13 are provided but there are not any details provided in any clause number	Incorporated
7	Name: Shri Ravi Singh Organisation: N/A	5.1 & 5.4 N/A	full	Editorial	Earthing is mentined on 5.1 clause and also on 5.4 clause.	5.4 should be deleted	Incorporated

					duplicate entry		
	Email: ravi.singh@erda.org	7.1 & 17.2			7.1 Tables Numbering is not proper (tabe 3 mentioned twice)	7.1 Numbering shall be corrected,	
	Mobile: 9978940998	N/A					
	Comment ID #: ETD_2024-05-037762				17.2 Table 6 is mentioned for tolerance however tolerance is not given in table 6		
						17.2 table for tolerance shall be corrected.	
			1	Technical	also in 17.1 at some places table reference is given only up to table 5 insted of upto table 10..		Incorporated
		16.3			this clause ask for testing premises, which is not a teschnical requirement.	16.3 Shall be deleted	
		N/A					
					In note IS 7572 is mentioned and that also need to be updated.	IS 7572 also need to be updated in line with lates standards.	
				Technical			
			full				Dropped
		16.4			16.4 TEST CERTIFICATES - this clause describe about certification and is not a technical requirements, and contains only generic information.	This clause shall be deleted.	
		N/A	full	General			Incorporated

ANNEX 8
STANDARD BY STANDARD REAFFIRMATION AND REVISION UPDATE

Sl. No.	IS No.	TITLE	Reaffirm M-Y (>= 5years TO BE REAFFIRMED)	No. of Amds	Eqv.	MEMBER SECRETARY INPUT	ACTION TAKEN
1	IS 11537 : 1985	Specification for centrifugal switch for single - Phase induction motors	2017	-	Indigenous	No licenses/lab to the standard, CG Power had informed ETD that there are no manufacturers to this standard	Archive and try to shift the topic out of committee.
2	IS 12065 : 1987	Permissible limits of noise levels for rotating electrical machines	March, 2019	1	Modified/ Technically Equivalent	Standard being revised - P draft stage	WC approved
3	IS 12066 : 1987	Specification for three - Phase induction motors for machine tools	March, 2019	-	Modified/ Technically Equivalent	WITHDRAWN	WITHDRAWN
4	IS 12075 : 2008	Mechanical vibration of rotating electrical machines with shaft heights 56 mm and higher - Measurement, evaluation and limits of vibration severity (First Revision)	July, 2018	-	Modified/ Technically Equivalent	STandard being revised - WC draft stage	Approved for finalization and printing
5	IS 1231 : 2019	Dimensions and Output Series of Foot Mounted Induction Motors â€" Frame Numbers 56 to 315 L (Fourth Revision)	-	-	Modified/ Technically Equivalent	Manufacturers may confirm to reaffirm or revise standard with detailed comments. Please give Comments on viability to adopt IEC 60072-1:2022 Related to IS	REAFFIRMED

						2223 and 8223. Kindly recommend if it has to be harmonized to IEC 60072 series	
6	IS 12615 : 2018	Line operated three phase AC motors (IE Code) "Efficiency classes and performance specification" (Third Revision)	-	1	Modified/ Technically Equivalent	Revision due , working group will finalize draft incorporating more clarity in language , tables	Revision to be done by the working group. Till then the standard is reaffirmed.
7	IS 12642 : 1989	Brush - Holders for slip rings group R, type RA - Specification	March, 2019	-	Modified/ Technically Equivalent	IEC 60778: 1984 is still active , decision to republish with updated references. Please add any inputs	REAFFIRMED
8	IS 12998 : 2024	Acoustics Test Code for the Measurement of Airborne Noise Emitted by Rotating Electrical Machines		-	Identical under dual numbering	NOT DUE	
9	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	ISO 8528 series covers this topic comprehensively. Manufacturers are required to confirm or add any input	Update references , circulate to alternator companies and then float as P draft. Till then the standard may be reaffirmed.
10	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	1	Modified/ Technically Equivalent	ISO 8528 series covers this topic comprehensively. Manufacturers are required to confirm or add any input	Update references , circulate to alternator companies and then float as P draft. Till then the standard may be reaffirmed.

11	IS 13466 : 1992	Brushes for electrical machines - Specification	2019	-	Modified/ Technically Equivalent	Standard was based upon Three IEC standard based - ,IEC 60136 latest published on 2024, IEC 60467:1974 withdrawn replaced by 60136, IEC 60773 latest published 2021. Should we adopt all IECs separately? Kindly give your inputs	Archive. Member Secretary can float P draft for harmonization with IEC if positive inputs are received from brush manufacturers . Approval to be taken by mail.
12	IS 13525 : 1992	Flexible conductors for carbon brushes - Specification	2019	-	Modified/ Technically Equivalent	Standard has 0 licenses. Manufactures are asked to give input on relevancy and latest standards used for this product	Archive. Member Secretary can float P draft for harmonization with IEC if positive inputs are received from brush manufacturers . Approval to be taken by mail.
13	IS 13529 : 2021	ROTATING ELECTRICAL MACHINES PART 26 EFFECTS OF UNBALANCED VOLTAGES ON THE PERFORMANCE OF THREE-PHASE CAGE INDUCTION MOTORS		-	Modified/ Technically Equivalent	NOT DUE	
14	IS 13555 : 1993	Guide for selection and application of 3 - Phase AC induction motors for different types of driven equipment	March, 2019	-	Indigenous	Standard needs revision . Any manufacturer/ association are required to submit their draft based on their practices and needs. Also attach the guidlelines/doc/ technical documents / spreadsheets	Archive

						if it is possible to share with ETD for better standards making	
15	IS 13584 : 1993	Brush materials for electrical machinery - Specification	March, 2019	-	Modified/ Technically Equivalent	As the standard is a combination of IEC 60773: 2021 & IEC 60413: 1972- . The new IEC standard has major changes which cannot be combined as before. Hence, both IECs may be wide circulated Any other suggestion may be given	Archive. Member Secretary can float P draft for harmonization with IEC if positive inputs are received from brush manufacturers . Approval to be taken by mail.
16	IS 13586 : 2023	Carbon Brushes Brush Holders Commutators and Slip-Rings Definitions and Nomenclature		-	Identical under dual numbering	NOT DUE	
17	IS 13937 (Part 1) : 1994	Statistical methods of determining and verifying stated noise emission values of machinery and equipment: Part 1 general considerations and definitions	November, 2022	-	Identical under dual numbering	ISO standards are same	
18	IS 13937 (Part 2) : 1994	Statistical methods of determining and verifying stated noise emission values of machinery and equipment: Part 2 methods for stated values for individual machines		-	Identical under dual numbering	ISO standards are same	Reaffirmed
19	IS 13937 (Part 3) : 1994	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	-	Identical under dual numbering	ISO standards are same	
20	IS 13937 (Part 4) : 1994	Statistical methods of determining and verifying stated noise emission values	November, 2022	-	Identical under dual	ISO standards are same	

		of machinery and equipment: Part 4 methods for stated values for batches of machines			numbering		
21	IS 14195 : 1994	Brush - Holders for electrical machines - Guide to the measurement of the static thurst applied to brushes		-	Identical under dual numbering	IEC TR 61015:1990 is same hence may be reaffirmed.	Reaffirmed
22	IS 14196 : 1994	Definitions and terminology of brush holders for electrical machines	March, 2023	-	Identical under dual numbering	IEC 60560:1977 is same .	
23	IS 14197 : 2023	Hydraulic Turbines Storage Pumps and Pump-Turbines - Model Acceptance Tests		-	Identical under dual numbering	NOT DUE	
24	IS 14376 : 1996	Brush holders for electrical machines - Specification	2017	-	Modified/ Technically Equivalent	IEC 60773:2021 and IEC 60316:2024 are latest standards in this topic. Please give suggestion /latest standards/ relevancy of the standard. 0 licenses related to this standard	Archive. Member Secretary can float P draft for harmonization with IEC if positive inputs are received from brush manufacturers . Approval to be taken by mail.
25	IS 14377 : 1996	Specification for three - Phase induction motors for fans used in air - Conditioning and ventilation	2017	-	Modified/ Technically Equivalent	Based on IEEMA 8 : 1987 . IEEMA send latest practices and also recommend revision or withdrawal	Update references and float as P draft
26	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	-	Identical under dual numbering	IEC 60072-2:1990 same , Also standard appears to be a repeat of 8223. Reccomendation be given to harmonize	Withdraw as duplicate to IS 8223

						number identical to IEC . Comments may also be given to IS 1231 which is derived from 60072-1	
27	IS 14569 : 1999	Commutators for electrical machines - Specification		-	Indigenous	Standard needs revision . Any manufacturer/ association are required to submit their draft based on their practices and needs. Also attach the guidlelines/doc/ technical documents / spreadsheets if it is possible to share with ETD for better standards making	Archive
28	IS 14578 : 1999	Three - Phase induction motors for use in nuclear power plants - Specification	March, 2019	1	Indigenous	NPCIL to do review	NPCIL to do review
29	IS 14582 : 2021	Single-phase small ac electric motors for centrifugal pumps for agricultural applications		-	Indigenous	NOT DUE	Anil Akole to review this standard
30	IS 14889 : 2000	Copper tamping powder for carbon brushes - Specification	December, 2015	-	Indigenous	Please give suggestion /latest standards/ relevancy of the standard. 0 licenses related to this standard;; Hemanth, ICA	Archive
31	IS 15429 : 2004	Storage, installation and maintenance of DC motors - Code of practice		-	Indigenous	Standard needs revision . Any manufacturer/ association are required to submit their draft based on their practices and needs.	Praveeen Vijayraghvan to provide draft

						Also attach the guidlelines/doc/ technical documents / spreadsheets if it is possible to share with ETD for better standards making	
32	IS 15880 : 2009	Three phase cage induction motors when fed from IGBT converters - Application guide	2019	-	Identical under dual numbering	LATEST TS-IEC TS 60034-25:2022 Manufacturers recommend on its adoption	Update to latest IEC under identical number
33	IS 15881 : 2009	Three phase cage induction motors specifically designed for IGBT converter supply - Specification	June, 2019	-	Indigenous	Standard needs revision . Any manufacturer/ association are required to submit their draft based on their practices and needs. Also attach the guidelines/doc / technical documents / spreadsheets if it is possible to share with ETD for better standards making	Withdraw with 15880
34	IS 15999 (Part 1) : 2021	Rotating electrical machines - Part 1 : Rating and performance		-	Identical under dual numbering	IEC 60034-1:2022 latest to be adopted	IEC 60034-1:2022 latest to be adopted approved under Identical numbering
35	IS 15999 (Part 2/Sec 1) : 2023	Rotating Electrical Machines Part 2-1: Standard Methods for Determining Losses and Efficiency from Tests Excluding Machines for Traction Vehicles		-	Identical under dual numbering	IEC 60034-2-1:2024 latest to be adopted	IEC 60034-2-1:2024 latest to be adopted under Identical numbering

36	IS 15999 (Part 3) : 2023	ROTATING ELECTRICAL MACHINES Part 3: Specific requirements for synchronous generators driven by steam turbines or combustion gas turbines and for synchronous compensators first revision		-	Identical under dual numbering	Up to date	IEC numbering to be made identical
37	IS 15999 (Part 4/Sec 1) : 2023	ROTATING ELECTRICAL MACHINES Part 4 Electrically excited synchronous machine quantities Section 1 Test methods first revision		-	Identical under dual numbering	Up to date	IEC numbering to be made identical
38	IS 15999 (Part 15) : 2017	Rotating Electrical Machines Part 15 Impulse Voltage Withstand Levels of Form-Wound Stator Coils for Rotating ac Machines		-	Identical under dual numbering	Up to date	IEC numbering to be made identical
39	IS 15999 (Part 18/Sec 41) : 2018	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		-	Identical under dual numbering	AMD1:2019 to be floated	AMD1:2019 to be floated; IEC numbering to be made identical
40	IS 15999 (Part 18/Sec 42) : 2018	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		-	Identical under dual numbering	AMD1:2020 to be floated	AMD1:2020 to be floated; IEC numbering to be made identical
41	IS 15999 (Part 20/Sec 1) : 2023	Rotating Electrical Machines Part 20-1: Control Motors Stepping Motors		-	Identical under dual numbering	Up to date	IEC numbering to be made identical
42	IS 15999 (Part 26) : 2016	Rotating Electrical Machines Part 26 Effects of Unbalanced Voltages on the Performance of Three-Phase Cage Induction Motors		-	Identical under dual numbering	Up to date	IEC numbering to be made identical
43	IS 2223 : 1983	Dimensions of flange mounted AC induction motors		2	Modified/ Technically Equivalent	Members may recommend IEC 60072 series to be adopted identical superseding all the related	Sumit Tyagi , ABB to provide revised draft

						standards	
44	IS 2253 : 1974	Designations for types of construction and mounting arrangements of rotating electrical machines (First Revision)	2017	-	Identical under dual numbering	IEC 60034-7:2020 latest to be adopted -ready to gazette	
45	IS 2254 : 1985	Dimensions of vertical shaft motors for pumps (Second Revision)	2017	-	Identical under dual numbering	Standard needs revision . Any manufacturer/ association are required to submit their draft based on their practices and needs. Also attach the guidlelines/doc/ technical documents / spreadsheets if it is possible to share with ETD for better standards making	IPMA committee members to provide the revised draft
46	IS 2968 : 1964	Dimensions of slide rails for electric motors	2017	1	Identical under dual numbering	DIN 42923 original standard withdrawn; Please give suggestion /latest standards/ relevancy of the standard. 0 licenses related to this standard	WITHDRAW
47	IS 2972 (Part 1) : 1979	Specification for textile motors: Part 1 loom motors (First Revision)	2017	2	Indigenous	Please give suggestion /latest standards/ relevancy of the standard. 0 licenses related to this standard	Contact ATIRA, ahmedabad for updates. Till then archive. Member secretary to take approval from email if inputs received.
48	IS 2972 (Part 2) : 1979	Specification for textile motors: Part 2 card motors (First Revision)	2017	1	Indigenous	Please give suggestion /latest standards/	Contact ATIRA, ahmedabad for updates.

						relevancy of the standard. 0 licenses related to this standard	Till then archive. Member secretary to take approval from email if inputs received.
49	IS 4029 : 2010	Guide for testing three phase induction motors (First Revision)	March, 2016	-	Indigenous	Standard needs revision . Any manufacturer/ association are required to submit their draft based on their practices and needs. Also attach the guidlelines/doc/ technical documents / spreadsheets if it is possible to share with ETD for better standards making	References to be updated and floated as P draft and till then to be reaffirmed. BHEL Observation for IS 4029 :2010 standard : Refer to the page 23 , there is a typographical error for calculating the formula of "Xsl". It needs to be rectified. It should have been Xsî = 0.64 × Xsí – 0.12 × Xs′ instead of Xsî = 1.6 × Xsí – 0.6 × Xs′,.
50	IS 4665 (Part 1) : 2023	Hand-Held Motor-Operated Electric Tools Safety Part 1: General requirements Second Revision		-	Identical under dual numbering	NOT DUE	
51	IS 4665 (Part 2/Sec 1) : 2023	Hand-Held Motor-Operated Electric Tools Safety Part 2 Particular requirements Section 1 drills and impact drills		-	Identical under dual numbering	NOT DUE	
52	IS 4665 (Part 2/Sec 2) : 2023	Hand-held motor-operated electric tools - Safety - Part 2 Particular requirements Section 2 screwdrivers and impact wrenches		-	Identical under dual numbering	NOT DUE	
53	IS 4665 (Part 2/Sec 3) : 2023	Hand-held motor-operated electric tools - Safety Part 2 Particular requirements Section 3 grinders polishers and disk-type sanders		-	Identical under dual numbering	NOT DUE	

54	IS 4665 (Part 2/Sec 5) : 2023	Hand-Held Motor-Operated Electric Tools Safety Part 2 Particular Requirements Section 5 Circular Saws		-	Identical under dual numbering	NOT DUE	
55	IS 4665 (Part 2/Sec 6) : 2023	Hand-Held Motor-Operated Electric Tools - Safety Part 2 Particular Requirements Section 6 Hammers		-	Identical under dual numbering	NOT DUE	
56	IS 4665 (Part 2/Sec 7) : 2023	Safety of Hand-Held Motor-Operated Electric Tools Part 2 Particular Requirements Section 7 Spray Guns for Non-Flammable Liquids		-	Identical under dual numbering	NOT DUE	
57	IS 4758 : 1968	Methods of measurement of noise emitted by machines		-	Modified/ Technically Equivalent	To be superseded by IS 12065 revision	WITHDRAW
58	IS 4889 : 1968	Methods of determination of efficiency of rotating electrical machines		3	Modified/ Technically Equivalent	WITHDRAWN	WITHDRAWN
59	IS 5422 : 1996	Turbine type generators - Specification (First Revision)		-	Modified/ Technically Equivalent	WITHDRAWN	WITHDRAWN
60	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	-	Identical under single numbering	IEC 60034-5:2020 latest to be adopted	"IEC 60034-5:2020 latest to be adopted " under identical numbering
61	IS/IEC 60034-8 : 2014	Rotating Electrical Machines Part 8 Terminal Markings and Direction of Rotation (Third Revision)	August, 2018	-	Identical under dual numbering	Up to date, ACD level new revision to be adopted when published	ACD level new revision to be adopted when published
62	IS/IEC 60034-27-4) : 2018	Rotating Electrical Machines Part 27 Winding Insulation of Rotating Electrical Machines Section 4 Measurement of insulation resistance and polarization index		-	Identical under dual numbering	Up to date	REAFFIRMED

63	IS 6362 : 1995	Designation of methods of cooling of rotating electrical machines (First Revision)	November, 2022	-	Identical under dual numbering	IEC 60034-6:1991 latest only To be republished with updated references	
64	IS 7538 : 1996	Three - Phase squirrel cage induction motors for centrifugal pumps for agricultural application - Specification (First Revision)	2017	3	Indigenous	3 licenses operative will take inputs for revised draft	References , methods to be updated and R&D project inputs to be incorporated. Then the draft may be floated as a P draft. Till then it may be reaffirmed.
65	IS 7572 : 1974	Guide for testing single - Phase AC and universal motors		-	Modified/ Technically Equivalent	To be harmonized with IEEE 114-2010 Draft was previously shared then dropped. Standard needs revision . Any manufacturer/ association are required to submit their draft based on their practices and needs. Also attach the guidlelines/doc/ technical documents / spreadsheets if it is possible to share with ETD for better standards making	RAVI SINGH, ERDA to prepare the draft harmonized with IEEE 114
66	IS 8151 : 1976	Specification for single - Speed three - Phase induction motors for driving lifts		2	Modified/ Technically Equivalent	Revision in printing	
67	IS 8223 : 1999	Dimensions and output series for rotating electrical machines (First Revision)	November, 2022	-	Modified/ Technically	To be superseded by IEC 60072 harmonization	

					Equivalent	. Comment if any objections	
68	IS 8789 : 2021	Values of performance characteristics for three-phase induction motors with degree of protection 2X		-	Indigenous	NOT DUE	
69	IS 900 : 2019	Code of Practice for Storage, Installation and Maintenance of Induction Motors (Third Revision)	-	-	Indigenous	Please comment if standard needs revision or to be reaffirmed as it is. Any manufacturer/ association are required to submit their draft based on their practices and needs. Also attach the guidlelines/doc/ technical documents / spreadsheets if it is possible to share with ETD for better standards making	REAFFIRMED
70	IS 9283 : 2013	Motors for submersible pumpsets - Specification (Second Revision)	May, 2018	-	Indigenous	Revision in WC stage	Approved for Printing
71	IS 9320 : 1979	Guide for testing direct - Current (DC) machines	March, 2017	1	Modified/ Technically Equivalent	IEEE 113-1985 inactive withdrawn. Please recommend	Praveeen Vijayraghvan to provide draft
72	IS 9582 (Part 1) : 1980	Specification for single - Phase electric motors for definite purposes: Part 1 domestic laundry machine motors	March, 2018	1	Indigenous	Please give suggestion /latest standards/ relevancy of the standard. 0 licenses related to this standard	WITHDRAW
73	IS 9670 : 1980	Specification for direct current micromotor for cassette tape recorders and other applications	March, 2019	-	Indigenous	Please give suggestion /latest standards/ relevancy of the standard.	WITHDRAW

						0 licenses related to this standard	
74	IS 9919 : 1999	Guide for selection and use of carbon brushes in electrical rotating machines (First Revision)	Februar y, 2018	-	Indigeno us	Please give suggestion /latest standards/ relevancy of the standard.	REAFFIRME D AND ARCHIVED.
75	IS 996 : 2009	Single phase a.c. induction motors for general purpose (Third Revision)		2	Identical under dual numberi ng	Revision in P draft stage	Approved for Wide circulation