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कार्यवृत्त
MINUTES

16th MEETING
OF
BEARINGS SECTIONAL COMMITTEE,
PGD 13

11:00 AM – 04:00 PM | Wednesday, 31 May 2023
Venue: Training Division Hostel, Tata Motors, Pune

भारतीय मानक ब्यूरो

मानक भवन, 9 बहादुर शाह जफर मार्ग

नई दिल्ली – 110002

BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002

MINUTES OF THE 15th MEETING OF BEARINGS SECTIONAL COMMITTEE, PGD 13

DATE & TIME	VENUE (Hybrid)
11:00 AM – 04:00 PM | Wednesday, 31 May 2023	Venue: Training Division Hostel, Tata Motors, Pune

CHAIRMAN: Dr. Manish Roy, Scientist-G, Defence Metallurgical Research Laboratory, Hyderabad
MEMBER SECRETARY: Shri Kundan Giri, Scientist-C (PGD), BIS, New Delhi

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MEMBERS PRESENT

S. No	Name of representative	Name of the Organization	Contact details
3.	Dr T. H. Gonsalves	Hindustan Aeronautics Limited, Bengaluru	rd.aerdc@hal-india.co.in
4.	Prof. Harish Hirani	IIT Delhi	hirani@mech.iitd.ac.in
5.	Prof Rajiv Tiwari	IIT Guwahati	rtiwari@iitg.ac.in
6.	Shri Rajaram Mane	KSPG Automotive (P) Limited, Pune	rajaram.mane@in.kspg.com
7.	Dr Soumendu Jana	National Aerospace Laboratories, Bangalore	sjana@nal.res.in
8.	Dr Sadanand Kulkarni	National Aerospace Laboratories, Bangalore	sadanandsk@nal.res.in
9.	Shri Trilochan Singh Bhatia	Schaeffler India Ltd.	trilochansingh.bhatia@schaeffler.com
10.	Shri Biswanath Nandi	Schaeffler India Ltd.	nandibsw@schaeffler.com
11.	Shri Gururaj Gaddi	SKF Bearing India Ltd. Pune	gururaj.gaddi@skf.com
12.	Shri Sandeep D Singh	SKF Bearing India Ltd. Pune	sandeep.d.singh@skf.com
13.	Shri Subose Pai	SKF Bearing India Ltd. Pune	subose.pai@skf.com
14.	Shri R.R Kulkarni	Tata Motors Ltd.	Ramesh1.kulkarni@tatamotors.com
15.	Shri Anoop Toby	Tata Motors Ltd.	att531197@tatamotors.com
16.	Shri Anil Gaikwad	Tata Motors Ltd.	Anil.gaikwad@tatamotors.com
17.	Shri Anchit Khanna	Tata Motors Ltd.	Anchit.khanna1@tatamotors.com
18.	Shri K. Shreenath Upadhaya	Timken India Ltd.	shreenath.upadhya@timken.com
19.	Dr Eapen P Joseph	Nuclear Power Corporation of India Ltd.	jeapen@npcil.co.in

Regrets

S. No	Name of representative	Name of the Organization
1.	Shri Milind Ghan	NRB Bearings Ltd., Thane

Item 0. GENERAL

0.1 Welcome by the Member Secretary

Member Secretary, Shri Kundan Giri on behalf of Bureau of Indian Standards, welcomed the Chairman and the members present in the meeting. He briefed the committee about the latest reform being done in the standards

formulation process and shared a presentation with the committee. He briefed the summary of the agenda and the decisions to be taken in the meeting to the committee and wished for thorough deliberations on the agenda points.

0.2 Opening remarks by the Chairman.

Dr. Manish Roy, Chairman, PGD 13 welcomed all the members present in the meeting. He thanked the members and invitees from M/s Tata Motors ltd. for hosting the meeting in Pune. Tata Motors being a consumer organization for the bearings Industry is a neutral location for the meeting. He briefed the committee about the agenda and important decisions that are required to be taken in the meeting. He emphasized that the committee consists of few of the most important people in Indian in the field of rolling bearings research and are capable of delivering more than what is currently being asked for. He asked the members to try and attend the meeting physically and increase their contribution in the national effort for standardization of bearing. Finally, he asked the Member Secretary to start the proceedings.

Item 1. CONFIRMATION OF MINUTES OF LAST MEETING

Since no comments were received, the Committee formally confirmed the minutes of the 15th meeting of Bearings Sectional Committee, PGD13 held on 6 December 2022 at Jaipur Branch Officer.

Item 2. REFORMS IN THE PROCESS OF STANDARDISATION

The committee noted the information given in the Agenda.

Item 3. SUMMARY OF ACTIONS TAKEN

The decision taken by committee on the Summary of actions taken on the minutes of the last meeting of Bearing Sectional Committee, PGD 13 are as given below:

S. N	Current Status	Discussions and Decision taken in the meeting
1.	***IS 14347: 1996*** *Plummer block housings – Specification and* ***IS 4773: 2017/ ISO 113 : 2010*** *Rolling bearings - Plummer block housings - Boundary dimensions (Third Revision)* The committee had reviewed both the drafts provided by Shri Shreenath Upadhyay. It was decided that revision draft for **IS 4773/ISO 113** will be given to **Shri TS Bhatia** for adding designations details as per that of DIN 736, 737, 738 and 739. The designation shall be for information purpose only and shall be as agreed between manufacturer and the consumer. The explanation of designation system from M/s Schaeffler Ltd. will be added into the revision of IS 4773 within 2 months. This will make IS 14347 redundant and it may be withdrawn in future. Once the draft of IS 4773 is received from Shri T S	Shri TS Bhatia shared a presentation about the changes done by him in the draft of IS 4773. He also submitted the draft to the committee. A copy of the draft and the presentation are attached at **Annex 1 and Annex 2**. It was suggested by Dr E P Joseph from NPCIL to include a column in the table for suitable mounting bolts to be used with the housings. The committee agreed to add a normative annex or an informative column in the table for this purpose. It was decided to circulate the draft for IS 4773 provided by Shri TS bhatia for a period of 2 months as P-draft and call a virtual meeting of PGD 13/Panel 1 once the comments are collated and are ready for discussion.

	Bhatia, it will be circulated as P-draft for a period of 2 months. Mr. Sumit Chandra will review the draft individually. The draft is yet to be received from M/s Schaeffler India Ltd. The committee may deliberate.	
2.	*Modification and adoption of **'ISO 3228 : 2013** 'Rolling bearings — **Cast and pressed housings for insert bearings** — Boundary dimensions and tolerances'* The committee referred the draft back to Shri Shreenath Upadhaya for creating 3 parts as per series for JIS, ABMA and ISO. He volunteered to prepare the draft within 1 month time. The new draft in 3 parts will be circulated as P draft from 1st jan to 31st march. The individual responsibility for approval of these draft has been taken by Shri Vijay Kumar Goel of RDSO. Draft for modification of ISO 3228 : 2013 has been received from Shri Shreenath Updhyaya on 29/05/2023. It has been circulated to committee for review as P-draft for 3 months. The draft will be discussed in the next meeting after comments are received. If no comments are received, the draft will be confirmed for wide circulation. Further, since **ISO/TC 4/SC 6** 'Insert Bearings' has developed ISO 3228 :2013, the committee may consider taking participating membership in ISO/TC 4/SC 6 and nominating interested members for participation in the ISO work.	The committee decided to circulate the draft for modification of ISO 3228 : 2013 received from Shri Shreenath Updhyaya on 29/05/2023 for review as P-draft for 3 months and call a virtual meeting of PGD 13/Panel 1 once the comments are collated and are ready for discussion. The Draft is attached at **Annex 4** for the committee to review. Further since **ISO/TC 4/SC 6** 'Insert Bearings' has developed ISO 3228 :2013 which is being adopted as an Indian Standard, the committee decided to take participating membership in ISO/TC 4/SC 6 and nominate the following members of PGD 13 as Experts from Indian in ISO/TC 4/SC 6 for representing India: 1. Shri Gururaj Gaddi, SKF India Ltd.; 2. Shri Shreenath Updadhyay, Timken India Ltd.; and 3. Shri Trilochan Singh Bhatia from Schaeffler India Ltd. The above nominated members are required to provide approval from their organization for representing India in ISO/TC 4/SC6.

Item 4 COMPOSITION OF THE SECTIONAL COMMITTEE

4.1 The committee noted the information given in the agenda and decided to appoint Dr Soumendu Jana as the Co-chairperson of the Sectional committee. As Co-Chairperson of PGD 13 he has agreed to act as the Chairman of the committee in absence of the Dr Manish Roy.

4.2 The committee decided to co-opt the following organization in the committee:

1) Indian Institute of Technology, Delhi
2) Indian Institute of Technology, Guwahati
3) Combat Vehicles Research Development Establishment, DRDO, Chennai
4) Nuclear Power Corporation of India Ltd., Mumbai

The above organization are required to provide filled and signed nomination proformas from their organizations nominating Principle, alternate and young professional member in Bearings Sectional Committee, PGD 13.

The committee members also decided to co-opt the following organizations once the contacts of the experts are received from the proposers:

1) DAE by NPCIL
2) Reliance Refinery by Prof .Tiwari
3) ISRO by Prof. Tiwari
4) IGCAR by NAL

4.3 Formation of Panel on Railway Bearings

Since the representatives from RDSO were not present in the meeting, the committee decided to withhold the decision for formulation of the panel on Railway Bearings under PGD 13.

The committee discussed the importance of RDSO's participation in the project. It was highlighted that setting up a test lab for Railway Bearings in India will be very helpful for Indian Bearings Manufacturers but the work of setting up an independent lab may have to be routed through a ministry and interested partners. The technology for development of a railway bearings test rig is available in India and the committee members are ready to share their expertise with the Indian government for setting up an independent test facility. Further, Indian Railways is the sole buyer of railway bearings in India and the terminology, specifications, test methods, and the delivery conditions etc, which are supposed to be developed by the railway bearings panel shall be done under the guidance of Indian railways and RDSO. The committee decided that in case Indian Railways is not ready for taking the convenorship of the proposed panel, the panel will be not be formulated and work on development of Indian Standards for railway bearings will not be started.

The details of the proposed panel are as given below:

1. Name of the Panel: PGD 13/Panel 4 : Railway Bearings
2. Scope of the Panel: Formulation of Indian Standards related to terminology, specifications and test methods and delivery conditions for all types of railway bearings.
3. Composition of the panel:
    a) Research, Designs & Standards Organization, Lucknow, RDSO (Convenor)
    b) M/s NRB Bearings ltd. Thane
    c) M/s National Engineering Industries Limited, Jaipur
    d) M/s Timken Engineering and Research Pvt. Ltd., Bengaluru
    e) M/s Schaeffler India Ltd., Vadodara
    f) M/s SKF India Ltd., Pune
    g) Bureau of Indian Standards, New Delhi
    h) Private wagon manufacturers – suggested by Shri Bisawanath Nandi
    i) M/s Siemens India Ltd.
    j) Bharat Heavy Electricals Limited.
4. Important standards to be dealt with
    a) American Railroad Association Bearings - AAR M-934, AAR M-959
    b) European standard - EN 12080/81/82 (Railway applications – Axle boxes –Performance testing)

4.4 Formation of Panel on Magnetic Bearings

The committee discussed the benefits of development of Indian standards on Magnetic Bearings. The committee also reviewed the proposal received by ISO/TC 123 for starting a new working group on magnetic bearings from China. In view of India's positive vote on the ballot circulated by TC/123 for opening the new working group, the committee decided to send a delegation to the next meeting of ISO/TC 123 scheduled in Japan in Nov 2023 to support the proposal for forming the working group and decide to form a new panel under PGD 13 on magnetic bearings and appointed Prof. Harish Hirani, IIT Delhi as the convener. Prof. Harish Hirani also volunteered to give justification on how magnetic bearings could be classified under the Plain Bearings, which will be useful in defending India's vote in the next meeting of ISO/TC 123.

The details of the new panel formed in magnetic bearings is as given below:

1. Name of the Panel: PGD 13/Panel 3 : Panel on Magnetic Bearings
2. Scope of the Panel: Formulation of Indian Standards related to terminology, specifications and test methods for Magnetic bearings.
3. Composition of the panel:
   a) Prof. Harish Hirani, Professor, Department of Mechanical Engineering IIT Delhi, Director CMERI, Durgapur (Convenor)
   b) Mr. Subose Pai submitted his nomination from SKF as a member from India in this WG.
   c) Dr Soumendu Jana, NAL
   d) Prof. Rajiv Tiwari, IIT Guwahati
   e) Dr T. H. Gonsalves, HAL (or other nomination from HAL)
   f) Shri Kundan Giri, BIS
   g) Wind turbine groups like adani to be contacted by Prof Hirani.
   h) Compressor manufacturers
   i) Kirloskar by SKF
   j) ELGI by SKF
   k) Siemens by SKF
   l) L&T by Timken
   m) IOCL and BPCL (Mr tarun Singhal) by Prof Harish Hirani
   n) Integral Coach Factory, Chennai

4. Important standards to focus on:

   a) ISO 14839-1:2004 - Magnetic bearings -- Part 1: Vocabulary
   b) ISO 14839-2:2013 - Magnetic bearings -- Part 2: Measurement and evaluation of the vibration behaviour of magnetic bearing systems
   c) ISO 14839-3:2013 - Magnetic bearings -- Part 3: Evaluation of the dynamic behaviour of magnetic bearing systems
   d) ISO 14839-4:2009 - Magnetic bearings -- Part 4: Performance testing
   e) ISO/TR 22971:2021 - Magnetic bearings -- Guide for reliability, availability, maintainability and safety (RAMS)
   f) IEC 61400-17:2019 - Wind turbines -- Part 17: Measurement and assessment of electrical characteristics of magnetic bearings
   g) ASME PTC 59-2004 (R2018) - Performance Testing of Magnetic Bearing Systems

5. The above standards were requested to be circulated to the members for study purpose.

6. With regards to the Face to Face Plenary meeting of ISO/TC 123 in Kyoto, Japan from 18-20 October 2023. The committee decided to nominate Prof Harish Hirani, Convener, PGD 13/Panel 1, Dr Manish Roy, Chairperson, PGD 13 and Shri kundan Giri, Member Secretary, PGD 13 as members of Indian delegation for attending the meeting as per justification given above at 4.4. The expected outcome from attending this meeting is formulation of a new working group under ISO/TC 123 for Magnetic Bearings.

Item 5. FINALIZATION OF WIDE CIRCULATED DOCUMENTS

The committee reviewed the status of the following documents which were wide circulated the decision of the committee is given in the last column of the table given below:

S.N	Documents	Title	Status before the meeting	Timeline	Decision of the committee
1	PGD 13 (18298) Revision of: IS 14802:2000	Plain Bearings Hardness testing of bearing metals Part 1 Multilayer bearings materials	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	7 months overdue (time line for publication of ISO adoption is 12 months)	To send the document to Dr. Manish Roy and Prof . Harish Hirani for review and comments. If no comments are received in 2 months, the document may be sent to publication.
2	PGD 13 (18447) Revision of: IS 10260:2017	Plain bearings Terms definitions classification and symbols Part 1 Design bearing materials and their properties	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	7 months overdue (time line for publication of ISO adoption is 12 months)	To send the document to Dr. Manish Roy and Prof . Harish Hirani for review and comments. If no comments are received in 2 months, the document may be sent to publication.
3	PGD 13 (18448) Revision of: IS 10260:1982	Plain bearings Terms definitions classification and symbols Part 2 Friction and wear	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	7 months overdue (time line for publication of ISO adoption is 12 months)	To send the document to Dr. Manish Roy and Prof . Harish Hirani for review and comments. If no comments are received in 2 months, the document may be sent to publication.
4	PGD 13 (18449) Revision of: IS 10260:2018	Plain bearings Terms definitions classification and symbols Part 3 Lubrication	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	7 months overdue (time line for publication of ISO adoption is 12 months)	To send the document to Dr. Manish Roy and Prof . Harish Hirani for review and comments. If no comments are received in 2 months, the document may be sent to publication.

5	PGD 13 (18450)	Plain bearings Terms definitions classification and symbols Part 4 Basic symbols	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	7 months overdue (time line for publication of ISO adoption is 12 months)	To send the document to Dr. Manish Roy and Prof . Harish Hirani for review and comments. If no comments are received in 2 months, the document may be sent to publication.
6	PGD 13 (18451)	Plain bearings Terms definitions classification and symbols Part 5 Application of symbols	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	7 months overdue (time line for publication of ISO adoption is 12 months)	To send the document to Dr. Manish Roy and Prof . Harish Hirani for review and comments. If no comments are received in 2 months, the document may be sent to publication.
7	PGD 13 (18959)	Rolling bearings Noise testing of rolling bearing greases Part 1 Basic principles testing assembly and test machine	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	Within timeline (time line for publication of ISO adoption is 12 months)	Since no comments have been received and members have recommended for adoption. The committee finalized the document for sending to publication.
8	PGD 13 (18963)	Rolling bearings Linear motion rolling bearings Vocabulary	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	7 months overdue (time line for publication of ISO adoption is 12 months)	Since no comments have been received and members have recommended for adoption. The committee finalized the document for sending to publication.
9	PGD 13 (20000) Revision of: IS 3090:1965	INSTALLATION AND MAINTENANCE OF ROLLING BEARINGS CODE OF PRACTICE	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	Well within timeline (time line for publication of Indigenous standard is 24 months)	M/s Schaeffler submitted modifications in the draft of IS 3090. The draft submitted is attached at **Annex 3.** The committee decided to circulate the new draft incorporating the changes for a period of 2 months and call a virtual meeting of PGD 13/Panel 1 once the comments are collated and are ready for discussion.

10	PGD 13 (20011) Revision of: IS 6457:1972	SINGLE ROW CYLINDRICAL ROLLER BEARINGS SPECIFICATION	No comments have been received on the wide circulated document. Committee may Kindly approve the publication and Gazette notification as Indian Standard	Well within timeline (timeline for publication of Indigenous standard is 24 months)	Since no comments have been received and members have recommended for adoption. The committee finalized the document for sending to publication.

Item 6. ITEMS PENDING FOR PRELIMINARY OR WIDE CIRCULATION

The committee decided to withhold the preliminary draft circulation or the wide circulation of the following documents till the time the review of documents mentioned at Item no. 6 is over. Once the documents are reviewed and sent to publication, the below mentioned documents will be circulated for the committee to review:

S. N	IS Number	IS Title	Recommendations in the previous meetings
1.	IS 13406 : 2018/ISO 8443 : 2010	Rolling bearings - Radial ball bearings with flanged outer ring - Flange dimensions (First Revision)	Committee approved the Wide circulation of ISO 8443:2022 for 3 Months for revision of Indian Standard.
2.	IS 16298 : 2017 ISO 6280:1981	Plain bearings - Requirements on backings for thick - Walled multilayer bearings	ISO 6280: 2018 Committee approved the Wide circulation of ISO 8443:2022 for 3 Months for revision of Indian Standard.
3.	IS/ISO 12297 : 2012	Rolling Bearings - Steel Cylindrical Rollers - Dimensions and Tolerances	ISO 12297-1 : 2021 Committee approved the Wide circulation of ISO 8443:2022 for 3 Months for revision of Indian Standard.
4.	IS 9764 (Part 1) : 1992/ ISO 6525: 1983	Plain bearings - Washers for plain bearings and wrapped bushes - Specification: Part 1 ring type thrust washers (First Revision)	ISO 6525:2018 Committee approved the Wide circulation of ISO 8443:2022 for 3 Months for revision of Indian Standard.
5.	IS 9619:1980	“Identification code for shell type needle bearings including Sealed Bearing	The committee decided that the draft will be wide circulated for a period of 2 months for the committee to review and comment. Further the responsibility of scrutiny of the document was given to Dr Soumendu Jana of NAL who would provide his comments to the member secretary within 1 month of Wide circulation.
6.	IS 12102:1987	“Specification for tapered roller bearings”	The committee decided to circulated the draft as preliminary draft for 3 months. The following discussions were held during the meeting which may be continued in the Panel meeting: o There are ISO standards for specifying chamfer o Radius is required since stress concentration on corners

			○ We can give option in the standard if possible (needs to be discussed) ○ Radius helps in calculating mounting dimensions. SKF had shown interest in reviewing the documents, the document will be shared with SKF for study and comments.
7.	16605 (Part 1) : 2018 ISO 2982-1:2013	Rolling bearings Accessories Part 1 : Dimensions for adapter sleeve assemblies and withdrawal sleeves	Drafts were provided by M/s Schaeffler India Ltd. for revision of adapter and withdrawal sleeve in the 15th Meeting. The committee decided to circulate both the drafts as Preliminary Drafts for a period of 3 months. The individual responsibility for approval of these draft has been given to representatives from Steel Authority of India.
8.	IS 16605 (Part 2) : 2018/ ISO 2982-2 : 2013	Rolling Bearings -- Accessories Part 2 Dimensions for Locknuts and Locking Devices	
9.	ISO 15241 : 2012	Rolling bearings — Symbols for physical quantities" for 3 months for review and comments from the committee.	Committee approved the Wide circulation of ISO 15241 : 2012 for 3 Months for adoption as new Indian Standard.
10.	ISO 12297-2:2018	'Rolling bearings — Cylindrical rollers — Part 2: Boundary dimensions, geometrical product specifications (GPS) and tolerance values for ceramic rollers' was circulated to interested committee members on 10-06-2022.	Committee approved the Wide circulation of ISO 12297-2:2018 for 3 Months for adoption as new Indian Standard

Item 7. REVIEW/REAFFIRMATION OF PUBLISHED INDIAN STANDARDS

As per the policy of BIS, the standards which have completed five years since their last publication/reaffirmation are reviewed for their reaffirmation or reaffirmation with revision or withdrawal based on the latest technology trends being followed in the country.

The review has been divided into following categories:

1. **Standards left for review from last year (rollover).**

S. No	IS Number	Status	Decision of the committee
1	IS 4216: 1981 Specification for needle cages (First Revision)	Shri Milind ghan Recommend adaptation of ISO:3030 standard for IS:4216 via email dated 17/02/2023 **Issues:** ● The original IS 4216 contains specification for needle cages, where as ISO 3030 gives only dimensions and tolerances. ● IS 4216 defines 4 types of cages where as types are not clear in ISO 3030. ● IS 4216 covers hardness, surface roughness, sampling plan and other general requirements which are not covered in ISO	The Member Secretary Volunteered to do the modification of ISO 3030 such that it includes all the requirements given in IS 4216 for making it a complete product specification suitable for tender and contract purposes, within a period of 4 months. The committee agreed and asked the Member

		3030. **Recommendation:** The committee may deliberate for modification of ISO 3030 such that it includes all the requirements given in IS 4216 for making it a complete product specification suitable for tender and contract purposes. The work of modification may be assigned to volunteering Members.	Secretary to share the draft with mr milind ghan and in consultation with him, wide circulate the draft for a period of 2 months.
2	IS 6454: 1972 Specification for self - Aligning roller bearings	Allocated to SKF India Ltd. To put up detailed report for revision of the standard in 2 months. Report due	Members from SKF volunteered to review current IS 6454 in line with the old IS 6455 and its newer version so that they could prepare a draft for revision of IS 6454. The committee allotted 4 months to SKF for sending the revision draft to BIS for circulation to the committee.
3	IS 6456: 1972 Specification for double row radial ball bearings	Draft for revision of IS 6456 : 1956 has been received from Shri Shreenath Upadhyaya on 16/05/2023. It has been circulated to committee for review as P-draft for 3 months. The draft will be discussed in the next meeting after comments are received. If no comments are received, the draft will be confirmed for wide circulation.	The committee noted the information given in the agenda.
4	IS 10203 : 1982 Technical supply conditions for thin - Walled plain bearings	Allocated to KSPG Automotive (P) Ltd To put up detailed. Report due	Mr Rajaram Mane from KSPG requested 3 months more for providing the revision draft of IS 10203 to BIS. The committee agreed and asked him to expedite. Once the draft is received it will be wide circulated for a period of 2 months.

2. Published standards due for periodic review in 2023-24.

The Committee reviewed the standards due for review for reaffirmation, Revision or Withdrawal in this year from 1 April 2022 to 31 March 2023 and its decision is given in the last column of the table given below:

S.No.	IS Number(B)	IS Title(C)	Status of base standard and recommendation of BIS secretariat	Decision of the committee
1.	IS 13405 : 2018 ISO 246 : 2007	Rolling bearings - Cylindrical roller bearings, separate thrust collars - Boundary dimensions (Second Revision)	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.
2.	IS 13962 : 2018 ISO 10317	Rolling bearings - Tapered roller bearings - Designation system	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.

	: 2008	(First Revision)		
3.	IS 14802 (Part 2) : 2019 ISO 4384-2:2011	Plain Bearing — Hardness Testing of Bearing Metals Part 2 Solid Materials (First Revision)	ISO 4384-2:2022 Plain bearings — Hardness testing of bearing metals — Part 2: Solid materials may be adopted for revision of IS 14802 (Part 2) : 2019 ,since it is an identical adoption.	To wide circulate the standard for a period of 2 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
4.	IS 15620 : 2019 ISO 4383 : 2012	Plain Bearings — Multilayer Materials for Thin-Walled Plain Bearing (First Revision)	Under development ISO/DIS 4383, May be wide circulated for revision of IS 15620. Since it is an identical adoption.	To wide circulate the standard for a period of 3 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
5.	IS 2399 : 2019 ISO 5593 : 1997	Rolling Bearings — Vocabulary (Second Revision)	ISO 5593:2023 Rolling bearings — Vocabulary may be adopted for revision of IS 2399 : 2019 ,since it is an identical adoption.	To wide circulate the standard for a period of 2 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
6.	IS 3823 : 2014 ISO 76 : 2006	Rolling bearings - Static load ratings (Third Revision)	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.
7.	IS 5669 : 2019 ISO 15 : 2017	Rolling bearings - Radial bearings - Boundary dimensions, general plan (Second Revision)	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.
8.	IS 5692 : 2019 ISO 492 : 2014	Rolling bearings - Radial bearings - Geometrical product specifications (GPS) and tolerance values (Second Revision)	Under development ISO/FDIS 492 May be wide circulated for revision of IS 5692 : 2019. Since it is an identical adoption.	To wide circulate the standard for a period of 3 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
9.	IS 5932 : 2019 ISO 104 : 2015	Rolling bearings - Thrust bearings - Boundary dimensions, general plan (Second Revision)	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.
10.	IS 5933 : 2019 ISO 199 : 2014	Rolling bearings - Thrust bearings - Geometrical product specification (GPS) and tolerance values (Fourth Revision)	Under development ISO/FDIS 199 May be wide circulated for revision of IS 5933 : 2019. Since it is an identical adoption.	To wide circulate the standard for a period of 3 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
11.	IS 11027 (Part 2) : 2018 ISO 1132-2 : 2001	Rolling Bearing - Tolerances Part 2 Measuring and Gauging Principles and Methods	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.

12.	IS 11027 (Part 1) : 2019 ISO 1132-1 : 2000	Rolling Bearing â€" Tolerances Part 1 Terms and Definitions (First Revision)	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.
13.	IS 2898 (Part 1) : 2019 ISO 3290-1 : 2014	Rolling bearings - Balls: Part 1 steel balls (Second Revision)	No Change in ISO, may be allotted to NAL or any other volunteering organization for adding test for steel balls.	Members from NAL Volunteered to review the standard and to add test methods applicable for steel balls. The committee decided to allot then 3 month time for providing a revision draft.
14.	IS 2898 (Part 2) : 2019 ISO 3290-2 : 2014	Rolling bearings - Balls: Part 2 ceramic balls	No Change in ISO, may be allotted to NAL or any other volunteering organization for adding test for steel balls.	Members from NAL Volunteered to review the standard and to add test methods applicable for ceramic balls. The committee decided to allot then 3 month time for providing a revision draft.
15.	IS 16478 (Part 1) : 2019 ISO 4386-1 : 2012	Plain bearing - Metallic multilayer plain bearings: Part 1 non - Destructive ultrasonic testing of bond of thickness greater than or equal to 0.5 mm	ISO 4386-1:2019 Plain bearings — Metallic multilayer plain bearings — Part 1: Non-destructive ultrasonic testing of bond of thickness greater than or equal to 0,5 mm May be wide circulated for revision of IS 16478 (Part 1) : 2019. Since it is an identical adoption.	To wide circulate the standard for a period of 2 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
16.	IS 16478 (Part 2) : 2019 ISO 4386-2 : 2012	Plain bearing - Metallic multilayer plain bearings: Part 2 destructive testing of bond for bearing metal layer thicknesses greater than or equal to 2 mm	ISO 4386-2:2019 Plain bearings — Metallic multilayer plain bearings — Part 2: Destructive testing of bond for bearing metal layer thicknesses greater than or equal to 2 mm May be wide circulated for revision of IS 16478 (Part 2) : 2019. Since it is an identical adoption.	To wide circulate the standard for a period of 2 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
17.	IS 5935 (Part 2) : 2019 ISO 5753-2 : 2010	Rolling bearings - Internal clearance: Part 2 axial internal clearance for four - Point - Contact ball bearings	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.
18.	IS 5935 (Part 1) : 2019 ISO 5753-1 : 2009	Rolling bearings - Internal clearance: Part 1 radial internal clearance for radial bearings (Second	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.

		Revision)		
19.	IS 7461 : 2019 ISO 355 : 2007	General plan of - Boundary dimensions for tapered roller bearings: Part 1 single row bearings (Second Revision)	ISO 355:2019 Rolling bearings — Tapered roller bearings — Boundary dimensions and series designations May be wide circulated for revision of IS 7461 : 2019. Since it is an identical adoption.	To wide circulate the standard for a period of 2 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
20.	IS 17126 : 2019	Plain bearing: lead and tin casting alloys for multilayer plain bearing	Based on ISO 4381 : 2011. Presently in India lead based alloy is also in practice. To cover those lead based alloys and other tin based alloys which are not covered in ISO 4381 : 2011, the committee felt the necessity to have a separate Indian standard. The committee may deliberate and decided whether they want to align with ISO.	The committee reviewed the previous decision and as recommended by Shri Rajaram Mane, decided to adopt the ISO standard without any modification. To wide circulate the standard for a period of 2 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
21.	IS 17267 : 2019 ISO 16281 : 2008	Rolling Bearings - Methods for Calculating the Modified References Rating Life for Universally Loaded Bearings	ISO/DIS 16281 under development Rolling bearings — Methods for calculating the modified reference rating life for universally loaded bearings May be wide circulated for revision of IS 17267 : 2019. Since it is an identical adoption.	To wide circulate the standard for a period of 3 months and if no comments are received, the standard may be sent to printing in consultation with the Chairman.
22.	IS 17276 : 2019 ISO 15243 : 2017	Rolling Bearings - Damage and Failures - Terms, Characteristics and Causes	No Change in ISO, May be reaffirmed since it is an identical adoption.	To reaffirm as recommended.

3. Standards published before the year 2000

The decision of the committee for review of pre 2000 standards which are immediately required to be reviewed and revised/archived/merged/withdrawn or amended is given in last column of the table given below:

S.No	IS No.	Title	**Status of base standard and recommendation of BIS secretariat**	**Decision of the committee**
1.	IS 3980 : 1982	Specification for porous metal powder oil - Impregnated bearings (First Revision)	Not equivalent to ISO 2795:2020 Plain bearings — Sintered bushes — Dimensions and tolerances	The committee decided to archive this standard since the product is going out of use and currently there are no experts in the committee willing to take up the review of this product.

			Committee may decide to Revise/archive/merge/withdraw	Some members suggested that IGUS and BOWMAN are supplying these bearings in India.
2.	IS 6458 : 1972	Specification for double row cylindrical roller bearings	Indigenous Committee may decide to Revise/archive/merge/withdraw	The committee allotted the task of reviewing and preparing a review report to M/s SKF India Ltd. The report and draft for revision of the standard is required to be submitted within 6 months.
3.	IS 14478 : 1997	Plain bearings - Thick - Walled bushes, plain and flange type, full - Round (without any joint or slit) - Specification	Indigenous Committee may decide to Revise/archive/merge/withdraw	The committee decided to archive this standard since the product is going out of use and currently there are no experts in the committee willing to take up the review of this product.

Item 8 POSITION OF WORK

8.1 The committee noted the information given in the agenda.

8.2 The committee noted the information given in the agenda.

Item 9 INTERNATIONAL ACTIVITIES

9.1 The committee noted the information given in the agenda.
9.2 The committee noted the information given in the agenda.

9.3 Wide Circulation of ISO/DIS stage standards for revision of Identical Indian Standards: The committee noted the information given in the agenda.

9.4 NWIP - All the New Work Item Proposals received from ISO for balloting and comments were reviewed by the committee and decided to take action on the following documents :

a. **ISO/CD 7544 Rolling bearings — Test and assessment methods for cleanliness** –

   Comments were submitted by Mr Avinash Sharma on behalf of National Engineering Industries Ltd. (nbc), Jaipur, which were approved by the Chairperson and Head (PGD) for sending to ISO/TC 4/WG 25 "Cleanliness for rolling bearings" needs to be reviewed and modified comments based on the feedback from ISO may be prepared by Mr Avinash Sharma for sending back to ISO.

b. ISO/CD 3643 Rolling bearings — Ceramic rolling elements — Common vocabulary and characteristics of surface imperfections – *To be circulated to the committee for a period of 6 months for review and comments on adoption as Indian Standard.*

c. ISO/CD 23768 Rolling bearings — Parts library — Reference dictionary for rolling bearings – *To be circulated to the committee for a period of 6 months for review and comments on adoption as Indian Standard.*

d. ISO/DIS 22872 Rolling bearings — Geometrical product specifications (GPS) — Terms, definitions and symbols associated with GPS – *To be circulated to the committee for a period of 6 months for review and comments on adoption as Indian Standard.*

e. ISO/CD 17956 Rolling bearings — Methods for calculating the effective static safety for universally loaded rolling bearings – *No action to be taken yet.*

f. ISO/CD 8838 Plain bearings — Water-lubricated plain bearing materials – *To be circulated to the committee for a period of 6 months for review and comments on adoption as Indian Standard.*

g. ISO/CD 12843 Plain bearings — Reuse, recycling and disposal of plain bearing materials – *To be circulated to the committee for a period of 6 months for review and comments on adoption as Indian Standard.*

h. ISO/CD 12132 Plain bearings — Quality assurance of thin-walled half bearings — Design FMEA– *To be circulated to the committee for a period of 6 months for review and comments on adoption as Indian Standard.*

i. ISO/DIS 4379 Plain bearings — Copper alloy bushes– *No action taken yet, committee may kindly deliberate if it would like to start work on this subject.*

j. ISO/CD 4385 Plain bearings — Compression testing of metallic bearing materials– *No action taken yet, committee may kindly deliberate if it would like to start work on this subject.*

k. ISO/DIS 7148-1 Plain bearings — Testing of the tribological behavior of bearing materials — Part 1: Testing of bearing metals – *To be circulated to the committee for a period of 6 months for review and comments on adoption as Indian Standard. Dr Manish Roy will take the responsibility for review and final approval for this document for adoption as Indian Standard.*

l. ISO/DIS 7148-2 Plain bearings — Testing of the tribological behavior of bearing materials — Part 2: Testing of polymer-based bearing materials – *To be circulated to the committee for a period of 6 months for review and comments on adoption as Indian Standard. Dr Manish Roy will take the responsibility for review and final approval for this document for adoption as Indian Standard.*

Item 10 NATIONAL AND INTERNATIONAL LEVEL EVENTS TO BE PARTICIPATED IN

The committee noted the information given in the Agenda and asked the members to write to the member secretary for informing the list of important events for the committee where presence of BIS may be required, the following event was noted as a recommendation from the committee:

S.no	**Name of event**	**Tentative date**	**Type of event (National/Internat**	**Participant Name**	**Mode of participation**	**Reason for choosing the event for participation**

			ional/ State level etc.)		**(Physical/virtual)**	
3.	RDSO event on Bearings	July 2023	New Delhi	Member Secretary	Physical	It will be beneficial for starting work on Indian Standard on Railway bearings. Identification of Experts.

Item 11 SCIENTIFIC JOURNALS AND PERIODICALS TO BE SUBSCRIBED

The committee noted the information given in the agenda and decided to subscribe the following Journals relevant to PGD 13:

S.No	Name of journal/magazine	Publisher name	Type (daily /weekly /fortnightly /monthly/half yearly/ yearly, etc.)	Publication Availability Mode (Hard copy / soft copy)	Link / address	Impact factor
1.	Bearing News India		Monthly	Soft Copy	Home - India (bearing-news.com)	
2.	Indian Journal of Tribology	TSI	Biannually	Soft Copy	https://www.tribologyindia.org	1.89
3.	Lubricants	MDPI	Monthly	Soft Copy	https://www.mdpi.com/journal/lubricants	3.5
4.	Wear	Elsevier	Monthly	Soft Copy	https://www.sciencedirect.com/journal/wear	4.69
5.	Tribology International	Science Direct	Monthly	Soft Copy	https://www.sciencedirect.com/journal/tribology-international	5.62
6.	Tribology Letter	Springer	Monthly	Soft Copy	https://www.springer.com/journal/11249	3.16

Committee members may please suggest other important journals and magazines that may benefit this committee.

Item 12 CREATION OF POOL OF EXPERTS

The committee noted the information given in the agenda and remarked that work of creation of pool of experts is already under progress in form of new panels being formulated for various subject. Looking at the good gathering of aerospace experts, the committee suggested that a new panel on aerospace bearings may be formed under the committee. The members were requested to suggest organisations which may be co-opted to form this new panel on aerospace bearings. Also HAL, NAL and IIT Guwahati were given the task to prepare a report on important standards that could be formed by this panel and list of already available standard on aerospace bearings at International, National or Industry level.

Item 13 RESEARCH PROJECT TO BE TAKEN UP FOR INCLUSION OF EMPIRICAL DATA AND INSIGHTS

The committee noted the information given in the agenda.

Item 14 DATE AND PLACE OF NEXT MEETING

BIS is in the process of digitalizing and publicly announcing the meeting plan for various committee meeting and has instructed to create option of annual meeting calendar to its IT department. Following tentative committee meeting dates are proposed for FY 2023-24 for committee to deliberate upon:

S.N.	Meeting No	Date	Venue
1.	17th meeting	14-15 .12.2023 (Proposed)	In Kolkata BIS KKBO/ IIT Guwahati / with visit at Balmer Lawrie, lubricants for bearings
2.	18th meeting	01.05.2024 (Proposed)	In Coimbatore along with an industry visit in one of these organizations: ZF (probable members) LMW Shanti Gears
3.	19th Meeting	15-12-2024	Ahmedabad Branch Officer, with a visit to Schaeffler, Vadodara.

Item 15 ANY OTHER BUSINESS – NIL

----------Meeting ended with a thanks to Chair----------