

# कार्यवृत्त MINUTES

19<sup>th</sup> MEETING OF  
BEARINGS SECTIONAL COMMITTEE, PGD 13

10:30 AM – 02:00 PM | Thursday, 18<sup>th</sup> July 2024

**Venue:** Institute of Technology, Nirma University, Ahmedabad, Gujarat

Meeting link:

<https://bismanak.webex.com/bismanak/j.php?MTID=m74eed5d916c537e31565124224bf529c>

INDUSTRY VISIT | Friday, 19<sup>th</sup> July 2024

10:00 AM – 02:00 PM

**Venue:** M/s Schaeffler India Limited, Vadodara



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**  
**19<sup>th</sup> MEETING OF BEARINGS SECTIONAL COMMITTEE, PGD 13**

DATE & TIME	VENUE (Hybrid)
Thursday, 18 <sup>th</sup> July 2024   10:30 AM – 02:00 PM	<b>Venue:</b> Institute of Technology, Nirma University, Ahmedabad, Gujarat <b>Meeting</b> <b>link:</b> <a href="https://bismanak.webex.com/bismanak/j.php?MTID=m74eed5d916c537e31565124224bf529c">https://bismanak.webex.com/bismanak/j.php?MTID=m74eed5d916c537e31565124224bf529c</a>
Friday, 19 <sup>th</sup> July 2024   10:00 AM to 02:00 PM	<b>Venue:</b> Schaeffler India Limited, Vadodara

**MEMBERS PRESENT**

1. **CHAIRMAN:** Dr Manish Roy, Scientist-G, Defence Metallurgical Research Laboratory, Hyderabad
2. **Co-Chairman:** Dr Soumendu Jana, Chief Scientist & Head, Propulsion Division, CSIR-NAL, Bengaluru
3. **MEMBER SECRETARY:** Mr. Kundan Giri, Scientist-C/Deputy Director (PGD), BIS, New Delhi

S. No	Name of representative	Name of the Organization	Contact details
4.	Shri Asfak Ali Mollah	Bharat Heavy Electrical Limited, Hyderabad	<a href="mailto:asfak@bhel.in">asfak@bhel.in</a>
5.	Shri Raveendra HS	Bimetal Bearing Limited, Coimbatore	<a href="mailto:raveendra@bimite.co.in">raveendra@bimite.co.in</a>
6.	Shri M. Solairaju	Combat Vehicles Research and Development Establishment, Ministry of Defence, Chennai	<a href="mailto:solairaju.m.cvrde@gov.in">solairaju.m.cvrde@gov.in</a>
7.	Shri T. H. Gonsalves	Hindustan Aeronautics Limited, Bengaluru	<a href="mailto:thgon@yahoo.com">thgon@yahoo.com</a>
8.	Prof Harish Hirani	Indian Institute of Technology Delhi, New Delhi	<a href="mailto:hirani@mech.iitd.ac.in">hirani@mech.iitd.ac.in</a>
9.	Prof. Rajiv Tiwari	Indian Institute of Technology Guwahati, Guwahati	<a href="mailto:rtiwari@iitg.ac.in">rtiwari@iitg.ac.in</a>
10.	Shri Arun Bisht	Maruti Suzuki India Limited, Gurugram	<a href="mailto:arun.bisht@maruti.co.in">arun.bisht@maruti.co.in</a>
11.	Shri Deepak Borse	National Engineering Industries Limited, Jaipur	<a href="mailto:deepak.borse@nbcbearings.in">deepak.borse@nbcbearings.in</a>
12.	Shri Lokesh Agarwal	National Engineering Industries Limited, Jaipur	<a href="mailto:lokesh.agrawal@nbcbearings.in">lokesh.agrawal@nbcbearings.in</a>
13.	Shri Milind Ghan	NRB Bearings Limited, Thane	<a href="mailto:milind.ghan@nrb.co.in">milind.ghan@nrb.co.in</a>
14.	Dr. Eapen P Joseph	Nuclear Power Corporation of India Limited, Mumbai	<a href="mailto:jeapen@npcil.co.in">jeapen@npcil.co.in</a>
15.	Shri Trilochan Singh Bhatia	Schaeffler India Limited, Vadodara	<a href="mailto:bhatitil@schaeffler.com">bhatitil@schaeffler.com</a>
16.	Shri Biswanath Nandi	Schaeffler India Limited, Vadodara	<a href="mailto:nandibsw@schaeffler.com">nandibsw@schaeffler.com</a>
17.	Shri Gururaj Gaddi	SKF India Limited, Pune	<a href="mailto:gururaj.gaddi@skf.com">gururaj.gaddi@skf.com</a>
18.	Shri Akash Revankar	SKF India Limited, Pune	<a href="mailto:akash.revankar@skf.com">akash.revankar@skf.com</a>
19.	Shri Anoop Toby	Tata Motors Limited, Pune	<a href="mailto:att531197@tatamotors.com">att531197@tatamotors.com</a>
20.	Shri Arindam Ghosh	Tata Steel Limited - Bearing Division, Kharagpur	<a href="mailto:arindam.ghosh@tatasteel.com">arindam.ghosh@tatasteel.com</a>
21.	Shri Sumit Chandra	Tata Steel Limited - Bearing Division, Kharagpur	<a href="mailto:er.sumitchandra@gmail.com">er.sumitchandra@gmail.com</a>
22.	Shri Vijay Bhaskar	Timken India Limited, Bangalore	<a href="mailto:bhaskarg@timken.com">bhaskarg@timken.com</a>

**Item 0 General**

0.1 Welcome by the Head (PGD)/ Member Secretary.

The Member Secretary welcomed all the committee members for attending the meeting. He began by discussing the new reforms in standard formulation, including the Handbook for TC members published by BIS and elaborated on the responsibilities of Panels and working groups. He emphasized the importance of ensuring that upcoming standards have a sustainable structure. The Member Secretary also highlighted the necessity of providing comments on preliminary drafts (p-drafts), emphasizing that failing to do so can result in withdrawal of committee membership. He concluded by expressing gratitude to everyone for their attendance and extended a warm welcome to the chairman of the committee to deliver the opening remarks for the meeting.

### 0.1.1 Reforms in Standards Formulation

The committee noted the information as given below:

- Handbook for TC members [Handbook for TC Members.pdf \(bis.gov.in\)](#)
- Role of sectional committee is primarily planning, administration and monitoring, Principal members are responsible, No YP or guest representation will be counted in attendance.
- Panels and working groups will have the responsibility of review and drafting of standards.
- All the upcoming standard should be having some structure of a sustainable standard considering:
  - o Raw material
  - o Sources of energy
  - o Process with low carbon footprint
  - o Maintenance
  - o Waste management
  - o Reference of Standard on reuse and recycle of bearing metals can be added as reference to all the bearing standards
- ISO participation
  - o For any NWIP identify the level of interest in the subject between low, medium and high. MS to get it approved by HPGD.
  - o Every ballot has to be marked with level of interest on the IRD portal.
  - o One expert to be designated for each NWIP ballot of High and Medium Interest. Circulation of ballot has to be done to the expert of the area. comments received from the expert is to be circulated to the committee.
  - o Academicians of MOU institutes have greater role for participation in ISO and R&D.
- Commenting on P draft
  - o Members are supposed to defend the P draft in WC stage. Comments on WC draft are questions on work of committee members. P draft is document to be owned by the technical committee, abstaining from commenting on P draft is not healthy for committee.

### 0.2 Opening remarks by the Chairman.

The Chairman Dr. Manish Roy extended a warm welcome to all the members, emphasizing the importance of physical attendance to enhance interaction and foster more productive discussions. He highlighted some key topics including aerospace bearings, railway bearings, and energy storage devices along with their associated bearings. He underscored that these discussions are crucial for advancing industry interests and required collective expertise, which was increasingly vital in future sessions. The chairman expressed sincere gratitude to all members for their active participation, underscoring their valuable contributions to the committee's objectives.

### Item 1 CONFIRMATION OF MINUTES OF THE LAST MEETING

After discussing the comments regarding the attendance of the last meeting, **the Committee confirmed the minutes of the last meeting.**

### Item 2 STATUS REPORT ON THE ANNUAL ACTION PLAN 2023-24

Item 2.1 Carry Over Projects from 2022-23

S.No	IS No./ Title	Status before meeting	Decisions of the committee
1.	<a href="#">IS 4216 : 1981</a> Specification for needle cages (First Revision)	The WC draft has been wide circulated on 09 July 2024, members are requested to review and give their comments on the draft. The last date of comments is 09 Sept 2024.	The committee noted the information given in the agenda.
2.	<a href="#">IS 6454 : 1972</a> Specification for self – Aligning roller bearings	The P-Drafts of 6454-1 and 6454-2 has been circulated on 10 April 2024 and last date of comments was 09 July 2024. The comments received on the draft are attached at <b>Annex 3 (attached Separately)</b> the committee may kindly deliberate.	The committee agreed with the comments received on the P-draft and with modifications it decided to Wide circulate both the drafts for 3 months.
3.	<a href="#">IS 6456 : 1972</a> Specification for double row radial ball bearings	The last date for commenting on P-draft was 24 June 2024. The comments received on the draft are attached at <b>Annex 4 (attached Separately)</b> the committee may kindly deliberate.	<p>The committee decided to discuss the comments with Shri Shreenath Updadhaya and re-draft the standard by including definition for the designation/basic type given in the standard. Classification of Bearings has to be done and reference of ISO 15 and DIN 623, DIN 625-3 may be taken.</p> <p>The following comments are also required to be considered while redrafting:</p> <p>Comments from Prof. R. Tiwari: Symbols to be in italics, and check the subscript of the symbols in figures</p> <p>Comments from Mr E. P Joseph: Headers of the table have to repeat on all pages.</p> <p>Comments from Mr T S Bhatia: SABB shall not be a part of DRBB</p> <p>The committee decided to wide circulate draft for 1 month if all the comments are resolved in Panel 1.</p>

Item 2.2 Standards Due for Review in 2023-24

S.No	IS No./ Title	Status before meeting	Decisions of the committee
1.	IS 16605 (Part 2) : 2018/ ISO 2982-2 : 2013 Rolling Bearings – Accessories Part 2	The Preliminary drafts have been circulated on 05/07/2024, members are requested to review and give their	The committee noted the information given in the agenda.

	Dimensions for Locknuts and Locking Devices	comments on the draft. The last date of comments is 15 Sept 2024.	
2.	IS 16605 (Part 1) : 2018/ ISO 2982-1:20132-1 Rolling bearings Accessories Part 1 : Dimensions for adapter sleeve assemblies and withdrawal sleeves		
3.	IS 2898 (Part 1) : 2019/ ISO 3290-1 : 2014 Rolling bearings – Balls: Part 1 steel balls (Second Revision)	The document is under development and P-draft will be circulated once the drafting is completed as per IS 12 format. The committee may please note.	The Committee allotted 1 months' time to the member secretary to develop and circulate the P-drafts.
4.	IS 2898 (Part 2) : 2019/ ISO 3290-2 : 2014 Rolling bearings – Balls: Part 2 ceramic balls		
5.	IS 17267 : 2019/ ISO 16281 : 2008 Rolling Bearings – Methods for Calculating the Modified References Rating Life for Universally Loaded Bearings	As per the decision of the committee in its 18 <sup>th</sup> meeting, the document will remain on hold and will be published after the release of ISO 16281: 2024. The committee may please note.	The committee noted the information given in the agenda

### Item 2.3 Standards due for review in 2024-25

S.No	IS No./ Title	Status before meeting	Decisions of the committee
1.	IS 4217 : 2020 Rolling bearings -- Needle rollers -- Specification (Second Revision)	The ARP was allocated on the Standards formulation module on 04 July 2024. The review report is submission date has been fixed as 15 oct 2024. The committee may please note.	The committee noted the information given in the agenda
2.	IS 6455 : 2020 Single Row Deep Groove Ball Bearings — Specification (First Revision)	Mr. Sandeep D Singh has changed his function internally within SKF, so he is no longer a member of the sectional committee PGD 13. The ARP has been allotted to Mr. Akash Revankar with last date for submitting of report by 18 July 2024. Comments awaited on BIS portal. The committee may please note.	Members from SKF volunteered and the committee agreed to allot ARP for 2 months – till 18 sept 2024 to Mr. Akash Revankar for review of the standard and providing the revision considering the discussions held regarding requirements and test for dynamic and static rating of the bearings, the service temperature conditions and test methods etc.
3.	IS 9202 : 2020 Rolling Bearings — Cylindrical Rollers — Specification	The ARP was allocated on the Standards formulation module on 04 July 2024. The review report is	The committee noted the information given in the agenda.

	(First Revision )	submission date has been fixed as 15 oct 2024. The committee may please note.	
4.	IS 16736 : 2020/ ISO 3096 : 2018 Rolling Bearings — Needle Rollers — Boundary Dimensions, Geometrical Product Specifications ( GPS ) and Tolerance Values ( First Revision )	The ARP was allocated on the Standards formulation module on 17 July 2024. The review report is submission date has been fixed as 20 oct 2024. The committee may please note.	The committee noted the information given in the agenda.
5.	IS 4757 (Part 1) : 2020/ ISO 3547-1:2018 Plain bearings -- Wrapped bushes: Part 1 Dimensions (Second Revision)	The ARP was allocated on the Standards formulation module on 04 July 2024. The review report is submission date has been fixed as 15 oct 2024. The committee may please note	The committee noted the information given in the agenda.
6.	IS 4757 (Part 2) : 2020/ ISO 3547-2 : 2017 Plain bearings -- Wrapped bushes: Part 2 Test data for outside and inside diameters (Second Revision)	The ARP was allocated on the Standards formulation module on 04 July 2024. The review report is submission date has been fixed as 15 oct 2024. The committee may please note	The committee noted the information given in the agenda.
7.	IS 4757 (Part 3) : 2020/ ISO 3547-3 : 2017 Plain bearings -- Wrapped bushes: Part 3 Lubrication holes, grooves and indentations (Second Revision)	The ARP was allocated on the Standards formulation module on 04 July 2024. The review report is submission date has been fixed as 15 oct 2024. The committee may please note	The committee noted the information given in the agenda.
8.	IS 4757 (Part 4) : 2020 Plain bearings -- Wrapped bushes: Part 4 Materials (Second Revision)	The committee may allocate ARP for review of this standard please.	The committee decided to allocate the ARP review and revision of the standard to Mr HS Raveendra from M/s Bimetal Pvt Ltd for 2 Months period. The review report submission date was decided to be 18 <sup>th</sup> Sept 2024.

#### Item 2.4 Standards published before the Year 2000

S No.	IS No./ Title	Status before meeting	Decisions of the committee
9.	IS 12102 : 1987 – Specification for tapered roller bearings	The Preliminary drafts have been circulated on 09 July 2024, members are requested to review and give their comments on the draft.	The committee noted the information given in the agenda.

		The last date of comments is 15 Oct 2024.	
10.	IS 14347: 1996 Plummer block housings – Specification and IS 4773: 2017/ ISO 113 : 2010 Rolling bearings – Plummer block housings – Boundary dimensions (Third Revision)	The last date of comments on P draft was 25 May 2024. The comments received on the draft are attached at <b>Annex 5 (attached Separately)</b> the committee may kindly deliberate.	The comments were not discussed in the meeting. The committee asked the PGD 13/Panel 1 to resolve these comments in the panel meeting and put up its recommendation in the next sectional committee meeting.
11.	IS 3090 : 1965 – Code of practice for installation and maintenance of rolling bearings	The last date of comments on P draft was 26 May 2024. The comments received on the draft are attached at <b>Annex 6 (attached Separately)</b> the committee may kindly deliberate.	The comments were not discussed in the meeting. The committee asked the PGD 13/Panel 1 to resolve these comments in the panel meeting and put up its recommendation in the next sectional committee meeting.
12.	IS 6458 : 1972 – Specification for double row cylindrical roller bearings	The last date of comments on P draft was 25 May 2024. The comments received on the draft are attached at <b>Annex 7 (attached Separately)</b> the committee may kindly deliberate.	The comments were not discussed in the meeting. The committee asked the PGD 13/Panel 1 to resolve these comments in the panel meeting and put up its recommendation in the next sectional committee meeting.
13.	IS 9619 : 1980 – Identification code for shell type needle bearings (Including Sealed Bearing)	The Preliminary drafts have been circulated on 16 July 2024, members are requested to review and give their comments on the draft. The last date of comments is 15 Oct 2024.	The committee noted the information given in the agenda.

#### Item 2.5 Standard National Action Plan 2023-27

S No.	IS No./ Title	Status before meeting	Decisions of the committee
1.	<b>Railway Bearings</b>	<p>Mr Vijay Goel, informed on 08/07/2024 that he has been transferred from RDSO to Ministry of DoNER.</p> <p>Hello Sir, Greetings of the day.</p> <p>Kindly note that I have been transferred from RDSO to the Ministry of DoNER.</p> <p>Please ask RDSO to nominate someone else in place of me.</p> <p>For kind information please.</p> <p>Regards, Vijay</p> <p>The committee may deliberate.</p>	The committee asked BIS to write to RDSO for new nominations in PGD 13. Prof. Sehgal was requested to coordinate and oversee the formation of Railway Bearings Panel under PGD 13.

## Item 2.6 New Work Items Under Development

S No.	IS No./ Title	Status before meeting	Decisions of the committee
1.	<b>Magnetic Bearings</b>	<p>ISO 14839-Part 1 to Part 3 has been wide circulated on 28-02-2024 and ISO 14839-Part 4 and Part 5 has been wide circulated on 29-02-2024 for 2 months.</p> <p>The last date of comments on was 22 April 2024, no comments have been received on the WC draft. The committee may deliberate and approve for wide circulation.</p>	<p>Since no comments were received on the wide circulation. The committee finalized the draft Indian Standards based on ISO 14839 Part 1 to Part 5 for sending to publication for adoption as Indian Standards.</p>
2.	<b>Aerospace Bearings</b>	<p>The committee requested reports from members representing HAL, NAL, CVRDE, and IIT Guwahati by July 2024. Additionally, Mr. T. H. Gonsalves was tasked with presenting on various bearings utilized in aerospace applications during the inaugural meeting of the Aerospace Panel, to be scheduled alongside the Magnetic Bearings Panel and a workshop on R&amp;D guidelines from BIS. The convenors of the panel were asked to hold the meeting between July 8th and 12th, 2024.</p> <p>The write up from Dr M Solairaju has been received on 18/07/2024 and will be circulated to the committee for review.</p>	<p>Dr Solairaju gave a presentation on the report submitted. The committee decide to circulate the report to all members. The report is attached at <b>Annex 1</b> of the Minutes. The Committee asked the convenor of the PGD 13: P4 Aerospace Bearings Panel, Prof. Rajiv Tiwari to fix a meeting of the aerospace panel and advance the work.</p>
3.	<b>Bearings for Wind Energy sector and Nuclear Power Plants</b>	<p>The committee discussed on the prospects of standardizing bearings for Wind Energy sector and Nuclear Power Plants and tasked Dr Soumendu Jana and Dr Eapen Joseph respectively for preparation of preliminary proposals and reports.</p> <p>Report received from Dr S Jana, NAL on 16 July 2024 has been circulated via email to the committee for review and will be shared during the meeting.</p>	<p>The committee decide to circulate the report to all members. The report is attached at <b>Annex 2</b> of the Minutes. The Committee asked the members to review the report and send their recommendation to the MS for discussion in the next meeting of PGD 13.</p>
4.	<b>Bearings used in EV applications</b>	<p>Shri Arindam Ghosh, Tata Steel has proposed to develop a new Indian Standard on the subject. The proposal is attached at <b>Annex 8</b>, the committee may review and deliberate on the feasibility of the new item for standardization.</p>	<p>The committee decided to form a study group on “Scope of EV bearing standards” with the following organizations:</p> <ul style="list-style-type: none"> <li>- Schaeffler</li> <li>- Tata Bearings</li> <li>- NRB Bearings</li> </ul> <p>Members from Tata Bearings will convene the discussion of the</p>



			study group. A report of the study group is to be provided in the next meeting of PGD 13.
--	--	--	---

### Item 2.7 Any Other Projects

S No.	Title	Status before meeting	Decisions of the committee
1.	<b>ISO 3228 : 2013</b> - Rolling bearings — Cast and pressed housings for insert bearings — Boundary dimensions and tolerances	The last date of comments on P draft was 25 May 2024, no comments have been received on the draft. The committee may deliberate and approve for wide circulation.	The committee approved for wide circulation of the draft Indian standards for a period of 2 months.
2.	<b>IS 14802 (Part 1) : 2000/ISO 4384-1</b> - Plain Bearings Hardness testing of bearing metals Part 1 Multilayer bearings materials	The last date of comments on WC draft was 31 March 2024, no comments have been received on the draft. The committee may deliberate and approve for publication.	The committee finalized the document for publication since no comments were received on the wide circulation of the draft.
3.	<b>IS 10260 (Part 1) : 2017 / ISO 4378-1 : 2009</b> - Plain bearings Terms definitions classification and symbols Part 1 Design, bearing materials and their properties	The last date of comments on P draft was 09 June 2024, no comments have been received on the draft. The committee may deliberate and approve for wide circulation.	The committee approved for wide circulation of the draft Indian standards for a period of 2 months.

### Item 3 COMPOSITION OF THE SECTIONAL COMMITTEE

3.1 The committee noted the information given in the agenda.

3.2 The committee noted the information given in the agenda. The details of the various panel along with the contact details of the members is given in **Annex 3** of the minutes.

### Item 4 POSITION OF WORK

4.1 The committee noted the information given in the agenda.

4.2 The committee noted the information given in the agenda.

### Item 5 INTERNATIONAL ACTIVITIES

5.1 The committee noted the information given in the agenda.

#### 5.2 Membership of PGD 13 in International Committees related to Bearings

5.2.1 The committee noted the information given in the agenda about the membership in ISO/ TC 4 and its sub-Committees (SC).

5.2.2 The committee noted the information given in the agenda about the membership in ISO/ TC 123 and its sub-Committees (SC).

5.2.3 Considering the importance of mechanical energy storage technology in various industries, its potential to contribute to sustainable energy solutions, and the work of PGD 13 in the field of magnetic bearings, the committee recommended taking a participating membership in ISO/TC 346 "Mechanical Energy Storage Technology."

Prof. R. Tiwari, Prof. Harish Hirani, and Dr. Rakesh Sehgal are to be nominated as experts from India for this committee.

5.3 The committee noted the information given in the agenda.

#### 5.4 Future Meetings Scheduled for ISO/TC 4 and TC 123

The committee was informed about the 15<sup>th</sup> meeting of ISO/TC 123 which is proposed to be held in 13-15 November 2024 in Berlin, Germany. The committee decided that since Dr Manish Roy will not be able to participate in the upcoming meeting, the co-chairman, Dr Soumendu Jana and Shri Kundan Giri will participate and defend the comments sent by India on ISO 7148 and ISO 4378. Prof. Harish Hirani and Shri Kundan Giri were nominated to attend the meeting for defending the formation of Working Group on Magnetic Bearings in ISO/TC 123 which India has been supporting since the beginning. The Indian delegation for attending the 15<sup>th</sup> Meeting of ISO/TC 123 along with its subcommittees from 13 to 15 November 2024 as follows:

- a) Dr Soumendu Jana, CSIR- NAL
- b) Prof. Harish Hirani, IIT Delhi
- c) Shri Kundan Giri, BIS

#### Item 6 RESEARCH PROJECT TO BE TAKEN UP FOR INCLUSION OF EMPIRICAL DATA AND INSIGHTS

The committee noted the information given in the agenda.

#### Item 7 DATE AND PLACE OF NEXT MEETING

BIS has digitizing and publicly announces the meeting plan for various committee meeting. Following tentative committee meeting dates are proposed/previous decided for FY 2024-25 for committee to deliberate upon:

S.N.	Meeting No	Date	Venue
1.	20 <sup>th</sup> Meeting	09-12-2024	BIS New Delhi
2.	21 <sup>st</sup> Meeting	March/Apr 2025	BIS, IIT Guwahati

#### Item 8 ANY OTHER BUSINESS

Nil

-----

#### Day 2 : 16/04/2024 Industry Visit

Time 10:30 am to 02:00 pm	Schaeffler India Limited, Vadodara
---------------------------	------------------------------------

-----

## ANNEX 3

### 1. PGD 13-P1 : PANEL ON “ROLLING BEARINGS”

**Convenor:** Mr. T.S Bhatia, Schaeffler India Limited.

**(Mobile:** - 8758149704, **Email:** - [bhatitil@schaeffler.com](mailto:bhatitil@schaeffler.com))

S.no.	Organisation represented	Principal member	Contact Information
1.	Bharat Heavy Electrical Ltd.	Shri Asfak Ali Mollah	Mobile: - 8106136759 Email: - <a href="mailto:asfak@bhel.in">asfak@bhel.in</a>
2.	CSIR - National Aerospace Laboratories, Bengaluru	Dr. Soumendu jana	Mobile: - 9448021060 Email: - <a href="mailto:sjana@nal.res.in">sjana@nal.res.in</a>
3.	Maruti Suzuki India Limited, Gurugram	Shri Ramkumar Sivaraman	Mobile: - 8586967087 Email: - <a href="mailto:ramkumar.s@maruti.co.in">ramkumar.s@maruti.co.in</a>
4.	NRB Bearings, Thane	Shri Milind Ghan	Mobile: - 9664080002 Email: - <a href="mailto:milind.ghan@nrb.co.in">milind.ghan@nrb.co.in</a>
5.	National Engineering Industries Limited, Jaipur	Shri Avinash Sharma	Mobile: - 9829024030 Email: - <a href="mailto:avinash.sharma@nbcbearings.in">avinash.sharma@nbcbearings.in</a>
6.	Nuclear Power Corporation of India Limited, Mumbai	Dr. Eapen P Joseph	Mobile: - 9969512317 Email: - <a href="mailto:jeapen@npcil.co.in">jeapen@npcil.co.in</a>
7.	SKF Bearings	Shri. Gururaj Gaddi	Mobile: - 9962099939 Email: - <a href="mailto:gururaj.gaddi@skf.com">gururaj.gaddi@skf.com</a>
8.	Schaeffler India Limited, Vadodara	Shri Biswanath Nandi	Mobile: - 7573013716 Email: - <a href="mailto:biswanath.nandi@schaeffler.com">biswanath.nandi@schaeffler.com</a>
9.	Tata Motors Limited, Pune	Shri Anoop Toby	Mobile: - 9676673696 Email: - <a href="mailto:anoop.toby@tatamotors.com">anoop.toby@tatamotors.com</a>
10.	Tata Steel Limited - Bearing Division, Kharagpur	Shri Arindam Ghosh	Mobile: - 9225522938 Email: - <a href="mailto:arindam.ghosh@tatasteel.com">arindam.ghosh@tatasteel.com</a>
11.	TIMKEN India Limited	Shri K. Shreenath Upadhaya	Mobile: - 9901988771 Email: - <a href="mailto:ksupadhy@timken.com">ksupadhy@timken.com</a>
12.	Bureau of Indian Standards	Member Secretary (PGD 13)	Mobile: - 9560092556 Email: - <a href="mailto:Kundan.giri@bis.gov.in">Kundan.giri@bis.gov.in</a>

### 2. PGD 13-P2 : PANEL ON “PLAIN BEARINGS”

**Convenor:** To be decided....(Mr. NC Vaish has withdrawn themselves from the committee)

S.no.	Organisation represented	Principal member	Contact Information
1.	Gkn Sinter Metals Private Limited, Pune Industry	Shri Dayasagar Mrig	Mobile: - 9823286862 Email: - <a href="mailto:dayasagar.mrig@gkn.com">dayasagar.mrig@gkn.com</a>
2.	Iljin Bearings Company Limited, Pune Industry	Shri Dharmendra Parmar	Mobile: - 9766539518 Email: - <a href="mailto:dharmendra@iljin.com">dharmendra@iljin.com</a>
3.	KSPG Automotive Private Limited, Pune Industry	Shri Rajaram Mane	Mobile: - 9011083461 Email: - <a href="mailto:rajaram.mane@in.kspg.com">rajaram.mane@in.kspg.com</a>
5.	Steel Authority of India Limited (SAIL), New Delhi	Shri A.M. Danny	Mobile: - 9407981831 Email: - <a href="mailto:amdanny@sail.in">amdanny@sail.in</a>
6.	Bureau of Indian Standards	Member Secretary (PGD 13)	Mobile: - 9560092556 Email: - <a href="mailto:Kundan.giri@bis.gov.in">Kundan.giri@bis.gov.in</a>

### 3. PGD 13-P3 : PANEL ON "MAGNETIC BEARINGS"

**Convenor:** Prof. Harish Hirani, Professor, Department of Mechanical Engineering, IIT Delhi  
(Mobile: - 9910111579, Email: - [hirani@mech.iitd.ac.in](mailto:hirani@mech.iitd.ac.in))

S.no.	Organisation represented	Principal member	Contact Information
1.	CSIR - National Aerospace Laboratories, Bengaluru	Dr. Soumendu jana	Mobile: - 9448021060 Email: - <a href="mailto:sjana@nal.res.in">sjana@nal.res.in</a>
2.	Hindustan Aeronautics Limited, Bengaluru	Shri T. H. Gonsalves/ Dr. Siva Srinivas	Mobile: - 9845018488 Email: - <a href="mailto:thgon@yahoo.com">thgon@yahoo.com</a>
3.	Indian Institute of Technology Guwahati, Guwahati	Prof. Rajiv Tiwar	Mobile: - 9864071598 Email: - <a href="mailto:rtiwari@iitg.ac.in">rtiwari@iitg.ac.in</a>
4.	SKF India Limited, Pune	Shri Gururaj Gaddi	Mobile: - 9962099939 Email: - <a href="mailto:gururaj.gaddi@skf.com">gururaj.gaddi@skf.com</a>
5.	Schaeffler India Limited, Vadodara	Shri Biswanath Nandi	Mobile: - 7573013716 Email: - <a href="mailto:biswanath.nandi@schaeffler.com">biswanath.nandi@schaeffler.com</a>
6.	Bureau of Indian Standards	Member Secretary (PGD 13)	Mobile: - 9560092556 Email: - <a href="mailto:Kundan.giri@bis.gov.in">Kundan.giri@bis.gov.in</a>

### 4. PGD 13-P4 : PANEL ON "AEROSPACE BEARINGS"

**Convenor:** Prof Rajiv Tiwari, Indian Institute of Technology Guwahati  
(Mobile: - 9864071598, Email: - [rtiwari@iitg.ac.in](mailto:rtiwari@iitg.ac.in))

S.no.	Organisation represented	Principal member	Contact Information
1.	Austin Engineering Co. Ltd.	Shri Jana Prasad	Mobile: - 9940415273 Email: - <a href="mailto:jana.prasad@aec.com">jana.prasad@aec.com</a>
2.	CSIR - National Aerospace Laboratories, Bengaluru	Dr. Soumendu Jana	Mobile: - 9448021060 Email: - <a href="mailto:sjana@nal.res.in">sjana@nal.res.in</a>
3.	Combat Vehicles Research and Development Establishment	Shri M. Solairaju	Mobile: - 9444923687 Email: - <a href="mailto:solairaju.m.cvrde@gov.in">solairaju.m.cvrde@gov.in</a>
4.	Hindustan Aeronautics Limited, Bengaluru	Dr T. H. Gonsalves	Mobile: - 9845018488 Email: - <a href="mailto:thgon@yahoo.com">thgon@yahoo.com</a>
5.	National Engineering Industries Limited, Jaipur	Shri Surajit Chakravorty	Mobile: - 9001093709 Email: - <a href="mailto:surajit.chakravorty@nbcbearings.in">surajit.chakravorty@nbcbearings.in</a>
6.	Bureau of Indian Standards	Member Secretary (PGD 13)	Mobile: - 9560092556 Email: - <a href="mailto:kundan.giri@bis.gov.in">kundan.giri@bis.gov.in</a>
7.	DGM(D), AERDC, HAL	Dr. Kanna Babu,	Email: <a href="mailto:htse.aerdc@hal-india.co.in">htse.aerdc@hal-india.co.in</a>