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**BUREAU OF INDIAN STANDARDS**

**Minutes**

|  |  |  |  |
| --- | --- | --- | --- |
| **MEETING** | **DAY & DATE** | **TIME** | **VENUE** |
| Twenty Second Meeting of Educational Instruments and Equipment Sectional Committee, PGD 22 | 28 November 2024  Thursday | 1430 h | BIS HQ, New Delhi (Hybrid Mode) |

1. **Chairperson:** Dr. Sukhvir Singh, Emeritus Scientist
2. **Member Secretary:** Shri Ashutosh Rai, Scientist-C, PGD, BIS

**MEMBERS PRESENT**

|  |  |  |
| --- | --- | --- |
| 3. | Ambala Scientific Instruments Manufacturers Association, Ambala Cantt. | Shri Ashwani Goel |
| 4. | Indian Association of Physics Teachers, Delhi | Dr. Mamta |
| 5. | Instrument Research and Development Establishment, Dehradun | Shri Kumar Abhijeet |
| 6. | Malaviya Institute of Technology, Jaipur | Dr. R K GoelDr. Rajeev Agrawal |
| 7. | National Council of Educational Research and Training, New Delhi | Dr. Gagan Gupta |
| **8.** | Optics and Allied Engineering Private Limited, Bengaluru | Dr. Ramagopal V Sarepaka |

**Item 0 GENERAL**

* 1. **Welcome by the Member Secretary**

Shri Ashutosh Rai, Member Secretary of PGD 22, on behalf of the Bureau of Indian Standards, extended a warm welcome to all the members of the 22nd meeting of the Educational Instruments and Equipment Sectional Committee.

**0.2 Opening Remarks by the Chairperson**

Dr. Sukhvir Singh, Chairperson of PGD 22, extended a warm welcome to all participants at the 22nd meeting of the Educational Instruments and Equipment Sectional Committee. He commended the members for their attendance and urged them to actively engage in the committee's proceedings. Furthermore, Dr. Sukhvir Singh emphasized the importance of completing assigned tasks within the specified time frame.

**Item 1 CONFIRMATION OF MINUTES OF LAST MEETING**

The Committee confirmed the minutes of the 21st meeting of PGD 22 held on 14 June 2024.

**Item 2 COMPOSITION OF SECTIONAL COMMITTEE**

**2.1** The Committee noted the composition. Also, the committee removed the following organizations due to their lack of participation and their request to be removed from the committee.

1. Indian Institute of Technology Kanpur
2. Roter Precision Instruments Private Limited, Roorkee

**2.2** The committee deliberated and approved the nomination request of Hindustan Pencils Pvt. Ltd.

**Item 3 POSITION OF WORK**

**3.1** The Committee noted the program of work of the Educational Instruments and Equipment Sectional Committee, PGD 22.

**3.2 Standard Under Review- Carried Over**

The Committee deliberated upon the standards carried over from the last year 2023-24 and decided as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Sl No. | IS No. | Title | Remarks |
| 1 | IS 7020 : 1973 | Crystals and dielectric materials used in instrument industry | The committee deliberated and requested Member Secretary to follow up with Dr. Satish Dubey to add the terms and definitions which are being used in this document such as hardness of crystal, refractive index etc. |
| 2 | IS 8622 : 1999 | Wire wound sliding contact rheostats for use in educational institutions - Specification (First Revision) | The Committee deliberated and decided to Wide Circulate the document for 60 days.Also, Dr. Sukhvir Singh, Chairperson suggested to do the numbering of the parts of the Rheostat in the figure. |

**3.3 Review of Pre- 2000 Standards**

The committee deliberated upon pre-2000 standards and decided as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl No.** | **IS No.** | **Title** | **Remarks** |
| 1 | IS 1444 : 1989 | Engineers Pattern Drawing Boards - Specification (Second Revision) | The committee decided to archive these documents due to no technical advancement. |
| 2 | IS 1955 : 1961 | Specification for prismatic compass, liquid |
| 3 | IS 1480 : 1970 | Specification metric scales for general purposes (First Revision) |
| 4 | IS 1957 : 1961 | Specification for prismatic compasses, non - Liquid | The Committee deliberated and decided to circulate this document as P-draft for 21 days. |
| 5 | IS 9107 : 1979 | Specification for autocollimator | Dr. Ramagopal requested Member Secretary to provide the ISO standards against the list provided by him to complete the review. |
| 6 | IS 2539 : 1963 | Specification for plane tables | The committee noted the information regarding the ARP allotted to BIS Officer. |
| 7 | IS 3686 : 1966 | Specification for student - Type microscope |
| 8 | IS 4328 : 1967 | Specification for monocular dissecting microscope |
| 9 | IS 4329 : 1967 | Specification for measuring (Travelling) microscope |
| 10 | IS 14633 : 1999 | Blackboards for class rooms - Specification |
| 11 | IS 5204 : 1969 | Specification for research microscope | The Committee deliberated and created a working group named Microscopes Working Group under the convenorship of Dr. Ramagopal and Dr. Satish Dubey & Shri Ashwani Goel as a member of the Working Group.  Also, the Committee requested Member Secretary to provide the ISO standards related to the Microscopes. |

**3.4 Standards to be Reaffirm & Archived**

The Committee deliberated upon the standards identified for the archival and decided as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Sl No. | IS | Title | Decision taken in meeting |
| 1 | IS 5146 : 1969 | Specification for sounding sextant | The committee decided to archive this document due to no technical advancement. |
| 2 | IS 7010 : 1973 | Specification for pivots for magnetic compasses | The committee decided to archive this document due to no technical advancement. |

**Item 4 ANNUAL PROGRAMME FOR STANDARDISATION**

**4.1** The committee deliberated upon the list of the standards identified related to the instrument details shared by Dr Gagan Gupta and requested the member secretary to add the concerned sectional committee against each standard.

Also, Dr. Gagan Gupta informed the committee that this is an incomplete list and we need to prepare an exhaustive list of educational equipment. The committee agreed upon the same and decided that the list would be continuously updated based on the input received.

**4.2** The committee deliberated upon the identified sectors and nominated the following as convenor of the working panel based on the identified sector.

|  |  |  |
| --- | --- | --- |
| **Sl No.** | **Working Panel** | **Convenor** |
| 1 | Drawing Instruments | Dr Rajeev Agrawal |
| 2 | Miscellaneous Instruments | Dr Mamta |
| 3 | Optical Instruments | Dr Satish Dubey |
| 4 | Surveying Instruments | Shri Neeraj Gujjar |

The committee requested the convenors to co-opt the other members in the respective panel as required, in consultation with the Chairperson.

**Item 5 DATE AND PLACE OF NEXT MEETING**

The Committee decided to hold the next meeting in physical mode in Ambala, on 28.02.2025.

**Item 6 ANY OTHER BUSINESS**

The meeting ends with the thanks to chair.

**ANNEX- I**

**(***Item*2.1**)**

Composition of Educational Instruments and Equipment, PGD 22

|  |  |  |
| --- | --- | --- |
| 20th Meeting | 01 March 2024 | BIS New Delhi [Hybrid Meeting] |
| 21st Meeting | 14 June 2024 | BIS New Delhi [Hybrid Meeting] |
| 22nd Meeting | 28 November 2024 | BIS New Delhi [Hybrid Meeting] |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Organization represented** | **Principal member** | **Contact and email** | **Attendance**  **in the last three meetings** | | | |
| **Alternate member** | **20th** | **21st** | **22nd** |  |
| **1.** | In personal capacity | Dr. Sukhvir  Singh  (Chairman) | sukhvirster@gmail.com  9958571458 | P | P | P | 3/3 |
| **2.** | Central  Scientific  Instruments  Organization,  Chandigarh | Dr. AMIT  LOCHAN  SHARMA | amitsharma.csio@csio.res.in  09417850180 | P | P | - | 2/3 |
| Dr. RAJ KUMAR | raj.optics@csio.res.in  08437760400 |
| **3.** | CSIR - National Physical Laboratory, New Delhi | Dr. Premshankar K. | [dubeypk@nplindia.org](mailto:dubeypk@nplindia.org)  9968408417 | P | P | - | 2/3 |
| **4.** | Controllerate of  Quality  Assurance  (Instruments),  Raipur,  Dehradun | Shri A.  Radhakrishanan,  JAG(NFSG),  Director (I)  Shri Manjit  Singh (PScO),  Dy. Controller | instarmt-dgqa@nic.in,  011-23013566  jctech-cqai-mod@nic.in,  0135 - 2527514 | P | P | - | 2/3 |
| **5.** | Geodetic and  Research  Branch Survey  of India,  Dehradun | Shri Neeraj Gurjar | [neeraj.gurjar.soi@gov.in](mailto:neeraj.gurjar.soi@gov.in)  8600518174 | P | - | - | 1/3 |
|  |  | Shri Deepak Kumar | [deepak.soi@gov.in](mailto:deepak.soi@gov.in)  9990463164 |
| **6.** | Indian  Association of  Physics  Teachers, Delhi | Dr. Mamta | mamta.phy26@gmail.com 9818076507 | P | P | P | 3/3 |
| **7.** | Instrument  Research and  Development  Establishment  (IRDE),  Dehradun | Kumar Abhijeet | [abhijeet-kr.irde@gov.in](mailto:abhijeet-kr.irde@gov.in)  9412985314 | P | - | P | 2/3 |
| k.k.kailasia | kamleshkumarkailasia@yahoo.com  8171221351 |
| **8.** | Malaviya  National  Institute of  Technology,  Jaipur | Dr. Rajendra Kumar Goyal | rkg.meta@mnit.ac.in 9423534247 | - | P | P | 2/3 |
| Dr. Rajeev Agrawal | ragrawal.mech@mnit.ac.in 9631659867 |
| **9.** | National  Council of  Educational  Research &  Training  (N.C.E.R.T), Delhi | Dr. Gagan Gupta | ggupta.ncert@nic.in,  ggupta@gmail.com  9654121185 | P | P | P | 3/3 |
| Prof Alka Mehrotra | meh\_alka@yahoo.co.in 01126592214, 989156907 |
| **10.** | Office of the  Development  Commissioner  (MSME), New  Delhi | Sh S. Vijaya Kumar, | [vsalavadi@dcmsme.gov.in](mailto:vsalavadi@dcmsme.gov.in)  8971423923 | P | P | - | 2/3 |
| Shri Aluri Suresh | [alurisureshgaru@yahoo.co.in](mailto:alurisureshgaru@yahoo.co.in)  9440400444 |
| **11.** | Optics and Allied Engineering Private Limited, Bengaluru | Dr Ramagopal V Sarepaka | [ramagopal@opticsindia.com](mailto:ramagopal@opticsindia.com)  8884457623 | P | P | P | 3/3 |
|  |
| Shri D. Rajendra Kotaria | [drk@opticsindia.com](mailto:drk@opticsindia.com)  9886772206 |
| **12.** | The Ambala  Scientific  Instruments  Manufacturers Association,  Ambala Cantt. | Shri Ashwani  Goel | [ashwanigoel40@gmail.com](mailto:ashwanigoel40@gmail.com)  9896201350 | P | P | P | 3/3 |
| Shri Puneet Gupta | [asimaindia@gmail.com](mailto:asimaindia@gmail.com)  +91-1714005370, 4003837 |

**Annex-II**

**Program of Work**

(*Item* 3)

**SCOPE**:

1. Formulation of standards for instruments and equipment for school and college Laboratories.
2. Formulation of standards for surveying instruments, drawing instruments;

|  |  |  |
| --- | --- | --- |
| **1** | **IS 1360 : 2023** | Engineers’ Pattern Tee Squares — Specification ( third revision ) |
| **2** | **IS 1444 : 1989** | Engineers Pattern Drawing Boards - Specification Second Revision |
| **3** | **IS 1480 : 1970** | Specification metric scales for general purposes First Revision |
| **4** | **IS 1481 : 1970** | Specification for metric steel scales for engineers First Revision |
| **5** | **IS 1491 : 2023** | Metric Scales for Architectural Purposes — Specification  (First Revision) |
| **6** | **IS 1492 : 1970** | Specification for metric surveying chains First Revision |
| **7** | **IS 1561 : 2023** | Set Squares for Use of Drawing Offices — Specification ( Second Revision ) |
| **8** | **IS 1562 : 2023** | Specification for metric diagonal scales Cartographers, Surveyors and Engineers |
| **9** | **IS 1563 : 2023** | Protractors for Use of Drawing Offices — Specification ( Second Revision ) |
| **10** | **IS 1764 : 1961** | Specification for trough compass |
| **11** | **IS 1779 : 1961** | Specification for 4 - Metre levelling staff folding type |
| **12** | **IS 1842 : 1961** | Specification for surveying chain pins Arrows |
| **13** | **IS 1955 : 1961** | Specification for prismatic compass liquid |
| **14** | **IS 1957 : 1961** | Specification for prismatic compasses non - Liquid |
| **15** | **IS 2233 : 2023** | Straightedges for Drawing Office Use - Specification |
| **16** | **IS 2286 : 1963** | Specification for pantograph |
| **17** | **IS 2288 : 1963** | Specification for ranging rods |
| **18** | **IS 2466 : 1963** | Specification for beam compasses |
| **19** | **IS 2533 : 1978** | Specification for geometry boxes First Revision |
| **20** | **IS 2539 : 1963** | Specification for plane tables |
| **21** | **IS 2988 : 1995** | Vernier theodolite - Specification First Revision |
| **22** | **IS 3081 : 1994** | Microscopes - General purposes - Dimensions and marking First Revision |
| **23** | **IS 3099 (Part 12) :1992** | Microscopes - Slips and slidesspecification Part 1 microscope slips Part 2 microscope slides First Revision |
| **24** | **IS 3113 : 1965** | Specification for prismatic binoculars for common use |
| **25** | **IS 3135 : 1965** | Specieication for cathetometer |
| **26** | **IS 3206 : 1989** | Engineers Drawing Instruments - Dividers - Specification First Revision |
| **27** | **IS 3207 : 1989** | Engineers Drawing Instruments - Rotating Compasses |
| **28** | **IS 3208 : 1989** | Engineers drawing instruments - Half set of compasses - Specification First Revision |
| **29** | **IS 3209 : 1989** | Engineers Drawing Instruments - Spring Bow Compasses - Specification First Revision |
| **30** | **IS 3210 : 1989** | Engineers Drawing Instruments -Drawing Pens |
| **31** | **IS 3211 : 1991** | Engineers Drawing Instruments Pen Points First Revision |
| **32** | **IS 3212 : 1991** | Engineers drawings instruments lengthening bars |
| **33** | **IS 3213 : 1991** | Engineers Drawing Instruments - Handles - Specification First Revision |
| **34** | **IS 3214 : 1991** | Engineers Drawing Instruments Pencil Points - Specification First Revision |
| **35** | **IS 3215 : 1991** | Engineers Drawing Instruments - Needle Points - Specification First Revision |
| **36** | **IS 3216 : 1989** | Engineers Drawing Instruments Needles - Specification First Revision |
| **37** | **IS 3217 : 1991** | Engineers Drawing Instruments Prickers - Specification First |
| **38** | **IS 3218 : 1968** | Specification for parallel rulers 150mm Link Type |
| **39** | **IS 3219 : 1966** | Specification For Engineers Drawing Instruments Boxes for Leads and Needles |
| **40** | **IS 3220 : 1966** | Specification For Engineers Drawing Instruments Screw Drivers |
| **41** | **IS 3221 : 1966** | Sets for drawing instruments |
| **42** | **IS 3222 (Part 1) : 1989** | Instrument screws - Specification Part 1 fasteners for drawing instruments First Revision |
| **43** | **IS 3686 : 1966** | Specification for student - Type microscope |
| **44** | **IS 4328 : 1967** | Specification for monocular dissecting microscope |
| **45** | **IS 4329 : 1967** | Specification for measuring Travelling microscope |
| **46** | **IS 4380 : 1967** | Specification for abney level |
| **47** | **IS 4590 : 1980** | Specification for secondary level First Revision |
| **48** | **IS 5146 : 1969** | Specification for sounding sextant |
| **49** | **IS 5148 : 1969** | Specification for hand magnifiers Circular - 50 75 and 100 mm |
| **50** | **IS 5153 : 1969** | Specification for proportional compasses - 150 200 and 300 mm |
| **51** | **IS 5204 : 1969** | Specifiction for research microscope |
| **52** | **IS 5205 : 1969** | Specification for drawing pins |
| **53** | **IS 5213 : 1969** | Specification for french curves for drawing office use |
| **54** | **IS 5694 : 1970** | Specification For Engineers Drawing Instruments Dotting Pens |
| **55** | **IS 5726 : 1970** | Specification For Engineers Drawing Instruments Bordering Pens |
| **56** | **IS 5737 : 1970** | Specification For Engineers Drawing Instruments Curve Pens |
| **57** | **IS 5928 : 1970** | Specification for tangent clinometer |
| **58** | **IS 6425 : 1971** | Specification for dioptometer Lensometer |
| **59** | **IS 6471 : 1971** | Specification for spectrometer Student Type |
| **60** | **IS 7010 : 1973** | Specification for pivots for magnetic compasses |
| **61** | **IS 7011 : 1973** | Specification for back - Silvered mirrors used in insturment industry |
| **62** | **IS 7020 : 1973** | Crystals and dielectric materials used in instrument industry |
| **63** | **IS 7047 : 1973** | Timbers used in instrument industry |
| **64** | **IS 7078 : 1973** | Plastics used in instrument industry |
| **65** | **IS 7543 : 1975** | Specification for planimeters |
| **66** | **IS 7544 : 1975** | Specification For Parallel Ruler Roller Type |
| **67** | **IS 7919 : 1975** | Specification for refractometer - abbe type |
| **68** | **IS 8275 : 1976** | Specification for binocular eyepication for microscope |
| **69** | **IS 8311 : 1976** | Specification for instrument jewels |
| **70** | **IS 8330 : 2004** | Tripods for surveying instruments - Fixed leg type -Specification Second Revision |
| **71** | **IS 8390 : 1977** | Specification for are combs |
| **72** | **IS 8622 : 1999** | Wire wound sliding contact rheostats for use in educational institutions - Specification First Revision |
| **73** | **IS 8630 : 1977** | Specification For Engineers Drawing Instruments Double Line Pens |
| **74** | **IS 8651 : 1977** | Specification for flame photometer |
| **75** | **IS 8661 : 1977** | Specification for polarimeter and saccharimeter Optical |
| **76** | **IS 8679 : 1978** | Specification for triangular scales |
| **77** | **IS 8680 : 1978** | Specification For Engineers Drawing Instruments Compass Bow Pen Double Knee Jointed with Sector Head Joints |
| **78** | **IS 8681 : 1978** | Specification For Engineers Drawing - Instruments Compass Bow Pencil Double Knee Jointed with Sector Head Joints |
| **79** | **IS 8691 : 1986** | Specification for mirror stereoscope First Revision |
| **80** | **IS 8916 : 1978** | Specification for spherometer |
| **81** | **IS 9107 : 1979** | Specification for autocollimator |
| **82** | **IS/ISO 9176 : 1988 ISO 9176 : 1988** | Tubular technical pens - Adaptor for compasses |
| **83** | **IS/ISO 9177-1 : 2016** | Mechanical Pencils for Technical Drawings Part 1 Classification Dimensions Performance Requirements and Testing |
| **84** | **IS/ISO 9177-2 : 2022** | Mechanical pencils for technical drawings Part 2 Black leads Classification and dimensions |
| **85** | **IS/ISO 9177-3 : 2022** | Mechanical pencils for technical drawings Part 3 Black leads Bending strengths of HB leads |
| **86** | **IS/ISO 9178-1 : 1988 ISO 9178 : PART 1 : 1988** | Templates for lettering and symbols Part 1 general principles and identification markings |
| **87** | **IS/ISO 9178-2 : 1988** | Templates for lettering and symbols Part 2 slot widths for wood cased pencils clutch pencils and fine - Lead pencils |
| **88** | **IS/ISO 9178-3 : 1989** | Templates for lettering and symbols Part 3 slot widths for technical pens with tubular tips in accordance with ISO 9175 - 1 |
| **89** | **IS/ISO 9179-1 : 1988** | Technical drawings - Numerically controlled draughting machines |
| **90** | **IS/ISO 9180 : 1998** | Black leads for wood - Cased pencils - Classification and diameters |
| **91** | **IS 9440 : 1979** | Specification for laboratory balances |
| **92** | **IS 9441 : 1979** | Specification for sextant |
| **93** | **IS 9514 : 1980** | Specification for front surface aluminized mirrors |
| **94** | **IS 9571 : 1980** | Specification for photoelectric colorimeter Single Beam |
| **95** | **IS 9607 : 1980** | Specification for tertiary level |
| **96** | **IS 9613 : 1980** | Specification for primary level |
| **97** | **IS 9680 : 1980** | Materials for light duty springs for instrument industry |
| **98** | **IS 9865 : 1981** | Specification for laboratory weights |
| **99** | **IS 9892 : 1981** | Specification for subtense bar |
| **100** | **IS 9898 : 1981** | Specification for heliotrope surveying |
| **101** | **IS/ISO 9960-1 : 1992** | Draughting instruments with or without graduation Part 1 draughting scale rules |
| **102** | **IS/ISO 9962-1 : 1992** | Manually operated draughting machines Part 1 definitions classification and designation |
| **103** | **IS/ISO 9962-2 : 1992 1992** | Manually Operated Draughting Machines Part 2 Characteristics Performance Inspection and marking |
| **104** | **IS/ISO 9962-3 : 1994** | Manually orerated draughting machines Part 3 dimensions of scale rule chuck plates |
| **105** | **IS 10695 : 1983** | Specification for pocket stereoscope |
| **106** | **IS 10995 : 1984** | Specification for tuning fork |
| **107** | **IS 10996 : 1984** | Specification For Stop Clock With Fly-Back Action |
| **108** | **IS 11152 : 1984** | Specification for laboratory stands Metallic |
| **109** | **IS 11445 : 1985 ISO 11554: 2006** | Specification for parallax bar Stereometer |
| **110** | **IS 11781 : 1986** | Specification for stencil templates and pen tips for english lettering |
| **111** | **IS 11961 : 1986** | Specification for 4 - Metre levelling staff Telescopic |
| **112** | **IS 12353 : 1988** | Specification for stencil templates for geometrical figures |
| **113** | **IS 12397 : 1988** | Specification for metallic dissecting trays |
| **114** | **IS B12397 : 1988** | Specification for metallic dissecting trays |
| **115** | **IS 12399 : 1988** | Specification for tripod stands |
| **116** | **IS 12428 : 1988** | Specification for scribing tools |
| **117** | **IS 14253 : 1995** | Educational instruments and equipment - Wire gauze for school and laboratory use - Specification |
| **118** | **IS 14260 : 1995 ISO 9385** | Glass and glass - Ceramics - Knoop hardness test |
| **119** | **IS 14440 : 1997** | Drawing Instruments - Tubular Tips For Hand Held Technical Pens Using India Ink On Tracing Paper - Specification |
| **120** | **IS 14633 : 1999** | Blackboards for class rooms -Specification |
| **121** | **IS 14859 : 2000** | Specification for Hindi Devnagari stencil templates and pen tips |
| **122** | **IS 15084 : 2002** | Spring balance - Tension type For Use In Schools - Specification |
| **123** | **IS 15085 : 2001** | Decimeter cube For Use In School-Specification |
| **124** | **IS 15085 : 2001** | Decimeter Cubes for Use in Schools |
| **125** | **IS 15197 : 2002** | Kerosene heating lamp for use in school and college laboratories -Specification |
| **126** | **IS 15242 : 2002** | Magnets For Use In Schools And Colleges - Specification |
| **127** | **IS 16506 (Part 2) : 2021 ISO 9211-2:2010** | Optics and photonics Optical coatings Part 2 Optical Properties |