कार्यसूची

Agenda

1st WORKING PANEL MEETING FOR PIPE CONVEYOR BELTS, PGD 40: P01

02:30 PM - 04:30 PM | Thursday, 05 December, 2024

Meeting Link:
https://bismanak.webex.com/bismanak/j.php?MTID=m1093a7497448ac73c23391ae7cdd5a78

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

Meeting and committee	DATE & DAY		VENUE
1st working panel meeting for Pipe Conveyor Belts, PGD 40: P01	05 December, 2024 (Thursday)	02:30 pm	BIS, Headquarter, New Delhi (Hybrid Meeting)

Meeting link:	https://bismanak.webex.com/bismanak/j.php?MTID=m1093a7497448ac73c23391ae7cdd5a78
Meeting number:	**2511 511 7878**
Password:	**PGD40:P1**

Shri Vichitra Vir Singh, Member Secretary PGD 40

CONVENER: Shri Abhijit Nag, Convenor (PVUNL-Patratu, NTPC)

ITEM 0 GENERAL

0.1 Welcome Address by the Member Secretary of the Committee, PGD 40

0.2 Opening remarks by the Convener of the Working Panel PGD 40: P01

ITEM 1: Discussions & Deliberations

Draft on SPECIFICATION FOR PIPE CONVEYOR BELTS

1. SCOPE

This standard specifies materials, construction, testing, and performance requirements for pipe conveyor belts used for transporting bulk materials, with considerations for safety, environmental resistance, and long-term durability. The provisions align with IS 1891 (Parts 1 to 5), IS 3400, IS 14489, IS 15427:2004, DIN 22131:1988, and DIN 22102:2014.

2. REFERENCES

This standard references the following:

- **IS 1891 (Parts 1 to 5):** Conveyor Belting Specifications and Performance Requirements

- **IS 3400:** Methods of Test for Vulcanized Rubber
- **IS 14489:** Occupational Safety and Health Code of Practice
- **IS 15427:2004:** Conveyor Belts – Fire Resistant Belts – Specifications
- **DIN 22131:1988:** Steel Cord Conveyor Belts – Requirements for Cover Thickness and Test Methods
- **DIN 22102:2014:** Textile Conveyor Belts – Strength Classes and Specifications

3. TERMINOLOGY

Terms defined in IS 1891 and the following shall apply:

- **Pipe Conveyor Belt:** A tubular conveyor belt that encloses materials during transport, minimizing spillage and protecting materials from external conditions.
- **Transition Zone:** The area where the belt transitions from a flat state to a tubular form.
- **Edge Overlap:** The overlapping section of the belt during tubular operation, ensuring a sealed enclosure.

4. MATERIAL REQUIREMENTS

4.1 **Rubber Covers:**

- The rubber covers shall conform to the abrasion, heat, oil, and fire resistance properties outlined in IS 1891 and DIN 22102.

4.2 **Reinforcement Layers:**

- Fabric belts (EP type) or steel cord belts (ST type) shall conform to tensile strength and elongation criteria in IS 1891 and DIN 22131.
- Reinforcement layers must ensure flexibility and durability during repeated bending cycles.

4.3 **Surface Properties:**

- Anti-static properties as per IS 15427:2004.
- Surface resistance requirements as outlined in IS 14489 for occupational safety.

5. DIMENSIONS AND CONSTRUCTION

5.1 **Nominal Diameters and Widths:**

- Pipe conveyor belts shall comply with nominal diameters between 100 mm and 700 mm, with recommended width-to-diameter ratios derived from DIN 22102.

5.2 **Cover Thickness:**

- Minimum cover thickness shall conform to DIN 22131 for steel cord belts and IS 1891 for textile belts.

5.3 **Overlap Width:**

- The overlap width shall be ≥ 10% of the total belt width, ensuring proper sealing and load stability during operation.

6. PERFORMANCE REQUIREMENTS

6.1 **Tensile Strength:**

- Tensile strength classes as per IS 1891 and DIN 22102, ensuring adequate load-bearing capacity.

6.2 **Flex Resistance:**

- The belt shall withstand a minimum of 10,000 bending cycles in the transition zone without visible cracking or delamination (IS 3400).

6.3 **Abrasion Resistance:**

- Maximum wear loss:
    - General-purpose belts: ≤ 200 mm^3 (IS 1891).
    - High-abrasion-resistant belts: ≤ 120 mm^3 (DIN 22102).

6.4 **Fire Resistance:**

- Belts for underground or hazardous applications shall meet fire-retardancy criteria in IS 15427:2004 and DIN 22102.

6.5 **Dynamic Adhesion:**

- Adhesion strength between layers shall comply with DIN 22102, ensuring integrity under operational stress.

7. TESTING METHODS

7.1 **Tensile Strength Test:**

- Conduct tests per IS 3400 and DIN 22131.

7.2 **Flex Fatigue Test:**

- Flexural durability testing using cyclic bending machines as outlined in IS 3400.

7.3 **Abrasion Resistance Test:**

- Measure material loss per IS 3400 methods and DIN standards.

7.4 **Fire Resistance Test:**

- Perform drum friction, propagation, and flame tests as per IS 15427:2004.

7.5 **Adhesion Testing:**

- Test layer adhesion per DIN 22131 to ensure structural integrity.

8. SAFETY AND ENVIRONMENTAL REQUIREMENTS

8.1 **Anti-Static Properties:**

- Surface resistivity must meet IS 15427:2004 for static charge dissipation.

8.2 **Eco-Friendly Materials:**

- Encourage the use of recyclable components, minimizing environmental impact.

9. MARKING AND LABELLING

Each belt shall be clearly marked with:
a) Manufacturer's name and trademark.
b) Belt type and diameter.
c) Cover material properties.
d) Batch number and date of manufacture.

10. PACKAGING AND STORAGE

10.1 **Packaging:**

- Belts shall be packaged to prevent deformation, moisture absorption, and UV damage.

10.2 **Storage:**

- Store in accordance with IS 1891 guidelines to maintain physical and mechanical properties.

11. COMPLIANCE AND CERTIFICATION

Compliance with this standard shall be verified through inspection and testing by BIS or any accredited third-party certification body. Certification shall only be granted for belts meeting all criteria.

ANNEXURES

Annex A: Performance Classification Based on Diameter and Load Capacity
Annex B: Maintenance Guidelines for Prolonged Belt Lifespan
Annex C: Detailed Testing Protocols as per IS and DIN Standards

ITEM 2 COMPOSITION OF THE PANEL

Sl No.	Name	Organization	Contact Detail
1.	Shri Abhijit Nag, Convenor	NTPC, PVUNL-Patratu, NTPC	Abhijitnag@ntpc.co.in 9650993428
2.	Mr Shakeel Ahmad, Member	TKIL Industries Pvt Ltd, Pune	Shakeel.Ahmad@tkil.com, 9011046972
3.	Shri Timir Bhattacharyya, Member	Forech India Limited, Sonipat	7358719500 timirb@forech.com
4.	Mr. Shekhar Kr Dey, Member	Forech India Limited	9831744449
5.	Shri A Chatterjee, Member	Macmet Engineering Ltd, Kolkata	9007000483 ak_macmet@yahoo.com
6.	Shri Chinmay Ray, Member	Oriental Rubber Industries Private Limited, Pune	9011094077 cray@orientalrubber.com
7.	Shri Vivek Kumar Upadhyay, Member	NTPC Hyderabad	9650998411 vivek.ksvnit@gmail.com
8.	Mr. P.S. Bhawal, Member	NRC Industries Limited, Amritsar	psbhawal@nrcconveyor.com , 9830250122

9.	Mr. Sanjay Kumar Malik	Lepton Projects Pvt Ltd, Gurugram	skumar@lepton.co.in 9811224030

ITEM 3 DATE & PLACE OF THE NEXT MEETING

Tentative panel meeting dates are proposed for FY 2024-25:

S. No.	Meeting Number	Meeting Type	Date	Venue
1	2nd Meeting	Hybrid Meeting	-	-

ITEM 4 ANY OTHER BUSINESS: