



**2023 CEMA FALL ENGINEERING CONFERENCE
CONVEYOR IDLER COMMITTEE MEETING**
Microsoft Teams Webinar
Tuesday, November 6, 2023 – 2:15 pm

AGENDA

1. Call to order.
2. Attendance and Introductions.
3. Approval of Minutes of June 13, 2023 (attached)
4. Old business
 - a) **How speed affects Idler Rolls** (Former “high-speed conveying for idlers” topic)– Updates.
Subcommittee: Jim Masek, PPI (chair); Tom Hubbert, Dos Santos International; Paul Ormsbee, Overland Conveyor Co., Inc.; Paul Schmidgall, Superior Industries, Inc.; Andrew Jennings, Conveyor Dynamics, Inc.; Benjamin Brewer, Douglas Manufacturing Co., Inc.; Luis Estay, Bechtel Corporation; Nick Mackenzie, Rulmeca Canada Limited; Dr. Andrew Hustrulid, Shaw Almex Industries; Muhammed Malik, Luff Industries Ltd.; Bob Hawkins, Continental Global Material Handling, LLC.

In past meetings, there was some discussion about what could be required from high-speed idlers, such as tight TIR, balancing requirement, specific surface finish, and low TIR rate of change. The subcommittee will reach out to gather specifications from large end-users to better understand what is regularly called for in high-speed applications.

There was some discussion regarding some requirements for high-speed older rolls (TIR, TIR rate of change, roll balance). Also, it was mentioned that conveyors are now running above 2000 fpm.



b) **Impact Equations** – Updates.

Subcommittee: Brett DeVries, FLEXCO (Chair); Benjamin Brewer, Douglas Manufacturing Co., Inc.; Tony Van Zee & Jim Masek, PPI; Scott Adams, Ingenium Design; Ray Weidenfeller, Sunhill America, LLC.; Paul Schmidgall, Superior Industries, Inc.; Bob Hawkins, Continental Global Material Handling, LLC.

A range of “k” factor values (spring constant) is required to be able to perform the work to move away from force equations for impact idlers. The plan is to leverage the work performed on CEMA Standard No. 575, “Bulk Material Belt Conveyor Impact Bed/Cradle: Selection and Dimensions”. Also, try to harmonize the impact idler equations with those related to impact beds.

Brett led the charge to harmonize the impact idler equations with those of the impact beds. He was looking at deflection from a single impact and using the remainder of the deflection for handling the material flow. He created spreadsheets to easily show how various k factors affect the results of the equations.

He plans to present a clean and organized form to be discussed, showing different scenarios about what could happen and how it will affect users.

c) **Idler Monitoring Technical Paper** – Updates

Subcommittee: Benjamin Brewer, Douglas Manufacturing Co., Inc. (chair); Dr. Andrew Hustrulid, Shaw Almex Industries; Jim Masek, PPI; Paul Schmidgall, Superior Industries, Inc.; Kevin Guay, NHI.

Part of this content will be included in the CEMA’s Belt Book 8th Edition, Chapter 16, and needs to cover all the components because, nowadays, everything is monitored.

The technical paper still requires some minor edits that were discussed during the working sessions on Monday before submitting the final version for approval. The final version will be presented at this meeting.

d) **White Papers Topics** – Volunteers needed.

Possible topics include (but are not limited to) the following:

- 3-Roll Offset Idler – Andrew Jennings, Conveyor Dynamics, Inc.
- Gap between CEMA standards and international standards (If a volunteer decides to tackle this topic, it might be best to start by defining the differences in approaches)



- Idler junction or roll gap as it relates to belt failures.
- Energy efficiency scale for idlers (including how it relates to belt indentation rolling resistance) – similar to Robin Steven’s white paper for belts.
- Non-Standard Configuration Idlers.

e) **Non-Steel Idler Rolls** – Updates

Subcommittee: Paul Schmidgall, Superior Industries, Inc. (Chair); Brett DeVries, FLEXCO; Tony VanZee & Jim Masek, PPI; Kevin Guay, NHI; Bob Hawkins, Continental Global Material Handling, LLC; Scott Adams, Ingenium Design; Wendell Love, Bunting.

The subcommittee started working on a white paper that will ultimately be added to the CEMA's Belt Book Chapter 5. In previous meetings, the different rollers were briefly discussed, and how they could be separated into categories based on construction.

The first draft was reviewed in the working sessions on Monday. It was mentioned that it gives benefits and drawbacks for polymers, aluminum, composite, and covered rolls. They have a list of edits needed. The final draft will be presented at this meeting.

f) **Idler Knocking Values**

Todd Swinderman was preparing for a webinar on the CEMA Mistracking Allowance Guide and found that a distinction needs to be made between alignment and mistracking.

He mentioned that a common rule of thumb is not to knock and idler more than 1/8 inches at a time. In the CEMA Belt Book, it is recommended not more than 1/4 inch, which appears to mean cumulative. The no more than 1/4-inch recommendation appears in several belt and idler manufacturers’ literature.

The default value for rigid structure and deliberate alignment of idlers in the CEMA Belt Book is 1/4 inch or 0.25 degrees. Todd presented a graphic to show how much the idlers move when knocked 0.25 degrees.

A survey would be sent out to the attendees of this committee for comments and corrections. The survey was sent, and some comments were received and will be discussed at this meeting.



g) **CEMA Belt Book, 8th Edition – Chapter 5 “Belt Conveyor Idlers”** – Updates.

Subcommittee: Benji Brewer, Douglas Manufacturing Co., Inc. (Chair); Dr. Andrew Hustrulid, Shaw Almex Industries; Bob Hawkins, Continental Global Material Handling, LLC; Paul Schmidgall, Superior Industries, Inc.; and Tom Hubbert, Dos Santos International.

This committee asked to review/rewrite the current chapter and the comments and errata received after the second printing of the book.

5. New Business
6. Next Meeting – June 11, 2024, Naples Grande Beach Resort, Naples, FL.
7. Adjourn.

Paul Schmidgall, Chair
Andrew Hustrulid, Vice-Chair



**2023 CEMA ENGINEERING CONFERENCE
CONVEYOR IDLER COMMITTEE MEETING**

Naples Grande Beach Resort, Naples, FL
Tuesday, June 13, 2023

MINUTES

1. Call to order.
Paul Schmidgall, Superior Industries, Inc.; Chair, called the meeting to order at 9:00 am.
2. Attendance and Introductions – Roll call attached.
3. Approval of Minutes of November 7, 2022 – Minutes were approved.
4. Old business
 - a) **How speed affects Idler Rolls** (Former “high-speed conveying for idlers” topic)– Updates.
Subcommittee: Jim Masek, PPI (chair); Tom Hubbert, Dos Santos International; Paul Ormsbee, Overland Conveyor Co., Inc.; Paul Schmidgall, Superior Industries, Inc.; Andrew Jennings, Conveyor Dynamics, Inc.; Benjamin Brewer, Douglas Manufacturing Co., Inc.; Luis Estay, Bechtel Corporation; Nick Mackenzie, Rulmeca Canada Limited; Dr. Andrew Hustrulid, Shaw Almex Industries; Muhammed Malik, Luff Industries Ltd.; Bob Hawkins, Continental Global Material Handling, LLC.

The subcommittee is still working on this, and they plan to include it in the CEMA’s Belt Book, 8th Edition, Chapter 5. There was some discussion about what could be required from high-speed idlers such as tight TIR, balancing requirement, specific surface finish, and low TIR rate of change. The subcommittee will reach out to gather specifications from large end-users to better understand what is regularly called for in high-speed applications.

There was some discussion regarding some requirements for high-speed older rolls (TIR, TIR rate of change, roll balance). Also, it was mentioned that conveyors are now running above 2000 fpm.

The subcommittee is still working on this, and how will be included in Chapter 5 “Belt Conveyor Idlers” in the Belt Book 8th Edition. It was agreed to provide updates at the 2023 CEMA Fall Engineering Conference.



CONVEYOR EQUIPMENT
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b) **3-Roll Offset Idlers White Paper** – Updates

Volunteer: Andrew Jennings, Conveyor Dynamics, Inc.

Some references to an end-user needed to be removed before the white paper is ready. Andrew was not present. This topic is tabled until the 2023 CEMA Fall Engineering Conference.

c) **Impact Equations** – Updates.

Subcommittee: Brett DeVries, FLEXCO (Chair); Benjamin Brewer, Douglas Manufacturing Co., Inc.; Tony Van Zee & Jim Masek, PPI; Scott Adams, Ingenium Design; Ray Weidenfeller, Sunhill America, LLC.; Paul Schmidgall, Superior Industries, Inc.; Bob Hawkins, Continental Global Material Handling, LLC.

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He plans to present a clean and organized form to be discussed, showing different scenarios about what could happen and how it will affect users. Brett was not present. This topic is tabled until the 2023 CEMA Fall Engineering Conference.

d) **Idler Monitoring Technical Paper** – Updates

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- Non-Standard Configuration Idlers.

No volunteers at this time.

f) **Non-Steel Idler Rolls** – Updates

Subcommittee: Paul Schmidgall, Superior Industries, Inc. (Chair); Brett DeVries, FLEXCO; Tony VanZee & Jim Masek, PPI; Kevin Guay, NHI; Bob Hawkins, Continental Global Material Handling, LLC; Scott Adams, Ingenium Design; Wendell Love, Bunting.

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b) **CEMA Belt Conveyor for Bulk Materials book, 8th Edition** – Volunteers needed.

This committee was tasked to review/rewrite Chapter 5 “Belt Conveyor Idlers”. A subcommittee was created to review this chapter: Benji Brewer, Douglas Manufacturing Co., Inc. (Co-Chair); Jim Masek, PPI (Co-Chairs); Dr. Andrew Hustrulid, Shaw Almex Industries; Bob Hawkins, Continental Global Material Handling, LLC; Paul Schmidgall, Superior Industries, Inc.; and Tom Hubbert, Dos Santos International.

6. Next Meeting – November 6, 2023, Virtual CEMA Fall Engineering Conference.

7. The meeting was adjourned at 9:45 am.

Paul Schmidgall, Chair

Andrew Hustrulid, Vice Chair