



**2023 CEMA ENGINEERING CONFERENCE  
BULK BELT SYSTEMS AND EMERGING TECHNOLOGIES COMMITTEE MEETING**

Naples Grande Beach Resort, Naples, FL  
Tuesday, June 13, 2023 – 2:00 pm

**AGENDA**

1. Call to order.
2. Attendance and Introductions.
3. Approval of Minutes of November 7, 2022 (attached).
4. Old business
  - a) **Appendix D – Installation Standard** – Updates  
Subcommittee: Todd Swinderman, RToddS Engineering, LLC (chair); Colin Barbeau, Hatch; Jim Masek, PPI; Paul Ormsbee, Overland Conveyor Co. Inc.; Akiko Wakatsuki, Fenner Dunlop Conveyor Belting; Robin Steven, ContiTech North America, Inc; Luis Estay, Bechtel Corporation; Laura Hoggan, REMA Tip Top; Todd Hollingsworth, Raw Engineering and Design, LLC.; David Jesse, Lassing Dibben Consulting Engineers Ltd.; Marcus Dos Santos, Dos Santos International.

The idea is to create two (2) documents:

- Summary of Installation Tolerances and Startup Procedures – A summary to be included in the CEMA Belt Book, 8<sup>th</sup> Edition as new Appendix D.
- CEMA Guide No. 02 “Installation and Start-Up of Belt Conveyors Handling Bulk Materials” – A separate document that would be an expanded version of Appendix D offered as a technical guide.

The two (2) documents being created are installation standards. Therefore, it was decided that belt training should be a separate technical paper.

Todd Swinderman has some items that need to be discussed during this meeting regarding skirtboard and wear liner practices. Also, he has some suggestions regarding new knocking idlers’ guidance.



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b) **New Content for the CEMA Belt Book, 8<sup>th</sup> Edition regarding Idler Replacement and Idler Condition Monitoring** (Former topic “Idler Maintenance Safety”) – Updates.

Subcommittee: Colin Barbeau, Hatch (chair); Gerhard Schmidt, TAKRAF USA, Inc; Geoff Stoll, Richwood; Jim Masek, PPI; David Jesse, Lassing Dibben Consulting Engineers Ltd; Benjamin Brewer, Douglas Manufacturing Co. Inc.; Erick Jackson, TAKRAF USA, Inc.

A draft was created and includes a weight requirement table for the lifting belt to be added to Chapter 2 of the Belt Book (8<sup>th</sup> edition). Calculations behind the table need to be reviewed for technical accuracy.

Previously, a review was done of the belt lifting force table. The draft also includes language about idler replacement technology for inclusion in the Belt Book 8<sup>th</sup> Edition Chapter 16 Emerging Technologies.

The draft was sent to the attendees of the 2022 CEMA Fall Engineering Conference before being sent to the Official Representatives (ORs) for final approval.

c) **White Paper “CEMA Power Methods”** – Updates

*Author*: Andrew Jennings, Conveyor Dynamics, Inc.

This white paper is a summary of the history of the CEMA’s Power Calculation Methods. Al Reicks, Overland Conveyor Co. Inc.; will peer-review the white paper.

d) **DEM Transfer Chute Design/Analysis**– Updates

Subcommittee: Paul Ormsbee, Overland Conveyor Co. Inc. (chair); Matthew Koca, FLEXCO; Andrew Jennings, Conveyor Dynamics, Inc., Colin Barbeau, Hatch; Geoff Stoll, Richwood; David Kruse, Advanced Conveyor Technologies Inc.

It was agreed to move this out of Chapter 16 and into the Transfer Chute Chapter 12 for the CEMA Belt Book, 8<sup>th</sup> Ed.

The subcommittee was working on text updates, including notes about sticky and/or fine material. The final draft will be presented at this meeting.

e) **CWD Factor Case** – Updates

Subcommittee: Paul Ormsbee (chair) & Al Reicks, Overland Conveyor Co. Inc.; Andrew Hustrulid, Shaw Almex Industries, Ltd.; Andrew Jennings, Conveyor Dynamics Inc.

Factor to correlate flat belt test to actual trough belt with non-uniform material load distribution across the belt. Non-standard idler sets need to be included. The



subcommittee needs to determine how the process can be simplified.

The subcommittee is working on a separate technical paper on CWD. Also, they are working on a set of equations that will expand toward non-standard geometry.

f) **Pipe Conveyor Stiffness/Aging Fatigue Loss with Lifecycles** – Updates

Subcommittee: Sergio Zamorano, ZING eirl (chair); Joshua Holcombe, Contitech North America, Inc; Luis Estay, Bechtel Corporation; Andrew Jennings, Conveyor Dynamics, Inc.; Paul Ormsbee & Al Reicks, Overland Conveyor Co. Inc.; Akiko Wakatsuki, Fenner Dunlop Americas.

Discussion on the loss of stiffness due to lifecycle fatigue is a large part of wear on pipe conveyors. It brought up the question: how do we quantify this for clients so they can plan replacement/lifetime? It was suggested to look at re-writing the section in the CEMA 7th Ed. Belt Book (for the 8th Ed.).

Sergio was not present during the meeting. However, the current draft has minor feedback. Joshua will contact Sergio and schedule some working meetings to finish this project before the 2023 CEMA Engineering Conference.

g) **ARPM Rubber Energy Discussion**

Subcommittee: Joshua Holcombe, Contitech North America, Inc.; Paul Ormsbee & Al Reicks, Overland Conveyor Co. Inc.; and Andrew Hustrulid, Shaw Almex Industries Ltd.

Robin Steven, Continental North America, Inc. sent to the chairs of this committee a document on a proposed belt energy efficiency standard.

In previous meetings, was discussed removing this item from this committee and leaving it at the individual component committees because the overall conveyor efficiency is difficult to define. However, it was decided to leave it in this committee since there isn't a belting committee.

It was mentioned that VDI 4459 has produced energy efficiency ranges for conveyors in the 2022 version. A subcommittee was created to provide a recommendation regarding CEMA adopting/publishing a version of Robing Steven's energy efficiency document.



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h) **CEMA Belt Book 8<sup>th</sup> Edition Publication**

Subcommittee: Greg Westphall, Shaw Almex Industries Ltd; Marcus Dos Santos, Dos Santos International; Todd Swinderman, RToddS Engineering, LLC; Todd Hollingsworth, Raw Resources, LLC.

CEMA does not currently have a publication timeline for the Belt Book. This Committee recommended asking the CEMA Board of Directors if they wanted to start working on this.

Todd Swinderman created a proposal that was presented to the CEMA Board of Directors for discussion at the 2023 CEMA Annual Meeting and feedback will be provided to this committee at this Conference.

i) **Cleated & Sidewall Belt for Incline Applications**

Subcommittee: Geoff Normanton, Fenner Dunlop (chair); Akiko Wakatsuki, Fenner Dunlop; Laura Hoggan, Rema TIP TOP; Sean Henry & Peter Bradley, Continental Contitech North America, Inc.

This was a topic on this committee in 2019. It was an idea for the CEMA Belt Book, 8<sup>th</sup> Edition. The idea is the inclusion of cleated belts in the existing table in the CEMA Belt Book, 7<sup>th</sup> Edition, Chapter 10. Material properties dependent on caking or sticking/lumping materials, molded vs. cleated (fabricated design), specialty belts; create awareness: consider end-user preference, specific design based on material properties (pocket-cleated-molded, maintenance-cleaning, etc.).

The subcommittee has been working on adding illustrations of the different cleat profiles; identifying and providing a common name for the standard cleat patterns.

5. New Business

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

7. Adjourn.

Todd Hollingsworth, Chair  
Andrew Jennings, Vice Chair



**2022 CEMA FALL ENGINEERING CONFERENCE  
BULK BELT SYSTEMS AND EMERGING TECHNOLOGIES COMMITTEE MEETING**

Cisco Webex Meetings  
Monday, November 7, 2022

**MINUTES**

1. Call to order  
Todd Hollingsworth, Raw Resources, LLC; Chair, called the meeting to order at 11:25 am.

2. Attendance and Introductions – Roll call attached.

3. Approval of Minutes of June 14, 2022 – Minutes were approved.

4. Old business

a) **Appendix D – Installation Standard – Updates**

Subcommittee: Todd Swinderman, RToddS Engineering, LLC (chair); Colin Barbeau, Hatch; Jim Masek, PPI; Paul Ormsbee, Overland Conveyor Co. Inc.; Akiko Wakatsuki, Fenner Dunlop Conveyor Belting; Robin Steven, ContiTech North America, Inc; Luis Estay, Bechtel Corporation; Laura Hoggan, REMA Tip Top; Todd Hollingsworth, Raw Engineering and Design, LLC.; David Jesse, Lassing Dibben Consulting Engineers Ltd.; Marcus Dos Santos, Dos Santos International.

The idea is to create two (2) documents:

- One would be an expanded CEMA Belt Book, 8<sup>th</sup> Edition, Appendix D entitled "Belt Conveyors for Bulk Materials Installation and Start-Up Best Practices"
- Second would be a separate document with graphics that CEMA could offer/provide can be offered as a technical paper.

The two (2) documents being created are installation standards. Therefore, it was decided that belt training should be a separate technical paper.

The documents are ready to be sent to the Official Representatives (OR) for approval after this meeting.

b) **Idler Maintenance Safety – Updates.**

Subcommittee: Colin Barbeau, Hatch (chair); Gerhard Schmidt, TAKRAF USA, Inc; Geoff Stoll, Richwood; Jim Masek, PPI; David Jesse, Lassing Dibben Consulting Engineers Ltd; Benjamin Brewer, Douglas Manufacturing Co. Inc.; Erick Jackson, TAKRAF USA, Inc.



A draft was created and includes a weight requirement table for the lifting belt to be added to Chapter 2 of the Belt Book (8<sup>th</sup> edition). Calculations behind the table need to be reviewed for technical accuracy.

Previously, Colin Barbeau submitted a draft regarding the inspection and change, and Benjamin Brewer and Jim Masek are working on the peer review for the belt lifting force table. The draft also includes language about idler replacement technology for inclusion in the Belt Book 8<sup>th</sup> Edition Chapter 16 Emerging Technologies.

The draft is ready for approval. It will be sent to the attendees of this meeting before being sent to the Official Representatives (ORs) for final approval.

- c) **White Paper “CEMA Power Methods”** – Updates  
*Author:* Andrew Jennings, Conveyor Dynamics, Inc.

This white paper is a summary of the history of the CEMA’s Power Calculation Methods. Al Reicks, Overland Conveyor Co. Inc.; will peer-review the white paper.

Andrew was not present during the meeting. Todd Hollingsworth will follow up with Andrew and Al and bring it to a conclusion.

- d) **Condition Monitoring for Overall System Document** – Updates  
Subcommittee: Hans Rodgers, SEW-Eurodrive, Inc. (Chair); Andrew Hustrulid, Shaw Almex Industries Ltd.; Andrew Jennings, Conveyor Dynamics, Inc.; David Jesse, Lassing Dibben Consulting Engineers Ltd.; Al Reicks, Overland Conveyor Co. Inc.; Chad Brown, Dodge Industrial, Inc.; Dan Miners, Cambelt International LLC; Adam Soder, Sumitomo Drive Technologies.

The subcommittee was tasked with providing a path forward for a document that would give end-users advice on the practical use and interpretation of the data.

Hans Rodgers mentioned he will bring this discussion to the CEMA’s Conveyor Controls Committee.

- e) **DEM Transfer Chute Design/Analysis**– Updates  
Subcommittee: Paul Ormsbee, Overland Conveyor Co. Inc. (chair); Matthew Koca, FLEXCO; Andrew Jennings, Conveyor Dynamics, Inc., Colin Barbeau, Hatch; Geoff Stoll, Richwood; David Kruse, Advanced Conveyor Technologies Inc.

It was agreed to move this out of Chapter 16 and into the Transfer Chute Chapter 12 for



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the CEMA Belt Book, 8<sup>th</sup> Ed.

The subcommittee is still working on text updates, including notes about sticky and/or fine material. They will present the draft at the 2023 CEMA Summer Engineering Conference.

f) **CWD Factor Case – Updates**

Subcommittee: Paul Ormsbee (chair) & Al Reicks, Overland Conveyor Co. Inc.; Andrew Hustrulid, Shaw Almex Industries, Ltd.; Andrew Jennings, Conveyor Dynamics Inc.

Factor to correlate flat belt test to actual trough belt with non-uniform material load distribution across the belt. Non-standard idler sets need to be included. The subcommittee needs to determine how the process can be simplified.

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h) **ARPM Rubber Energy Discussion**

*Volunteer*: Andrew Hustrulid, Shaw Almex Industries Ltd.

Robin Steven, Continental North America, Inc. sent to the chairs of this committee a document on a proposed belt energy efficiency standard.

It was discussed removing this item from this committee and leaving it at the individual



component committees because the overall conveyor efficiency is difficult to define. However, it was decided to leave it in this committee since there isn't a belting committee.

It was mentioned that VDI 4459 has produced energy efficiency ranges for conveyors in the 2022 version. A subcommittee was created to provide a recommendation at the 2023 CEMA Summer Engineering Conference regarding CEMA adopting/publishing a version of Robing Steven's energy efficiency document.

The subcommittee members are Joshua Holcombe, Contitech North America, Inc.; Paul Ormsbee & Al Reicks, Overland Conveyor Co. Inc.; and Andrew Hustrulid, Shaw Almex Industries Ltd.

i) **Discussion on CEMA Belt Book 8<sup>th</sup> Edition Publication**

Subcommittee: Greg Westphall, Shaw Almex Industries Ltd; Marcus Dos Santos, Dos Santos International; Todd Swinderman, RToddS Engineering, LLC; Todd Hollingsworth, Raw Resources, LLC.

CEMA does not currently have a publication timeline. This Committee recommends asking the CEMA Board of Directors if they want to start working on this.

Additionally, a question was raised: How do we trim down the size of the CEMA Belt Book? The following ideas came up:

- Move Chapter 6 to a separate Design Guidebook.
- Add Calculators to the CEMA site to enable removing tables from CEMA Belt Book and make access to correct data easier for users.

Todd Swinderman created a proposal to set June 2025 as a deadline for the completion of the book. Help is needed with technical writing and images/graphics. He proposed a potential two (2) volumes of the book this time, that needs to be sold as a set:

- 1) General Application Information
- 2) Calculations and Examples

Additionally, he suggested doing the book in SI metric units only. This simplifies force and mass calculations as well as most examples. Simplifies charts and graphs. Soft conversions to inches only where necessary (idlers, belts, etc.).

Also, Naylu Garces, CEMA; has been collecting changes and errata from the second printing that needs to be included in the 8<sup>th</sup> edition.



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The proposal will be presented to the CEMA's Board of Directors for discussion at the 2023 CEMA Annual Meeting and the feedback will be provided to this committee at the 2023 CEMA Summer Engineering Conference.

## 5. New Business

### a) **Cleated & Sidewall Belt for Incline Applications**

Subcommittee: Geoff Normanton, Fenner Dunlop (chair); Akiko Wakatsuki, Fenner Dunlop; Laura Hoggan, Rema TIP TOP; Sean Henry & Peter Bradley, Continental Contitech North America, Inc.

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The subcommittee has been working on adding illustrations of the different cleat profiles; identifying and providing a common name for the standard cleat patterns.

There were no subcommittee members present. Tabled until the 2023 CEMA Summer Engineering Conference.

6. Next Meeting – June 13, 2023, LaPlaya Beach & Golf Resort, Naples, FL.

7. Meeting was adjourned at 12:08 pm.

Todd Hollingsworth, Chair