



CONVEYOR EQUIPMENT
MANUFACTURERS ASSOCIATION

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2023 CEMA ENGINEERING CONFERENCE CONVEYOR PULLEY COMMITTEE MEETING

Naples Grande Beach Resort, Naples, FL
Tuesday, June 13, 2023 – 10:30 am

AGENDA

1. Call to order.
2. Attendance and Introductions.
3. Approval of Minutes of November 7, 2022 (attached).
4. Old business
 - a) **Unit Pulley Standard to better support unit pulley requirements (CEMA Standard No. B106.1)** – Updates.

Subcommittee: Jeff Ellis, PPI (chair); Benjamin Brewer, Douglas Manufacturing Co. Inc.; Bob Hawkins, Continental Global MH; Zac Casper, Talos Engineered Products; Ted Hotvet, Van Gorp; Paul Schmidgall, Superior Industries; Eddie Geerdes, Universal Industries, Tamara Thimmel, Safari Belting LLC; Greg Pollitt, Honeywell Intelligrated.

It was determined that the Unit Pulleys are distinguished enough to demand a new independent standard. Using ANSI/CEMA Standard B105.1 as a template.

A roller section is being added to the standard. It was settled on simplifying it to a live shaft pulley and dead/non-rotating shaft roller with steel shafts for now. Load rating and availability charts are similar to the ANSI/CEMA Standard B105.1 standard format. They have been created to be able to duplicate the usability of the standard for potential users.

- b) **Maximum Tension Ratio per Diameter per Inch Belt Width** – Updates.
Subcommittee: Brett DeVries, FLEXCO (chair); David Keech, Dodge Industrial, Inc.; Bob Hawkins, Continental Global MH.; Jeff Ellis, PPI; Al Reicks, Overland Conveyor Co., Inc.; Benjamin Brewer, Douglas Manufacturing Co. Inc.; David Jesse, Lassing Dibben Consulting Engineers Ltd.; Peter Bradley, Continental ContiTech – North America.

The initial task of the subcommittee was to determine the minimum pulley diameter size based on the horsepower transmitted.

Brett presented his work and calculator on lagging friction factors. He was currently



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looking for help analyzing the data he's gathered, and/or using his calculator to compare to real-world results. His question was, do we use his calculator in the future or stick with the existing Euler equation?

Al Reicks (not present) had agreed to help verify results but had questions about what the calculator was doing. Jeff Ellis volunteered to present real-world applications to Brett in an effort to validate the calculator. The committee agreed that more validation of the calculator would be needed before it could be voted on in any way at the Engineering Conference.

- c) **ANSI/CEMA Standard. B105.1 "Specifications for Welded Steel Conveyor Pulleys – With Compression Type Hubs"- Pulley and Shaft Selection Tables 4A and 4B.** How often are these used? In what way do we feel they are used? – Updates.

Subcommittee: David Keech, Dodge Industrial, Inc. (chair); Benjamin Brewer, Douglas Manufacturing Co. Inc.; Jeff Ellis, PPI; Andrew Hustrulid, Shaw Almex Industries Ltd.; Paul Ormsbee, Overland Conveyor Co., Inc.; Brett DeVries, FLEXCO; Marc Dos Santos, Dos Santos International.

The Committee should gather more pulley manufacturers' input on removing some of the odd pulley shaft sizes. There should be a further discussion in the subcommittee to determine what to do with Tables 4A and 4B. There were some suggestions they are removed altogether, but they need to remain as a reference for the pulley load ratings.

David Keech provided a summary of the previous discussions. He doesn't see a way to remove the tables because there is no single formula to substitute this. Also, he recommends leaving it as is. The information has been used since the 1960s.

Additionally, it was mentioned that during some events in Chile, it was shown a presentation (VOITH Turbo Mulheim - Germany) about the pulley design according to CEMA and the German guidelines differences trying to show why CEMA was deficient. Jeff will investigate more and document the findings about this a provide more information during the 2023 CEMA Summer Engineering Conference.

There was concern voiced by several participants that other standards organizations have a broader reach than CEMA, and dive into engineered pulleys more than CEMA does. The Board of Directors has requested the engineering conference continue to look into this topic.

5. Election of a Vice Chair.



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6. New Business.

a) **CEMA Pulley Design Criteria**

The CEMA's Board of Directors has requested the Engineering Conference determine the best course of action to mitigate concerns our standards are not broad enough. This has become evident, specifically for engineered class pulleys.

7. Next Meeting – November 7, 2023, Virtual CEMA Fall Engineering Conference.

8. Adjourn.

Benjamin Brewer, Chair
Jeff Ellis, Vice-Chair



**2022 CEMA FALL ENGINEERING CONFERENCE
CONVEYOR PULLEY COMMITTEE MEETING**

Cisco Webex Meetings
Monday, November 7, 2022

MINUTES

1. Call to order
Benjamin Brewer, Douglas Manufacturing Co. Inc.; Chair, called the meeting to order at 3:35 pm.
2. Attendance and Introductions – Roll call attached
3. Approval of Minutes of June 14, 2022 – Minutes were approved.
4. Old business
 - a) **Unit Pulley Standard to better support unit pulley requirements (CEMA Standard No. B106.1)** – Updates. Survey Results.
Subcommittee: Jeff Ellis, PPI (chair); Benjamin Brewer, Douglas Manufacturing Co. Inc.; Bob Hawkins, Continental Global MH; Zac Casper, Talos Engineered Products; Ted Hotvet, Van Gorp; Paul Schmidgall, Superior Industries; Don Suderman, Bunting; Eddie Geerdes, Universal Industries, Tamara Thimmel, Bryant Products; Greg Pollitt, Honeywell Intelligrated.

It was determined that the Unit Pulleys are distinguished enough to demand a new independent standard. Using ANSI/CEMA Standard B105.1 as a template.

They will add a rollers section to the standard. It was settled on simplifying it to a live shaft pulley and dead/non-rotating shaft roller with steel shafts for now. It will be needed to set up load ratings for the rollers rather than describing certain bearing types or sizes to avoid specifying the individual components as that is not CEMA's intent.

Work is still in progress. The subcommittee established a series of meetings to have the final draft ready for the 2023 CEMA Summer Engineering Conference. This includes the survey regarding the load ratings.

- b) **Maximum Tension Ratio per Diameter per Inch Belt Width** – Updates.
Subcommittee: Brett DeVries, FLEXCO (chair); Chad Brown & David Keech, Dodge Industrial, Inc.; Bob Hawkins, Continental Global MH.; Jeff Ellis, PPI; Al Reicks, Overland Conveyor Co., Inc.; Benjamin Brewer, Douglas Manufacturing Co. Inc.; David Jesse,



Lassing Dibben Consulting Engineers Ltd.; Peter Bradley, Continental ContiTech – North America.

The initial task of the subcommittee was to determine the minimum pulley diameter size based on the horsepower transmitted.

Brett presented his work and calculator on lagging friction factors. He is currently looking for help analyzing the data he's gathered, and/or using his calculator to compare to real-world results. His question was, do we use his calculator in the future or stick with the existing Euler equation?

Al Reicks (not present) had agreed to help verify results but had questions about what the calculator was doing. Jeff Ellis volunteered to present real-world applications to Brett in an effort to validate the calculator. The group agreed that more validation of the calculator would be needed before it could be voted on in any way at the Engineering Conference.

- c) **ANSI/CEMA Standard. B105.1 “Specifications for Welded Steel Conveyor Pulleys – With Compression Type Hubs”- Pulley and Shaft Selection Tables 4A and 4B.** How often are these used? In what way do we feel they are used? – Updates.

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Additionally, it was mentioned that during some events in Chile, it was shown a presentation (VOITH Turbo Mulheim - Germany) about the pulley design according to CEMA and the German guidelines differences trying to show why CEMA was deficient. Jeff will investigate more and document the findings about this a provide more information during the 2023 CEMA Summer Engineering Conference.



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There was concern voiced by several participants that other standards organizations have a broader reach than CEMA, and dive into engineered pulleys more than CEMA does.

It was suggested that the CEMA Board of Directors may need to weigh in on this topic. No current plans were made, and this will continue as a topic in the 2023 CEMA Summer Engineering Conference

5. New Business– No new business was discussed at this meeting.
6. Next Meeting – June 13, 2023, LaPlaya Beach & Golf Resort, Naples, FL.
7. Meeting was adjourned at 4:32 pm

Benjamin Brewer, Chair
Jeff Ellis, Vice-Chair