Conveyor Equipment Manufacturers Association

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2021 CEMA VIRTUAL FALL ENGINEERING CONFERENCE
CONVEYOR PULLEY COMMITTEE MEETING
Monday, November 8, 2021

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 – Via virtual registration (roll call attached)

3. Approval of Minutes of September 22, 2021 – Minutes were approved

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; Don Suderman, Bunting; Eddie Geerdes, Universal Industries, Tamara Thimmel, Bryant Products.
   The subcommittee is working on having a draft for review. The subcommittee will add rollers section to the standard.
   b) **Use FEA to verify Belt Book Table 7.39 compared to B105.1 Table 1 to determine if smaller pulley diameters are acceptable to manufacturers in the availability chart** – No Updates.
   Subcommittee: Andrew Hustrulid, Shaw Almex Industries Ltd. (chair); Alex Vitou, Dodge Mechanical Power Transmission Company Inc.; Benjamin Brewer, Douglas Manufacturing Co. Inc.; Bob Hawkins, Continental Global MH; John Calfee, Martin Sprocket & Gear; Jeff Ellis, PPI; Paul Schmidgall, Superior Industries, Inc.
   This topic was discussed again and there is still resistance to changing the chart at this time. The plan is to have further discussion during the 2022 CEMA Engineering conference.
   c) **ANSI/CEMA Standards B105.1 and 501.1 – Standard for Balancing Pulleys** – Updates
   ANSI revision finished and were approved on August 5, 2021. Both standards are available on the CEMA ecommerce for purchase.
   d) **Minimum Pulley Size Selection based on Horsepower transmitted** – Updates.
   Subcommittee: Brett DeVries, FLEXCO (chair); Chad Brown & David Keech, Dodge Mechanical Power Transmission Company Inc.; Bob Hawkins, Continental Global MH.; Jeff Ellis, PPI; Paul Ormsbee, Overland Conveyor Co., Inc.; Benjamin Brewer, Douglas Manufacturing Co. Inc.; David Jesse, Lassing Dibben Consulting Engineers Ltd.
   Proposal to change the name of this topic to '*Maximum Tension Ratio per Diameter per Inch Belt Width'* was approved.

Brett DeVries provided some charts and showed a presentation.

e) **ANSI/CEMA Standard. B105.1 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 Mechanical Power Transmission Company 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

i. Correction and Clarification in Tables 4:

Original: Based on SAE 1018 material, using either a bending stress of 8000 psi from resultant load (no torque), or a free shaft deflection at the hub of 0.0023 inches per inch (tan of 8 minutes), whichever governs.

Proposal: Based on SAE 1018 material with a key seat, using either 6000 psi shear stress / 12000 psi bending stress from the resultant load (no torque) using the ASME B17C equation, or a free shaft deflection at the hub of 0.0023 inches per inch (tan of 8 minutes), whichever governs.

ii. Remove yellow highlights and the note about the yellow highlights.

iii. Change 6 in shaft to 5 15/16 in.

iv. Further discussion is required on the eliminating shaft sizes 1 3/16, 1 11/16, 2 3/16, 2 11/16 in.

v. Discussion about using the B17C equation for sizing shafts in this standard and then use B106.1 for Engineered pulleys. No decision was made.

The subcommittee will continue working on this, no voting on proposal. This topic will continue to the 2022 CEMA Engineering Conference The committee should gather more pulley manufacturers input on removing some of the odd pulley shaft sizes prior to the next Engineering Conference.

f) **ANSI/CEMA Standard B105.1, Item 2.1. Standard Pulley Diameter Proposed Changes** – Updates

The proposal to clarify ANSI/CEMA Standard B105.1, Item 2.1. was approved.

Proposal: Standard welded steel pulley diameters are 8 (203), 10 (254), 12 (305), 14 (356), 16 (406), 18 (457), 20 (508), 24 (610), 30 (762), 36 (914), 42 (1067) and 48 (1219) inches (mm). All other sizes are considered special. These nominal diameters apply to straight and crown face pulleys and are for bare pulleys only; they do not include any increase brought about by lagging.

Regarding the additional information to be added in ANSI/CEMA Standards B105.1 and 501.1. Item 2.3 Face Widths Variations. More discussion needed before approving.

Add: The pulley face width should be selected so that the belt does not track off the face of the pulley during normal operation.

g) **Comparison of CEMA and ISO belt tracking allowances** – No Updates

Todd Hollingsworth, Raw Engineering & Design, LLC; started a subcommittee from the Bulk Handling Section to dive into this topic further and is surveying the other subcommittees.

5. New Business – No new business discussed.

6. Next Meeting – June 14, 2022, at La Playa Beach & Golf Resort, Naples, FL

7. The meeting was adjourned at 4:33 pm

Benjamin Brewer, Chair
Jeff Ellis, Vice-Chair

2021 CEMA VIRTUAL FALL ENGINEERING CONFERENCE - CONVEYOR PULLEY COMMITTEE MEETING - Roll Call

Attendance Count	Event Name	First Name	Last Name	Email	Title	Company	Phone	Country/Region
1	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Benjamin	Brewer	bbrewer@douglasmanufacturing.com	Chief Engineer	Douglas Manufacturing	1-12058841200	United States of America
2	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Chad	Brown	cbrown@dodgeindustrial.com	AE Manager	Dodge Industrial	1-8642526195	United States of America
3	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Brett	DeVries	bdevries@flexco.com	Engineer	Flexco	1-6162421636	United States of America
4	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Jeff	Ellis	jellis@ppi-global.com	Product Engineering Manager	Precision Pulley and Idler	1-6416212523	United States of America
5	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Naylu	Garces	naylu@cemanet.org	Engineering Manager	CEMA	1-2392608009	United States of America
6	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Joshua	Holcombe	joshua.holcombe@continental.com	Research and Development Engineer	Continental	1-6144200988	United States of America
7	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Andrew	Hustrulid	andrew.hustrulid@almex.com	Sr Vp global Services	Shaw Almex	1-305-450-1295	United States of America
8	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	David	Keech	dkeech@dodgeindustrial.com	Development Engineer	Dodge Industrial	1-8645532101	United States of America
9	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Kara	Leeds	karaleeds@dfandi.com	Engineering Supervisor	Design, Fabricators, & Integrators LLC	1-5137078749	United States of America
10	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Thomas	Looper	tlooper@dodgeindustrial.com	R&D Engineer - Power Transmission Components	Dodge Industrial	1-864-281-2493	United States of America
11	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Kimberly	MacLaren	kim@cemanet.org	Mgr. Marketing/Membership	CEMA	1-2392608406	United States of America
12	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Muhammed	Malik	muhammed@luffindustries.com	Mechanical Engineer	Luff Industries Ltd.	1-4032793555	Canada
13	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Jim	Masek	jmasek@ppi-global.com	Engineer	PPI	1-6417803135	United States of America
14	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Rodney	Mishmash	r.mishmash@interroll.com	Engineering Manager	Interroll Corp	1-7192503633	United States of America
15	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Paul	Schmidgall	p.schmidgall@superior-ind.com	Chief Engineer	Superior Industries	1-6514706441	United States of America
16	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Robin	Steven	robin.steven@continental.com	CS R&D BMH Chief Engineer Steel Cord & Pipe Belts	Continental	1-9375940685	United States of America
17	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Tamara	Thimmel	tamara@bryantpro.com	President	Bryant Products	1-2625103842	United States of America
18	2021 CEMA Fall Engineering Conference - Conveyor Pulley Committee	Akiko	Wakatsuki	akiko.wakatsuki@fennerdunlop.com	Sr Manager	Fenner Dunlop	1-4803342115	United States of America