See chapter "3. Results" of the article *"The reduction of rotating conveyor roller vibrations by the use of plastic brackets"*

pages 9-12

3.1. The plastic trestle of a fixed conveyor idler, the plastic casing of the conveyor roller

With regard to the scope of the paper, the measured graphs of the effective values of vibration velocities $v_{(*)RMS(fi)}$ [mm·s^{-1}] are not presented in paper "The reduction of rotating conveyor roller vibrations by the use of plastic brackets" for circumferential speeds v_r = 2.5 m·s^{-1} and v_r = 1.25 m·s^{-1} for conveyor rollers with a diameter of 89 mm.

These measured courses (conveyor rollers with plastic casing, whose axles are placed in plastic trestle, of the fixed conveyor idler) are presented in the appendix entitled:

- **conveyor roller with a diameter of 89 mm plastic casing at the measuring points A and B (Table 3); C and D (Table 4) for a fixed conveyor idler with plastic brackets – see address folder "Chapter 3.1", files: "Plast_plast_89mm_16,2Hz.pdf", "Plast_plast_89mm_32,4Hz.pdf" and "Plast_plast_89mm_50Hz.pdf"**

Table 4 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 89 mm plastic casing at the measuring points C and D for a fixed conveyor idler with plastic brackets.

Table 4. Roller axle placement – plastic trestle, measuring points C and D, roller casing - plastic, D_r = 89 mm.

f_i	n_r	v_r	Measuring point „C"			Measuring point „D"		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]		[mm·s^{-1}]			[mm·s^{-1}]	
50	825	3.84	0.87 [1]	0.25 [1]	0.13 [1]	0.40 [2]	0.14 [2]	0.93 [2]
32.4	535	2.49	1.61	0.20	0.12	1.03	0.12	0.65
16.2	267	1.25	0.12	0.12	0.08	0.26	0.06	0.23

[1] see Fig. 1(a), [2] see Fig. 1(b).

Fig. 1 shows the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in three mutually perpendicular axes of the coordinate system at circumferential speed v_r = 3.84 m·s^{-1} of the conveyor roller with a plastic casing diameter 89 mm. Vibration sensors have been placed at measuring points C and D.

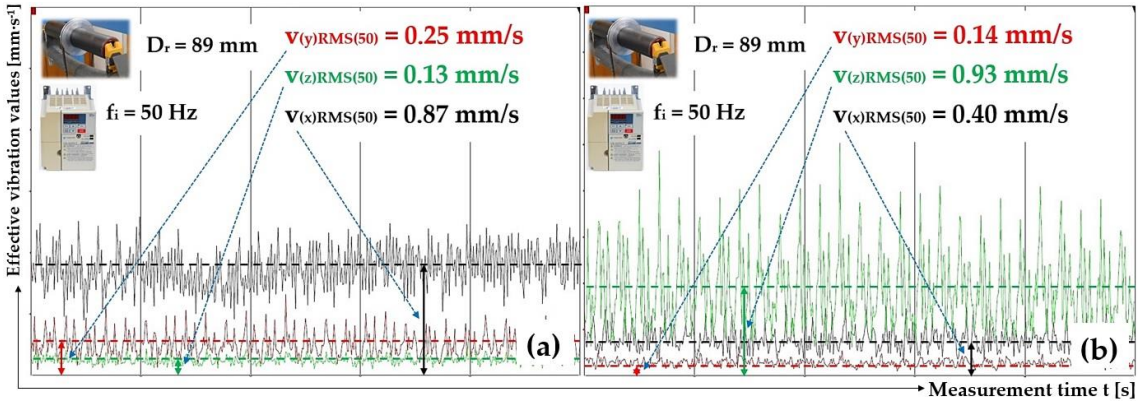

Figure 1. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ89 mm, the circumferential speed of the roller v_r = 3.84 m·s^{-1}, plastic trestle, **(a)** measuring point C, **(b)** measuring point D.

In paper "The reduction of rotating conveyor roller vibrations by the use of plastic brackets", the measured graphs of the effective values of vibration velocities $v_{(*)RMS(fi)}$ [mm·s^{-1}] are not presented for the circumferential speeds of the conveyor rollers (with diameter 108 mm and 133 mm.) other than v_r = 2.5 m·s^{-1}. As mentioned above, if you are interested in these measured vibration waveforms, it is necessary to ask the authors of this article via e-mail for documentation of the measured vibration records of the conveyer rollers taken at various circumferential speeds v_r [m·s^{-1}].

These measured courses are presented in the appendix entitled:

- **conveyor roller with a diameter of 108 mm plastic casing at the measuring points A and B (Table 5); C and D (Table 6) for a fixed conveyor idler with plastic brackets – see address folder "Chapter 3.1", files: "Plast_plast_108mm_13,4Hz.pdf", "Plastic_plastic_108mm_26,4Hz.pdf" and "Plastic_plastic_108mm_50Hz.pdf"**
- **conveyor roller with a diameter of 133 mm plastic casing at the measuring points A and B (Table 7); C and D (Table 8) for a fixed conveyor idler with plastic brackets – see address folder "Chapter 3.1", files: "Plast_plast_108mm_10,9Hz.pdf", "Plastic_plastic_133mm_21,8Hz.pdf", Plastic_plastic_133mm_33,7Hz.pdf" and "Plastic_plastic_108mm_50Hz.pdf".**

Table 5 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 89 mm plastic casing at the measuring points C and D for a fixed conveyor idler with plastic brackets.

Table 5. Roller axle placement – plastic trestle, measuring points A and B, roller casing - plastic, D_r = 108 mm.

f_i	n_r	v_r	Measuring point "A"			Measuring point "B"		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	824	4.66	0.92	0.26	0.25	0.46	0.22	0.70
41.3	681	3.85	0.88	0.36	0.22	0.53	0.29	1.03
26.8	442	2.5	0.60 [1]	0.14 [1]	0.13 [1]	0.25 [2]	0.10 [2]	0.34 [2]
13.4	220	1.24	0.09	0.08	0.06	0.08	0.05	0.17

[1] see Fig. 2(a), [2] see Fig. 2(b).

Fig. 2 shows the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in three mutually perpendicular axes of the coordinate system at circumferential speed v_r = 2.5 m·s^{-1} of the conveyor roller with a

plastic casing diameter 108 mm. Vibration sensors have been placed at measuring points A and B.

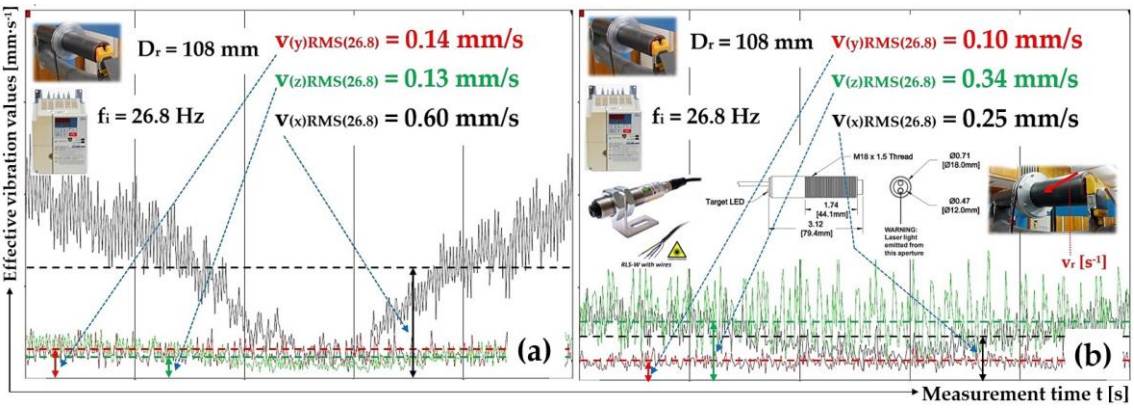

Figure 2. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ108 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, plastic trestle, **(a)** measuring point A, **(b)** measuring point B.

Table 6. Roller axle placement – plastic trestle, measuring points C and D, roller casing - plastic, D_r = 108 mm.

f_i	n_r	v_r	Measuring point „C"			Measuring point „D		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	824	4.66	0.55	0.23	0.11	0.36	0.21	0.72
41.3	681	3.85	0.52	0.33	0.09	0.41	0.26	0.96
26.8	442	2.5	0.56 [1]	0.12 [1]	0.07 [1]	0.21 [2]	0.09 [2]	0.34 [2]
13.4	220	1.24	0.11	0.06	0.06	0.09	0.10	0.15

[1] see Fig. 3(a), [2] see Fig. 3(b).

Fig. 3 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a plastic casing of 108 mm diameter.

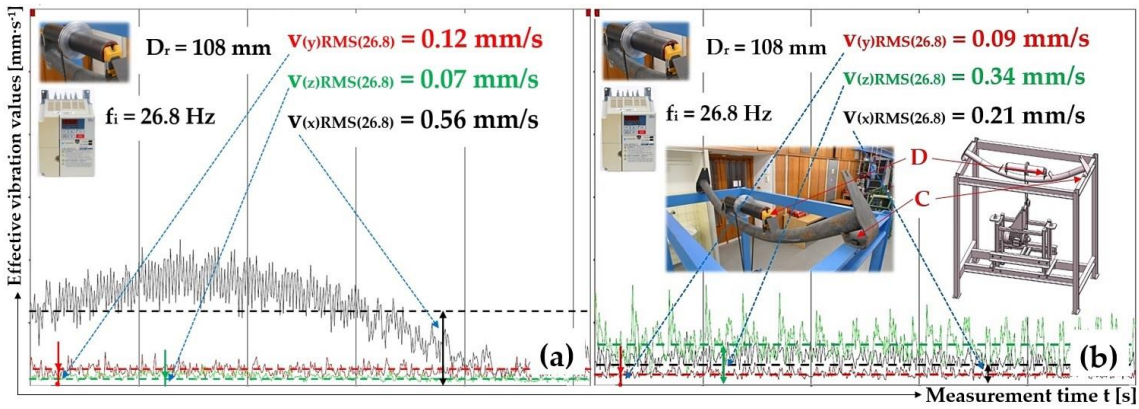

Figure 3. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ108 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, plastic trestle, **(a)** measuring point C, **(b)** measuring point D.

Table 7 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the

vibration measurements of a conveyor roller with a diameter of 133 mm plastic casing at the measuring points A and B for a fixed conveyor idler with plastic brackets.

Table 7. Roller axle placement – plastic trestle, measuring points A and B, roller casing - plastic, D_r = 133 mm.

f_i	n_r	v_r	Measuring point „A“			Measuring point „B“		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	824	5.74	0.70	0.37	0.21	0.51	0.29	0.89
33.7	555	3.86	0.46	0.36	0.15	0.50	0.28	0.85
21.8	360	2.51	0.20 [1]	0.21 [1]	0.09 [1]	0.24 [2]	0.13 [2]	0.58 [2]
10.9	179	1.25	0.07	0.11	0.06	0.10	0.08	0.18

[1] see Fig. 4(a), [2] see Fig. 4(b).

Fig. 4 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the “x“, “y“ and “z“ axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a plastic casing of 133 mm diameter.

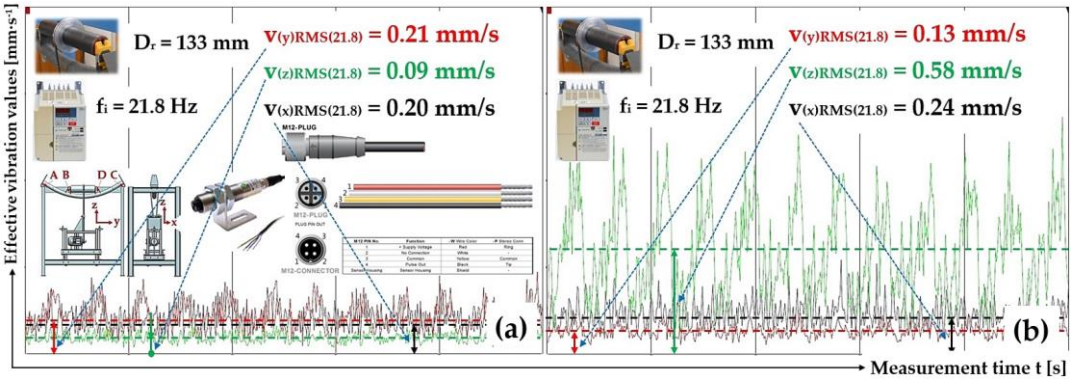

Figure 4. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ133 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, plastic trestle, **(a)** measuring point A, **(b)** measuring point B.

Table 8 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 133 mm plastic casing at the measuring points C and D for a fixed conveyor idler with plastic brackets.

Table 8. Roller axle placement – plastic trestle, measuring points C and D, roller casing - plastic, D_r = 133 mm.

f_i	n_r	v_r	Measuring point „C“			Measuring point „D“		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	825	5.75	0.46	0.46	0.19	0.66	0.43	1.11
33.7	555	3.86	0.73	0.35	0.11	0.55	0.34	0.88
21.8	360	2.50	0.18 [1]	0.20 [1]	0.09 [1]	0.27 [2]	0.13 [2]	0.68 [2]
10.9	179	1.25	0.08	0.09	0.06	0.10	0.08	0.19

[1] see Fig. 5(a), [2] see Fig. 5(b).

Fig. 5 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a plastic casing of 133 mm diameter.

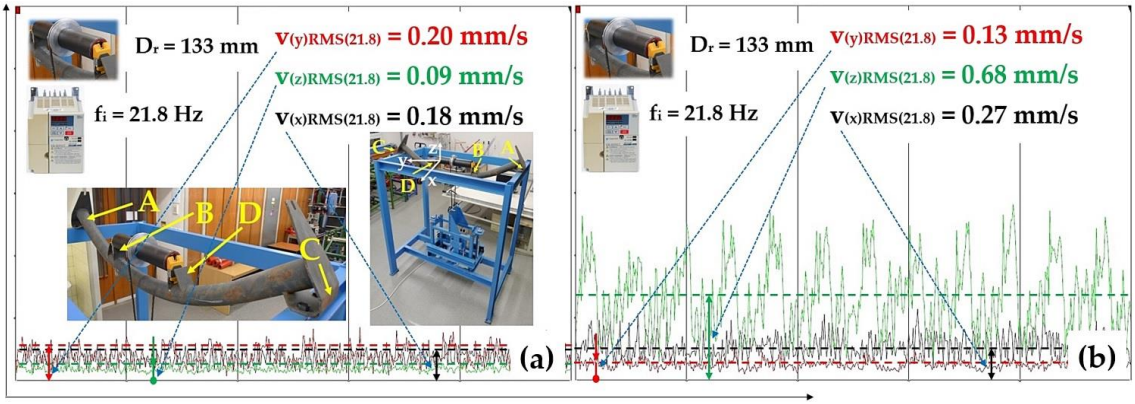

Figure 5. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ133 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, plastic trestle, **(a)** measuring point C, **(b)** measuring point D.

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3.2. The plastic trestle of a fixed conveyor idler, the steel casing of the conveyor roller

These measured courses (conveyor rollers with steel casing, whose axles are placed in plastic trestle, of the fixed conveyor idler) are presented in the appendix entitled:

- **conveyor roller with a diameter of 89 mm steel casing at the measuring points A and B (Table 9); C and D (Table 10) for a fixed conveyor idler with plastic brackets – see address folder "Chapter 3.2", files: "kov_plast_89mm_10sec".**

Table 10 displays the effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}] that were read from the DEWESoft X measurement software provided for the vibration measurements of a steel casing roller with a diameter of 89 mm. These were taken in measuring points A and B of the conveyor idler with plastic brackets on our laboratory device.

Table 10 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 89 mm steel casing at the measuring points C and D for a fixed conveyor idler with plastic brackets.

Table 10. Roller axles placement – plastic trestle, measuring points C and D, roller casing - steel, D_r = 89 mm.

f_i	n_r	v_r	Measuring point "C"			Measuring point „D"		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	823	3.84	1.09 [1]	0.18 [1]	0.26 [1]	0.43 [2]	0.28 [2]	0.46 [2]
32.3	533	2.48	0.81	0.51	0.22	0.70	0.52	0.52
16.12	266	1.24	0.17	0.10	0.09	0.11	0.07	0.18

[1] see Fig. 6(a), [2] see Fig. 6(b).

Fig. 6 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 3.84 m·s^{-1} for a conveyor roller with a steel casing of 89 mm diameter. Vibration sensors have been placed at measuring points C and D.

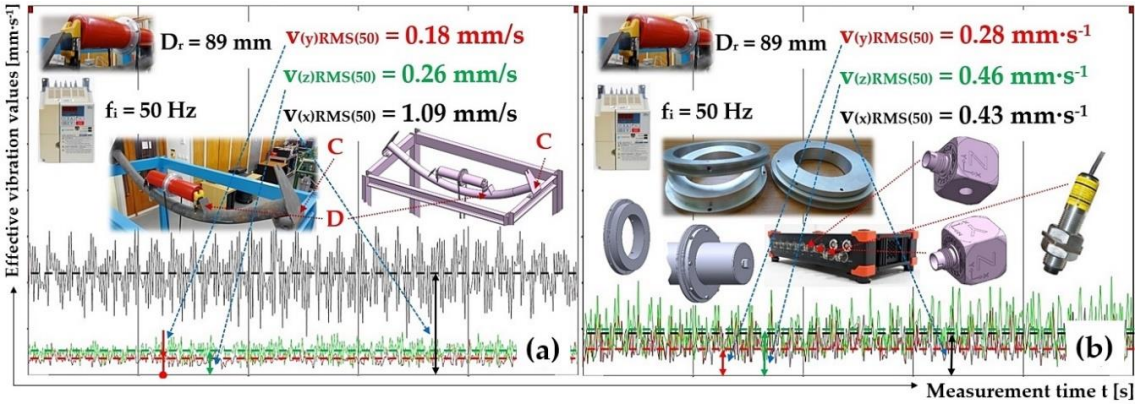

Figure 6. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], stell roller ϕ89 mm, the circumferential speed of the roller v_r = 3.84 m·s^{-1}, plastic trestle, **(a)** measuring point C, **(b)** measuring point D.

In paper "The reduction of rotating conveyor roller vibrations by the use of plastic brackets", the measured graphs of the effective values of vibration velocities $v_{(*)RMS(fi)}$ [mm·s^{-1}] are not presented for the circumferential speeds of the conveyor rollers (with diameter 108 mm and 133 mm.) other than v_r = 2.5 m·s^{-1}. As mentioned above, if you are interested in these measured vibration waveforms, it is necessary to ask the authors of this article via e-mail for documentation of the measured vibration records of the conveyer rollers taken at various circumferential speeds v_r [m·s^{-1}].

These measured courses are presented in the appendix entitled:

- **conveyor roller with a diameter of 108 mm plastic casing at the measuring points A and B (Table 11); C and D (Table 12) for a fixed conveyor idler with plastic brackets – see address folder "Chapter 3.2", files: "kov_plast_108mm_10sec",**
- **conveyor roller with a diameter of 133 mm plastic casing at the measuring points A and B (Table 13); C and D (Table 14) for a fixed conveyor idler with plastic brackets – see address folder "Chapter 3.2", files: "kov_plast_133mm_10sec"**

Table 11 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 108 mm steel casing at the measuring points A and B for a fixed conveyor idler with plastic brackets.

Table 11. Roller axles placement – plastic trestle, measuring points A and B, roller casing - steel, D_r = 108 mm.

f_i	n_r	v_r	Measuring point "A"			Measuring point "B"		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	826	4.67	0.75	0.24	0.15	0.39	0.19	0.48
41.4	682	3.86	0.36	0.31	0.12	0.32	0.18	0.56
26.84	442	2.5	0.60 [1]	0.11 [1]	0.07 [1]	0.20 [2]	0.12 [2]	0.32 [2]
13.36	220	1.25	0.12	0.08	0.08	0.10	0.08	0.14

[1] see Fig. 7(a), [2] see Fig. 7(b).

Fig. 7 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a steel casing of 108 mm diameter. Vibration sensors have been placed at measuring points A and B.

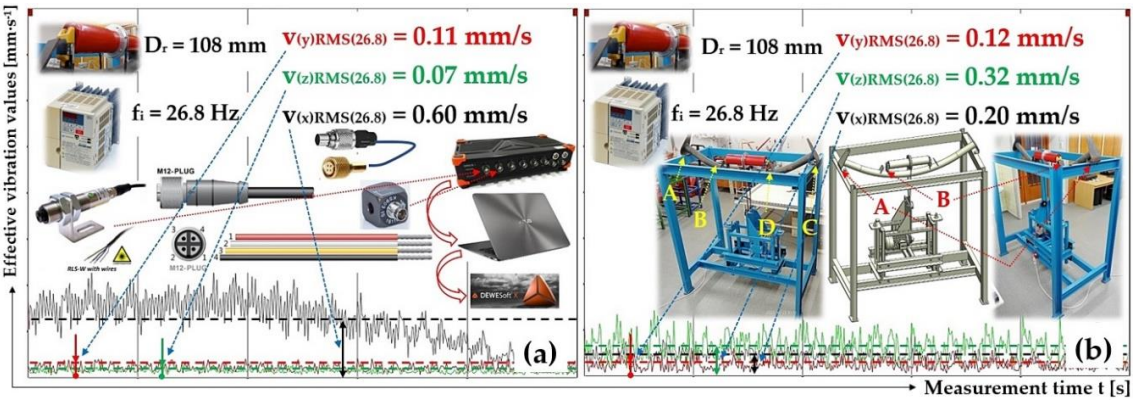

Figure 7. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], stell roller ϕ108 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, plastic trestle, **(a)** measuring point A, **(b)** measuring point B.

Table 12 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 108 mm steel casing at the measuring points C and D for a fixed conveyor idler with plastic brackets.

Table 12. Roller axles placement – plastic trestle, measuring points C and D, roller casing - steel, D_r = 108 mm.

f_i	n_r	v_r	Measuring point "C"			Measuring point "D"		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	826	4.67	1.40	0.20	0.31	0.38	0.19	0.44
41.34	681	3.85	1.27	0.25	0.28	0.61	0.19	0.52
26.85	443	2.5	0.67 [1]	0.14 [1]	0.15 [1]	0.26 [2]	0.12 [2]	0.30 [2]
13.37	220	1.25	0.11	0.12	0.09	0.08	0.07	0.13

[1] see Fig. 8(a), [2] see Fig. 8(b).

Fig. 8 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a steel casing of 108 mm diameter. Vibration sensors have been placed at measuring points C and D.

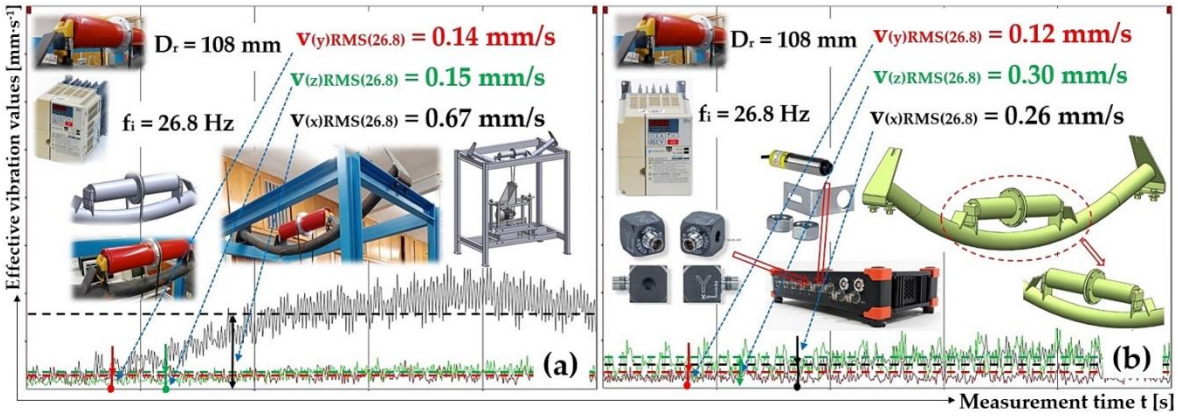

Figure 8. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], stell roller ϕ108 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, plastic trestle, **(a)** measuring point C, **(b)** measuring point D.

Table 13 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 133 mm steel casing at the measuring points A and B for a fixed conveyor idler with plastic brackets.

Table 13. Roller axles placement – plastic trestle, measuring points A and B, roller casing - steel, D_r = 133 mm.

f_i	n_r	v_r	Measuring point "A"			Measuring point "B"		
			V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)	V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	825	5.75	0.47	0.24	0.11	0.35	0.24	0.55
33.64	554	3.86	0.64	0.17	0.10	0.48	0.18	0.37
21.92	361	2.52	0.23 [1]	0.12 [1]	0.07 [1]	0.21 [2]	0.13 [2]	0.26 [2]
10.89	179	1.25	0.19	0.09	0.07	0.14	0.09	0.16

[1] see Fig. 9(a), [2] see Fig. 9(b).

Fig. 9 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a steel casing of 133 mm diameter. Vibration sensors have been placed at measuring points A and B.

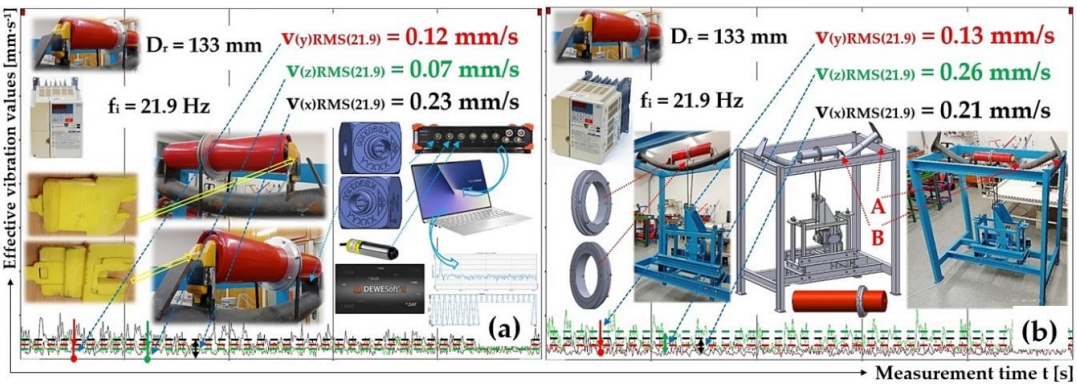

Figure 9. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], stell roller ϕ133 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, plastic trestle, **(a)** measuring point A, **(b)** measuring point B.

Table 11 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 133 mm steel casing at the measuring points C and D for a fixed conveyor idler with plastic brackets.

Table 14. Roller axles placement – plastic trestle, measuring points C and D, roller casing - steel, D_r = 133 mm.

f_i	n_r	v_r	Measuring point "C"			Measuring point "D"		
			V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)	V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	825	5.75	0.49	0.24	0.18	0.27	0.19	0.48
33.67	555	3.87	0.32	0.18	0.17	0.30	0.14	0.31
21.87	361	2.51	0.21 [1]	0.11 [1]	0.14 [1]	0.13 [2]	0.09 [2]	0.23 [2]
10.89	179	1.25	0.11	0.07	0.08	0.08	0.06	0.14

[1] see Fig. 10(a), [2] see Fig. 10(b).

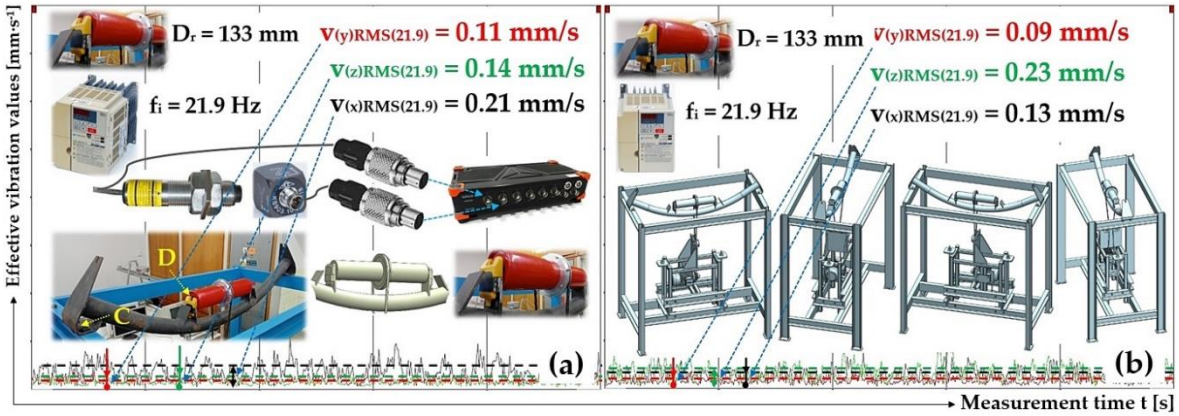

Figure 10. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], stell roller ϕ133 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, plastic trestle, **(a)** measuring point C, **(b)** measuring point D.

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3.3. The steel trestle of the fixed conveyor idler, the plastic casing of the conveyor roller

These measured courses (conveyor rollers with plastic casing, whose axles are placed in steel trestle, of the fixed conveyor idler) are presented in the appendix entitled:

- **conveyor roller with a diameter of 89 mm steel casing at the measuring points A and B (Table 15); C and D (Table 16) for a fixed conveyor idler with plastic brackets – see address folder "Chapter 3.3", files: "Plast_kov_89mm_10s.pdf".**

Table 16 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 89 mm plastic casing at the measuring points C and D for a fixed conveyor idler with steel brackets.

Table 16. Roller axles placement – steel trestle, measuring points C and D roller casing - plastic, D_r = 89 mm.

f_i	n_r	v_r	Measuring point „C“			Measuring point „D“		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	826	3.85	0.28 [1]	0.37 [1]	0.15 [1]	0.77 [2]	0.27 [2]	1.04 [2]
32.35	533	2.48	0.26	0.28	0.12	0.89	0.17	0.79
16.15	266	1.24	0.11	0.17	0.13	0.31	0.14	0.33

[1] see Fig. 11(a), [2] see Fig. 11(b).

Fig. 11 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the “x“, “y“ and “z“ axes of the selected coordinate system at circumferential speed v_r = 3.85 m·s^{-1} for a conveyor roller with a plastic casing of 89 mm diameter. Vibration sensors have been placed at measuring points C and D.

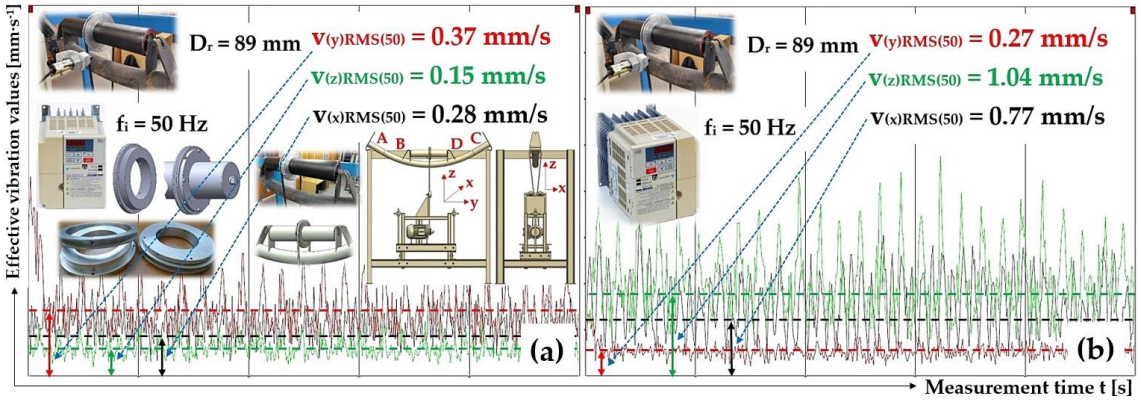

Figure 11. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ89 mm, the circumferential speed of the roller v_r = 3.85 m·s^{-1}, steel trestle, **(a)** measuring point C, **(b)** measuring point D.

In paper “The reduction of rotating conveyor roller vibrations by the use of plastic brackets”, the measured graphs of the effective values of vibration velocities $v_{(*)RMS(fi)}$ [mm·s^{-1}] are not presented for the circumferential speeds of the conveyor rollers (with diameter 108 mm and 133 mm.) other than v_r = 2.5 m·s^{-1}. As mentioned above, if you are interested in these measured vibration waveforms, it is necessary to ask the authors of this article via e-mail for documentation of the measured vibration records of the conveyer rollers taken at various circumferential speeds v_r [m·s^{-1}].

These measured courses are presented in the appendix entitled:

- **conveyor roller with a diameter of 108 mm plastic casing at the measuring points A and B (Table 17); C and D (Table 18) for a fixed conveyor idler with plastic brackets – see address folder “Chapter 3.3”, files: “Plast_kov_108mm_10s.pdf”,**
- **conveyor roller with a diameter of 133 mm plastic casing at the measuring points A and B (Table 19); C and D (Table 20) for a fixed conveyor idler with plastic brackets – see address folder “Chapter 3.3”, files: “Plast_kov_133mm_10s.pdf.**

Table 17 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 108 mm plastic casing at the measuring points A and B for a fixed conveyor idler with steel brackets.

Table 17. Roller axles placement – steel trestle, measuring points A and B roller casing - plastic, D_r = 108 mm.

f_i	n_r	v_r	Measuring point „A“			Measuring point „B“		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	825	4.66	0.44	0.53	0.36	0.66	0.32	2.16
41.24	680	3.84	0.28	0.41	0.22	0.76	0.32	1.33
26.73	441	2.50	0.33 [1]	0.26 [1]	0.14 [1]	0.78 [2]	0.20 [2]	0.81 [2]
13.34	220	1.24	0.08	0.13	0.06	0.17	0.10	0.32

[1] see Fig. 12(a), [2] see Fig. 12(b).

Fig. 12 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a plastic casing of 108 mm diameter. Vibration sensors have been placed at measuring points A and B.

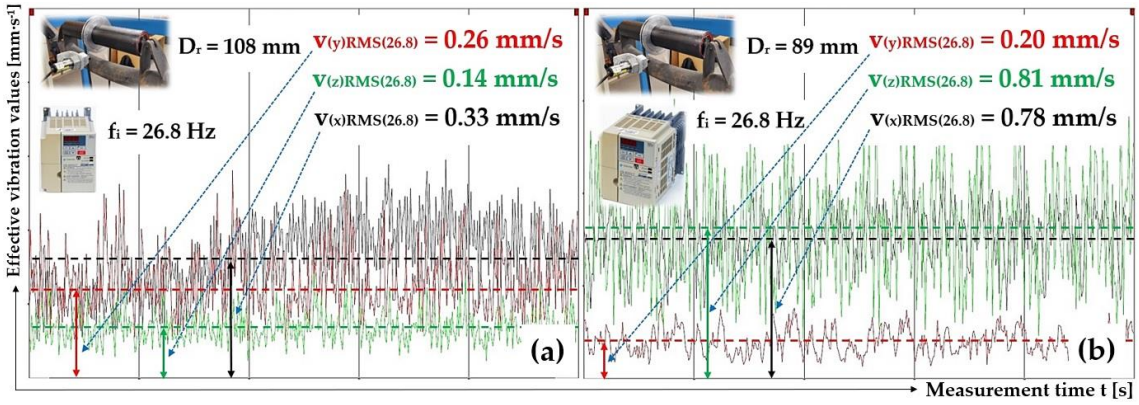

Figure 12. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ108 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, steel trestle, **(a)** measuring point A, **(b)** measuring point B.

Table 18 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 108 mm plastic casing at the measuring points C and D for a fixed conveyor idler with steel brackets.

Table 18. Roller axles placement – steel trestle, measuring points C and D roller casing - plastic, D_r = 108 mm.

f_i	n_r	v_r	Measuring point „C“			Measuring point „D“		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	823	4.65	0.58	0.86	0.23	0.61	0.45	2.54
41.29	681	3.85	0.66	0.48	0.18	0.76	0.40	1.30
26.68	440	2.49	0.35 [1]	0.24 [1]	0.11 [1]	0.63 [1]	0.18 [1]	0.64 [1]
13.35	220	1.24	0.08	0.13	0.06	0.14	0.09	0.32

[1] see Fig. 13(a), [2] see Fig. 13(b).

Fig. 13 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a plastic casing of 108 mm diameter. Vibration sensors have been placed at measuring points C and D.

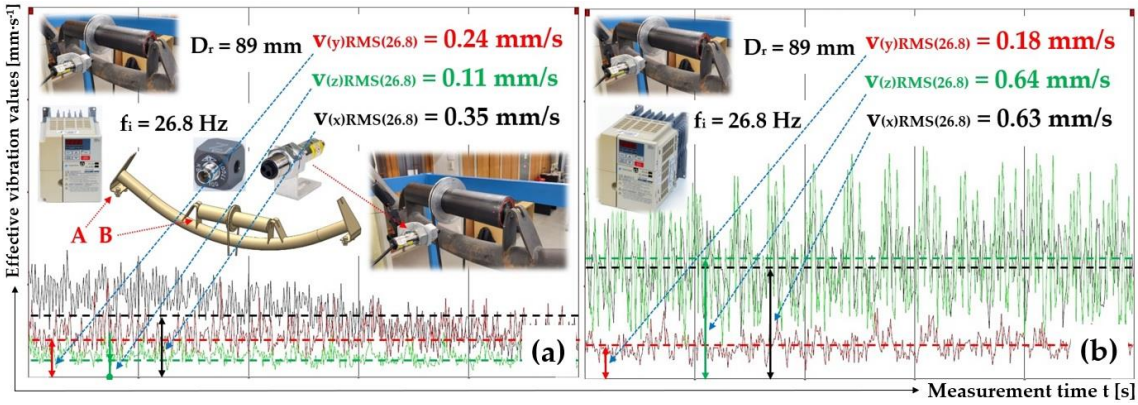

Figure 13. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ108 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, steel trestle, **(a)** measuring point C, **(b)** measuring point D.

Table 16 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 133 mm plastic casing at the measuring points A and B for a fixed conveyor idler with steel brackets.

Table 19. Roller axles placement – steel trestle, measuring points A and B roller casing - plastic, D_r = 133 mm.

f_i	n_r	v_r	Measuring point „A"			Measuring point „B"		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	825	5.75	0.44	0.66	0.41	0.76	0.41	2.31
33.48	552	3.84	0.46	0.43	0.20	0.57	0.38	0.97
21.83	360	2.51	0.13 [1]	0.25 [1]	0.14 [1]	0.35 [2]	0.21 [2]	0.61 [2]
10.84	179	1.24	0.08	0.12	0.09	0.16	0.09	0.20

[1] see Fig. 14(a), [2] see Fig. 14(b).

Fig. 14 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a plastic casing of 133 mm diameter. Vibration sensors have been placed at measuring points A and B.

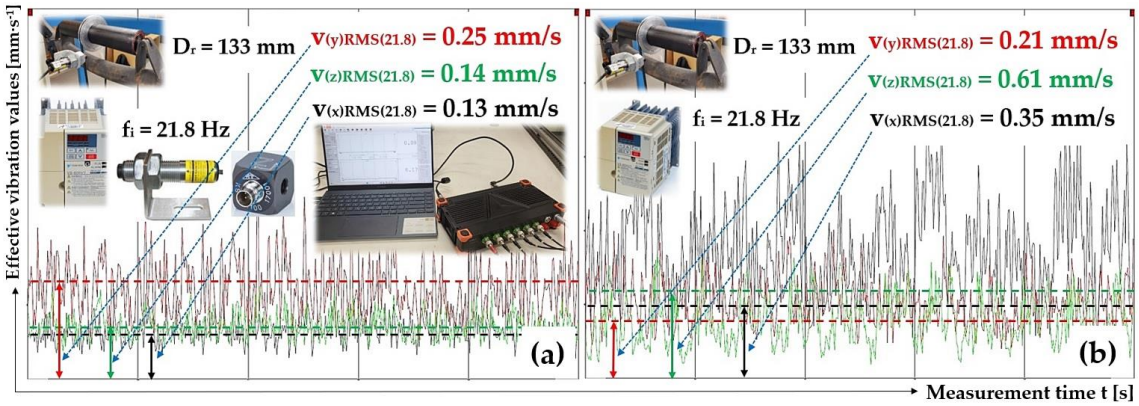

Figure 14. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ133 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, steel trestle, **(a)** measuring point A, **(b)** measuring point B.

Table 17 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 133 mm plastic casing at the measuring points A and B for a fixed conveyor idler with steel brackets.

Table 20. Roller axles placement – steel trestle, measuring points C and D roller casing - plastic, D_r = 133 mm.

f_i	n_r	v_r	Measuring point „C“			Measuring point „D“		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	824	5.74	0.69	0.68	0.23	0.95	0.39	1.94
33.56	553	3.85	0.49	0.38	0.16	0.63	0.27	0.92
21.84	360	2.51	0.18 [1]	0.23 [1]	0.12 [1]	0.38 [2]	0.18 [2]	0.57 [2]
10.84	179	1.24	0.11	0.15	0.09	0.21	0.10	0.19

[1] see Fig. 15(a), [2] see Fig. 15(b).

Fig. 15 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the “x“, “y“ and “z“ axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a plastic casing of 133 mm diameter. Vibration sensors have been placed at measuring points C and D.

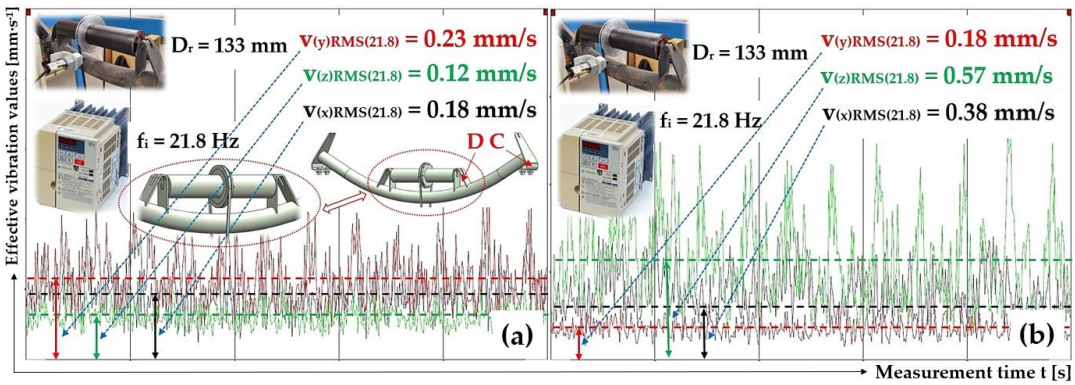

Figure 15. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], plastic roller ϕ133 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, steel trestle, **(a)** measuring point C, **(b)** measuring point D.

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3.4. The steel trestle of the fixed conveyor idler, the steel casing of the conveyor roller

- **conveyor roller with a diameter of 89 mm steel casing at the measuring points A and B (Table 21); C and D (Table 22) for a fixed conveyor idler with steel brackets – see address folder "Chapter 3.4", files: "kov_kov_89mm_10sec".**

Table 22 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 89 mm steel casing at the measuring points A and B for a fixed conveyor idler with steel brackets.

Table 22. Roller axles placement – steel trestle, measuring points C and D roller casing - steel, D_r = 89 mm.

f_i	n_r	v_r	Measuring point „C"			Measuring point „D"		
			V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)	V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	826	3.85	0.92 [1]	0.36 [1]	0.26 [1]	0.79 [2]	0.18 [2]	1.15 [2]
32.4	534	2.49	0.92	0.57	0.13	0.96	0.57	0.80
16.17	267	1.24	0.09	0.11	0.07	0.21	0.07	0.24

[1] see Fig. 16(a), [2] see Fig. 16(b).

Fig. 16 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 3.84 m·s^{-1} for a conveyor roller with a steel casing of 89 mm diameter. Vibration sensors have been placed at measuring points C and D.

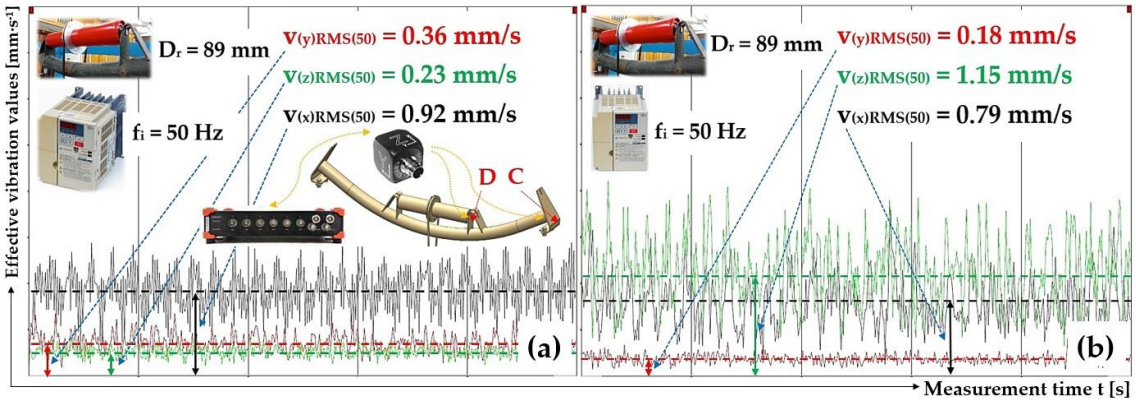

Figure 16. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], steel roller ϕ89 mm, the circumferential speed of the roller v_r = 3.85 m·s^{-1}, steel trestle, **(a)** measuring point C, **(b)** measuring point D.

In paper "The reduction of rotating conveyor roller vibrations by the use of plastic brackets", the measured graphs of the effective values of vibration velocities $v_{(*)RMS(fi)}$ [mm·s^{-1}] are not presented for the circumferential speeds of the conveyor rollers (with diameter 108 mm and 133 mm.) other than v_r = 2.5 m·s^{-1}. As mentioned above, if you are interested in these measured vibration waveforms, it is necessary to ask the authors of this article via e-mail for documentation of the measured vibration records of the conveyer rollers taken at various circumferential speeds v_r [m·s^{-1}].

These measured courses are presented in the appendix entitled:

- **conveyor roller with a diameter of 108 mm plastic casing at the measuring points A and B (Table 23); C and D (Table 24) for a fixed conveyor idler with plastic brackets – see address folder "Chapter 3.4", files: "Kov_kov_108mm_10s.pdf",**
- **conveyor roller with a diameter of 133 mm plastic casing at the measuring points A and B (Table 25); C and D (Table 26) for a fixed conveyor idler with plastic brackets – see address folder "Chapter 3.4", files: "Kov_kov_133mm_10s.pdf".**

Table 23 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 108 mm steel casing at the measuring points A and B for a fixed conveyor idler with steel brackets.

Table 23. Roller axles placement – steel trestle, measuring points A and B roller casing - steel, D_r = 108 mm.

f_i	n_r	v_r	Measuring point „A"			Measuring point „B"		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	823	4.65	0.61	0.35	0.15	0.83	0.24	0.94
41.25	680	3.85	0.35	0.36	0.11	0.90	0.24	1.12
26.73	441	2.49	0.38 [1]	0.16 [1]	0.09 [1]	0.44 [2]	0.10 [2]	0.50 [2]
13.30	219	1.24	0.06	0.10	0.05	0.14	0.08	0.25

[1] see Fig. 17(a), [2] see Fig. 17(b).

Fig. 17 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a steel casing of 108 mm diameter. Vibration sensors have been placed at measuring points A and B.

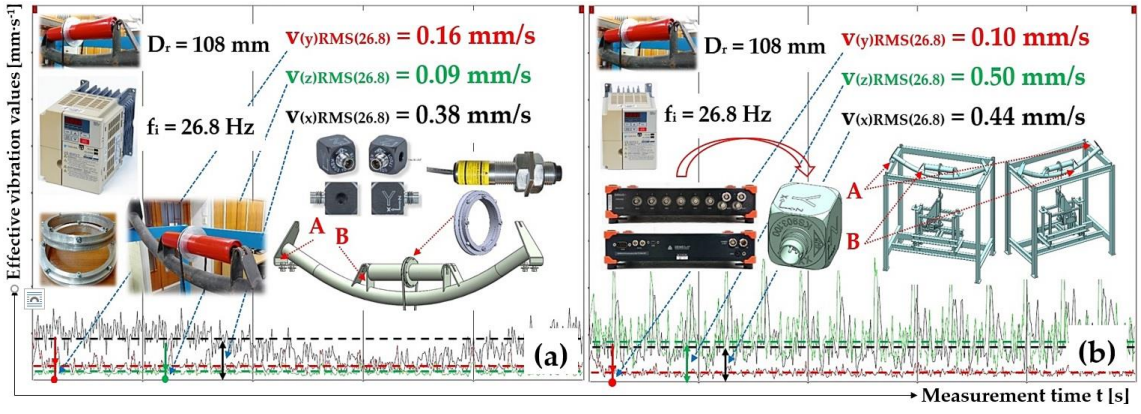

Figure 17. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], steel roller ϕ108 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, steel trestle, **(a)** measuring point A, **(b)** measuring point B.

Table 24 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 108 mm steel casing at the measuring points C and D for a fixed conveyor idler with steel brackets.

Table 24. Roller axles placement – steel trestle, measuring points C and D roller casing - steel, D_r = 108 mm.

f_i	n_r	v_r	Measuring point „C“			Measuring point „D“		
			V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)	V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	823	4.66	1.14	0.30	0.28	0.99	0.24	0.84
41.20	679	3.84	1.19	0.40	0.33	1.03	0.33	1.10
26.73	441	2.49	0.46 [1]	0.20 [1]	0.14 [1]	0.52 [2]	0.12 [2]	0.59 [2]
13.32	220	1.24	0.07	0.10	0.07	0.13	0.07	0.21

[1] see Fig. 18(a), [2] see Fig. 18(b).

Fig. 18 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the “x“, “y“ and “z“ axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a steel casing of 108 mm diameter. Vibration sensors have been placed at measuring points C and D.

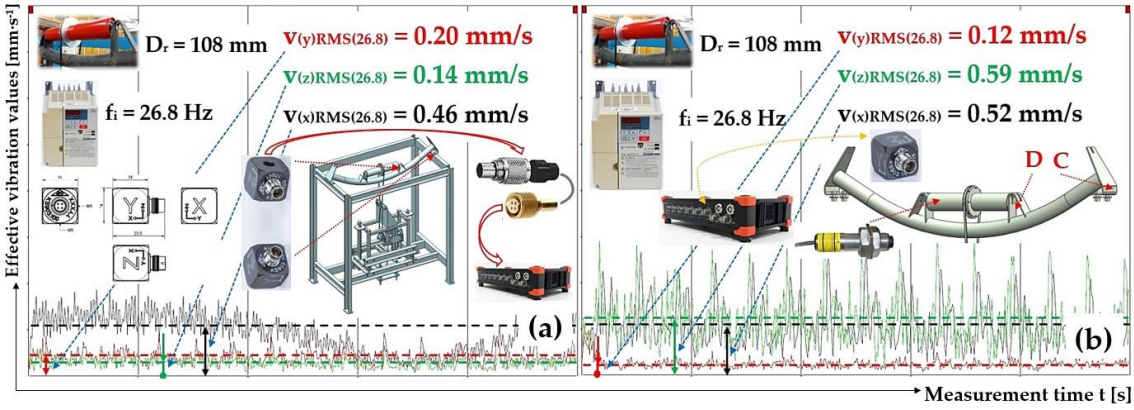

Figure 18. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], steel roller ϕ108 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, steel trestle, **(a)** measuring point C, **(b)** measuring point D.

Table 25 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 133 mm steel casing at the measuring points A and B for a fixed conveyor idler with steel brackets.

Table 25. Roller axles placement – steel trestle, measuring points A and B roller casing - steel, D_r = 133 mm.

f_i	n_r	v_r	Measuring point „A“			Measuring point „B“		
			V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)	V(x)RMS(fi)	V(y)RMS(fi)	V(z)RMS(fi)
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	826	5.75	0.29	0.29	0.13	0.46	0.18	0.87
33.66	555	3.86	0.43	0.21	0.11	0.49	0.14	0.68
21.89	361	2.51	0.14 [1]	0.13 [1]	0.08 [1]	0.26 [2]	0.09 [2]	0.39 [2]
10.87	179	1.25	0.10	0.06	0.11	0.14	0.09	0.18

[1] see Fig. 19(a), [2] see Fig. 19(b).

Fig. 19 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a steel casing of 133 mm diameter. Vibration sensors have been placed at measuring points A and B.

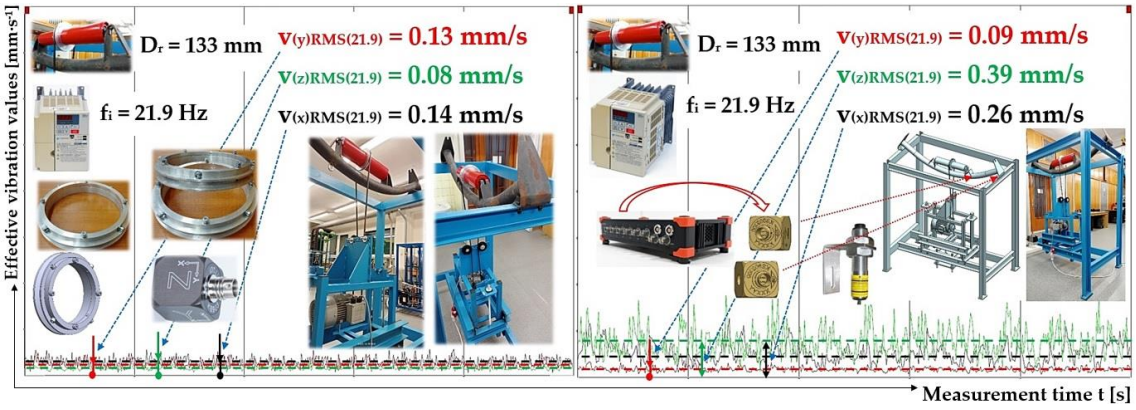

Figure 19. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], steel roller ϕ133 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, steel trestle, **(a)** measuring point A, **(b)** measuring point B.

Table 26 indicates effective vibration velocity values $v_{(*)RMS(fi)}$ [mm·s^{-1}], which have been read from the DEWESoft X measurement software, for the vibration measurements of a conveyor roller with a diameter of 133 mm steel casing at the measuring points A and B for a fixed conveyor idler with steel brackets.

Table 26. Roller axles placement – steel trestle, measuring points C and D roller casing - steel, D_r = 133 mm.

f_i	n_r	v_r	Measuring point „C"			Measuring point „D"		
			$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$	$V_{(x)RMS(fi)}$	$V_{(y)RMS(fi)}$	$V_{(z)RMS(fi)}$
[Hz]	[min^{-1}]	[m·s^{-1}]	[mm·s^{-1}]					
50	824	5.74	0.33	0.30	0.17	0.42	0.20	0.83
33.59	554	3.86	0.26	0.21	0.12	0.33	0.14	0.59
21.87	361	2.51	0.23 [1]	0.15 [1]	0.10 [1]	0.23 [2]	0.10 [2]	0.40 [2]
10.87	179	1.25	0.10	0.14	0.09	0.11	0.09	0.18

[1] see Fig. 23(a), [2] see Fig. 23(b).

Fig. 20 indicates the measured effective values of the vibration speed $v_{(*)RMS(50)}$ [mm·s^{-1}] in the "x", "y" and "z" axes of the selected coordinate system at circumferential speed v_r = 2.5 m·s^{-1} for a conveyor roller with a steel casing of 133 mm diameter. Vibration sensors have been placed at measuring points C and D.

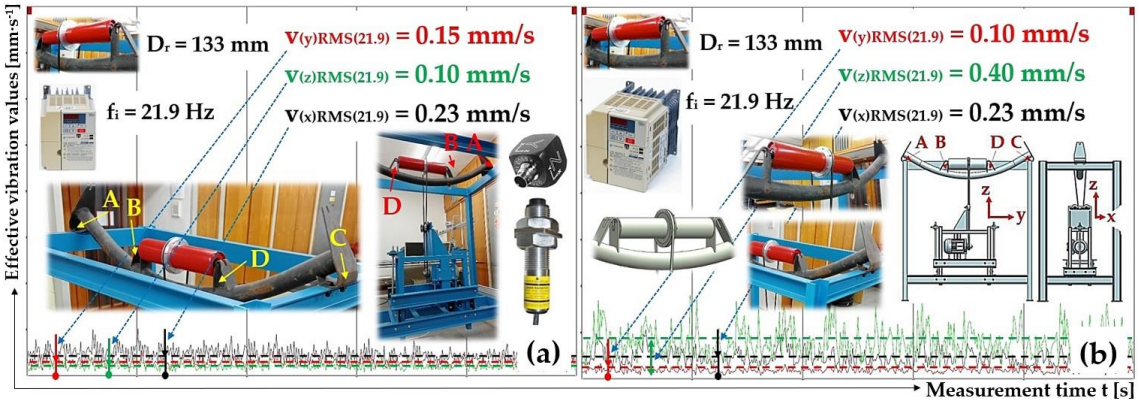

Figure 20. Effective vibration values $v_{(*)RMS(fi)}$ [mm·s^{-1}], steel roller ϕ133 mm, the circumferential speed of the roller v_r = 2.5 m·s^{-1}, steel trestle, **(a)** measuring point C, **(b)** measuring point D.