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CAPABILITY AND QUALITY OF THE VIBRATORY ROLLERS

asist. drd. ing. Valentin TONT
s.l. dr. ing. Stefania IONESCU
Universitatea " Dunarea de jos" Galati

ABSTRACT

In this paper are presented the global criterions of performance and the classification of vibratory rollers about these criterions.

Capability of the vibratory rollers is the capacity of these to achieve the function for that are implemented.
Capability is dependent by the construction and functional caracteristics of the vibratory rollers, then: diameter and breadth of roller, vibrating force, amplitude and frecquence of vibrations, first speed, traction force, etc.
It was defined the next global criterions of performance:

- **power criterion:**

$$i_N = \frac{N}{M}, \left[\frac{kW}{daN}\right],$$

defind with ratio by the power and weight of machine;

- **stating linear load criterion:**

$$p = \frac{Q}{B \cdot D}, \left[\frac{daN}{mm^2}\right],$$

defined with ratio by weight of roller and product of the diameter and breadth of roller;

- **vibrating force criterion:**

$$R_w = \frac{F_{cf}}{Q},$$

defined with ratio by vibrating force and weight of roller;

- **mobility criterion:**

$$i_v = \frac{v}{M}, \left[\frac{km/h}{daN}\right],$$

defined with ratio by travel speed and weight of machine;

- **criterion:**

$$i_{T1} = \frac{F_T \cdot v}{G}, \left[\frac{kW}{daN}\right],$$

defined with ratio of power by travel speed and weight of machine;

- **criterion:**

$$i_T = \frac{F_T}{G},$$

defined with ratio of traction force and weight of machine.
In concordance with these criterions, the vibrating rollers are classified thus (look the tabel and the diagrams of the criterions):

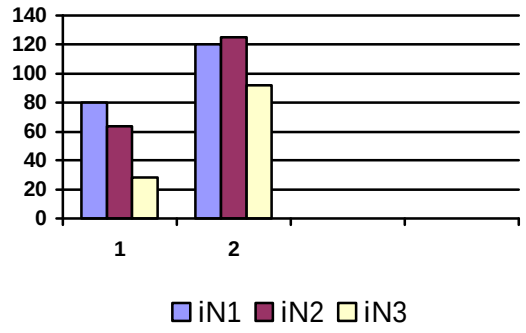

Figure. 1

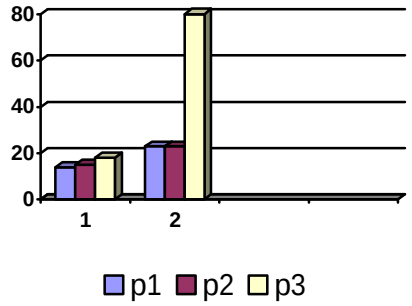

Figure. 2

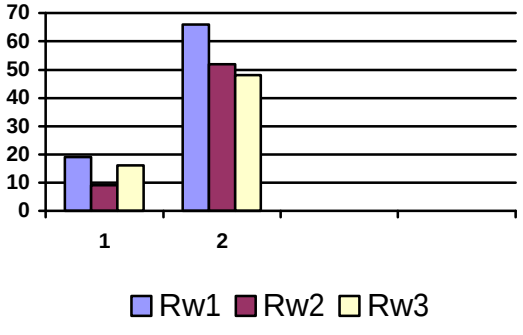

Figure 3

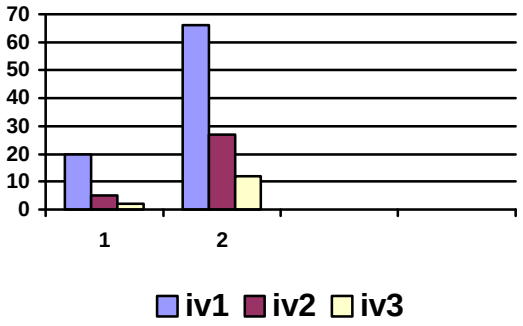

Figure 4

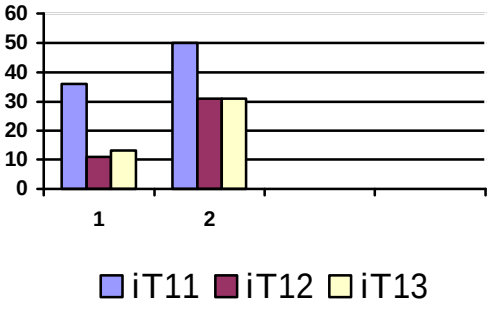

Figure 5

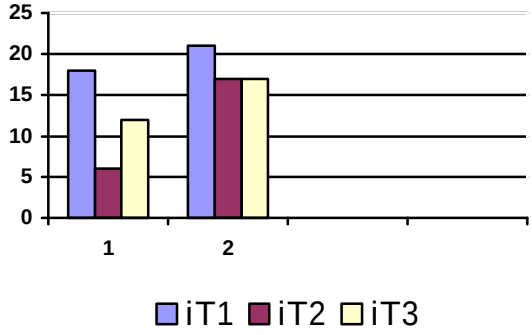

Figure 6

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Typ **(function by the weight of machine)**	i_N **(× 10^{-3}) [kW / daN]**	p **(× 10^{-3}) [daN / mm^2]**	R_W	i_V **(× 10^{-3}) [(km/h) / daN]**	i_{T1} **(× 10^{-3}) [kW / daN]**	i_T
I M ≤ 5000	8,0 - 12,06	1,4 - 2,3	1,9 - 6,6	2,0 - 6,6	3,6 - 5,0	1,8 - 2,1
II 5000 < M ≤ 10000	6,46 - 12,25	1,43 - 2,3	0,83 - 5,17	0,53 - 2,72	1,13 - 3,1	0,6 - 1,71
III M > 10000	2,82 - 9,24	1,73 - 8,0	1,62 - 4,77	0,18 - 1,24	1,37 - 3,1	1,23 - 1,7