

Chain calculations

Conveyor chain calculations

Chain speed in m/sec (v)

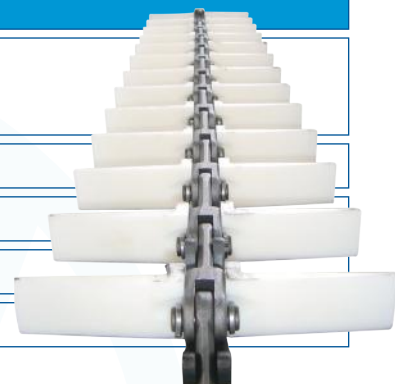
$$v = \frac{z \times p \times n}{60.000}$$

v = chain speed in meters per second

z = number of teeth

p = chain pitch

n = rotations per minute



Conveyor chain calculations

Capacity in m³ per hour (Q)

$$Q = A \times v \times 3.600 \text{ sec.}$$

Q = capacity in m3 per hour

A = trough width x layer height in m2

v = chain speed in meters per second

Conveyor chain calculations

Material weight on the chain in kg (mass₁)

$$\text{Mass}_1 = \frac{\text{tons per hour} \times \text{distance in meters}}{v \times 3,6}$$

Mass₁ = material weight on the chain in kg

v = chain speed in meters per second

Conveyor chain calculations

Power in Kw (P)

$$P = \frac{(v \times \text{mass}_1 \times \mu_1 + \text{mass}_2 \times \mu_2) \times 9,81}{1.000}$$

P = power in Kw

v = chain speed in m per sec

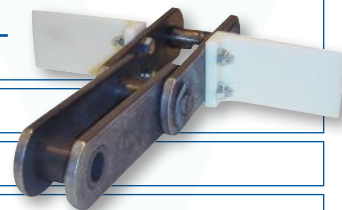
mass₁ = material weight on the chain in kg

μ₁ = friction between steel and the product (for a smooth-running product ca. 1,15)

mass₂ = total chain weight in kg

μ₂ = friction between the steel bottom and the chain

(for steel pushers approx. 0,25 and for plastic pushers approx. 0,15)



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