

Conveying task & path

Mass flow ($\dot{M}$)	60.0 t/h
Belt speed (v)	1.50 m/s
Largest lump size ($L_{s,max}$)	0 mm
Bulk density (ρ)	0.80 t/m³
Dynamic angle of repose (β_{dyn})	20 °
Feed length (A)	3.0 m
Conveying height (H)	20.0 m
Discharge length (C)	2.0 m
Incline angle (β)	90 °

Belt configuration & capacity

Belt width (B_w)	800 mm
Usable width (input) (n_w)	320 mm
Cleat pitch (C_p)	180 mm
Sidewall	WKS 180 mm
Cleat	TCS 160 mm
Requested mass flow	60.0 t/h
Filling degree at requested mass flow (ψ)	66 %

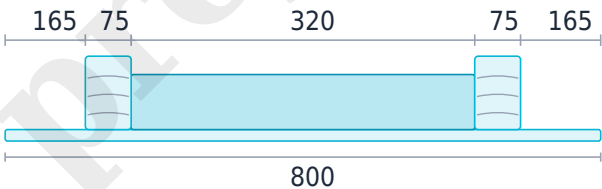
Fill degree at which the pockets actually carry the target mass flow — all other design values unchanged. Above 100 % the target is physically out of reach for this geometry.

Base belt recommendation

Recommended base belt	XE400/3+2TR
Tensile strength	400 N/mm
Belt safety factor (S)	13.7

Force chain & drive

Material load (m_L)	11.11 kg/m
Belt weight (selected belt) (m_G)	34.96 kg/m
Conveying path (one way) (L)	25.0 m
Effective tension at drive (T_e)	3,223 N
Pre-tension (T_2)	8,232 N
Maximum belt tension (T_1)	11,455 N
Start-up force	12,583 N
Effective power	4.8 kW
Shaft power ($\eta = 0.80$)	6.0 kW
Motor power (recommended)	8.2 kW



Pocket cross-section - schematic, dimensions in mm

Construction

Min. pulley diameter	450 mm
Min. deflection wheel	720 mm
Belt length to order (at minimum pulley)	51.41 m

⚠ In this option the pockets are narrow and deep relative to the cleat height. Such pockets may not fill completely during loading, and during overhead discharge material can wedge and remain in the pocket (carry-back, build-up, increased cleaning and wear). Verify filling and residual discharge with your material — especially if moist or sticky — or choose the option with the larger cleat pitch.