



عمران مدرن  
بازار نوین ارتباطات ساختمانی

# نصب آسانسور و تهیه کلیه قطعات

سراسر کشور



با قیمت استثنایی و اکیپ متخصص

برای مشاوره رایگان تماس بگیرید

02162999675

Elevator calculation acc. EN81-20/50

**Elevator data**

Nominal load	Q	kg	1275	
Car weight	F	kg	1400	(864 - 2278kg)
Counterweight	G	kg	2038	(50%)
Travelling speed	v	(V_3=)	m/s	1,60
Travel distance	H	m	45,0	
Suspension / (roping)	is			2 : 1
Machine at the top, above				
Shaft efficiency	etaS	%	82	
Number of pulleys	(ball bearing)		3	
Type of rope	WOLF PAWO F7			
Number of ropes	z		8	
Rope diameter	ds	mm	8	
Rope weight	s	kg	92	(0,258 kg/m)
Compensation rope weight	su	kg	185	
Car cable weight	HK	kg	22	
Rope span weight	R	kg	0	
Min. rope breaking load	B	N	40600	
Traction sheave diameter	Dtr	mm	320	
Sheave width		mm	122	(number of grooves
8)				
Groove distance		mm	14,0	Minimum distance
Angle of wrap minimum	min.	deg	180	
V-groove angle		deg	45	

Sheave profile: V-groove with min. 50 HRC

**Traction, rope pressure, rope safety**

Traction empty, on top, accelerating  
 1,8390 <= 2,0935  
 Traction 150% nominal load, below, not moving  
 1,5731 <= 2,0935  
 Rope pressure k < permissible rope pressure  
 1,80 < 2,00 N/mm<sup>2</sup>

Conditions according to EN81-1 or -20:  
 Load 125% 1,4399 <= 2,2726 (2)  
 Emergency stop 1,5628 <= 1,8625 (2)  
 with deceleration [m/s<sup>2</sup>] 0,500  
 Blocked car 10,689 > 5,1648 (4)

Real safety factor > Minimum safety factor for ropes  
 22,97 > 12

Rope safety factor according to EN81-1 or -20:  
 NEQUIV = 08,5 NEQUIVT = 06,5 NEQUIVP = 02,0  
 Pulleys >= 320 mm, pulleys NPR = 0 NPS = 2  
 Rope safety nue = 23,0 > 17,6 (minSF)  
 Rope certification EN81

Traction conditions are fulfilled.  
 Rope safety conditions are fulfilled.  
**ZAlift - 20170315 - Machine dimensioning ZA-145537**

**Mechanical drive data**

Machine manufactured by Ziehl-Abegg  
 Machine type SM 200.45D Gearless synchronous  
 Machine version ZAtop \*

Traction sheave	mm	320 /122/14,0/8x8/HK45
Load output torque	Nm	627 (max. 799)
Real statical axle load	kg	2553 (max. 3600)

**Brake data**

brake Warner ERS VAR07 SZ800/800, 2x800 Nm, EU-BD 819/2  
 Dual circuit disk brake, DC supply necessary  
 (518 Nm, 0,66 m/s<sup>2</sup>, 3 m, 25534 J, 264 W)  
 207 V brake, with hand release, microswitch

**Machine load data in the installation**

Typical motor operating power	kW	9,6
Typ. operating current	A	31,8
Start. Current	A	52,7
Average power losses	kW	1,85
Output speed	rpm	191
Load torque	Nm	627,5 (eff. 480,5)
Inertia of installation	kgm <sup>2</sup>	33,73

240 Starts per hour , 50 % required duty cycle at elevator operation  
 Max. static load pulleys 21816 N, pulley speed 1,60 m/s

**Selected ZIEHL-ABEGG motor**

Motor type SM200.45D-20 - gearless

	Nameplate data	(Operating
Rated voltage	V	360
Rated frequency	Hz	32 ( 31,8)
Rated torque	Nm	710 ( 627,5)
Rated speed	rpm	192 ( 191,0)
Rated output power	kW	14,3 ( 12,6)
Rated current	A	36 ( 31,8)
Maximum torque	Nm	1200 ( 1200 )
Current at maximum torque	A	74 ( 74 )
Inertia of motor	kgm <sup>2</sup>	0,350
Possible acceleration	m/s <sup>2</sup>	1,34

(MKmax=480,0 Nm)

Without cooling (87)

Dimension sheet A-M-6704, Motor construction type IMB3

Motor with encoder ECN 1313-2048Endat

### **Selected frequency inverter**

Inverter ZAdyn 4CS032, Rated inverter current 32 A  
mains current 23,2 A, 400 V, 15,2 kW, Max. 0,85 m/s<sup>2</sup>  
Radio interference filter, integrated ; Line reactor, integrated  
Brake resistance separate BR50-3 Attention! (or Recuperation: ZArec4C  
026 + BR14A)