

Report EC type-examination

Report belonging to EC type-examination certificate no. : NL 12-400-1002-074-07
 Date of issue of original certificate : July 17, 2012
 Concerns : Lift
 No. and date of revision : 1; October 19, 2012
 Requirements : Lifts Directive 95/16/EC.
 Standard: EN81-1:1998+A3:2009
 Project no. : P120037-03, P120037-07

1. General specifications

Name and address manufacturer : Kleemann Group
 Kilkis Industrial Area
 P.O Box 25
 P.C. 61 100 Kilkis, Greece
 Description of lift : Gearless traction lift without machine room
 Type : Atlas 2:1 N
 Address of examined lift : Kleemann Group
 Kilkis Industrial Area
 P.O Box 25
 P.C. 61 100 Kilkis, Greece
 Date / data of examination : March – July 2012, October 2012
 Examination performed by : W.Visser

2. Description lift

General:

The Kleemann Atlas 2:1 N is a traction lift with a 2:1 suspension system that is built without a separate machine room (MRL). The car is centrally suspended and guided. The gearless traction machine which is applied is depending on the load. The traction machine and the governor are supported by a frame that is mounted in the top of the well and secured with specially designed wall plates.

The power switches, the fuses and the controller including functions for inspection and rescue operation are mounted in a cabinet.

This cabinet is mounted in or in the vicinity of one of the landing doorframes, at one of the two upper floors.

If the travel of the car is more than 30 m, an intercom is provided for two-direction communication between the car and the control panel.

When for maintenance or inspection entrance to the car roof is necessary, a fixed balustrade of 700 mm height at least on machine side provides a safe working area.

The car can be built with a single entrance or a double entrance oriented opposite to each other. The allowed doors are two or three panel telescopic doors and two, four or six panels central opening doors or semi automatic hinged landing doors with foldable car doors. The minimum pit depth is 1100 mm and the lift has a regular headroom of minimum 3450 mm.

The main characteristics of the Atlas 2:1 N lift are given in table 1, table 2 and general drawings in Annex 1.

Unintended Car Movement Protection (UCMP):

The controller monitors the safety circuit just before the lift starts and during the trip in the period where the door bypass device, if applied, is active.

When the car leaves the landing zone with open doors it leads to an open safety circuit because of the door-bridging circuit becoming inactive. After this UCM detection the machine brake is no longer energized and will close due to spring force. The lift enters a status that requires the intervention of a lift technician to recover to normal mode, switching off and on of the main switch will not recover the lift. The UCM detection status is stored in a non volatile memory and is cleared only when a dedicated unblocking action is performed. For this action, the lift maintenance person has to select the related menu in the lift controller in order to reset the lift.

In absence of a door safety bypassing device and a re-levelling function with open doors, UCMP relies on the exclusion of an unintended car movement by measures mentioned above. The braking force must be guaranteed. A relevant Risk Analysis is provided and found in order.

This means that also in this case both brake elements must be monitored by switches which are checked by the inverter or controller prior to start. These switches are pre-set and therefore guard excessive wear of the brake elements.

Ascending Overspeed Protection (AOP):

The bi-directional safety gear on the car is used as ascending overspeed protection. The safety gear is triggered by the overspeed governor in case of overspeed upwards.

2.1 Lift data

Table 1: Main characteristics of ATLAS 2:1 N lift.

Rated load	kg	375	450	≤630	≤1000
Rated speed	m/s	≤1.6			
Car area	m ²	0,9	1,3	1,66	2,4
Min/max car weight	kg	550/800	550/900	650/1100	800/1050
Door type		telescopic single side or central opening doors hinged semi-automatic doors			
Clear entrance width	mm	600-900	600-1000	600-1200	600-1200
Number of car entrances		1 entrance or 2 entrances at 180°			
Maximum no. of stops		16			
Maximum no. of accesses		32			
Maximum travel	m	45			
Minimum headroom	mm	See table 2			

Minimum pit height	mm	See table 2 (with a normal apron)			
Machine type 1 Brake		SM200.15C RTW8012 200,300,350	SM200.15C RTW8012 200,250,350	SM200.15C RTW8012 250,350	SM200.20C RTW8012 350
Machine type 2 Brake		XAP2M VAR07 SZ300/	XAP2M VAR07 SZ300/	XAP2M VAR07 SZ300/	XAP2L VAR09 SZ600/500
Machine type 3 Brake		-	-	SM200.20C RTW8012 250,350	SM200.30C RTW8010.10-13 400
Machine type 4 Brake		-	-	Sassi G300-T0 DF01	Sassi G300-T1 DF01
Controller type		Kleemann Lisa / Kleemann Serial			
Drive type		Ziehl Abegg Zetadyn 3C/ Yaskawa L1000A			
Diameter overspeed governor rope	mm	8			
- Min. braking load	kN	28			
Rope manufacturer - type - diameter - min braking load	mm kN	Drako 250T 6,5 31,5			
Number of ropes		6	6	6-7	8
Traction sheave diameter - α , groove, γ	mm °	240 180, V-groove, 40-45			
Car guide rails	mm	75/62/10			89/62/16
Max bracket distance	mm	2000			2000
Cwt guide rails	mm	50/50/5			
Max bracket distance	mm	2000			
Cwt guide rails in case CWT safety gear	mm	75/62/10			
Max bracket distance	mm	2000			

Table 2: Allowed car dimensions.

Single entrance cabin							
Rated load		Total car height (ext)	Door height	$V \leq 1,0$ m/s		$1,0$ m/s $\geq V \leq 1,6$ m/s	
pers.	kg			Min Pit	Min head	Min pit	Min head
		mm	mm	mm	mm	mm	mm
Carfloor area according to Table 1.1 & 1.2 of EN81-1		2340	2000	1100	3450	1200	3600
		2430	2100	1100	3550	1200	3700

Double sided entrance cabin							
Rated load		Total car height (ext)	Door height	$V \leq 1,0$ m/s		$1,0$ m/s $\geq V \leq 1,6$ m/s	
pers.	kg			Min Pit	Min head	Min pit	Min head
		mm	mm	mm	mm	mm	mm
Carfloor area according to Table 1.1 & 1.2 of EN81-1		2340	2000	1100	3450	1200	3600
			2100		3550		3700
		2430	2000	1100	3550	1200	3700
			2100				

2.2 Summary of applicable safety components

The following table lists the allowed safety components with their certificate number which may be used in the Atlas 2:1 N lift within their application range.

Component	Manufacturer; type	Certificate no.
Landing door locking device	Gea Zita; EØ 1 A/B	LF/A-C-1047/04
	Gea Zita; EØ 2 A/B	LF/A-C-1044/03
	Klefer; PRT2-40/10,PRD2-40/10	ATV 700
	Klefer; PRT2-50/11,PRD2-50/11	ATV 703
	Klefer-Tecnolama; PRC2-40/10	ATV 699 – ATV 530/1
	Klefer-Tecnolama; PRC2-50/11	ATV 702 – ATV 484/3
	Klefer-Tecnolama; PRC4-40/10	ATV 701 – ATV 533/1
	Klefer-Tecnolama; PRC4-50/11	ATV 704 – ATV 487/4
	Klefer-Tecnolama; PRC6-50/11	ATV 705 – ATV 488/3
	Tecnolama; 265/11/50	02/09-009/PR/R
	Tecnolama; 210/10/40	01/09-009/PR/R
	Tecnolama; PRC6-40/10	ATV 534/1
	Tecnolama; PRI1-50/11,PRD1-50/11	ATV 483/3
	Tecnolama; PRI2-40/10,PRD2-40/10	ATV 531/1
	Tecnolama; PRI2-50/11,PRD2-50/11	ATV 485/3
	Tecnolama; PRI3-40/10,PRD3-40/10	ATV 532/1
Tecnolama; PRI3-50/11,PRD3-50/11	ATV 486/3	
Car safety gear	Dynatech; PR 2000 UD	ATI/LD-VA/M150A-1/11
	Dynatech; PR 2500 UD	ATI/LD-VA/M065A-3/11
Counterweight safety gear (optional)	Dynatech; PR 2500	ATI/LD-VA/M062A-1/11
	Kleemann; 1410315-D	C/TH/LF06-03/0004
	Centoducati; 92.01	I0085
Ascending safety device	Dynatech; PR 2000 UD	ATI/LD-VA/M150A-1/11
	Dynatech; PR 2500 UD	ATI/LD-VA/M065A-3/11
PU Buffers	Elastogran; 1251	08/208/AP005/1251
	Elastogran; 1651	08/208/AP005/1651
	Elastogran; 1002	08/208/AP005/1002
	Elastogran; 1303	08/208/AP005/1303
	Elastogran; 080080	44 208 06 338893 100
	Elastogran; 125080	44 208 06 343067 100
	Elastogran; 165080	44 208 06 343068 100
	Acla; 300411	08/208/AP002/300411
	Acla; 300401	08/208/AP001/300401
Hydraulic Buffers	Thyssen; 01A	APV 001/002/003
	Thyssen; 01B	
	Thyssen; 01C	
	Hebei Dongfang Fuda Machinery; YH52/175	BSI-LB-516943

Overspeed governor (car and cwt)	Montanari; RG300,RH300,RG300BD,RH300BD	AGB 100/4
	Thyssen; 6023	AGB 055/2
	PFB; LK300	AGB 184/3
	Kleemann, KLG1.0	NL10-400-1002-071-07Rev3
	Kleemann, KLG1.6	NL10-400-1002-071-08Rev3

2.3 Applied other certified components

Component	Manufacturer, type	Certificate no.
Suspension ropes	Drako 250 T	G 515
Controller - Main PCB	Kleemann, Lisa	0920892613/5 / 0671
	Kleemann, Serial	LF/A-C-1188/11
Door bridging PCB	Schneider, Lisa 10-10	0920892613/5 / 0671
	Schneider, Lisa 10-A3	NL11-400-1002-135-03
	Kleemann, GL-2LEV	LF/A-C-1188/11
	Kleemann, SB-ZONE	LF/A-C-13007/12
UCMP system	Kleemann, UCMP for traction lifts with gearless drive models ATLAS 1:1, ATLAS 2:1N, ATLAS RPH 2:1N, ATLAS 2:1-L, ATLAS GIGAS 2:1N, ATLAS SUPER GIGAS 4:1.	NL12-400-1002-074-05Rev.2
UCMP means	Mayr RTW 8012 size 200, 250, 350	ESV 845
	Mayr RSR 8010.10 size 400	ESV 766/1
	Warner ERS VAR 07 SZ 300	ESV 819
	Warner ERS VAR 09 sz 600/500	NL11-400-1002-153-01
	A.Sassi G300-T0&T1 / DF01	DCI 003

3. Examinations and tests

The examination covered a check whether compliance with the Lift Directive 95/16/EC is met, if possible based on the harmonized product standard EN 81-1 :1998 + A3:2009. Issues not covered by or not complying these Standard are directly related to the above mentioned essential requirements based on the risk assessment, where applicable with the aid of harmonized A-and B-standards, such as EN 60204-1.

The examination included:

- Examination of the technical file (See annex 2):
- Check of performed calculations according to EN 81-1.
- Examination of the representative model in order to establish conformity with the technical file.
- Inspections and tests to check compliance with the requirements.

4. Results

After the final examination the installation and the technical file were found in accordance with the requirements. The functional tests passed without remarks. The load tests passed without remarks and did not lead to permanent deformations or loss of stability.

4.1. Calculations

Calculations of the car guide rails and counterweight guide rails are made on the basis of EN 81-1 requirements. Additional calculations were made for the counterweight frame, machine support frame, drive shaft and the buffer support structure. The calculations were checked and found in order.

There has been given special attention to the fact that it should be possible to conduct final inspections without the need of checking calculations.

This means that, where possible, system limits are given such as maximum car mass and maximum bracketing distance for the guide rails.

4.1.1. Guide rail calculations

The calculations are made according to EN 81-1 Annex G.

The calculations take into account the additional loads introduced by the machine.

The information stated in the model description enables final inspections without the need of a calculation check. The maximum bracket span for each allowed type of guide rail is stated in the model description. Deviating of the indicated maximum bracket distances is possible if additional calculations according to EN 81-1 are made and approved.

4.1.2. Traction

The calculations are made according to EN 81-1 Annex M and found in order.

The minimum and maximum required mass of the car is indicated in the model description. The information stated in the model description enables final inspections without the need of a traction calculation check.

4.1.3. Suspension rope safety factor

All relevant factors have been considered and lead to the maximum allowed car mass and car dimensions as stated in the model description.

The information stated in the model description enables final inspections without the need of a calculation check.

4.2. Measurements

4.2.1. Current measurements

Current measurements were done to check proper balancing. The final result was ok.

4.2.2. Speed measurements

The following speed measurements, using testloads, have been performed:

- nominal speed
- inspection drive speed

All measurements were within the set values according to paragraph 12.6 (nominal speed), paragraph 14.2.1.3. (inspection drive speed)) of EN 81-1.

4.2.3. Insulation resistance measurements

On the following circuits, insulation resistance measurements have been performed:

- Motor circuit
- Safety circuit
- Car lighting circuit

The measured values of the single lines, and of parts of lines, as well as their summation, were significantly higher than the required values in the standard EN 81-1, par 13.1.3.

5. Conditions

On the EC type-examination certificate the following conditions apply:

General:

- Nominal load : 375 - 1000 kg
- Max. nominal speed : 1,6 m/s
- Max travel : 45 m
- Max number of stops : 16
- Motor and brakes must be energized according to the requirements of EN 81-1:1998+A3:2009 clause 12.4 & 12.7 while the used contactors must fulfill the requirements of EN 81-1:1998+A3:2009 clause 13.2.
- This EC type certification does not include approval for fire-fighting purposes according to EN 81-72.

Control cabinet:

- The controller must be located in a separate and lockable cabinet, next to the one of the two upper landing doors. It must be able to close and lock this door without the use of a key. Opening can only be done with the use of a key.
- The control panel shall be protected against splashing water and shall have a protection degree IPX3, the electrical equipment inside the control panel shall have a protection degree IP2X.
- The cabinet shall be located in an area which is suitably protected against all weather conditions, such as rain, including the working area (min. 500 x 700 mm) in front of the cabinet.
- Unrestricted access to the controller must be ensured. Therefore the controller can not be located in private premises without additional measures.
- The control panel shall not be located in areas where interference with public can be expected to lead to dangerous situations.
- If the controller is installed outside, the effect of high and low temperatures and the influences on the lift system must be examined separately.
- In front of the control panel a horizontal free space of 70 cm is required. In case the space in front of the control cabinet shall allow the passing of public

this minimum horizontal free space needs to be 1.20 m. In specific situations for instance if wheelchairs have to pass by, this value might need to be enlarged to 1,55 m. The essence is that in any case a free horizontal space of 70 cm is guaranteed. In addition, depending on the frequency of passing public and the nature of activities on site, the use of a fence guarding the working area might be needed.

- The light intensity in front of the opened control panel shall be 200 lux.
- A LED display must be installed in the control cabinet as a level indicator including identification of car movement and car travelling direction.
- An emergency powered rescue drive must be supplied in the cabinet .

Machine:

- The light intensity in front of the machine and inverter shall be 200 Lux.
- The machine used is equipped with a non-adjustable brake. This brake is considered by its manufacturer as a maintenance free brake. The machine itself needs only visual inspections. The maintenance work foreseen to be performed from the car roof is not likely to cause any unexpected movement of the car Changing of the machine or the brake is considered repair work and not maintenance work. For that reason the car is not equipped with any mechanical blocking device to keep it in position to perform maintenance. (EN 81-1:1998 + A3:2009 paragraph 6.4.3)
- Considering the location of the machine at the side in the top of the well, nib guards or other additional protections for the traction sheave are not required.

Rope system:

- The rope system of the ATLAS 2:1 N deviates from various EN 81-1 articles. The nominal diameter of the ropes is 6.5 mm instead of the required 8.0 mm and the traction sheave has a diameter of 240 mm. The rope terminations consist of a wedge socket with one rope clamp that is mounted such that it prevents that the wedge can leave the socket. Because of the risks involved with the deviations of the standard, the suspension rope system has been type approved by a Notified Body. The drive system of the ATLAS 2:1 N meets all conditions set in the report of both certifications.

Pit :

- For entrance of the pit, in case the depth is over 500 mm, a vertically fixed ladder shall be present to reach the pit floor from the landing. When this is not possible, a not permanently fixed ladder can be used under several conditions:
 - It must be possible to place the not permanently fixed ladder in an operational position angle of approximately 70° to the horizontal.
 - Additional requirements for this ladder are that it can be stored either against the wall of the well or on a support attached to the guide rail within a reach of 0.70 m or it is stored on the pit floor under the condition that it is connected to a chain in order to lift it from the landing position.
 - The ladder shall be connected irremovable to the pit.
 - The ladder shall comply with EN 81-1, paragraphs 6.2.2.c and d.

- Clearances between bottom of the safety gear frame and top of the overspeed governor's tension weight can be reduced to 100 mm minimum.

Car :

- The car roof is accessible, provided with required handrails and inspection drive.

Re-levelling with open doors or pre-opening of doors:

When the option re-levelling with the doors open or pre-opening of doors is provided, the following items will have to be checked during final inspection:

- The maximum length of the zones is 100 mm. It must fulfil the requirements of EN 81-1 and the conditions of the UCMP certificate NL12-400-074-05.
- The magnets which define the re-levelling or pre-opening zone, shall be bonded to prevent movement with open doors outside the allowed zone.

Well:

- Local requirements may demand an emergency light on the car roof or top of the well.
- A two way communication device shall allow contact with the rescue service and shall be designed and constructed such, that it will function even without the normal power supply. This provision shall be there both on the car roof and on the bottom of the car so that it can be reached when trapped in the pit.
- A temperature between +5°C and + 40°C must be ensured in the lift well
- The vertical clearance between the VVVF located in the welltop (which might have some part in the car projection) and the top of the cardoormotor box must be sufficient. If this can not be achieved, the VVVF must be relocated.

Documents:

- A technical file, a user manual, a maintenance manual and an electrical diagram must be present at the lift.
- When the option re-levelling with the doors open is provided, the following items will have to be present at the installation to be checked during final inspection:
 - Detailed field test instructions regarding UCMP must be present in one of the following documents "Kleemann KL-UCMP Traction-Examination and Tests before putting into service"
 - "Gearless Machine Ziehl-Abegg / Lift Drive Zetadyn / Serial controller" or,
 - "Gearless Machine Ziehl-Abegg / Lift Drive Zetadyn / Lisa controller" or,
 - "Gearless Machine Ziehl-Abegg / Lift Drive Yaskawa / Serial controller" or,
 - "Gearless Machine Ziehl-Abegg / Lift Drive Yaskawa / Lisa controller".
 - An additional calculation shall be done to check whether the deceleration and stopping distance is within the limits as required by EN 81-1:1998+A3:2009. The calculation method to be used is "Kleemann Calculations for UCM-A3, stopping with Machine Brake". For each installation the calculations shall be checked and approved.

6. Conclusions

Based upon the results of the EC type-examination Liftinstituut B.V. issues an EC type-examination certificate.

The EC type-examination certificate is only valid for products which are in conformity with the same specifications as the type certified product. The EC type-examination certificate is issued based on the requirements that are valid at the date of issue. In case of changes of the product specifications, changes in the requirements or changes in the state of the art the certificate holder shall request Liftinstituut B.V. to reconsider the validity of the EC type-examination certificate.

In any case the certificate holder shall request Liftinstituut B.V. for a review of the validity of the EC type-examination certificate, taking into account the current product specifications, current requirements and current state of the art, every 5 years.

7. CE marking and EC Declaration of conformity

Every product that is placed on the market in complete conformity with the examined type must be provided with a CE marking according to annex III of the Directive under consideration that conformity with eventually other applicable Directives is proven. Also every product / safety component *) must be accompanied by an EC declaration of conformity according to annex II of the Directive in which the name, address and Notified Body identification number of Liftinstituut B.V. must be included as well as the number of the EC type-examination certificate.

Prepared by:

Certification decision by:



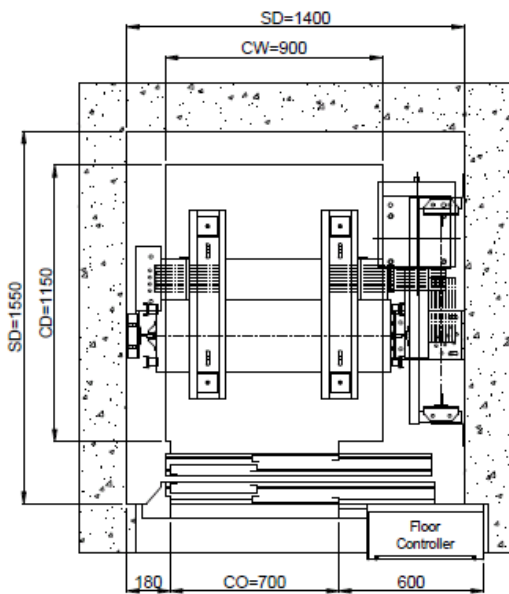
W.Visser
Senior Specialist
Liftinstituut B.V.

Annexes

Annex 1a : ATLAS 2:1 N (dimensions are not absolute)

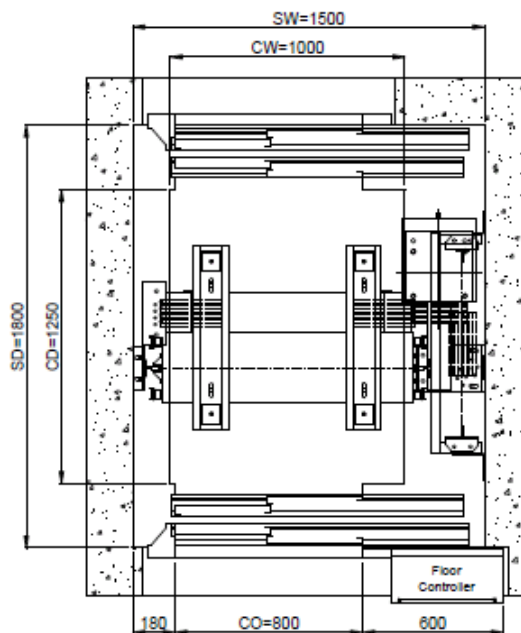
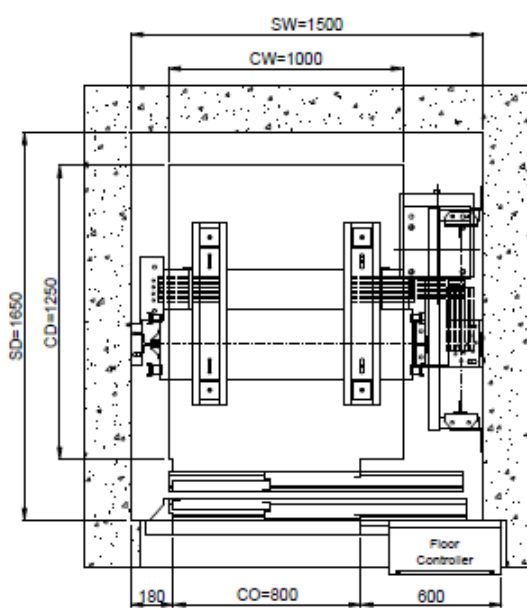
ATLAS 2:1 (375 Kg / 5 persons / Available car area 900x1150)

Side-opening doors

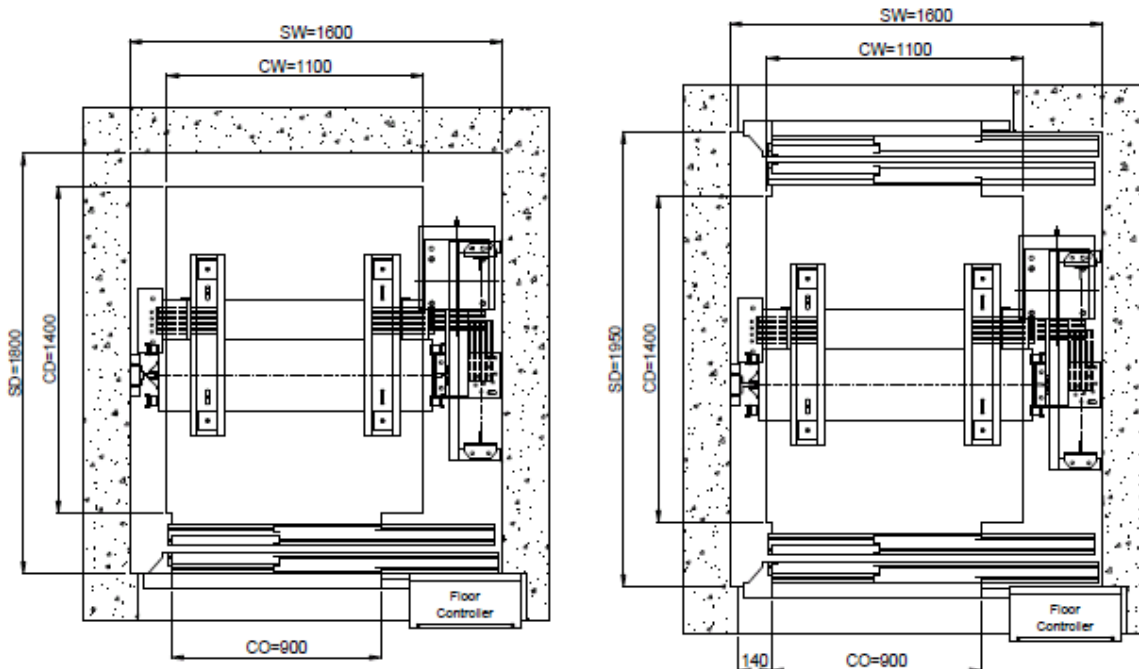


ATLAS 2:1 (450 Kg / 6 persons / Available car area 1000x1250)

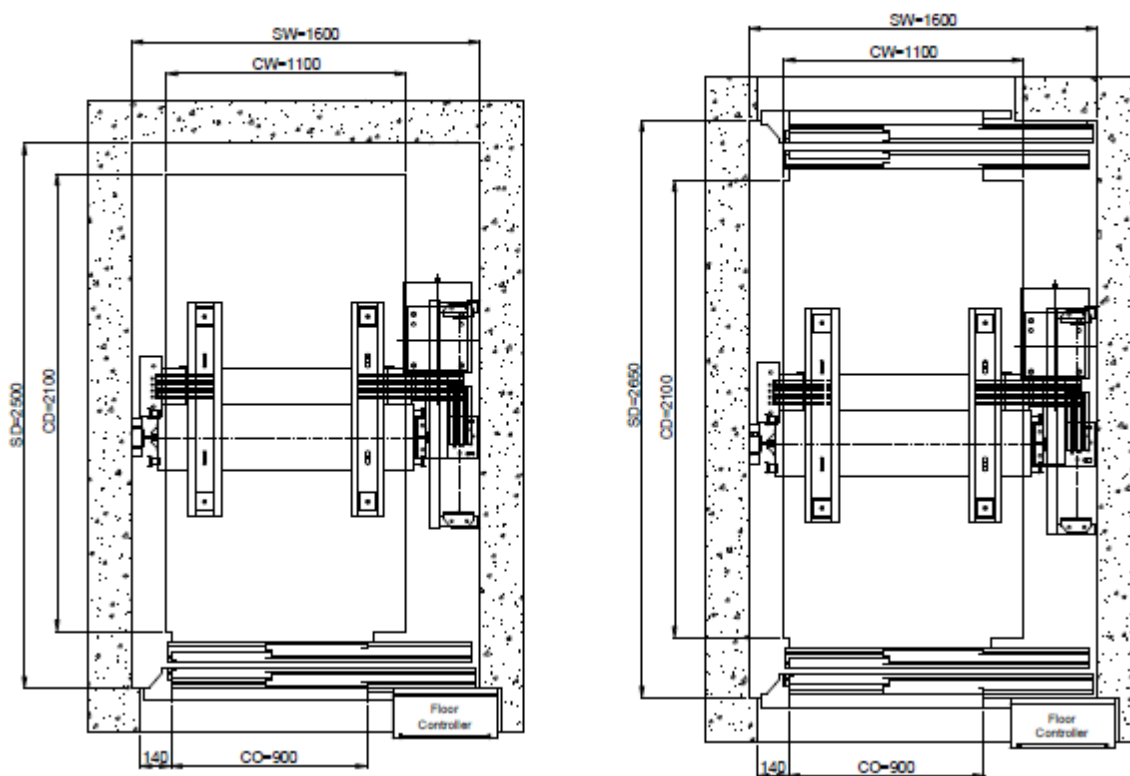
Side-opening doors



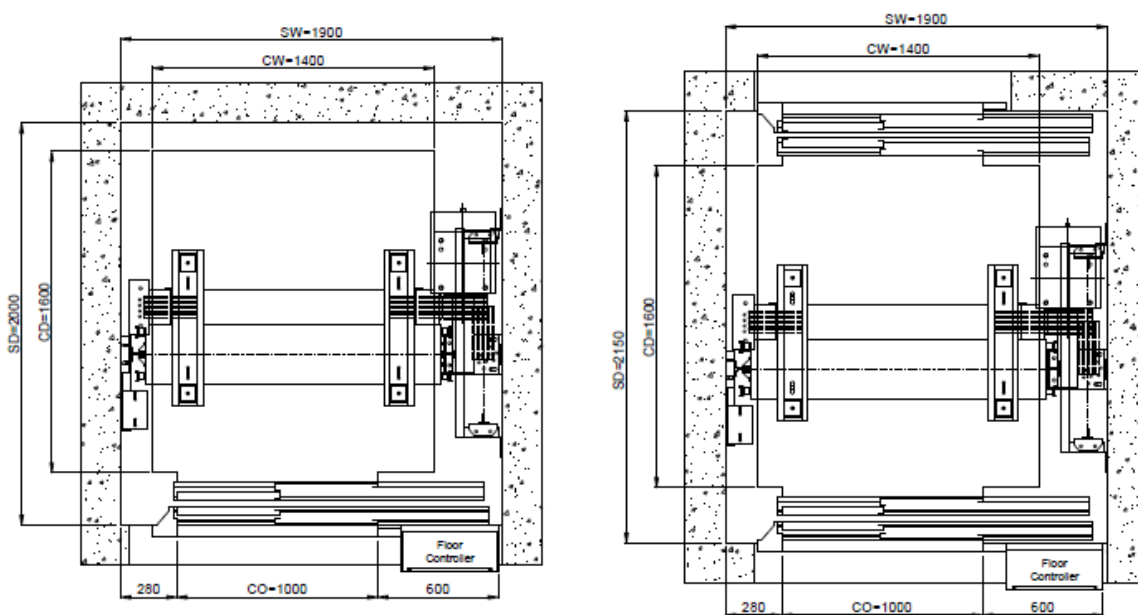
ATLAS 2:1 (630 Kg / 8 persons / Available car area 1100x1400)
Side-opening doors



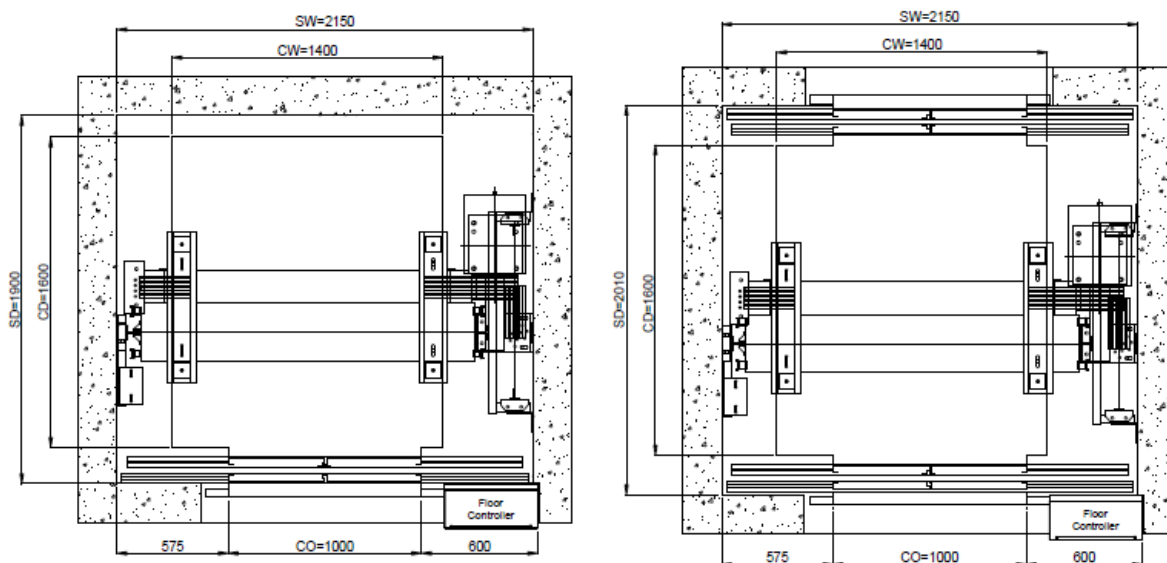
ATLAS 2:1 (1000Kg / 13 persons / Available car area 1100x2100)
Side-opening doors



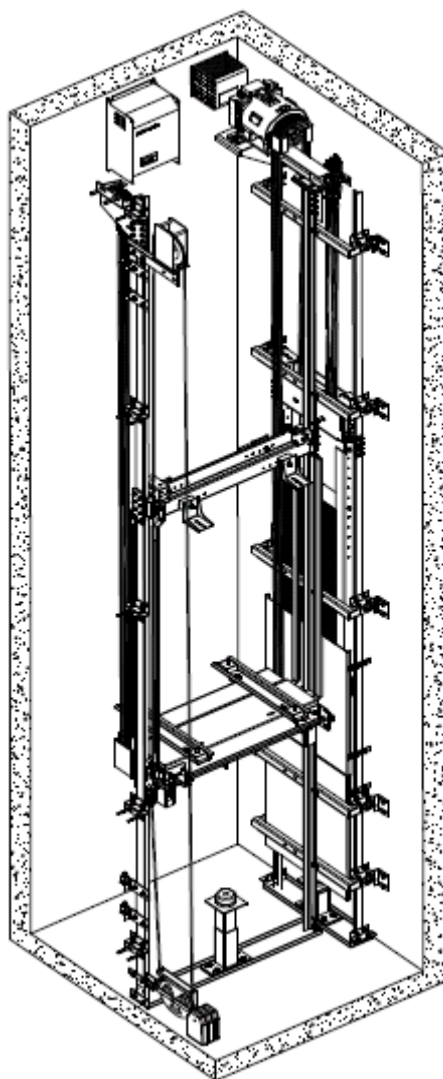
ATLAS 2:1(1000 Kg / 13 persons / Available car area 1400x1600)
Side-opening doors



ATLAS 2:1 (1000 Kg / 13 persons / Available car area 1400x1600)
Central-opening doors



Annex 1b : Overview of complete installation



Annex 2 : Documents of the Technical File which were subject of the examination

title	document number	date
results of tests		14-06-2012
operation instructions	V4-2012	05-04-2012
installation instructions	V1.7-2011	05-04-2012
planning data	V2.5-2009	05-04-2012
RA > no Block device	V1	05-04-2012
RA > free space tension weight	V1	28-06-2012
Stopping distance calcs (UCM)	5.5.3-13	05-04-2012
Atlas 2:1 Buckling calcs	V1	10-04-2012
Atlas 2:1 Ropes calcs	V1	10-04-2012
Atlas 2:1 machine beam calcs	V1	16-07-2012
EI diagram Serial-Zetadyn	V1	12-04-2012
EI diagram Serial-Yaskawa	V1	12-04-2012
EI diagram Lisa-Zetadyn	V1	12-04-2012
EI diagram Lisa-Yaskawa	V1	12-04-2012

Annex 3 : Revision overview

REVISIONS OF THE CERTIFICATE

Rev.:	Date	Summary of revision
-	July 17, 2012	Original
1	October 19, 2012	Including SB-ZONE & change bracket distances

REVISIONS OF THE REPORT, BELONGING TO THE CERTIFICATE

Rev.:	Date	Summary of revision
-	July 17, 2012	Original
1	October 19, 2012	Including SB-ZONE & change bracket distances