

Lampiran 1. Perhitungan Modul Bangunan

A. Modul bangunan didasarkan pada modul bahan bangunan.

a. Lantai

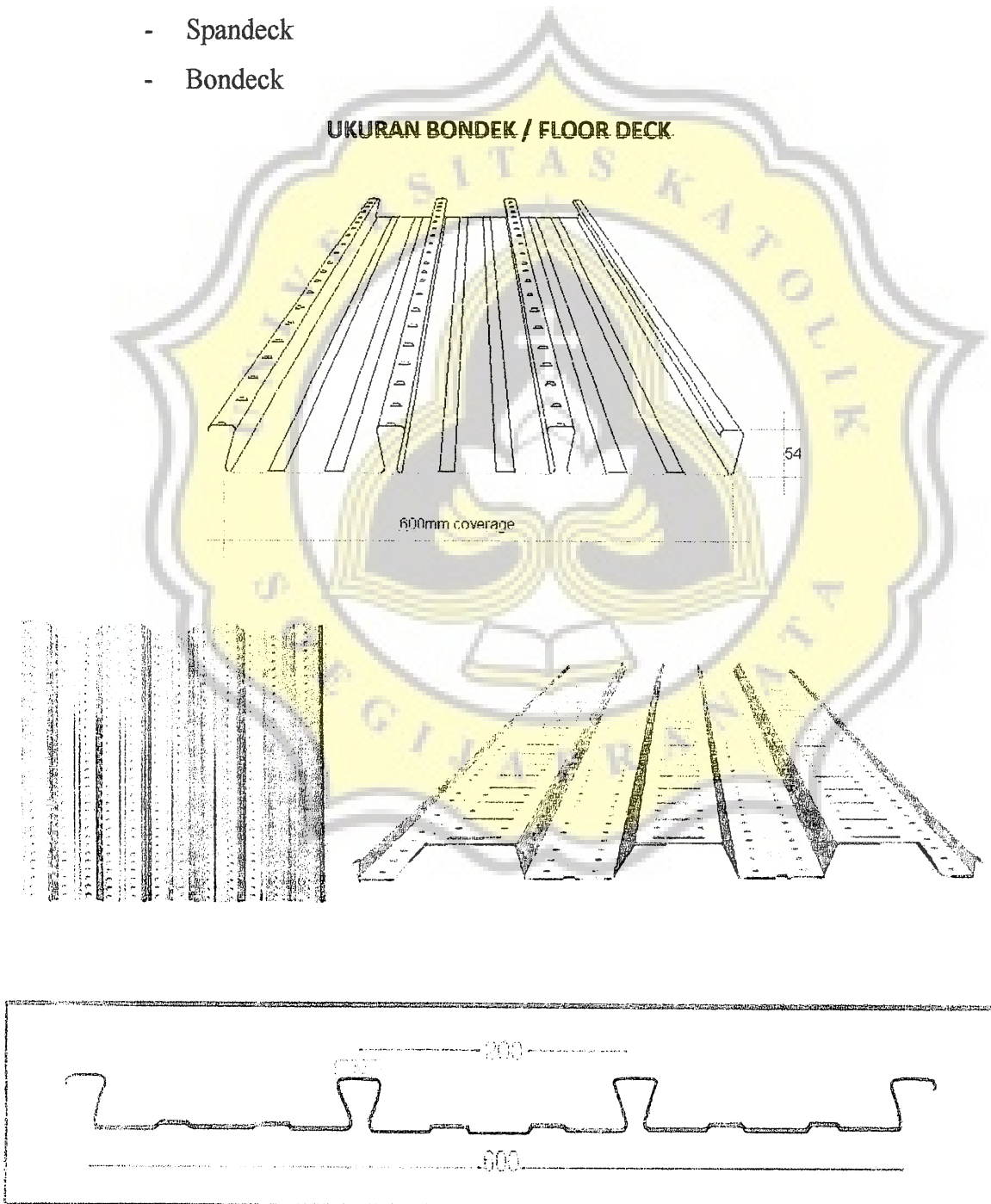
Ukuran Penutup Lantai Standar

- Keramik : 30 cm x 30 cm
- Marmer : 60 cm x 60 cm

Ukuran Plat Lantai Pre-Fab

- Spandek
- Bondeck

UKURAN BONDEK / FLOOR DECK





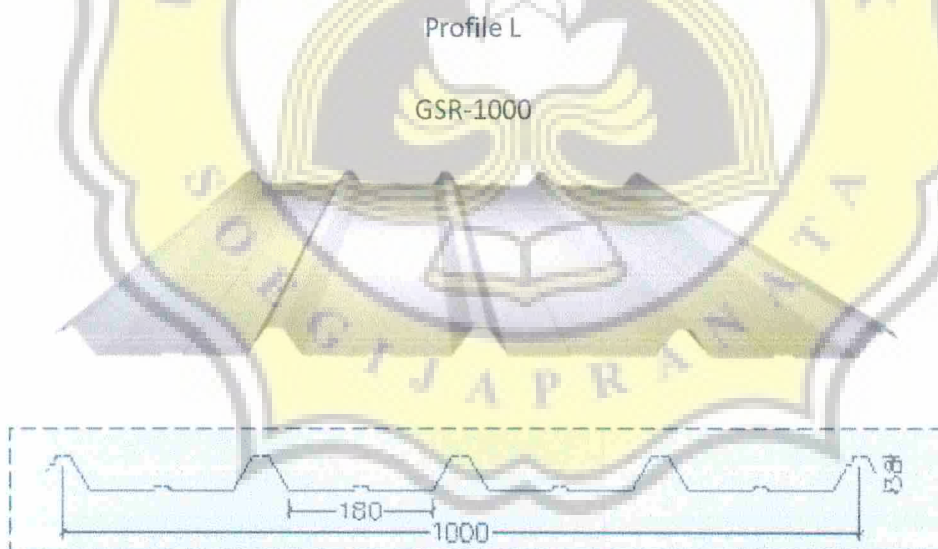
ROOFING / SPANDEK

Zincalume adalah baja lapis hasil campuran antara Aluminium dan Zinc dengan komposisi 55% Aluminium , 43.5% Zinc dan 1.5% Silicon.

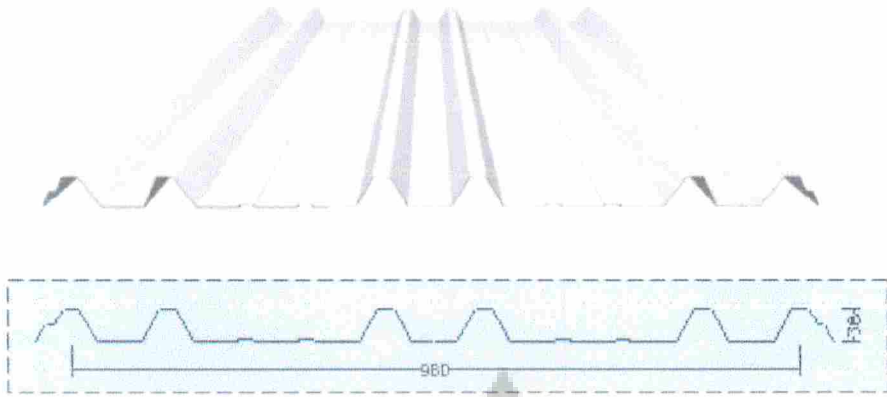
Dimana bahan tersebut merupakan bautan PT.BLUESCOPE STEEL INDONESIA yang di olah dengan teknologi modern .

Ini menyebabkan logam tersebut mudah di bentuk, berkekuatan tinggi, berumur panjang dan cocok untuk berbagai aplikasi keperluan bangunan dan manufactur.

Selain itu, juga menghasilkan permukaan yang bersifat melekat terhadap cat, sehingga memudahkan pengecatan.



GTR-960



GL-950

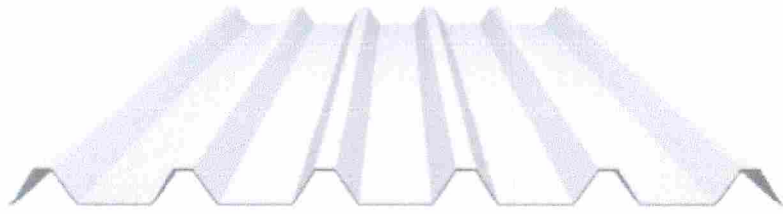


SD-935



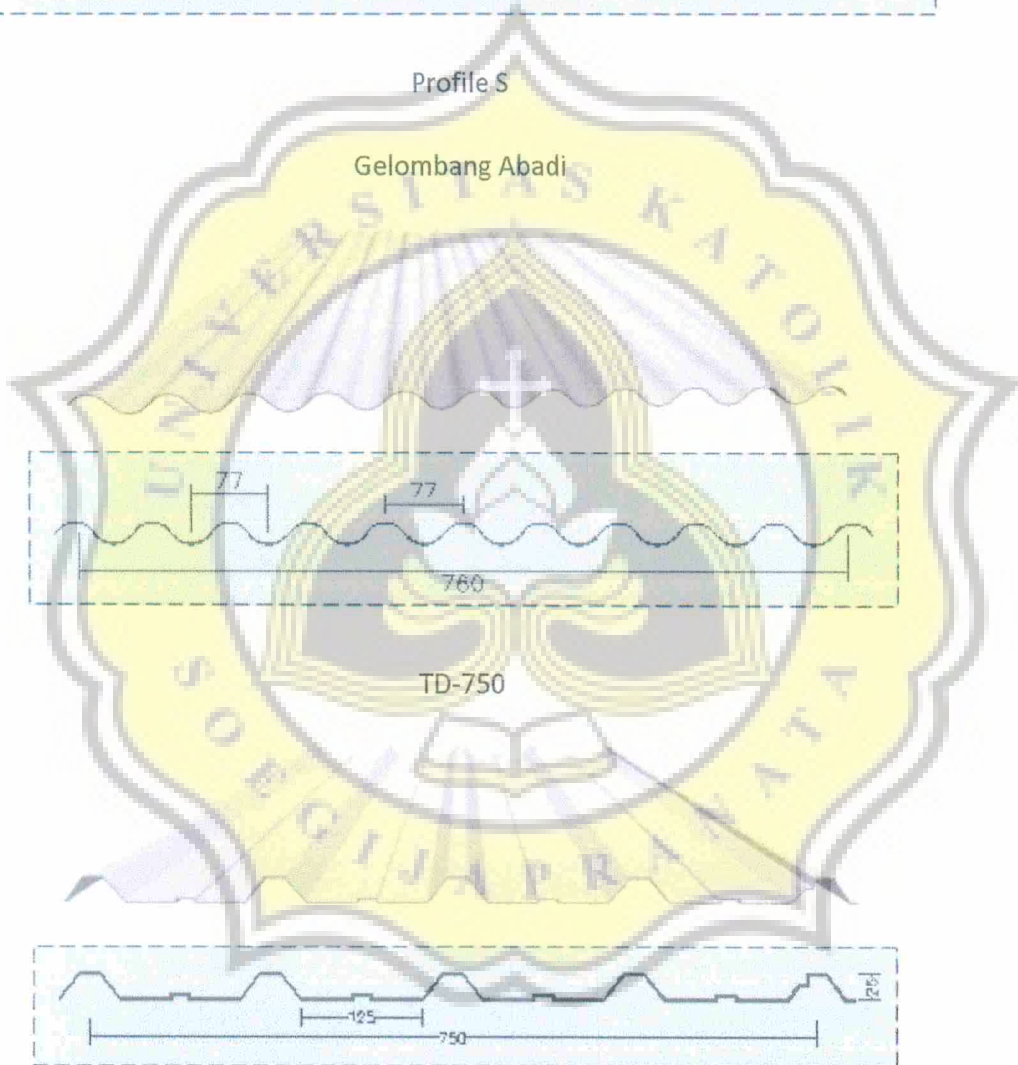
LT-7

GL750

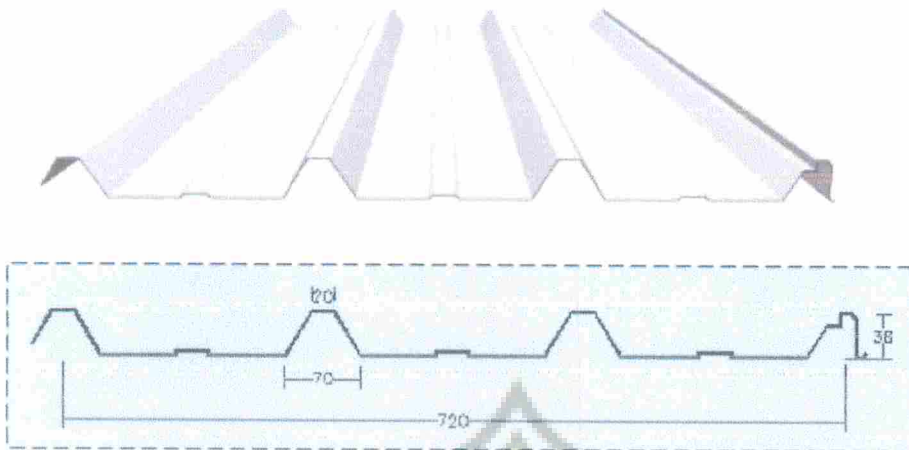


Profile S

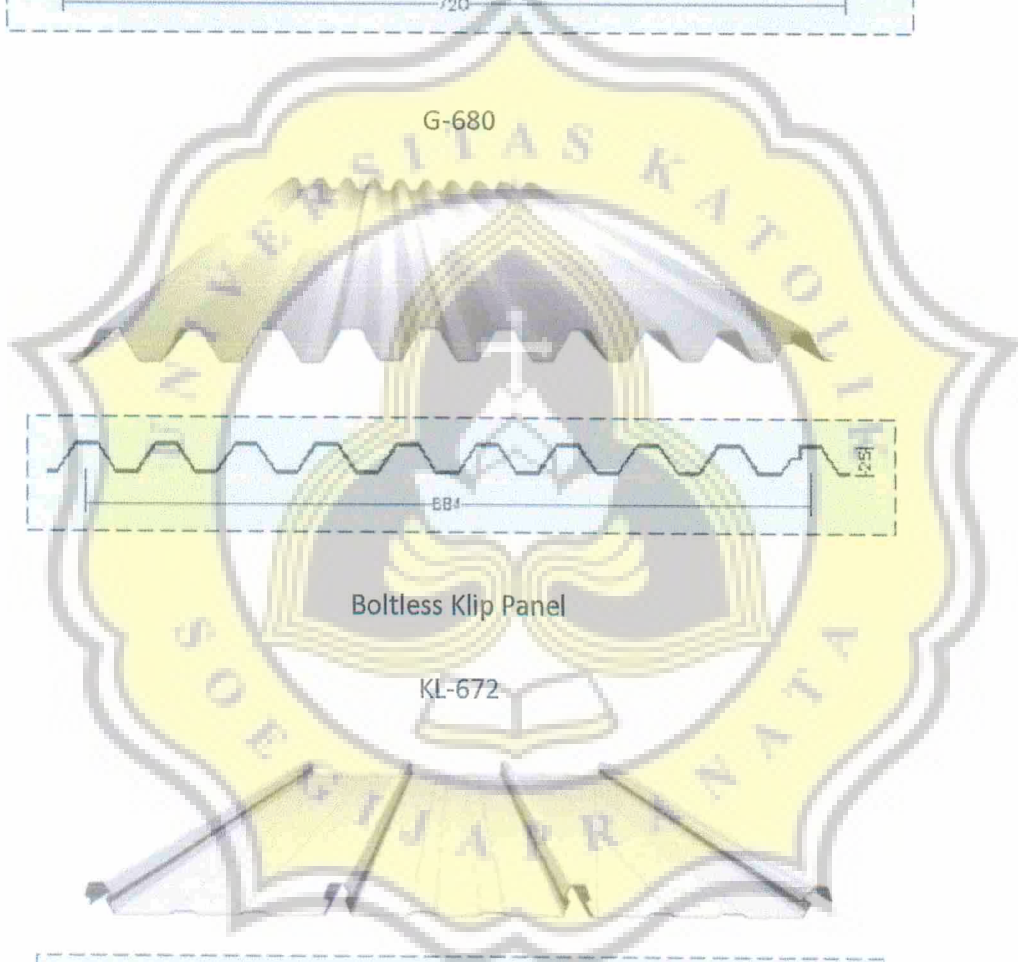
Gelombang Abadi



NSR-720

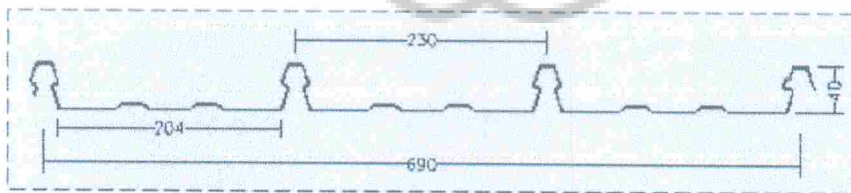


G-680

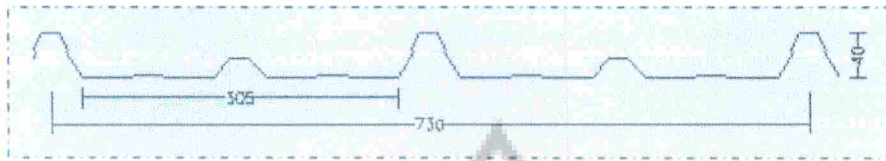


Boltless Klip Panel

KL-672

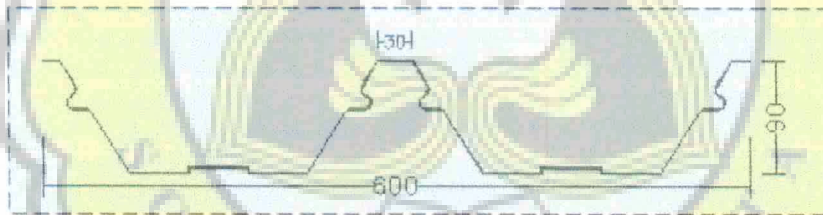


SL-730

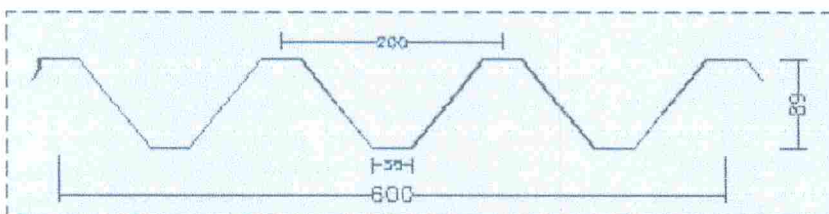


Profile Gelombang Tinggi

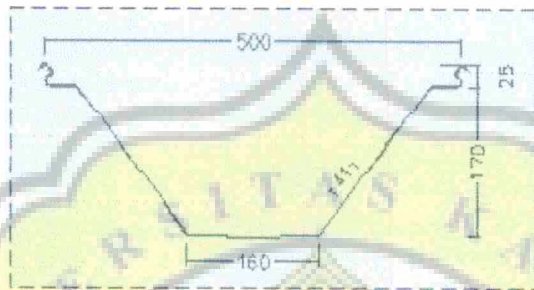
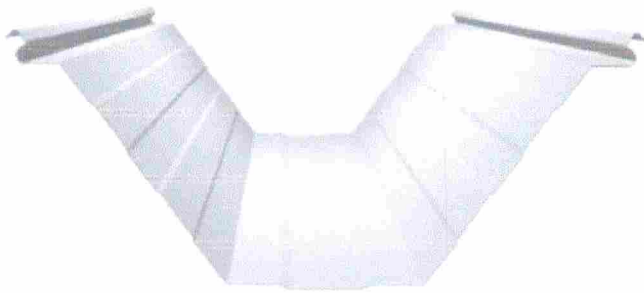
TB-600



V-600

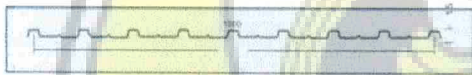


V-500



CLAADING

SS-1000



SS-750



MR-1000



PS 1050



MC-1100



CV.SMT

CV.SUKSES MANDIRI TEKNIK

Kompleks Perkantoran Mutiara Bekasi Centre

Blok B No.22, Jl.Raya A.Yani Kav.20, Bekasi Barat 17148

TELP. (021) 8895.0987, 320.111.88, 9953.71.71, 6805.68.98

HP ; 0817.18.68.78, 0812.808.737.88

Produk kami lainnya ;

www.bajaringanskytruss.blogdetik.com

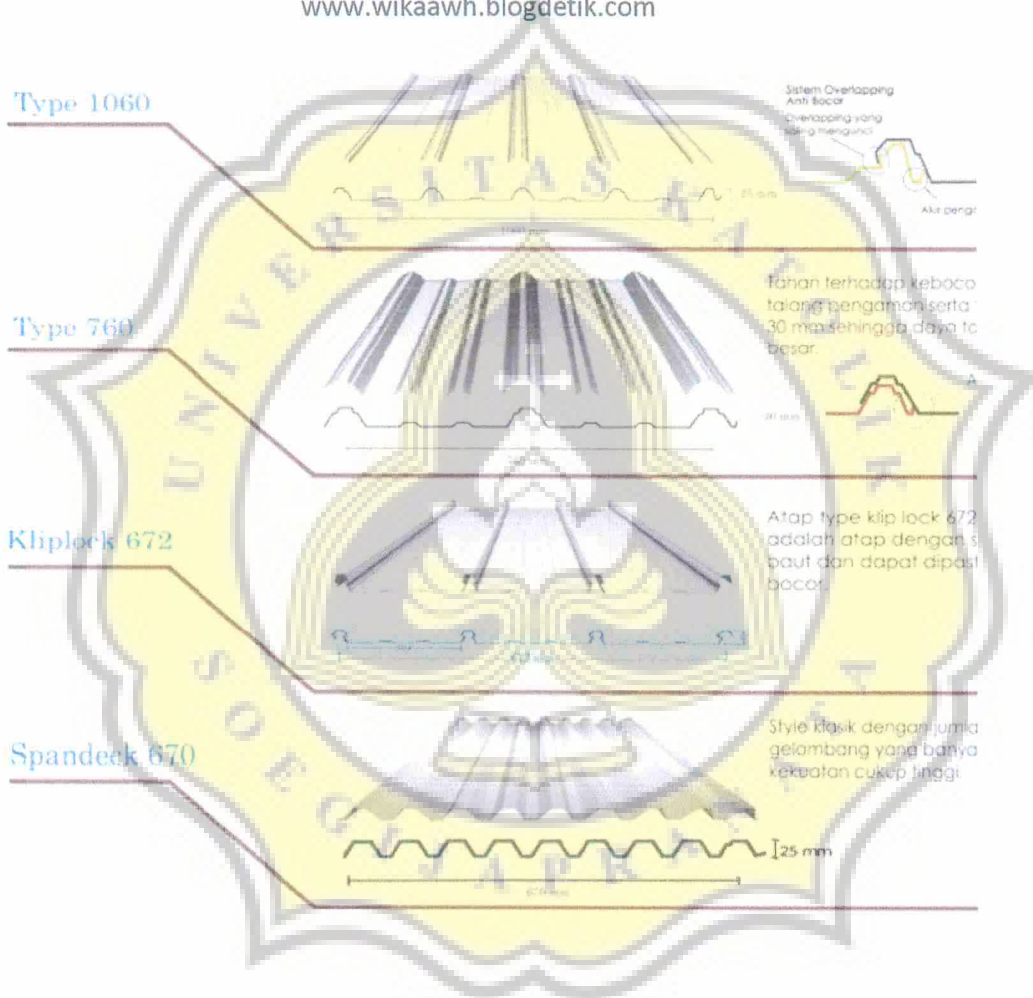
www.skyroof.blogdetik.com

www.kusenaluminium.blogdetik.com

www.plafongypsum.blogdetik.com

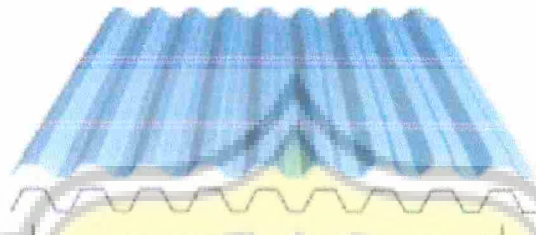
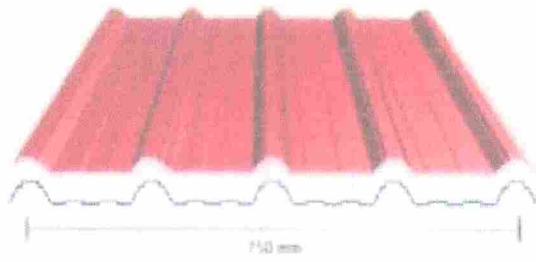
www.pintugarasi.blogdetik.com

www.wikaawh.blogdetik.com



Atap Gelombang Al & Zn Coated

Corrugated Sheet with Al & Zn Coated



► CS modern 9

Bahan Material

Al & Zn coated

Panjang Length
1.8 m - 25 m

Tebal Thickness
0.3 - 0.8 mm

► CS modern 9

Bahan Material

Al & Zn coated

Panjang Length
1.8 m - 25 m

Tebal Thickness
0.3 - 0.8 mm

► CS Classic 1

Bahan Material

Al & Zn coated

Panjang Length
1.8 m - 25 m

Tebal Thickness
0.3 - 0.8 mm

► CS Classic 2

Bahan Material

Al & Zn coated

Panjang Length
1.8 m - 25 m

Tebal Thickness
0.3 - 0.8 mm

► CS Floor De

Bahan Material

Al & Zn coated

Panjang Length
1.8 m - 25 m

Tebal Thickness
0.35 - 1.0 mm

Pilihan Warna

Colour Variant



Merah Manggis
Red Manggo

Merah Delima
Red Pomegranate

Biru Laut
Blue Sea

Hijau Mangga
Green Mango

Coklat Selak
Brown Chocolate

Coklat Seder
Brown Simple

...

b. Baja Konvensional/ Baja Profil

- Profil H, I : 12 m
- Profil L : 6 m

c. Tulangan : 6 m – 9 m – 12 m

d. Plafond

- Gypsum : 120 cm x 120 cm; 120 cm x 240 cm
- Kalsiboard

Eternit Gresik
ISO 9001 - ISO 14001 - OHSAS 18001

etex
KalsiBoard

Kals

TENTANG KAMI | PELAYANAN | ACARA | KARIR | HUBUNGI KAMI | INFO PEMBELIAN
SOLUSI ETER | SOLUSI KALSI | MSDS | CARA MENENTUKAN ETER&KALSI YANG ASLI

09/04/2013

PRODUK & INSTALASI | APLIKASI | AKSESORIS | KEUNTUNGAN | PROYEK

Home English

APLIKASI PLAFON

KalsiBoard Ling 6®

KalsiBoard Ling 6® adalah papan untuk aplikasi ruangan dalam dan plafon luar dengan ketebalan 6 mm. **KalsiBoard Ling 6®** memiliki daya tahan lebih dibandingkan dengan produk lain, dan solusi tepat untuk mendapat hasil plafon yang sempurna.

KalsiBoard Ling 6® diaplikasikan dengan menykerupkan ke sistem rangka **KalsiParing®** atau menggunakan sistem T-Grid.

Untuk aplikasi ruangan dalam, sambungan antara papan harus diaplikasikan dengan **Kalsi Lemper DD-INT®** dan **Kalsi Tape F6-30®** untuk menghasilkan sambungan tertutup.

Untuk aplikasi plafon luar, sambungan antara papan diaplikasikan dengan sistem sambungan tertutup atau cisi dengan bedam khusus yang tahan terhadap cuaca dan pergerakan, tahan terhadap sinar UV, dan memunculkan debit di cat.

Tahan air

Tahan rayap

Nama Produk	Tebal (mm)	Lebar (mm)	Panjang (mm)	Berat (kg)
KalsiBoard Ling 6	6	1200	2400	1,8
	6	1200	2400	1,8
	6	1200	2400	1,8
	6	1200	2400	1,8
	6	1200	2400	1,8
	6	1200	2400	1,8
	6	1200	2400	1,8
	6	1200	2400	1,8
	6	1200	2400	1,8
	6	1200	2400	1,8

100% BEBAS ASBES
SIMPULKA, SUPERFIBER, CARBOGLITE
DAN JENIS ASBES LAINNYA

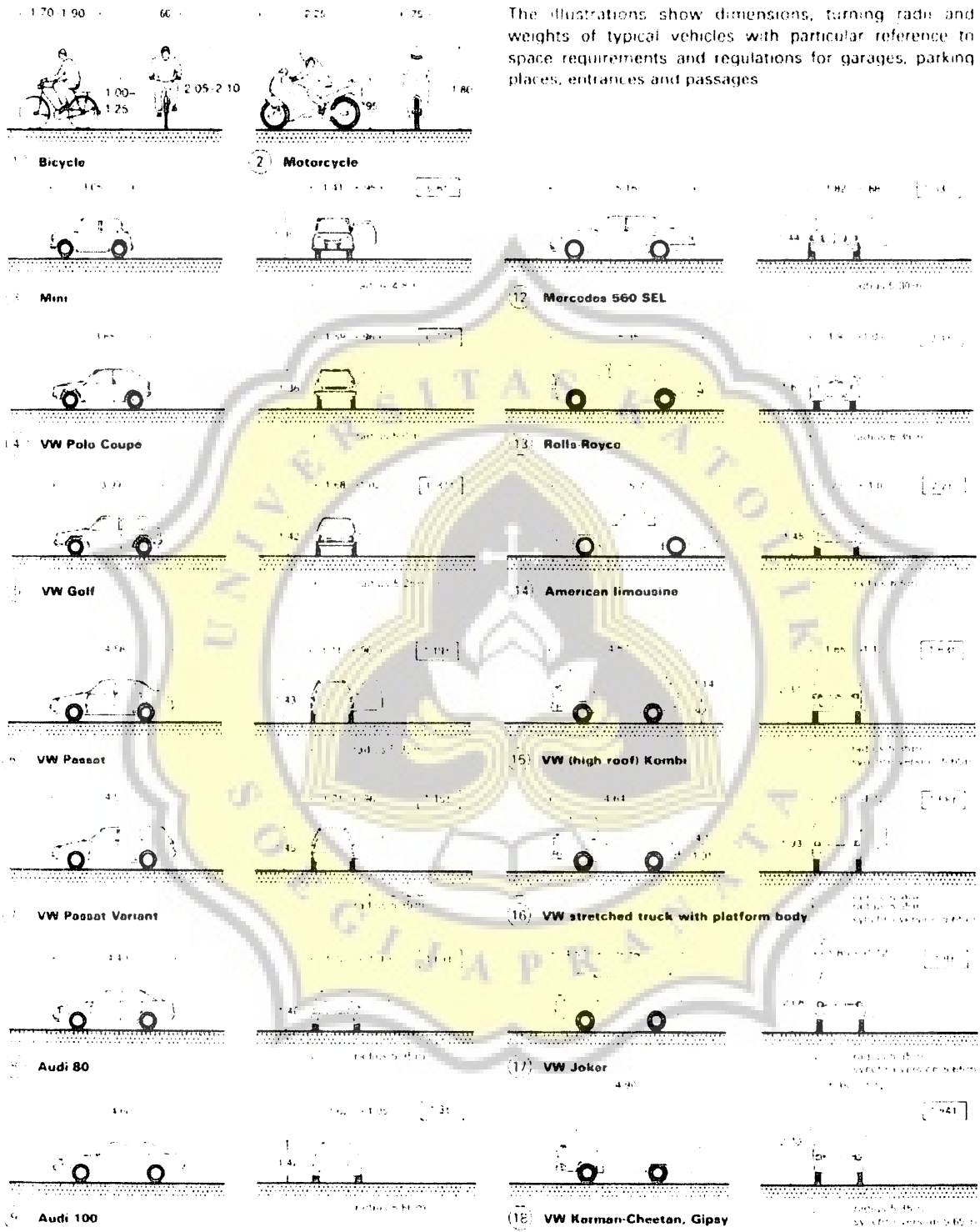
Legal Notices - Copyright © 2013 Eternit Gresik. All Rights Reserved. Privacy Policy

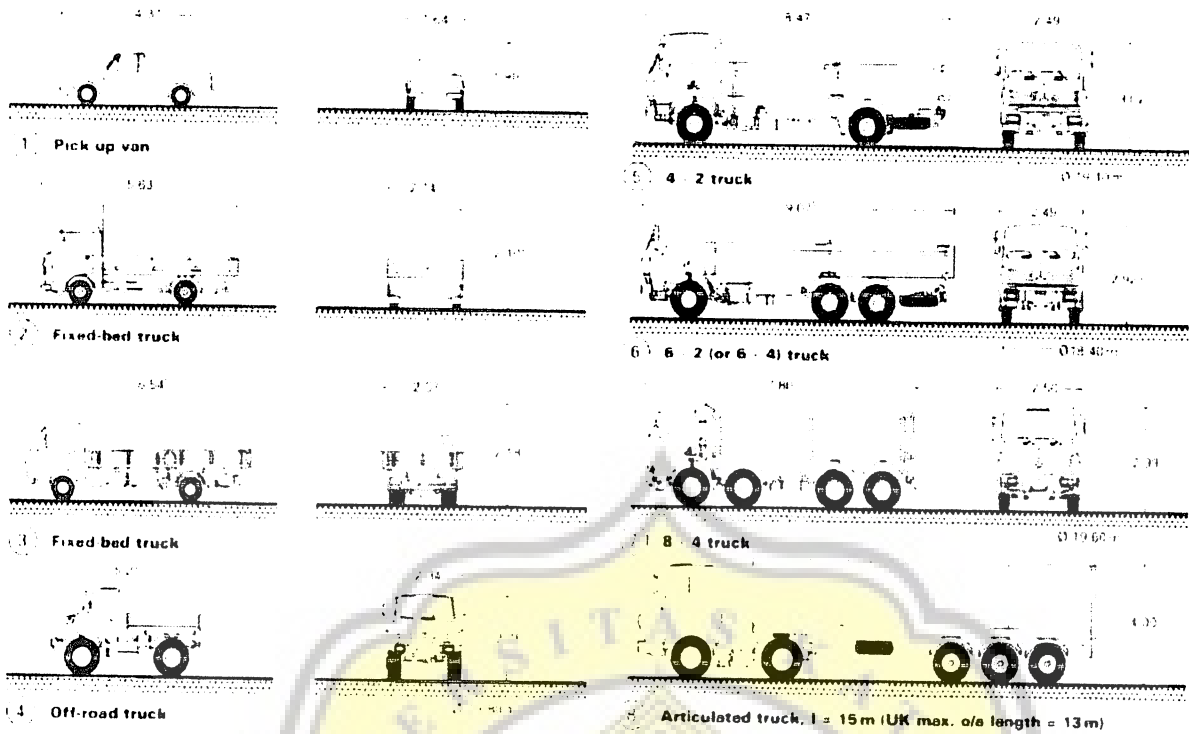
B. Modul bangunan didasarkan pada modul kendaraan (mobil dan motor)

Sumber: Data Arsitek, Ernst dan Peter Neufert

VEHICLE DIMENSIONS

The illustrations show dimensions, turning radii and weights of typical vehicles with particular reference to space requirements and regulations for garages, parking places, entrances and passages





Sehingga modul standar untuk bangunan:

- Kelipatan 30 cm
- Kelipatan 120 cm
- Kelipatan 6 m – 9 m – 12 m
- Kelipatan 2.5 m (mobil)
- Kelipatan 90 cm (motor)

Lampiran 2. Perkiraan Kebutuhan Listrik Bangunan Untuk Perencanaan Instalasi

Penggunaan	Watt/m ²						Pertumbuhan beban 10 tahun (%)	
	pencahaya aan	Total	Lain- lain	Total	AC	Total		
Pertokoan (mall)	50	4.519,9 kVA	10	903,98kVA	50	4.519,9 kVA	50	
9.943,78 kVA							14.915,67 kVA	
Hotel								
Lobby	60	18,9 kVA	5	1,575 kVA	80	25,2 kVA	45,675 kVA	
Kamar	15	1.813,5 kVA	5	604,5 kVA	50	6.045,5 kVA	50	8.463,5 kVA
							12.695,25 kVA	
8.509,175 kVA							12.740,925 kVA	

Luas indoor mall : 90.397,965 m² → 90.398 m²

Luas indoor hotel : 156.554,551 m² → 156.555 m²

Luas kamar hotel : 120.900 m²

Luas loby hotel : 315 m²

Kebutuhan listrik untuk mall : 9.943,78 kVA

Perkiraan 10 tahun mendatang : 14.915,67 kVA

Kebutuhan listrik hotel : 8.509,175 kVA

Perkiraan 10 tahun mendatang : 12.740,925 kVA

Lampiran 3. Perkiraan Kebutuhan Air Bersih untuk Perencanaan Plumbing

Berdasarkan Utilitas Bangunan, Ir. Hartono Poerbo, M. Arch., halaman 22

Hotel	$3\text{m}^3/\text{hari}/100\text{m}^2$
Pertokoan	$0,5\text{m}^3/\text{hari}/100\text{m}^2$

Luas indoor mall : $90.397,965 \text{ m}^2 \rightarrow 90.398 \text{ m}^2$

Luas indoor hotel : $156.554,551 \text{ m}^2 \rightarrow 156.555 \text{ m}^2$

Kebutuhan Air Bersih Mall

$$90.398 \text{ m}^2 \times 0,5\text{m}^3/\text{hari}/100\text{m}^2 = \underline{451,995 \text{ m}^3/\text{hari}}$$

Kebutuhan Air Bersih Hotel

$$156.555 \text{ m}^2 \times 3\text{m}^3/\text{hari}/100\text{m}^2 = \underline{4.696,65 \text{ m}^3/\text{hari}}$$



Lampiran 4. Landasan Helikopter (Elevated Helideck)

Berdasarkan Peraturan Direktur Jendral Perhubungan Udara No. SKEP/100/VI/2010

Data dan Fasilitas Tempat Pendaratan dan Lepas Landas Helikopter; sekurang-kurangnya memuat tentang:

- a. Gambar lokasi Tempat Pendaratan dan Lepas Landas Helikopter yang menunjukkan fasilitas utama, termasuk penunjuk arah angin (wind direction indicator) untuk pengoperasian Tempat Pendaratan dan Lepas Landas Helikopter;
- b. Gambar lokasi yang memperlihatkan jarak Tempat Pendaratan dan Lepas Landas Helikopter (Heliport/Helideck) ke Bandar Udara terdekat,
- c. Lokasi obstacle berdasarkan koordinat titik referensi dalam system koordinat WGS –84;
- d. Ketinggian Obstacle terhadap Mean Sea Level (MSL) dalam ukuran feet
- e. Data fasilitas:

Elevated Tempat Pendaratan dan Lepas Landas Helikopter (Elevated Heliport) antara lain:

- Final Approach and Take-Off Area (FA TO) dan Touch down and Lift Off Area (TL OF).
- Pengait (Tie down) untuk menambatkan helikopter.
- Jaring pengaman (Safety Net)
- Jalan akses personel baik untuk keperluan darurat maupun keadaan normal. Area bebas hambatan minimal berbusur 210 derajat dihitung dari tepi FA TO. Tanda-tanda rambu dan /atau marka elevated heliport
- Penghalang (obstacle)
- Lampu hambatan dan lampu-lampu sebagai alat bantu pendaratan untuk penerbangan malam hari/IFR Flight meliputi:
 - a) Lampu Perimeter .
 - b) Lampu Sorot (Flood Light).
 - c) Lampu Penghalang (obstruction Light).
- Alat bantu penentu cuaca dan kecepatan angin.
- Kantong angin (Wind Sock)
- Prosedur pendekatan untuk pendaratan, batal dan keberangkatan untuk penerbangan malam hari/ IFR Flight.
- Fasilitas dan personel radio komunikasi penerbangan yang memiliki lisensi yang sah dan masih berlaku

- Personel Helicopter Landing Officer (HLO) yang memiliki lisensi yang sah dan masih berlaku
- Rescue Equipment dan Fire Fighting yang sesuai dengan katagorinya

MODEL	RESCUE EQUIPMENT	FIRE FIGHTING	RESCUE EQUIPMENT	FIRE FIGHTING
BOEING 40	8.75	7.02	1.92	572
BOEING 40	11.75	10.36	2.15	1089
BOEING 40	8.75	6.75	2.28	1739
BOEING 40	6.06	9.75	2.26	1740
BOEING 40	9.35	6.17	1.97	589
BOEING 40	9.59	6.05	2.07	1080
BELL 47	12.29	11.31	2.59	1735
BELL 47	11.95	10.15	1.83	1452
BELL 47	12.95	11.28	2.20	1683
SA 341g	11.58	10.52	1.93	1800
AS350 SQUIREL	12.09	10.70	2.29	1950
AS355 TWIN SQUIREL	12.98	10.70	2.01	2400
BO105	11.81	9.90	2.53	2500
AUGUSTA 109	13.04	11.0	3.54	2600
SA365 C DAUPHIN	13.22	11.67	3.6	3500
SA365 N DAUPHIN	13.68	11.93	3.61	4250
BELL 222	15.33	12.80	3.72	3742
SIKORSKY S78	16.00	13.41	5.00	5171
BELL 212	17.47	14.63	2.53	5080
AS332L SUPER PUMA	18.70	15.52	3.79	8599
BELL 214 ST	18.96	15.85	2.53	7936

USA Unified Facilities Criteria (UFC) 2008

MODEL	RESCUE EQUIPMENT	FIRE FIGHTING	RESCUE EQUIPMENT	FIRE FIGHTING
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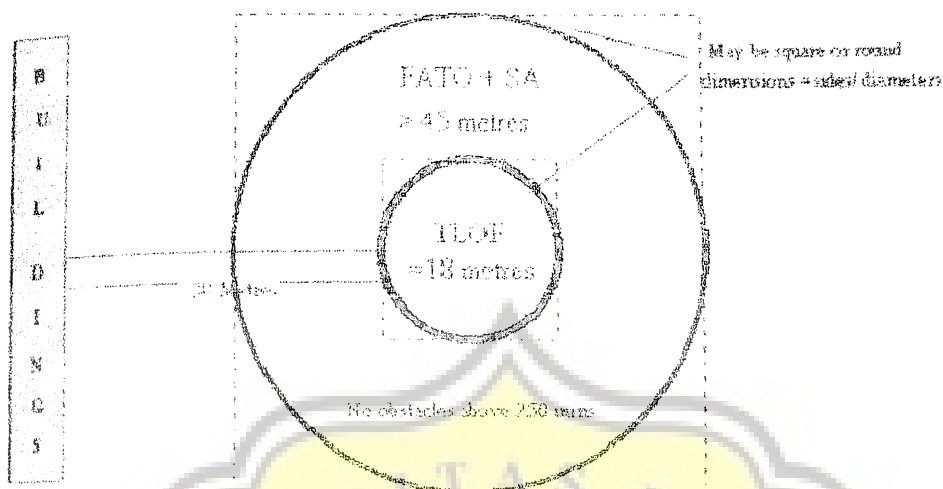
RESCUE EQUIPMENT AND FIRE FIGHTING EQUIPMENT FOR HELICOPTERS



RESCUE EQUIPMENT AND FIRE FIGHTING EQUIPMENT FOR HELICOPTERS

HELIPAD INQUIRY

HELIPAD LAYOUT AND MINIMUM DIMENSIONS
FOR SIKORSKY S 61 N/ SEAKING



Notes

Touchdown and Lift off area = 1.5 x largest undercarriage dimension
 = 1.5 x 7.16 m
 = 10.74 m (say 11 m) but

Nose - Tail distance to accommodate aircraft doors = 18 m

FATO+SA = 2 x Overall length of S 61N (D)
 = 2 x 22.2 m
 = 44.4 m (say 45 m)

Minimum permitted distance of TLOF from obstacles = 1.5 x RD
 = 1.5 x 18.9 m
 = 28.35 m (say 30 m)

It is strongly recommended that the TLOF should be located 30 metres or more from buildings to avoid downwash and noise effects

TLOF to be firm, flat and load bearing to 2.5 x MTWA = 23.25 Tonnes

Recommended concrete/ paved surface for access by hospital utilities in all weather conditions.

Fig. 5.

The civil S61N, in order to use a site of this size, would need to have outside ground effect hover performance, which degree isoperative. For normal Group A/Class 1 profiles a FATO of about 300 metres would be required.

DETERMINING THE EFFECTS OF HELIDECK LIGHTING SYSTEMS

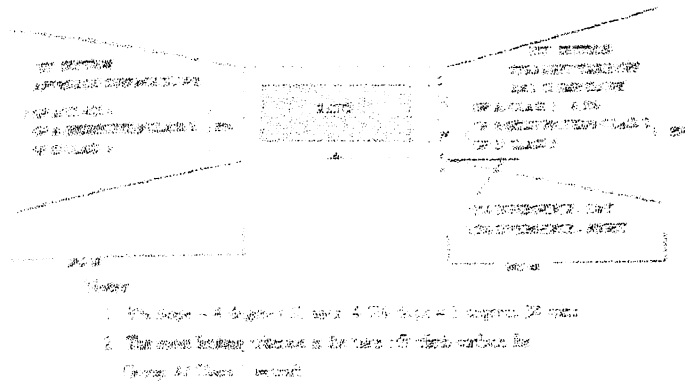


Figure 11. Helideck lighting system
Source: [Source, [Year], [Author]

HELIDECK LIGHTING SYSTEM

There are several problems exist with current helideck lighting systems

- the location of the helideck on the platform is often difficult to establish due to the lack of conspicuity of the perimeter lights
- helideck floodlighting systems frequently present a source of glare and loss of pilots' night vision on deck, and further reduce the conspicuity of helideck perimeter lights during the approach;
- the performance of most helideck floodlighting systems do not meet the current specification for light intensity and distribution and thus illumination of the central landing area is inadequate, leading to the so-called 'black hole' effect.

Lampiran 5. Tipe Konfigurasi Kamar pada Bangunan Hotel

GUESTROOM FLOOR

Guestroom floor analysis

TOWER CONFIGURATION	ROOMS/FLOOR	DIMENSIONS, FT (M)	GUESTROOM (%)	CORRIDOR, SQ FT (SQ M)	PERIMETER (X ROOM WIDTH)	COMMENTS
Single-loaded slab	Varies 12-30+	32 x any length (10)	65	80 (7.5)	2-2-4	Some economy in that vertical core can be absolute minimum—not affected by room days.
Double-loaded slab	Varies 16-40+	60 x any length (18)	70	45 (4.2)	1-6-1-8	200 ft (61 m) plus dead-end corridor for two stair scheme; can be turned into L or T.
Offset slab	Varies 24-40+	80 x any length (24)	72	50 (4.6)	1-4-1-6	Core is buried, creating lower perimeter factor; higher corridor because of elevator lobby; also other shapes.
Rectangular tower	16-24	110 x 110 (34 x 34)	65	60 (5.6)	1-5-1-7	Planning problems focus on access to corner rooms; fewer rooms; floor make it difficult to plan core.
Circular tower	16-24	90-130 diameter (27-40)	67	45-65 (4.2-6)	1-0-5	Smaller diameter for 16 rooms per floor; larger for 24 rooms; corridor area varies; trimmer-dustily; perimeter of 16-19 ft (4.9-5.8 m).
Triangular tower	24-30	Varies	64	65-85 (6-7.9)	1-4-1-8	Central core inefficient because of triangular shape; corner rooms easier to plan than with square shape.
Atrium	24+	90+ (27)	62	95 (8.8)	1-6-1-8	Open volume creates spectacular space; open corridor balconies; opportunity for glass elevators; requires careful engineering for HVAC; especially smoke evacuation; can be shaped into irregular configurations.

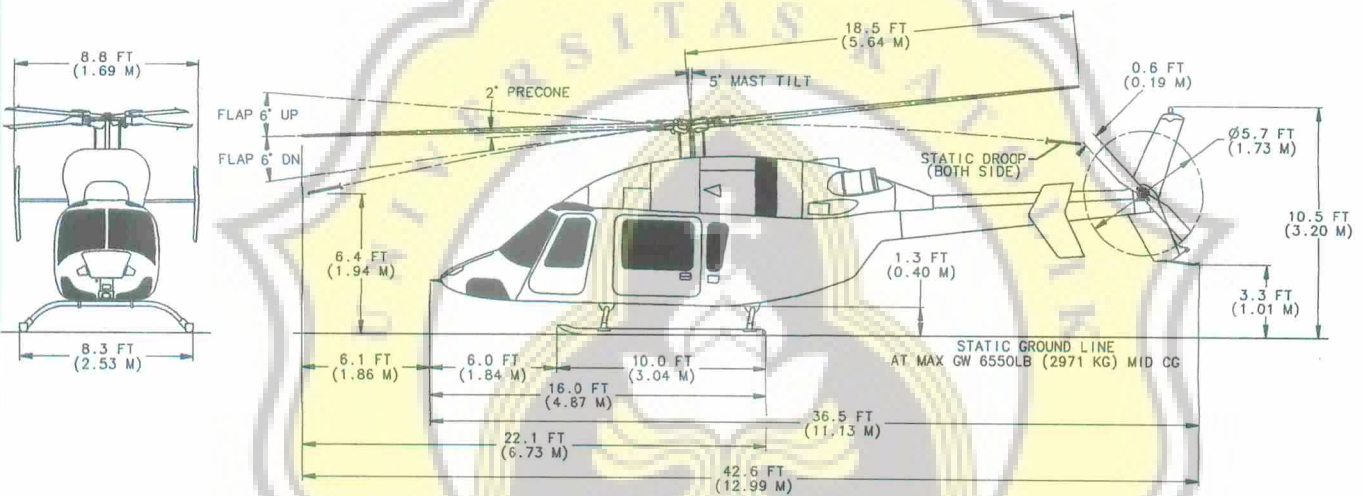
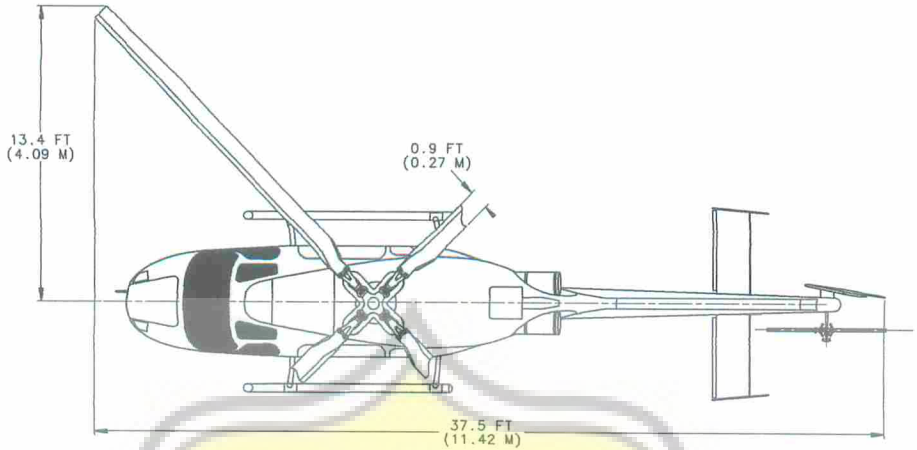
Each guestroom floor configuration has certain characteristics which affect its potential planning efficiency. The table shows the basic building dimensions, the usual percentage of floor area devoted to guestrooms, the amount of area per room needed for corridors, and a "perimeter factor," a multiple of the room width required for the exterior wall. For example, the table shows that double-loaded slabs (and the "offset slab" modification) are the most efficient in terms of guestroom area percentage and that the atrium plans are the least economical in providing guestroom space.

Sumber: Walter Rutes dan Richard Penner, 1995

Bell 427 Heliport Design Data and Dimensions



427
STD GEAR



LANDING GEAR LOADING AT MAXIMUM GROSS WEIGHT (6350-POUNDS),
BASED ON 1G STATIC CONDITIONS AT AFT-MOST STRUCTURAL CG LIMIT

Gear Type	Loading (lb)		Contact Area (in ²)		Contract Pressure (lb/in ²)	
	Forward	Aft	Forward	Aft	Forward	Aft
Standard Skid	2176	4174	16.5 x 2.0	16.5 x 2.0	66	127
High Skid	2079	4271	16.5 x 2.0	16.5 x 2.0	63	129
Emergency Floats	2079	4271	16.5 x 2.0	16.5 x 2.0	63	129

LANDING GEAR LOADING AT MAXIMUM GROSS WEIGHT (6550-POUNDS),
BASED ON 1G STATIC CONDITIONS AT AFT-MOST STRUCTURAL CG LIMIT

Gear Type	Loading (lb)		Contact Area (in ²)		Contract Pressure (lb/in ²)	
	Forward	Aft	Forward	Aft	Forward	Aft
Standard Skid	2245	4305	16.5 x 2.0	16.5 x 2.0	68	131
High Skid	2145	4406	16.5 x 2.0	16.5 x 2.0	65	134
Emergency Floats	2145	4406	16.5 x 2.0	16.5 x 2.0	65	134



Flight Light Inc.
2708 47th Ave.
Sacramento, California, U.S.A.
95822-3806

(916) 394-2800 FX (916) 394-2809
(800) 806-3548 EM info@flightlight.com

ICAO Compliant
Heliport Design Guide

Touchdown and Lift-Off Area Lighting (TLOF)

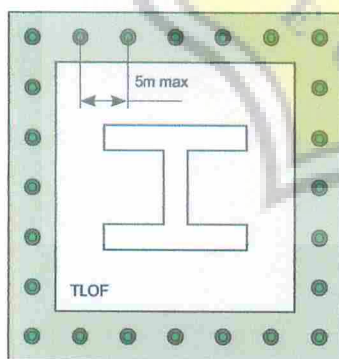
Recommendations from ICAO Annex 14 Volume II – Heliports (Second Edition 1995 + Amendments 1, 2 & 3) Paragraph 5.3.8

ICAO Annex 14 Volume II – Heliports (Second Edition 1995 + Amendments 1, 2 & 3)
ICAO Heliport Manual (Third Edition – 1995)

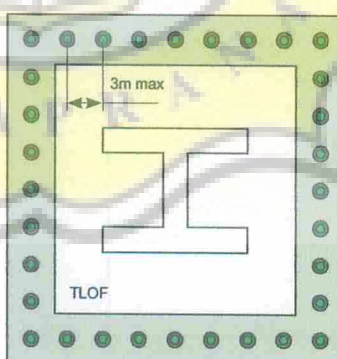
A touchdown and lift-off area lighting system should be provided at a heliport intended for use at night. The touchdown and lift-off area lighting system for a surface level heliport should consist of one or more of the following:

- Perimeter lights; or
- Floodlighting; or
- Luminescent panel lighting when a) and b) are not practicable and final approach and take-off area lights are available.

Touchdown and lift-off perimeter lights should be placed along the edge of the designated touchdown and lift-off area or within a distance of 5m from the edge. These should be uniformly spaced at intervals of not more than 5m for surface level heliports and helipads. For elevated heliport and helidecks, the maximum distance between fittings is 3m. There should be a minimum number of four lights on each side including a light in each corner. For lighting the surface where enhanced surface texture cues are required, floodlights should be located on floor level and installed around the TLOF at 10m max spacing. Touchdown and lift-off area lights should be steady omnidirectional lights emitting green.



Ground Level Heliport



Elevated Heliport/Helideck

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Data Sheet: ICAO Heliport Design
2/3/2012



Flight Light Inc.
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**ICAO Compliant
Heliport Design Guide**

Final Approach and Take-Off Area Lighting (FATO)

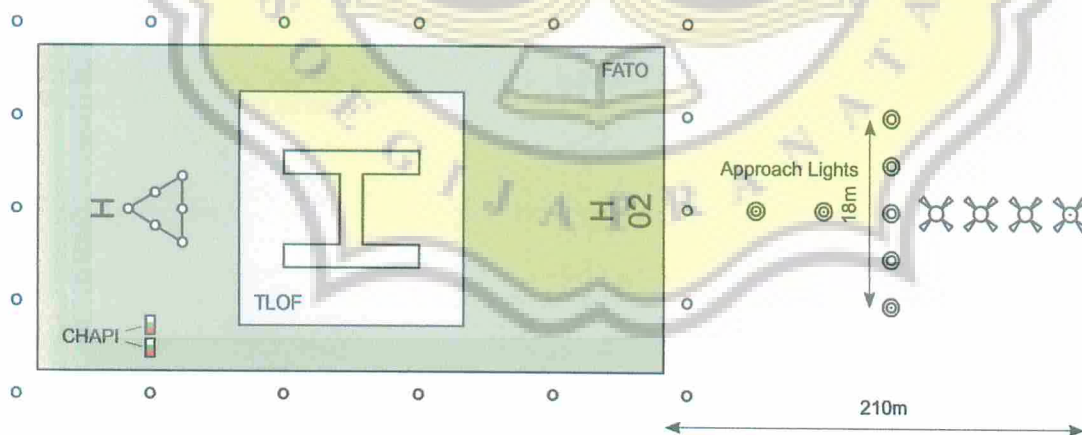
Recommendations from ICAO Annex 14 Volume II – Heliports (Second Edition 1995 + Amendments 1, 2 & 3) Paragraph 5.3.6

Where a final approach and take-off area is established at a surface level heliport on ground intended for use at night, final approach and take-off lights should be provided, except where the final approach and take-off area and the touch down and lift-off area are nearly coincidental or the extent of the final approach and take-off area is self-evident.

The final approach and take-off area lights should be placed along the edges of the final approach and take-off area as follows:

- For an area in the form of a square or rectangle, at intervals of not more than 50m with a minimum of four lights on each side including a light at each corner
- For any other shaped area, including a circular area, at intervals of not more than 5m with a minimum of ten lights

Final approach and take-off area lights should be steady omnidirectional lights showing white.



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Page 3 of 5



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Approach Lighting

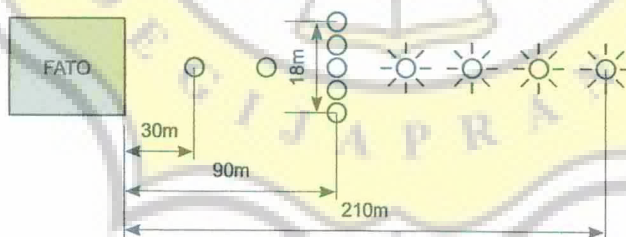
Recommendations from ICAO Annex 14 Volume II – Heliports Second Edition 1995 + Amendments 1, 2 & 3) Paragraph 5.3.3

An approach lighting system should be provided at a heliport where it is desirable and practicable to indicate a preferred approach direction. The approach lighting system should consist of a row of three lights spaced uniformly at 30m intervals and a crossbar 18m in length located at a distance of 90m from the perimeter of the Final Approach and Take Off area (FATO). The lights forming the crossbar should be at right angles to, and bisected by the line of the approach lights, and spaced at 4.5m intervals.

Where there is the need to make the final approach course more conspicuous, additional lights spaced uniformly at 30m intervals should be provided beyond the crossbar. The lights beyond the crossbar may be steady or sequenced flashing, depending upon the environment.

Where an approach lighting system is provided for a non-precision FATO the system should be not less than 210m in length, as shown in ICAO Annex 14, Volume II, Figure 5.10.

Bi-directional Approach lighting is also available.



**Both the steady & flashing lights
should be omnidirectional white lights**

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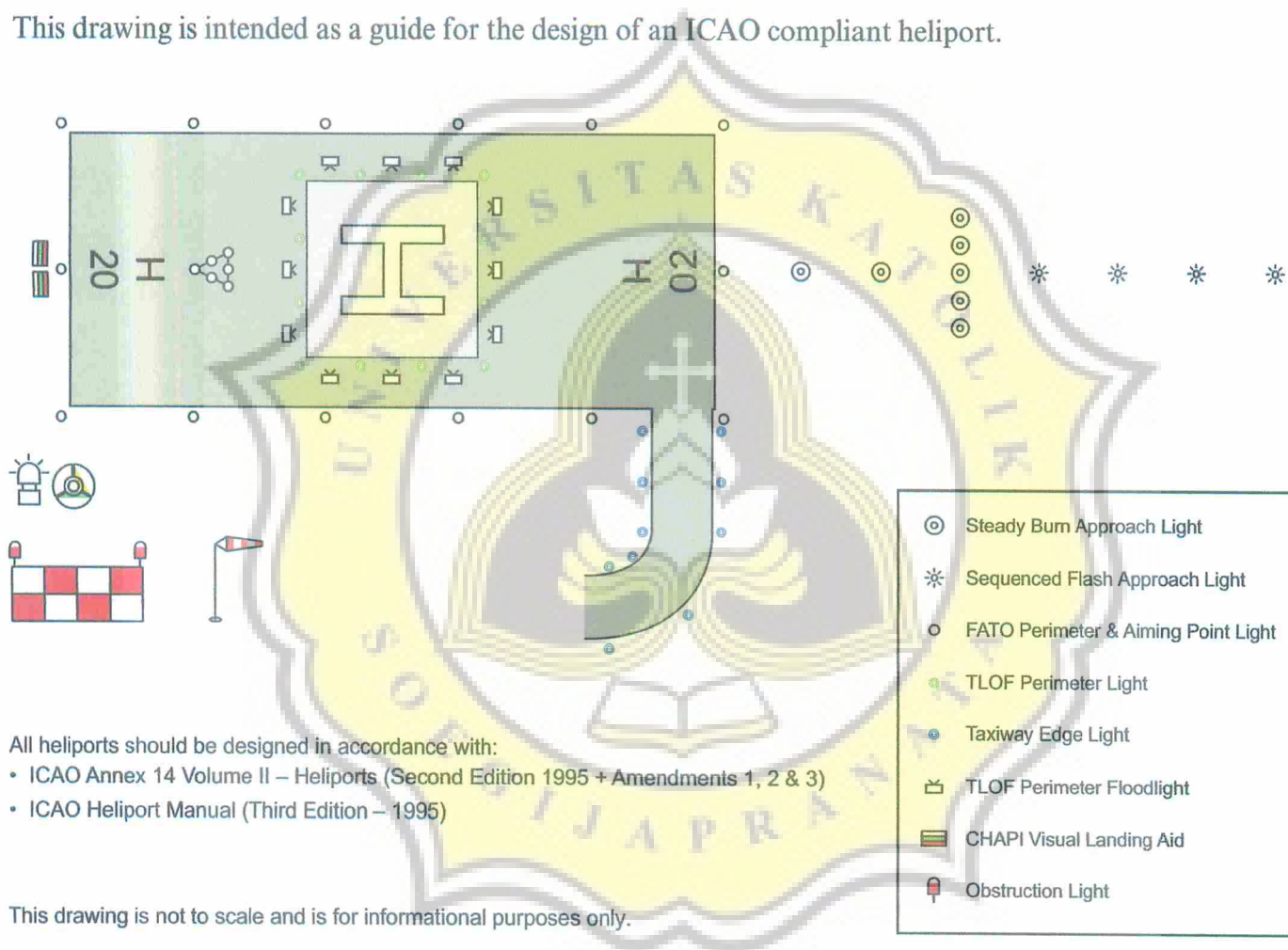
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ICAO Compliant
 Heliport Design Guide

Heliport Lighting General Layout - ICAO

This drawing is intended as a guide for the design of an ICAO compliant heliport.



All heliports should be designed in accordance with:

- ICAO Annex 14 Volume II – Heliports (Second Edition 1995 + Amendments 1, 2 & 3)
- ICAO Heliport Manual (Third Edition – 1995)

This drawing is not to scale and is for informational purposes only.

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Page 1 of 5

Redefining Elevator Technology

KONE EcoDisc

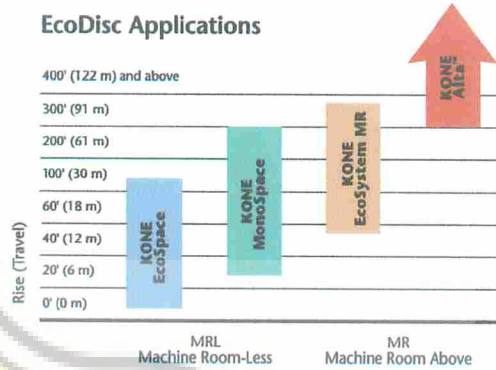
Proven Technology

- More than 15 years of experience with KONE EcoDisc technology, including the world's first Machine Room-Less (MRL) installation
- KONE has sold and installed over 400,000 KONE EcoDisc machines worldwide
- Applicable from 2 to 100+ floors

Space Savings

- In low- to mid-rise elevators, the compact KONE EcoDisc structure eliminates the traditional machine room
- In high-rise systems, the KONE EcoDisc delivers remarkable space savings and improved efficiency

EcoDisc Applications



KONE Eco-efficient™ solutions

How much can you save by selecting right?

KONE elevators can reduce the total energy consumption by as much as two-thirds or even more. For example, a KONE EcoSpace elevator, with the KONE EcoDisc hoisting machine, uses up to 70% less energy compared to a hydraulic elevator and up to 50% less than a 2-speed traction elevator. With additional energy-saving features, this energy consumption can be reduced even further.

1 A green hoisting system

The KONE EcoDisc hoisting machine made DC gearless and inefficient geared hoisting machines obsolete. The KONE EcoDisc permanent-magnet synchronous motor, together with a vector-controlled drive system and regenerative options, provide the highest total efficiency and minimize both mechanical and electrical losses.

2 Regenerative drive

Recovers excess energy from the elevator when the KONE EcoDisc motor acts as a generator. This most notably occurs with an empty car traveling UP or a full car traveling DOWN. The drive can recover up to 25% of the total energy used by an elevator, producing clean and safe energy that does not damage the network.

3 Put to sleep when not in use

In today's elevators, lights, signalization and ventilation can consume a considerable amount of electricity even when the elevator is not moving. KONE energy-efficient options supervise elevator usage and set the devices to sleep mode during inactive periods to minimize total energy consumption.

4 Eco-efficient car lighting

To save energy used for car lighting, halogen lights have been replaced by LED spot lights. LED lights consume 80% less electricity than halogen lights and last up to 10 times longer.



Select your KONE EcoDisc-powered elevator

KONE EcoSpace

<i>Application</i>	Low-Rise
<i>Type</i>	MRL
<i>Powered by</i>	EcoDisc
<i>Capacity</i>	2000 – 5000 lbs. (907 – 2268 kg)
<i>Speed</i>	150 fpm (.75 m/s), 200 fpm (1.0 m/s)
<i>Landings</i>	2 to 12

Machine Room-Less performance in a new or existing hoistway: Designed specifically to fit in the hydraulic footprint, KONE EcoSpace delivers pure traction Machine Room-Less performance to low-rise buildings.

- No oil
- No hole drilling
- Uses 70% less energy than hydraulic applications
- Minimal building interface
- Ideal solution for replacement of existing hydraulic elevator (contact KONE Sales Professional)

KONE MonoSpace

<i>Application</i>	Mid-Rise
<i>Type</i>	MRL
<i>Powered by</i>	EcoDisc
<i>Capacity</i>	2000 – 5000 lbs. (907 – 2268 kg)
<i>Speed</i>	200 – 500 fpm (1.0 – 2.54 m/s)
<i>Landings</i>	6 to 27

The Machine Room-Less solution that launched a revolution: Introduced over a decade ago, KONE MonoSpace forever changed the vertical transportation landscape by eliminating the requirement for a machine room.

- Consumes approximately 50% less energy than conventional traction machines
- Creates more usable space – variable machine locations
- Superior ride quality
- Minimal building interface

KONE EcoSystem MR

<i>Application</i>	Mid- to High-Rise
<i>Type</i>	MR
<i>Powered by</i>	EcoDisc
<i>Capacity</i>	2000 – 5000 lbs. (907 – 2268 kg)
<i>Speed</i>	200 – 700 fpm (1.0 – 3.5 m/s)
<i>Landings</i>	6 to 63

Innovative, space efficient, mid-high rise system: KONE EcoSystem MR elevators use next-generation KONE EcoDisc hoisting machines that require only half the overhead machine room space of traditional traction elevators.

- Energy efficient
- Superior acceleration/deceleration profile
- Improved floor-floor times and leveling

KONE Alta

<i>Application</i>	High-Rise
<i>Type</i>	MR
<i>Powered by</i>	EcoDisc
<i>Capacity</i>	2000 – 8000 lbs. (907 – 3629 kg)
<i>Speed</i>	700 – 1600 fpm (3.5 – 8.13 m/s)
<i>Landings</i>	6 to 126

State-of-the-art technology, a truly extraordinary elevator system: KONE Alta elevators are developed for the next generation of super-tall buildings of up to 1600 ft. (480 m) in height.

- Reaches speeds of up to 1600 fpm (8.13 m/s)
- Super efficient
- High power-to-weight ratio

The special Silent Car™ technology applied on both single and high capacity double-decker cars ensures a smooth and quiet ride.

For the latest product information and interactive design tools, visit www.kone.us

KONE EcoSpace

Innovation Meets Affordability

MAX TRAVEL
100 ft. (30.5 m)

MAX LANDINGS
12

SPEED⁽¹⁰⁾
150, 200 fpm
(.75, 1.0 m/s)

CAR HEIGHT ^F
8, 9 or 10 ft.
(2438, 2743
or 3048 mm)

ENTRANCE HEIGHT ^G
7, 8 or 9 ft.
(2134, 2438
or 2743 mm)

**MINIMUM
OVERHEAD HEIGHT ^H**
13 ft. 1 in. (8 ft. cab)
(3988 mm [2438 mm cab])

PIT DEPTH ^I
5 ft. (1524 mm)

EcoSpace		A	B	C	D	E		
		CAPACITY lbs. (kg)	OPENING TYPE	HOISTWAY WIDTH (mm)	HOISTWAY DEPTH (mm)	INTERIOR WIDTH (mm)	INTERIOR DEPTH (mm)	DOOR WIDTH (mm)
Front Opening	PASSENGER	2000 (907)	SSP	7'-4" (2235)	5'-9" (1753)	5'-8" (1727)	4'-3" (1295)	3'-0" (914)
		2500 (1134)	SSP-CO	8'-4" (2540)	5'-9" (1753)	6'-8" (2032)	4'-3" (1295)	3'-6" (1067)
		3000 (1361)	SSP-CO	8'-6" (2591)	6'-3" (1905)	6'-8" (2032)	5'-0" (1524)	3'-6" (1067)
		3500 (1588)	SSP-CO	8'-6" (2591)	6'-11" (2108)	6'-8" (2032)	5'-6 ¹ / ₈ " (1681)	3'-6" (1067)
		4000 (1814)	CO	9'-4" (2845)	6'-11" (2108)	7'-5 ¹ / ₈ " (2281)	5'-6 ³ / ₈ " (1681)	4'-0" (1219)
Front & Reverse Opening	SERVICE	4000 (1814)	2SP	7'-4" (2235)	9'-2" (2794)	5'-6 ³ / ₈ " (1681)	7'-7 ¹ / ₈ " (2323)	4'-0" (1219)
		4500 (2041)	2SP	7'-4" (2235)	9'-8" (2946)	5'-6 ³ / ₈ " (1681)	8'-1 ¹ / ₈ " (2473)	4'-0" (1219)
		5000 (2268)	2SP	7'-4" (2235)	10'-2 ¹ / ₂ " (3105)	5'-6 ³ / ₈ " (1681)	8'-9 ³ / ₈ " (2672)	4'-0" (1219)
Control Space	PASSENGER	2000 (907)	SSP	7'-4" (2235)	6'-3 ¹ / ₄ " (1911)	5'-8" (1727)	4'-3" (1295)	3'-0" (914)
		2500 (1134)	SSP-CO	8'-4" (2540)	6'-3 ¹ / ₄ " (1911)	6'-8" (2032)	4'-3" (1295)	3'-6" (1067)
		3000 (1361)	SSP-CO	8'-6" (2591)	6'-11" (2108)	6'-8" (2032)	5'-0" (1524)	3'-6" (1067)
		3500 (1588)	SSP-CO	8'-6" (2591)	7'-5 ¹ / ₄ " (2267)	6'-8" (2032)	5'-6 ¹ / ₈ " (1681)	3'-6" (1067)
		4000 (1814)	CO	9'-4" (2845)	7'-5 ¹ / ₄ " (2267)	7'-5 ¹ / ₈ " (2281)	5'-6 ³ / ₈ " (1681)	4'-0" (1219)
Control Space	SERVICE	4000 (1814)	2SP	7'-4" (2235)	10'-1 ¹ / ₂ " (3086)	5'-6 ³ / ₈ " (1681)	7'-7 ¹ / ₈ " (2323)	4'-0" (1219)
		4500 (2041)	2SP	7'-4" (2235)	10'-7 ¹ / ₂ " (3238)	5'-6 ³ / ₈ " (1681)	8'-1 ¹ / ₈ " (2473)	4'-0" (1219)
		5000 (2268)	2SP	7'-4" (2235)	11'-3 ¹ / ₄ " (3435)	5'-6 ³ / ₈ " (1681)	8'-9 ³ / ₈ " (2672)	4'-0" (1219)
		CAPACITY lbs. (kg)	CONTROLLER SPACE	WIDTH (mm)	DEPTH (mm)	DOOR WIDTH (mm)		
		2000 to 5000 (907 to 2268)	integral or remote closet	4'-0" (1219)	1'-8" (508)	3'-6" (1067)		
		2000 to 5000 (907 to 2268)	adjacent room	5'-0" (1524)	dimension (B)	3'-0" (914)		

Section View



Plan Views



Notes

- (1) A hoist beam (by KONE) is required for installation (by others). Dimension **H** reflects clear under hoist beam.
- (2) If an EBD (Emergency Battery Device) is required please contact your KONE Sales Professional for further detail regarding dimension **J**.
- (3) The published hoistway **A** x **B** dimensions represent the minimum clear inside requirements. Construction efficiencies can be realized by increasing these dimensions by up to 2" (51 mm).
- (4) For seismic zones, add 4" (102 mm) to dimension **A** for 2000 lbs. (907 kg) and 2500 lbs. (1134 kg) capacity applications.
- (5) For seismic zones add 2" (51 mm) to dimension **A** for 3000 lbs. (1361 kg) and 3500 lbs. (1588 kg) capacity applications.
- (6) For pit depths less than 5' (1524 mm) please contact a KONE Sales Professional.
- (7) If occupied space exists below the hoistway, consult your KONE Sales Professional.
- (8) All dimensions are based on an 8'-0" (2438 mm) cab with a 7'-0" (2134 mm) door. Alternate car and door heights are available, but will affect dimension **H**.
- (9) Contact your local KONE Sales Representative regarding local code variations when utilizing the integral and remote closet options.
- (10) 150 fpm (.75 m/s) only available up to 85 ft. (25 m) of travel and 10 landings.
- (11) 200 fpm (1.0 m/s) only available for 2000 lbs. (907 kg) through 3500 lbs. (1588 kg) capacity applications.

Visit www.kone.us for the latest job-specific details, CAD drawings, specifications, electrical data, reaction loads and building access requirements.

KONE EcoSpace EB

The Benefits are Clear

KONE EcoSpace is also applicable for existing buildings with hydraulic elevators. This turnkey solution replaces the hydraulic system with innovative MRL technology.

Why Replace?

Instead of replacing your old elevators with similar technology, KONE offers you a new choice. Our innovative Machine Room-Less design is the first turnkey full replacement elevator solution for existing hydraulic elevators. Thanks to the revolutionary KONE EcoDisc motor, KONE EcoSpace EB fits into the existing hydraulic hoistway with capability to seamlessly interface with your existing entrances.

KONE has sold over 400,000 KONE EcoDisc machines globally, with an excellent record of operating reliability. So, instead of complicated, lengthy and expensive retrofit upgrades, KONE provides a brand new elevator.

- Everything from the site survey to the dismantling of the existing equipment is carefully thought out in order to minimize disruption to your building.
- Our optimized maintenance program minimizes downtime and ensures safe and reliable lifetime operation.

KONE EcoSpace EB Advantages

- **For the owner:** Minimized building disruption, increased property value, accommodates reduced pit depth and overhead
- **For the tenant:** Smoother, quieter ride, no hydraulic oil odor, optimum stopping accuracy, sophisticated car features
- **For the environment:** No hydraulic oil, energy-efficient, recycle existing elevator where feasible, minimize building materials

1 Space Efficiency

Possibility to accommodate reduced headroom height and pit depth. The KONE EcoDisc machine is so compact there is no need for a machine room above, as it fits right into the hoistway.

2 Energy-efficient

The revolutionary gearless KONE EcoDisc machine has only one moving part and is three times more efficient than a hydraulic-powered unit using 70% less energy – with the potential to cut annual operating costs in half or better – a true energy miracle.

3 Minimal Disruption

KONE EcoSpace EB fits inside the existing hydraulic hoistway, minimizing the need for modifications.

4 Reusable Entrances

KONE EcoSpace EB reduces significant structural modifications by seamlessly interfacing with most existing hydraulic entrances.

5 Modern, Code-compliant

Modern, simple and code-compliant operating displays.

6 High Performance

Optimal stopping accuracy for a smooth ride.

7 No Oil

The hydraulic cylinder is drained of all oil and capped, ensuring oil-free, environmentally-friendly operation.



Tabel 1.3. Klasifikasi Hotel

Sumber: Knowledge on Hotel Operation oleh Balai Pendidikan dan Latihan Kepariwisataaan

Klasifikasi Hotel berdasarkan Knowledge on Hotel Operation oleh Balai Pendidikan dan Latihan Kepariwisataaan	Plan	European	pengunjung hanya membayar tarif kamar saja.				
		Continental	tarif kamar termasuk tarif makan pagi				
		Modified American	tarif kamar termasuk tarif 2 kali makan (jam dapat dipilih)				
		Full American	tarif kamar termasuk 3 kali makan.				
	Ukuran / Jumlah Kamar	Small	jumlah kamar antara kurang dari 25 buah.				
		Average	jumlah kamar antara 25 – 100 buah.				
		Above Average	jumlah kamar antara 100 – 300 buah				
		Large	jumlah kamar lebih dari 300 buah				
	Jenis Pengunjung	Family	hotel untuk tamu yang menginap bersama keluarga				
		Bussiness	hotel untuk pengusaha				
		Tourist	hotel untuk tamu yang menginap berupa wisatawan, baik domestik maupun luar negeri				
		Transit	hotel untuk tamu yang singgah dalam waktu singkat.				
		Cure	hotel untuk tamu yang menginap dalam proses pengobatan atau penyembuhan penyakit				
	Lama Menginap	Transit	hotel dengan lama tinggal tamu rata-rata semalam.				
		Semi Resident	hotel dengan lama tinggal tamu lebih dari satu hari tetapi tetap dalam jangka waktu pendek, berkisar dua minggu hingga satu bulan				
		Resident	hotel dengan lama tinggal tamu cukup lama, berkisar paling sedikit satu bulan.				
	Lokasi	Resort	hotel yang berada di daerah rekreasi atau peristirahatan				
		Mountain	hotel yang berada di pegunungan				
		Beach	hotel yang berada di pantai				
		City	hotel yang berada di tengah kota				
Highway		hotel yang berada di jalur highway					
Kegiatan Tamu Selama Menginap	Sport	hotel yang berada pada kompleks kegiatan olahraga.					
	Ski	hotel yang menyediakan area bermain ski.					
	Conference	hotel yang menyediakan fasilitas lengkap untuk konferensi.					
	Convention	hotel sebagai bagian dari komplek kegiatan konvensi.					
	Pilgirm	hotel yang sebagian tempatnya berfungsi sebagai fasilitas ibadah.					
Sistem Operasional	Casino	hotel yang sebagian tempatnya berfungsi untuk kegiatan berjudi.					
	Franchised	Hotel waralaba, hotel menggunakan nama dagang, lisensi dagang dari pihak lain sesuai persyaratan yang diberikan tetapi dikelola sendiri					
	Refferal	Hotel dengan kepemilikan dan pengeolaan berbeda, tetapi pemasarannya menjadi satu					
Peraturan Pemerintah	Tarif	Chain	Hotel berjaringan internasional, pengelolaan mengikuti perusahaan utama				
		Ekonomi	hotel dengan tarif ekonomi				
		Medium	hotel dengan tarif menengah				
	Bintang	Deluxe	hotel dengan tarif paling tinggi				
		★	Min. 15 kamar standar	Kamar mandi dalam	Luas kamar standar min 20m ²	-	-
		★★	20	Kamar mandi dalam	22m ²	Min. 1 kamar suite	Luas kamar suite min. 44m ²
		★★★	30	Kamar mandi dalam	24m ²	2	48 m ²
		★★★★	50	Kamar mandi dalam	24m ²	3	48 m ²
		★★★★★	100	Kamar mandi dalam	26m ²	4	52 m ²