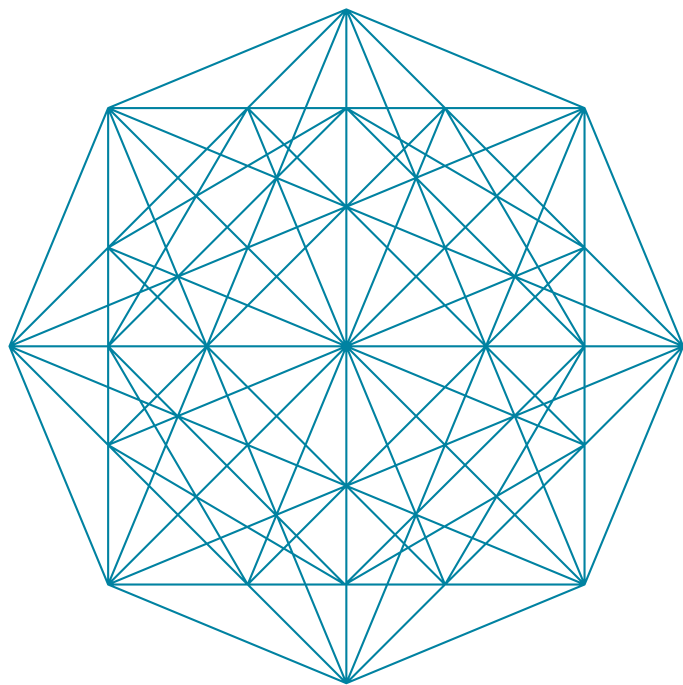


Create new world



BETTERING WORLD *through* QUALITY FORMWORK

Using world-changing initiatives, we're out to create a new future.

Our legacy and success are only fueled by our passion to change the world.

Contact

Address: Ho Chi Minh Office
10 Luong Dinh Cua Street, Thu Thiem Ward,
Thu Duc City, Ho Chi Minh City

Ha Noi Office
17th Floor, ARFM Building 115 Tran Duy Hung,
Cau Giay District, Ha Noi

VGSI AL-Form Factory
Lot E2, 12 Street, Nhon Trach IP6,
Long Tho, Nhon Trach, Dong Nai

Phone: [84 - 28] 3740 2186 (ext. 323#)
Website: vgsi.vn/al-form-business

GLOBAL LEADER

A World-class construction company representing Korea **GS E&C** is creating a global benchmark!



VGSI AL-FORM

NO.1 ALUMINIUM FORMWORK SYSTEM IN VIETNAM

With limitless passion, GS E&C moves beyond being Korea's best to create change around the world.

Incorporating green and smart technology into everything it produces, GS E&C is a top-tier global leader, spearheading sustainable growth with future-oriented technology and products.

From its start in 1969, the company has continued to grow and innovate, seeing astounding success around the world.

Building its presence in Vietnam, GS E&C soars again, bringing fresh initiative to each sector of its expertise.

VGSI Aluminium formwork systems are designed in compliance with the highest safety standards to be easily integrated with any type of the site, its easy handling and assembly and the quality of the materials used.

Financial Highlights

as of Dec 31, 2022 (UNIT 100 MIL. KRW)



1970s

1969
- Lackhee Development Co. (LDC) incorporated.

1977
- Lucky International Construction Co. created.

1988
- Start of construction of the Lucky Goldstar.
- North America Headquarters.
- Completion of the Imam University Sports Center.
- Company moves to Yeokjeon Building.

1990s

1995
- **COMPANY NAME CHANGED TO LG CONSTRUCTION.**

1999
- **LG CONSTRUCTION AND LG ENGINEERING MERGE.**

2000s

2003
- Chosen as "Best Corporate Management Structure" by the Korea Stock Exchange.
- 'Xi' chosen as the No. 1 brand in the 2004 Consumer Well-Being Awards.

2005
- **CORPORATE NAME CHANGED TO "GS ENGINEERING & CONSTRUCTION CORP."**
- Awarded the "Silver Tower Award" for the restoration of the Cheonggyecheon.

2006
- Named world's 31st largest construction company out of 225 companies in 2006 by ENR magazine.

2007
- **NAMED WORLD'S 31ST LARGEST CONSTRUCTION COMPANY OUT OF 225 COMPANIES IN 2007 BY ENR MAGAZINE.**
- **GSND ESTABLISHED IN VIETNAM**

2008
- Xi comes 1st in apartment category for 3 straight years in 2008 First Brand Grand Prize.

2010s

2011
- GS E&C admitted into Dow Jones Sustainability Index in two straight years.

2013
- Honored with the 1st Government Citation for Korea's Endeared Firm.

2015
- Named the 26th largest contractor out of top 250 global construction companies in 2015 by ENR magazine.

2019
- **RENAMED GSND TO VGSI**
- **OFFICIAL LAUNCH OF FOUR NEW VGSI BUSINESS : ALUMINIUM FORMWORK / PHC PILE / ELEVATOR / GYPSUM BOARD**

2020
- Acquired Danwood S.A., a polish modular housing company and Elements Europe Ltd., a British modular housing company.

2022
- GS Inima acquires Phu My Vinh Investment & Construction JSC(PMV), a Vietnamese water treatment company.
- Developing Thu Thiem Zeit River project in HCM.

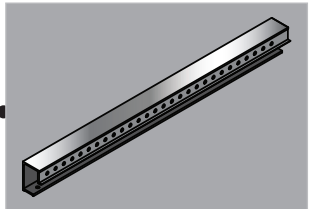
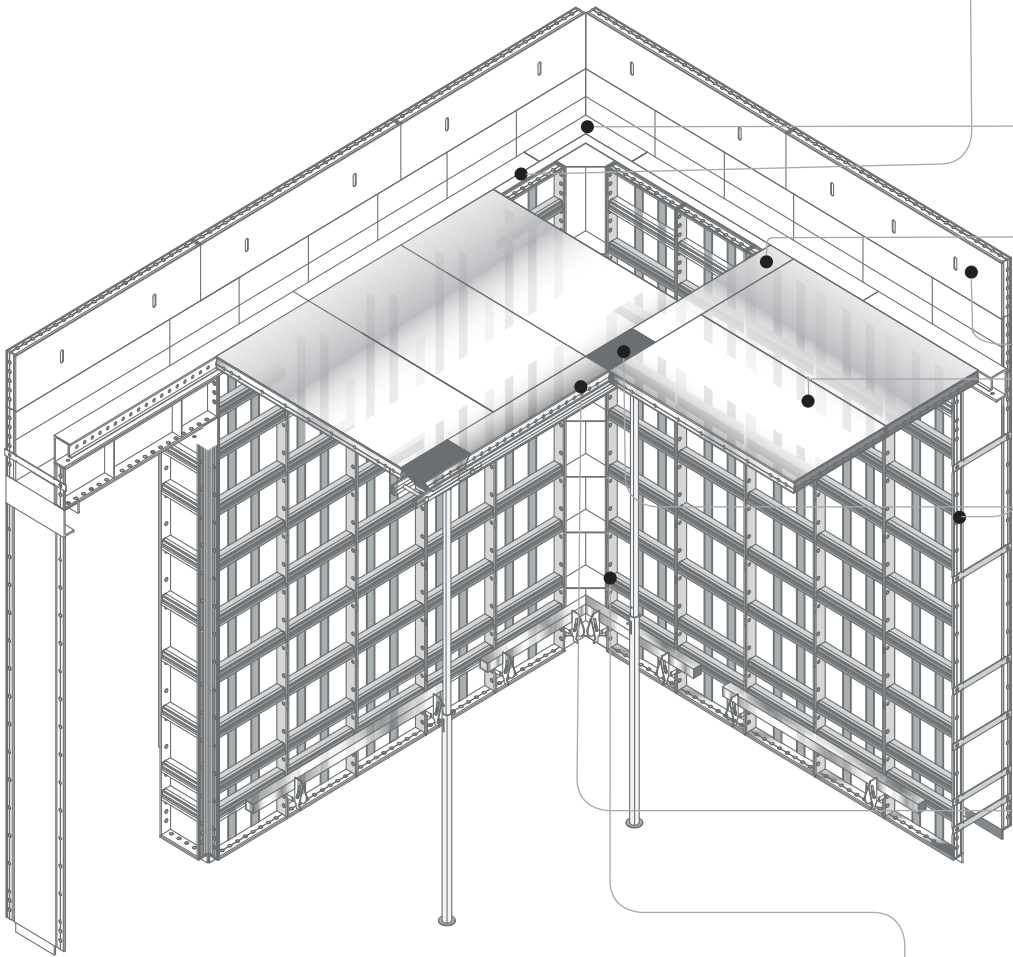
Bringing
**STRONGER,
SLEEKER
FORMWORK**
to W O R L D



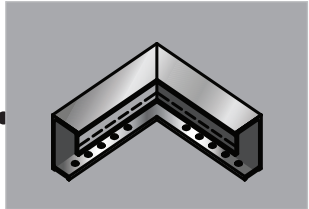
ALUMINIUM FORMWORK

Aluminium formwork is a construction system for forming the cast-in-place concrete structure of a building. It is an efficient approach which yields remarkably strong structures with supreme concrete finish.

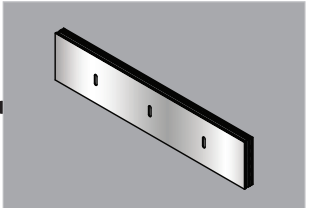
We focus on providing more developed formwork system in the world.



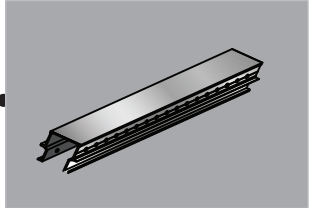
Slab Length: 1800 * 250



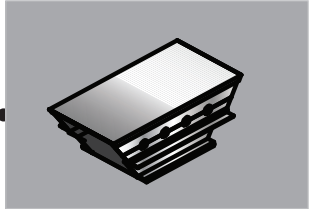
Slab In-corner:(400+400)*250



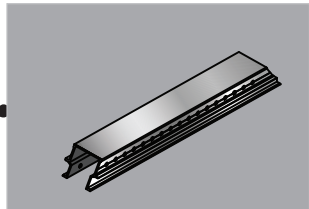
Kicker: 1800 * 200



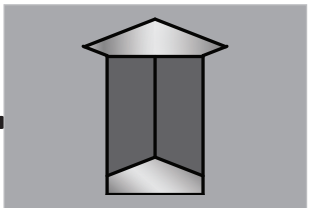
End beam: 900 * 150



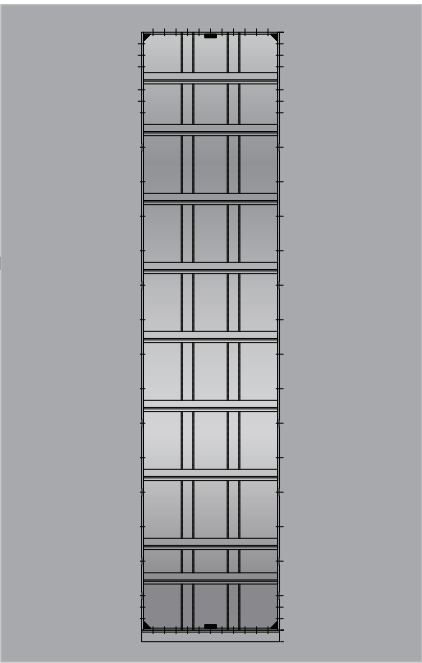
Standard Prop Head
300 * 150



Standard Middle Beam
900 * 150

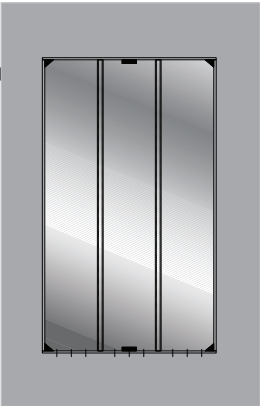


In-corner:
(100+100)*2600/2650
(100+150)*2600/2650
(150+150)*2600/2650



Standard Wall Panel (W x H) (Including Rocker):

500 * 2650, 450 * 2650
400 * 2650, 350 * 2650
300 * 2650, 250 * 2650



Standard Slab Panel (W x L):

600 * 1200
600 * 1050
600 * 900

Aluminium Formwork VGSI setting process

01 Delivery to the site



02 Marking



03 Checking the mark



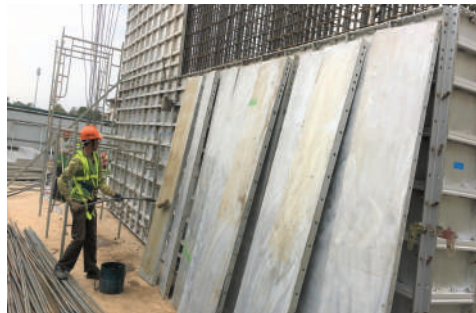
04 Rebar works for wall



05 Checking rebar works



06 Setting and oiling wall panels



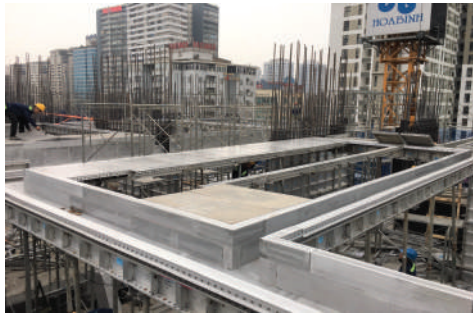
07 Setting wall panels



08 Setting S/L and beam panels



09 Setting slab beams



10 Setting slab panel



11 Setting slab panels



12 Setting staircase panels



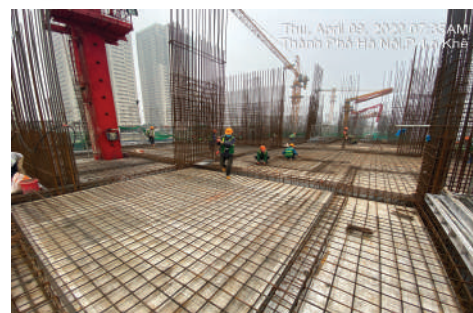
13 Numbering panels



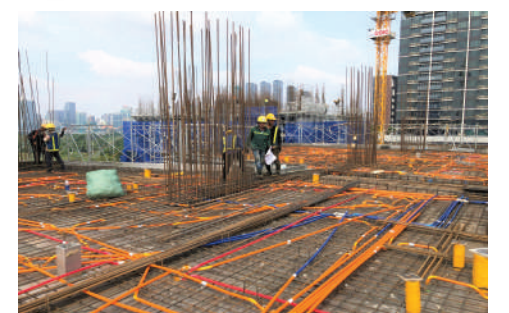
14 Oiling



15 Rebar works for slab



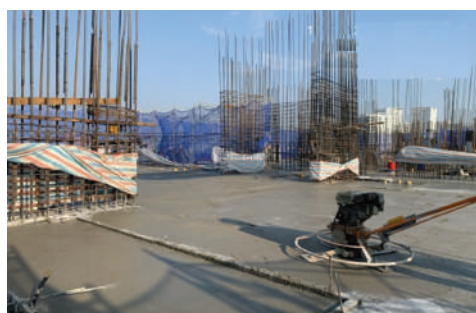
16 Mechanical and Electrical



17 Concrete Casting



18 Concrete Casting



19 Dismantling panels



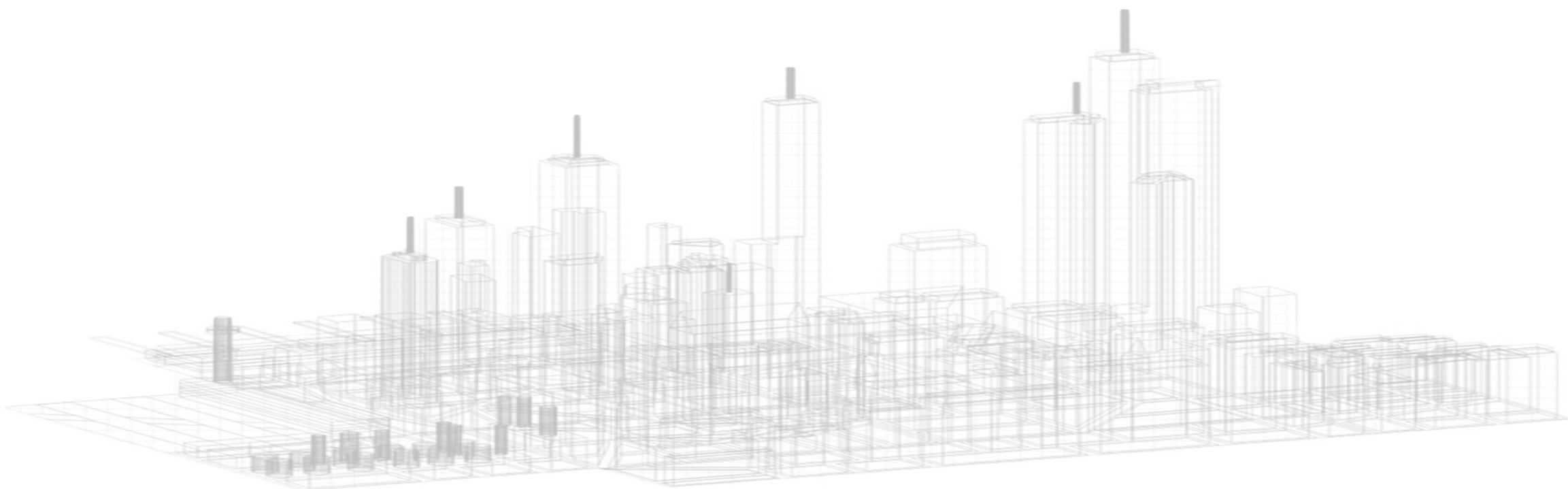
20 Finishing dismantle



- 1 Improves wall panel strength
- 2 Makes slab panels more stable
- 3 Increases wall panel height
- 4 Improves horizontal stiffener

OUR PRODUCT

I M P R O V E D

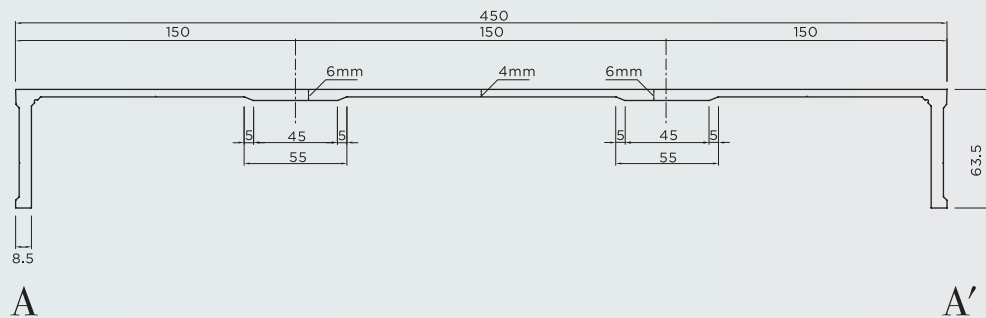
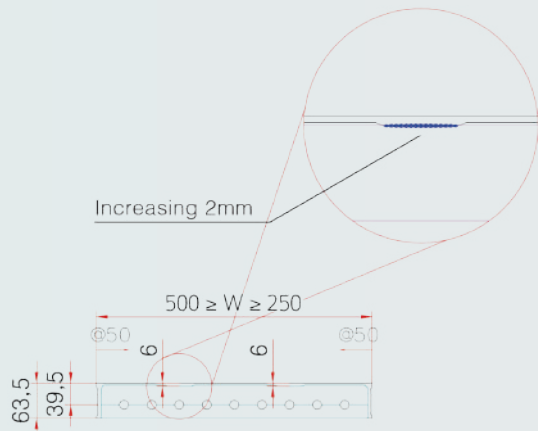
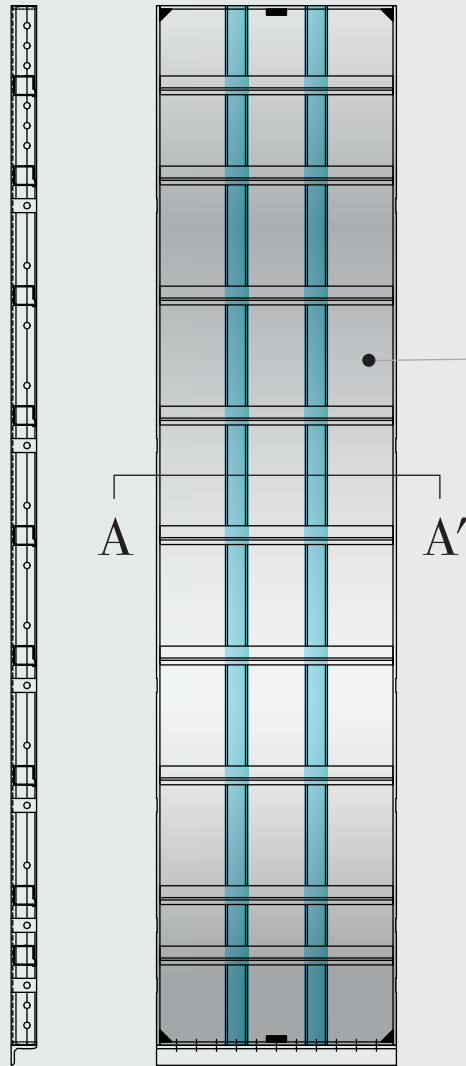
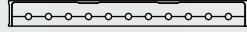


1

Key points

- Increases panel thickness which is welding point
- Prevents damage caused by welding
- Adds structure and supports concrete

$$500 \geq W \geq 250$$



Improves Wall Panel Strength

VGSI Wall panel details:

In order to prevent panel damages caused by welding and strengthen panel stiffeners, We increase panel thickness at welding points to 6 mm.



Statics Calculation Simulation

VGSI:

There is slight deformation on the surface of Aluminium form

Structural Design Summary

1. Form size = 500mm x 2600mm
Floor height = 3500mm
2. Design Method
- Allowable stress design
3. Material
- $F_{tu} = 225\text{Mpa}$, $F_{ty} = 210\text{Mpa}$,
 $E = 69600\text{Mpa}$
4. Design load calculation
Lateral pressure = 50.03 kN/m^2
= 0.05003 N/mm^2

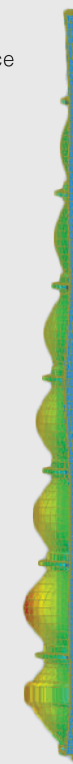


Other products:

There is a substantial deformation on the surface of Aluminium form

Structural Design Summary

1. Form size = 500mm x 2600mm
Floor height = 3500mm
2. Design Method
- Allowable stress design
3. Material
- $F_{tu} = 225\text{Mpa}$, $F_{ty} = 210\text{Mpa}$,
 $E = 69600\text{Mpa}$
4. Design load calculation
Lateral pressure = 50.03 kN/m^2
= 0.05003 N/mm^2



*Damages on the surface:

The damages on the surface of Aluminium panels caused by welding, can be seen clearly. To prevent this damage on our Aluminium panel surfaces, panel thickness is increased up to 6 mm at welding points.

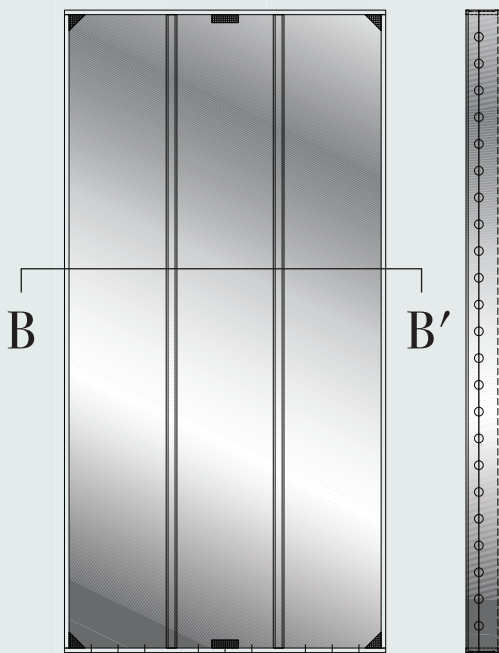




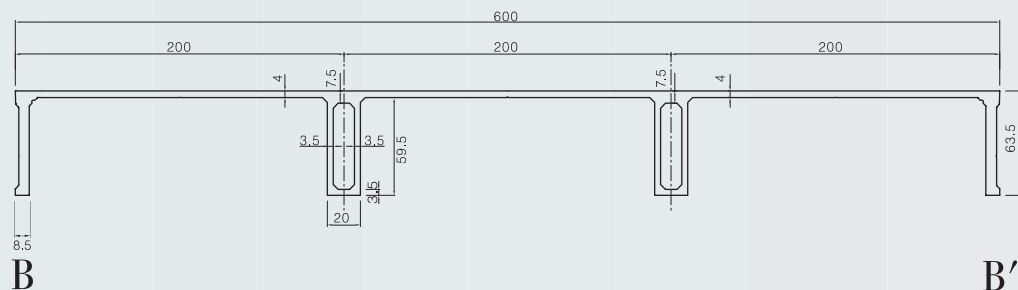
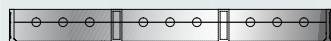
- Improves rigidity for stability
- Changes direction of reinforcement to complement compressive stress

VGSI slab panel detail:

Changes direction of stiffener to complement compressive stress.



*Real image



Stability of slab panels

Statics calculation Simulation

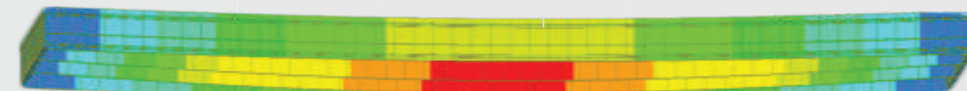
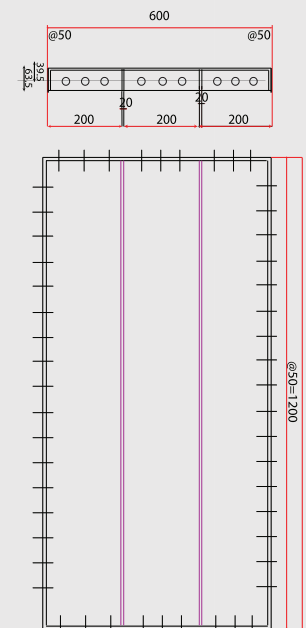
VGSI:

There is slight deformation on the surface of Aluminium form

Structural Design Summary

- Form size = 600mm x 1200mm
Slab thickness = 200mm
- Design Method
- Allowable stress design
- Material
- $F_{tu} = 225\text{Mpa}$, $F_{ty} = 210\text{Mpa}$, $E = 69600\text{Mpa}$
- Design load calculation
- Dead Loads: Slab $24000\text{ N/m}^3 \times 200\text{mm} = 4800\text{ N/m}^2$
Form = 400 N/m^2
- Live Loads: = 2500 N/m^2
- Total Loads: = 7700 N/m^2

= 0.0077 N/mm^2



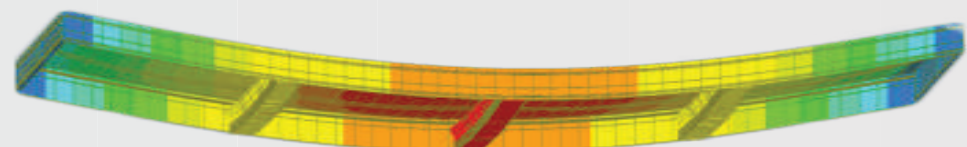
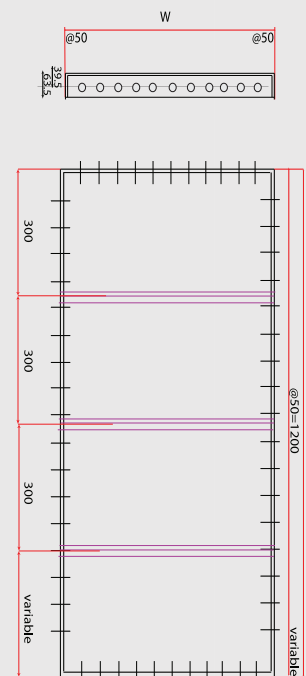
Other products:

There is a substantial deformation on the surface of Aluminium form

Structural Design Summary

- Form size = 600mm x 1200mm
Slab thickness = 200mm
- Design Method
- Allowable stress design
- Material
- $F_{tu} = 225\text{Mpa}$, $F_{ty} = 210\text{Mpa}$, $E = 69600\text{Mpa}$
- Design load calculation
- Dead Loads: Slab $24000\text{ N/m}^3 \times 200\text{mm} = 4800\text{ N/m}^2$
Form = 400 N/m^2
- Live Loads: = 2500 N/m^2
- Total Loads: = 7700 N/m^2

= 0.0077 N/mm^2

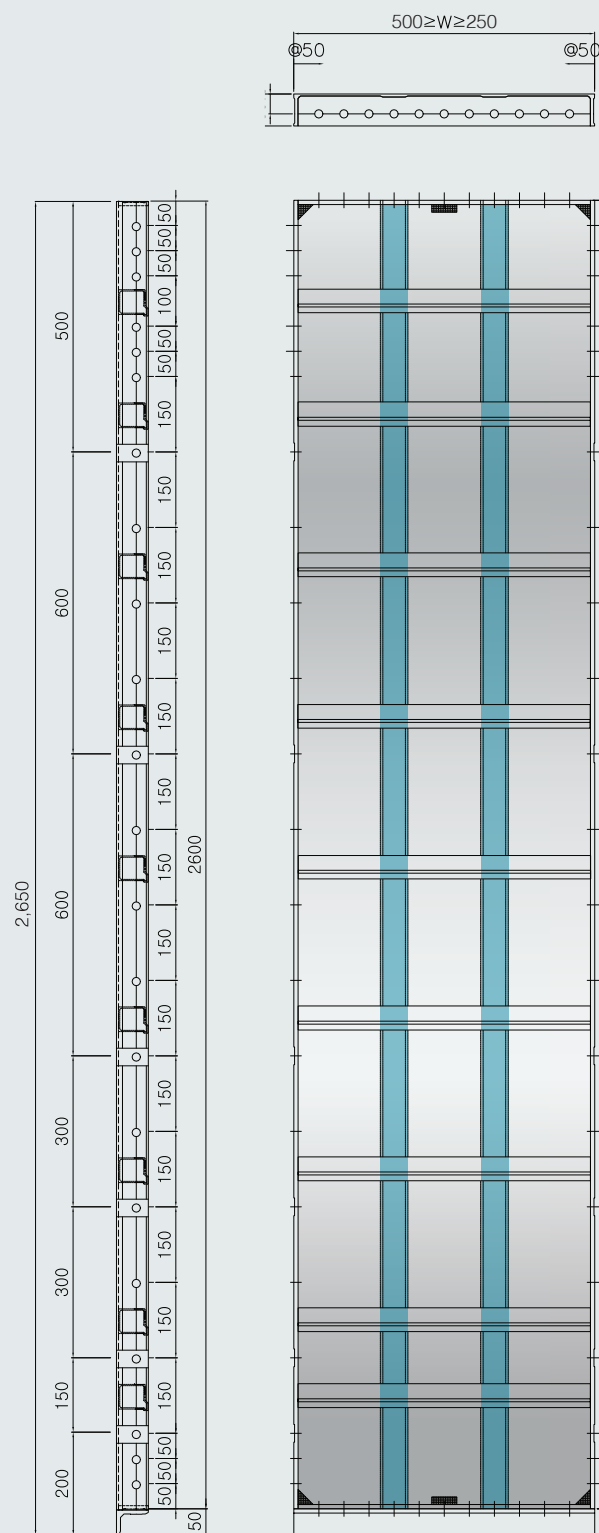


3

Key points

- Added height to 2,600mm
- Allows for reduced upper panel size

Increases wall panel height



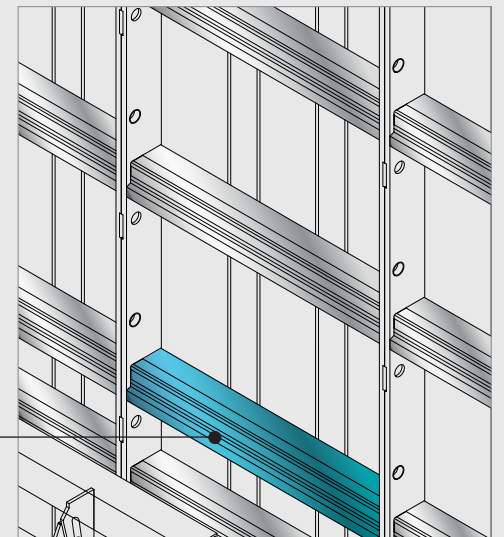
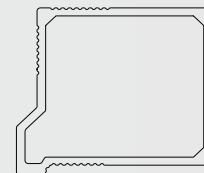
4

Key points

- Changes shape of horizontal stiffener
- Adds corner compensation reinforcement

Improves horizontal stiffener

Change of the shape of stiffener



VGSI product



*Section detail:

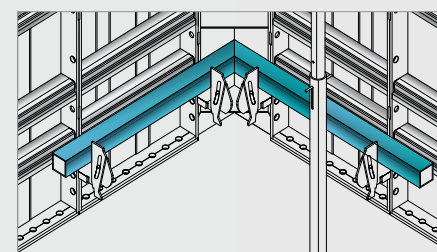
- Horizontal stiffener is modified in order to align with panel end profile (63.5mm)
- Steel box is placed with horizontal stiffener.

Other product



*Section detail:

- Horizontal stiffener does not align with the panel end profile.
- Steel box does not align with horizontal stiffener.

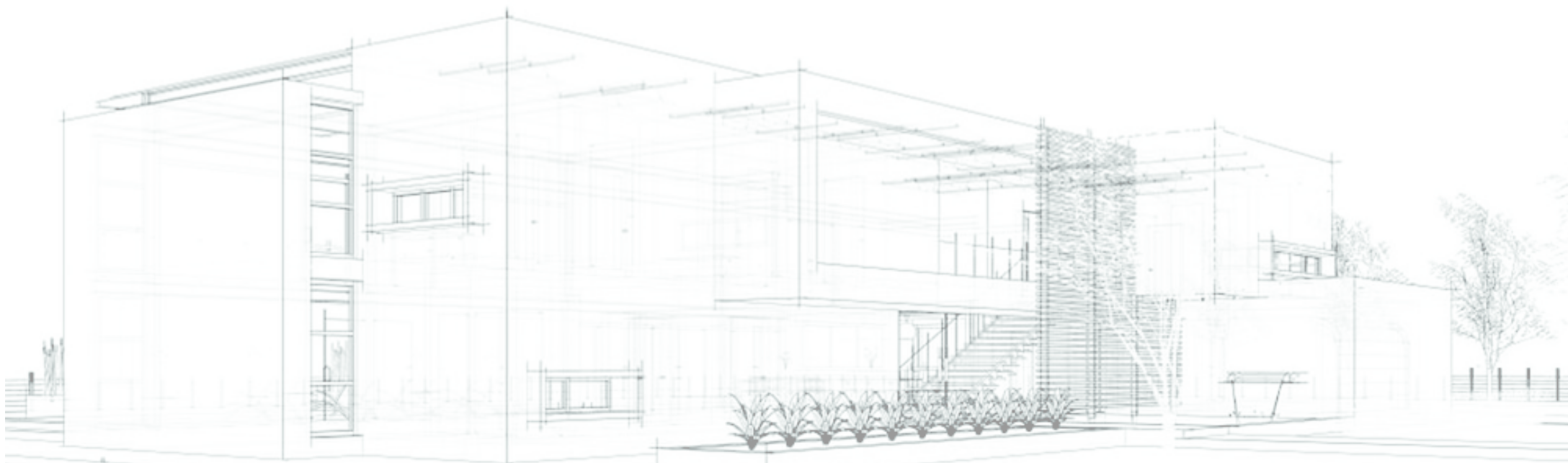


*Tips:

- Adding corner compensation stiffener.
- We suggest an additional stiffener to reinforce the strength of the corner.

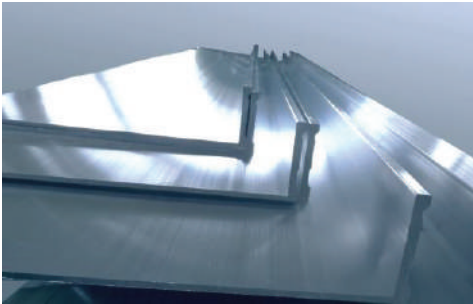
- 1* **Quality** – We deliver the highest and best quality products.
- 2* **Speed** – Our automatic systems give us an advantage over others in the market.
- 3* **Capacity** – We have an overwhelming and impressive production capacity.
- 4* **Service** – We have the most hands-on and knowledgeable technical and support teams.

OUR FACTORY



Manufacturing process for new products

01 Aluminium Alloy (Raw material)



02 Marking and Cutting



03 Punching



04 Punching



05 Noching



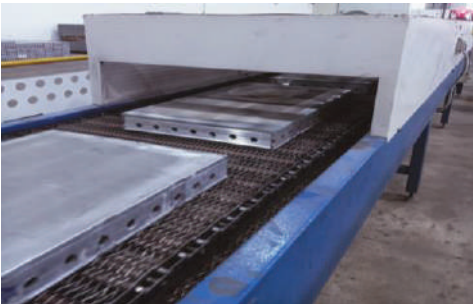
06 Welding



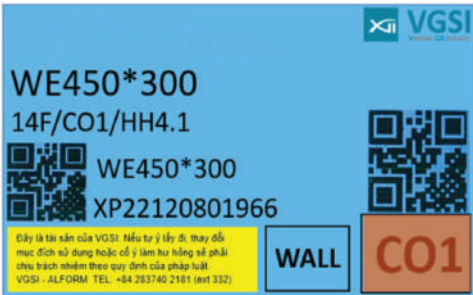
07 Coating



08 Drying



09 Label with QR Code



10 Packing and Stand by



Manufacturing process for used products

01 Return to the factory



02 Classification



03 Cleaning by worker



04 Cleaning by machine



05 Marking and Cutting



06 Repair



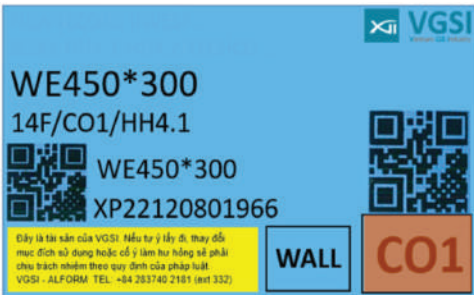
07 Coating



08 Drying



09 Label with QR Code



10 Packing and Stand by



VGSI

ALUMINIUM

FORM *factory*

Located in Nhon Trach 6 Industrial Park, Dong Nai Province, Vietnam, our Aluminium Form Factory is state-of-the-art.

GS manufactory has got design capability 1.000 tons of product per month.

GS aluminium formwork manufactory specialized in manufacturing high-quality products.



Factory bird's eyes-view



Factory Front



Factory Office Front



Factory bird's eyes-view



Main Gate

GS E&C A GLOBAL PARTNER

Taking on any challenge and never giving up until the job is done, we approach the future without fear.

We create new, exciting products while broadening and bettering the world with fervor and passion.

Creating new value in life and dreaming of a better future for our customers.

23

countries of
the world

30

overseas
companies or
branches

205

project sites



Ready for an
EXCITING
new start

Contact**Address:****Ho Chi Minh Office**

10 Luong Dinh Cua Street, Thu Thiem Ward,
Thu Duc City , Ho Chi Minh City

Phone : [84 - 28] 3740 2186 (ext. 323#)

Website : vgi.vn/al-form-business

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VGSI AL-Form Factory

Lot E2, 12 Street, Nhon Trach IP6, Long Tho,
Nhon Trach, Dong Nai

Global Technology Leader

Changing the world with its incomparable technology
GS E&C and VGSI lead to a vibrant future through endless technology innovation

Green Technology

Smart Technology

Advanced Technology



CHANGE

ALUMINIUM FORMWORK

Business Card Slot