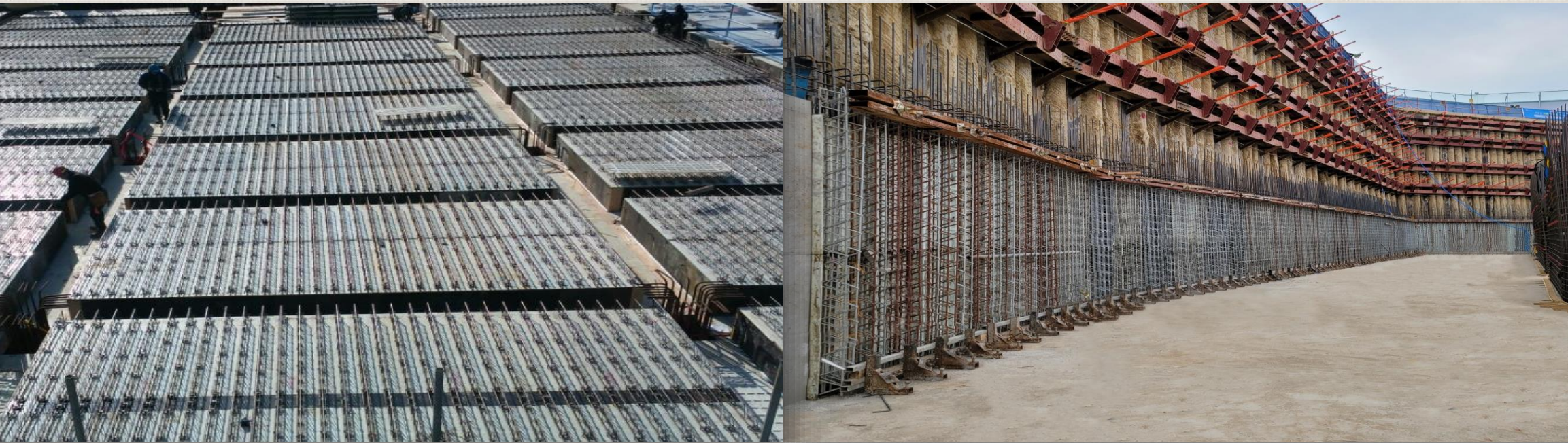




Since 1995
Since 1995


PLUS DECK





 **SamGwang Steel Wire Co., Ltd.**

 국토해양부 건설신기술인증

 한국건축구조기술사회 기술인증

 대한건축학회 건축성능인증

 국방시설본부 우수제품선정

 녹색에너지 우수기업

SAMGWANG made the structural steel in a constantly challenging attitude from the establishment up to the present. Despite of the rapidly changing world situation and the continuous social change, we has aimed at the customer satisfaction management.



Deck Plate

- Formwork Deck
- Integral Deck
- Insulation Deck

Wall & Column

- Integrated wall Deck
- Party Wall Deck
- Column Deck

Steel Wire

- TrussStud Rebar
- Steel Fiber
- Annealing Wire



Advantages of Formwork Type Deck

- Excellent natural lighting for accident prevention in underground workplaces
- High-strength truss girders used only at both ends for support
- Rebar spacing applied uniformly according to the existing structural calculation
- Use of synthetic resin plates(GMT Panel) to ensure durability and natural lighting
- Cost savings due to increased reuse of synthetic resin plates(GMT Panel)
- Excellent bearing surface when detaching thanks to the use of synthetic resin plates(GMT Panel)
- Environment friendly demolding without chemical remover enhances safety



Underdeck Measurement After Deck Installation: 1,612 lux
(Fluorescent Light 20W approximately 150 lux)



Truss girder
(functions as floor joist, minimizing support use)

Existing construction method



- Excessive use of support, wooden sleeper, floor joist
- Wastage after cutting plywood board
- Lower work safety
- Lower workability due to excessive use of supports

Formwork Type construction method



Constructability / Safety

- Simplification of construction procedures, excellent work safety
- Ensuring durability with TG-type joist
- Shortening of construction time

Cost-effectiveness

- Cost savings due to reduced labor input (Approximately 30% labor cost savings)
- Increased material utilization rate

Formwork Type construction method



Universal application

- Customized manufacturing and supply tailored to specific sites
- Ensuring diversity according to structural design (Rahmen structure, flat slab construction)

Environment Friendly

- No use of adhesives (environmental pollution mitigation)
- No generation of construction waste
- Excellent daylighting performance due to the use of resin panels (GMT)

Advantages of Integral Type Deck

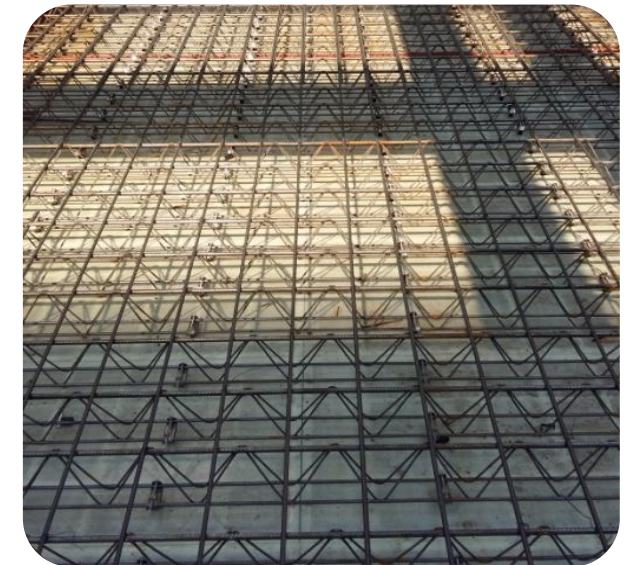
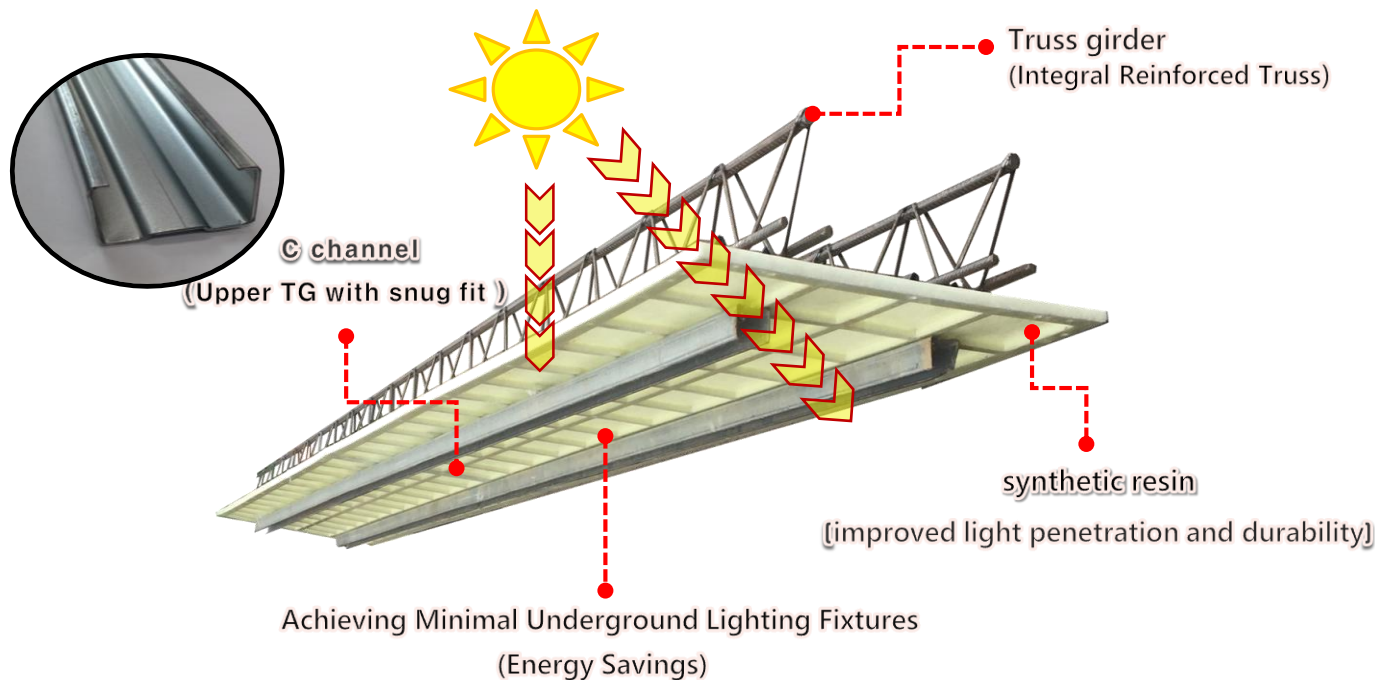


Construction New Technology No. 833

- **Excellent natural lighting** for accident prevention in underground workplaces
- With the non-support method, the support and falsework are omitted
- Minimizing on-site rebar work with pre-assembled integral truss girders
- The bottom C channel and the upper truss girder are connected firmly, reducing the concentration of load and decreasing deflection
- Cost savings due to **increased reuse** of synthetic resin plates(GMT Panel)
- **Excellent bearing surface when detaching** thanks to the use of synthetic resin plates(GMT Panel)
- Environment friendly demolding without chemical remover enhances safety



Underdeck Measurement After Deck Installation: 1,612 lux
(Fluorescent Light 20W approximately 150 lux)



Existing construction method



- Excessive use of support, wooden sleeper, floor joist
- Wastage after cutting plywood board
- Lower work safety
- Lower workability due to excessive use of supports

Integral Type Deck construction method



Cost-effectiveness

- TG can be adjusted to 3 rows or 2 rows, allowing for a reduction in rebar quantity (approximately 30% reduction in rebar quantity)
- Cost savings due to reduced labor input (Approximately 30% labor cost savings)

Constructability / Safety

- Simplification of construction procedures, excellent work safety
- Shortening of construction time



Universal application

- Customized manufacturing and supply tailored to specific sites
- Ensuring diversity according to structural design (Rahmen structure, iron frame construction)

Environment Friendly

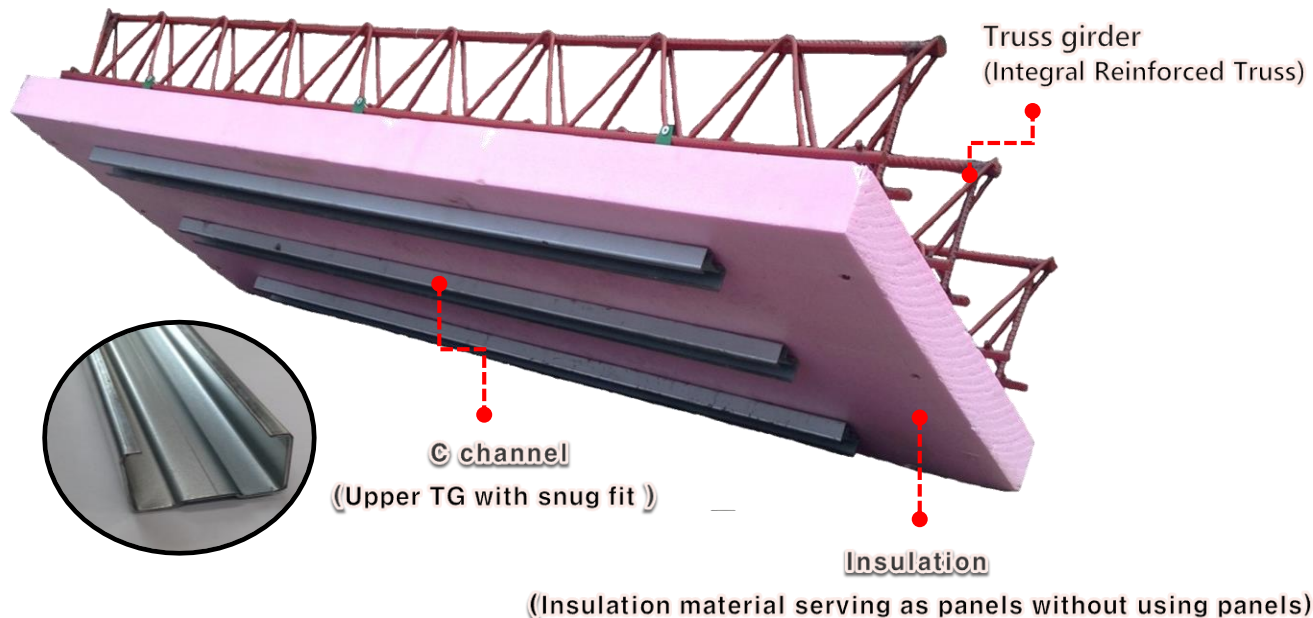
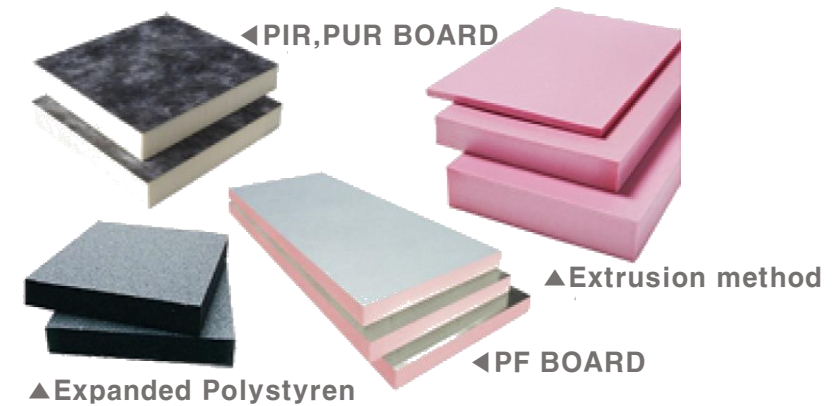
- No use of adhesives (environmental pollution mitigation)
- No generation of construction waste
- Excellent daylighting performance due to the use of resin panels (GMT)

Advantages of Insulation Type Deck



Construction New Technology No. 833

- By omitting the construction of slab formwork, construction costs are reduced
- With the non-support method, the support and falsework are omitted
- Minimizing on-site rebar work with pre-assembled integral truss girders
- The bottom C channel and the upper truss girder are connected firmly, reducing the concentration of load and decreasing deflection
- The construction method where insulation material and formwork are installed simultaneously, resulting in a **shortened construction period**



Existing construction method



- After the installation of slab formwork, insulation material is installed
- After the installation of slab formwork, residual waste materials are generated
- Lower work safety
- Lower workability due to excessive use of supports

Insulation Type Deck construction method



Cost-effectiveness

- The construction method where insulation material and scaffolding are installed simultaneously
- Cost savings due to reduced labor input (Approximately 30% labor cost savings)

Constructability / Safety

- Simplification of construction procedures, excellent work safety
- Shortening of construction time



Universal application

- Compatibility with various insulation materials
- Ensuring diversity according to structural design (Rahmen structure, iron frame construction)

Environment Friendly

- No use of adhesives (environmental pollution mitigation)
- No generation of construction waste

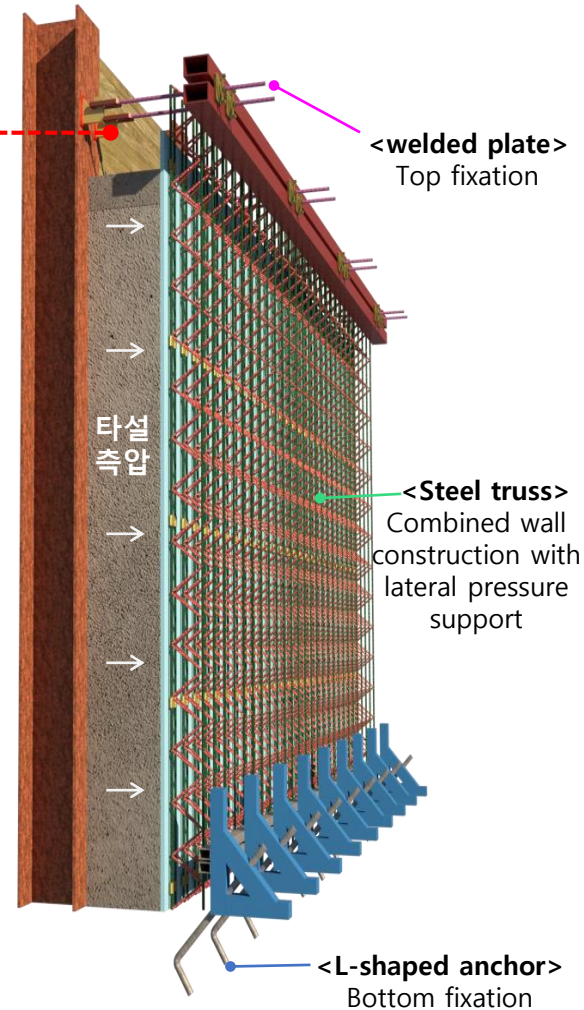
Advantages of Combined wall deck systems

- Adaptation to various combined wall constructions
- **Customized production and supply** according to on-site concrete filling height
- Simultaneous installation height : H 1.5m ~ 8.0m
- **Single-stage construction, multi-stage construction** (Example of 4-stage / 12m construction)
- V.H Separate installation, V.H Simultaneous installation

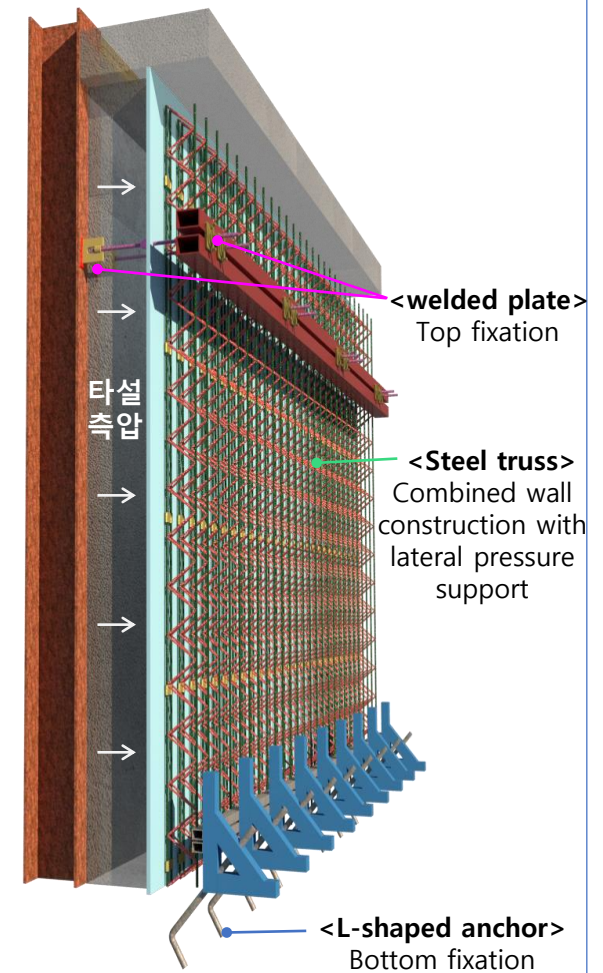


Securing excellent bearing surface

Open Cut Site installation concept



Top Down Site installation concept



soldier pile + Euroform



- Excessive Material Quantity
- Heavy Weight challenges during installation, removal, and transportation
- Extended Construction Period
- Increased Construction Costs

Combined wall + Open Cut



Feasibility and Safety in Construction

- Combining factory-produced TG-type wall deck components on-site
- Shortening the construction period for lightweight wall deck transportation

Economic Efficiency

- Improved productivity due to reduced labor input. (Approximately 30% reduction in labor input)

Combined wall + Top Down



Universal application

- Customized production and supply according to wall site specifications (H1.5~8.0m)
- Possible construction of 1 to 4 tiers (up to H12m)
- Applicable to Open Cut and Top Down construction sites

Environment Friendly

- Use of GMT (Glass Mat Thermoplastics) panels eliminates construction waste

Substructure support components



Lower support structure



Status of fastening the bottom anchor bolt

Upper support components



Ring-shaped welded plate (Type A)



One-piece welded plate with nut (Type B)

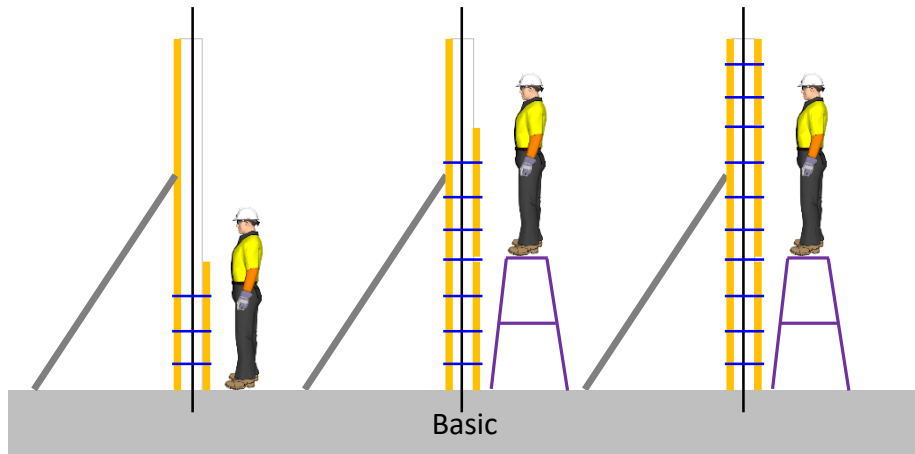


When V.H is installed separately
/ during precast site

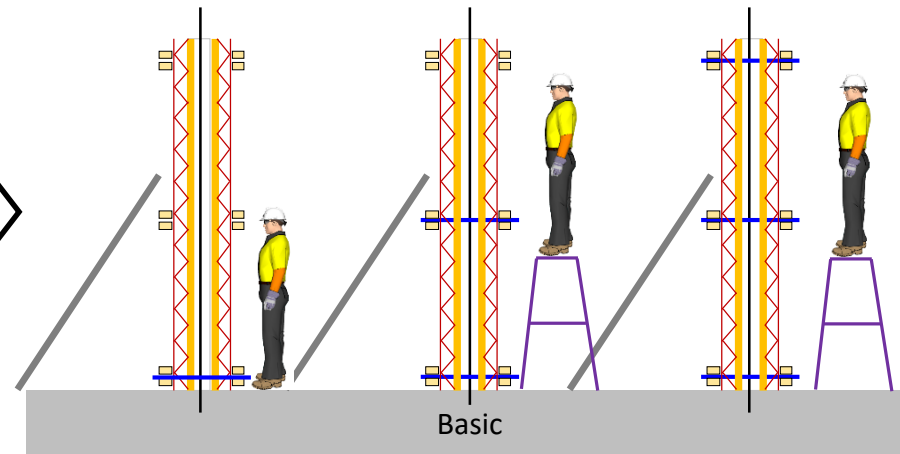


One-piece welded plate with nut
/ during cast-in-place site

Existing construction method (Euroform + Pretai)



Wall deck + bolt



- expected effect
Reduced tie workload and shortened construction period

Advantages of Column Deck systems

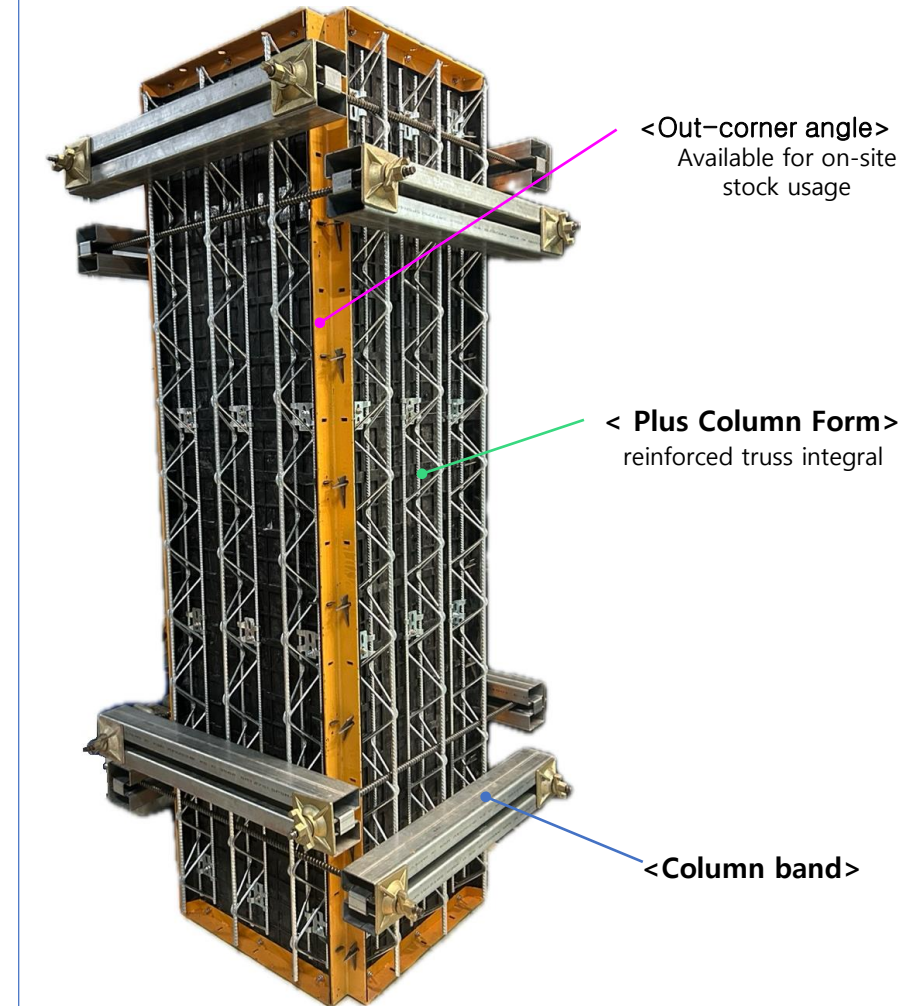
- Adaptation to various column constructions
- Customized production and supply according to on-site column height
- Pre-assembly for transportation reduces formwork construction time at the site
- Due to the lightweight nature of the material and its ability for mass production, construction costs are reduced.
- Expectation of increased productivity due to savings in labor input



Existing

our company Column PlusDeck

Installation concept



Existing construction method



- Excessive Material Quantity
- Difficult installation and demolding work due to heavy weight from column band
- Extended Construction Period
- Increased Construction Costs

Column PlusDeck + Open Cut



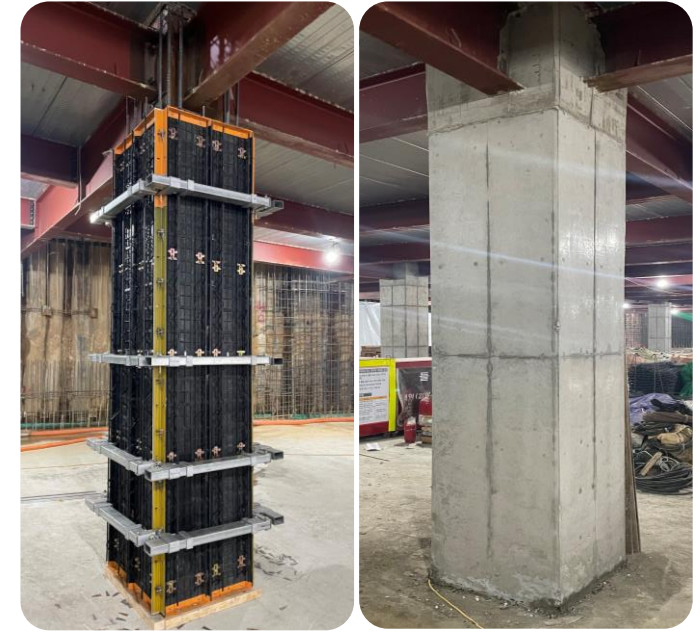
easy and Safety in Construction

- Combining factory-produced TG-type column forms on-site
- Shortening the construction period for light weight column form transportation

Economic Efficiency

- Improved productivity due to reduced labor input. (Approximately 30% reduction in labor input)

Column PlusDeck + Top Down



Diversity

- Customized production and supply based on site-specific column heights (H1.5~8.0m)
- Applicable to both Open Cut and Top Down construction sites

Environmental Sustainability

- Use of GMT (Glass Mat Thermoplastics) panels eliminates construction waste

Detailed construction

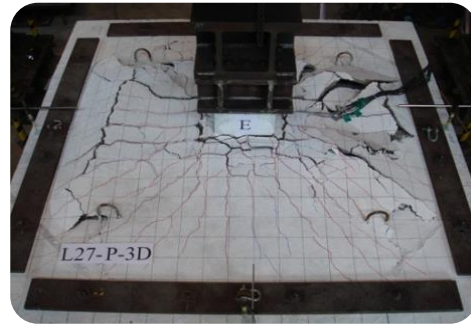


- Details of bolt, angle bracket, and wing nut plate fastening.

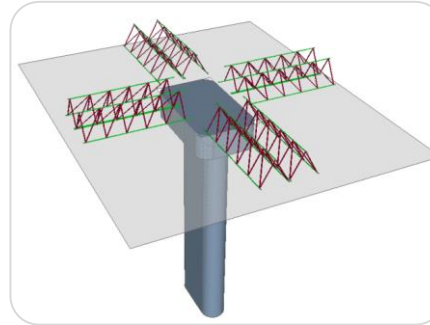
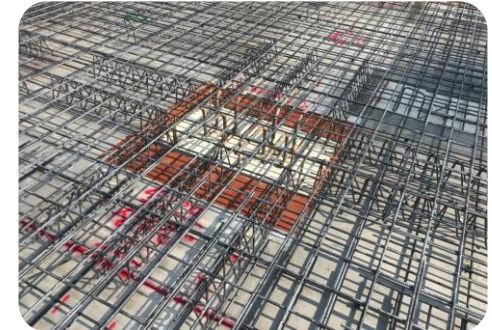
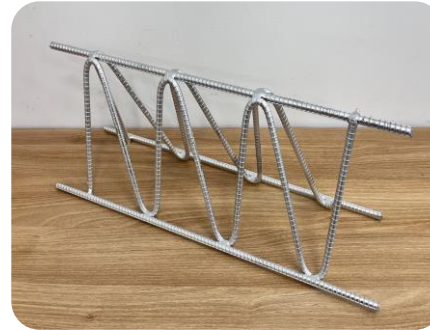
Advantages of Shear Reinforcement

- A shear reinforcement for slab-column joints of reinforced concrete flat plate structures vulnerable to shear failure, providing structural resistance performance against shear failure and unbalanced moments. It enables independent structural behavior of the slab-column joint even after damage to the concrete slab.

Truss stud



Solid Truss

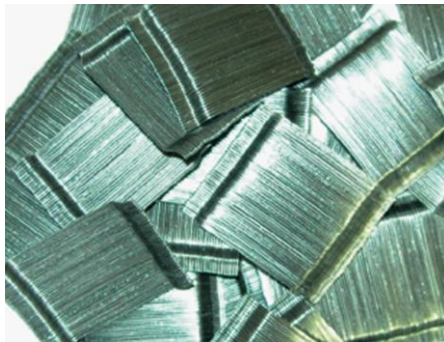


- No welding, no heat state molding processing, so there is no thermal deformation or tempering
- After installing the upper and lower portions, it can be easily inserted, reducing installation labor costs
- Double-density arrangement of vertical bars at standard installation length

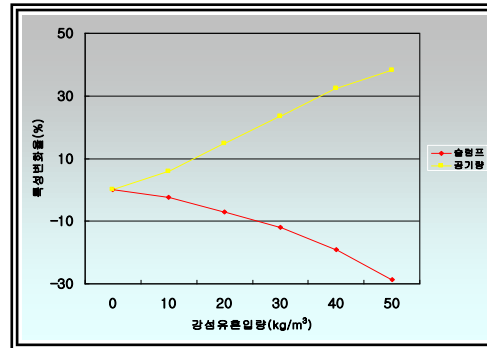
- Efficient triangular truss shape for structural performance, resolving settlement issues caused by welding
- Improved constructability through installation after lower bar installation
- Ease of transportation and installation due to simple shape and lightweight

Advantages of steel Fiber

- Steel fiber reinforced concrete significantly enhances the mechanical properties of concrete compared to ordinary concrete, including **tensile strength, flexural strength, impact resistance, abrasion resistance, fatigue resistance, and reduction in drying shrinkage time**



[Steel fiber bundle 0.5×30]



[Steel fiber dosage kg/m3]

- Presentation of mix standards based on slump and air content characteristic changes
- When the steel fiber content is 30kg/m³, there is a 12% reduction in slump compared to the non-fiber-added mix. Therefore, it is necessary to take this into account for workability during actual construction

Installation of steel Fibers



[Steel fiber ton bag]



[Feeding device]



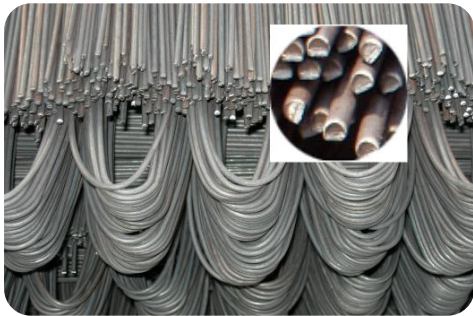
[Conveyor transportation]



[Shotcrete]

Advantages of Annealing Wire

- We **minimized surface oxidation** with stable heat-treated products, achieving suitable strength for the intended purpose due to good **elongation**. Additionally, our product has reduced risk of safety accidents as it has non-sharp cutting edges.



[Cutting cross-section of Annealing Wire]



[Clear water sedimentation photo]

- SG-Coating Wire with improved film
- No spreading or smudging in rainy conditions due to enhanced film
- Corrosion resistance improved based on 72-hour clear water sedimentation test results

Annealing Wire Production process



[Wire drawing]



[Heat treatment]



[Annealing Wire cutting]



[packaging of finished products]



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