



BUILDING STRONG FUTURES

As a 'New Leader of the Deck Plate industry', we will be the reliable support to the cities and spaces in the world by creating a new value.

www.winhitech.co.kr

WINHIBEAM

WINHITECH CO.,LTD.



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We are creating a new value of construction material industry.

WINHITECH CO., LTD. was established by the division of the steel construction material department of WINSTEEL Co., Ltd, the mid-sized company with forty years of experience, in 2011. We are a construction material specialized company which has outstanding growth and profitability. It has manufactured mainly deck plate recently. Deck plate is an assembly structural material for metal which replaces plywood form. It is used in the process of forming a steel frame and steel concrete structure when building. It has advantages of quality standardization, safety improvement, shortened construction period, cost saving as new paradigms in the construction material market WINHITECH CO., LTD. suggests creative values and firms the foundation of continuous development through various differentiated deck plates.

We are innovating construction material market

WINHITECH CO., LTD. is a dynamic company leading market through technology innovation and product development with non-stop challenges and passion. It developed void deck by combining deck plate first in the world in accordance with the government policy which is aiming at long lifespan recently, and it is a hollow slab method designated as a New Construction Technology(No.778) of the Ministry of Land, Infrastructure and Tran port. Also, WINHI_BEAM, which will be released this time, is non-dismantle beam form of a new concept. It is corresponding to the current trend which requires minimum using of form in perspective of cost and environment, so an advanced method to use a form permanently. It can save field workers and material input by using WINHI_BEAM and is possible to save manpower and costs. Also, it is able to shorten the construction period and improve the work environment.

We will lead the construction material market and firm the foundation of one hundred-year company.

We will continuously develop new technologies and advanced methods. WINHICHTECH, which is opening a new prospect as the 'Value Creator' of construction material market, will construct the future while maximizing the value of customers and shareholders, looking around and sharing with surroundings, coexisting with various stakeholders. We will be the company that improves the city's environment and quality of life, gives hopes and impression by maintaining, developing, growing the main capabilities for construction of the world's new towns while dreaming one hundred-year company.

Thank you.

All employees of WINHITECH Co., Ltd



WINHITECH CO., LTD.

2011 _ Present

Growth&Leap Period

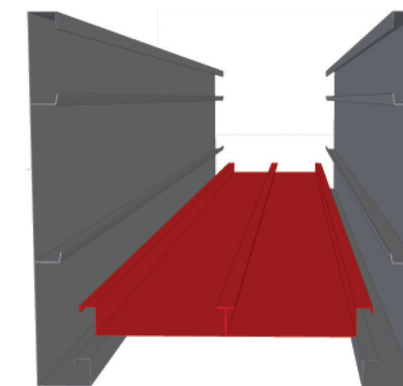
- 2019 Extended the second factory
WINHI_BEAM New Construction of Production Equipment
- 2018 Received certificate on VPS floor impact sound insulation structure performance
Received award from the Minister of Land, Infrastructure and Transport on new construction technology
Received Excellent Product Certificate on NOVA DECK
- 2017 NOVA DECK New Construction of Production Equipment
Certification for Small Giant Business (minister of employment and labour)
Obtained comprehensive construction industry license
Start construction 2nd plant in Eumseong
Obtain Japan Construction Center rating report
- 2016 Obtained Certificate of Fire-resisting structure: VOIDEDeck
Obtained NOVA DECK (De-molding Deck)
Patent Certification of K-Mark :NOVA DECK
3 Million-dollar- winner of the Export Tower
- 2015 Designated as Void deck New Construction Technology(No.778)
Venture Activation Prize Awarded by the Minister of the Future Creation Science
Awarded by the Minister of Industry and Commerce for Small & Medium Business Innovation
Selected as Quality Management Excellent Company of Chung-buk
- 2014 Awarded by Million dollars Export Tower/Selected as the first-class Venture Company in Chung-buk
Awarded by the Minister of Public Procurement Service for Small & Medium Business Innovation
Listed on KOSDAQ
- 2013 First deck plate certification for carbon emission quantity(Extra Deck)
Awarded as Public Purchase Merit Example Small businessma (Small and Medium Business Administration)
Recognition for insulation structure of floor impact sound (Void deck/Korean Construction Test Technology Researcher)
- 2012 EXTRA DECK Excellent Product Recognition (Public Procurement Service)
Selected as Technology-innovative Small business(Inno-Biz)
EXTRA DECK PLATE K-mark(performance) Certification : EXTRA DECK PLATE
Selected as a venture company
- 2011 ACE DECK PLATE Achieved recognition of fire-resisting structure: Ace Deck Plate
Corporation division from steel construction material department of WINSTEEL Co., Ltd to WINHITECH Co., Ltd
- 2011 ACE DECK PLATE Achieved recognition of fire-resisting structure: Ace Deck Plate
Corporation division from steel construction material department of WINSTEEL Co., Ltd to WINHITECH Co., Ltd
- 2008 Contracted for purchasing procured materials of Tox Deck
Excellent Product Certification of Tox Deck(Public Procurement Service)
- 2005 Completed Um-Sung factory(Deck exclusive manufacturing factory)
- 2003 Developed Un-welded steel wire integrated Dream Deck
- 2000 Changed the company's name to WINSTEEL Co., Ltd
- 1999 Developed fire-resisting structure ACE DECK(Co-developed with Pohang Industrial Researcher)
- 1998 Developing ALPHA DECK for Fire-resisting structure(Codevelop with Korea Steel Structural Association)
New facility for DECK PLATE at Pohang Plant
- 1991 Completed Steel Service Center in Pohang factory
- 1976 Established Dong-Myung Steel trading company(Present WINSTEEL Co., Ltd)

01

WINHI_BEAM Development Background

◆ Requiring form-minimized method in perspective of cost and environment

A form is a necessary component in the process of using concrete, but it is desirable to minimize it for saving manpower and cost, shortening period, improving the work environment. As a way to minimize form manufacturing in the field, it is a method to use a form permanently using non-dismantle beam form.



WINHI_BEAM Development



The WINHI_BEAM applied field to minimize putting field workers and materials and have few disposal occurrences

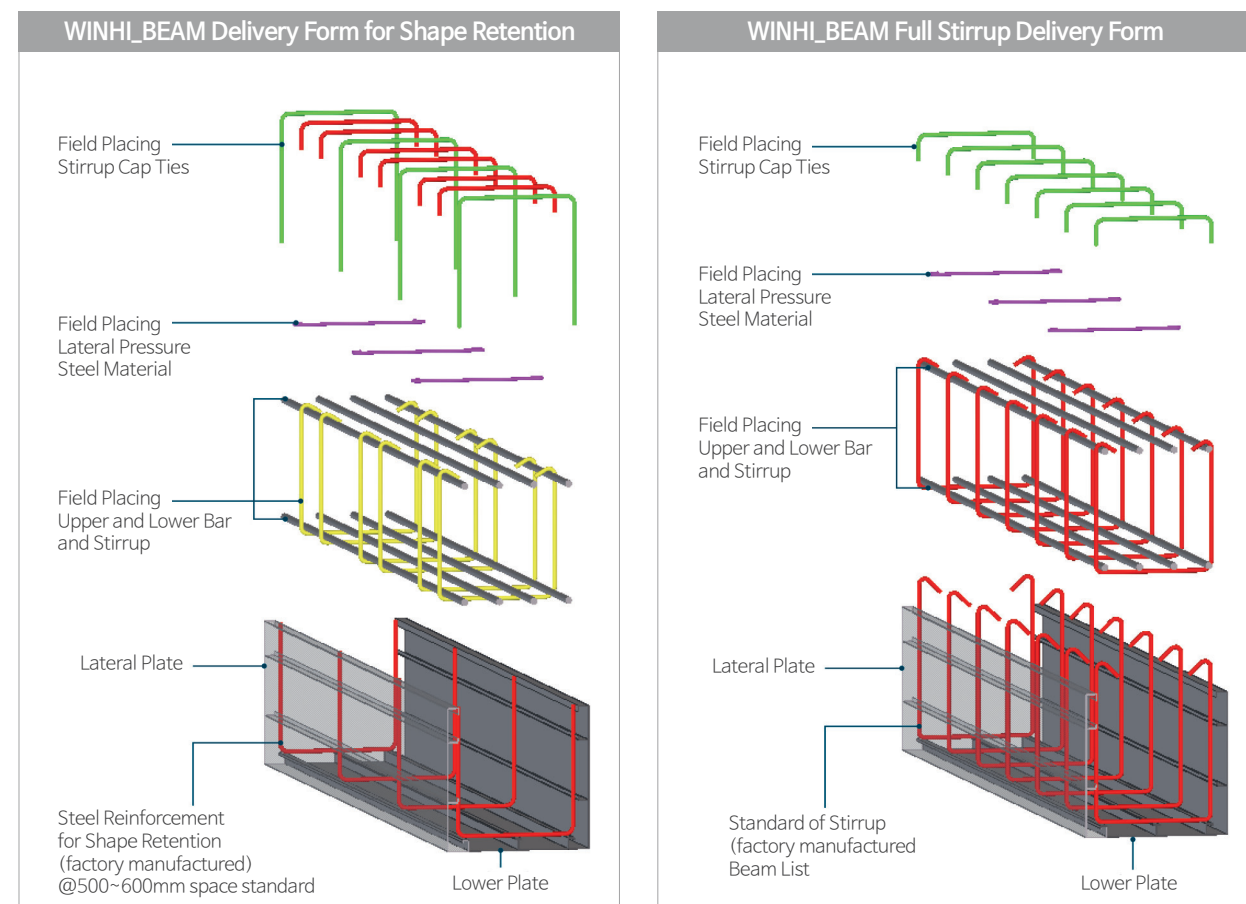
◆ A new paradigm of beam form Non-Dismantle beam form

1. WINHI_BEAM acts as a form which is needed in concrete casting, it is non-dismantle beam form which is manufactured accurately in WINHITECH's automation process facility and doesn't need to remove the form permanently after installed.
2. It is a system that 1.0-ton galvanized plate is pre-matured in the factory by the forming line as a plate which has temporary material structure performance, and is installed in the field through an assembly machining process, and acts a role as a foam.



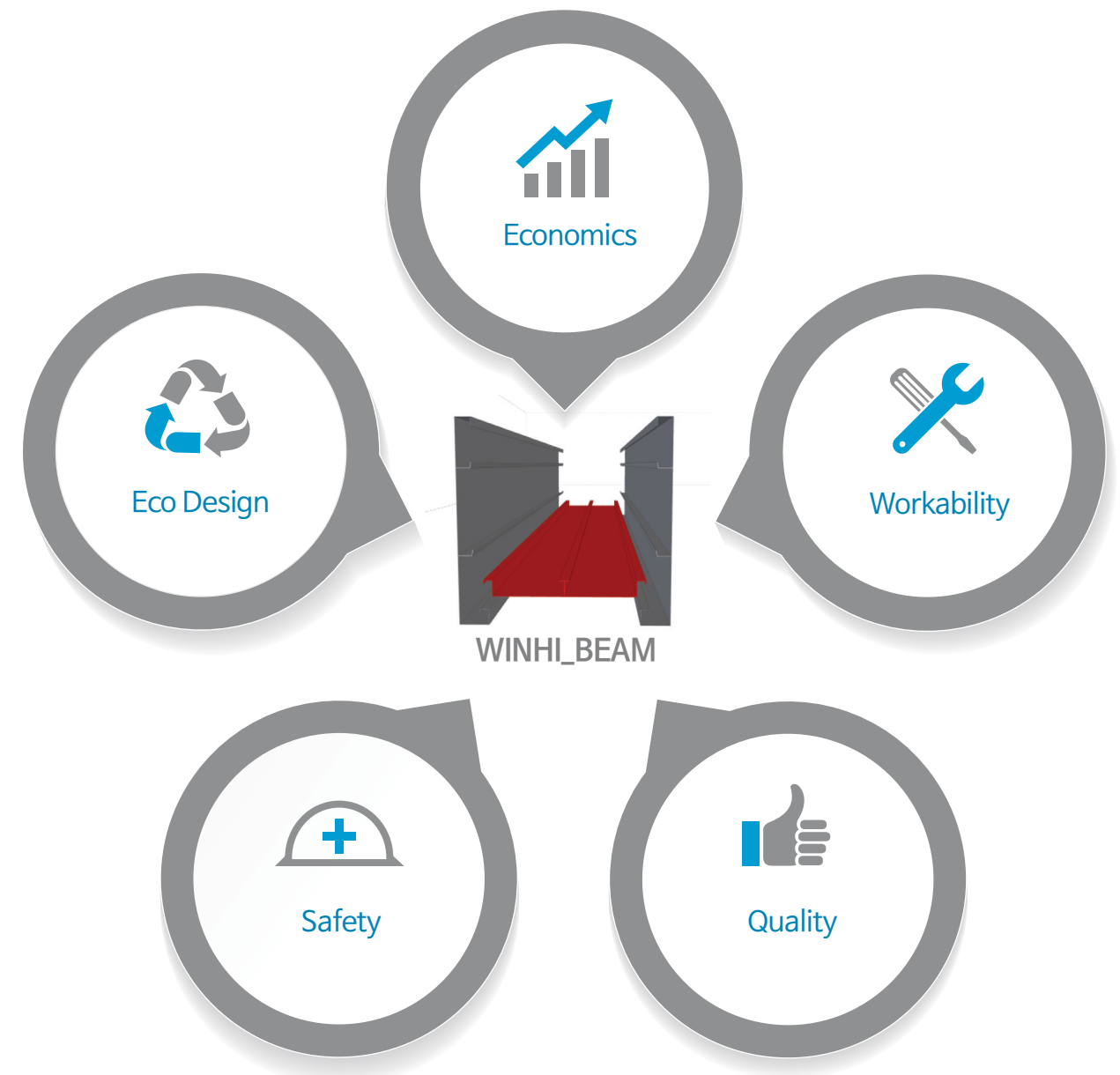
1.0T galvanized plate (7.85kg/m²) Plate Manufacturing Assembly Machining

/ WINHI_BEAM form /



◆ WINHI_BEAM's Five Excellence

WINHI_BEAM has five excellencies which are economics, workability, safety, high quality, and eco-design. When using WINHI_BEAM, it is easy to manage fields and able to pre-manufacture foam by saving field workers, saving safety management cost, skipping the process of dismantling and arrangement of beam form, minimizing temporary materials. It is possible not only to shorten construction period, reduce disposals, noise and dust quantity but also to manage quality rigidly because it is manufactured accurately in the factory, so superior construction quality can be achieved.



Creating Unique Solutions & Values!

Continuous challenge to create differentiation and newness

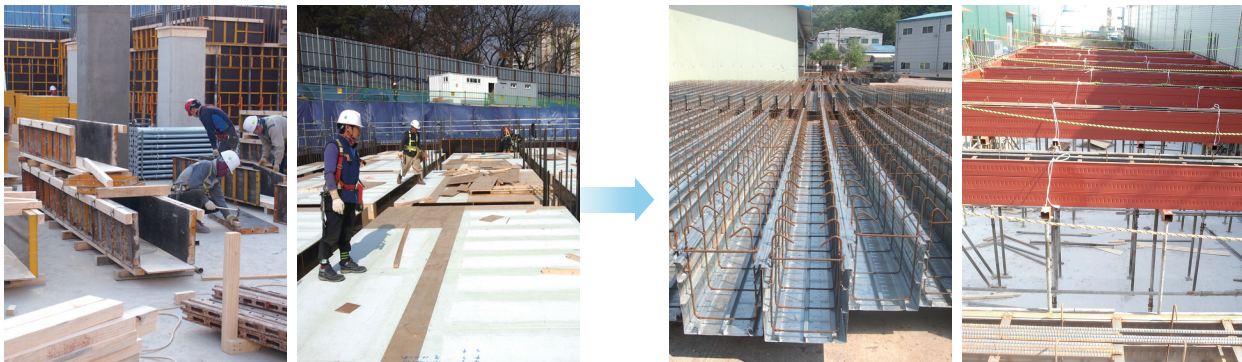
1 Economics

- Saving workers put into the field by being pre-manufactured in factory
- Saving material cost with systematic manufacturing and assembly plan
- Shortening effect of the construction period
 - No need of dismantling and arranging process of beam foam
 - Simplifying installation process



/ Saving material and labor cost /

- Saving under 5% of labor cost for field installation and manufacturing in a factory, material cost, 25% of indirect(period reduction) in comparison with conventional foam
- Saving labor expense and material loss by pre-manufacturing in factory



/ Construction Period Shortening /

- It is easy to install and doesn't need to requidate foam after curing concrete when using WINHI_BEAM rather than conventional foam
- The field installation process according to factory manufacturing is very simple and it is able to work frame construction simultaneously in field and factory
- A company using WINHI_BEAM shortened about 15% of construction period in comparison with conventional foam
- Hardly being affected by climate conditions

Manufacturing method	1DAY	2DAY	3DAY	4DAY	5DAY	6DAY	7DAY	8DAY	9DAY	10DAY
General foam	Marking	Conventional foam manufacturing / column, and wall rebar placing			Conventional foam of beam and slab		Placing of beam and slab rebar		Electrical facility	Casting
DH-BEAM	Marking	Conventional foam manufacturing / column, and wall rebar placing			WINHI_BEAM deck plate		Placing of beam and slab rebar	Electrical facility	Casting	
				Shortening foam from 2.5 day to 1.5 days					Shortening the whole construction period to 1.5 days	

2 Workability

- It is able to transport materials for the installation process, so it needs minimum open storage
- Transported to the field and installed after manufactured in the factory
- There is no need to manufacture a foam in the field so it minimizes workers for field construction
- It is easy to manage fields by using the minimum temporary materials(Only scaffold installed)
- No need of a spacer
- The manufacturing method which is applicable for both pre-casting and concurrent casting of column



WINHI_BEAM
is applicable for all



Characteristics of column pre-casting manufacturing method

- Simple column foam work
- Preventing deformation when casting
- Minimum dismantling of column foam(reusable)
- Extra process occurs (advantageous for sectional sequential construction method
→ reuse area column foam afterward)

Manufacturing method characteristics of column concurrent casting

- It can work by one process per floor.
- Complicated column foam work
- It is able that frame setup is deformed when casting (impossible to treat)
- Reassemble after dismantling the whole column foam

3 Safety

- Noticeably decreased accident rate by skipping conventional foam installation and dismantling
- Minimizing field workers and safety accidents by field installation using equipment



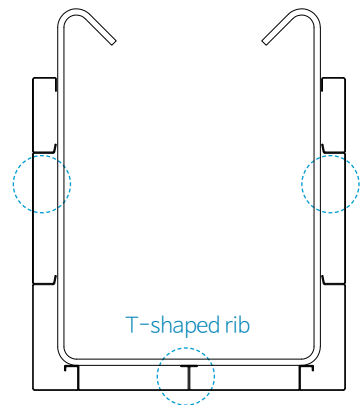
4 Quality

- Achieving rebar construction quality because T-shaped rib replaces rebar spacer
- It can maintain sufficient construction quality with small field workers
- It can make a uniform cover thickness of rebar
- Excellent machinability, durability, weathering with galvanized sheet steel (KSD3506-GI steel plate) product



Construction quality

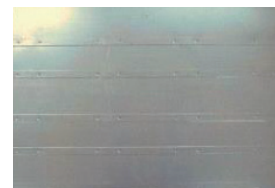
Maintaining rebar cover thickness by T-shaped rib



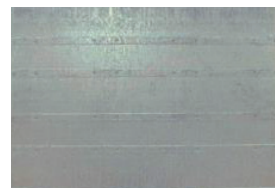
* Rib: Bent piles of T-shaped steel sheet

Durability, Weathering

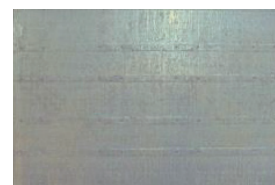
Neutral salt spray test on galvanized sheet steel (KSD3506-GI steel plate)



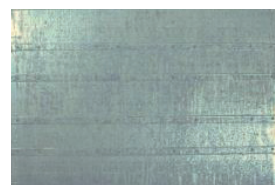
<Before test>



<After 24 hours>



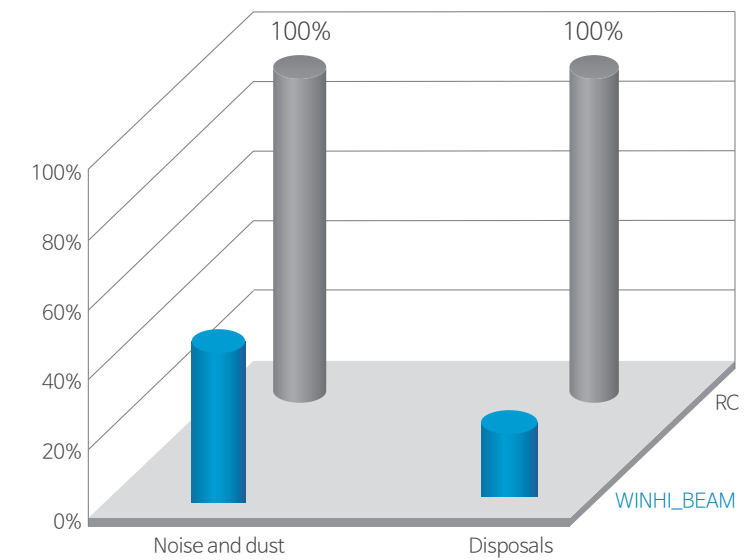
<After 48 hours>



<After 72 hours>

5 Eco Design

- It can make a fresh work environment with little noise and dust occurrence in the fields by factory forming manufacturing
- It can realize the low-carbon eco-design method by minimizing construction disposals and reduced CO₂



Reduced noise and dust

Reduced construction disposals

Reduced CO₂

Saving energy

Eco-friendly
WINHI_BEAM



Conventional foam



WINHI_BEAM



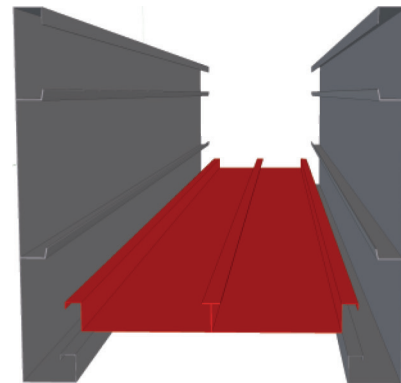
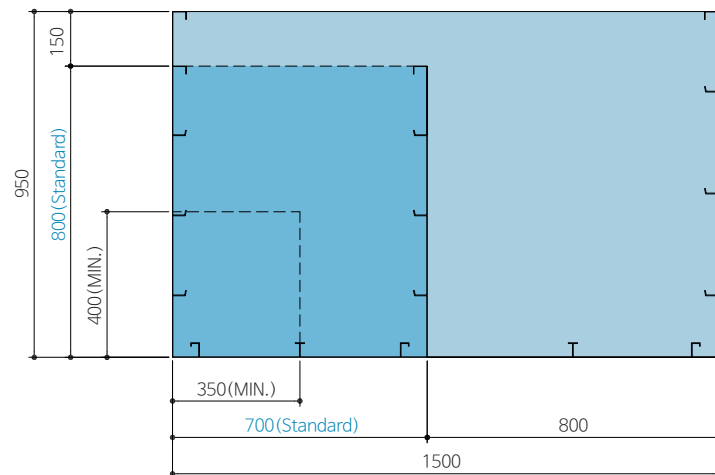
Making construction disposals



Minimizing construction disposals

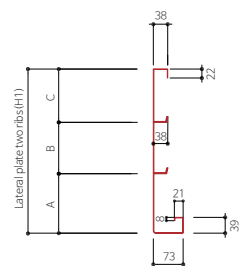
WINHI_BEAM

It has a range of foam cross section from minimum W300 H400 to maximum W1500 H950.
It can manufacture variously with foam cross section of 50mm unit for width and height each



WINHI_BEAM lateral plate

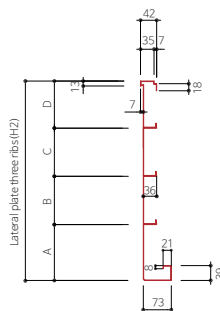
Lateral plate detailed two ribs



H1 : 400,450,500,550,600

A, B, C dimensions can be adjusted according to foam cross section size

Lateral plate detailed three ribs

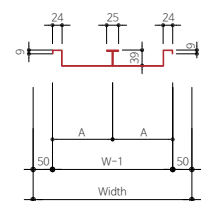


H2 : 650,700,750,800

A, B, C, D dimensions can be adjusted according to foam cross section size

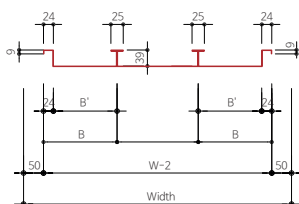
WINHI_BEAM lower plate

Lower plate detailed one ribs



Width	W-1	A
400	300	150
500	400	200
600	500	250

Lower plate detailed two ribs



Width	W-2	B(B')	C
700	600	185(161)	230
800	700	235(211)	230
900	800	285(261)	230

Shortening construction period and improving field environment in comparison with original manufacturing method

It reduces workers and materials put into the field by minimizing foam manufacturing in the field and manufacturing space and can shorten the construction period and improve field environment by non-dismantling foam.

WINHI_BEAM factory manufacturing process



WINHI_BEAM Construction sequence in the field



General Manufacturing Method



LG science park DP3

10, Magok Joongang 10-ro, Gayang 1-dong,
Gangseo-gu, Seoul

Contractor: LG subone



V1 MOTORS

23, Pyeongdong-ro 79beon-gil, Gwonseon-gu,
Suwon-si

Contractor: SK E&C



Mullae-dong V1 center

19, Mullae-dong 6-ga, Yeongdeungpo-gu,
Seoul

Contractor: SK E&C



Queens Park 12

799-3, Magok-dong, Gangseo-gu,
Seoul

Contractor: Mun-Myung ENG



AK Valley

13-207, Seongsu-dong 1-ga, Seongdong-gu

Contractor: ACE E&C



Hanam Misagangbyeon city

Self-sufficiency Facility Site 25-2BL

Contractor: Hyundai E&C



Samsung Harrington Tower

60-48, Gasan-dong, Geumcheon-gu, Seoul

Contractor: Hyosung E&C



Hillstate in Gwanggyo Jungang Station

1336, lui-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do

Contractor: Hyundai E&C



Baegot Avenuefrance

Commercial Site 1-1, Baegot New Town, Siheung-si, Gyeonggi-do

Contractor: Hoban E&C

(Awarded by the Minister of Land, Infrastructure and Transport)

(Awarded by the Prime Minister)

(Awarded by the Minister of the Future Creation Science)

(Awarded by the Minister of the Commerce, Industry and Energy)

(Awarded by the Administrator of the Small and Medium Business)

(Designated as an Excellent company in Chung-buk)

(Technology-innovative Small business Certificate)

(Designation Certificate as the First-class Venture Company)

(ISO9001 Certificate)

(Recognition Certificate of Fire-resisting structure)

(K-mark Certificate)

(KS Certificate)

(Carbon Emission Certificate) EXTRA DECK-1208 type

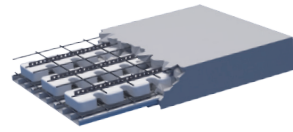
(Carbon Emission Certificate) EXTRA DECK-1310 type

(Performance Certificate) Insulation structure of floor impact sound

(Designation Certificate of New technology) VOIDDECK 관련 Voiddeck

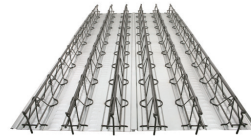


Jamsil Lotte World Tower



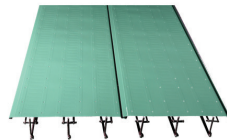
VOIDDECK

- ▲ Hollow slab system
- ▲ New construction technology No. 778
- ▲ Optimized new manufacturing method for long lifespan house



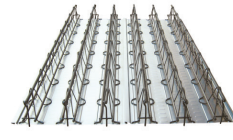
EXTRA DECK

- ▲ Un-welded steel wire integrated deck
- ▲ Excellent product of public procurement service
- ▲ Achieved the first carbon emission certificate in the industry



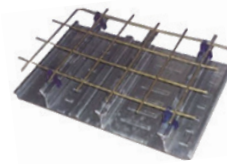
TOX DECK

- ▲ A new-concept deck which applies TOX circle connection technology to connect without welding
- ▲ Excellent product of public procurement service



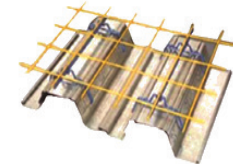
DREAM DECK

- ▲ Factory auto-manufactured product by welding triangle truss girder and lower steel sheet



ACE DECK

- ▲ Composite slab for Fire-resisting structure ALPHA DECK



ALPHA DECK

- ▲ Composite slab for Fire-resisting structure ALPHA DECK



SK Hynix Semiconductor Factory

Constructor : SK E&C Co., Ltd



LG Electronics Haiphong Factory (Vietnam)

Constructor : GS E&C



Gwangju Convention Center

Constructor : Korean Hydro Nuclear Power



Daejeon Yusung Police Station Office

Constructor : Daejeon Provincial Police Agency



Sejong-si Goun Elementary School

Constructor : Sejong Education Office



New Office Building of Korean Consumer Agency

Constructor : Korean Consumer Agency



New Office Building of Korean Mineral Resources Public Corporation

Constructor : Korean Mineral Resources Public corporation



Ulsan Free Trade Zone Project

Constructor : Ministry of Commerce, Industry, and Energy



Busan Science Museum

Constructor : Incheon Airport Office



Hansol Technics factory (Vietnam)

Constructor : Hansol Technics Co., Ltd



Vietnam Yenbin Project

Constructor : Samsung Electronics Co., Ltd



Incheon International Airport Terminal 2

Constructor : Incheon Airport Office



New Office Building of Korean Ceramic Technology

Constructor : Korean Ceramic Technology



Sejong City Hall Office

Constructor : National Agency for Administrative City Construction



Hanwha Pangyo Research Center

Constructor : Hanwha E&C Co., Ltd



Complex development of Section 3 in front of Yongsan Station

Constructor : Samsung C&T Co., Ltd



New Construction of Busan Lotte Complex Shopping mall

Constructor : Lotte Construction Co., Ltd



Seoul Eastern District Court Office

Constructor : Supreme Court



Honam Expressway Gwangju Songju Station Building

Constructor : Ultra Construction Co., Ltd



Lotte mall Suwon Station Branch

Constructor : Lotte Construction Co., Ltd



Incheon Asian Game Main Stadium

Constructor : Incheon Metropolitan City