



The World Best Technology! FIXON is making.
Corrugated Steel Pipe & Corrugated Steel Plate

Wisdom for More Beautiful World,
The Technology of **FIXON** is Making the Future.

FIXON has manufactured the best corrugated steel pipe and corrugated steel plate equipped with the innovative technical skill through continuous R & D since the foundation in 1994. Global No. 1 FIXON who has made more beautiful and convenient world!

We will open a new future as a leader of world industry together with the spirit of dream, challenge and love.

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Global FIXON



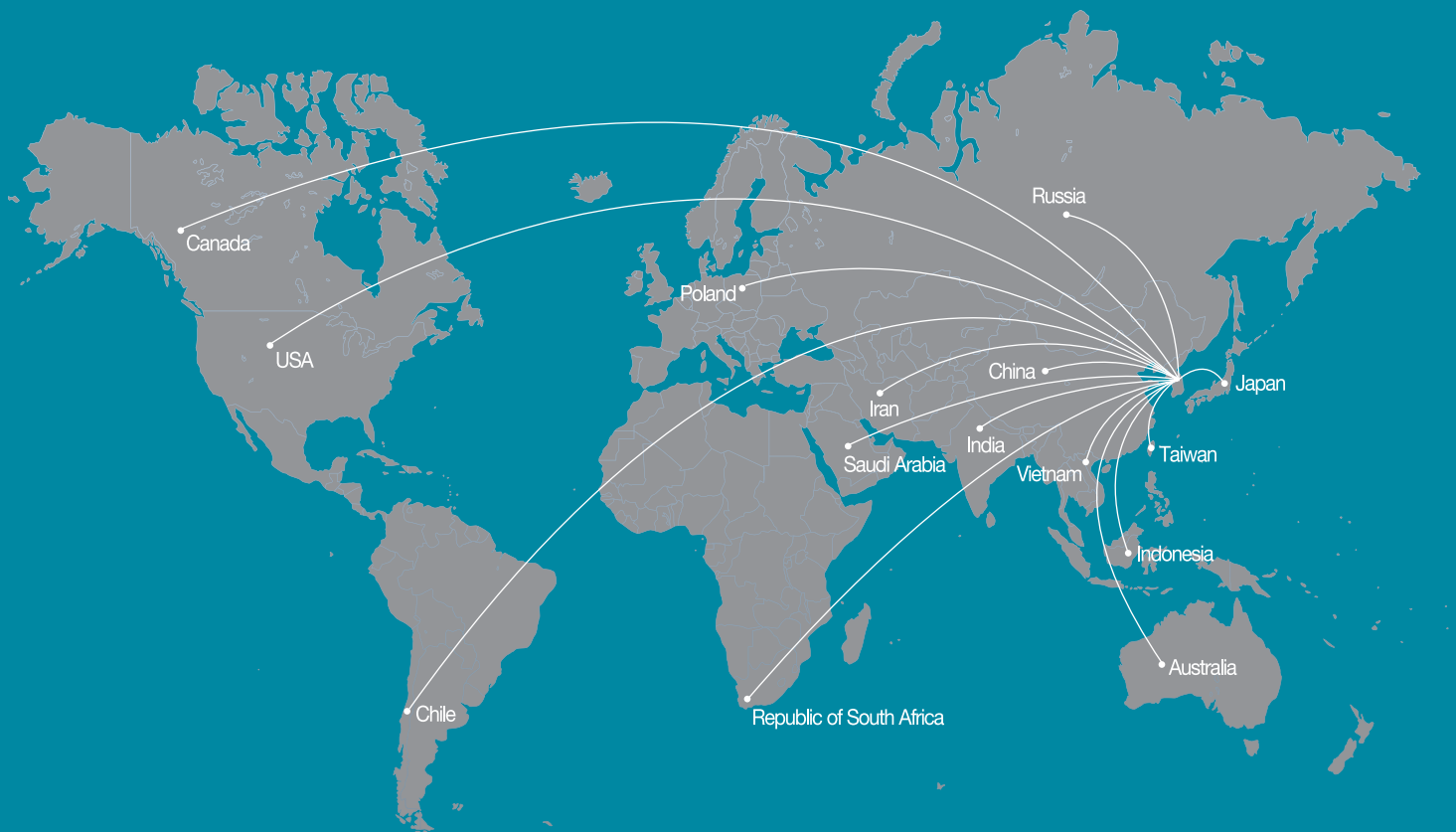
FIXON , Making The New Future

FIXON who has manufactured eco-friendly high-added value products along with the establishment of company's auxiliary research center in 2001

We have been exporting technology and products to more than 10 countries in the world such as China, U.S, Russia, Australia, Japan, and Iran, etc for the first time in the industry.

History of Major Certifications and Awards

- | | | | |
|------|---|------|---|
| 1994 | Foundation of Corporation Daesung Engineering Inc., | 2012 | Awarded for 3 Million U.S Dollar Export Tower Awarded for Gwangyang-si Best Executive Director Selected for Excellent Product Procured of Corrugated Steel Plate, Certified for Construction with New Technology (NET) Selected for Excellent Product Procured of HPL Corrugated Steel Pipe Awarded for Excellent Green Business Management Awarded for Commendation by The Minister of SMBA (Order of Merit for Economic Revitalization) |
| 1995 | KS Certification (KS D 3590) | | |
| 1997 | Selected for Prospective S & M Business Designated for National Technique Instruction Company | | |
| 1999 | Designated for Excellent Venture Business | | |
| 2000 | Designated for Excellent Business in Technical Competitiveness (SMBA) | | |
| 2001 | Certified of ISO9001, EM(Excellent Material), NT(New Technology) | | |
| 2002 | Selected for the procured excellent products of PL Corrugated Steel Pipe | 2013 | Certified of Green Business Excellent S & M Companies (Green-biz) Awarded for K-Water New Technology Competition Silver Prize |
| 2003 | Selected for Prospective S & M Export Business | | |
| 2004 | Certified of Technical Innovation Type S & M Business (Inno-biz) | 2014 | Commendation for Local Economic Development by Governor of Jeonnam |
| 2006 | Certified of PF Corrugated Steel Pipe NEP(New Product) Selected for Procured Excellent Product | 2015 | Certificate of Risk Evaluation (KOSHA) |
| 2008 | Establish social welfare foundation Chamsaem-dongsan Acquired Daesung New Tech in Zhangjiagang China | 2016 | Awarded for Commendation by The Ministry of S & M Business (Merit of Venture Activation) Acquired the certificate of Fireproof Structure (KICT) Awarded for Commendation by The Ministry of Labor (Merit of Employment) |
| 2010 | Selected for The Business of Top Happiness Index in Our Era | 2017 | Chosen as Global small & strong company (Small and Medium Business Administration) |
| | | 2019 | CE certificate |



Overseas
Construction
Cases



INDIA



RUSSIA



JAPAN



CANADA



AUSTRALIA



TAIWAN



IRAN



POLAND



SOUTH AFRICA



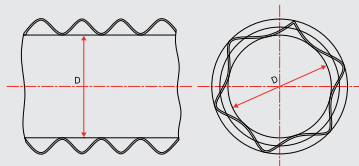
CHINA



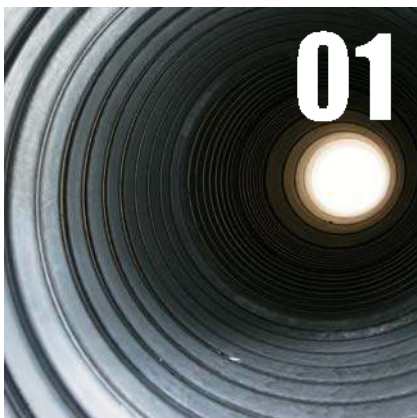
Introduction to Corrugated Steep Pipe

Product Type

KS D 3590
(Corrugated Steel Pipe & Corrugated Section)



| Symbol | Dimension | | |
|----------|-------------------------|--------------------------|----------------------------------|
| | Pitch of Corrugation(P) | Height of Corrugation(H) | Bending Radius of Corrugation(r) |
| SCP 0 RS | 38.0 | 6.5 | 7.1 |
| SCP 1 RS | 68.0 | 13.0 | 17.5 |
| SCP 3 RS | 76.2 | 25.4 | 17.5 |



01

Ideal drain structure with long life, economic and easy construction as it has structural safety, durability and corrosion resistance

Flexible pipe with a spiral shape created by molding molten zinc galvanizing steel plate into a wave shape to increase its hardness



02



03

Product mainly used for drain pipe in diverse civil engineering works, and widely used for industrial complex, housing development, golf range, apartment, underground path, road construction site, and rain storage tank



• Merits of Corrugated Steel Pipe

High Strength

- Flexible pipe by molding groove on steel plate to give a load carrying capacity for the uniform distribution of weight and reaction force around the pipe to maintain large load carrying capacity
- Available to construct with 1/5-1/10 weight and about 1/20-1/40 thickness compared to the huge pipe of same pipe diameter



Easy Transportation

- Available to transport and store with manpower in a narrow place without machine as it is light weight



Easy Construction

- Easier basic construction than rigid pipe as it is light and flexible
- Short construction period as it is possible to construct even by unskilled man through the bolt assembly



Long Service Life

- Maintain long service life by adding zinc galvanizing (dual side 600g/m²) and film coating to secure corrosion resistance



Environment Friendly

- Possible 100% recycle and minimum carbon discharge for raw steel material being used



Excellent Economy

- Procurement of excellent economy with an unit length of maximum 10m long, a fast construction, a procurement of long service life, and a recycling of raw material
- Reduction of maximum 60% construction cost (material cost, subsidiary facilities) compared to that of huge pipe





• General Corrugated Steel Pipe

• High strength, reliable structural stability!

- Used zinc galvanizing steel plate for strong corrosion resistance, structural stability and excellent durability
- Available for fast construction with a maximum 10m unit length and a band connection method

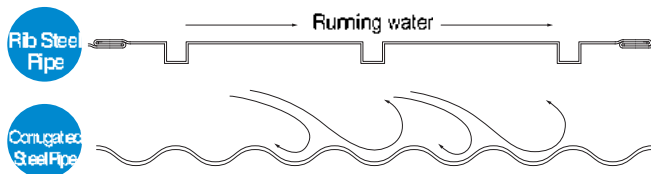
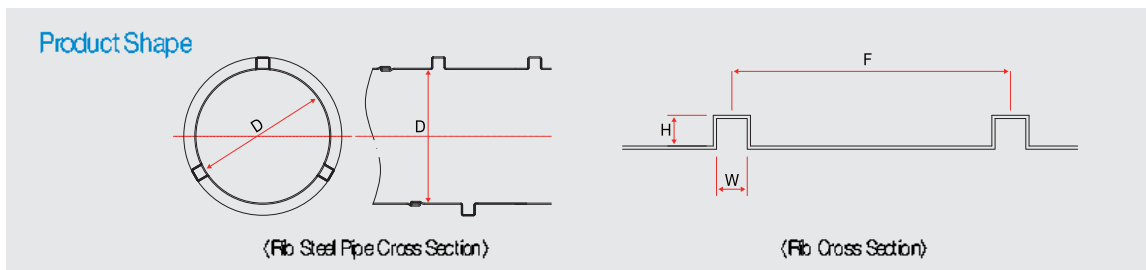




● Rib Steel Pipe / Rib Steel Pipe with High Corrosion Resistance

➡ Secure Excellent Roughness Coefficient!

- The world first new technology with merits of corrugated steel pipe, PE pipe and hump pipe
- Secure the low coefficient of roughness through the removal of inner groove
- Remove the damage on zinc galvanizing layer that occurs at the pipe construction through the manufacturing technology of patent petition (service life extension)



| Pipe Type | Rib Steel Pipe | Concrete | Corrugated Steel Pipe (1RS) |
|--------------------------|----------------|-------------|-----------------------------|
| Roughness Coefficient(n) | 0.011~0.013 | 0.011~0.013 | 0.013~0.020 |





PL Corrugated Steel Pipe

Over 70 Years Service Life, Excellent Corrosion Resistance!

- Drastic service life extension of product through the polyethylene film coating with high corrosion resistance on general corrugated steel pipe
- Available to use even in any condition and environment with its high chemical resistance
- Suitable for drain pipe, wastewater pipe, and the salty ocean areas of reclaimed land and harbor

Coating Type



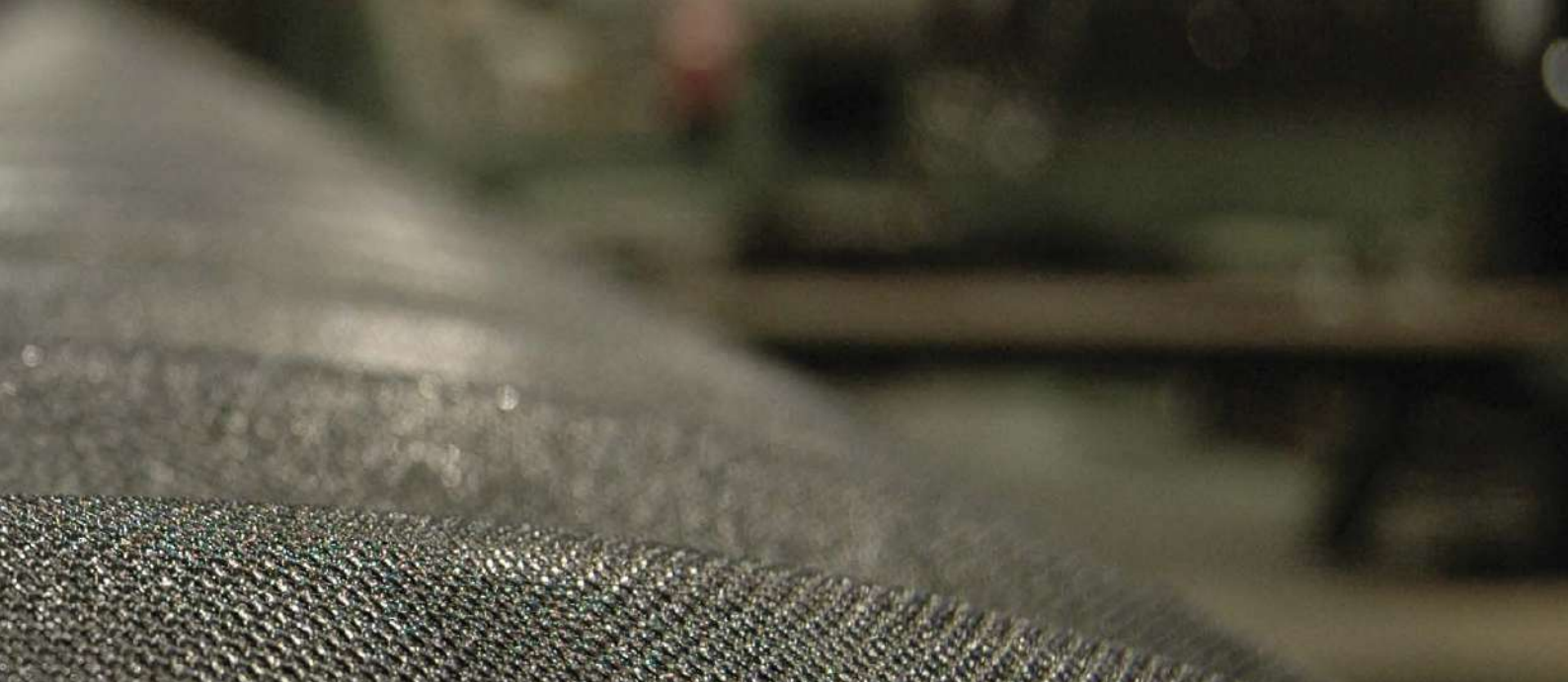
- High Strength PE Resin
- Adhesive PE Resin
- Zinc Galvanizing
- Steel Plate
- Zinc Galvanizing
- Adhesive PE Resin
- High Strength PE Resin

PL Film

Product Kinds

| Symbol | Coating Type | Coating Thickness |
|--------|----------------------|---|
| PL301 | Inner coating | Inner surface 0.25mm & thicker |
| PL302 | Inner, outer coating | Inner, outer surface, each 0.25mm & thicker |



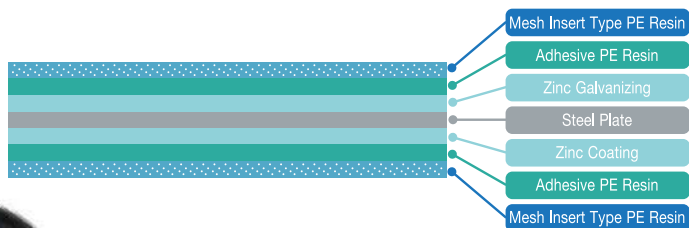


HPL Corrugated Steel Pipe

Realized Strong Impact Resistance with Solid Coating!

- Elimination of damage on coating layer generated at the transportation and construction of product through the high strength mesh-type film coating
- Maximization of stability such as long term durability and corrosion resistance with strong binding and impact resistance

Coating Type

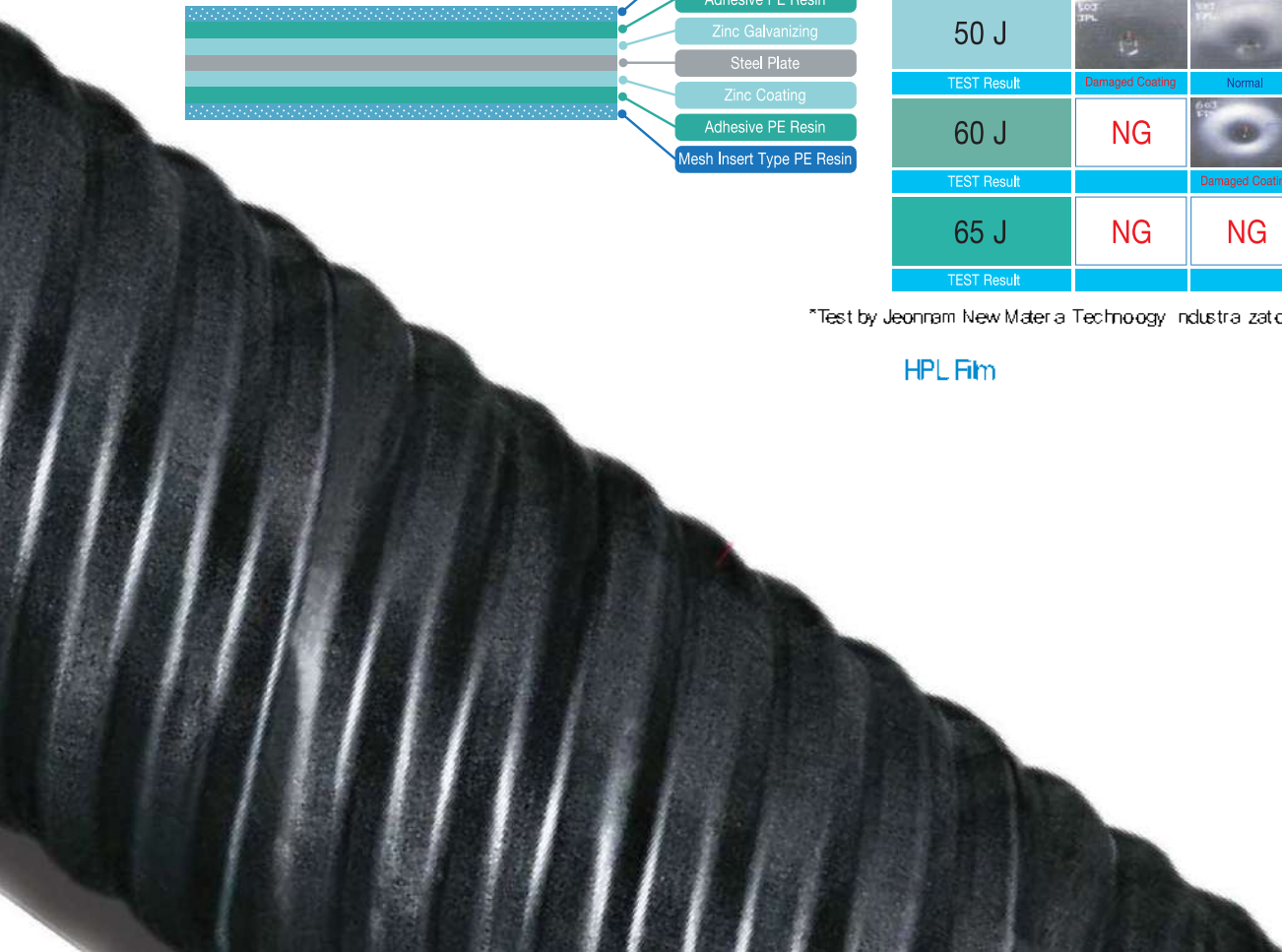


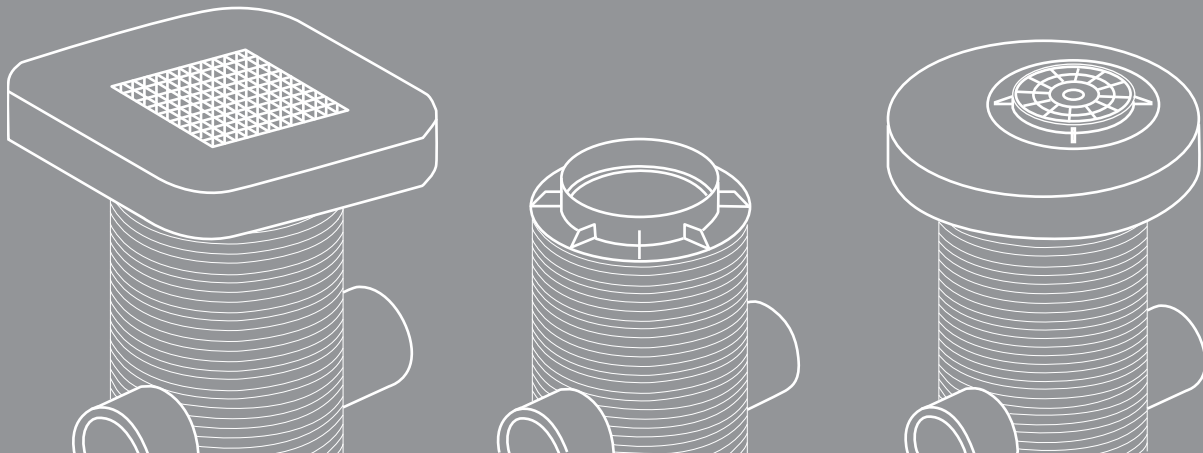
Impact Test (Test Method ASTM D 3763)

| Impact Energy (J) | JPL | FPL | HPL |
|-------------------|---|---|---|
| 50 J |  |  |  |
| TEST Result | Damaged Coating | Normal | Normal |
| 60 J | NG |  |  |
| TEST Result | | Damaged Coating | Normal |
| 65 J | NG | NG |  |
| TEST Result | | | Normal |

*Test by Jeonnam New Material Technology Industrialization Support Center

HPL Film





PF Corrugated Steel Pipe

Guarantee 100% Perfect Water Seal!

- Realize the feature of high water seal through the permanent mounting of polyethylene flange
- Available for fast construction with a simple bolt assembly method
- Available for the application not only to rain water pipe and drain pipe, but also to sewer pipe and wastewater pipe



Perforated Pipe

Effective Rain Water Management!

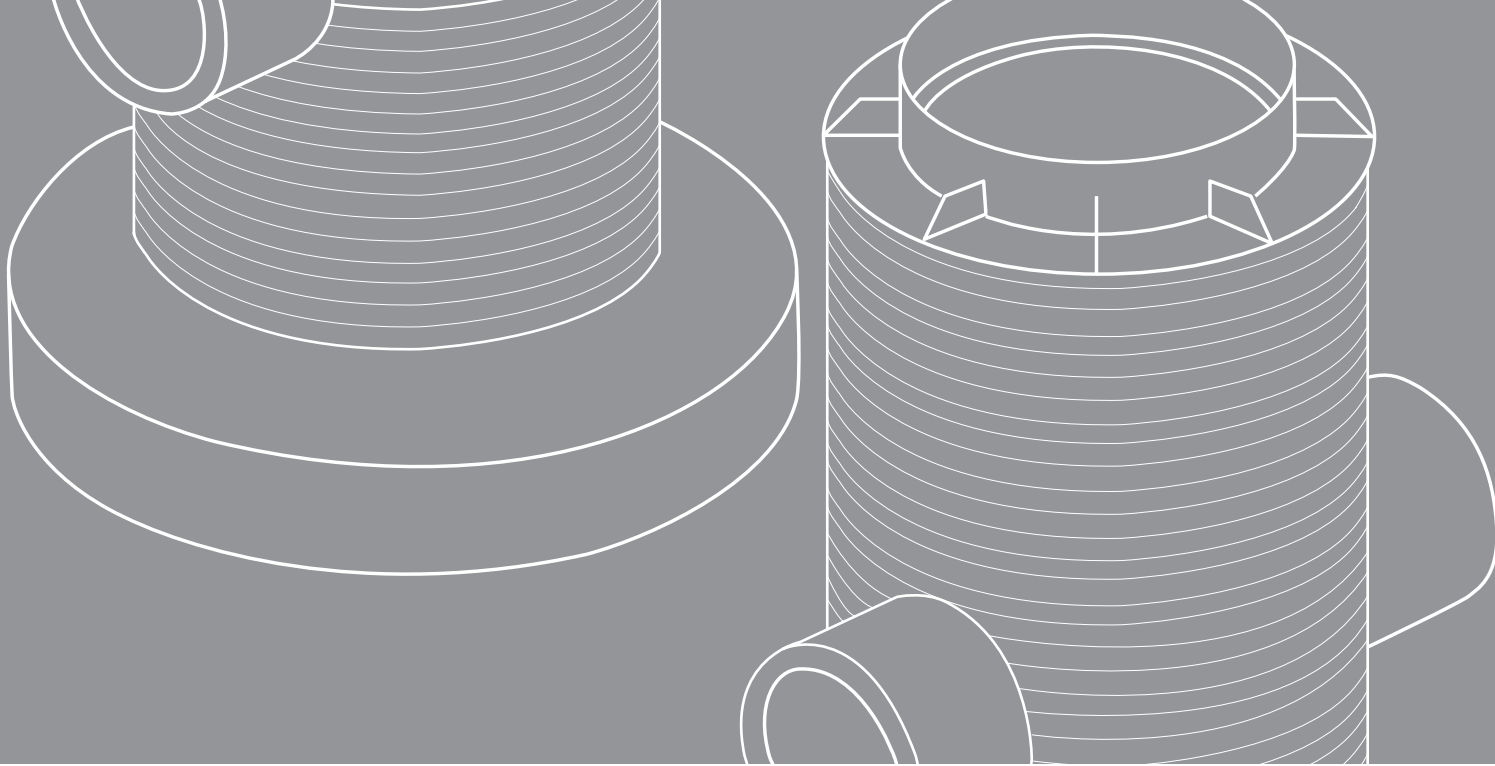
- Used widely for sports field, tennis court, golf range, tunnel, and park
- Used largely for the constructions of large scale sports field, stone filled drain in tunnel, and vertical drainage construction for housing site creation with tight perforation and high external strength

Corrugate Steel Pipe Manhole

Perfect Water Seal, Fast Construction!

- All-in-one product, available for fast construction without separate process
- Available for the delivery of special dimension through the order manufacturing system for customer response





Connection Method for Corrugated Steel Pipe

Sleeve (Corrugated Steel Pipe with Small Diameter)



Coupling Band (H-PL Corrugated Steel Pipe / FL Corrugated Steel Pipe / General Corrugated Steel Pipe / Rib Steel Pipe)



Flange (PF Corrugated Steel Pipe)



Saddle T Connection



Manhole Connection



T Shape Connection

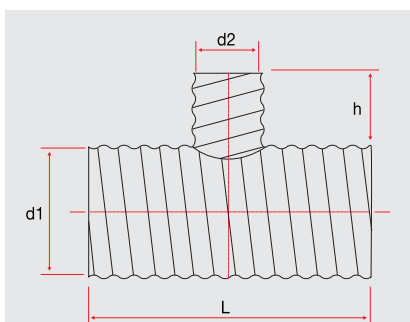


Corrugated Steel Pipe Dimension / Nipple, Curved Pipe

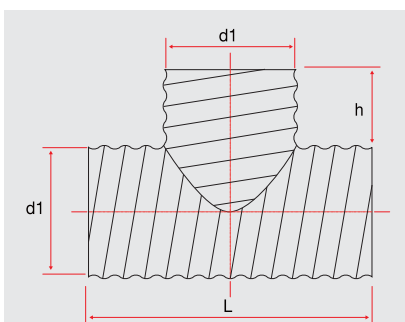
Dimension of Corrugated Steel Pipe

| Types | Manufacturing Dimension | | | |
|----------|--|--------------------------|----------------|-----------------|
| | General Corrugated Steel Pipe, PL Corrugated Steel Pipe, HPL Corrugated Steel Pipe | PF Corrugated Steel Pipe | Rib Steel Pipe | Perforated Pipe |
| SCP 0 RS | D150 ~ D600 | D250 | D150 ~ D250 | D150 ~ D600 |
| SCP 1 RS | D300 ~ D1800 | D300 ~ D1000 | D300 ~ D1500 | D300 ~ D1800 |
| SCP 3 RS | D900 ~ D2400 | - | - | - |

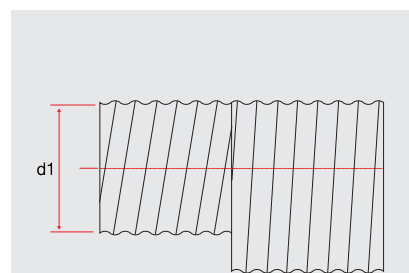
Nipple & Curved Pipe



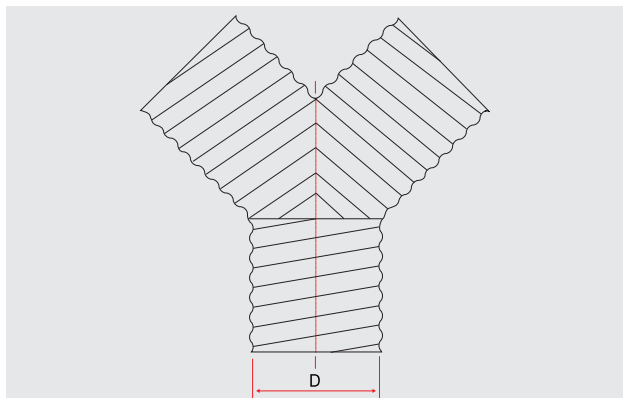
T Shape Pipe (Reducing Tee)



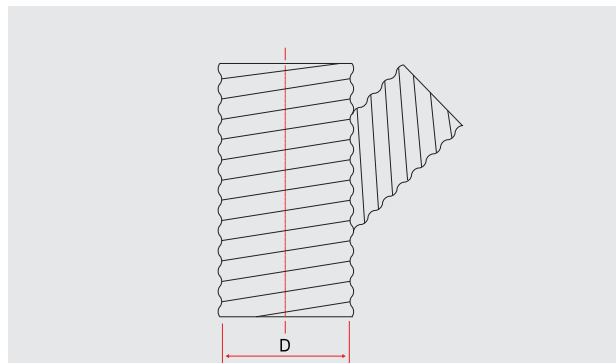
T Shape Pipe (Equal Tee)



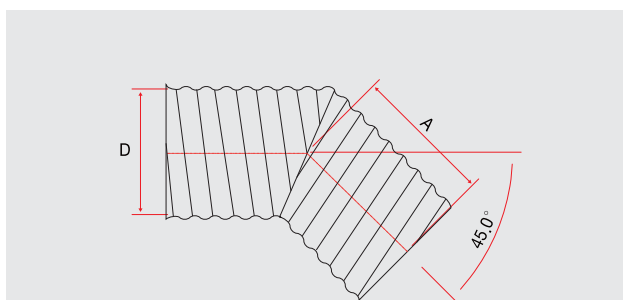
Reducer



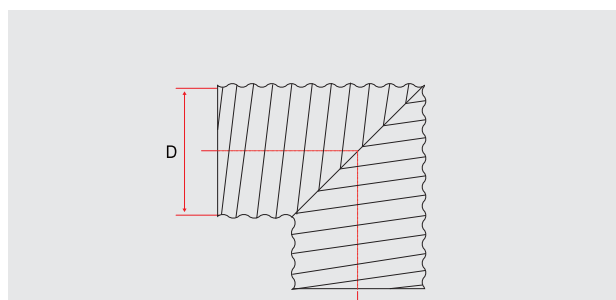
Y Shape Pipe



Branch Pipe



Elbow 45



Elbow 90

➔ Application Range for Each Pipe Diameter

| Types | KS D 3590 1RS Type (68mm×13mm) | | | | | | | | | | | | | | | KS D 3590 3RS Type (75mm×25mm) | | | | | | | | | | | | Hume Pipe (Norma 2 Types) | |
|-------------------|----------------------------------|------------------------|--------------------------|-----------------------------|------------------------|--------------------------|-----------------------------|------------------------|--------------------------|-----------------------------|------------------------|--------------------------|-----------------------------|------------------------|--------------------------|----------------------------------|-----------------------|------------------------|--------------------------|-----------------------------|------------------------|--------------------------|-----------------------------|------------------------|--------------------------|-----------------------------|--------------------------|---------------------------------|--|
| Thickness (mm) | Min. Cover (mm) | 1.4t (46year) | | | 1.6t (52year) | | | 2.0t (64year) | | | 2.7t (85year) | | | 3.2t (97year) | | | Min. Cover (mm) | 2.0t (64year) | | | 2.7t (85year) | | | 3.2t (97year) | | | | | |
| Depth (m) | | Mand Height (mm) | Pipe Weight (kg/m) | Weight on base (kg/m) | Mand Height (mm) | Pipe Weight (kg/m) | Weight on base (kg/m) | Mand Height (mm) | Pipe Weight (kg/m) | Weight on base (kg/m) | Mand Height (mm) | Pipe Weight (kg/m) | Weight on base (kg/m) | Mand Height (mm) | Pipe Weight (kg/m) | Weight on base (kg/m) | | Mand Height (mm) | Pipe Weight (kg/m) | Weight on base (kg/m) | Mand Height (mm) | Pipe Weight (kg/m) | Weight on base (kg/m) | Mand Height (mm) | Pipe Weight (kg/m) | Weight on base (kg/m) | Pipe Weight (kg/m) | False Load (kg/m) | |
| 300 | 0.30 | 52.6 | 14.8 | 2388 | 58.4 | 17.0 | 3885 | 73.0 | 20.0 | 4581 | | | | | | | | | | | | | | | | 832 | 2800 | | |
| 350 | 0.30 | 35.9 | 16.4 | 2810 | 40.2 | 18.7 | 2574 | 48.8 | 23.0 | 3240 | | | | | | | | | | | | | | | | 1032 | 3000 | | |
| 400 | 0.30 | 26.6 | 18.7 | 2420 | 29.5 | 21.4 | 2280 | 35.2 | 26.3 | 2574 | | | | | | | | | | | | | | | | 1284 | 3300 | | |
| 450 | 0.30 | 20.9 | 20.2 | 1910 | 22.6 | 23.1 | 1820 | 27.0 | 29.3 | 2180 | | | | | | | | | | | | | | | | 1616 | 3600 | | |
| 500 | 0.30 | 17.3 | 23.1 | 1618 | 18.8 | 26.4 | 1880 | 21.7 | 32.3 | 2184 | | | | | | | | | | | | | | | | 1964 | 3900 | | |
| 600 | 0.30 | 13.2 | 27.0 | 1318 | 14.1 | 30.8 | 1318 | 15.8 | 38.5 | 1910 | 18.9 | 50.5 | 2520 | 21.2 | 59.9 | 2420 | | | | | | | | | | 2776 | 4500 | | |
| 700 | 0.30 | 11.2 | 30.2 | 1183 | 11.7 | 34.5 | 1154 | 12.8 | 43.2 | 1830 | 14.7 | 56.9 | 1930 | 16.2 | 67.4 | 2520 | | | | | | | | | | 3752 | 5000 | | |
| 750 | 0.30 | 10.5 | 32.4 | 1118 | 10.9 | 37.0 | 1130 | 11.8 | 46.3 | 1810 | 13.4 | 61.0 | 1910 | 14.8 | 72.2 | 2180 | | | | | | | | | | - | | | |
| 800 | 0.30 | 10.0 | 34.5 | 1118 | 10.3 | 38.5 | 1120 | 11.1 | 48.3 | 1810 | 12.4 | 65.0 | 1910 | 13.4 | 77.1 | 2180 | | | | | | | | | | 4876 | 5400 | | |
| 900 | 0.30 | 9.3 | 38.1 | 1188 | 9.5 | 44.7 | 1120 | 10.0 | 55.5 | 1910 | 10.9 | 72.8 | 1920 | 11.6 | 85.0 | 1910 | 0.30 | 18.6 | 63.2 | 3830 | 22.7 | 83.2 | 3940 | | | 6218 | 5900 | | |
| 1000 | 0.30 | 8.8 | 43.7 | 1170 | 9.0 | 48.9 | 1120 | 9.4 | 62.1 | 1820 | 10.0 | 80.7 | 1910 | 10.6 | 94.0 | 2180 | | 15.6 | 68.0 | 2910 | 18.6 | 92.0 | 3530 | | | 7444 | 6300 | | |
| 1100 | 0.30 | 8.5 | 48.0 | 1180 | 8.7 | 54.9 | 1110 | 8.9 | 67.8 | 1830 | 9.4 | 88.8 | 1930 | 9.8 | 103.4 | 21530 | | 13.6 | 75.9 | 2850 | 15.9 | 101.2 | 38130 | 18.1 | 119.2 | 37820 | 8420 | 6800 | |
| 1200 | 0.45 | 8.3 | 51.3 | 1188 | 8.4 | 58.6 | 1120 | 8.6 | 74.0 | 1838 | 9.0 | 95.6 | 21570 | 9.3 | 112.4 | 21280 | 0.30 | 12.3 | 83.2 | 2940 | 14.0 | 108.4 | 38830 | 15.2 | 130.2 | 34880 | 10812 | 7300 | |
| 1300 | 0.45 | | | | | | | 8.4 | 80.2 | | 8.7 | 104.5 | | | | | 0.45 | 11.3 | 90.6 | | 12.6 | 118.8 | | 13.6 | 138.9 | | - | | |
| 1350 | 0.45 | | | | | | | 8.3 | 83.2 | 2130 | 8.6 | 108.5 | 21870 | 9.1 | 116.1 | 23380 | | 10.9 | 94.0 | 2880 | 12.1 | 123.4 | 31980 | 13.0 | 145.3 | 39220 | 1300 | 8300 | |
| 1400 | 0.45 | | | | | | | 8.3 | 86.3 | | 8.5 | 112.5 | | | | | | 10.5 | 97.5 | | 11.6 | 128.0 | | 12.4 | 150.6 | | - | | |
| 1500 | 0.45 | | | | | | | | | | 8.3 | 120.4 | 22570 | 8.5 | 141.2 | 24180 | | 10.0 | 103.3 | 2840 | 10.9 | 136.8 | 31980 | 11.5 | 161.7 | 32790 | 1484 | 9300 | |
| 1600 | 0.45 | | | | | | | | | | 8.2 | 128.4 | | | | | | 9.6 | 110.2 | | 10.3 | 145.9 | | 10.8 | 172.5 | | - | | |
| 1650 | 0.45 | | | | | | | | | | 8.2 | 132.3 | 21680 | 8.3 | 154.9 | 2190 | | 9.4 | 114.1 | 2440 | 10.1 | 150.1 | 36520 | 10.5 | 176.8 | 38130 | 1800 | 10300 | |
| 1700 | 0.45 | | | | | | | | | | 8.1 | 136.3 | | | | | | 9.2 | 117.5 | | 9.8 | 154.7 | | 10.3 | 182.1 | | - | | |
| 1800 | 0.45 | | | | | | | | | | | | | 8.1 | 168.6 | 27750 | 0.45 | 9.0 | 124.9 | 31240 | 9.5 | 163.5 | 32470 | 9.9 | 191.9 | 39900 | 21888 | 11300 | |
| 1900 | | | | | | | | | | | | | | | | | 0.60 | 8.8 | 131.8 | | 9.2 | 172.6 | | 9.5 | 207.5 | | | | |
| 2000 | | | | | | | | | | | | | | | | | | 8.6 | 137.6 | 3240 | 9.0 | 181.4 | 34140 | 9.3 | 213.6 | 35170 | | 12000 | |
| 2100 | | | | | | | | | | | | | | | | | | 8.5 | 144.9 | | 8.8 | 190.3 | | 9.0 | 224.7 | | | | |
| 2200 | | | | | | | | | | | | | | | | | | 8.4 | 151.8 | 34970 | 8.6 | 198.3 | 38130 | 8.8 | 235.4 | 38980 | | 12500 | |
| 2300 | | | | | | | | | | | | | | | | | | 8.3 | 157.6 | | 8.5 | 215.9 | | 8.7 | 245.1 | | | | |
| 2400 | | | | | | | | | | | | | | | | | | 8.2 | 165.0 | 3730 | 8.4 | 218.5 | 38330 | 8.6 | 257.6 | 39040 | | 12800 | |



“ Advance The Future Technology ”



34

Military Installations

26

Tunnel

Page Number for
Relevant Product

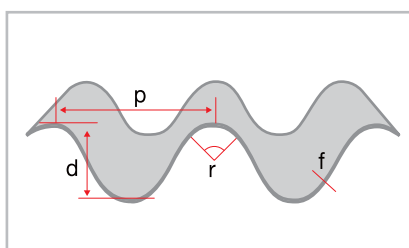
The reinforcement technology of corrugated steel plate structure developed by FIXON has established a new milestone in the related industry.

Developing the best products, FIXON is realizing the future of better technology that provides the human life with the convenience and new value.

Corrugated Steel Plate Introduction

Characteristic of Corrugated Steel Plate

- Corrugated steel plate is the material for structure for which the steel plate material for structure of constant size (SS400, SS490, SS590) has been molded to increase the hardness, which has procured the design service life of more than 50–100 years through the molten zinc galvanizing (dual side 900g/m²)
- Economic and eco-friendly product with simple construction method compared to other method, convenient transportation, fine aesthetic appearance, and structural stability
- Available to utilize for various structures from bridge, excavating tunnel, ecological tunnel, noise barrier tunnel, military installations to underground culvert



Dimension of Corrugated Steel Plate



Flat card



Corrugated card

Merits of Corrugated Steel Plate

Fast Construction Feature

- Light material with easy & simple transportation
- Available for fast construction through bolt assembly reducing the construction period by 30–50% compared to other construction methods
- Available emergency construction through partly repair at aging, flood recovery, repair & reinforcement

Perfect Quality

- Uniform quality out of factory manufactured product
- Excellent quality maintained through the integrated management from design to manufacturing, construction, and site management

Solid Durability

- Secure a long expected service life applied with molten zinc galvanizing (900g/m²) on the surface of steel material

Eco-Friendliness

- Eco-friendly product compared to concrete structure as it is available for 100% recycle according to the characteristic of steel material

Excellent Economic Feature

- Shortened construction period through fast construction
- Secure a long product life through solid durability to realize excellent economic feature
- Available to reduce construction cost by 15–30% compared to that of steel concrete structure

Aesthetic Feature

- Easy to harmonize the surrounding landscape through inner & external decorations

Excellent Water Flow Cross Section

- Smooth connection between waterway in upper & lower streams and waterway culvert to relieve bottleneck phenomenon

Dimension & Construction Order

Dimension of Corrugated Steel Plate

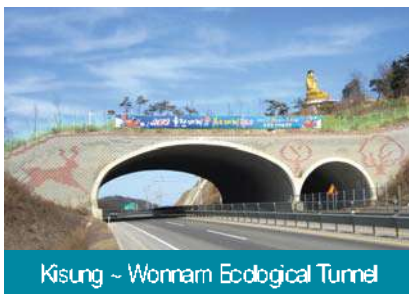
| Types | Thickness (t) | Groove Pitch (p) | Groove Depth (d) | Bending Radius (r) |
|-------------------|---------------|------------------|------------------|--------------------|
| Standard Type | 2.7 ~ 7.0mm | 150mm | 50mm | 28mm |
| Deep Groove Type1 | 3.42 ~ 7.1mm | 380mm | 140mm | 76mm |
| Deep Groove Type2 | 3.0 ~ 9.0mm | 400mm | 150mm | 81mm |





Godeung-dong Ecological Tunnel Aerial View

LANDSCAPE PLANNING



Kisung ~ Wonnam Ecological Tunnel



Gyeonggi-do Gunpo ~ Dang-dong



Gimpo ~ Gwansan

Reinforced soil block shape



Aerial View of Park Creation on Bundang-Suseo Road



3-Dimensional View of Wonshin Tunnel

Harmonious high class technology with the coexistence of living and nature!

Beautiful environment utilizing the upper soil of structure actively,
 Design to a convenient and useful space
 Create a refined space with inner & outer corrugated steel plate utilizing natural stone,
 lumber finish, and reinforced soil pattern



Bucheon-Baekhak Area Housing Complex Creation Construction

Steel Material Lining Finish



Jeonju-Wanju Innovative Cities Improvement Project

Wood Lining Finish

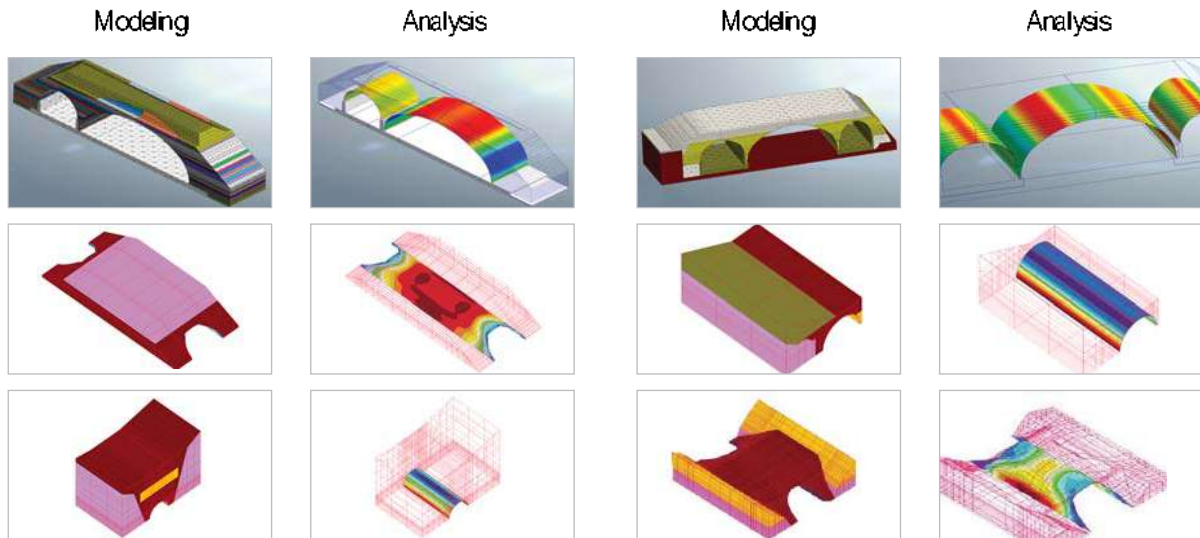


Gyeonggi-do Pocheon Golf Range

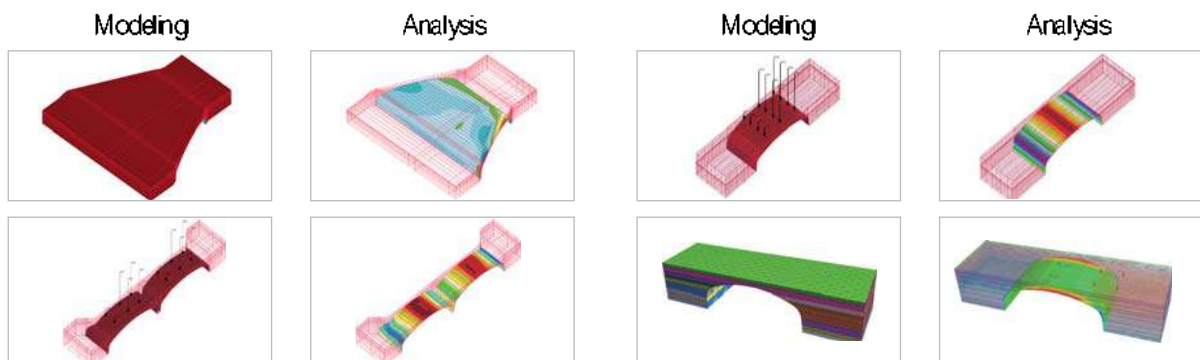
Front Wall Stone Attachment

COMPUTATIONAL ANALYSIS

Finite Element Analysis, Arch Type FEM Analysis

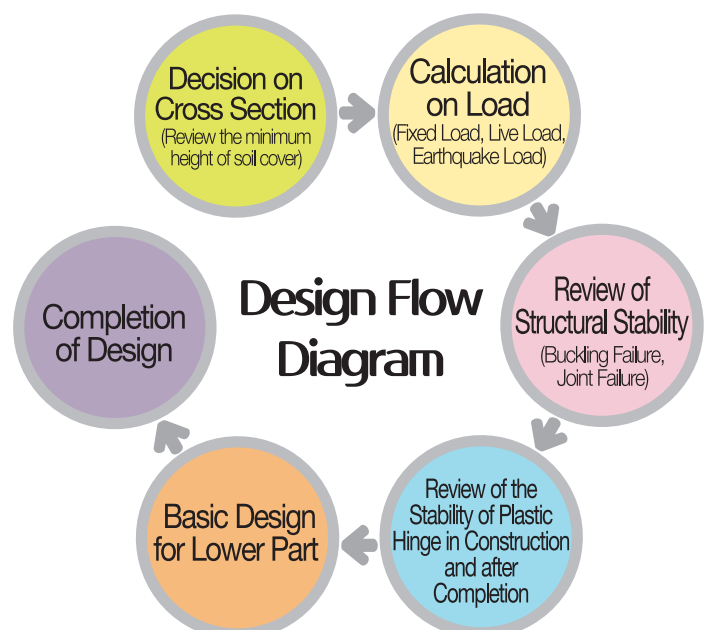


Finite Element Analysis, Box Type FEM Analysis



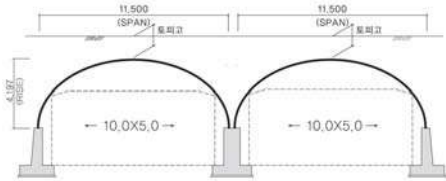
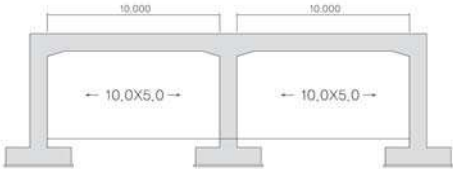
Computational Analysis

- Implement the 2 or 3 dimensional structure analysis at designing of structure in a special condition to design through the accurate analysis according to the real movement of structure.
- Analyze the structure by the finite element analysis program, Pentagon 3D, which is composed for the soil element modeling considering the interaction with back filling around corrugated steel plate and the carbon model using Midas GTS and Duncan-Chang Soil Model.
- In order to simulate the interaction of ground-structure which is the characteristic of corrugated steel plate, PENTAGON Program can change Es of back filling soil according to the stress condition of ground by soil cover and calculate the compressive force and bending moment of structure during the construction to simulate the similar combined movement of ground-structure. Therefore, such construction process of real back filling can be reflected, and a finite element analysis can be implemented by using the Pentagon Program, a widely used program for ground, which is available for the model of back filling soil.

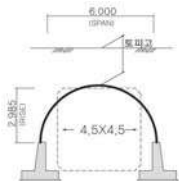
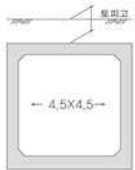
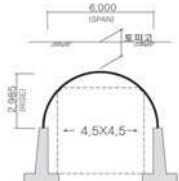
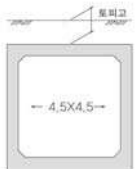


Corrugated Steel Plate applied section

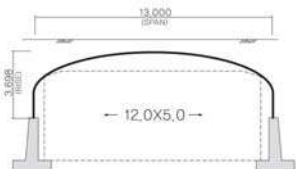
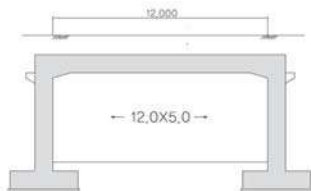
Excavation Tunnel

| Division | Corrugated Steel Plate Structure | Reinforced concrete Structure |
|--------------------|---|--|
| 10.0m × 5.0m |  |  |
| Sum | 70% | 100% |

Passage - Waterway Underpass

| Division | Corrugated Steel Plate Structure | Reinforced concrete Structure |
|-------------------------------|---|---|
| Waterway 4.5m × 4.5m |  |  |
| Passage 4.5m × 4.5m |  |  |
| Sum | 70% | 100% |

Ramen bridge

| Division | Corrugated Steel Plate Structure | Reinforced concrete Structure |
|--------------------|---|---|
| 12.0m × 5.0m |  |  |
| Sum | 75% | 100% |

Construction New Technology, RC Reinforcement Construction Method



Excellent form in place that secures the round trip with 8 lanes!

Four cases of patent in Korea and the international patents in U.S, Canada, Australia, Russia, Italy have been registered by FIXON for the exclusive construction method of corrugated steel plate structure with RC reinforcement through the application of all-in-one metal mould.

Special Merits

- Applicable for a structure with more than 16m long span, a structure of high soil cover, and a structure with earth pressure
- Optimize the converted cross sectional area of RC for the flexible movement of corrugated steel plate and concrete
- Improve the limit of span from 16m to 33m to be applicable for the section of high soil cover
- Shorten the construction period by 50% compared to RC Rahmen Bridge and by 40% to technologies in overseas
- 80% level of construction cost compared to RC Rahmen Bridge and 93% to overseas construction method



• Shape : Semicircle Arch
 • Span : 10.5m
 • Rise : 5.312m
 • Length : 97.197m
 • Wall Thickness : 6.0mm

Goryeong ~ Seongju 3 National Road Building Construction

RC Reinforcement Order

01

Arrangement of Metal Bar

Arrangement of RC Reinforced Metal Bar

02

Assembly and Joining of Mould

Assembly and Joining of RC Reinforced Mould

03

Initial Assembly and Joining of Mould

Initial Assembly and Joining of RC Reinforced Mould

04

Initial Partly Placement of Mould

Initial Partly Placement of RC Reinforced Mould

05

Secondary Partly Assembly of Mould

Secondary Partly Assembly of RC Reinforced Mould

06

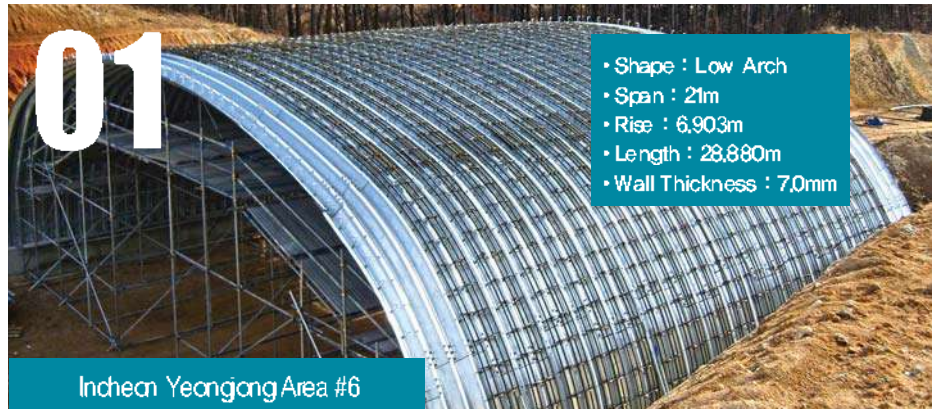
Secondary Placement Completion

Secondary Placement Completion of RC Reinforced Mould
(Extrude concrete to GROUT FITTING HOLE)

07

Water Proof

Installation of PE Sheet Water Proof & Protector





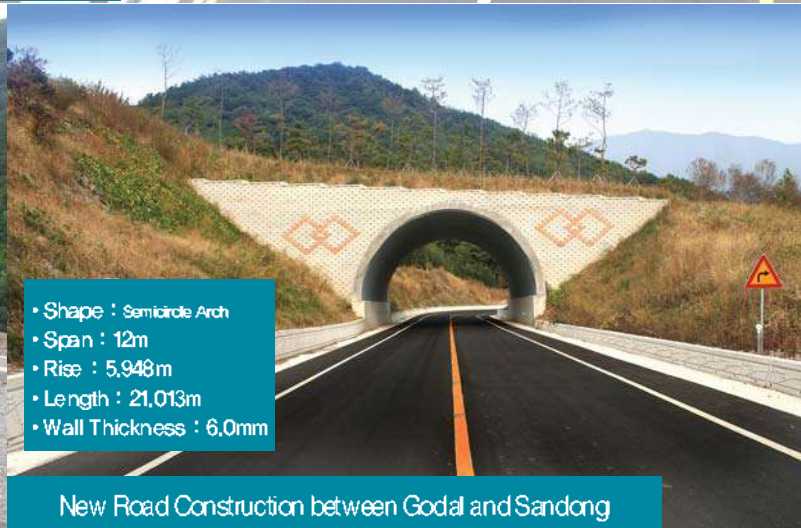
- Shape : Semi-circle Arch
- Span : 21.775m
- Rise : 10.379m
- Length : 115m
- T : 7.0mm

Ulsan techno industrial complex composition construction



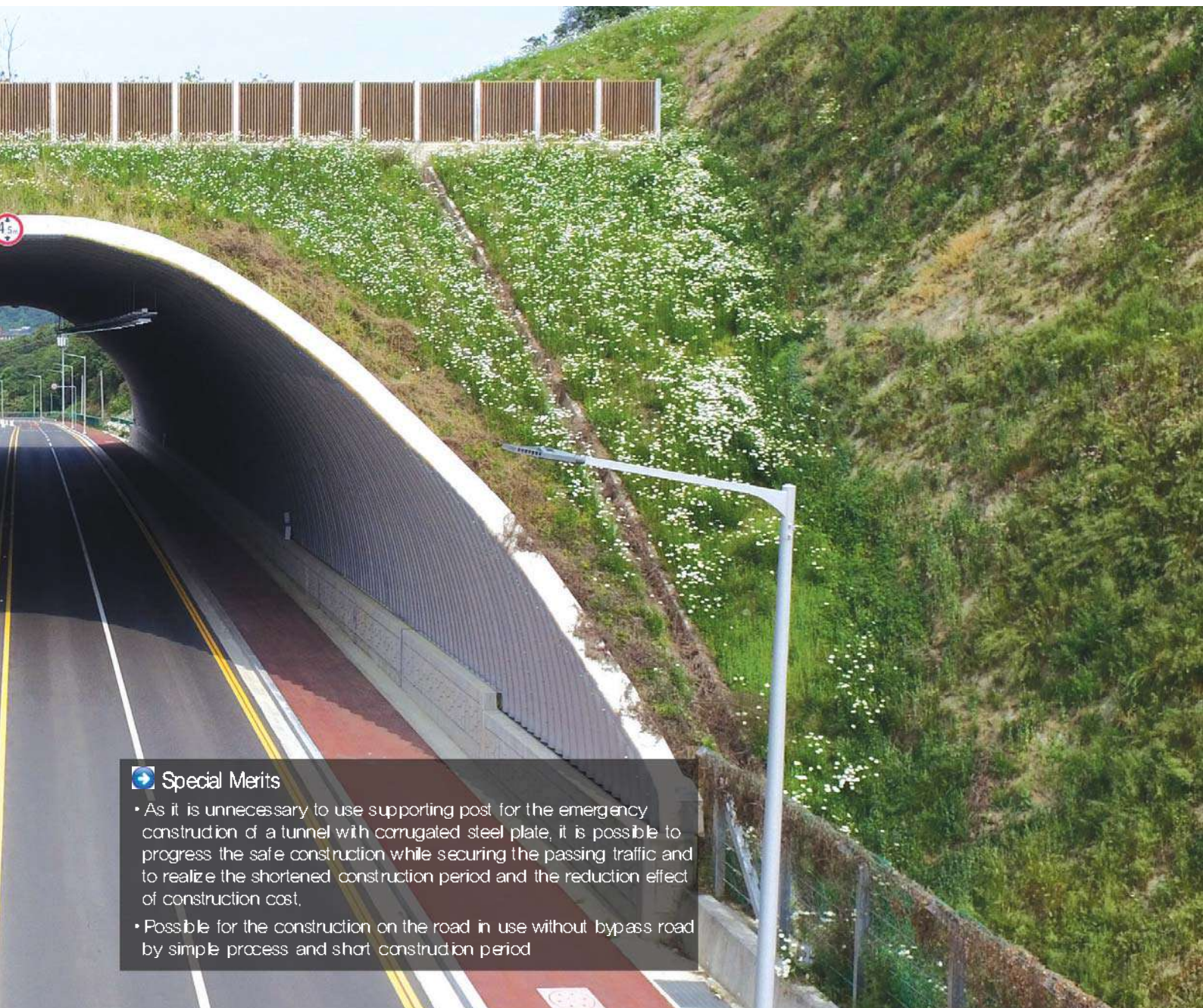
- Shape : Semi-circle Arch
- Span : 10.5m
- Rise : 5.315m
- Length : 50.099m
- Wall Thickness : 6.0mm

Road Expansion Construction between Mungok and Chang-ri



- Shape : Semi-circle Arch
- Span : 12m
- Rise : 5.948m
- Length : 21.013m
- Wall Thickness : 6.0mm

New Road Construction between Godal and Sandong



Special Merits

- As it is unnecessary to use supporting post for the emergency construction of a tunnel with corrugated steel plate, it is possible to progress the safe construction while securing the passing traffic and to realize the shortened construction period and the reduction effect of construction cost.
- Possible for the construction on the road in use without bypass road by simple process and short construction period

TUNNEL

Perfect Construction from Ecological Tunnel to Rock Shed Tunnel!

Ecological Tunnel

- Rock shed tunnel structure to protect the habitats of animals in ecosystem, which has applied corrugated steel plate to tunnel type and pedestrian overpass type
- Tunnel to prevent road from destruction and passage from block when soil and stones slide down at mountain slide



Before The Construction of Downtown Park Type Noise Barrier Tunnel

SOUND BARRIER TUNNEL

Excellent Noise Block Effect! Economic Construction Cost!

Innovatively solve the noise pollution and the reduction of green belt out of fast increasing roads and vehicles

General Purpose

- With fast construction, 20% cheaper cost than other construction method and about 30% noise reduction effect
- Structure that has secured economic feature based on the durability through structural stability
- Optimum harmony with city landscape by using skylight to induce natural light

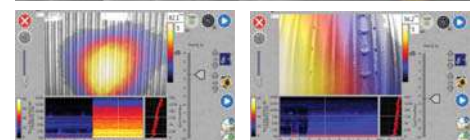
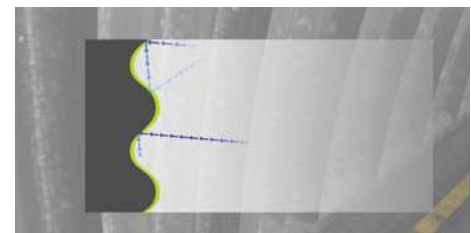
Park Creation Purpose

- Increasing effect of green belt as it is a structure to create park on corrugated steel plate
- Merit of beautiful appearance through the creation of downtown green belt
- Available for traffic pass at the bottom, available for the installation of various facilities such as sports facility and playground as well as park

Covering Purpose

- Tunnel structure with lightless noise block for the prevention of foreign substances and dust

Corrugates Steel Plate Noise Barrier Tunnel Diffused Reflection



Verification by Sound Camera Video Technique
(Acoustic Camera, Noise Indicator, ACOBM, Germany)



Special Merits

- About 20% cheaper than other construction method
- Short construction period, available for minimum civil complaints through traffic opening during construction
- With excellent structural stability, eliminate the concern about natural disaster
- With excellent noise block capability, create pleasant residential environment
- Easy to harmonize with surrounding landscape through internal & external decorations, and applicable to eco-friendly facility by using ecological plants
- Simple washing without separate maintenance and management
- Excellent openness, and in case of park creation purpose, realize the same effect as the creation of underground of road



WATER FLOW PATH

Beautiful Appearance! Secure Visibility through Excellent Openness!

Construction with Perfect Response even to Cold Weather or Hot Weather!
Fast Construction together with Securing Safety through Optimum Design!



Special Merits

- Available for traffic pass different from concrete (4.5mx4.5m) culvert of general box type
- Play beautiful appearance through various fixed-end finishing type
- Reduce safety accident by none use of scaffold and supporting post
- Structure of bolt connection with excellent fatigue resistance, which excludes welding connection
- Available for safe and economic construction by the selection of steel type suitable for site condition
- Dry construction method to reduce the maintenance and management cost by minimizing the occurrence of defect

BRIDGE

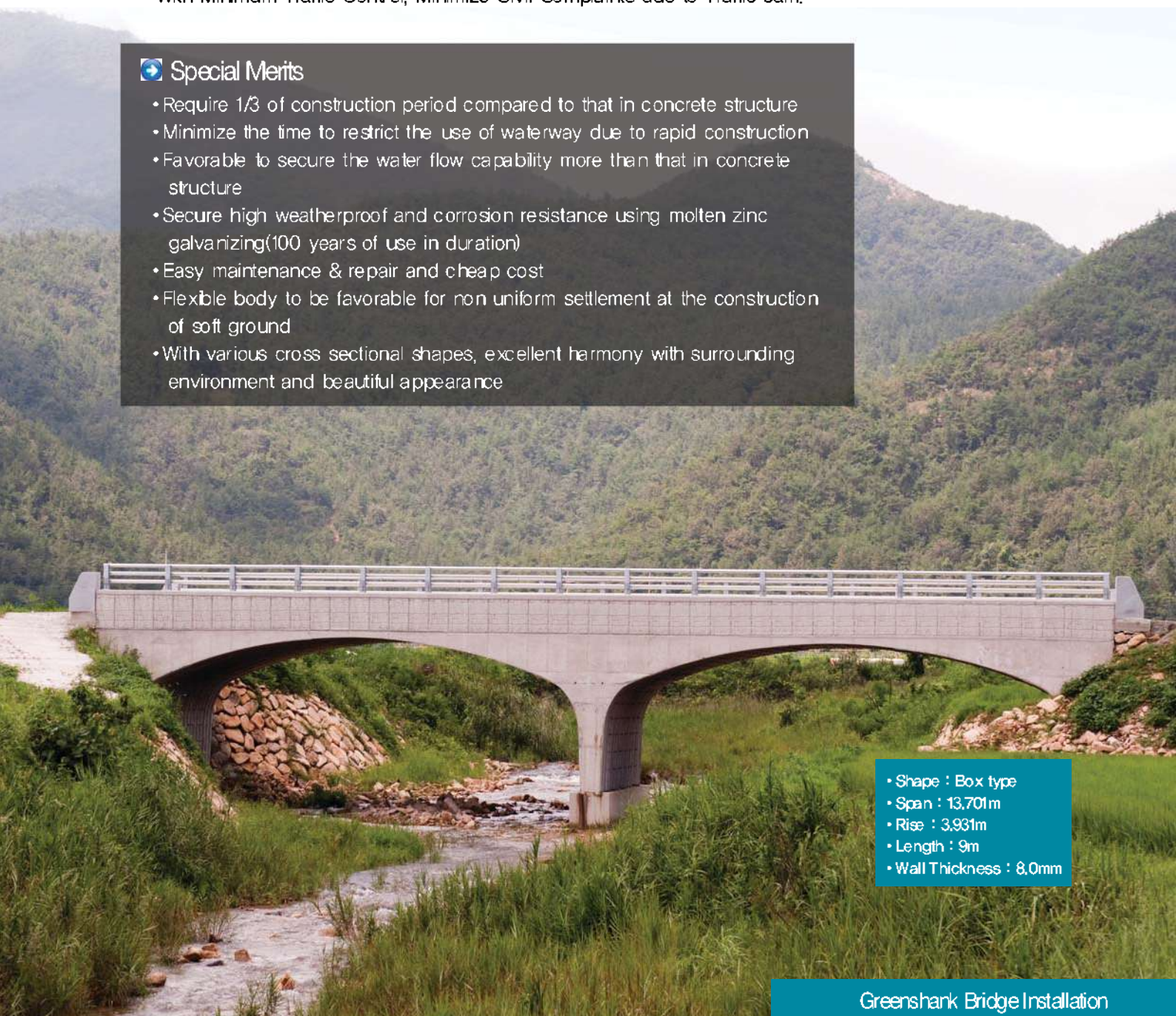
- With Shortened Construction Period, Minimize Traffic Jam and Civil Complaints!

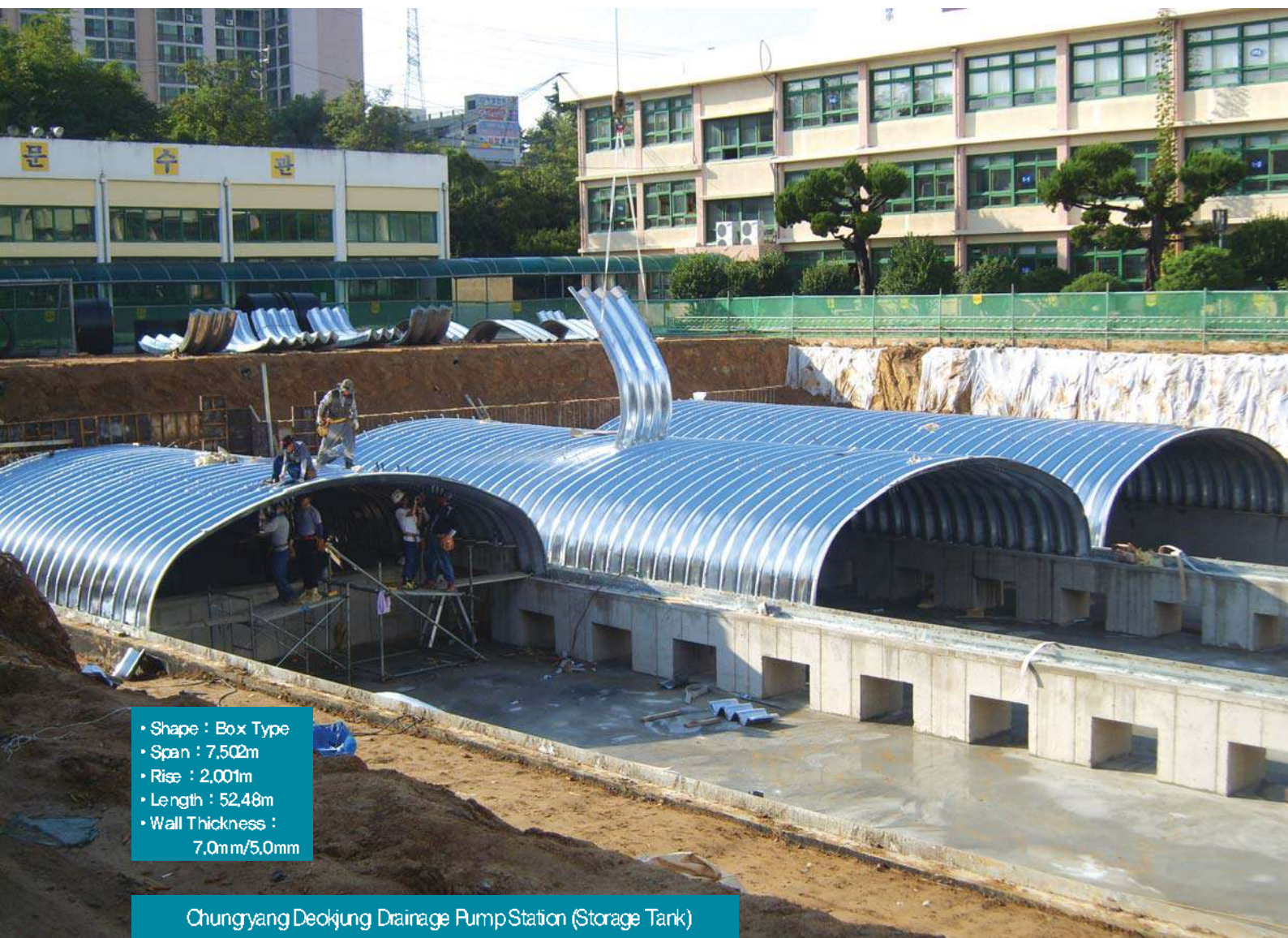
Secure Maximum Safety through Professional Technician for Structure!
With Minimum Traffic Control, Minimize Civil Complaints due to Traffic Jam!



Special Merits

- Require 1/3 of construction period compared to that in concrete structure
- Minimize the time to restrict the use of waterway due to rapid construction
- Favorable to secure the water flow capability more than that in concrete structure
- Secure high weatherproof and corrosion resistance using molten zinc galvanizing(100 years of use in duration)
- Easy maintenance & repair and cheap cost
- Flexible body to be favorable for non uniform settlement at the construction of soft ground
- With various cross sectional shapes, excellent harmony with surrounding environment and beautiful appearance





- Shape : Box Type
- Span : 7.502m
- Rise : 2.001m
- Length : 52.48m
- Wall Thickness :
7.0mm/5.0mm

Chungyang Deokjung Drainage Pump Station (Storage Tank)

WATER STORAGE SYSTEMS

Simple & Fast Construction, Economic Construction Cost!

Water storage system that has solved all demerits of other construction methods of complicated process and high risk of leaks

Special Merits

- Require 1/2 of construction period compared to that in concrete structure, cheaper construction cost by more than 20%
- Simple construction to be available for rapid construction
- Flexible body equipped with structural stability, through regular measurement of the displacement occurring during common use
- Available to distinguish the structural integrity based on the general investigation on steel structure for easy maintenance and management
- Perfect waterproof with gasket, urethane sealant, water seal bdt, and bdt cap waterproof technique
- Available to utilize for flood prevention, parking lot, and rainwater recycle facility according to site shape



- Shape : Circular Type
- Span : 2,5m
- Rise : 2,5m
- Length : 6,1m
- Wall Thickness : 5,3mm

Manufacturing of Underground Culvert Prototype

UNDERGROUND UTILITY CHAMBER

Efficient Operation of City & Advanced Utilization of Underground Space!

Necessary Structure to Maintain Pleasant Passing Space for Pedestrians and Safe and Comfortable Urban Environment!

Special Merits

- Flexible body with steel material to be noncollapsible at earthquake or explosion
- High deformation resistance with low risk of destruction due to rapid crack, shear stress, and distortion
- Realization of high economy with long service life of structure and simple maintenance & repair (80% compared to concrete underground culvert)
- Perfect waterproof on bolt connection part with the application of PVC waterproof cap
- Available for improvement of beauty & preservation of road structure, smooth traffic passing

MILITARY INSTALLATIONS

● Reduce National Budget with Excellent Performance and Cheap Construction Cost!

Construction Method with Simple Assembly!
Fast Construction! Safe Structure!



● Special Merits

- Available to utilize for storage facilities of military ammunition storage, hangar, military camp
- Minimize internal secondary splinter damage at the impact of artillery shell
- Arch type without post to be available for 100% use of space
- Simple bolt assembly to secure easy construction, shortened construction period, and economy for mountain area and desolated area
- Available for recycle to eliminate waste processing cost and minimize CO2 generation
- Onsite assembly for recycle at the relocation of military base



○○Military Unit Force Integration Project, Offensive Helicopter Igloo



- Shape : Low Arch
- Span : 25m
- Rise : 10m
- Length : 36m
- Wall Thickness : 7.01mm
- Special Matter :
6 Buildings/ Steel Composite Construction Method Applied



● PROTECTIVE WALL

A wall to reduce damages and increase resistance against shrapnel or storm pressure from explosion/implosion of bomb shells in barracks and battle sites (e.g. gun emplacement)

- Height : 5.8m
- Wide : 1.2m
- Length : 76m
- Wall Thickness : 4.67mm
- Protection Grade: Grade 2



Protective Wall at Mt. Chiak in Wonju for reducing the magazine distance in the Tactical Training Camp

● Special Features of Corrugated Steel Plate Protective Wall

- No need for concrete curing and substantially shorter construction period
- Secure the magazine distance by minimizing damages to the surrounding area
- No secondary damage caused by shrapnel as anti-scabbing steel plate
- Easy modification of specifications and design of protective wall
- Uniform quality product manufactured by standardized process
- 25% less cost than other types of construction



OO Military Unit K-9 Covered Emplacement, Protective Wall of Rear Circular Emplacement

- Height : 2.3m
- Wall Thickness : 4.18mm
- Diameter : 13m
- Protection Grade: Grade 3
- Constructed at 18 locations



House & Facility Structures

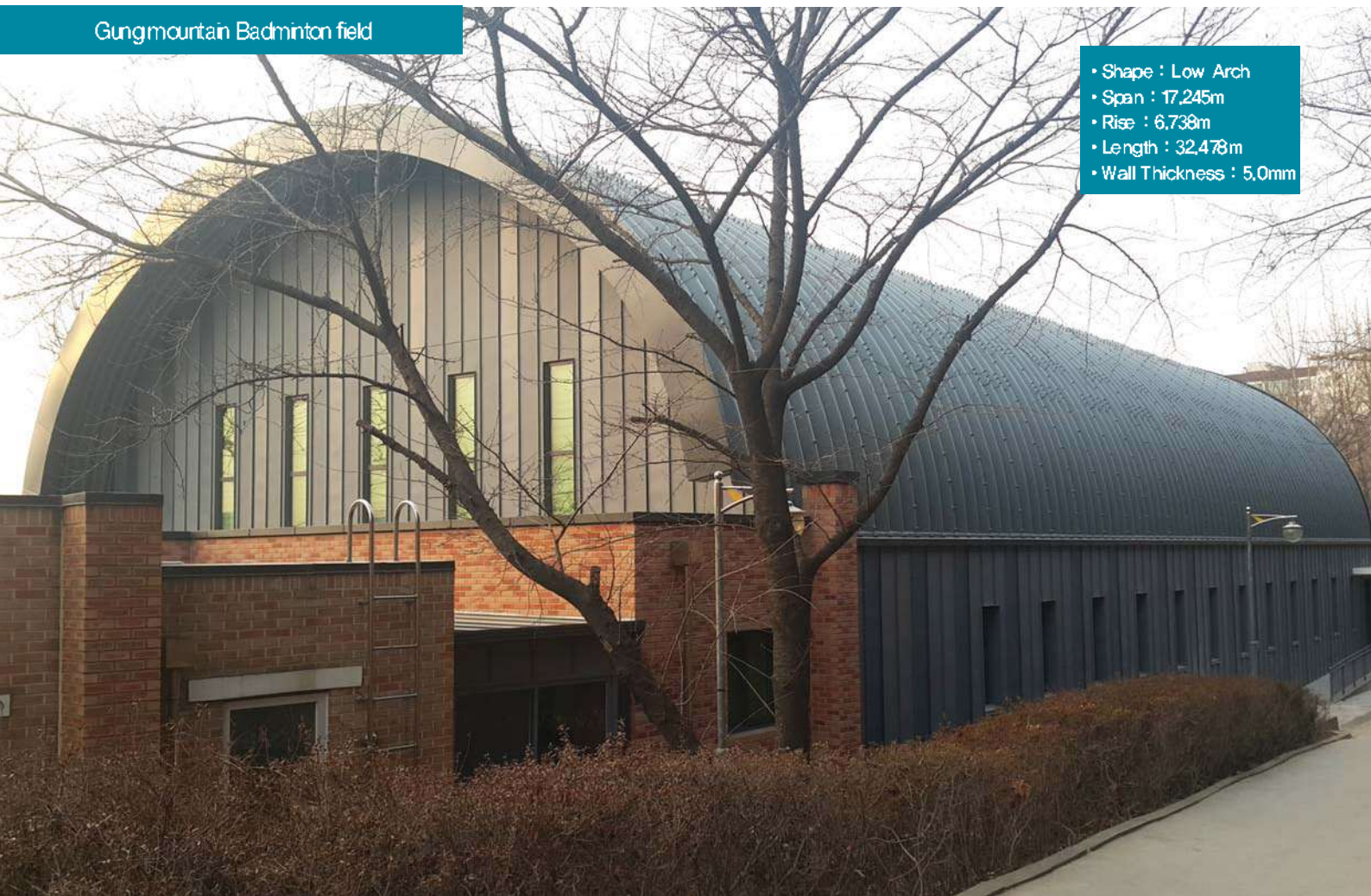
• Semipermanent Life Span, Storage Facility of Various Utilizations!

• Special Merits

- Underground building structure of ecological environment for the modernization of conventional underground tunnel
- Relief of external impact and the insulation effect by covering reinforcement soil on top of corrugated steel plate
- Maintain indoor temperature of 15 degree in annual average and 90% humidity
- Available for various usages with the same effect as the conventional underground tunnel
- Prevent environmental pollution using with materials for 100% recycle



Gungmountain Badminton field





FIXON will be always with 'Nature' and 'Man'

The greatest wisdom is just the "Wisdom to Live Along".

It is not to destroy nature and build it newly but to create
the world living in harmony with nature.

FIXON shares learned wisdom from nature with our neighbors.

Making a warm world where people share with, love and give strength each other,
the heart of FIXON's family shall be there together.

FIXON

FIXON

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