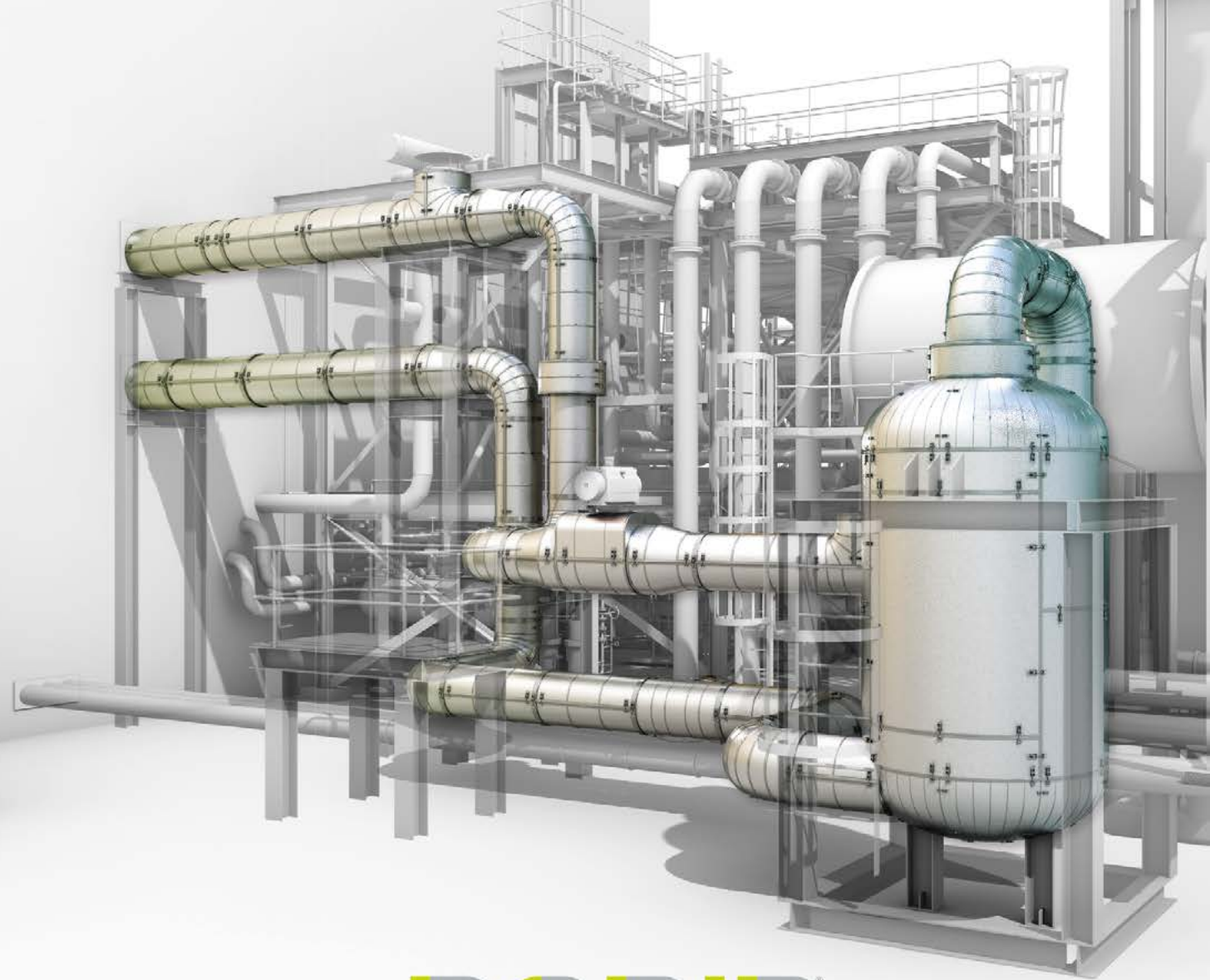


KOREA

Ministry of SMEs and Startups | KBIZ Korea Federation of SMEs

ADIPEC | ADNOC

31 October - 3 November 2022  
Abu Dhabi, United Arab Emirates



**D** 동인엔지니어링  
DONG IN ENGINEERING

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**RAPID**<sup>®</sup>  
REUSABLE ADVANCED PLANT INSULATION DEVICE





sustainable

지속사용 가능한 배관계통 및 설비용 모듈형  
착탈식 보온단열재

산업용 인슐레이션의 미래!  
래피드는 다릅니다



The modular reattachable piping system & plant equipment  
insulation capable of using sustainably

The Future of Insulation for Industries!  
**RAPID IS DIFFERENT**



Multi-layer™ Insulation

**RAPID**  
REUSABLE ADVANCED PLANT INSULATION DEVICE





Insulation waste 0% 폐기물발생 0%

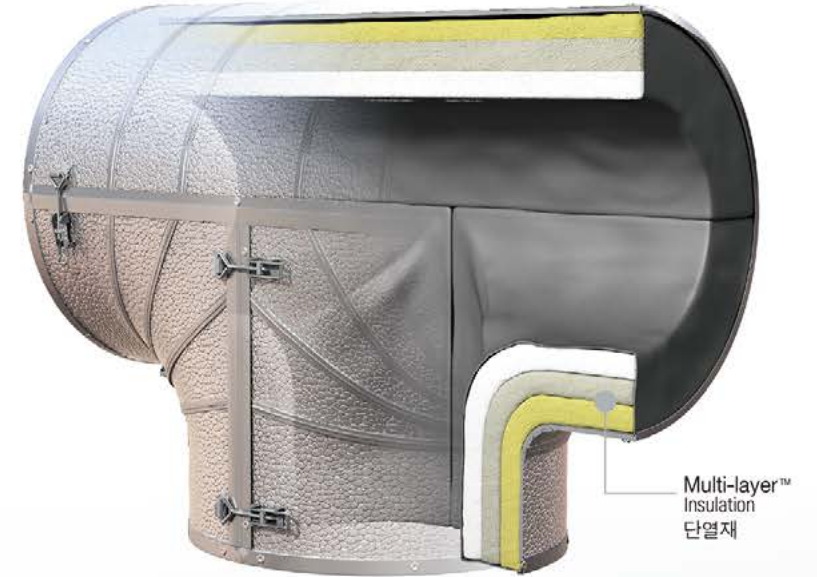
# Reusable 100%

재사용 100%

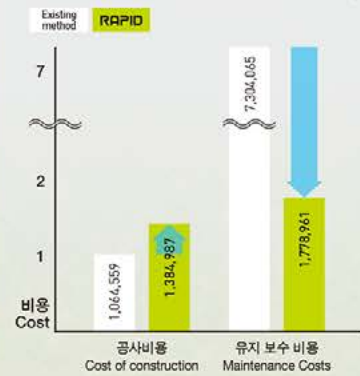


RAPID는 모듈형 착탈식 배관 보온단열재로 한번 설치된 보온단열재는 반영구적으로 재사용 가능.  
RAPID is a modular removable pipe(thermal) insulation product, and it can be reused permanently.

RAPID는 수차례의 배관 정비 및 검사 시 폐기물 0%.  
RAPID has 0% waste in several piping maintenance and inspection.



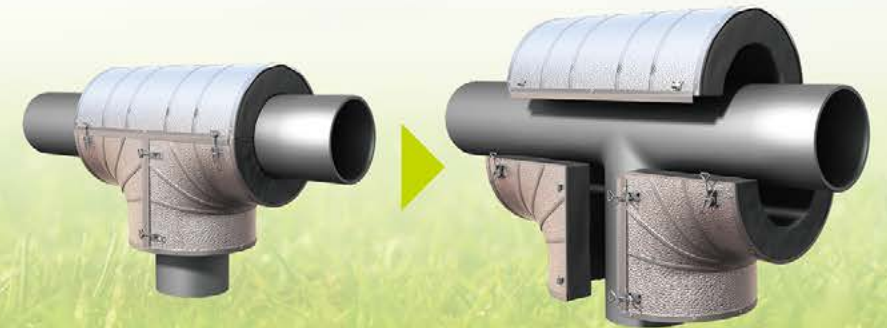
## 5년간 유지비용 비교 (배관 감육검사 개소) 5 Year Maintenance Costs Comparison



## 특허증 Patents



- 압축결합구조의 마감커버를 구비하는 배관용 단열장치.  
- Insulation device for valve equipped with the jacket of compression combining structure.
- T형 배관용 단열재 보호커버.  
- T type insulation protective cover for piping.



모듈형 착탈식  
Reattachable Modular System





It does not influent the facilities' deformation

# High Strength

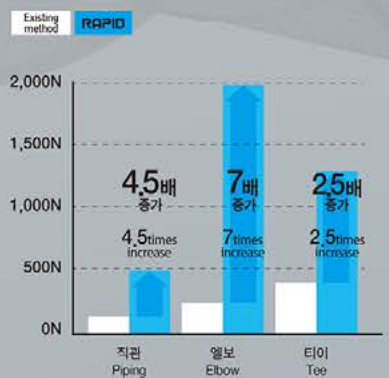
설비 변형에 영향을 주지않는 강건함

독자적 AL-Profile의 압착결합공법이 적용된 가벼우면서도 뛰어난 강도의 금속마감커버.  
The Metal jacket that the compression combining method of construction of independent AL-Profile has been applied with the light and excellent strength.

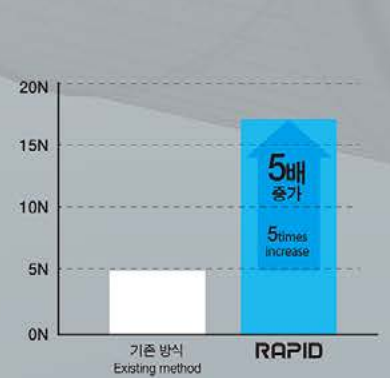
06 장기간 반복적인 탈부착에도 변형 없는 우수한 내구성.  
Excellent durability without deformation in the long period repetitive attachment & detachment.

보온단열재의 경량화로 설비에 관한 하중 부담 감소.  
Reducing of load stress for the facility with the weight lightening of thermal insulation.

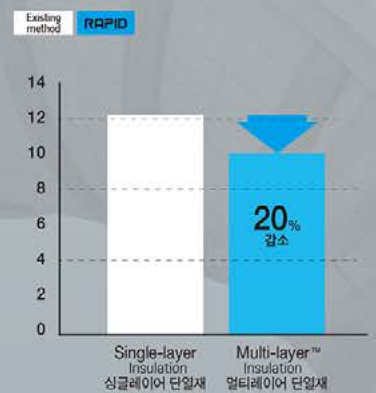
**압축하중 (20% 변형)**  
Compressive Load (20% strain test)



**인장강도**  
Tensile strength



**단위 면적당 무게(kg/m<sup>2</sup>)**  
Weight per unit area(kg/m<sup>2</sup>)







Excellent insulating effect coping with all environments

# Insulation effect

모든 환경에 대응하는 정밀한 단열효과

Precision + Insulation Performance | 정밀성 + 단열성

엄격한 공정 검사를 통해 금속커버 결합부위의 이물질 유입과 열손실 최소화. (mm 단위의 오차 관리)  
Minimize the inflow of foreign substances into the metal jacket joint and heat loss through rigorous process inspection in mm.

커넥터 기술에 의한 배관의 열팽창에 능동적 대응.  
Active response to thermal expansion of piping with connector technology.

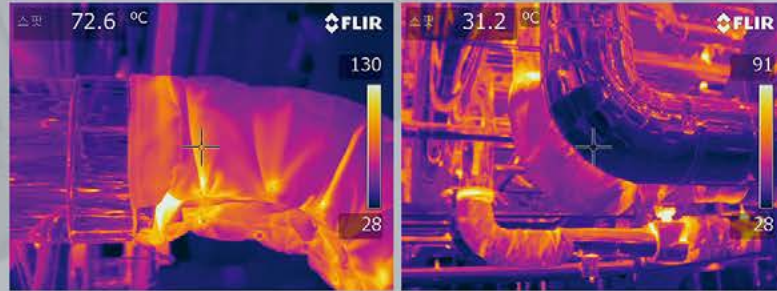
Multi-layer™ 보온단열재 충전기술과 틈새 특수 공법 적용으로 열저항의 증가에 의한 단열효과 증대.  
Multi-layer™ insulation filling technology and niche-special construction methods are applied to increase insulation effect.

08



## 단열재 열화상 비교

The comparison of Thermal Image of Insulator

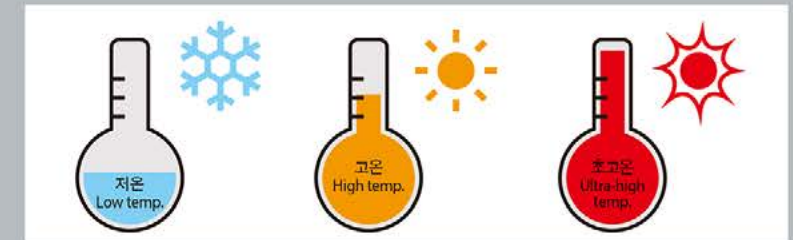


Existing method  
기존 방식

RAPID

## 저온에서 초고온의 배관까지 능동적 대응 (-180℃ ~ 1,100℃)

Broad application with the Piping from the low temperature to the ultra-high temperature (-180℃ ~ 1,100℃)







Beautiful exterior appearance connected to RAPID

# Beautiful exterior

RAPID로 이어지는 아름다운 외관

- \* 불소수지 도장은 기본사양이 아니며 요청할 경우 적용하는 추가사양입니다. 불소수지 도장 적용 시 추가금액이 발생할 수 있습니다.
- \* PVDF coating is not the basic specification but the additional ones by the request of the customer. In case of applying PVDF coating, extra charges may occur.

10

우수한 도장 반색과 다양한 컬러 적용으로 산업 현장의 분위기 전환.  
Conversion of industrial mood with the application of excellent painting chroma and various colors.

배관 종류에 따른 직관적 색상 적용으로 암묵적 커뮤니케이션 역할.  
Implicit communication role with the application of intuitive color in accordance with the kind of piping.



불소수지 도장  
PVDF coating







Installation with cutting edge technology

# Accurate & Rapid

정확하고 빠른 시공

3D 스캐너를 이용한 현장(공간적 제약, 비규격 배관)의 정밀실측으로 정확한 설계/시공.  
The accurate design/construction with the precise actual measurement of site(spatial restriction, non-standard plumbing) utilizing 3D Scanner.

사전제작 된 모듈화 부품을 간편한 캐치클립조작으로 조립하여 배관정비 시 편리하고 신속한 시공.  
Convenient and prompt construction at time of maintaining the plumbing by assembling the modular component manufactured in advance with the simple catch clip manipulation

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## 간단한 캐치클립 조작

Simple use with catch clips



- ① 파손 위험도 감소
- ② 정비 편리성
- ③ 길이 조절 가능
- \* 2015.09.11 실용신안 등록

- ① Reduction of risk of breakage
- ② The convenience of maintenance
- ③ Flexible Length
- \* 2015.09.11 Utility model registered

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### 3D 스캐너

3D Scanner



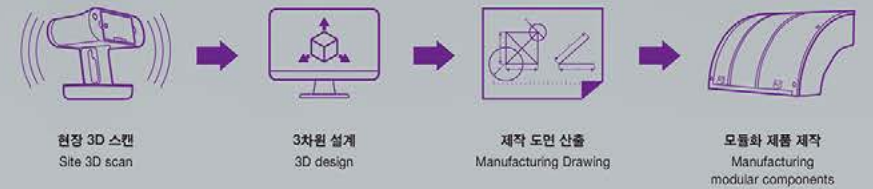
### 현장 3D 스캔

Site 3D Scan



### 작업 프로세스

Work Process





14



15

**ELBOW COVER**

**VALVE COVER**

**TEE COVER**

**REDUCER COVER**



3D view

3D view

3D view

3D view



Side view



Multi-layer™  
Insulation view



Side view



Multi-layer™  
Insulation view



Multi-layer™  
Insulation view



Side view



Multi-layer™  
Insulation view



Side view

**Multi-layer™**

| Name                 | Density $\text{kg}/\text{m}^3$ | Thermal conductivity $\text{W}/\text{m}\cdot\text{K}$ |                             | Linear Shrinkage $^\circ\text{C}$ | Standard    |
|----------------------|--------------------------------|---|-----------------------------|-----------------------------------|-------------|
|                      |                                |   | Mean Temp.                  |                                   |             |
| Cerak Wool           | 128                            | 0.084   | 300 $^\circ\text{C}$        | 1100 $^\circ\text{C}$             | KS L 9104   |
| Mineral Wool         | 80                             | 0.044   | 70 $^\circ\text{C}$         | 600 $^\circ\text{C}$              | KS L 9102   |
| Glass Wool           | 24                             | 0.048   | 70 $^\circ\text{C}$         | 300 $^\circ\text{C}$              | KS L 9102   |
| Aerogel              | 200                            | 0.023   | 100 $^\circ\text{C}$        | 650 $^\circ\text{C}$              | ASTM C 1728 |
| EPS                  | 35                             | 0.029   | 23 $\pm$ 2 $^\circ\text{C}$ |                                   | KSH3808     |
| Expanded Rubber Foam | 200                            | 0.031   | -180 $^\circ\text{C}$       |                                   | ISO 13787   |

**Multi-layer™**

| Name                 | Density $\text{kg}/\text{m}^3$ | Thermal conductivity $\text{W}/\text{m}\cdot\text{K}$ |                             | Linear Shrinkage $^\circ\text{C}$ | Standard    |
|----------------------|--------------------------------|---|-----------------------------|-----------------------------------|-------------|
|                      |                                |   | Mean Temp.                  |                                   |             |
| Cerak Wool           | 128                            | 0.084   | 300 $^\circ\text{C}$        | 1100 $^\circ\text{C}$             | KS L 9104   |
| Mineral Wool         | 80                             | 0.044   | 70 $^\circ\text{C}$         | 600 $^\circ\text{C}$              | KS L 9102   |
| Glass Wool           | 24                             | 0.048   | 70 $^\circ\text{C}$         | 300 $^\circ\text{C}$              | KS L 9102   |
| Aerogel              | 200                            | 0.023   | 100 $^\circ\text{C}$        | 650 $^\circ\text{C}$              | ASTM C 1728 |
| EPS                  | 35                             | 0.029   | 23 $\pm$ 2 $^\circ\text{C}$ |                                   | KSH3808     |
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**Multi-layer™**

| Name                 | Density $\text{kg}/\text{m}^3$ | Thermal conductivity $\text{W}/\text{m}\cdot\text{K}$ |                             | Linear Shrinkage $^\circ\text{C}$ | Standard    |
|----------------------|--------------------------------|---|-----------------------------|-----------------------------------|-------------|
|                      |                                |   | Mean Temp.                  |                                   |             |
| Cerak Wool           | 128                            | 0.084   | 300 $^\circ\text{C}$        | 1100 $^\circ\text{C}$             | KS L 9104   |
| Mineral Wool         | 80                             | 0.044   | 70 $^\circ\text{C}$         | 600 $^\circ\text{C}$              | KS L 9102   |
| Glass Wool           | 24                             | 0.048   | 70 $^\circ\text{C}$         | 300 $^\circ\text{C}$              | KS L 9102   |
| Aerogel              | 200                            | 0.023   | 100 $^\circ\text{C}$        | 650 $^\circ\text{C}$              | ASTM C 1728 |
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| Expanded Rubber Foam | 200                            | 0.031   | -180 $^\circ\text{C}$       |                                   | ISO 13787   |

**Multi-layer™**

| Name                 | Density $\text{kg}/\text{m}^3$ | Thermal conductivity $\text{W}/\text{m}\cdot\text{K}$ |                             | Linear Shrinkage $^\circ\text{C}$ | Standard    |
|----------------------|--------------------------------|---|-----------------------------|-----------------------------------|-------------|
|                      |                                |   | Mean Temp.                  |                                   |             |
| Cerak Wool           | 128                            | 0.084   | 300 $^\circ\text{C}$        | 1100 $^\circ\text{C}$             | KS L 9104   |
| Mineral Wool         | 80                             | 0.044   | 70 $^\circ\text{C}$         | 600 $^\circ\text{C}$              | KS L 9102   |
| Glass Wool           | 24                             | 0.048   | 70 $^\circ\text{C}$         | 300 $^\circ\text{C}$              | KS L 9102   |
| Aerogel              | 200                            | 0.023   | 100 $^\circ\text{C}$        | 650 $^\circ\text{C}$              | ASTM C 1728 |
| EPS                  | 35                             | 0.029   | 23 $\pm$ 2 $^\circ\text{C}$ |                                   | KSH3808     |
| Expanded Rubber Foam | 200                            | 0.031   | -180 $^\circ\text{C}$       |                                   | ISO 13787   |

\* 배관온도, 보온요구조건에 따라 단열재를 조합하여 사용합니다.  
 \* Insulation in combined according to piping temperature and thermal insulation requirements.

\* 배관온도, 보온요구조건에 따라 단열재를 조합하여 사용합니다.  
 \* Insulation in combined according to piping temperature and thermal insulation requirements.





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FLANGE COVER



3D view



Side view

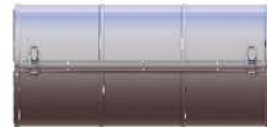


Multi-layer™  
Insulation view

PIPE COVER



3D view



Side view

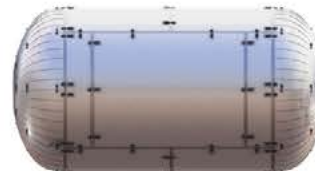
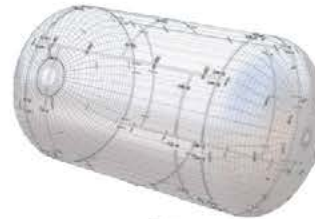


Multi-layer™  
Insulation view

ROUND COVER



3D view



Side view

FLATBOARD COVER



3D view



Side view

Multi-layer™

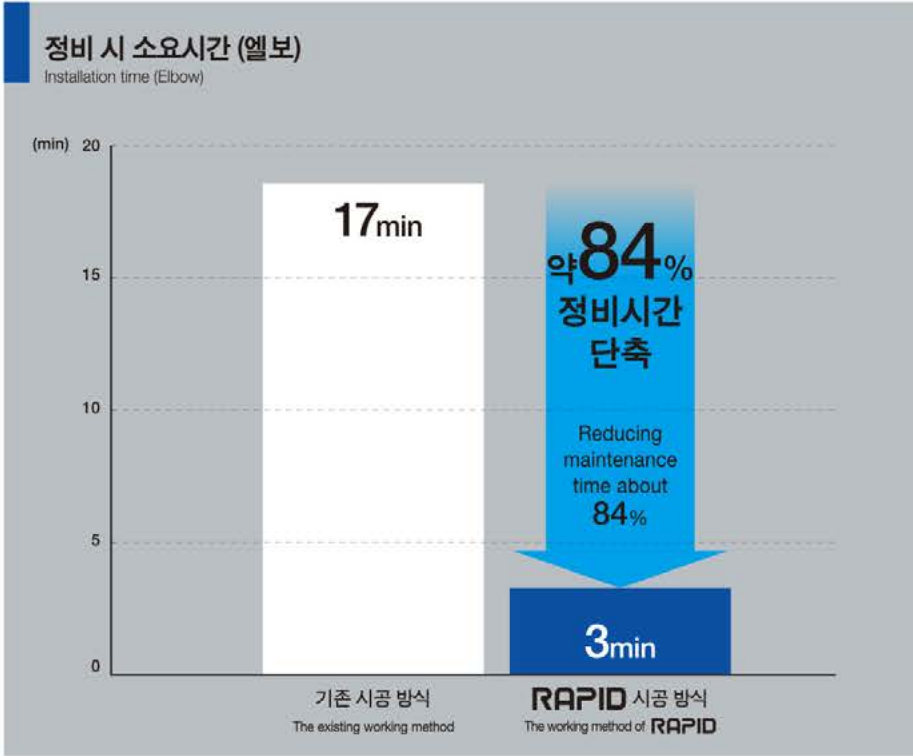
| Name                 | Density kg/m <sup>3</sup> | Thermal conductivity W/mK |        | Linear Shrinkage % | Standard    |
|----------------------|---------------------------|---------------------------|--------|--------------------|-------------|
|                      |                           | Mean Temp.                | 300 ℃  |                    |             |
| Cerak Wool           | 128                       | 0.084                     | 300 ℃  | 1100 ℃             | KS L 9104   |
| Mineral Wool         | 80                        | 0.044                     | 70 ℃   | 600 ℃              | KS L 9102   |
| Glass Wool           | 24                        | 0.048                     | 70 ℃   | 300 ℃              | KS L 9102   |
| Aerogel              | 200                       | 0.023                     | 100 ℃  | 650 ℃              | ASTM C 1728 |
| EPS                  | 35                        | 0.029                     | 23±2 ℃ |                    | KSH3808     |
| Expanded Rubber Foam | 200                       | 0.031                     | -180 ℃ |                    | ISO 13787   |

Multi-layer™

| Name                 | Density kg/m <sup>3</sup> | Thermal conductivity W/mK |        | Linear Shrinkage % | Standard    |
|----------------------|---------------------------|---------------------------|--------|--------------------|-------------|
|                      |                           | Mean Temp.                | 300 ℃  |                    |             |
| Cerak Wool           | 128                       | 0.084                     | 300 ℃  | 1100 ℃             | KS L 9104   |
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| Glass Wool           | 24                        | 0.048                     | 70 ℃   | 300 ℃              | KS L 9102   |
| Aerogel              | 200                       | 0.023                     | 100 ℃  | 650 ℃              | ASTM C 1728 |
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\* 배관온도, 보온요구조건에 따라 단열재를 조합하여 사용합니다.  
 \* Insulation in combined according to piping temperature and thermal insulation requirements.

기대효과 - 시간단축 | Expected effect - Time Reduction

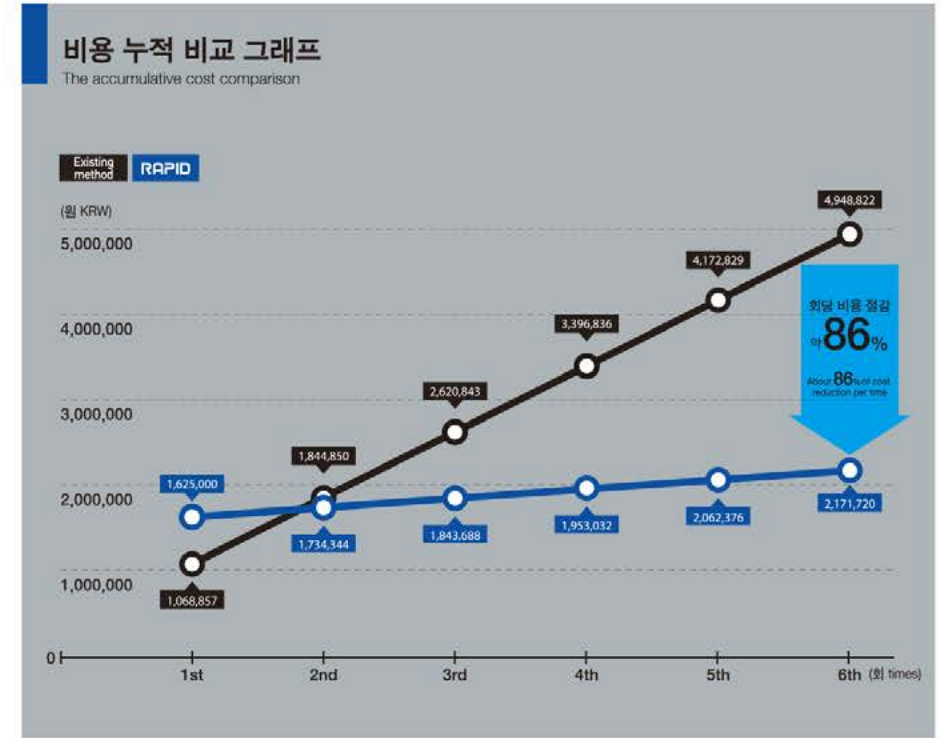


Expected effect - Cost Reduction | 기대효과 - 비용절감

## 사용할수록 보다 높아지는 경제성!

The more it is used, the HIGHER the economic FEASIBILITY is!

단 2회의 정비 재 사용만으로도 기존 보온단열재 공사비 만회  
ONLY 2 TIMES OF REUSES will make up for the construction cost of the existing one.





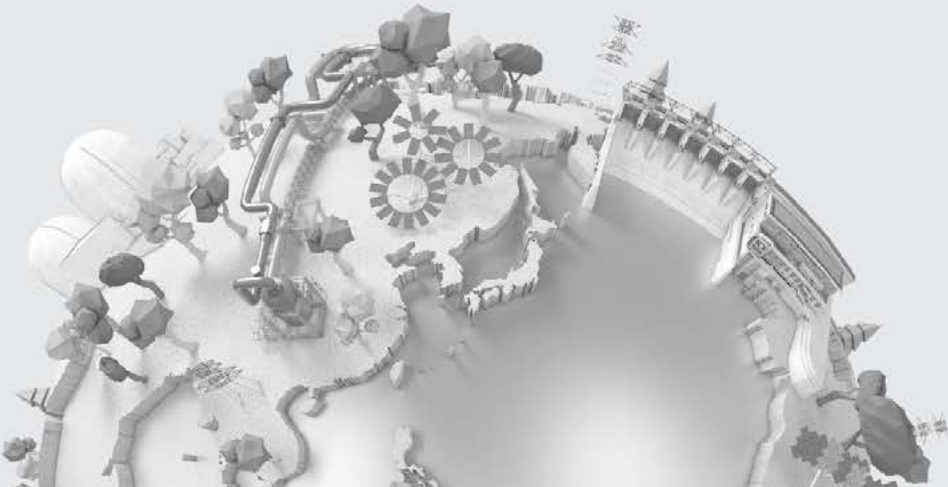


|  |          |
|--|----------|
| 녹색기술제품 획득<br>Acquired the Green technology certification on Product  | 2022. 03 |
| 이노비즈 인증 연장<br>InnoBiz certification extended   | 2022. 02 |
| 한국수력원자력 우수협력기업 표창장 수상<br>Awarded citation for excellence in cooperation from Korea Hydro & Nuclear Power Co. Ltd.  | 2021. 12 |
| 혁신제품 지정<br>Designated as K-Innovative Product  | 2021. 12 |
| 사단법인 한국 AEO진흥협회 회원 등록<br>Registered membership of Korea AEO Association  | 2021. 08 |
| 수출입안전관리우수업체 지정<br>Designated as an authorized economic operator(AEO)   | 2021. 06 |
| 녹색기술 인증 획득<br>Acquired the Green Certification on Technology   | 2021. 05 |
| 품질경영시스템 인증서 획득<br>Acquired ISO 9001 certificate  | 2021. 03 |
| 본사 및 공장 이전 (경주시 강동면 강동산단로 52)<br>Headquarters and factory relocation (52, Gangdong Sandan-ro, Gangdong-myeon, Gyeongju)  | 2021. 01 |
| 메인비즈 인증 획득<br>Acquired the MainBiz certification   | 2020. 12 |
| 신기술실용화표창장 수상 (산업통상자원부장관)<br>Awarded a certificate of new excellent technology (Minister of Trade, industry and energy)   | 2020. 12 |
| 한국원자력산업협회 회원 등록<br>Registered membership of the Korea Atomic Industrial Forum  | 2020. 09 |
| 스마트공장 구축·운영<br>Applied & operated as Smart factory   | 2020. 03 |
| 여성기업 인증 연장 획득<br>Extension of women enterprise certification   | 2020. 02 |
| 청년스마트중소기업 선정<br>Designated as the young smart small business   | 2019. 11 |
| 조달우수제품 연장<br>Extention of government excellent products  | 2019. 03 |
| 신기술실용화 대통령상 수상<br>Won a presidential award for commercialization of new excellent technology(NET)  | 2018. 12 |
| 신제품(NEP) 인증 연장<br>New excellent product(NEP) Certification extended  | 2018. 09 |
| 미국특허등록 (US 9,958,106 B2)<br>Patent registration in the USA (US 9,958,106 B2)   | 2018. 05 |
| 일본특허등록 (特許第 6303075号)<br>Patent registration in Japan (特許第 6303075号)   | 2018. 03 |
| 신기술실용화 장관표창장 수상<br>Won a ministerial award for commercialization of New Excellent Technology(NET)  | 2017. 11 |
| 중국특허등록 (CN 105683642 B)<br>Patent registration in China (CN 105683642 B)   | 2017. 02 |
| 안전보건경영시스템 인증 획득<br>Acquisition of certification for the Occupational Health and Safety Management System   | 2016. 10 |
| 미국특허등록 (US 9,567,538 B2)<br>Patent Registration in the USA (US 9,567,538 B2)   | 2016. 10 |
| 조달우수제품지정<br>Designated as the excellent procured products  | 2016. 04 |
| 특허출원 (압축결합구조의 미검커버를 구비하는 밸브용 단열장치 (10-2015-0018573))<br>Patent Application (Insulation device for valve equipped with the jacket of Compression Combining Structure (10-2015-0018573)) | 2015. 08 |
| 신제품 (NEP) 인증 획득 (NEP-MOTIE-2015-025)<br>Acquisition of certification for New Excellent Product(NEP) (NEP-MOTIE-2015-025)   | 2015. 02 |
| 산업혁신3.0 산업부장관상 수상<br>Won an award of Minister of Industry for Industrial Innovation 3.0  | 2014. 09 |
| INNO-BIZ (제 130301-00160) 인증 획득<br>Acquisition of INNO-BIZ Certification (No.130301-00160)   | 2013. 05 |
| 본사 및 공장이전 (경주시 김포읍 노동길 33)<br>Relocation of the head office & the factory (33,Nodong-gil, Gampo-eup, Gyeongju-si, Gyeongangsangbuk-do)   | 2012. 12 |
| AI-4 지식경제부 신기술 인증 (제 0688 호) 획득<br>Acquisition of NET Certification of AI-4 Ministry of Knowledge Economy (No.0688)  | 2012. 12 |
| 기업부설연구소등록 (제 2012110895호)<br>Registration of Enterprise-affiliated R&D Center (No.2012110895)  | 2012. 04 |
| 벤처기업 등록 (제 201220200077호)<br>Registration of Venture Enterprise (No. 201220200077)   | 2012. 01 |
| 전문건설 도장공사업 면허취득<br>License acquisition of Painting Construction Business of Professional Construction  | 2009. 08 |
| 한국수력원자력 협력업체 등록<br>Registration as the subcontractor of Korea Hydro & Nuclear Power Co. Ltd.   | 1997. 01 |
| 전문건설 기계설비공사업 면허취득 법인전환<br>License acquisition of mechanical facility construction business of professional construction and conversion to a corporation                                | 1991. 06 |
| 유남산업으로 개인기업창업 (전문건설 난방사업 1종)<br>Foundation of private enterprise as Woonam industrial Co., Ltd. (1st class of Heating Construction Business of Professional Construction)              | 1987. 06 |



주요고객 | Major Clients

|  |   |  |
|--|---|--|
|  <p>한국수력원자력<br/>KOREA HYDRO &amp; NUCLEAR POWER CO., LTD<br/>(KHNP)</p> |  <p>한국남동발전<br/>KOREA SOUTH-EAST POWER CO., LTD<br/>(KOEN)</p>                      |  <p>한국남부발전<br/>KOREA SOUTHWEST POWER CO., LTD<br/>(KOSPO)</p> |
|  <p>한국동서발전<br/>KOREA EAST-WEST POWER CO., LTD<br/>(EWP)</p>             |  <p>한국서부발전<br/>KOREA WESTERN POWER CO., LTD<br/>(KOWP)</p>                         |  <p>한국중부발전<br/>KOREA MIDLAND POWER CO., LTD<br/>(KOMIPO)</p>  |
|  <p>포스코<br/>POSCO</p>   |  <p>한전(KPS)<br/>KEPCO PLANT SERVICE &amp; ENGINEERING CO., LTD<br/>(KEPCO KPS)</p> |  <p>지역난방공사<br/>KOREA DISTRICT HEATING CORPORATION</p>         |



Track Record : Korea Hydro & Nuclear Power Co. Ltd. | 주요납품실적 : 한국수력원자력

| 연도<br>YEAR | 번호<br>NO. | 발주사<br>C/C | 사업소<br>SITE      | 발주기종<br>UNIT    | 설비종류<br>TYPE/AMT | 계약명<br>TITLE OF CONTRACT | 계약일<br>D/M/Y  | 금액<br>AMOUNT(KRW) |             |
|------------|-----------|------------|------------------|-----------------|------------------|--------------------------|---|-------------------|-------------|
| 2022       | 1         | KHNP       | 고리<br>GORI       | 3plant          | SINGORI #1,2     | OPR1000                  | [K22-G024-010] 3월 장비기술투수배관 모은재 구매/해수라인<br>Seawater pipe insulation material purchase/seawater line  | 2022/03/07        | 32,619,273  |
| 2022       | 2         | KHNP       | 양양양수<br>YANGYANG | Pumped storage  | #1-4             | 250                      | 양양 경산지체 모은재 16A외 1종<br>Pipe insulation  | 2022/02/07        | 5,074,273   |
| 2022       | 3         | KHNP       | 한빛<br>HANBIT     | 2plant          | #3,4             | OPR1000                  | Y22G087010, 271계 관보온재, 동인엔지니어링/MSADV<br>Pipez insulation, Dongin engineering/MSADV  | 2022/01/18        | 7,104,820   |
| 2021       | 1         | KHNP       | 고리<br>GORI       | 2plant          | #3,4             | 950                      | 고리2발전소 MSR 신축이음관 모은재 구매/MSR Manway<br>Moisture separation reheater insulation material purchased / MSR manway                             | 2021/10/05        | 29,295,091  |
| 2021       | 2         | KHNP       | 고리<br>GORI       | 2plant          | #3               | 950                      | 고리2발전소 MSR 신축이음관 모은재 구매/MSR 신축이음관<br>MSR expansion joint insulation equipment purchase / MSR expansion joint                              | 2021/09/15        | 293,559,000 |
| 2021       | 3         | KHNP       | 고리<br>GORI       | 2plant          | TBN #3           | 950                      | 고리3호기 퇴번건물 증축수 침투 모은재 교체 공사<br>Decommissioning of Condensed Water Penetrating Insulation equipment.                                       | 2021/09/09        | 17,213,000  |
| 2021       | 4         | KHNP       | 고리<br>GORI       | 3plant          | SINGORI #1,2     | OPR1000                  | 고리3월 기계부 복합관을 냉수배관 모은재 구매/냉각수 라인<br>Purchase of cold water pipe insulation equipment in the composite building with 3 rings/coolant line. | 2021/09/06        | 25,784,273  |
| 2021       | 5         | KHNP       | 고리<br>GORI       | 2plant          | #3,4             | 950                      | 고리 3, 4호기 증기발생기 취출수 탱크 룸 모은재 22종목/SGBD TK Room<br>Steam generator water intake tank room insulation 22 item/SGBD TK room.                 | 2021/09/06        | 480,599,040 |
| 2021       | 6         | KHNP       | 고리<br>GORI       | 2plant          | #3,4             | 950                      | 고리2발전소 기계부 2차계통 모은재 자체 구매/HOT/HDP 주변배관, MSR 신축이음관<br>Machine part tube insulation.  | 2021/09/01        | 293,193,455 |
| 2021       | 7         | KHNP       | 한울<br>HANUL      | 2plant          | #3,4             | OPR1000                  | 한울2발전 기계부 관보온재 외 1종목 조달구매<br>1 item of tube insulation.   | 2021/08/30        | 4,734,728   |
| 2021       | 8         | KHNP       | 월성<br>WOLSONG    | 2plant          | #3,4             | 700                      | 2발전 기계부 관보온재 1종목 구매/CIV FG<br>Tube insulation material 1 item purchase/CIV FG   | 2021/11/02        | 26,626,546  |
| 2021       | 9         | KHNP       | 월성<br>WOLSONG    | 2plant          | #4               | 700                      | 2발전 기계부 관보온재 3종목<br>4 pipe insulation material 3 items.   | 2021/10/05        | 26,126,091  |
| 2021       | 10        | KHNP       | 월성<br>WOLSONG    | 3plant          | SINWOLSONG #2    | OPR1000                  | 3월 정비기술투수 열교환기를 관보온재5종목/해수라인<br>Pipe insulation materials 5 items/sea water line.   | 2021/08/20        | 26,309,910  |
| 2021       | 11        | KHNP       | 월성<br>WOLSONG    | 2plant          | #3,4             | 700                      | 2월 정비기술투수 관보온재 1종목 구매<br>Purchase of one item of pipe insulation device.  | 2021/07/15        | 7,595,637   |
| 2021       | 12        | KHNP       | 월성<br>WOLSONG    | 2plant          | TBN #3,4         | 700                      | 2월 기계부 터빈중간밸브를 관보온재 1종목<br>1 item of pipe insulation for turbine control valve.   | 2021/07/09        | 16,142,182  |
| 2021       | 13        | KHNP       | 월성<br>WOLSONG    | 2plant          | TBN #3,4         | 700                      | 2월 기계부 터빈중간밸브를 관보온재 1종목<br>1 item of pipe insulation for turbine intermediate valve.  | 2021/07/09        | 26,626,546  |
| 2021       | 14        | KHNP       | 월성<br>WOLSONG    | SINGORI #1,2    | OPR1000          | 700                      | 3월 기계부 관보온재 등 7종목<br>7 items including 3 shot, mechanical and pipe insulation.  | 2021/07/05        | 17,447,637  |
| 2021       | 15        | KHNP       | 월성<br>WOLSONG    | 2plant          | TBN #3,4         | 700                      | 2월 기계부 관보온재 등 5종목<br>5 items including 2-shot mechanical pipe insulation.   | 2021/06/28        | 21,223,182  |
| 2021       | 16        | KHNP       | 월성<br>WOLSONG    | SINWOLSONG #1,2 | OPR1000          | 700                      | 3월 기계부 관보온재 15종목 구매<br>Purchasing 15 items.   | 2021/06/11        | 79,265,728  |
| 2021       | 17        | KHNP       | 월성<br>WOLSONG    | 2plant          | #3,4             | 700                      | 2월 기계부 관보온재 9종목 구매<br>Purchasing 9 items of 2-shot mechanical pipe insulation.  | 2021/05/14        | 26,126,091  |
| 2021       | 18        | KHNP       | 월성<br>WOLSONG    | SINWOLSONG #1,2 | OPR1000          | 700                      | 3월 기계부 관보온재 23종목 구매<br>Purchase of 23 items of pipe insulation device.  | 2021/02/09        | 107,852,573 |
| 2020       | 1         | KHNP       | 한빛<br>HANBIT     | 2plant          | #4               | OPR1000                  | 2월비 관보온재(1차)/MSIV ROOM 외<br>MSIV room, etc.   | 2020/12/22        | 358,210,490 |
| 2020       | 2         | KHNP       | 한빛<br>HANBIT     | 2plant          | #4               | OPR1000                  | 2월비 관보온재(2차)/MSIV ROOM 외<br>MSIV room, etc.   | 2020/12/17        | 434,450,300 |
| 2020       | 3         | KHNP       | 한빛<br>HANBIT     | 2plant          | #3,4             | OPR1000                  | 2월비 관보온재, 동인엔지니어링/MSIV ROOM 외<br>Dong in Engineering/MSIV room, etc.  | 2020/09/25        | 656,912,527 |
| 2020       | 4         | KHNP       | 한빛<br>HANBIT     | 2plant          | #3,4             | OPR1000                  | 271계 동인엔지니어링/MSADV<br>Dong in Engineering/MSADV.  | 2020/04/01        | 14,456,364  |
| 2020       | 5         | KHNP       | 한울<br>HANUL      | 2plant          | #3               | OPR1000                  | 한울2발전 기계부 관보온재 1종목 조달구매<br>Pipe insulation device.  | 2020/01/30        | 17,384,728  |
| 2020       | 6         | KHNP       | 새울<br>SAEUL      | SINGORI #4      | APR1400          | 700                      | 신고리4호기 주급수 밸류리 모은재 구매/Venturi Line<br>Main water supply venturi insulation device purchase / venturi line.                                | 2020/11/09        | 31,228,910  |
| 2020       | 7         | KHNP       | 새울<br>SAEUL      | SINGORI #3      | APR1400          | 700                      | 신고리3호기 주급수 밸류리 모은재 보수용 자체 구매/Venturi Line<br>Water supply venturi insulation repair device/venturi line.                                  | 2020/03/03        | 29,275,273  |
| 2020       | 8         | KHNP       | 월성<br>WOLSONG    | 1plant          | #2               | 700                      | 1월 기계부 관보온재 4종목 구매<br>Purchase of 4 items of pipe insulation.   | 2020/11/09        | 69,494,566  |



| YEAR | NO. | QOR  | SITE             | UNIT                    | TYPE(BMW) | TITLE OF CONTRACT   | D / M / Y  | AMOUNT(KRW) |
|------|-----|------|------------------|-------------------------|-----------|---|------------|-------------|
| 2020 | 9   | KHNP | 월성 WOLSONG       | 1plant #2               | 700       | 1발 정비기술부 관보온재 51품목 구매<br>Purchase 51 items of pipe insulation device.   | 2020/10/28 | 573,564,237 |
| 2020 | 10  | KHNP | 월성 WOLSONG       | 2plant #3,4             | 700       | 2발 기계부 관보온재 3품목 구매<br>Purchase of 3 items of pipe insulation.   | 2020/09/09 | 18,056,546  |
| 2020 | 11  | KHNP | 월성 WOLSONG       | 2plant #3, 4            | 700       | 2발 기계부 관보온재 2품목 구매<br>Purchase of 2 items of pipe insulation.   | 2020/09/09 | 16,444,728  |
| 2020 | 12  | KHNP | 월성 WOLSONG       | 2plant #3, 4            | 700       | 2발 기계부 관보온재 3품목 구매<br>Purchasing 3 items of pipe insulation.  | 2020/09/04 | 17,108,910  |
| 2019 | 1   | KHNP | 청송발전소 CHEONGSUNG | Pumped storage #1,2     | 300       | 청송 총 1578.관보온재<br>Total 1578_pipe insulation.   | 2019/10/29 | 24,434,455  |
| 2019 | 2   | KHNP | 한울 HANUL         | 1plant #1, 2            | 950       | 한울 1발 기계팀 관보온재 외 6품목 조달구매<br>Pipe Insulation device.  | 2019/12/18 | 51,124,000  |
| 2019 | 3   | KHNP | 한울 HANUL         | 2plant #3               | OPR1000   | 한울 2발전소 기계팀 관보온재 1품목 조달구매-3호기/MSSV<br>Pipe Insulation device 1 item procurement unit 3/MSSV.  | 2019/08/28 | 17,384,727  |
| 2019 | 4   | KHNP | 한울 HANUL         | 2plant #4               | OPR1000   | 한울 2발 기계팀 관보온재 외 53품목 조달구매-4호기/MSSV ROOM<br>Pipe insulation other 53 items procurement unit 4/MSSV room.  | 2019/08/19 | 374,951,200 |
| 2019 | 5   | KHNP | 한울 HANUL         | 3plant #5               | OPR1000   | 한울 3발전소 기계팀 관보온재 외 23품목-5호기/MSSV ROOM<br>Pipe Insulation device 23rd Item-5th Unit/MSSV room.   | 2019/08/13 | 376,768,300 |
| 2019 | 6   | KHNP | 한울 HANUL         | 2plant #3               | OPR1000   | 한울 2발 기계팀 관보온재 외 53품목 조달구매-3호기/MSSV ROOM<br>Pipe insulation other 53 items procurement unit 3 / MSSV room.  | 2019/07/25 | 342,424,273 |
| 2019 | 7   | KHNP | 월성 WOLSONG       | 2plant #3               | 700       | 2발 기계부 정비용 관보온재 10품목<br>Maintenance pipe insulation device 10 items.  | 2019/12/05 | 42,409,000  |
| 2019 | 8   | KHNP | 월성 WOLSONG       | 2plant #3               | 700       | 2발 기계팀 제동장비용 관보온재 5품목 구매<br>System maintenance pipe insulation device 5 items purchased.  | 2019/11/06 | 8,620,000   |
| 2019 | 9   | KHNP | 월성 WOLSONG       | 3plant #4               | 700       | 2발 기계팀 정비용 관보온재 6품목 구매<br>Purchase of 6 pipe insulation for maintenance.  | 2019/10/28 | 81,648,364  |
| 2019 | 10  | KHNP | 월성 WOLSONG       | 2plant #4               | 700       | 2발 기계팀 정비용 관보온재 5품목<br>Maintenance pipe insulation device 5 items.  | 2019/05/23 | 23,215,273  |
| 2019 | 11  | KHNP | 월성 WOLSONG       | 2plant #4               | 700       | 2발 기계팀 증기발전기 정비용 관보온재 4품목<br>Steam generator maintenance pipe insulation device 4 items.  | 2019/04/29 | 12,840,273  |
| 2019 | 12  | KHNP | 월성 WOLSONG       | 2plant #4               | 700       | 2발 기계팀 정비용 관보온재 14품목<br>Maintenance tube insulation device 14 items.  | 2019/04/25 | 58,396,000  |
| 2019 | 13  | KHNP | 월성 WOLSONG       | 2plant #3, 4            | 700       | 2발 기계팀 살비 및 배관 관보온재 5품목<br>Two-shot mechanical team unit 3 and 4 equipment and pipe insulation device 5 items.  | 2019/04/25 | 13,214,000  |
| 2019 | 14  | KHNP | 월성 WOLSONG       | 2plant #4               | 700       | 2발 기계팀 정비용 착탈식 관보온재 품 5품목<br>5 items for maintenance detachable pipe insulation, etc.   | 2019/04/22 | 19,478,910  |
| 2019 | 15  | KHNP | 월성 WOLSONG       | 2plant #3               | 700       | 2발 기계팀 터빈냉각 및 주급수계통 관보온재 8품목<br>Turbine cooling and main water supply system pipe insulation device 8 items.  | 2019/04/18 | 31,450,727  |
| 2019 | 16  | KHNP | 한빛 HANBIT        | 2plant #3, 4            | OPR1000   | 2가계 관보온재/MSADV<br>Tube insulation / MSADV.  | 2019/09/25 | 20,308,000  |
| 2019 | 17  | KHNP | 한빛 HANBIT        | 1plant #1               | 950       | 1발 기계팀 관보온재 주급수라인<br>Insulation device main water supply line.  | 2019/01/25 | 29,362,363  |
| 2018 | 1   | KHNP | 양양발전소 YANGYANG   | pumping up #1-4         | 250       | Bellows Cover 10x의 2종류/Bellows, VV<br>Bellows cover 2 types/bellows, VV.  | 2018/12/05 | 4,603,000   |
| 2018 | 2   | KHNP | 한울 HANBIT        | 3plant #6               | OPR1000   | 한울 3발전소 기계팀 주급수계통 관보온재 구매/MSSV ROOM<br>Main steam isolation valve room piping insulation purchase / MSSV room.  | 2018/11/05 | 376,768,300 |
| 2018 | 3   | KHNP | 새울 SAEUL         | 1plant                  | APR1400   | 보온재, SGBD TK 동판, 1M, 1M, 세라믹 울+미네랄 울, 600, EA, S, etc. 3 cases / SGBD TK room.<br>Insulation, SGBD TK copper plate, 1M, 1M, serac wool + mineral wool, 600, EA, S, etc. 3 cases / SGBD TK room. | 2018/10/17 | 81,966,457  |
| 2018 | 4   | KHNP | 새울 SAEUL         | 1plant SINGORI #4       | APR400    | 신고리 4호기 하절기 고온지역 교체용 배관 보온재 구매/MSSV ROOM<br>High temperature area replacement piping insulation device purchase / MSSV room.  | 2018/09/06 | 861,409,310 |
| 2018 | 5   | KHNP | 새울 SAEUL         | 1plant SINGORI #3       | APR1400   | 새울 1발 SGBD TK 보온재 구매/SGBD TK ROOM<br>SGBD TK insulation material purchase / SGBD TK room.   | 2018/03/28 | 56,840,001  |
| 2018 | 6   | KHNP | 새울 SAEUL         | 1plant SINGORI #3       | APR1400   | 신고리 3호기 교체용 배관 및 밸브 보온재 구매/MSSV ROOM<br>Purchase of piping and valve insulation / MSSV room.  | 2018/02/14 | 791,614,682 |
| 2018 | 7   | KHNP | 월성 WOLSONG       | 3plant SINWOLSONG #1, 2 | OPR1000   | 3발 기계팀 관보온재 5품목 구매-해수라인<br>Pipe insulation material 5 items purchase / seawater line.   | 2018/09/10 | 120,958,555 |
| 2018 | 8   | KHNP | 월성 WOLSONG       | 2plant #3, 4            | 700       | 2발 기계팀 진공계통 보온재 4품목 구매<br>Purchase of vacuum system insulation device 4 items.  | 2018/08/09 | 16,726,364  |
| 2018 | 9   | KHNP | 월성 WOLSONG       | 2plant #3, 4            | 700       | 2발 기계팀 터빈 및 보조계통용 관보온재 4품목<br>4 items of pipe insulation for turbine and auxiliary system.  | 2018/08/08 | 16,402,365  |
| 2018 | 10  | KHNP | 월성 WOLSONG       | 2plant #3, 4            | 700       | 2발 기계팀 복수계통 관보온재 6품목 구매<br>Purchase of 6 pipe insulation device for multi-systems of 2-engine machine team.   | 2018/08/08 | 17,525,637  |
| 2018 | 11  | KHNP | 월성 WOLSONG       | 2plant #4               | 700       | 월성 2발 기계팀 4호기 피더캐비닛 보온재 2품목 구매(해수)<br>Feeder cabinet insulation device 2 items.   | 2018/01/30 | 38,909,920  |

Track Record : Thermal Power | 주요납품실적 : 화력

| 연도   | 연차 | 인수    | 발주사               | 사업소                                      | 발주처(해수) UNIT       | 설비(BMW) TYPE(BMW)                 | 주요장비 MAJOR EQUIPMENT | 계약명 TITLE OF CONTRACT  | 계약일 D / M / Y | 금액 AMOUNT(KRW) |
|------|----|-------|-------------------|--|--------------------|-----------------------------------|----------------------|--|---------------|----------------|
| 2022 | 1  | KOMPO | 신보령 SINBORONG     | 신보령 TBN #2                               | 1,000              | TBN FL VV                         |                      | 신보령 2호기 OH 터빈 탈부착식 보온재 조달구매<br>Turbine Reattachable Insulation.  | 2022/05/11    | 18,584,547     |
| 2022 | 2  | KOWPO | 태안 TAEAN          | 태안 3plant #9                             | 1,050              | HRH, CRH, MS FG                   |                      | 태안 2호기 주급수계통 모듈형 착탈식 보온재 구매<br>Main steam system module type Reattachable insulation device purchase.  | 2022/03/30    | 53,998,182     |
| 2022 | 3  | KOWPO | 태안 TAEAN          | 태안 CC                                    | 346.33             | Outdoor Pump                      |                      | 죽림발전소 옥외펌프 탈부착식 보온재 구매<br>Purchase of Reattachable insulation device for outdoor pump.                 | 2022/01/13    | 9,950,000      |
| 2022 | 4  | KOSPO | 한빛 HANBIT         | 한빛 HRSG #1, 2                            | 100                | #1, 2 HRSG                        |                      | HRSG 착탈식 보온 단열장치 구매<br>Purchase of HRSG reattachable insulation system.                                | 2022/03/29    | 238,434,709    |
| 2022 | 5  | KOSPO | 안동 ANDONG         | 안동 HRSG                                  | G/T: 277, S/T: 140 | HRSG                              | HRSG                 | 안동 1호기 HRSG 탈부착식 보온재 구매<br>Purchase of HRSG reattachable insulation.                                   | 2022/03/22    | 17,013,000     |
| 2022 | 6  | KOSPO | 하동 HADONG         | 하동 2plant #6                             | 500                | HRH/UPBP Tee, HRTR VV             |                      | 하동 6호기 터빈살비 착탈식 보온재 조달구매<br>Procurement purchase of TBN equipment reattachable insulation of unit 6.   | 2022/03/31    | 37,051,364     |
| 2022 | 7  | KOSPO | 하동 HADONG         | 하동 2plant #7                             | 500                | TBN VV                            |                      | 하동 7호기 터빈살비 밸브 착탈식 보온재 조달구매<br>Turbine installation valve reattachable insulation device.              | 2022/03/31    | 89,365,364     |
| 2022 | 8  | KOSPO | 하동 HADONG         | 하동 2plant #4                             | 500                | TBN VV                            |                      | 하동 4호기 터빈살비 밸브 알루미늄 착탈식 보온재 조달구매<br>Valve aluminum material Reattachable insulation device.            | 2022/01/21    | 90,307,820     |
| 2022 | 9  | KOEN  | 분당 BUNDANG        | 분당 ST                                    | 185                | Manhole                           |                      | RAPID M/H Cover<br>RAPID M/H cover.  | 2022/04/20    | 1,118,700      |
| 2022 | 10 | KOEN  | 이수 YEosu          | 이수 BLR #2                                | 328.6              | Bed Ash Drain Pipe                |                      | 보일러의 보온재<br>Boiler insulation.   | 2022/04/11    | 19,368,000     |
| 2021 | 1  | KOMPO | 신보령 SINBORONG     | 신보령 TBN #1                               | 1,000              | TBN FL VV                         |                      | 신보령 터빈살비 인접설비를 위한 탈부착식 보온재 구매<br>Purchase of reattachable insulation.                                  | 2021/06/10    | 18,006,846     |
| 2021 | 2  | KOMPO | 보령 BORYONG        | 보령 GT #5, 6                              | 150                | GT NG Line                        |                      | 죽림 가스터빈 5, 6호기 PreHTR 구간 NG배관 탈부착식 보온재 구매(해수)<br>PreHTR section NG pipe.                               | 2021/04/19    | 266,251,524    |
| 2021 | 3  | KOWPO | 태안 TAEAN          | 태안 CC                                    | 346.33             | HR/FP Drum, Drag Chain Conveyor   |                      | 죽림 복합발전소 4 CMD 착탈식 보온재 구매<br>Purchase of composite plant & CMD reattachable insulation.                | 2021/07/27    | 45,836,910     |
| 2021 | 4  | KOWPO | 태안 TAEAN          | 태안 3plant #9, 10                         | 1050               | BLR Long S/B                      |                      | 태안 8, 10호기 보일러의 Long S/B 용접 단 Flange 보온재 구매<br>Boiler long S/B shear flange insulation purchase.       | 2021/06/28    | 38,688,000     |
| 2021 | 5  | KOWPO | 태안 TAEAN          | 태안 1plant #3                             | 500                | MS Line                           |                      | RAPID TEE 400A200T 등 5품목 구매<br>Purchase 5 items such as RAPID tee 400A200T.                            | 2021/06/22    | 69,197,485     |
| 2021 | 6  | KOWPO | 태안 TAEAN          | 태안 IG                                    | 346.33             | Rigging Device etc.               |                      | IGCC 가스화물류 착탈식 보온재 구매<br>Purchase of IGCC gasification plant reattachable insulation.                  | 2021/05/14    | 159,482,782    |
| 2021 | 7  | KOWPO | 태안 TAEAN          | 태안 3plant #9                             | 1,050              | GAH Support                       |                      | 태안 9호기 GAH Support 탈부착식 보온재 구매<br>Purchase of reattachable thermal insulation by GAH support.          | 2021/05/14    | 7,950,000      |
| 2021 | 8  | KOWPO | 태안 TAEAN          | 태안 1plant #1                             | 500                | HRH, MS Line                      |                      | 태안 1호기 터빈 용기배관 일체형 보온재 구매<br>Turbine steam pipe integrated insulation cover.                           | 2021/02/10    | 88,432,182     |
| 2021 | 9  | EWI   | 당진 DANGJIN        | 당진 3plant #9, 10                         | 1,020              | Compressor Line                   |                      | 당진 9, 10호기 모듈형 착탈식 보온재 구매<br>Modular reattachable insulation purchase.                                 | 2021/07/14    | 29,751,455     |
| 2021 | 10 | EWI   | 동해바이오 DONGHAE BIO | 동해 바이오 BLR                               | 200                | BRL Fluid Medium V/V (ACV)        |                      | [동해] 바이오 유동체 유량조절밸브(ACV) 모듈형 보온재 구매<br>BLR fluid medium flow control valve (ACV) modular insulation.   | 2021/08/31    | 276,321,600    |
| 2021 | 11 | EWI   | 동해바이오 DONGHAE BIO | 동해 바이오 Biomass TBN, BLR                  | 200                | TBN, BLR VV etc.                  |                      | (동해) 모듈형 탈부착식 보온재 조달 구매<br>Modular reattachable insulation.  | 2021/08/18    | 142,073,910    |
| 2021 | 12 | EWI   | 동해바이오 DONGHAE BIO | 동해 바이오 TBN                               | 200                | TBN Chiller                       |                      | 동해 바이오 냉동기 모듈형 보온재 구매<br>Purchase of modular insulation.   | 2021/10/13    | 98,602,919     |
| 2021 | 13 | EWI   | 울산 ULSAN          | 울산 2,3CC GT #5, 6                        | 150(KT)            | GT NG Line                        |                      | [울산] 발전소(IGCC 가스터빈) NG배관 탈부착식 보온재 구매<br>Gas turbine NG piping, valve reattachable insulation purchase. | 2021/08/31    | 371,961,846    |
| 2021 | 14 | EWI   | 울산 ULSAN          | 울산 2,3CC GT                              | 150                | GT, VV                            |                      | [울산] 발전소(탄화수소) 탈부착식 보온재 5종<br>5 types of reattachable insulation.                                      | 2021/02/10    | 16,860,600     |
| 2021 | 15 | EWI   | 당진 DANGJIN        | 당진 2plant #7, 8                          | 500                | BFP                               |                      | [당진] 7, 8호기 관보온재 2품목 구매<br>Purchase 2 items of piping insulation.                                      | 2021/11/01    | 103,187,519    |
| 2021 | 16 | EWI   | 당진 DANGJIN        | 당진 3plant Environmental Equipment #9, 10 | 1,020              | ME Piping VV, Expansion joint(FG) |                      | [당진] 9, 10호기 모듈형 착탈식 보온재 2품목<br>Modular reattachable insulation device 2 items.                        | 2021/10/07    | 55,826,910     |
| 2021 | 17 | EWI   | 당진 DANGJIN        | 당진 1plant #1, 2, 3, 4                    | 500                | BFP, Cross over pipe FG, CV FG    |                      | 당진 1-4호기 모듈형 착탈식 보온재 구매<br>Modular reattachable insulation purchase.                                   | 2021/02/10    | 409,406,976    |
| 2021 | 18 | KOSPO | 안동 ANDONG         | 안동 HRSG                                  | G/T: 277, S/T: 140 | HRSG                              |                      | HRSG 탈부착식 보온재 구매<br>Purchase of HRSG reattachable insulation.  | 2021/09/02    | 30,393,546     |
| 2021 | 19 | KOSPO | 하동 HADONG         | 하동 1plant #3                             | 500                | TBN                               |                      | 하동 3호기 터빈살비 밸브 알루미늄 착탈식 보온재 조달 구매<br>Purchase of turbine valve aluminum reattachable insulation.       | 2021/05/03    | 149,936,127    |



| YEAR | NO. | COR.   | SITE              | UNIT                                    | TYPE(SW)           | MAJOR EQUIPMENT   | TITLE OF CONTRACT  | D / M / Y  | AMOUNT(KRW)              |
|------|-----|--------|-------------------|---|--------------------|---|--|------------|--------------------------|
| 2021 | 20  | KOSPO  | 하동<br>HADONG      | 1plant #2, 3                            | 500                | HRH   | 하동 2,3호기 터빈 재결빙기배관 알루미늄 재착탈식 보온재 조달형 구매<br>Reheat vapor piping aluminum reattachable insulation device.  | 02/03/2021 | 132,481,437              |
| 2021 | 21  | KOSPO  | 하동<br>HADONG      | 2plant #5                               | 500                | TBN   | 하동 5호기 터빈실비 배관 및 밸브 착탈식 보온재 조달형 구매<br>Piping and valve Reattachable insulation device.   | 22/02/2021 | 158,087,064              |
| 2021 | 22  | KOEN   | 분당<br>BUNGANG     | GT #1, 2Block                           | 75                 | Bearing No. 1 & Gas Pre HTR   | 분당 #1,2 Block 가스터빈 1BRG & Gas Pre Heater 보온재 구매<br>Gas Turbine 1 BRG & gas pre heater insulation.  | 25/05/2021 | 94,981,000               |
| 2021 | 23  | KOEN   | 여수<br>YEOSU       | TBN                                     | 3400(F1), 3280(F2) | Manhole   | 탈착식 보온재 커버 구매<br>Purchase of reattachable insulation cover.  | 23/08/2021 | 3,061,000                |
| 2021 | 24  | KOEN   | 영흥<br>YEONGHEUNG  | 2plant Environmental Equipment #1,2,3,4 | 870                | Water Treatment System & Condensate Polishing Plant                       | 제1~4호기 수처리실비 및 복수탈염실비 보온재 구매<br>Purchase of thermal insulation materials for water treatment facilities and multiple desalination facilities.                  | 07/09/2021 | 18,689,000               |
| 2021 | 25  | KOEN   | 영흥<br>YEONGHEUNG  | 1plant #4                               | 870                | Separator Hemi-Head   | Separator Hemi-Head 탈부착식 보온재(30°x100)<br>Separator hemi-head reattachable insulation.  | 12/03/2021 | 12,230,400               |
| 2021 | 26  | KOEN   | 영흥<br>YEONGHEUNG  | 2plant #3                               | 870                | LPBP  | 3호기 터빈실비 착탈식 일체형 보온재 구매<br>Purchase of all-in-one thermal insulation for turbine installation.   | 18/02/2021 | 198,039,819              |
| 2020 | 1   | KOMPO  | 제주<br>JEJU        | GT HRSRG                                | 228.6              | NG Pipe Wall Thinning, Manifold FG  | 제주발전본부 폭립 탈부착식 보온재 구매<br>Reattachable insulation.  | 29/07/2020 | 90,347,960               |
| 2020 | 2   | KOWEPO | 태안<br>TAEAN       | CC                                      | 346.33             | HRSRG V/V   | IGCC 발전사 HRSRG 밸브 탈부착식 보온재 구매<br>IGCC power plant HRSRG valve reattachable insulation device purchase.   | 11/05/2020 | 32,809,455               |
| 2020 | 3   | KOWEPO | 태안<br>TAEAN       | 1plant #2                               | 500                | LPBP  | 2호기 저압 바이패스 밸브 보온재 구매<br>Low pressure bypass valve insulation purchase.  | 02/03/2020 | 55,777,819               |
| 2020 | 4   | KOWEPO | 태안<br>TAEAN       | TBN #4                                  | 500                | LPBP, BFPT CV   | 4호기 터빈 보조기모동장치 착탈식 보온재 구매<br>Auxiliary equipment module type reattachable insulation.  | 17/09/2020 | 78,871,273               |
| 2020 | 5   | EWP    | 당진<br>DANGJIN     | Chemical Engineering Part 1 #1~4        | 500                | NaOH and HCl Tank & Piping Line   | [당진 1~4호기]약품탱크 착탈식 보온재 9종(설치포함)<br>Drug tank reattachable insulation.  | 24/06/2020 | 16,928,881<br>67,715,525 |
| 2020 | 6   | EWP    | 당진<br>DANGJIN     | 1plant #1, 2, 3, 4                      | 500                | LPBP  | 관보온재 2종목 조달구매<br>Pipe insulation device.   | 27/11/2020 | 218,649,046              |
| 2020 | 7   | EWP    | 당진<br>DANGJIN     | 2plant TBN                              | 500                | LPBP Drip Pot   | 당진화력 플랜지 30A 등 7종목<br>7 items flange.  | 15/10/2020 | 93,469,673               |
| 2020 | 8   | EWP    | 당진<br>DANGJIN     | 2plant #8                               | 500                | LPBP  | LPBP 및 Dip Pot용 탈부착식 보온재 15set 구매<br>Reattachable tube insulation device 15 set for LPBP and drip.   | 20/03/2020 | 79,688,566               |
| 2020 | 9   | EWP    | 호남<br>HONAM       | BLR #1                                  | 250                | HRSRG HPBP  | 착탈식 보온재<br>Reattachable insulation.  | 02/03/2020 | 2,448,000                |
| 2020 | 10  | KOSPO  | 남제주<br>NAMYEU     | TBN #2                                  | 100                | TBN V/V Add   | 기력 2호기 터빈 밸브, 배관 보온재 구매<br>Purchase of turbine valve, pipe insulation.   | 29/05/2020 | 3,428,214<br>13,712,858  |
| 2020 | 11  | KOSPO  | 신안현<br>SINANCHEON | HRSRG #1~8                              | 150                | Reducer(TK Main Tank), Daily Tank(B), HP SW / BR Attempt Main Line(SU,HS) | 황연저장실비 환연저장탱크 및 HRSRG 주배관 착탈식 보온재 구매<br>Limestone storage tank for yellow plume elimination system and HRSRG main pipe reattachable insulation device purchase | 24/03/2020 | 445,248,700              |
| 2020 | 12  | KOSPO  | 하동<br>HADONG      | 2plant #5, 6                            | 500                | HPBP, CRH, HRH  | 하동 5,6호기 보일러실비 착탈식 보온재 조달형 구매<br>Boiler facility reattachable insulation device procurement purchase.  | 04/05/2020 | 72,132,000               |
| 2020 | 13  | KOSPO  | 하동<br>HADONG      | 2plant #6                               | 500                | LPBP  | 하동 6호기 터빈 LPBP 화재방지 알루미늄 재착탈식 보온재 조달형 구매<br>Unit 6, TBN LPBP fire-protection aluminum reattachable insulation device procurement purchase.                     | 21/04/2020 | 55,777,819               |
| 2020 | 14  | KOSPO  | 하동<br>HADONG      | 2plant #6                               | 500                | HRH, NRV  | 하동 6호기 배관 및 밸브 착탈식 보온재 조달형 구매<br>Turbine equipment piping and valve Reattachable insulation materials  | 20/04/2020 | 102,867,028              |
| 2020 | 15  | KOSPO  | 하동<br>HADONG      | 1plant #1, 4                            | 500                | TNB, HDR Line   | 하동 1,4호기 터빈 HDR 및 배관 알루미늄재 착탈식 보온재 제작<br>Fabrication of reattachable insulation device.  | 04/03/2020 | 186,113,400              |
| 2020 | 16  | KOSPO  | 하동<br>HADONG      | 1plant #1, 4                            | 500                | LPBP  | 하동 1,4호기 LPBP 화재방지 알루미늄 재착탈식 보온재<br>LPBP fire prevention type aluminum reattachable insulation.  | 29/01/2020 | 110,440,073              |
| 2020 | 17  | KOEN   | 영흥<br>YEONGHEUNG  | 1plant #1, 2 Combustion                 | 800                | Pulverizer Line and Inertty steam V/V                                     | 1,2호기 미분기 부속실비 탈부착식 보온재 구매<br>Unit 1, 2, purchase of insulation device for pulverizer auxiliary equipment.   | 08/07/2020 | 82,756,364               |
| 2020 | 18  | KOEN   | 영흥<br>YEONGHEUNG  | 2plant #4                               | 870                | HRH   | 영흥 4호기 터빈보조실비 착탈식 일체형 보온재 구매<br>Unit 4, reattachable insulation purchase for turbine auxiliary equipment.  | 06/05/2020 | 266,592,600              |
| 2020 | 19  | KOEN   | 영흥<br>YEONGHEUNG  | 3plant #6                               | 870                | BLR & TBN   | 영흥 6호기 주요실비 착탈식 일체형 보온재 구매<br>Unit 6, reattachable insulation purchase for turbine main equipment.   | 20/03/2020 | 323,598,937              |
| 2020 | 20  | KOEN   | 영흥<br>YEONGHEUNG  | 3plant #6                               | 870                | BFPT  | #6 보일러 및 터빈 주요실비 착탈식 일체형 보온재 구매<br>Unit 6, Reattachable insulation purchase for boiler and turbine main equipment.   | 17/03/2020 | 133,000,000              |
| 2019 | 1   | KOMPO  | 보령<br>BORYEONG    | 1plant #1                               | 250                | SCR Sonic Horn  | 제1호기 SCR Sonic Horn 착탈식 보온재 제작구매<br>Unit 1, SCR sonic horn reattachable insulation cover.  | 15/10/2019 | 11,137,272               |
| 2019 | 2   | KOWEPO | 태안<br>TAEAN       | 1plant #3                               | 500                | LPBP, BFPT CV   | 3호기 터빈 보조기모동장치 보온재 구매<br>Unit 3, turbine auxiliary equipment insulation.   | 27/09/2019 | 78,871,273               |
| 2019 | 3   | KOWEPO | 서인천<br>SUNCHON    | GT                                      | 250                | GT #H Line  | 한국서부발전 서인천발전본부 제2호기 가스터빈 배관 보온재 구매<br>Gas turbine IBH piping insulation device purchase(phase 2).  | 18/11/2019 | 48,847,637               |
| 2019 | 4   | KOWEPO | 서인천<br>SUNCHON    | GT                                      | 250                | GT #H Line  | 한국서부발전 서인천발전본부 가스터빈 배관 보온재 구매<br>Gas turbine IBH piping insulation device purchase.  | 15/10/2019 | 65,130,182               |
| 2019 | 5   | EWP    | 당진<br>DANGJIN     | 1plant Environmental Equipment          | 500                | Environmental Equipment PV/V, FG  | 파이프커버 7종<br>7 types of pipe covers.  | 09/09/2019 | 9,851,730                |

| YEAR | NO. | COR.  | SITE                       | UNIT                                 | TYPE(SW) | MAJOR EQUIPMENT                  | TITLE OF CONTRACT  | D / M / Y  | AMOUNT(KRW)                              |
|------|-----|-------|----------------------------|--------------------------------------|----------|----------------------------------|--|------------|--|
| 2019 | 6   | EWP   | 울산<br>ULSAN                | 4CC GT #7, 8                         | 287      | GT TBN Line                      | #7, 8 GT 단열커버 18종<br>GT insulation cover 18 types.   | 25/11/2019 | 149,785,370                              |
| 2019 | 7   | KOSPO | 하동<br>HADONG               | 1plant #2, 3                         | 500      | LPBP                             | 하동 2,3호기 터빈 화재방지 알루미늄재 착탈식 보온재 구매<br>Aluminum detachable insulation purchase.  | 23/10/2019 | 110,440,073                              |
| 2019 | 8   | KOEN  | 하동<br>HADONG               | 1plant #2, 3                         | 500      | HRH, 10, 20KG HDR                | 하동 2,3호기 터빈실비 및 배관 알루미늄재 착탈식 보온재 제작 구매<br>Reattachable insulation purchase.  | 20/05/2019 | 112,451,309                              |
| 2019 | 9   | KOEN  | 영흥 예고<br>YEONGHEUNG<br>IED | BLR #1                               | 125      | BLR Wall Insulation              | 영흥 1호기 보일러 외장 보온재 제작구매<br>Manufacture and purchase of external insulation.   | 02/12/2019 | 338,413,440<br>84,603,365                |
| 2019 | 10  | KOEN  | 삼천포<br>SAMCHEONPO          | 1plant #3, 4 Environmental Equipment | 560      | NaOH Line                        | 제3, 4호기 복수탈염실비 가스터빈 배관 착탈식 보온재 구매<br>Condensate polishing plant, caustic soda pipe reattachable insulation device purchase.                            | 08/11/2019 | 4,914,000                                |
| 2019 | 11  | KOEN  | 영흥<br>YEONGHEUNG           | 1, 2plant #1~4                       | 870      | Water Treatment System           | 제1~4호기 수처리실비 통정기대리 보온재 구매<br>Purchase of insulation device for water treatment facilities to prepare for winter.                                       | 26/11/2019 | 13,705,819                               |
| 2019 | 12  | KOEN  | 영흥<br>YEONGHEUNG           | 1plant #1, 2                         | 800      | Inter HDR                        | #1, 2 Furnace Intermediate HDR 탈부착식 보온재 구매<br>Purchase of furnace intermediate HDR reattachable insulation.  | 19/12/2019 | 140,098,700<br>60,042,300<br>200,141,000 |
| 2019 | 13  | KOEN  | 영흥<br>YEONGHEUNG           | 2plant Environmental Equipment       | 870      | Drain Line                       | RAPID 파이프 14종목<br>RAPID pipe 14 items.   | 02/12/2019 | 4,861,000                                |
| 2019 | 14  | KOEN  | 영흥<br>YEONGHEUNG           | 2plant Environmental Equipment       | 870      | VV, FG                           | RAPID 파이프 4종목<br>RAPID pipe 4 items.   | 02/12/2019 | 1,324,000                                |
| 2019 | 15  | KOEN  | 영흥<br>YEONGHEUNG           | 3plant #5, 6                         | 870      | SCB Sump Pump                    | #5, 6 SCB Pump 배관 탈부착식 보온재 구매<br>SCB pump piping reattachable insulation purchase.   | 14/11/2019 | 3,739,000                                |
| 2019 | 16  | KOEN  | 영흥<br>YEONGHEUNG           | 3plant #5, 6                         | 870      | BLR V/V                          | #5, 6 보일러밸브 착탈식 일체형 보온재 구매<br>Purchase of boiler valve reattachable all-in-one insulation.   | 17/04/2019 | 130,364,696                              |
| 2019 | 17  | KOEN  | 영흥<br>YEONGHEUNG           | 3plant #5                            | 870      | TBN V/V                          | #5 터빈 고온고압 배관 착탈식 일체형 보온재 구매<br>Purchase of turbine high temperature and high pressure pipe detachable all-in-one insulation.                          | 28/02/2019 | 75,071,920                               |
| 2018 | 1   | KOMPO | 제주<br>JEJU                 | #1, 2 ST. GT. HRSRG                  | 228.6    | FG/ST, Manhole                   | 목장 1, 2호기 고온배관 및 Flange 탈착식 보온재 구매<br>Purchase of high temperature piping and flange removable equipment for CC  | 21/11/2019 | 32,799,320                               |
| 2018 | 2   | KOMPO | 세종<br>SEJONG               | HRSRG, GT                            | 162.1    | FG, V/V, STRAINER                | 알루미늄재 단열장치 제작구매<br>Manufacture and purchase of aluminum insulation devices.  | 13/12/2019 | 109,690,219                              |
| 2018 | 3   | KOMPO | 보령<br>BORYEONG             | HRSRG #3, 4                          | 150      | HP STIM, HRH, STIM, HPBP         | HRSRG 3, 4호기 탈부착식 보온재 제작구매<br>Manufacture and purchase of HRSRG detachable insulation device.  | 11/04/2019 | 44,147,200                               |
| 2018 | 4   | KOSPO | 남제주<br>NAMYEU              | Rankine cycle #1, 2                  | 100      | HTR                              | 기력 1, 2호기 HP #5, 6 HTR Cover 착탈식 보온재 구매<br>Unit 1, 2 HP #5, 6 HTR cover reattachable insulation purchase.  | 31/05/2019 | 18,600,000                               |
| 2018 | 5   | KOSPO | 신안현<br>SINANCHEON          | GT #8                                | 150      | GT NG Pre HTR FW Outlet Line     | #8 GT NG Pre HTR FW Outlet Line 성형보온재 구매<br>GT NG pre HTR FW outlet line molded insulation purchase.   | 13/12/2019 | 4,950,000                                |
| 2018 | 6   | KOSPO | 신안현<br>SINANCHEON          | HRSRG #6, 7                          | 150      | Yellow Flame Elimination System  | 기시예비저장실비 일체형 착탈식 단열장치 구매<br>Purchase of an all-in-one removable insulation.  | 29/05/2019 | 286,322,680                              |
| 2018 | 7   | KOSPO | 하동<br>HADONG               | 1plant #3                            | 500      | COP                              | Cross-Over Pipe 정비예비용 일체형 착탈식 단열장치 구매계약<br>Contract for production and purchase of main steam piping all-in-one reattachable insulation device.        | 02/05/2018 | 87,400,000                               |
| 2018 | 8   | KOSPO | 하동<br>HADONG               | 1plant #1                            | 500      | HRH                              | 하동 1호기 주증기배관 비프리건서부 일체형 착탈식 단열장치 제작 구매계약<br>Main Steam Piping reattachable insulation system.  | 17/04/2018 | 91,895,132                               |
| 2018 | 9   | KOSPO | 하동<br>HADONG               | 1plant #4                            | 500      | MS Line                          | 하동 4호기 주증기배관 착탈식 단열장치 제작구매 계약<br>Contract for production and purchase of main steam piping reattachable insulation system.                             | 28/02/2018 | 92,793,600                               |
| 2018 | 10  | KOEN  | 삼천포<br>SAMCHEONPO          | 1plant #3, 4                         | 560      | CW; TWS, Waste Water, Instrument | #3, 4 현상제어실비 착탈식 보온재 제작구매, 터빈제어부<br>Reattachable insulation device purchase.   | 05/06/2018 | 24,676,800                               |
| 2018 | 11  | KOEN  | 영흥<br>YEONGHEUNG           | 3plant #6                            | 870      | HRH                              | #6 터빈 고온 고압 배관 착탈식 보온재 설치조건부 구매<br>Purchase conditions for installation of turbine high temperature, high pressure pipe, removable thermal insulation. | 23/02/2018 | 133,456,000                              |



# 특허 및 인증 | Patents & Certifications

1. 특허권 (2009.07.10)

2. 특허권 (2009.08.05)

3. 특허권 (2010.09.17)

4. 특허권 (2014.05.20)

5. 특허권 (2014.07.30)

6. 특허권 (2016.03.09)

7. 특허권 (2016.11.30)

8. 특허권 (2018.02.23)

9. 우수제품지정증서 (2018.04.01)

10. (2018.10.29)

11. 특허권 (2016.12.29)

12. 특허권 (2017.09.29)

13. 특허권 (2017.04.11)

14. 특허권 (2018.01.18)

15. (2018.05.18)

16. (2018.05.01)

17. 특허권 (2018.08.10)

18. 특허권 (2018.05.14)

19. 특허권 (2018.06.14)

20. (2018.09.07)

21. CERTIFICATE (2019.10.01)

22. (2020.02.27)

23. 특허권 (2020.01.17)

24. (2020.07.27)

25. (2021.02.21)

26. 국제기술 인증서 (2021.05.20)

27. (2021.06.30)

28. (2021.10.27)

29. 혁신제품 지정 인증서 (2021.10.27)

30. (2022.02.02)

31. 국제기술제품 확인서 (2022.01.17)

32. (2022.01.18)

33. 중소기업 확인서 (2022.04.07)

- 01. 특허 - 밸브장치용커버
- 02. 특허 - 배관용 단열커버 및 그 시공방법
- 03. 특허 - 배관용 단열장치
- 04. 특허 - 압착결합구조의 마그네틱커버를 구비하는 배관용 단열장치
- 05. 특허 - 확장식 단열장치
- 06. 특허 - T형 배관용 단열재 보호커버
- 07. 특허 - 직관용 단열재 보호커버
- 08. 특허 - 밸브 유닛용 단열재 보호커버
- 09. 인증 - 조달우수제품지정
- 10. 특허 - 미국합각결합구조를 가지는 배관용 단열장치
- 11. 특허 - 단열성능이 강화된 배관용 단열장치
- 12. 특허 - 중국합각결합구조를 가지는 배관용 단열장치
- 13. 특허 - 배관가열커버
- 14. 특허 - 안전기능을 구비하는 배관용 단열장치
- 15. 특허 - 일본밸브유닛용 단열재 보호커버
- 16. 특허 - 미국밸브유닛용 단열재 보호커버
- 17. 특허 - 배관용 단열장치
- 18. 특허 - 밸브유닛용 단열장치
- 19. 특허 - 분기형 배관용 단열장치
- 20. 인증 - 신제품(NEP) 인증 연장
- 21. 인증 - 안전보건경영시스템 인증서
- 22. 인증 - 여성기업 인증 연장
- 23. 특허 - 저온배관용 단열장치
- 24. 인증 - 경일혁신형 중소기업(Main-Biz) 확인서
- 25. 인증 - 품질경영시스템(ISO9001)
- 26. 인증 - 녹색기술 인증서
- 27. 인증 - 수출입안전관리우수업체 등록
- 28. 인증 - 일본저온배관용 단열장치
- 29. 인증 - 혁신제품 지정 인증서
- 30. 인증 - 기술혁신형 중소기업(Inno-Biz) 확인서
- 31. 인증 - 녹색기술제품 확인서
- 32. 인증 - 벤처기업 확인서
- 33. 인증 - 중소기업 확인서

특허 Patents 국내 Domestic (15)  
 인증 Certifications 국외 Overseas (06) **20**건

실용신안 Utility Model **2**건  
 디자인 Design **7**건



# 주요납품실적 | Portfolio



REUSABLE ADVANCED PLANT INSULATION DEVICE

