



THIEN PHAT



QUACERT®  
BS EN 124-1994



QUACERT®  
ISO 9001:2008



JAS-ANZ  
JAS-ANZ

# DUCTILE IRON CASTING FOUNDRY

LOADING TEST MACHINE



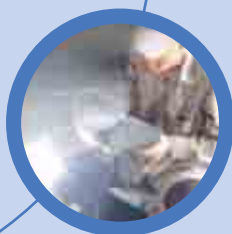
# THIEN PHAT COMPANY

[WWW.THIENPHAT.COM.VN](http://WWW.THIENPHAT.COM.VN)

# THIEN PHAT CO., LTD'S INTRODUCTION

www.thienphat.com.vn

ISO 9001:2008



Thien Phat Ductile Foundry located in Dai Dong - Hoan Son Industrial Zone, Tien Du District, Bac Ninh Province of Vietnam. It has been established according to The exporting to European Market Project with its main items of gully tops and manhole tops, covers and frames for communication, power projects...

The products produced by Thien Phat Co., Ltd with various models, sizes and design based high quality which have been confirmed and highly appreciated by European customers in UK., Italy, Germany, Spain...

The Ductile is the most durable among casting products thanks to its structure with round granular of spheroidal graphite cast iron. Its while-grey colour is similar with colour of gray cast iron product, but the small round granulars inside of its structure is different from one that make ductile products is more durable with high loading pressure, anti-abration, anti-clash, so that manhole tops and grating covers made from ductile are more better than from made from gray cast iron.

## DUCTILE PRODUCTION PROCESS IS STRICTLY CONTROLLED BY TECHNICAL STANDARD:

- ▶ All of raw materials must be taken samples/ specimen for metallic and chemical analyzing by laboratory to choose the good quality materials which meeting the requirement of technology.
- ▶ The technique of endothermic reaction, emancipate impurities from hot iron water is strictly and precisely controlled to create reactive circuit of spheroidal graphite cast iron.
- ▶ All of ductile products have been carefully checked composition, spherodal grade, loading, tensile strength upon delivery.

With a qualified and skilled leadership and management, Thien Phat Co., Ltd producing about 1,000MT ductile products monthly those 70% for exporting to European market and 30% supplying to Vietnam domestic market. The products made by Thien Phat Co., Ltd have also bearing the preeminent features: smooth surfaces, clear inscriptions, anti-thief lock-keys etc...

Thien Phat Co.,Ltd has produced and exported products in ductile cast iron material in FCD 500-7 and FCD 450-10 (high durability and quality cast iron) grade, designed according to ISO 1083:1987 standards as well as has supplied the ductile gully tops and manhole tops with the ranges of loading pressure 7.5MT; 12.5MT; 40MT; 60MT; 90MT; 120MT and other higher loadings.

The quality of products made by Thien Phat Co., Ltd and its Production Controlling System have been obtained The Certificates of Directorate for Standards Metrology, Quality (STAMEQ) and Vietnam Certification Centre (QUACERT) that conforms to Standards:

TCVN ISO 9001:2008 / ISO 9001:2008.

**The gully tops and manhole tops of Thien Phat are conforms to European Stand BS EN 124 and can bear Vietnam Quality Mark.**

TỔNG CỤC TIÊU CHUẨN  
ĐO LƯỜNG CHẤT LƯỢNG  
TRUNG TÂM CHỨNG NHẬN PHÙ HỢP  
**QUACERT**

DIRECTORATE FOR STANDARDS,  
METROLOGY AND QUALITY (STAMEQ)  
VIETNAM CERTIFICATION CENTRE  
**QUACERT**



# GIẤY CHỨNG NHẬN CERTIFICATE

No.: HT 1859/1.10.17

*Chứng nhận hệ thống quản lý chất lượng của:*  
*This is to certify that the Quality Management System of*

**CÔNG TY XUẤT NHẬP KHẨU THIÊN PHÁT (TNHH)**  
**THIEN PHAT IMPORT - EXPORT COMPANY LIMITED**

*Địa chỉ/ address:*

**Khu Công nghiệp Đại Đồng - Hoàn Sơn, huyện Tiên Du, tỉnh Bắc Ninh, Việt Nam**  
*Dai Dong - Hoan Son Industrial Zone, Tien Du District, Bac Ninh Province, Vietnam*

*cho lĩnh vực / for the following activities:*

**Thiết kế, Sản xuất và Cung ứng Sản phẩm gang cầu**  
*Design, Manufacture and Supply of Spheroidal Graphite Cast Iron (Ductile) Products*

*đã được đánh giá và phù hợp với các yêu cầu của tiêu chuẩn :*  
*has been assessed and found to conform with the requirements of the following standard*

**TCVN ISO 9001: 2008/ ISO 9001 : 2008**

*Giấy chứng nhận này có giá trị từ / This certificate is valid from :*

**04.11.2010 đến / to 01.4.2012**

Tổng cục TC-ĐL-CL  
TỔNG CỤC TRƯỞNG  
*(The Director General of STAMEQ)*

Hội đồng Chứng nhận  
CHỦ TỊCH  
*(The Chairman of the Certification Board)*

Trung tâm Chứng nhận QUACERT  
GIÁM ĐỐC  
*(The Director of QUACERT)*

*Ngô Quý Việt*

*Phạm Hồng*



*Nguyễn Nam Hải*



TỔNG CỤC TIÊU CHUẨN  
ĐO LƯỜNG CHẤT LƯỢNG  
TRUNG TÂM CHỨNG NHẬN PHÙ HỢP  
**QUACERT**



DIRECTORATE FOR STANDARDS,  
METROLOGY AND QUALITY (STAMEQ)  
VIETNAM CERTIFICATION CENTRE  
**QUACERT**

# GIẤY CHỨNG NHẬN CERTIFICATE

No.: SP 697.10.17

*Chứng nhận sản phẩm / This is to certify that:*

**Nắp cống thoát nước và Nắp bể bằng gang cầu**  
*Gully Tops and Manhole Tops made from Spheroidal Graphite Cast Iron (Ductile)*

NHÃN HIỆU THƯƠNG MẠI/TRADE MARK :



THIEN PHAT

Thien Phat Ductile

*được sản xuất tại / made in:*

**CÔNG TY XUẤT NHẬP KHẨU THIÊN PHÁT (TNHH)**  
**THIEN PHAT IMPORT - EXPORT COMPANY LIMITED**

**Khu Công nghiệp Đại Đồng - Hoàn Sơn, huyện Tiên Du, tỉnh Bắc Ninh, Việt Nam**  
*Dai Dong - Hoan Son Industrial Zone, Tien Du District, Bac Ninh Province, Vietnam*

*phù hợp với tiêu chuẩn / conforms to the standard:*

**BS EN 124 : 1994**

**VÀ ĐƯỢC PHÉP SỬ DỤNG DẤU CHẤT LƯỢNG VIỆT NAM**  
*and can bear Vietnam Quality Mark*

*Giấy chứng nhận này và Dấu chất lượng có giá trị từ / this certificate and the use of Quality Mark is valid from:*

**04.11.2010 đến /to 01.4.2012**

Tổng cục TC-ĐL-CL  
TỔNG CỤC TRƯỞNG  
(The Director General of STAMEQ)

Hội đồng Chứng nhận  
CHỦ TỊCH  
(The Chairman of the Certification Board)

Trung tâm Chứng nhận QUACERT  
GIÁM ĐỐC  
(The Director of QUACERT)

*Ngô Quý Việt*

*Phạm Hồng*



*Nguyễn Nam Hải*

KT3-3494CK0/5

# PHIẾU KẾT QUẢ THỬ NGHIỆM

## TEST REPORT



MẪU 5

## 8. Kết quả thử nghiệm

Tên chỉ tiêu	Kết quả thử nghiệm
<b><u>THỬ TẢI</u></b>	
8.1. Kích thước nắp mẫu thử, mm	740 x 740
8.2. Đường kính tâm lót, mm	250
8.3. Tải trọng thử, kN (kgf)	600 (61 160)
8.4. Thời gian duy trì, min	1
8.5. Kết quả thử nghiệm,	Không hỏng



**TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 3**  
**QUALITY ASSURANCE & TESTING CENTER 3**

Head Office: 49 Pasteur, Q1, Hồ Chí Minh City, VIỆT NAM  
 Testing: 7 Road 1, Biên Hòa 1 Industrial Zone, Đồng Nai

Tel: (84-8) 3829 4274  
 Tel: (84-61) 383 6212

Fax: (84-8) 3829 3012  
 Fax: (84-61) 383 6298

www.quatest3.com.vn  
 qt-dichvutn@quatest3.com.vn

KT3-3197CK9/2

# PHIẾU KẾT QUẢ THỬ NGHIỆM

## TEST REPORT

02/07/2009

Trang 02/04



### KHUNG VUÔNG CHÂN RẮC

#### 7. Kết quả thử nghiệm

Tên chỉ tiêu	Kết quả thử nghiệm
<b>A. THỬ TẢI</b>	
7.1. Khối lượng, kg	40,0
• Nắp hồ ga	
7.2. Kích thước nắp hồ ga, mm	500 x 500 x 30
7.3. Đường kính tấm lót, mm	250
7.4. Tải trọng phá huỷ, kN	746
	76 050
7.5. Tình trạng mẫu sau khi thử	Xem hình



### TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 3

#### QUALITY ASSURANCE & TESTING CENTER 3

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 Testing: 7 Road 1, Bến Hòa Industrial Zone, Đồng Nai

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M03.2 - FTTN09

01/17 (05/2008)



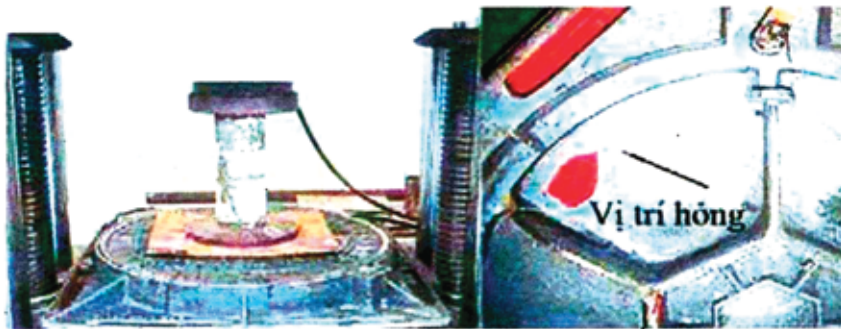
KT3-2148CK9

# PHIẾU KẾT QUẢ THỬ NGHIỆM

## TEST REPORT

05/08/2009

Trang 02/02



### 8. Kết quả thử nghiệm

Tên chỉ tiêu	Kết quả thử nghiệm
<b>A. THỬ TẢI</b>	
7.1. Đường kính nắp hố ga. mm	Ø 640
7.2. Đường kính tấm lót. mm	Ø 250 x 20
7.3. Tải trọng thử. kN	400
kgf	40 800
7.4. Thời gian duy trì. s	30
7.5. Tình trạng mẫu sau khi thử.	Không hỏng
<b>B. THỬ PHÁ HỦY (*)</b>	
7.6. Lực phá hủy. kN	479
kgf	48 800
7.7. Vị trí hỏng.	Xem hình

Ghi chú : (\*) Theo yêu cầu khách hàng.

### 9. Chứng kiến khi thử nghiệm:

DDTV - CDM	DDNCC - CTY THIÊN PHÁT	DDNT - TỔNG CTY XD SỐ 1
P.V. HOÀNG	BÙI THỊ NGỌC LAN	NGUYỄN HUY TUẤN



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M03/2 - TTTN09

BH7 (05/2008)

## LIST OF WORKS HAVE BEEN USING THIEN PHAT'S PRODUCTS

NO.	CUSTOMERS	ADDRESS	WORKS	LOADING CAPACITY
01	TAH U Company	Taiwan	Taipei Highway, Kaoshiung, Taiwan	40 tons 120 tons
02	EXC Group	UK.	A15 Highway, England	40 tons 60 tons
03	Mario C.P Group	Italia	The General Agency of suppling for renovating and upgrading electricity system, telecommunicaion system projects in Italia, French, Portugal	40 tons 60 tons 90 tons
04	Fundicion	Spain	General Agency for supplying for wharf constructions.	90 tons
05	Sahlder Company	German	Drainage Projects in German and Eastern European.	40 tons
06	TECHNIP Company	Quang Ngai Vietnam	Dung Quat oil Refinery – Quang Ngai	40 tons 60 tons
07	Construction Corporations No.1 – The Joint Venture Construction VIC – Ho Chi Minh City Brand	Ho Chi Minh City	Ho Chi Minh City environment sanitation project in Nhieu Loc Thi Nghe valley	40 tons
08	3T&D Co., LTD	Ho Chi Minh City	Tan Son Nhat Airport Project	60 tons 90 tons
09	Petroleum Industrial and Civil Construction Joint Stock Company	Ba Ria-Vung Tau, Viet Nam	“Constructing new building base and repairing oil gigs package No.110” project	12,5 tons 40 tons
10	Hanoi Sewerage and Drainage Co., Ltd	Hanoi, Vietnam	Renewing manholes surrounds Hoan Kiem lake, Old towns, Linh Nam, Pham Hung street project	30 tons 60 tons
11	Engineering and Construction Joint Stock Company No.9 (COMA 9)	Ho Chi Minh City, Vietnam	Projects in New City, New Urban of Binh Duong.	10 tons
12	Corporation Investment and Construction No.5 Joint Stock Company – Ha Thanh Trading and Construction Joint Stock Company – Hanoi Telecommunication Construction Joint Stock Company	Hanoi, Vietnam	Telecommunication Covers for the Projects “ Manhole an Telecommunication Covers Construction Projects” in Hue street, Trang Thi, Hang Khay, Hoang Quoc Viet, Cau Giay, Ton Duc Thang – Cat Linh, Quan Thanh, Nguyen Son, Ngoc Lam, Le Van Luong street,...	12,5 tons 25 tons 40 tons
13	Branch of No.4 Investment & Construction Joint Stock Company – Licogi	Hanoi	Ecopark Urban – Van Giang, Hung Yen, Vietnam	12,5 tons 25 tons 40 tons
14	HARBIN Power engineering Company Limited	Cam Pha, Quang Ninh	Cam Pha Thermal Power Plant project is complished - Cam Pha, Quang Ninh.	1,5 tons 25 tons
15	Hong Long Construction Co., Ltd	Ba Ria-Vung Tau	Saigon International port (SITV) project in Phu My 1 Industrial Zone	60 tons 90 tons
16	TeaHung Vietnam Co., LTD	Ba Ria-Vung Tau	Cai Mep Port Project	60 tons 90 tons

**And many other projects...**



## PLACES OF INSTALATION AND LOADINGS

The appropriate class of manhole cover or gully grate to be used depends on the place of installation.

- The various places of installation have been divided into groups numbered 1 to 6.
- A guide as to which class of manhole top or gully top should be used is shown in parenthesis for each group.
- The selection of the appropriate class is the responsibility of the designer. Where there is any doubt the stronger class should be selected.

### GROUP 1 (CLASS A15) ▶▶▶

Areas which can only be used by pedestrians and pedal cyclists.



### GROUP 2 (CLASS B125) ▶▶▶

Footways, pedestrian areas and comparable areas, car parks or car parking decks.



### GROUP 3 (CLASS C250) ▶▶▶

For gully tops installed in the area of kerbside channels of roads which when measured from the kerb edge extend a maximum of 0.5m into the carriageway and a maximum of 0.2m into the footway.



### GROUP 4 (CLASS D400) ▶▶▶

Carriageway of roads (including pedestrian streets), hard shoulders and parking areas for all types of road vehicles.



### GROUP 5 (CLASS E600) ▶▶▶

Areas imposing high wheel loads eg. docks and aircraft pavements.



### GROUP 6 (CLASS F900) ▶▶▶

Areas imposing particularly high wheel loads eg. aircraft pavements.



### QUALIFIED DUCTILE IRON PRODUCTS MUST HAVE THESE SIGNS:

- ▶ Producer name on the products
- ▶ Loading class marking
- ▶ Date of production

FOUNDRY'S PRODUCTION PHOTOS



Pattern Production Dept



Making Moulds by Sand Technique



Casting Workshop



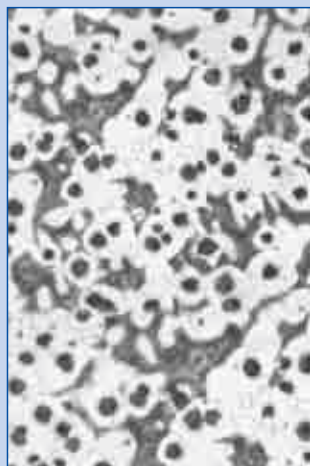
Telecommunication Cover Warehouse



Product warehouse



## FOUNDRY'S PRODUCTION PHOTOS



Ductile iron Micro – structure



Grey cast iron Micro – structure



Microscope for ductile micro – structure checking



Tensile Strength Test



Inter – Frequency – Electro Furnace



Automatic Moulding Machine

EXPORTING ITEMS



TP-XK-01



TP-XK-02



TP-XK-03



TP-XK-04



TP-XK-05



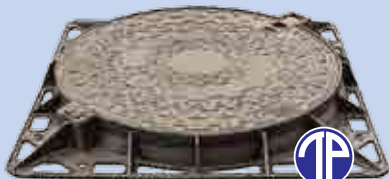
TP-XK-06



TP-XK-07



TP-XK-08



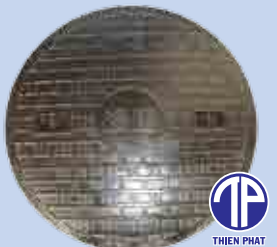
TP-XK-09



TP-XK-10



TP-XK-11



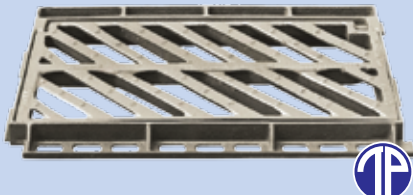
TP-XK-12



TP-XK-13



TP-XK-14



TP-XK-15



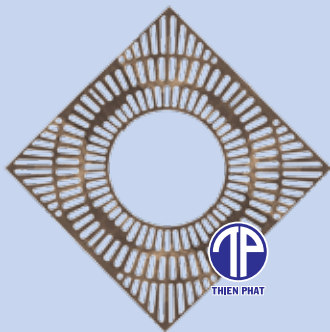
TP-XK-16



TP-XK-18



TP-XK-17



TP-XK-19



TP-XK-20



TP-XK-21



TP-XK-22



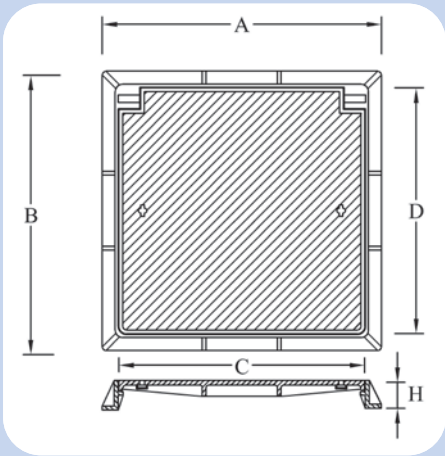
SQUARE MANHOLE SETS

Item TP-NV 01



No.	Frame's Size (A x B)	Cover's Size (Cx D)	Heights (H)	Loading Capacity
01	400x400	370x370	45	B125
02	450x450	420x420	60	C250
03	600x600	570x570	75	D400
04	700x700	640x640	75	E600

DETAILED DRAWING



Item TP-NV 02



No.	Frame's Size (A x B)	Cover's Size (Cx D)	Heights (H)	Loading Capacity
01	750x750	660x660	45	B125; C250
02	830x735	700x605	45-70	B125; C250; D400
03	978x978	900x900	70	C250
04	850x850	740x740	70	E600, F900

Item TP-NV 03



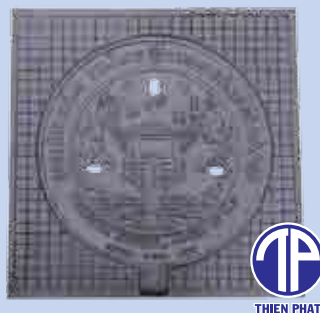
No.	Frame's Size (A x B)	Cover's Size (Cx D)	Heights (H)	Loading Capacity
01	960x960	764x764	45	B125; C250
02	960x960	764x764	70; 100	D400; E600; F900

PRODUCT NOTES

- ▶ The products are made according to European Standard EN124 of ductile material grade 500-7, which can bear the loading pressure from 12.5 – 90 tons, covers with thickness of 5 - 10mm.
- ▶ Cover's surface are designed with marked patterns, textures according to customers' request.
- ▶ The set of square frame and cover is suitable for construction of **square, concrete supporting structure (clear opening - CO)**. The clear opening's size must be smaller than the external frame's size (bearing pressure area) at least 2 - 3cm. The edge of frame is rested on the supporting structure part so that the set is positioned and taken form of firm cast – iron – concrete layer.
- ▶ Hinges and anti-theft locks (if any) are placed in the same direction with vehicles.
- ▶ Thien Phat is able to design and produce items according to customers' requests.

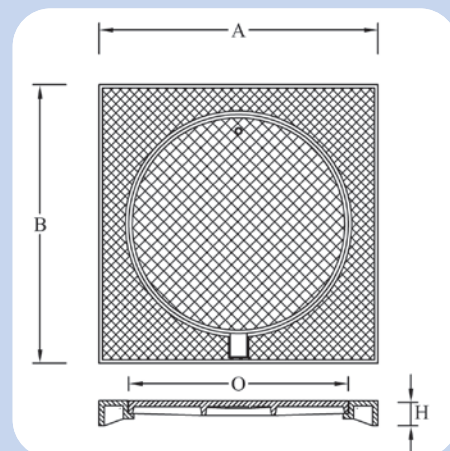
# CIRCULAR COVER & SQUARE FRAME MANHOLE FLAT SETS

Item TP-KDNT 01



No.	Frame's Size (A x B)	Cover's Size (O)	Heights (H)	Loading Capacity
01	800x800	Ø 630	45	B125; C250
02	800x800	Ø 630	70	D400
03	800x800	Ø 630	100	E600; F900

DETAILED DRAWING



Item TP-KDNT 02



No.	Frame's Size (A x B)	Cover's Size (O)	Heights (H)	Loading Capacity
01	900x900	Ø 650	45	B125; C250
02	890x890	Ø 650	45-60	B125; C250
03	900x900	Ø 650	70-100	D400; E600; F900

Item TP-KDNT 03



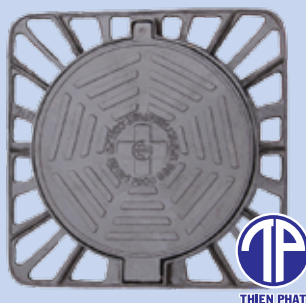
No.	Frame's Size (A x B)	Cover's Size (O)	Heights (H)	Loading Capacity
01	960x960	Ø 630	45-75	B125; C250; D400
02	1050x1050	Ø 650	75	D400

## PRODUCT NOTES

- ▶ The products are made according to European Standard EN124 of ductile material grade 500-7, which can bear the loading pressure from 12.5 – 90 tons, covers with thickness of 5 - 10mm.
- ▶ Cover's surface are designed with marked patterns, textures according to customers' request.
- ▶ The flat manhole set of circular cover and square frame is suitable for construction of **square concrete supporting structure (clear opening - CO)**. The clear opening's size must be smaller than the external frame's size (bearing pressure area) at least 2 - 3cm. The edge of frame is rested on the supporting structure part and stayed fit inside the concrete area to bear the pressure.
- ▶ Hinges and anti-theft locks (if any) are placed in the same direction with vehicles.
- ▶ Thien Phat is able to design and produce items according to customers' requests.

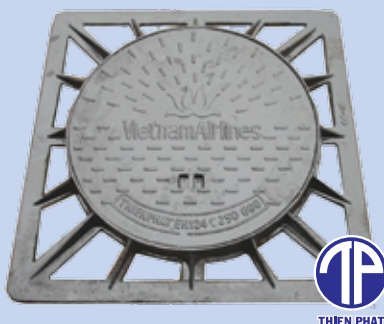
# UPPER CIRCULAR COVER & SQUARE FRAME MANHOLE SETS

Item TP-KANT 01



No.	Frame's Size (A x B)	Cover's Size (O)	Heights (H)	Loading Capacity
01	850x850	Ø 650	75	B125; C250; D400
02	850x850	Ø 650	100	E600; F900

Item TP-KANT 02



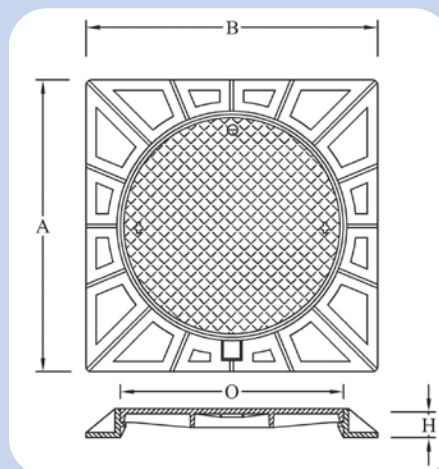
No.	Frame's Size (A x B)	Cover's Size (O)	Heights (H)	Loading Capacity
01	900x900	Ø 650	75	B125; C250; D400
02	900x900	Ø 650	100	E600; F900

Item TP-KANT 03



No.	Frame's Size (A x B)	Cover's Size (O)	Heights (H)	Loading Capacity
01	1000x1000	Ø 750	70-100	B125; C250; D400; E600; F900
02	1120x1120	Ø 940	75-80-100	B125; C250; D400; E600; F900

## DETAILED DRAWING



## PRODUCT NOTES

- ▶ The products are made according to European Standard EN124 of ductile material grade 500-7, which can bear the loading pressure from 12.5 – 90 tons, covers with thickness of 5 - 10mm.
- ▶ Cover's surface are designed with marked patterns, textures according to customers' request
- ▶ The set of upper circular cover and square frame is suitable for construction of **circular concrete supporting structure (clear opening - CO)**. The clear opening's size must be smaller than the external frame's size (bearing pressure area) at least 2 - 3cm. The edge of frame is rested on the supporting structure part so that the set is positioned and taken form of firm cast – iron – concrete layer.
- ▶ Hinges and anti-theft locks (if any) are placed in the same direction with vehicles.
- ▶ **Thien Phat is able to design and produce items according to customers' requests.**

# CIRCULAR COVER & FRAME MANHOLE SETS

Item TP-NT 01



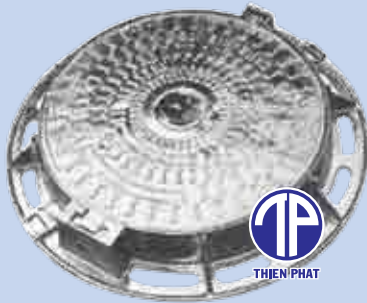
No.	Frame's Size (C)	Cover's Size (O)	Heights (H)	Loading Capacity
01	Ø 660	Ø 600	35	B125
02	Ø 750	Ø 600	50	B125; C250
03	Ø 845	Ø 630	100	D400

Item TP-NT 02



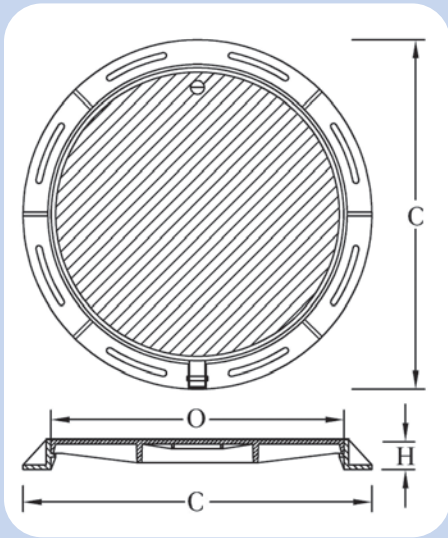
No.	Frame's Size (C)	Cover's Size (O)	Heights (H)	Loading Capacity
01	Ø 850	Ø 630	75	B125
02	Ø 850	Ø 650	75	C250; D400
03	Ø 850	Ø 650	100	E600; F900

Item TP-NT 03



No.	Frame's Size (C)	Cover's Size (O)	Heights (H)	Loading Capacity
01	Ø 1000	Ø 630	45-90	B125; C250; D400; E600; F900

DETAILED DRAWING



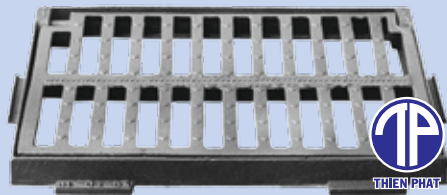
## PRODUCT NOTES

- ▶ The products are made according to European Standard EN124 of ductile material grade 500-7, which can bear the loading pressure from 12.5 – 90 tons, covers with thickness of 5 - 10mm.
- ▶ Cover's surface are designed with marked patterns, textures according to customers' request.
- ▶ The set of circular cover and frame is suitable for construction of **circular concrete supporting structure (clear opening – CO)**. The clear opening's size must be smaller than the frame's size (bearing pressure area) at least 2 - 3cm. The edge of frame is rested on the supporting structure part so that the set is positioned and taken form of firm cast – iron – concrete layer.
- ▶ Hinges and anti-theft locks (if any) are placed in the same direction with vehicles.
- ▶ Thien Phat is able to design and produce items according to customers' requests.



# GRATING SETS (WITH HINGES)

Item TP-CR 01



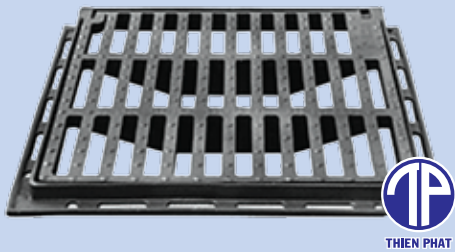
No.	Frame's Size (A x B)	Cover's Size (C)	Heights (H)	Loading Capacity
01	570x355	520x330	40	B125
02	570x420	500x350	40	C250

Item TP-CR 02



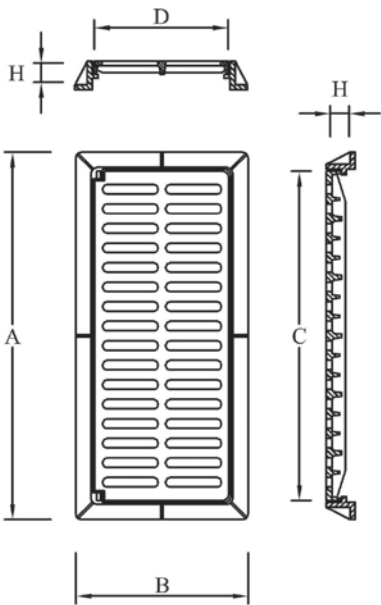
No.	Frame's Size (A x B)	Cover's Size (Cx D)	Heights (H)	Loading Capacity
01	900x470	860x430	50-70-100	B125; C250; D400; E600; F900
02	960x530	860x430	50-70-100	B125; C250; D400; E600; F900
03	1074x544	860x430	80-100	B125; C250; D400; E600; F900

Item TP-CR 03



No.	Frame's Size (A x B)	Cover's Size (Cx D)	Heights (H)	Loading Capacity
01	770x770	700x700	50-70	B125; C250; D400; E600; F900
02	870x870	800x800	50-70	B125; C250; D400; E600; F900

## DETAILED DRAWING



## PRODUCT NOTES

- ▶ The products are made according to European Standard EN124 of ductile material grade 500-7, which can bear the loading pressure from 12.5 – 90 tons, covers with thickness of 5 - 10mm.
- ▶ Covers' surface are designed with anti-slippery patterns.
- ▶ The grating set is suitable for construction of square, rectangular concrete supporting structure. The clear opening's size must be smaller than the frame's size (bearing pressure area) at least 2 - 3cm. The edge of frame is rested on the supporting structure part so that the set is positioned and taken form of firm cast – iron – concrete layer.
- ▶ Thien Phat is able to design and produce items according to customers' requests.

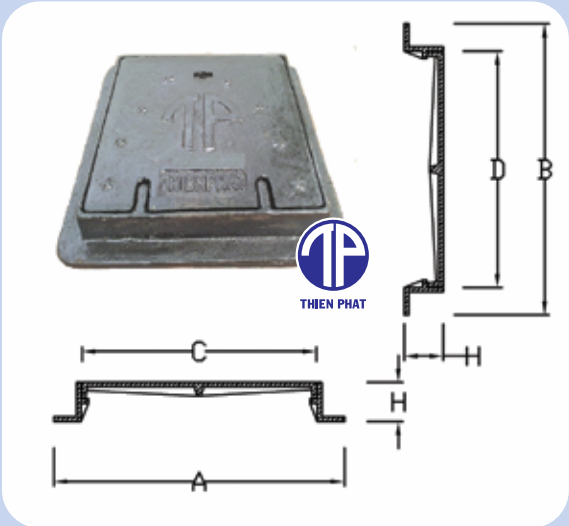
ELECTRICITY CABLE COVER SETS,  
TELECOMMUNICATION CABLE COVER SETS

CABLE COVER SETS

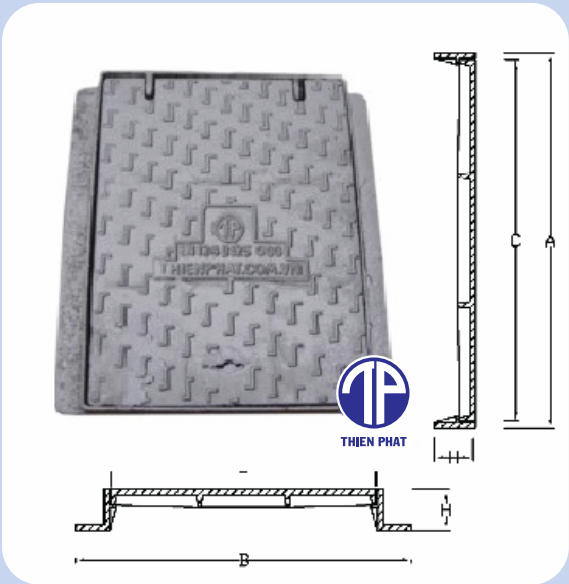
SPECIFICATIONS

Targets	Unit	Test Result
Frame's external size (A x B x H)	mm	330x330x43 630x570x65
Frame's internal size (C x D)	mm	260x260 605x450
Cover's Biggest Opening Angle	Degree	110
Maxium Loading Capacity (unbroken)	Ton	40
Tensile Strength $\sigma_b$	MPa	654
Elongation $\delta$	%	7.1
Yield Strength $\sigma$	MPa	533
Brinell Scale	HB	212

CABLE COVER SET 330X330



CABLE COVER SET 630X570



▶ CHARACTERISTICS ◀

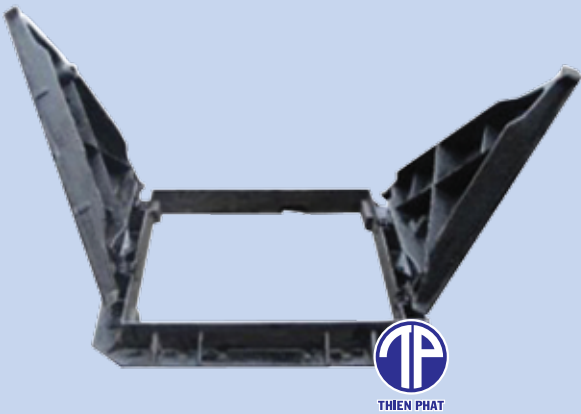
- ▶ The products are made according to European Standard EN124 of ductile material grade 500-7, which can bear loading pressure from 12.5 – 40 tons, covers with thickness of 5 – 10mm.
- ▶ The cable cover is designed with anti-theft hinges and able to be extended to work inside.
- ▶ The product set is suitable for construction of square, rectangular concrete supporting structure (clear opening – CO). The clear opening's size must be smaller than the frame's size (bearing pressure area) at least 2 - 3cm. The edge of frame is rested on the supporting structure part so that the set is positioned and taken form of firm cast – iron – concrete layer.

# ELECTRICITY CABLE COVER SETS, TELECOMMUNICATION CABLE COVER SETS

## DOUBLE CABLE COVER SETS (FOR SIDEWALKS)

### SPECIFICATIONS

Targets	Unit	Test Result
Frame's external size (A x B x H)	mm	945x872x80
Frame's internal size (C x D)	mm	800x700
Lid's Biggest Opening angle	Degree	125
Cover's lock safe angle	Degree	105
Lid's lift force	daN	29
Maxium Loading Capacity (ubroken)	Ton	12,5
Tensile Strength $\sigma_b$	MPa	654
Elongation $\delta$	%	7,3
Yield Strength $\sigma$	MPa	533
Brinell Scale	HB	212



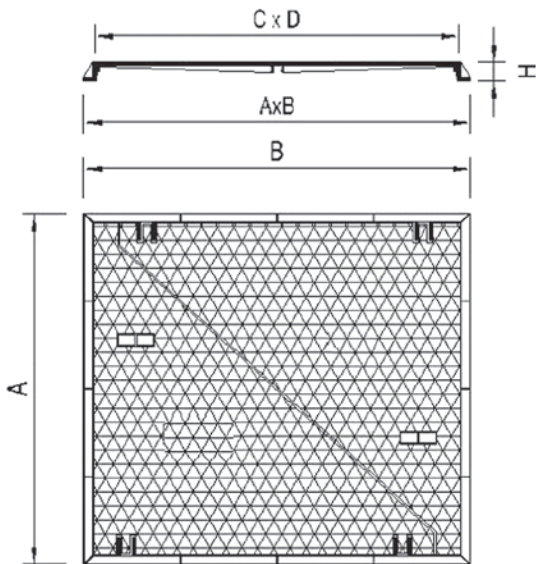
### CHARACTERISTICS

- ▶ Easily open the wings towards two opposite sides. Covers will self-brake in order not to fall down while working inside.
- ▶ When closed, covers will be lock together and completely locked by the special designed locks and keys for anti-theft.

### NOTES

- ▶ The edge of frame is rested on the supporting structure part so that the set is positioned and taken form of firm cast – iron – concrete layer.
- ▶ Wings must be placed in right position, evenly and locked after work finished.

### DETAILED DRAWING

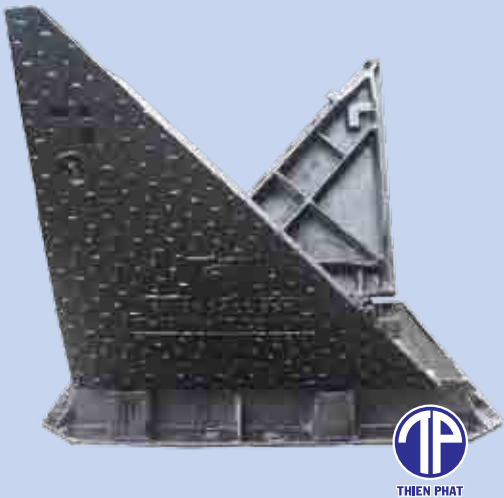
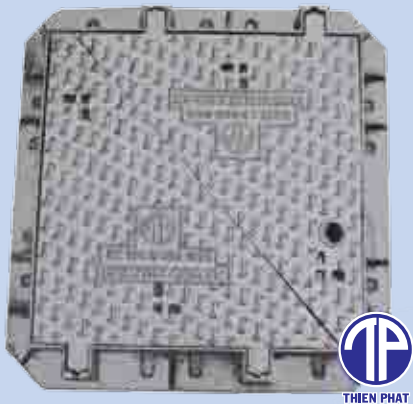


ELECTRICITY CABLE COVER SETS,  
TELECOMMUNICATION CABLE COVER SETS

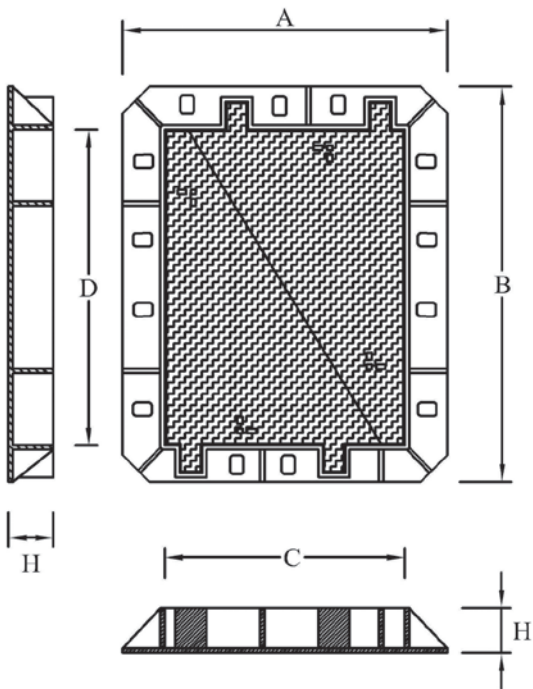
DOUBLE CABLE COVER SETS (FOR ROADS)

SPECIFICATIONS

Targets	Unit	Test Result
Frame's external size (A x B x H)	mm	910x950x100
Frame's internal size (C x D)	mm	750x750
Lid's Biggest Opening angle	Degree	125
Cover's lock safe angle	Degree	105
Lid's lift force	daN	29
Maxium Loading Capacity (ubroken)	Ton	40
Tensile Strength $\sigma_b$	MPa	654
Elongation $\delta$	%	7,2
Yield Strength $\sigma$	MPa	533
Brinell Scale	HB	212



DETAILED DRAWING



CHARACTERISTICS

- ▶ Easily open the wings towards two opposite sides. Covers will self-brake in order not to fall down while working inside.
- ▶ When closed, covers will be lock together and completely locked by the special designed locks and keys for anti-theft.

KEYS

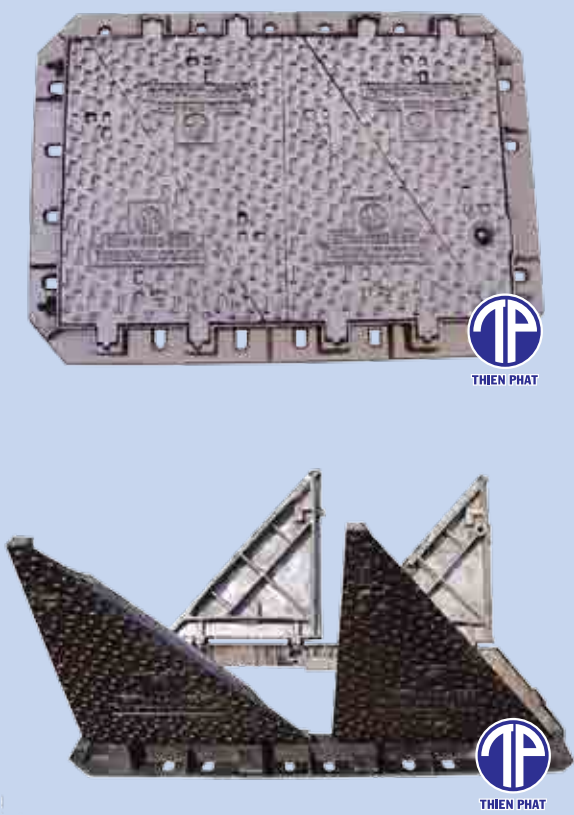




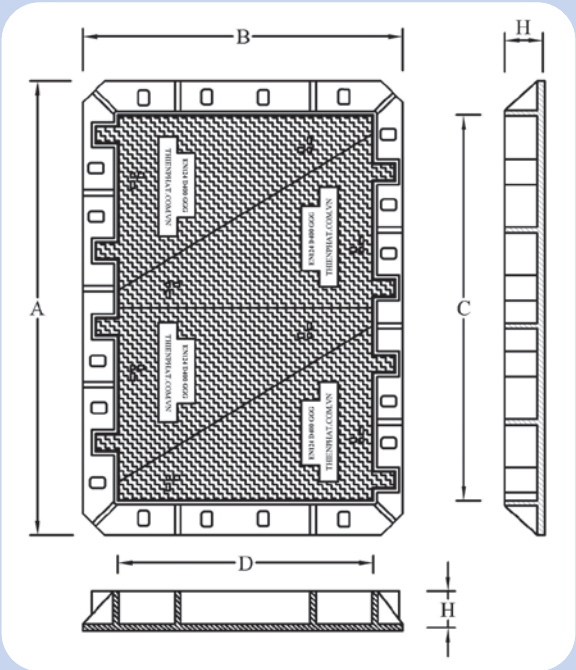
FOUR-WINGED CABLE COVER SETS (FOR SIDEWALKS)

SPECIFICATIONS

Targets	Unit	Test Result
Frame's external size (A x B x H)	mm	1255x884x80
Frame's internal size (C x D)	mm	1060x700
Lid's Biggest Opening angle	Degree	125
Cover's lock safe angle	Degree	105
Lid's lift force	daN	30
Maxium Loading Capacity (ubroken)	Ton	12,5
Tensile Strength $\sigma_b$	MPa	654
Elongation $\delta$	%	7,2
Yield Strength $\sigma$	MPa	533
Brinell Scale	HB	207



DETAILED DRAWING



CHARACTERISTICS

- ▶ Easily open four wings towards two opposite sides. Covers will self-brake in order not to fall down while working inside.
- ▶ When closed, covers will be lock together and completely locked by the special designed locks and keys for anti-theft.

NOTES

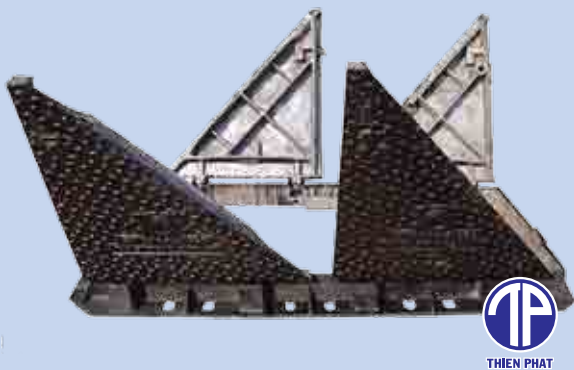
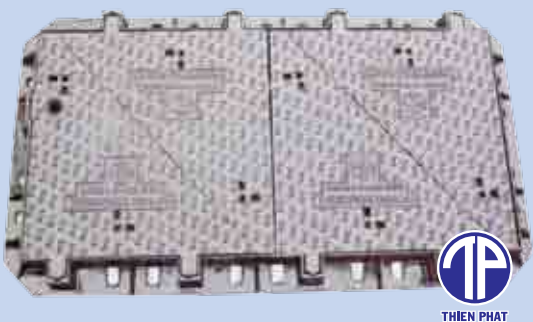
- ▶ The edge of frame is rested on the supporting structure part so that the set is positioned and taken form of firm cast – iron – concrete layer.
- ▶ Wings must be placed in right position, evenly and locked after work finished.

ELECTRICITY CABLE COVER SETS,  
TELECOMMUNICATION CABLE COVER SETS

FOUR-WINGED CABLE COVER SETS (FOR ROADS)

SPECIFICATIONS

Targets	Unit	Test Result
Frame's external size (A x B x H)	mm	1660x950x100
Frame's internal size (C x D)	mm	1500x750
Lid's Biggest Opening angle	Degree	125
Cover's lock safe angle	Degree	105
Lid's lift force	daN	30
Maxium Loading Capacity (ubroken)	Ton	40
Tensile Strength $\sigma_b$	MPa	654
Elongation $\delta$	%	7,1
Yield Strength $\sigma$	MPa	533
Brinell Scale	HB	207



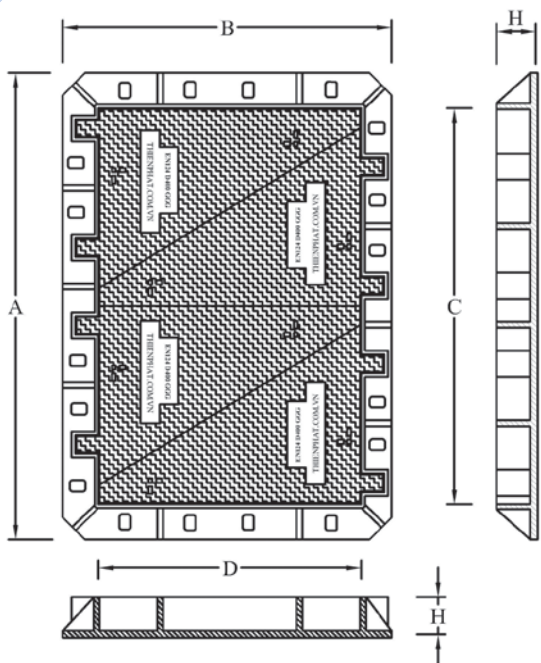
CHARACTERISTICS

- Easily open four wings towards two opposite sides. Covers will self-brake in order not to fall down while working inside.
- When closed, covers will be lock together and completely locked by the special designed locks and keys for anti-theft.

NOTES

- The edge of frame is rested on the supporting structure part so that the set is positioned and taken form of firm cast – iron – concrete layer.
- Wings must be placed in right position, evenly and locked after work finished.

DETAILED DRAWING

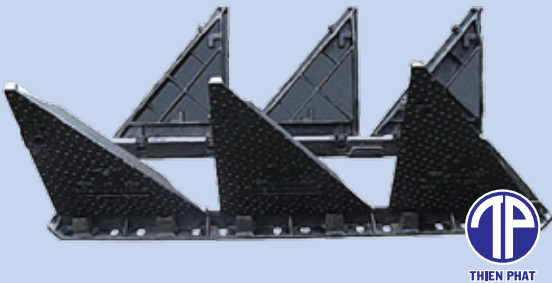
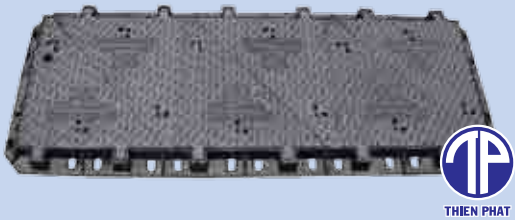


ELECTRICITY CABLE COVER SETS,  
TELECOMMUNICATION CABLE COVER SETS

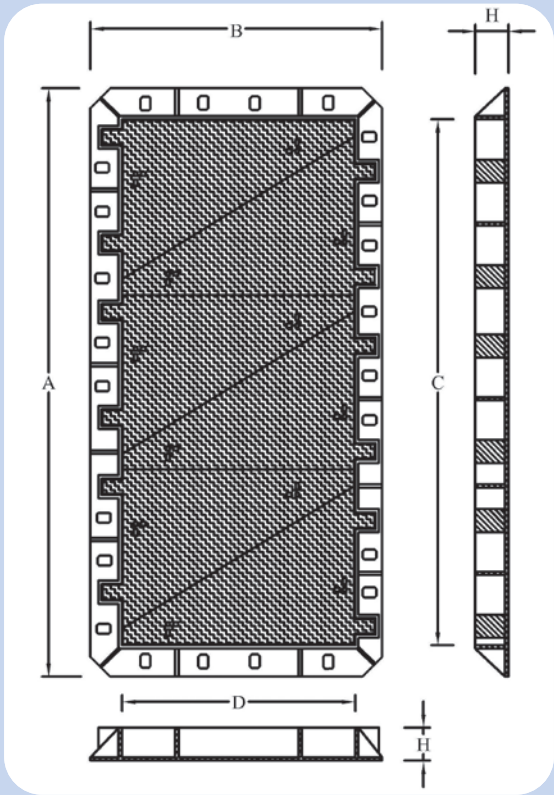
SIX-WINGED CABLE COVER SETS

SPECIFICATIONS

Targets	Unit	Test Result
Frame's external size (A x B x H)	mm	2415x950x100
Frame's internal size (C x D)	mm	2250x750
Lid's Biggest Opening angle	Degree	129
Cover's lock safe angle	Degree	105
Lid's lift force	daN	29
Maxium Loading Capacity (ubroken)	Ton	40
Tensile Strength $\sigma b$	MPa	654
Elongation $\delta$	%	7,2
Yield Strength $\sigma$	MPa	533
Brinell Scale	HB	208



DETAILED DRAWING



CHARACTERISTICS

- ▶ Easily open six wings towards two opposite sides. Covers will self-brake in order not to fall down while working inside.
- ▶ When closed, covers will be lock together and completely locked by the special designed locks and keys for anti-theft.

NOTES:

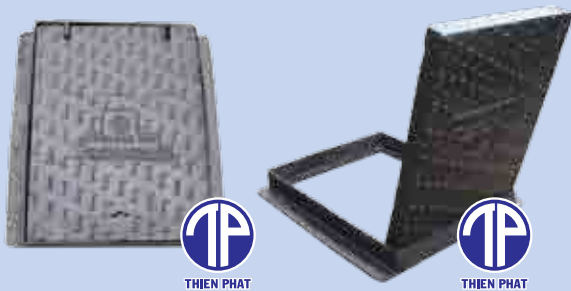
- ▶ The edge of frame is rested on the supporting structure part so that the set is positioned and taken form of firm cast – iron – concrete layer.
- ▶ Wings must be placed in right position, evenly and locked after work finished.

TELECOMMUNICATION CABLE COVER PRODUCTS

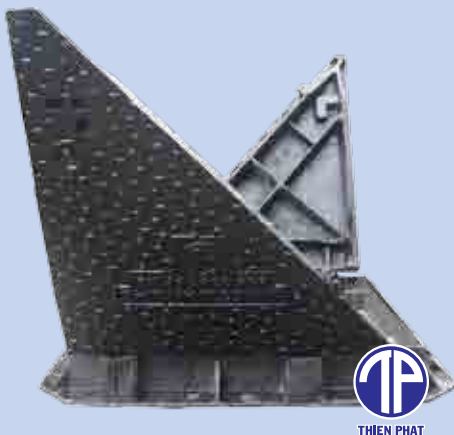
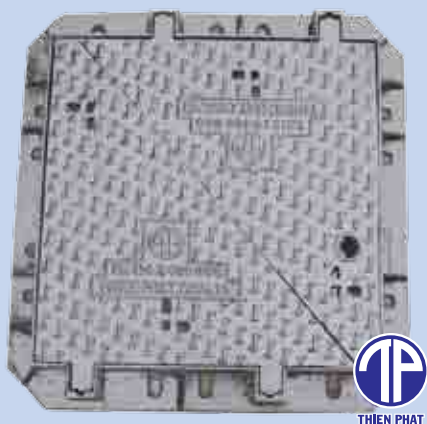
CABLE COVER SET 330X330



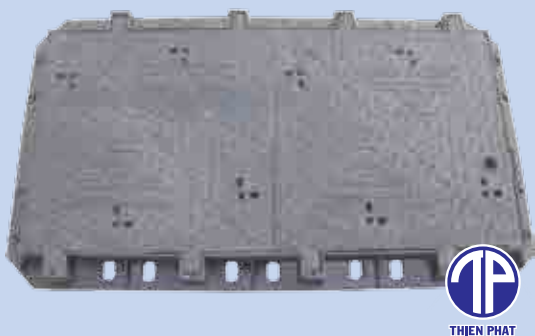
CABLE COVER SET 630X570



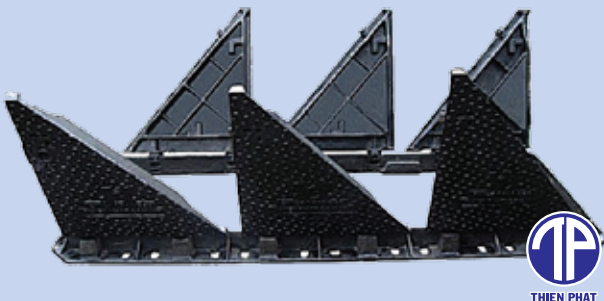
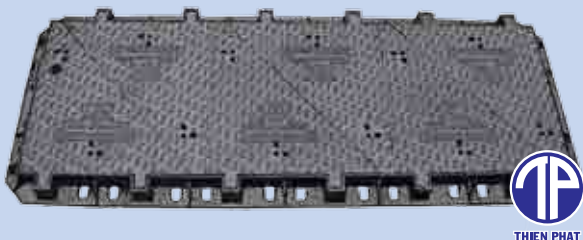
DOUBLE CABLE COVER SETS FOR SIDEWALKS AND ROADS



FOUR-WINGED CABLE COVER SETS FOR SIDEWALKS AND ROADS



SIX-WINGED CABLE COVER SETS FOR SIDEWALKS AND ROADS

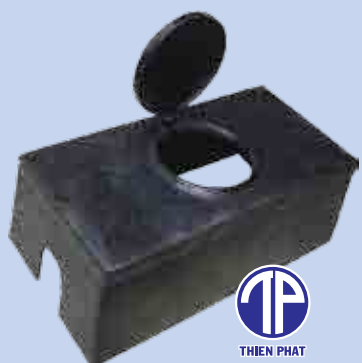




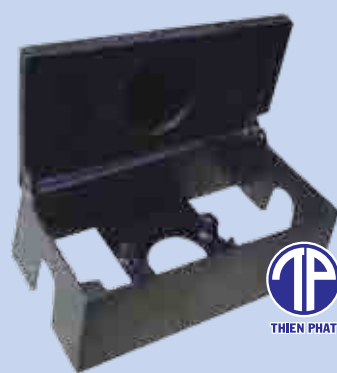
# SURFACE BOXES



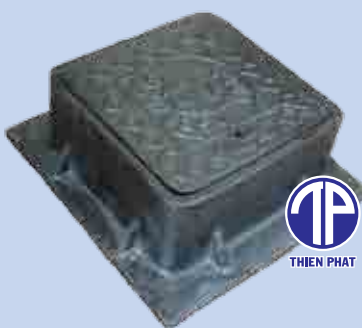
TP-HV-01



TP-HV-02



TP-HV-02



TP-HV-05



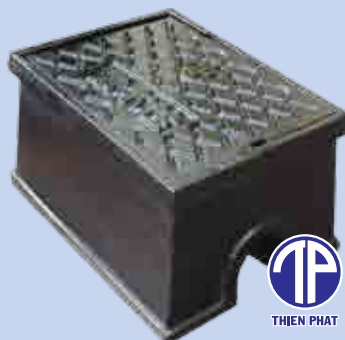
TP-HV-06



TP-HV-08



TP-HV-03



TP-HV-04

# PRODUCT USED INDOOR (HOTELS, KITCHENS, RESTROOMS)



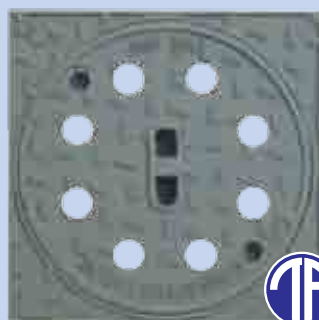
TP-NM-01



TP-NM-02



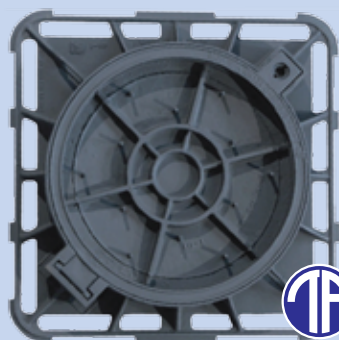
TP-NM-05



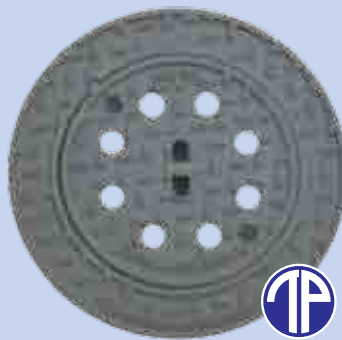
TP-TS-03



TP-TS-05



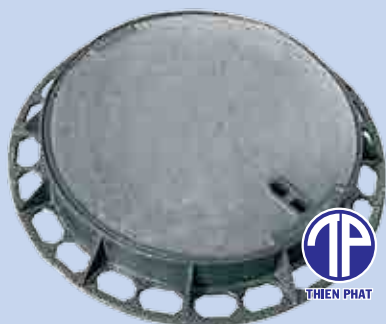
TP-NM-04



TP-TS-06



TP-TS-04



TP-NM-03



TP-TS-01



TP-TS-02

OTHER PRODUCTS



TP-GC-11



TP-GC-02



TP-GC-07



TP-GC-01



TP-GC-03



TP-GC-12



TP-GC-08



TP-GC-04



TP-GC-05



TP-GC-06





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