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頭條報道 *Headline*

Electrical Cable Performance to Withstand Fire

Dr FC Chan

1. Introduction

The purpose of this article is to enhance the understanding of electrical cables and its capability to withstand fire. There are no cables that can be 100% fire resistant or fire retardant because cable can only withstand fire up to a certain temperature (as beyond such threshold temperature, the cable will melt) under a prescribed condition. In the case of a fire disaster, it is essential to reduce the hazards contributed from electrical cables. These cables should therefore, in various applications and stipulated requirements be provided with fire resistance, flame retardant, low smoke and toxic gas as well as zero halogen gases emissions.

Hence fire resistant cable sheaths are designed to resist combustion and limit the propagation of flames. Low smokes cables are also designed to have a sheath to limit the amount of smoke and toxic halogen gases emitted out during fire situations.

The feature of fire resistant cables is to continue to function while under the influence of fire. Fire resistant cable aims to provide circuit integrity even when being burned. These cables should also maintain the required circuit integrity even after the fire has been extinguished, including to withstand a water spray and mechanical shock.

The feature of flame retardant cables is to retard or slow down the progress of fire spreading out

along the cable; basically it is to resist the spread of fire into a new area by inhibiting combustion. This is achieved through the use of materials that do not readily burn and will tend to self-extinguish. Flame retardant materials (Bromine, phosphorus, nitrogen and chlorine) are used to prevent ignition by increasing the threshold required to start a fire; to reduce the spread of fire, heat generated; and to delay flashover. Delaying the flashover can reduce the rate and intensity of burning, thus allowing more time for people to escape from the fire area and minimize the damages as far as possible.

From the above fire withstand capabilities, cables can be named with the following characteristics:

- Flame Retardant cables are designed for use in fire situations where the spread of fire/flames along a cable route needs to be retarded;
- Fire Resistant cables are designed to maintain circuit integrity of those vital emergency services during the fire;
- Low Smoke and Fume cables burn with little smoke and fumes compared to standard PVC (Fumes may contain halogens.); and
- Low Smoke Zero Halogen cables burn with little smoke and fumes; these fumes contain no halogens

2. Cable Manufacturing

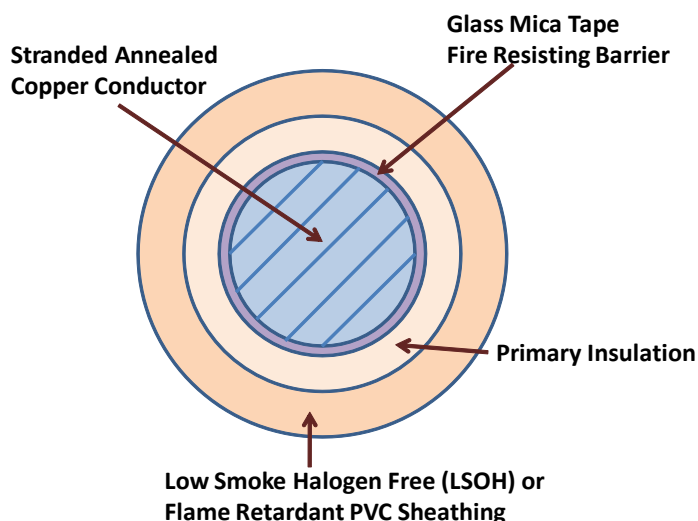


Figure 1 Cross-sectional view of a Cable

Electrical Cable Performance to Withstand Fire

Figure 1 is a cross-sectional view of a typical cable section. The inner portion is the copper conductor which can be single-core or multi-core constructions. To fulfill the function to resist and retard fire, the glass mica tape is the element as the fire resisting barrier helping to maintain the circuit integrity during fire. The primary insulation is the insulating materials from PVC to XLPE. The outer sheathing is for flame retardant purpose. The cables may be armoured or braided, with or without metallic screened depending on their specific application.

The choice of material and the production integrity determine the characteristics and quality of the manufactured cables. Quality assurance system including for examples, quality planning and process monitoring and control are essential to ensure the cables quality, durability and reliability. All manufacturing equipment and tools are inspected, calibrated and tested before cables production. All workers in the production process are fully understood the assembly process, quality requirement and safety procedures. When manual and automated tests are carried out, complete traceable documents are to be made available. The final products should be tested and passed a set of prescribed requirements before delivery.

3. Specifications and Standards

In designing the electrical cables for the applications in the facilities, it is essential to specify the required standards in terms of design, manufacture and test. Typically, the major standards adopted are:

(a) Fire Resistance Standards for maintaining circuit integrity

Basically, these standards set the requirements to be fulfilled in 3 fire tests: namely fire resistance, fire and water resistance, fire and mechanical shocks resistance.

BS 6387:2013, Test method for resistance to fire of cables required to maintain circuit integrity under fire conditions

BS 7846:2015, Electric Cables. Thermosetting insulated, armoured, fire-resistant cables of rated voltage 600/1000V for fixed installations, having low emission of smoke and corrosive gases when affected by fire.

IEC 60331, Test for electrical cables under fire conditions for circuit integrity.

(b) Flame Retardant Standards

Basically, these standards set the requirements to be fulfilled in fire and flame propagation test. IEC 60332-1-1:2004+AMD1:2015, Tests on electric and optical fibre cables under fire conditions: Test for vertical flame propagation for a single insulated wire or cable - Apparatus IEC 60332-1-1:2004+AMD1:2015, Tests on electric and optical fibre cables under fire conditions: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1kW pre-mixed flame IEC 60332-3-24:2000+AMD1:2008, Tests on electric and optical fibre cables under fire conditions: Test for vertical flame spread of vertically mounted bunched wires or cables – Category C

(c) Smoke Emission Standards

Basically, this standard sets the requirements to be fulfilled: IEC 61034-2:2005+AMD1:2013, Measurement of smoke density of cables burning under defined conditions: Test procedure and requirements

(d) Acid Gas Emission Standards

Basically, these standards set the requirements to be fulfilled in the following tests: IEC 60754-1:2011 or BS EN 60754-1:2014, Test on gases evolved during combustion of materials from cables: Determination of the halogen acid gas content IEC 60754-2:2011 BS EN 60754-2:2014, Test on gases evolved during combustion of materials from cables: Determination of acidity (by pH measurement and conductivity)

It should be noted that above tests are carried out by the manufacturer on samples of completed cable, or components taken from a completed cable, at a predetermined frequency to verify that the finished product meets the design specification. Such tests are normally carried out by an accredited laboratory. As described in the Standards, if the test sample fails to conform to the specified requirements, two further samples shall be prepared and tested and both shall conform to this requirement. Hence, 3 samples of a completed cable are typically prepared for the tests.

In Hong Kong, the "Code of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment" (The revision in April 2012) issued by the Fire Services Department demands cables to meet BS6387 standards to CWZ requirements (Refer

to Table 1). These cables are generally used to maintain the integrity power supplies for (e.g. cables from emergency generator to main switchboard) lighting system, fire alarm and sprinkler systems.

Requirements	Symbol
Resistance to fire alone 950°C for 3 hours	C
Resistance to fire with water	W
Resistance to fire mechanical shock 950°C	Z

Table 1. Categories of Resistance to Fire under BS6387

British Standard BS6387 covers the performance requirements and test methods for cables required to maintain circuit integrity under fire conditions. This standard has been developed to assist installation designers with their assessment of the fire performance characteristics of various types of cables and their selection for specific applications. In particular, it covers the cables' ability to maintain circuit integrity against a set of time and temperature parameters. Such requirements include resistance to fire, resistance to fire with water and resistance to fire with mechanical shock as shown in the table 1.

In Hong Kong, CWZ requirements are adopted hence the performance to meet the highest temperature of 950°C is demanded. Under test conditions, these fire resistant cables have to maintain power supply in a fire for three hours at 950°C when being placed in a 20 millimetre outside diameter stainless steel conduit during fire resistance testing.

4. Testing Process of Electrical Cables

In order to upkeep the functionality of electrical cables, the testing process basically is a life cycle process, from design, manufacturing, pre-installation, commissioning to maintenance. For example, the insulation capability of electrical cables would require the type test from manufacturer to prove its insulation withstand. After installation, pressure test (voltage withstand) is required before putting into commissioning. If the electrical cables are being disconnected and reconnected, additional pressure test is also required before putting back to the system.

For the case of fire withstand capability, the testing process is mainly based on the tests associated with the manufacturing because it is not possible to carry

out any fire resistance test at site to the required standard. Type test certificates from manufacturer are the required proof for compliance with the specification. These cable type test certificates are then submitted to Fire Services Department for approval to use for that cable type. Such Fire Services Department's approval letter is essential before placing order to that cable type.

For the facilities demanding critical electrical cable performance to withstand fire, it will depend on the basic design requirement in dealing with the risk associated. It may demand clients/consultants/contractors to take active witnessing role on samples of manufactured cable going through Factory Acceptance Tests (FAT) as given in British Standard BS6387. This approach will be adopted particularly on large scale public project, like transportation facilities.

5. Conclusion

This article has examined the fire withstand properties of electrical cables and their related Specifications and Standards on fire resistance, flame retardant and emission tests. These fire withstand tests of electrical cables are fundamentally different from their electrical properties tests (Insulation, conducting, continuity). Type test certificates from manufacturer are sufficient proof for compliance with the specification to obtain Fire Services Department's approval. Site testing of electrical cables will concentrate on the system functionality to ensure the electrical circuits are properly installed and safe in operation.

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搵食資料 *Notes To Trade*

香港房屋委員會 招標公告

香港房屋委員會招標公告可在以下網頁查看：
<http://www.housingauthority.gov.hk/en/business-partnerships/tenders/>

HKECA | HKECA | HKECA | HKECA | HKECA | HKECA

商會與你 *ECA Cares*

熱烈祝賀本會成員，榮獲香港特別行政區為2017年政府委任及頒授名單：

1. 會長：于健安先生 - 獲委任為太平紳士
 2. 副會長：陳福祥博士工程師 - 獲頒授銅紫荊星章
- 在此表彰他們對香港作出的貢獻，並嘉許他們努力不懈、致力服務社群。本會恭賀兩位獲得上述殊榮。

HKECA | HKECA | HKECA | HKECA | HKECA | HKECA

恭賀金碧電器

Congratulations to Grandeur Electrical Company Limited

本會恭賀**金碧電器**中標於觀塘彩福邨第三期公共租住房屋發展項目和體育館建築工程的電力裝置工程，並祝順利如期完成。

On Behalf of Hong Kong Electrical Contractors' Association, we would like to convey our congratulations to **Grandeur Electrical Company Limited** for the Electrical Installation for Construction of Public Rental Housing Development of Choi Fook Estate Phase 3 and Sports Centre, Kwun Tong (Sub-contract to Contract No. 20160228).

商會活動 Organised Activities

上海廠商參觀

Visit to Shanghai Manufacturers

上海廠商參觀於2017年5月10日至12日(星期三至星期五)舉行。共參觀了三間廠商，包括：Belden Kunshan Experience Centre、Chint Solar 及 Siemens。

Visits to 3 Shanghai Manufacturers were held during 10 to 12 May 2017 (Wed to Fri). Factories visited : Belden Kunshan Experience Centre, Chint Solar and Siemens.



NAMI技術成果展示週2017

NAMI Showcase 2017

由納米及先進材料發院有限公司邀請本會於2017年6月8日(星期四)在香港科學園中庭長廊參觀NAMI技術成果展示週2017。因應能源市場需求，發展以下能源技術：動力電池 - 快速充電電池、高密度電池、安全電池及電池管理、智能裝置 - 能源與傳感裝置及光電裝置及智能組件 - 節能和熱能管理技術。

NAMI Showcase 2017 was held on 8 June 2017 (Thur) at Atrium Link, Hong Kong Science Park, Shatin. The Energy Sector focuses on the following technologies to meet the ongoing and future needs of the market: Power Battery - Fast Charge Battery, High Energy Density Battery, Safe Battery and Battery Management, Smart Device - Energy & Sensing Device and Optoelectronic Device and Smart Component - Energy Saving and Thermal Management Technologies.



經驗交流論壇電力(線路)規例工作守則 2015年版研討會

Experience Sharing Sessions on Code of Practice 2015 Edition Seminar

由港九電器工程電業器材職工會、屋宇設備運行及維修行政人員學會和本會協辦的經驗交流論壇電力(線路)規例工作守則2015年版研討會，於2017年6月28日(星期三)在九龍尖沙咀香港科學館演講廳舉行；及2017年8月8日(星期二)在香港銅鑼灣香港中央圖書館演講廳舉行。

Experience Sharing Sessions on Code of Practice 2015 Edition Seminar with HK & Kowloon Electrical Engineering & Appliance Trade Workers Union and Building Services Operation and Maintenance Executives Society was held on 28 June 2017 (Wed) at Hong Kong Science Museum, TST, Kowloon and 8 August 2017 (Tue) at Hong Kong Central Library, Causeway Bay, Hong Kong.



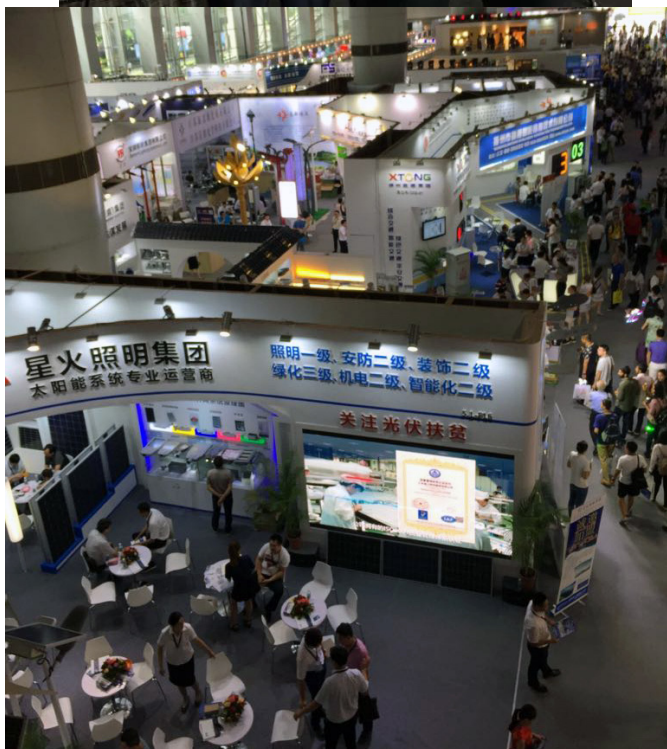
商會活動 Organised Activities

廣州國際照明展覽會

Guangzhou Electrical Building Technology

廣州國際照明展覽會於2017年6月9日至12日（星期五至星期一）在廣州中國進出口商品交易會展館舉行。展商及觀眾透過一連串同期舉行的高端論壇會議及同業交流活動，探討最新照明技術及設計新思維，拓展合作機會。

Guangzhou Electrical Building Technology was held on 9 to 12 June 2017 (Fri to Mon) at China Import and Export Fair Complex, Guangzhou, China. Through a series of concurrent seminar & networking events presenting cutting-edge lighting technology, inspired lighting design ideas and market intelligence.



建造業議會魯班先師義工服務日暨建造業義工計劃動禮

CIC Lo Pan Volunteer Service Day cum Launching Ceremony of Construction Industry Volunteering Programme

建造業議會魯班先師義工服務日暨建造業義工計劃啟動禮於2017年7月9日（星期日）於建造業議會零碳天地舉行。議會的其中一個工作是要團結業界，令建造業可以持續發展。希望透過各位義工會員，再號召更多建築界的朋友參加，讓這項饒富意義的工作年復年，如魯班先師寶誕一樣延續下去。CIC Lo Pan Volunteer Service Day cum Launching Ceremony of Construction Industry Volunteering Programme was held on 9 July 2017 (Sun) at CIC Zero Carbon Building, Kowloon Bay, Kowloon.



2017年永遠會長方宏浩盃羽毛球賽 2017 Badminton Competition – The Life President Martin Fong Cup

2017年永遠會長方宏浩盃羽毛球賽於2017年8月2、4及9日在香港專業教育學院沙田分校舉行。經過3日激烈的比賽，本年度羽毛球精英已順利誕生。在此多謝永遠會長方宏浩先生的慷慨支持。

The 2017 Life President Martin Fong Cup Badminton Competition was held on 02, 04 and 09 August 2017 at IVE Sha Tin, NT. Once again we would like to extend our sincere thanks to our Life President Mr Martin Fong for his generous support to the competition.



商會活動 Organised Activities

2017年永遠會長方宏浩盃羽毛球賽 2017 Badminton Competition – The Life President Martin Fong Cup

女子單打 Women's Single		
獎項	參賽者	代表機構
冠軍	關琬穎	中電工程有限公司
亞軍	何佩賢	榮港電器有限公司
季軍	朱佩絃	豐盛創建機電工程集團有限公司



女子雙打 Women's Doubles			
獎項	參賽者		代表機構
冠軍	陸凱恩	張慧瑜	喜利得(香港)有限公司
亞軍	郭敏婷	林咏	喜利得(香港)有限公司
季軍	黃煥琴	萬月娥	輝越科技有限公司



男子單打 Men's Single		
獎項	參賽者	代表機構
冠軍	陸智釗	保誠工程服務有限公司
亞軍	歐健煒	安樂機電設備工程有限公司
季軍	吳凌峰	喜利得(香港)有限公司



男子雙打 Men's Doubles			
獎項	參賽者		代表機構
冠軍	區健煒	林誠哲	安樂機電設備工程有限公司
亞軍	邱子燁	陳豔傑	MK電器(中國)有限公司
季軍	康劍	黃院城	PIZZA LIGHT LIMITED



男女子混合雙打 Mixed Doubles

獎項	參賽者		代表機構
冠軍	林誠哲	曾品	安樂機電設備工程有限公司
亞軍	林咏	何少雄	喜利得(香港)有限公司
季軍	葉皓銘	關琬穎	中電工程有限公司



即將舉辦之活動 Upcoming Activities

三會舉行中華人民共和國成立68周年聯歡晚會 The 68th PRC Anniversary Celebration Dinner

港九電業總會、香港電器業進出口商會及本會，將於2017年9月22日（星期五）在旺角彌敦道612號好望角大廈旺角倫敦大酒樓舉行中華人民共和國成立68周年聯歡晚會。歡迎各會員參加。

The 68th PRC Anniversary Celebration Dinner jointly organized by "Hong Kong & Kowloon Electric Trade Association", "Hong Kong E.P.M. Importers and Exporters Association Ltd." and HKECA will be held on 22 September 2017 (Fri) at London Restaurant, Good Hope Building, 612 Nathan Road, Mong Kok, Kowloon. All members are welcome to join.

2017年電氣系統綜合證書課程 Joint Comprehensive Certificate Course on Electrical Systems in Smart City 2017

由屋宇設備運行及維修行政人員學會、英國屋宇裝備工程師學會香港分會、香港工程師學會和本會協辦的2017年電氣系統綜合證書課程將於2017年9月26日至11月15日，合共12堂課程，在九龍九龍塘香港生產力促進局生產力大樓舉行。

Joint Comprehensive Certificate Course on Electrical Systems in Smart City 2017 with BSOMES, CIBSE and HKIE will be held during 26 September to 15 November 2017 (a total of 12 sessions) at Hong Kong Productivity Council, 78 Tat Chee Avenue, Kowloon Tong, Kowloon.

2017年度亞洲太平洋電氣工事協會聯合會會議 FAPECA 2017 Conference

亞洲太平洋電氣工事協會聯合會2017會議將於2017年10月10日至13日（星期二至星期五）在馬來西亞舉行。

The Federation of Asian and Pacific Electrical Contractors Associations (FAPECA) Meeting and Conference for 2017 will be held from 10 to 13 October 2017 (Tue to Fri) at Malaysia.

義跑義行「義」017 Run & Walk for Volunteering 2017

本會將參加由義務工作發展局(義工局)AVS舉辦之義跑義行「義」017，義工局期望能籌得港幣80萬元，以推動義務工作發展。誠邀各本會員支持及參與。活動日期是2017年10月22日(星期日)，起步時間是上午11時30分。該路程約3.5公里由數碼港商場出發，經數碼港海濱長廊及數碼港道，最後回數碼港商場。參加費用為每位HK\$150.00。

HKECA will join Run & Walk for Volunteering 2017 organized by the Agency for Volunteer Service (AVS) on 22 Oct 2017 (Sunday) at 11:30am. The route will be from Cyberport Arcade, passing through Cyberport Waterfront Park, Cyberport Road then back to The Arcade. The fee for participation is HK\$150 per person.

參觀香港電燈南丫島發電廠 Lamma Power Station Visit

由香港電燈邀請參觀南丫發電廠將於2017年10月25日(星期三)舉行，歡迎各會員參加。

Lamma Power Station Visit will be held on 25 October 2017 (Wed). All members are welcome to join.

2017電力規例研討會及傑出註冊電業工程人員 選舉2017年度頒獎典禮 2017 Electricity Regulations Technical Seminar & REW Awards Scheme

由機電工程署主辦，港九電器工程電業器材職工會和本會協辦的電力規例研討會及傑出註冊電業工程人員選舉2017年度頒獎典禮將於2017年11月7日(星期二)在九龍荃灣大會堂演奏廳舉行。歡迎各會員參加。

Technical Seminar on "Electricity Regulations" co-organized & REW Awards Scheme with EMSD and the HK & Kowloon Electrical Engineering & Appliance Trade Workers Union will be held on 7 November 2017 (Tue) at Tsuen Wan Town Hall. All members are welcome to join.

2017年會員週年大會 2017 Annual General Meeting Dinner

2017年會員週年大會，定於2017年11月10日(星期五)在香港九龍九龍灣展貿徑一號九龍灣國際展貿中心6樓展貿廳3舉行。

2017 Annual General Meeting Dinner will be held on 10 November 2017 (Fri) at Maximum Capacity of Rotunda 3, 6/F, Kowloon Bay International Trade & Exhibition Centre, 1 Trademart Drive, Kowloon Bay, Kowloon.

上海國際電力2017 EP Shanghai 2017

國內電力行業中規模最大、最具影響力的品牌電力展—國際電力展(EP)，始於1986年，由中國電力企業聯合會及雅式展覽服務有限公司主辦，是國內唯一獲得UFI國際認證之專業電力展，每年輪流於北京、上海舉辦。承蒙業界人士及海內外參展商多年來的大力支持，2017年「第十一屆上海國際電力設備及技術展覽會」暨「第十屆上海國際電工裝備展覽會」將移師浦東新國博中心，以更大展迎接新高峰。展會定於2017年11月20日至22日(星期一至三)，在中國·上海新國際博覽中心(E1-E5)館盛大舉行。展會面積達50000平方米，預計吸引來自中外900家參展商/品牌。

EP Shanghai 2017

Established in 1986, EP Shanghai is organized by the most authoritative organization, China Electricity Council, and fully supported by all major Power Group Corporations and Power Grid Corporations. 30 years successful track record and experience, it has become the largest and the most reputable electric power exhibition endorsed by UFI Approved Event in China and has been widely recognized by global market leaders and international trade associations. EP Shanghai 2017 will be moved to Shanghai New International Expo Centre, PR China (Hall E1-E5) and the exhibition scale will be substantially increased. The show will be held from 20-22 November 2017 (Mon to Wed) with over 50000 sqm exhibiting area, which expecting for a total of about 900 exhibitors/brands all over the world.

<https://www.epchinashow.com/EP17/Home/lang-trad/Information.aspx>

機電安全健步嘉年華2017 E&M Safety Walk and Carnival Fair 2017

機電安全健步嘉年華2017，今年的活動定於2017年12月10日(星期日) 在天水圍花田韓式燒烤場舉行，此活動乃是連續第十五年由本會香港機電工程商聯會與香港機電業工會聯合會合作舉辦機電安全推廣計劃之項目。活動當天，節目非常豐富，有山徑步行、健身操、機電安全話劇、問答遊戲及親子活動等，值以宣傳安全信息，中午更有自助燒烤，是一個老少咸宜的家庭同樂日，既可以郊外步行增進身心健康，又有遊戲獎品助慶。這是機電行業界每年舉辦安全推廣活動之一，歡迎各會員參加。

The E&M Safety Walk and Carnival Fair for this year will be held on 10 December 2017 (Sun) at Floraland BBQ, Tin Shui Wai. The programme includes morning drill exercise, hiking, safety quiz and various games and lucky draws. Lunch will be provided in BBQ style. All members are welcome to join.

會員動態 *Members' News*



香港電器工程商會 05/2017 - 08/2017年度新會員名單			
入會日期	申請會員名稱	會籍	代表人
Joining Date	Applicant Name	Membership Types	Representative
06/2017	迪比卡科技有限公司 DBK Technology Limited	普通會員 Ordinary Member	余耀光先生 Mr. Steve Yu
06/2017	宏發電聲(香港)有限公司 Hongfa Electroacoustic (Hong Kong) Co Ltd	永遠會員 Life Member	蕭志英先生 Mr. Tom Siu
07/2017	炬軒工程顧問(亞洲)有限公司 Living Tech (Asia) Limited	普通會員 Ordinary Member	龐嘉恩先生 Mr. Pong, Ka Yan Kevin
07/2017	主光工程有限公司 Lordray Engineering Co Ltd	普通會員 Ordinary Member	冚國標先生 Mr. Lip, Samuel Kwok Piu

高球專線 *Golfers Link*

香港電器工程商會會長盃高爾夫球賽 HKECA President Cup Golf Competition



香港電器工程商會會長盃高爾夫球賽 HKECA President Cup Golf Competition

香港電器工程商會會長盃高爾夫球賽，已於2017年6月23至24日(星期五至六)在獅子湖高爾夫球會舉行，在此多謝會長的慷慨贊助，隊員的支持和參與，令比賽能順利完成。

HKECA President Cup Golf Competition was held on 23 to 24 June 2017 (Fri to Sat) at Lion Lake Country Club, Qingyuan, China. We would like to express our appreciation to President for the kind sponsorship and the keen participation of team members and guests.



香港電器工程商會會長盃高爾夫球賽 HKECA President Cup Golf Competition

23-24 Jun 2017 2017年6月23-24日
Lion Lake Country Club 獅子湖高爾夫球會

Champion	Mr. Hong Kim	冠軍	康劍先生
1st Runner Up	Mr. Yip Wing Ho	亞軍	葉穎豪先生
2nd Runner Up	Mr. Wong Wing Yiu	季軍	黃榮耀先生
Best Gross	Mr. Hong Kim	最低杆	康劍先生
Best Front Nine	Mr. Chan Ka Yau Simon	最佳前九	陳家有先生
Best Back Nine	Mr. Kwan Wai Yuen	最佳後九	關偉元先生
Longest Drive Hole No A8	Mr. Wong Wing Yiu	最遠發球獎:第A8洞	黃榮耀先生
Longest Drive Hole No C3	Mr. Yip Wing Ho	最遠發球獎:第C3洞	葉穎豪先生
Close to Pin Hole No A6	Mr. Wong Ka Lai	最近洞獎:第A6洞	王家禮先生
Close to Pin Hole No A9	Mr. Tang Wing Ho, Sam	最近洞獎:第A9洞	鄧永豪先生
Close to Pin Hole No C4	Mr. Chung Ting Hoi	最近洞獎:第C4洞	鍾定海先生
Close to Pin Hole No C7	Mr. Au Chi Wai	最近洞獎:第C7洞	歐志偉先生
Guest Winner	Mr. Kwong Wing Fai	嘉賓組冠軍	鄺榮輝先生

HKECA | HKECA | HKECA | HKECA | HKECA | HKECA

NEXANS盃高爾夫球賽 NEXANS Cup Golf Competition

NEXANS Cup高爾夫球賽，已於2017年8月11日(星期五)在觀瀾高爾夫球會 - 艾斯場舉行，在此多謝協通電線有限公司的慷慨贊助，隊員的支持和參與，令比賽能順利完成。

NEXANS Cup Golf Competition was held on 11 August 2017 (Fri) at Mission Hill Golf Club - Els Course. We would like to express our appreciation to Hip Tung Cables Company Limited for the kind sponsorship and the keen participation of team members and guests.



NEXANS盃高爾夫球賽

NEXANS Cup Golf Competition

11 Aug 2017 2017年8月11日
Mission Hill Golf Club 觀瀾高爾夫球會

Champion	Mr. Lin Chun Wah, Calvin	冠軍	連俊華先生
1st Runner Up	Mr. Kwong Ka Sum	亞軍	鄭加森先生
2nd Runner Up	Mr. Au Chi Wai	季軍	歐志偉先生
Best Front Nine	Mr. Fung Chun Pong Wilson	最佳前九	馮鎮邦先生
Best Back Nine	Mr. Siu Kwok Chuan, David	最佳後九	蕭國全先生
Longest Drive Hole No 4	Mr. Lee Kwok Tai	最遠發球獎:第4洞	李國泰先生
Longest Drive Hole No 13	Mr. Chow Kam Fai Daniel	最遠發球獎:第13洞	周鑑輝先生
Close to Pin Hole No 3	Mr. Chow Kay Yui	最近洞獎:第3洞	周祈銳先生
Close to Pin Hole No 5	Mr. Au Chi Wai	最近洞獎:第5洞	歐志偉先生
Close to Pin Hole No 15	Mr. Au Chi Wai	最近洞獎:第15洞	歐志偉先生
Close to Pin Hole No 17	Mr. Chong Daniel	最近洞獎:第17洞	莊國明先生
Guest Winner	Mr. Devin	嘉賓組冠軍	Mr. Devin





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金碧電器
Grandeur Electrical Co. Limited

CELEBRATE THE POWER OF AWARDS

Grandeur Electrical Co. Limited (金碧電器) has been awarded for the the Electrical Installation for Construction of Public Rental Housing Development of Choi Fook Estate Phase 3 and Sports Centre, Kwun Tong (Sub-contract to Contract No. 20160228)

Over the years, Grandeur Electrical Co. Limited has honored the top performer in the industry. We master the art of engineering with an engineering philosophy that lies in our core values.

