



富美家® 火立克®⁺
FRguard®⁺

FIRE RETARDANT ANTIMICROBIAL GRADE PANELS BY FORMICA GROUP

BS 476-4
Non-Combustible

富美家®火立克®+ FRguard®+

FIRE RETARDANT ANTIMICROBIAL GRADE PANELS BY FORMICA GROUP

富美家®火立克®+是一種由特殊材料組成的裝飾美耐板，本產品具有優異的耐燃性能且不易膨脹，能減緩燃燒和火焰擴散；結合美耐板產品使用特性，兼具耐熱、防水、耐磨、耐撞擊等優異性能。

富美家®火立克®+ 產品可廣泛使用於公共空間、醫院、飯店和商業建築的牆面，亦適用於造船、汽車工業和火車內裝。

Formica® FRguard®+ is a decorative panel composed of a special material which provides the panel with its self-extinguishing and dimensional stability properties. FRguard®+ can slow the spread of flame and combustion, making the panel an excellent choice as a fire retardant material. FRguard®+ also demonstrates excellent heat, water, abrasion and impact resistance properties, making it suitable for various environments and applications.

It is much used as wall in public spaces, hospitals, hotels and commercial buildings. It can also be used in shipbuilding, automobile industries, and in railway wagons.



關於富美家® About Formica®

SINCE 1913

富美家® — 設計於今，恆久於心

富美家®商標的演變 Formica's LOGO History



1920s



1930s



1940s



1950s



1960s



1970 - 1980s



1990s - 現在

富美家®為一跨國性企業，於一九一三年由Herbert A. Faber及 Daniel J.O'Conor在美國俄亥俄州辛辛那提市成立，至今已有百年歷史。成立之初所製造的產品具備了耐火、防潮、耐高溫的特性。由於是用來取代雲母片(For-Mica)，從而發明了現代裝飾耐火板並命名為Formica®—富美家®。富美家®為全世界建築專業設計師所指定選用之第一品牌。

富美家®提供完整的表面飾材系列產品，包括高級裝飾耐火板、抗倍特®、彩虹心®、金麗®金屬裝飾耐火板、富美家®創藝板™及富美家®實驗室檯面系列等。選用優質產品，可以確保工程品質；富美家®生產的裝飾耐火板符合歐洲BS EN438標準，並獲得ISO 9001，14001，OHSAS 18001，及GREENGUARD認證。

富美家®在全球各地擁有工廠，亞洲地區的工廠分佈於台灣新竹、中國上海、中國九江及泰國曼谷。

Formica® was founded in Cincinnati in 1913 by two young men, Herber A. Faber and Daniel J.O'Conor. It was intended to serve as an electrical insulator and was created as replacement for Mica, which was used for that purpose at the time. Hence the name "Formica" was chosen. World-renowned artists and architects had also begun to recognize the potential of the decorative laminates and specified them for modernist and art deco interiors.

Formica® offers a complete series of surface decorative products, including High Pressure Laminate, Compact® Grade, ColorCore®, DecoMetal®, Formica® Custom Graphics™, and Formica® CHguard™ Series, etc. All High Pressure Laminate of Formica® conform to European BS EN438 standards. And meanwhile, we have got the certification of ISO 9001, 14001, OHSAS 18001, and GREENGUARD.

Formica® owns manufacturing bases worldwide, with four being located in Asia. Major based are located in HsinChu Taiwan, Shanghai China, Jiujiang China and Bangkok Thailand.



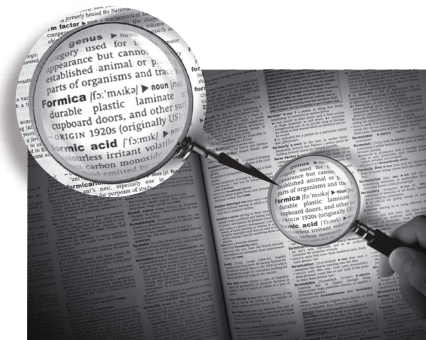
Herbert A. Faber



Daniel J.O'Conor

Formica一詞已經作為專有名詞收入《現代牛津英語詞典》中，是現代耐火板的代名詞。該辭典的第721頁對於Formica一詞的解釋為：富美家名詞，商標。堅硬耐用塑料貼面，適用於工作檯，櫃門及其他表面處理。

"As a professional word, "Formica" has been recorded in The Oxford English Dictionary, and as a replacement for decorative laminates."



現代牛津英語詞典 (O.E.D)

富美家®公司創辦人
Formica® Corporation Founders

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富美家®可持續發展宣言 Formica® Sustainability Statement

富美家集團堅持秉承可持續發展的宗旨來製造和銷售我們的產品。我們致力於提升使用資源的效益，從而達到保護地球環境、資源永續利用的長遠目標。無論現在或將來，富美家®將可持續發展視為一種商業美德和價值觀，並將嚴格地遵守。隨著國際社會越來越關注可持續性發展，富美家集團將以為建築師、設計師和消費者提供全方位的環保表面裝飾材料作為戰略重點。在富美家集團，我們持續致力於開發促進健康環境的新產品。更多有關我們如何執行“綠色”概念，如下：

With sustainability a concern for the global community, Formica Group makes it a priority to offer architects, designers and consumers a full range of environmentally friendly surfacing products. Formica Group continually strives to create innovative products that promote a healthier environment. Find out more about how we're putting 'green' principles into practice.

GREENGUARD 認證

根據美國環境保護局(USEPA)表示，減少室內空氣污染最有效的方法就是減少或消除有害的化學物質排放。富美家集團榮幸地宣布已通過GREENGUARD嚴格排放限制標準。富美家®高級裝飾耐火板、彩虹心®、抗倍特®和金麗®金屬各系列產品在亞洲通過GREENGUARD認證和GREENGUARD金牌認證兩項認證標準。(符合揮發性有機化合物低排放綠色標準，金牌認證包括考慮到敏感個體的安全因素，以及說明確保產品可在學校和醫療機構等環境中使用)這對於富美家集團保證其產品在住家、辦公室、學校等室內環境推動健康室內空氣品質是一重要進展。



Formica Group has taken significant steps to ensure that its products promote a healthy indoor air quality in homes, offices, schools and other indoor environments. According to the US Environmental Protection Agency (USEPA), the most effective way to reduce indoor air pollution is to reduce or eliminate harmful chemical emissions. Formica takes pride in meeting the strict emissions limits of the GREENGUARD Environmental Institute and in achieving GREENGUARD Certification for Indoor Air Quality for Formica® Laminates. Formica® Laminates, ColorCore®, Compact® and DecoMetal® are certified in Asia according to the GREENGUARD Certification and GREENGUARD Gold Certification standards for Indoor Air Quality.



碳減量標籤

Carbon Reduction Label

富美家集團率先成為全球第一間榮獲英國碳信託公司授予的碳減量標籤之表面裝飾耐火板製造商。富美家集團通過對碳足跡的評估以及為產品貼上碳減量標籤，來實現公司長期致力於減少對全球環境影響的願景。

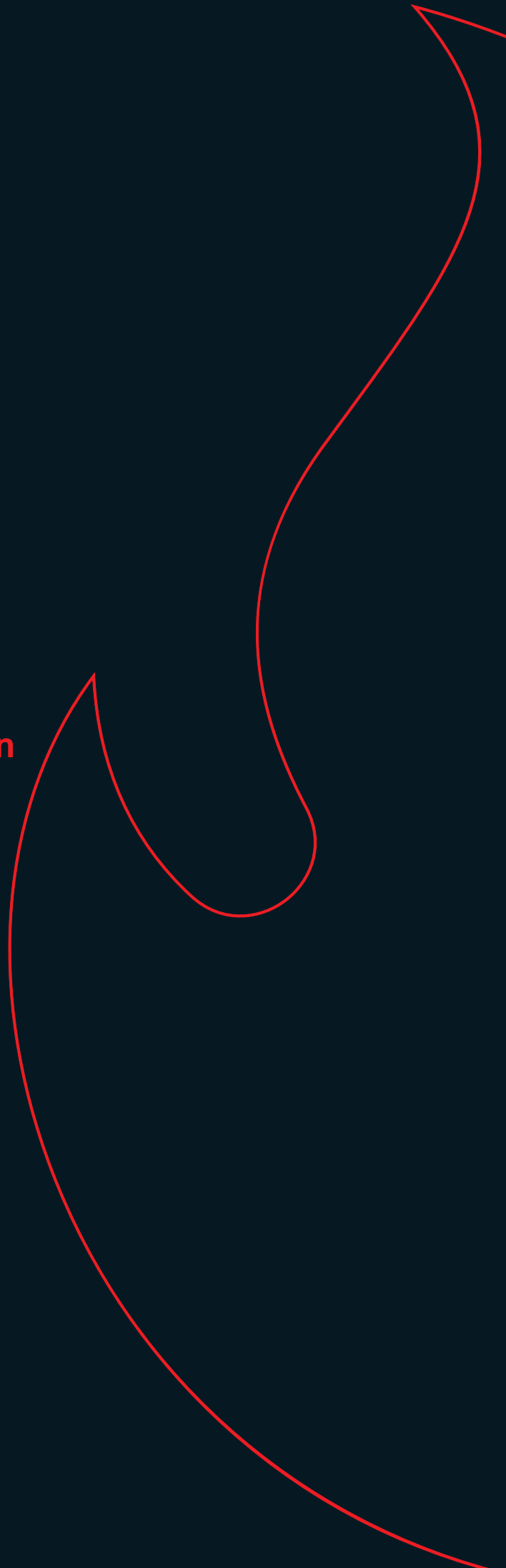
富美家集團榮幸地宣布旗下之高級裝飾耐火板(HPL)、持續壓力層壓板(CPL)、抗倍特®(Compact®Grade)以及富美家®實驗室檯面系列產品進行碳足跡測量，進而獲得英國碳信託公司所授予的碳減量標籤。

Formica Group becomes the first laminate manufacturer in the world to be awarded with Carbon Trust's Carbon Reduction Label. Formica Group is demonstrating its ongoing commitment to reducing its global environmental impact by undergoing carbon footprint assessment and labelling products with the Carbon Reduction Label.

Formica Group is pleased to announce that it has measured the carbon footprint for its range of High Pressure Laminates (HPL), Continuous Pressure Laminates (CPL), Compact Laminates and Bonded Worktops, which are now qualified to carry the Carbon Trust's Carbon Reduction Label.

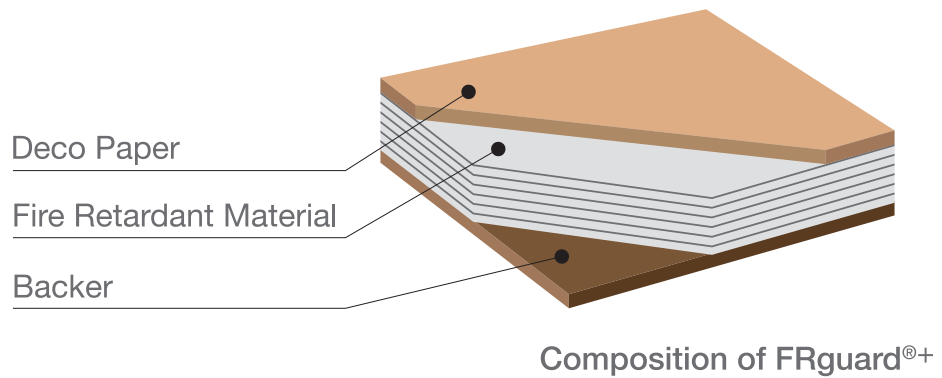


產品介紹
Product Introduction



產品規格 Product Specifications

- 板材尺寸Size : 4' x 8'
- 板材厚度Thickness : 2.7mm



產品物理性能 Product Physical Properties

測試項目 Test Items	測試標準 Test Standard	數據值 Data Values
Fire Test	BS 476-4:1970+C1:2014	Non-Combustible
Comply with Screening of substances of very high concern (SVHC) subject to authorization, according to (EU) No 143/2011, (EU) No 125/2012, (EU) No 348/2013 and (EU) No 895/2014 and (EU) No 2017/999 (Annex XIV of EC No 1907/2006) and candidate list by European Chemical Agency (ECHA), according to the EU court of Justice rules on SVHCs in articles.	1) Test portion is digested with acid and assisted with microwave, the elements are analyzed by ICP-OES. 2) Test portion is extracted by organic solvent, semi-quantitative analysis by GC-MS / UV-Vis. 3) Test portion is extracted by organic solvent, the extraction solution is analyzed by Headspace-GC/MS / LC-DAD-MS / LC-MS/MS.	PASS
Resistance to Surface Wear	EN 438-2:2016 Section 10	350 Revolutions
Resistance to Water Vapour	EN 438-2:2016 Section 14	Rating 5 – No visible Change
Resistance to Dry Heat (160°C)	EN 438-2:2016 Section 16	Rating 5 – No Change
Dimensional Stability at Elevated Temperature	EN 438-2:2016 Section 17	Dimension change in the longitudinal direction:0.45% Dimension change in the cross-longitudinal direction:0.45%
Resistance to Wet Heat	EN 438-2:2016 Section 18	Rating 5 – No Change
Scratch Resistance	EN 438-2:2016 Section 25	Rating 3
Resistance to Staining	EN 438-2:2016 Section 26	Rating 5 – No Change
Tensile Strength	ASTM D638-14	32.1MPa
Compressive Strength	ASTM D695-15	85.1MPa
Rockwell Hardness	ASTM D785-08(2015) Procedure A	105R
Flexural Strength	ASTM D790-15e2 Procedure A	91.0MPa
Specific Gravity	ASTM D792-13 Method A	1.94
Mean Coefficient of Linear Thermal Expansion	ASTM E831-14	16.2µm/(m.°C)

Anti-Bacteria grade available at request

Anti-Bacteria	JIS Z2801:2010 (Enterococcus faecalis BCRC 10066; Staphylococcus aureus BCRC 10451; Streptococcus pneumoniae BCRC 10794; Pseudomonas aeruginosa BCRC 11633; Escherichia coli BCRC 11634)	PASS
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產品特性

Product introduction



- 優異的耐燃性（耐燃一級材料）
Excellent Fire Retardant Properties

產品主原料使用具有自行熄滅性能的特殊材料，具有同級最優異之耐燃性能；並結合美耐板產品使用特性，兼具耐熱、防水、耐磨、耐撞擊等優異性能。
The core of FRguard^{®+} is made of special material which provides the panel with its self-extinguishing properties, making the panel an excellent choice as a fire retardant material. FRguard^{®+} also demonstrates excellent heat, water, abrasion and impact resistance properties, making it suitable for various environments and applications.



- 耐熱、防水、防裂
Heat, Water and Crack Resistance Properties

本產品具卓越之耐熱性能，接觸熱水不易發生變色或膨脹。優異的防水性能適合應用於浴室牆面，極佳之硬度與強度可降低運送途中發生裂紋、龜裂、缺口等問題。
With its excellent heat, water and crack resistance properties, it helps to prevent FRguard^{®+} from drastic dimensional expansion or surface damages, hence it is an ideal material to replace bathroom and kitchen tiles.



- 多樣化的木紋與各式花色結合表面處理，呈現高雅質感
Elegant Look

樣品擁有豐富的木紋與其他特殊表面處理，提供高級優雅的表面質感。
FRguard^{®+} is available in both wood grain and other textures to exude a sense of elegance.



- 可直接與夾板等基材結合，現場施工便利
Able to Direct Bond to Existing Materials

本產品可直接貼附於各式牆面基材，施工快速簡便。
FRguard^{®+} can be bonded to various kind of existing wall materials for fast and easy installation.



- 耐衝擊、耐刮痕
Impact and scratch resistance properties

本產品有優異的耐撞擊與耐刮痕性能，可適用於各式不同環境。
FRguard^{®+} has good impact and scratch resistance performance which makes it perfect for application in many different environments.

產品花色 Product Color

彩之戀 Solid Colors



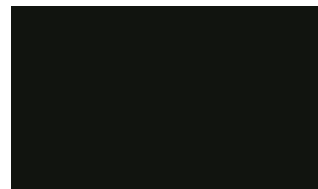
A3200
Ultra White



A0912
Storm



A0837
Graphite



A0909D8
Black Drygrain



A1485
Chrome Yellow



A4177
Lime



A0851
Spectrum Blue



A0845
Spectrum Red

彩繪 Patterns



A6444LM
Glax Textile Linum



A8814LM
Denim Twill Linum

晶華 Pearlescent



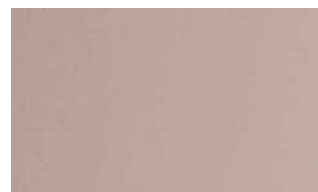
A7158K
Cosmic Dusk
Brushed



A7168K
Metal Pearl Silver
Brushed



A8819K
Frosted Black
Brushed



A7170K
Metal Pearl
Rosewood Brushed



180fx™



**A3460
Calacatta Marble**



**A6363H
Elemental Ash
Honed**



**A8830H
Elemental Concrete
Honed**



**A9482
Marbled Cappuccino**



**A9483
Ferro Grafite**

木紋 Wood Grains



A8902D8
White Painted
Wood Drygrain



A7182NT
Dunewood Naturelle



A6404D8
Bleached Elm Drygrain



A8854D8
Alabaster Oak Drygrain



A8843D8
Natural Ash Drygrain



A9016NT
Bamboo Striped Naturelle



A0860NT
Blond Afromosia Naturelle



A8844D8
Aged Ash Drygrain



A5483NT
Mocca Firwood Naturelle



A0861NT
Olive Afromosia Naturelle



A5264
Gracious Sakura



A0756NT
Natural Maple
Naturelle



A2726NT
Natural Beech
Naturelle



A9005NT
Fineline Naturelle



A9966NT
Hill Top Maple
Naturelle



A7012NT
Amber Maple
Naturelle



A5486NT
Classic Walnut
Naturelle



A2567NT
Copper Beech New
Naturelle



A5904NT
Wild Cherry
Naturelle



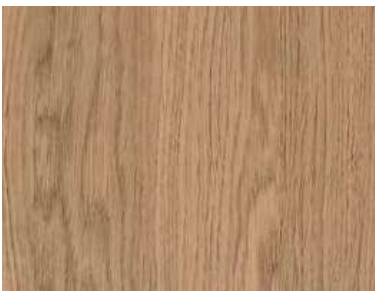
A7759NT
Select Cherry
Naturelle



A5478NT
Sand Oak
Naturelle



A6407D8
Honey Elm Drygrain



A5887NT
Millennium Oak
Naturelle



A5485NT
Spice Maple Naturelle



A6210NT
Couture Wood Naturelle



A9205D8
Legno Fineline Brown
Drygrain



A8846NT
Oiled Lrgno Naturelle



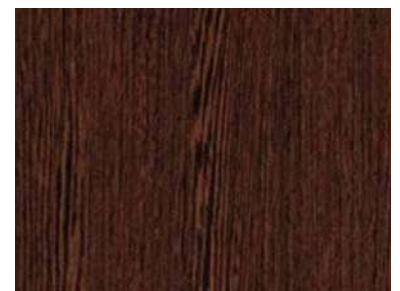
A8849NT
Natural Teak
Naturelle



A9484NT
Oxidized Beamwood
Naturelle



A9004NT
Vintage Teak Naturelle



A9578NT
Mali Wenge Naturelle



- **黏著劑
Adhesive**

請選擇專用於矽酸鈣板、水泥板、耐燃板貼合之中性黏著劑。
* 一般罐裝膠槍使用型容量約為300~330ml，可貼合一片標準4'x8'火立克®+ 板材。
Please choose an adhesive that is suitable for use on calcium silicate board, cement board and non-flammable board.
* Typically a bottle is around 300-330ml and it is sufficient for 1 sheet of 4' x 8' FRguard®+ board.



- **填縫用矽利康
Silicone Sealant**

請選擇專用於矽酸鈣板、水泥板、耐燃板貼合之中性矽利康；浴室或廚房等濕度較大之環境，請使用防霉型矽利康。
Please choose a silicone sealant that is suitable for use on calcium silicate board, cement board and non-flammable board. Do also make sure that the silicone sealant is suitable to be used in bathrooms, kitchens and other high humidity environments. Please use antimicrobial silicone sealant.



- **雙面膠帶 / 防水膠帶
Double-sided Tape / Waterproof Tape**

請選擇聚丙烯感壓型黏著劑材質之雙面膠帶/防水膠帶，以達到最佳的黏貼效果。
For optimal bonding effect, please use a double coated clear polypropylene tapes with acrylic adhesive.



Re-Modeling of
Kitchen
廚房改造影片



Re-Modeling of
Partition
間隔改造影片



Re-Modeling of
Wall & Ceiling
牆身天花改造影片



E-Catalogue
產品目錄



20% OFF SALE

20% OFF SALE

SLIM FIT

LOOSE FIT

SLIM FIT

*此商品圖片僅供參考，請以實品為準
Pictures shown are for illustration purpose only, colour may vary from actual sample.

使用與保養指南

Use and Care Guidelines

[保養上的注意事項] Maintenance

1. 對於一般性的污漬，使用濕抹布擦拭後再使用乾抹布即可，或使用中性清潔劑或稀釋劑即可清除乾淨。
To remove dirt from the surface, use a moist soft dabbed in a neutral detergent to wipe away the dirt; then make sure to use a dry cloth to wipe away moisture.
2. 請勿在板材上使用尼龍材質的硬毛刷或抹布（刮傷）以及酸或鹼性清潔劑（變色）以免損傷板材表面。
Do not use a nylon scrub brush, steel wool or abrasive detergent as it may damage the surface.

[加工上的注意事項] Fabrication Disclaimer

不當的施工工法可能導致產品龜裂，裁切缺口或打洞部分的接合點，請務必施加6R以上的R角加工。

To avoid stress cracking, please make sure that all corners or joints have a 6R and above angle.

* 詳情請參照施工手冊說明。

* Please refer to the Fabrication Guidelines for more information.

1. 為防止拿取產品時受傷或發生意外，請務必遵守施工手冊的記載事項。
Please follow the instructions in the Fabrication Guidelines to prevent any possible injuries or accidents.
2. 運送及操作時，請使用止滑用手套；產品加工時，請戴上防毒面具及護目鏡。
When transporting the material, please use anti-slip gloves.
During fabrication, please put on protective goggles and gas masks.
3. 所使用的黏著劑，可能會有含有機溶劑的產品，使用時請於通風良好處操作。
Depending on the adhesive used, there might be VOC emission during installation. Hence, please keep the environment properly ventilated.
4. 牆面的施工與建築物的構造有關，使用不當的工法或材料施工時，可能會成為施工不良的原因而引起意外，施工時請與現場監工商量後再施工。
The improper use of construction methods or materials may cause workplace accidents. Please check with the on-site construction supervisor prior to any fabrication and installation works.
5. 點交驗收前，工程管理者請務必進行檢查，發現不良之處時，請立刻修補後再度檢查。
Before handling over, please give a thorough check for any defects.

[使用上的注意事項] Usage Disclaimer

產品可能因為過多的水氣導致膨脹剝落，請勿直接施作於不平之清水混凝土面及灰泥面上。

If there is moisture from the cement wall, it may cause to FRguard[®]+ to bloat, hence being unable to bond flatly onto the wall surface.



產品應用
Application Areas



產品應用-醫院

Application Areas - Hospitals



*此商品圖片僅供參考，請以實品為準

* Pictures shown are for illustration purpose only, colour may vary from actual sample.



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* Pictures shown are for illustration purpose only, colour may vary from actual sample.

產品應用-醫院

Application Areas - Hospitals



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產品應用-公共空間

Application Areas - Public Spaces



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產品應用-公共空間

Application Areas - Public Spaces



產品應用-走廊

Application Areas - Corridors



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* Pictures shown are for illustration purpose only, colour may vary from actual sample.

產品應用-學校

Application Areas - Schools



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*此商品圖片僅供參考，請以實品為準

* Pictures shown are for illustration purpose only, colour may vary from actual sample.

產品應用-飯店

Application Areas - Hotels



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*此商品圖片僅供參考，請以實品為準

* Pictures shown are for illustration purpose only, colour may vary from actual sample.

產品應用-餐廳

Application Areas - Restaurants



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*此商品圖片僅供參考，請以實品為準

* Pictures shown are for illustration purpose only, colour may vary from actual sample.



基本施工工法
Fabrication Guide





富美家® 火立克®+ 產品施工手冊

產品簡介

富美家® 火立克®+ 是一種由特殊材料組成的裝飾材料，本產品具有優異的阻燃性能且不易膨脹，能減緩燃燒和火焰的擴散；結合產品使用特性，兼具耐熱，防水，耐磨，耐撞擊等優異性能。

施工前置準備作業

本產品在出廠前均經嚴格的品質檢管；施工前請確實做好以下相關事項，材料一經裁切或施作，本公司將無法接受退換貨服務。

(1) 產品型號確認

板料在裁切之前，請確實比對型號。



(2) 板材瑕疵檢查

請在裁切前確認板料材質完整無瑕疵。



(3) 堆置

本產品應水平堆放，並於堆放板料下方設置承托平台，以防止受潮、汗損。



(4) 搬運

搬運時請使用棉質防滑手套，需兩人選擇適當施力點將板料垂直橫向搬運。本產品 4×8 尺重量約為 15KG，建議一次搬運一片。



(5) 施工安全 / 防護裝備

火立克®+ 產品為特殊阻燃材料經高溫高壓一體壓製成型，裁切作業時會產生粉末飛濺，請確實佩戴防護眼鏡、口罩。



敷貼材料準備與操作注意事項

(1) 雙面膠

建議使用擁立或 3M 之泡棉雙面膠，寬度 18 ~ 24mm，厚度 1mm。



(2) 太棒膠

配合雙面膠時建議使用太棒膠 (Titebond) 或免釘膠。



(3) 強力膠 噴膠

本板料可使用強力膠或噴膠施工，方法如一般塗佈美耐板塗佈方式。



(4) 矽利康

矽利康用於安裝面板時會有黏著性不佳的問題；只可用於溝縫及邊角之填縫，市面上已有豐富色樣矽利康可依顏色需求選擇。



(5) 膠合面處理

膠合之前，請使用噴槍或抹布，清理裁鋸殘留粉末，及油漬等汙染。舊牆面如為壁紙牆面，需將所有壁紙完全剝除。



(A) 雙面膠

雙面膠應距板面外部向內 2cm 黏貼，並於內部橫向 40cm 間距做加強，確實黏貼壓實。



(B) 太棒膠

太棒膠之厚度需能附著於底板空隙，外框沿雙面膠施打一圈，內部以波浪型塗佈，塗厚必須高於雙面膠或黏貼底板空隙之厚度。



火立克^{®+} 裁切與開孔工法

板料裁切

板料裁切可使用一般組合鋸台，鋸片建議使用 80 目以上之 8 吋鎢鋼圓鋸片。裁切作業應由兩人協同作業，大量裁切時，請加裝鋸台輔助面板。



契合作業

(1) 取孔、開孔

可用取孔刀以模具取孔。用於有蓋板之取孔時，也可利用切斷鋸，以砂輪或鎢鋼鋸片切割。



(2) 契合作業

契合作業可使用鋸台裁切；或利用切斷鋸、小型溝鋸機，以導板輔助作業。

圓形契口可以使用鐵鑽頭或圓形取孔刀，燈具嵌洞可於黏貼之後開取，須注意避開骨料位置。



(3) 修整

不規則之牆面，契口作業如同一般夾板，板料可使用鉋刀、砂輪修整。



(4) 導孔

木作孔洞可先作記號黏貼固定以電鑽鑽孔，再以培林直刀洗孔。



舊牆面整理

地板保護

施工前請做地板保護動作。



敷貼面整理

火立克^{®+} 板材可以直接敷貼於多數舊有牆面，如大理石、磁磚，水泥粉光面、砌磚牆、塗裝牆面、壁紙牆面、玻璃。敷貼板材之前，請確實清理脫漆、白樺、粉塵、油汙、鏽斑、壁紙脫膠…等表面髒汙。如表面高低差不超過 2mm，請使用發泡雙面膠與木棒膠敷貼。



垂直面整理

垂直面有高低落差時，請以 10 公分以上寬度的夾板墊平，再以骨架工法直接用火立克^{®+} 封板；或可再封一層 4mm 以上夾板使垂直面平整。

墊平骨料施工可使用一般木作工法，或以膠黏、釘著等方式施工。如墊平骨料厚度可以使用釘裝底板，建議加裝底板之後再加裝面板。若舊有牆面轉角不是垂直轉角，在整理垂直面骨料時，需整面做垂直墊平。



(A) 墊平係數

墊平骨料須為完整的平整面，如不平整，其弧度不可以超過火立克^{®+} 板之彈性係數。

(B) 膠合

整理舊牆面之墊平骨料，如果厚度低於 4mm，其膠合點可於任何位置，如超過 4mm，其膠合點應在骨料上。



牆壁施工工法

輕鋼骨料結構工法 (三明治牆體封板)



火立克^{®+} 板材用於以輕型鋼骨、角材等結構骨料之施工可直接作為三明治牆的封板材料。；用於直接封板材料施工時，請注意以下施工細項。(木作角材工法除可釘槍固定之外，其他注意事項相同)

(1) 安裝框料

上下框料之固定如一般輕鋼架三明治隔間工法固定，請使用 ST 鋼釘、自攻牙螺絲。



(2) 立柱

使用火立克^{®+} 板材為結構封面板料時，立柱骨料間距不可超過 40 公分，高度若超過 240 公分，需使用水平壓條施工時，間距需縮短為 30 公分，以增加板料溝縫承受壓力。



(3) 立柱間距調整

除邊框立柱之外，其他立柱與框料不可使用螺絲固定，每片板料施工時，立柱間距請使用雙面膠輔助固定，並在框料與立柱的接觸點打上太棒膠強化。



(4) 接線盒與防火棉施做

接線盒應以焊接或以螺絲鎖固於相對位置，防火棉與隔音棉之垂直面不可超過骨料封板的垂直面。



(5) 壓條安裝

以骨料結構直接封板施工時，請以壓條做接合縫處理。適用的鋁壓條為七字型、小圓弧型 (用於邊框收邊；工字型 (用於接合縫收邊)；L 型 (俗稱飛機型) 用於轉角收邊。於木材角料之安裝，鋁壓條可直接以 J413 不銹鋼釘完全埋釘固定；如用於輕鋼骨料時，可使用雙面膠加太棒膠安裝。



(6) 封板

將雙面膠黏貼於骨料表面，並於雙面膠邊施打太棒膠；於立柱黏貼時調整立柱間距，並將雙面膠黏貼於框料，同時固定於立柱。

封底板工法 (壁板)



封板料可使用 12mm 以上石膏板、6mm 以上矽酸鈣板、密集板、4mm 以上之夾板；或其他平整之金屬板。

(1) 骨料安裝

使用輕型鋼骨、角材為骨料時，骨料間距請勿超過 40 公分，如為單面封底板、天花板，間距之支撐不可超過 90 公分。底板材料如為 4×8 尺，橫向結構骨料，中間須加裝縱向骨料補強。



(2) 封底板

底板骨料接合縫應與敷面板之溝縫錯開。

(3) 敷貼面板

除天花板之燈孔及木作框洞外，板面所需開孔應於火立克^{®+}板材安裝之前於同位置上先行開孔，螺絲孔位置應為底板或骨架、安裝盒底座上，不可將螺絲直接鎖固於火立克^{®+}板材上。



(4) 門片安裝

火立克^{®+}板會增加門面重量，須使用承重加強型鉸鍊。



天花板施工工法



(1) 板材裁切

一般明架或半明架輕鋼架天花板板料尺寸為 60.5cm，在更換為火立克^{®+} 板材時，因材質較硬，建議裁切為 60.4cm。其他不規則尺寸以一般裁切方式處理。



(2) 敷貼隔離

施打矽利康之前，請使用 18 ~ 24mm 寬之紙膠帶敷貼隔離。溝縫敷貼請沿板料邊沿黏貼。轉角敷貼時，應距離轉角內沿 6mm 以上。



(3) 矽利康填縫

(A) 板材與邊角對接請留 3 ~ 4mm 接合縫，避免密接黏貼。

(B) 請於所有工程完工並完成清潔工作之後進行填縫施工，以避免落塵汙染。如果填縫數量多，建議委請專業填縫工程業者施工。

(C) 一般溝縫與轉角填縫請使用相近色之中性矽利康，浴室、廚房、流理檯面邊框填縫請使用防霉矽利康。

(D) 因室溫差異，矽利康初凝時間不固定，請勿一次施工過大面積。填縫時請一次打足矽利康。填縫時請以適當大小圓弧橡膠刮刀刮填多餘殘膠。



(4) 拆除膠帶

紙膠帶需在矽利康初凝之前撕除，並注意勿汙損板材表面。



梯廳改造計畫 - 天花板

既有概況說明 | 輕鋼架明架礦纖天花板、TB 照明

整修計畫 | 複層式木構天花板，上層面貼火立克®+ #A6407
模矩分割，下層面貼火立克®+ #A3200，LED 支架燈間接採光。

施工流程 |

(1) 上層骨料→水平吊筋→



(2) →封底板



(3) 測距→打分割線



(4) 加強膠合工法



(5) →封側板



(6) 開電氣設備孔洞→



(7) 矽利康填縫作業



施工案例

梯廳改造計畫 - 牆面

既有概況說明 | 水泥漆粉刷，外露配電箱、配線管

整修計畫 | 舊牆面整理：以夾板做垂直整平，並直接採骨料工法施工。

壁板隱藏設計：電箱區域使用木作角材造型壁板與矽酸鈣板底板隱藏設計，方便整體造型設計與門片安裝。

施工流程 |

(A) 牆面整平

以寬 10cm 厚度 4mm 的夾板作為整平骨料，使用厚度 1.5mm 夾板墊片調整高低差，使用膠合及釘裝固定。面板膠合使用一般膠合工法

(1) 契合高低差



(2) 整修垂直高低差



(3) 釘膠裝夾板骨料



(4) 夾板骨料



(B) 壁板

壁板因裝設門片，須預留西德鉸鏈安裝深度

(1) 牆面骨料安裝



(2) 電氣設備預留孔



(3) 板材布膠貼合



(4) 矽立康填縫



梯廳改造前後對照圖

改裝前➡



改裝後➡



施工案例

輕隔間改造計畫

既有概況說明 | 玻璃隔間

整修計畫 | 玻璃隔間裝設輕鋼架 直接面貼火立克^{®+}板

施工流程 |

(1) 安裝框料



(2) 安裝立柱



(3) 安裝橫桿



(4) 雙面膠與木棒膠



(5) 膠合與安裝壓條



(6) 完成面



輕隔間改造前後對照圖

改裝前↓



改裝後↓



廚房改造計畫

既有概況說明 | 天花板：輕鋼架明架礦纖、TB 燈，
櫥櫃：人造石檯面，系統家具

牆面：壁紙（非標準工法黏貼），

整修計畫 | 天花板：更換為火立克®+ #A3200，
流理臺：檯面更換為美耐板 #9306
牆面更換為火立克®+ #A9306

牆面：更換為火立克®+ #A6444
上櫃門片更換為 #9527 加同色封邊
下櫃更換為門片 #8006 加同色封邊

施工流程

(1) 清理舊牆面



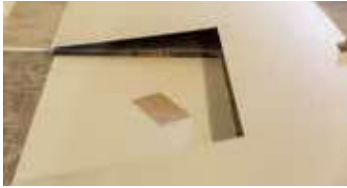
(5) 更換檯面



(9) 訂做門板



(2) 契合板料



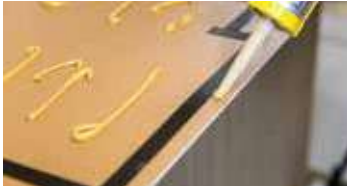
(6) 製作新檯面



(10) 舊門板拆除



(3) 膠合



(7) 槽孔整理



(11) 安裝門片



(4) 牆面完成圖



(8) 檯面完成圖



(12) 櫥櫃完成圖



廚房改造前後對照圖

改裝前↓



改裝後↓



磁磚乾貼工法 Installation onto Wall Tiles

將火立克®+ 施工在磁磚牆面時，可使用標準黏著劑及雙面膠帶的乾式工法施工。
FRguard®+ can be dry bonded to wall tiles surface with the use of double-sided tapes and Max Bond.

1
檢查磁磚表面的髒污
Ensure surface of the tiles are free from dirt

2
檢查磁磚表面有無不平
Ensure surface of the tiles are flat

3
檢查磁磚有無膨脹
Ensure wall tiles are not bloated

4
丈量與裁切
Measurement and Cutting

5
貼雙面膠
Pasting double-sided tape

6
上黏著劑
Applying adhesive

7
安裝
Installation

8
封邊
Edging

9
清潔表面
Clean the surface

10
完成
Installation complete

1 檢查磁磚表面的髒污 Ensure surface of the tiles are free from dirt

您可以選擇以下步驟：
You may opt for the following steps:

- A) 用中性清潔劑擦拭
Wipe with a mild detergent
- B) 用水擦拭
Wipe with water
- C) 乾擦
Wipe with a dry cloth

2 檢查磁磚表面有無不平 Ensure surface of the tiles are flat

有的磁磚牆面會凹凸不平，請用直尺或施工放線器確認不平的狀況。

As some wall tiles may be uneven, please place a flat long ruler or a level tool across the surface to ensure flatness of the surface.

不平時：
In the event if the surface is not flat:

- A) 3mm以下的不平，請重複黏貼施工用雙面膠帶（厚度1mm）來因應。
For gap below 3mm, please paste a few layers of double-sided tape (thickness 1mm) until surface is leveled.
- B) 3mm以上請用木片製作襯墊。
For gap above 3mm, please use Max Bond to fill the gap.

3 檢查磁磚有無膨脹 Ensure wall tiles are not bloated

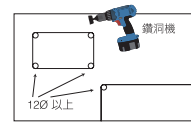
舊磁磚多會膨脹、剝落，請用鐵鎚等敲擊聲音檢查。
Old tiles may bloat as time goes by, which might result in tiles peeling off from the wall. Please use a hammer to gently knock on the surface of the tiles to check.

- 「鏗鏘」從牆底傳出的聲音OK。
- If the knocking echo sounds solid.
- 「卡滋卡滋」膨脹的聲音NG。
- If the knocking echo sounds hallow.

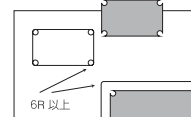
因應膨脹、剝落的磁磚面方法
You may opt for the following methods to solve the issue of tiles peeling off from the wall:

- 在膨脹的部份充填灰泥。
- Fill the bloated part with cement.
- 小部分的膨脹，在膨脹的磁磚部份鑽出注入孔，注入黏著劑。
- You may drill a small hole at the bloated part to inject adhesive in.

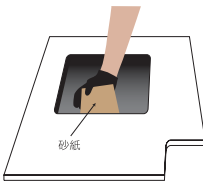
4 丈量與裁切 Measurement and Cutting



- A) 裁切時請務必使用輔助木板固定，從正面切入 (正面貼有保護膜)。
When drilling is recommended to proceed slowly and to support behind the sheet with a substrate to avoid chipping out at the back of the sheet

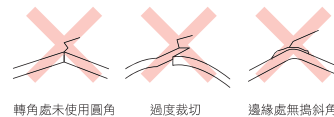


- B) 開孔裁切時請務必使用6R以上的刀具，從正面進行開孔。
When making a cutout ensure that each corner is drilled to a minimum 6mm radius to eliminate cracking in the corners.



- C) 開孔順序
1. 使用6R以上的刀具於四角進行鑽洞
2. 使用鋸刀裁切
3. 再以砂紙在切割面處砂磨至平整
Internal cutout
1. Drill holes in the 4 corners.
2. Cut between holes with a suitable saw
3. Remove the unwanted piece

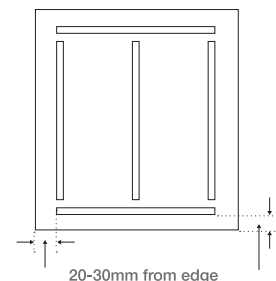
- D) 切角順序
1. 使用6R以上的刀具於轉角處進行鑽洞
2. 使用鋸刀裁切
3. 再以砂紙在切割面處砂磨至平整
External cutout
1. Drill a hole in the corner
2. Cut up to the hole with a suitable saw
3. Remove the unwanted piece



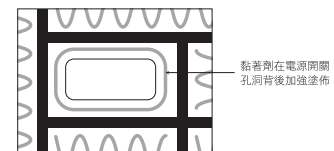
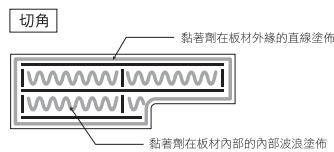
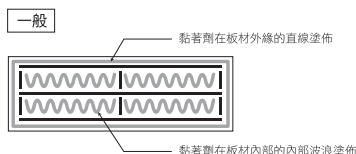
5 貼雙面膠/防水膠帶 Pasting double-sided tape / Waterproof tape

使用強力雙面膠帶依圖所示黏貼，膠帶距離板材邊緣至少20~30mm。
Use a strong double-sided tape on the back of the board. As shown in the diagram below, please leave an allowance of at least 20-30mm away from the edge.

浴室工法與一般工法的最大不同處為，雙面膠需與防水膠帶一併使用，以防止水從表面進入。任何板材邊緣或切角處，都請於周邊貼上防水膠帶。
The major difference between the bathroom installation method and general installation process is the use of waterproofing tape. Excessive thickness variations should be dealt with as mentioned in the section on dry area installation. Waterproof tape should be used around the edges as well as around any cutouts.



6 上黏著劑 (專用膠) Applying adhesive



※ 若用於浴室等潮濕處應採用防水性較佳的雙面膠帶

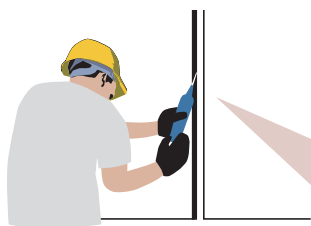
如圖所示，使用專用膠在板背面塗佈，內部請務必以波浪線塗抹，外部邊緣請務必以直線塗抹。板材最外層四周塗佈黏著劑距離邊緣至少10mm，黏著劑的厚度約高4mm。
Apply the adhesive in 4mm bead or a minimum of 3mm thicker than the tape.
Step 1. Run a 4mm bead of adhesive around the perimeter of the sheet.
Step 2. Within the boundary of the tape use a zig zag pattern of adhesive across the entire sheet.

若於板中置入插座，其開孔處邊緣應額外上膠強化黏著。
If there is a hole drilled for socket, please coat a circle of adhesive around the socket to enhance bonding.

7 安裝 Installation

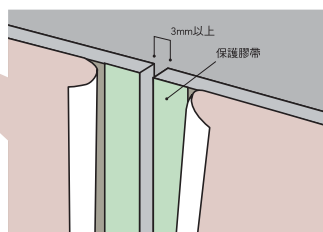
- A) 於塗佈完黏著劑後10分鐘內將雙面膠帶黏貼面之離型紙撕除，水平貼於壁面並加壓10分鐘。兩片板材之間間隙為3mm。
Remove the double-sided tape within 10 minutes of applying the adhesive. Bond the board onto the wall, and apply pressure against the surface for 10 minutes to enhance the bonding. Please keep a gap of 3mm in between two adjacent boards.
- B) 加壓完後請置放至少一天（24小時）使黏著劑完全固化。
Allow the adhesive to harden for 24 hours before proceeding to the next step.

8 封邊 Edging



等板材貼合並穩固後。將板材間隙兩側貼妥保護用紙膠帶，在空隙處（3mm）以專用膠槍將填縫劑填入間隙中，待填縫劑乾燥完全後，撕除紙膠帶。

After the adhesive has hardened, you may proceed to fill the gap (3mm) with a sealant. After the sealant is dried, you may peel off the paper tape.



貼上保護膠帶後，將填縫劑灌入內部

※ 板材與所有的收邊條之間至少必須要預留3mm空隙

9 清潔表面 Cleaning the Surface

10 完成 Installation Complete

施工完成後，請放置一天(24小時)以上，再將表面保護膜剝除。

Remove the protective film for at least 24 hours after installation.

快速簡便的磁磚乾貼式工法 Benefits of Direct Installation onto Wall Tiles

乾貼工法四大特色

4 Benefits of Dry-bonding Method



縮短工期
Shorter
installation time



減少廢材
Reduce of waste
materials



阻絕噪音
Lesser noise
pollution



降低成本
Lower cost

為避免改造水路管線時的長期施工，造成日常生活的不便，在現有磁磚牆面上直接黏貼的乾貼工法最為合適。乾貼工法可降低改造施工時的噪音、粉塵、廢棄物。可用電鋸快速裁切，雙面膠帶及黏著劑黏貼的乾式工法 (Dry-bonding工法)，也可大幅縮短工期。

To avoid disruption to the existing piping system and daily lives, FRguard®+ can be directly bonded on existing wall surfaces. This installation method helps to reduce installation time, and avoid cost, noise and waste materials generated from hacking the existing wall tiles. It can be easily installed by cutting the board to size and bonding it with double-sided tape and adhesive.

(系統式浴室(Unit Bath)無法施工) Guidelines for bathroom installation

- 浴室的乾貼工法乃以磁磚牆面為基本。灰泥牆面無法施工。
For bathroom installation, it can only be bonded onto existing wall tiles surfaces. It cannot be bonded onto concrete wall surfaces.
- 浴室施工時，請務必使用浴室專用的接著劑與矽利康，並於板材外圍貼上防水膠帶以防止水氣進入；磁磚貼附板材外圍部分亦須填入接著劑以避免板材外側翹起。
For bathroom installation, please use a bathroom-specific construction kit.

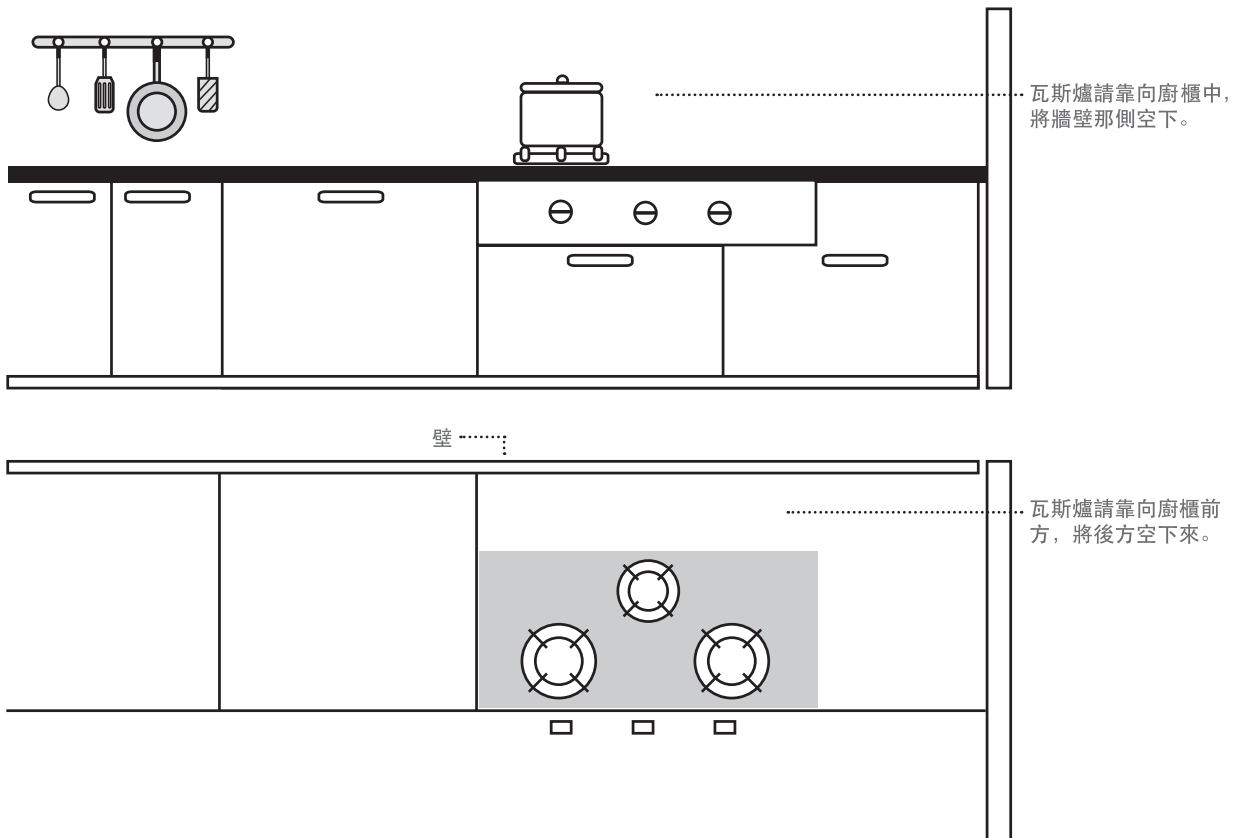
工程案例：Back of House Harbour Grand Kowloon
裝修前



選用火立克®+改造後



廚房施工注意事項 Kitchen Installation



火立克®+與家用烹調器具（4,600kcal以下）兩端，或依機種與排熱口的距離可保留在15cm以上。無法保留15cm以上時，請將高度30cm以上的隔熱板安裝在距離火立克®+表面1cm以上之處。並請不要將加熱的鍋具類直接接觸火立克®+表面。

FRguard®+ can be For cooking areas, it is recommended to keep a safety allowance of 150mm between the stove and FRguard®+ surface. In the event where it is not possible to keep a safety allowance of 150mm, please place an aluminium oil block board of 300mm height between the stove and the FRguard®+ surface. To ensure long-lasting surface durability, cookware still hot from the stove should not be have direct contact with the FRguard®+ surfaces.

- 請注意不要再靠近瓦斯爐的部分留下接縫。
It is recommended not to position the joints at the cooker hob.
- 即使達成上述條件，也請注意不要讓火直接碰觸火立克®+表面。
Besides the guidelines mentioned above, please also note to avoid direct fire on the FRguard®+ surface.
- 本注意事項並非法令上的注意事項。關於瓦斯爐的設計，請遵照當地相關條例與規定。
This information serves as a guideline only. Please adhere to the local regulations for the design of the cooker hob.

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