



## Hawk Pan Application Manual



## Hawkpan Application Technique Manual

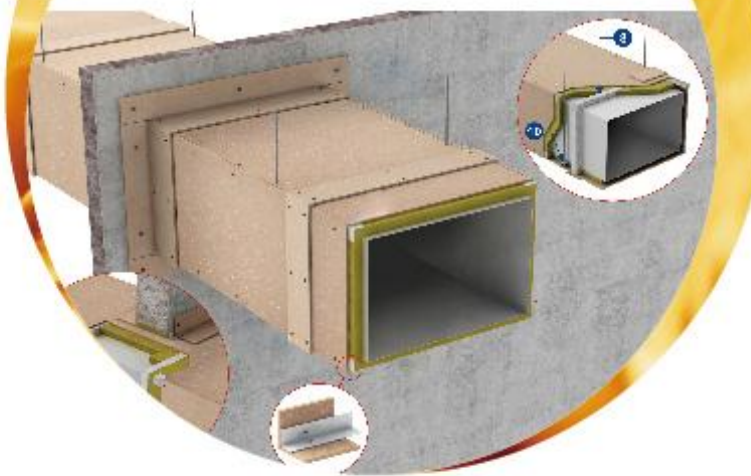
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## 提供被动防火的 安全设计

Fire Rated Ductwork



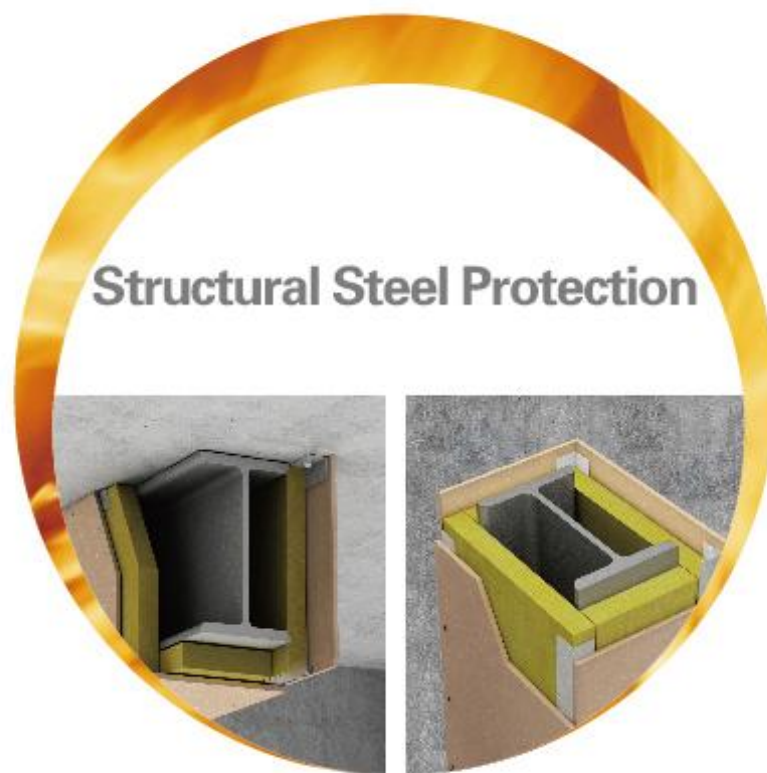
Partitions & External Walls



Ceilings Fire Protection



Structural Steel Protection



Mechanical & Electrical  
(M&E) Services Enclosures



Fire Resistant Glazing



Provide passive fire protection

## Safety design

Fire-resisting Rolling Shutter



Penetration Seals



Cavity & Smoke Barriers



# Hawkpan – Passive Fire Protection System Expert

火克Hawk板预防式防火系统专家

## 预防式防火理论

预防式防火作为防火的一种方式，也是一种有效减轻火灾造成灾害的方式。它是指运用一系列具有耐火强度的建筑防火产品及系统，将火灾限制在初发的防火单元内，防止火焰蔓延，以保护相邻单元空间免受其害，保证物业使用者能迅速撤离现场，最大限度地保护生命和财产安全，降低火灾损失情况。

## Passive Fire Protection

As a scientific extension of fire precautions, Passive Fire Protection is an efficient way of decreasing the fire disaster. It is refer to use those high fire resistance and incombustible fireproof products and systems to work against the flame spread speed, and limit the fire in the primary fire unit, in order to protect the adjacent room from the fire,also won the escaping time for people. It will protect the security of people's life and property to the utmost, and reduce the loss due to fire.



## 选择建筑防火材料的关键

材料的燃烧性能——不燃，不助燃，熔点高

材料的隔热性能——防止火灾时热传递而引起背火面因温度过高而起火

材料的密封性能——防止连接不致密处出现窜火现象

材料的结构性能——保证结构完整从而保护背火面

材料的安全性能——防止燃烧产生毒害烟气，危害生命和环境安全

## The Key of Selecting Fireproof Materials:

Combustion Properties ---- Incombustible material, never support combustion, high melting point.

Insulation Properties ---- Prevent heat-transfer during the fire to avoid the unexposed surface temperature rise.

Sealing Performance ---- Avoid flame over.

Structure Properties ---- Be sure of structural integrity to protect the unexposed surface from fire.

Security Performance ---- Avoid poison gas during burning to protect the security of life and environment.



## 火克Hawk板的定义

火克Hawk板是在国际领先技术配方基础上，增加多种防火成分及相应添加剂，针对当今被动防火系统的要求研制、开发、生产而成的一种专业防火的非石棉纤维增强硅酸盐板材。



## The Definition of Hawkpan

Basing on the international leading technology and formula, Hawkpan is a kind of fiber reinforced calcium silicate board with multi-fireproof element and corresponding additive that study and developed aimed at the modern passive fire protection system.

## 火克Hawk板材主要特性

### Leading Features of Hawkpan

#### 经久耐用

产品抗老化，耐久性好，防霉抗菌。



#### High Bending Strength

High temperature autoclaved process had formed the stable torbay mullite crystal structure, insured the excellent rigidity, high bending strength, low shrinkage of Hawkpan.

#### 高强度

板材经高温压蒸，内部形成晶体结构，使板材具备优良的材料刚性和抗机械性，高强度低收缩。

#### 绿色环保

产品100%不含石棉，甲醛及苯任何对人体有害的物质，无任何放射性。

#### Fireproof

Incombustibility Class A1, maximum limit of fire resistance is 4hrs, smoke index and toxicity index is zero.

#### Environment Friendly

Non-asbestos, there is no formaldehyde release, no benzene release, and nonradioactive.

#### 抗震

系统为轻钢体结构，具体较大的弹性，整个系统在遇到地震时也不会坍塌或给人员造成伤害。

#### 防火性

不然A1级均质材料，最高耐火极限达4小时以上，其烟指数毒指数为零。

#### Earthquake

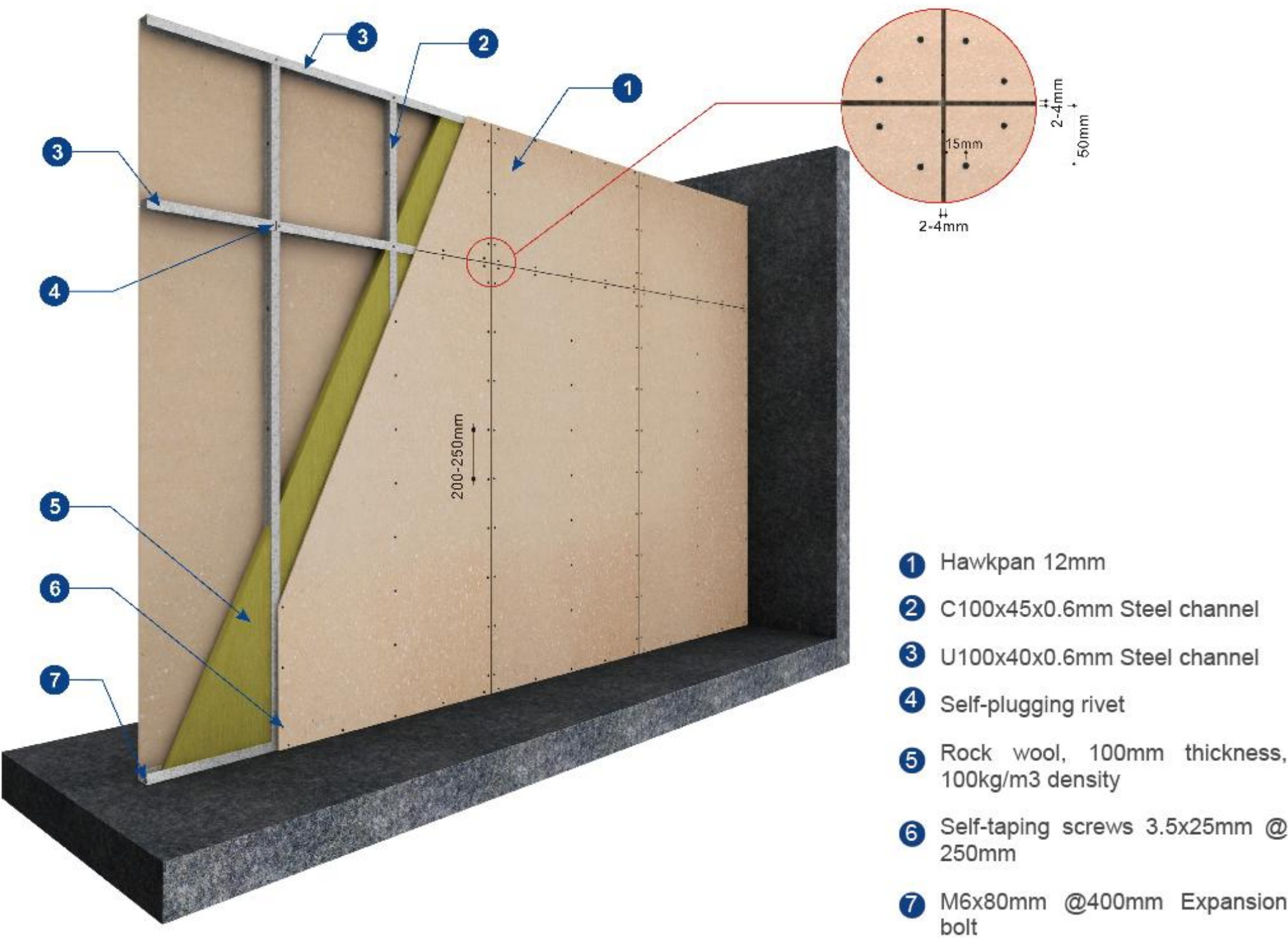
Steel structure system, has great flexibility, will not fell down and bury people once any earthquake occur.

#### Durable

Anti-aging, good durability, antibacterial, mould proof, it is healthy both for people and environment.



Partitions & External Walls



系统简介

火克板防火墙系统集优质轻钢龙骨、保温岩棉、A1级不燃无机防火板为一体，通过国家权威检测机构检测，具有1-4小时耐火极限构造，为实现建筑中的竖向防火分区提供最为安全、经济、实用的解决方案。特别在钢结构的建筑主体中使用其优点更为突出。

System Introduction

Hawkpan partitions fire protection system is a blend of high quality light-gauge steel channel, rock wool and inorganic incombustibility class A1 fire protection board (Hawkpan). It has 1hrs ~ 4hrs fire endurance structure, and passed every kind of national test concern. The developing of Hawkpan fire wall system had provided a most security, most economic and most practical solution for vertical fire partition, especially in the application of steel structural buildings.

系统特点

- 耐火极限1~4小时，完全满足《建筑设计防火规范》要求；
- 轻钢龙骨无机防火板体系，有建造高墙技术优势(最高可达40m)；
- 墙体质量轻(约33kg/m²)，为建筑结构柱和梁减轻荷载负担；
- 墙体薄(91~124mm)，有效增大使用空间；
- 高隔声性能(51dB以上)；
- 墙面可进行多种装饰；
- 施工快捷，有效缩短施工周期，是砌块墙体的1/2施工时间。

Leading Feature of Hawkpan Fire Wall System

- 1hrs ~ 4hrs Fire endurance, meet the requirement of Code for fire protection design of buildings perfectly.
- A system combined by steel structure and inorganic fireproof board, has the technical advantage of building high wall (Maximum Height is 40meter).
- Low deadweight (about 33kg/㎡), will reduce the load-bearing of structural stean and column.
- Thin wall (91mm ~ 124mm thickness), will enlarge the room space.
- Good insulation performance (Above 51db).
- Wall surface is decorative.
- Quick installation process, save construction period efficiently ---- it only takes a half time of the building with block wall system.

系统性能

火克Hawk板防火墙系统耐火极限、系统厚度依据龙骨类型、板材和岩棉的厚度组合不同而变化，具体参见系统性能表。

System Performance

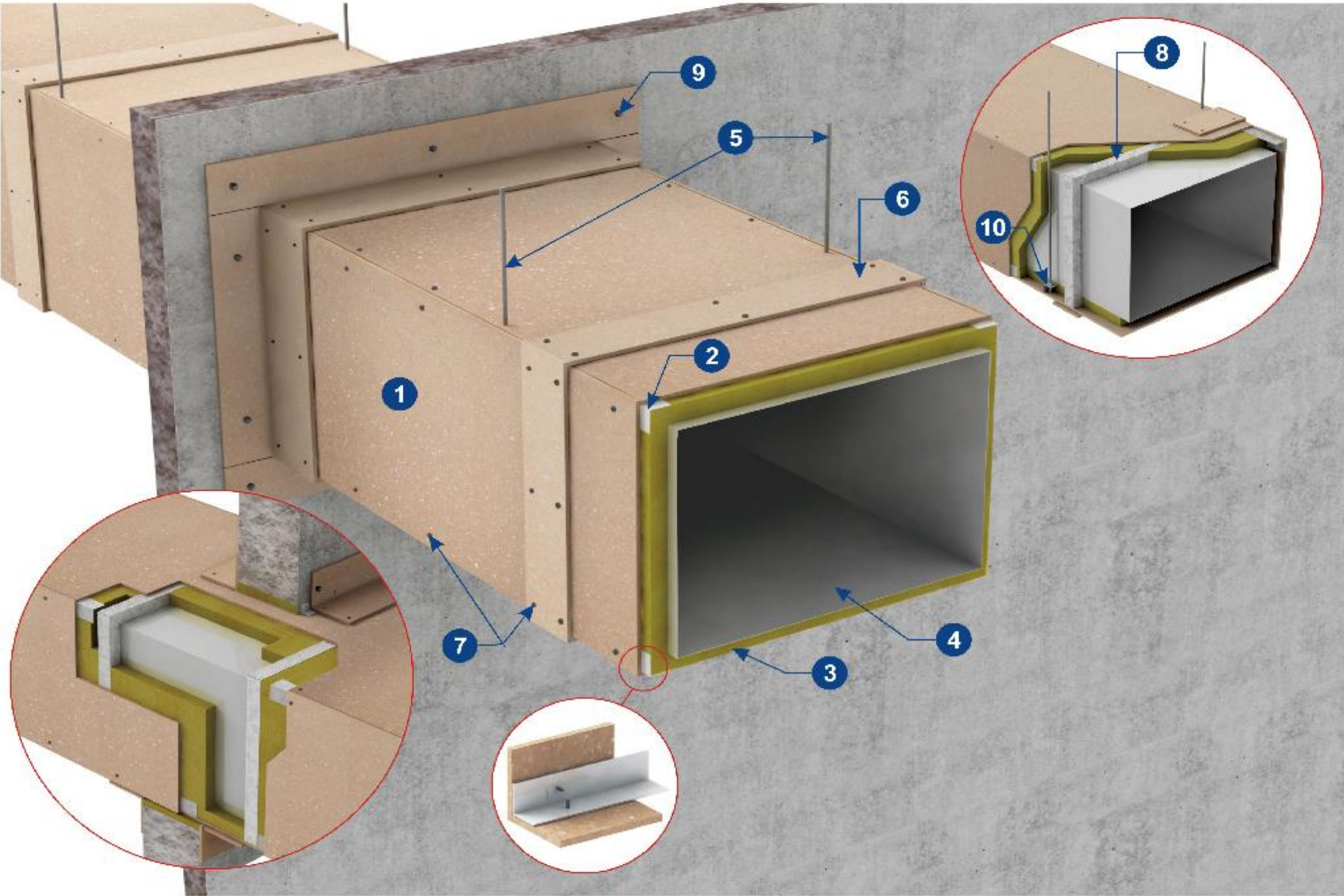
The fire endurance and thickness of the Hawkpan fire wall system were decided by the steel channel specifications, Hawkpan thickness and rock wool thickness. The exact data please browse Hawkpan fire wall system tabulation.

适用范围 Application

厂房	Factories
仓库	Storehouse
图书馆	Library
博物馆	Museum
会议中心	Conference center
宾馆、酒店	Hotel



Hawkpan Steel Smoke Exhaust Duct Fire Protection



- ① Hawkpan 9mm

② L Shape steel channel 40x40x0.6mm

③ Rock wool, 50mm thickness, 100kg/m3 density

④ Steel Smoke Exhaust Duct

⑤ Derrick
- ⑥ Hawkpan strip 100x9mm

⑦ Self-taping screws 3.5x25mm @ 250mm

⑧ U50x40x0.6mm size steel channel

⑨ Expansion bolt

⑩ Pole arm

系统简介

防烟与排烟系统中的管道、风口及阀门等必须采用不燃材料制作。

防火风管：采用不燃、耐火材料制成，能满足一定耐火极限的风管。

火克板自撑式风管、铁皮风管包覆、保温风管均采用不燃材料制作，并达到1-3小时耐火极限要求。

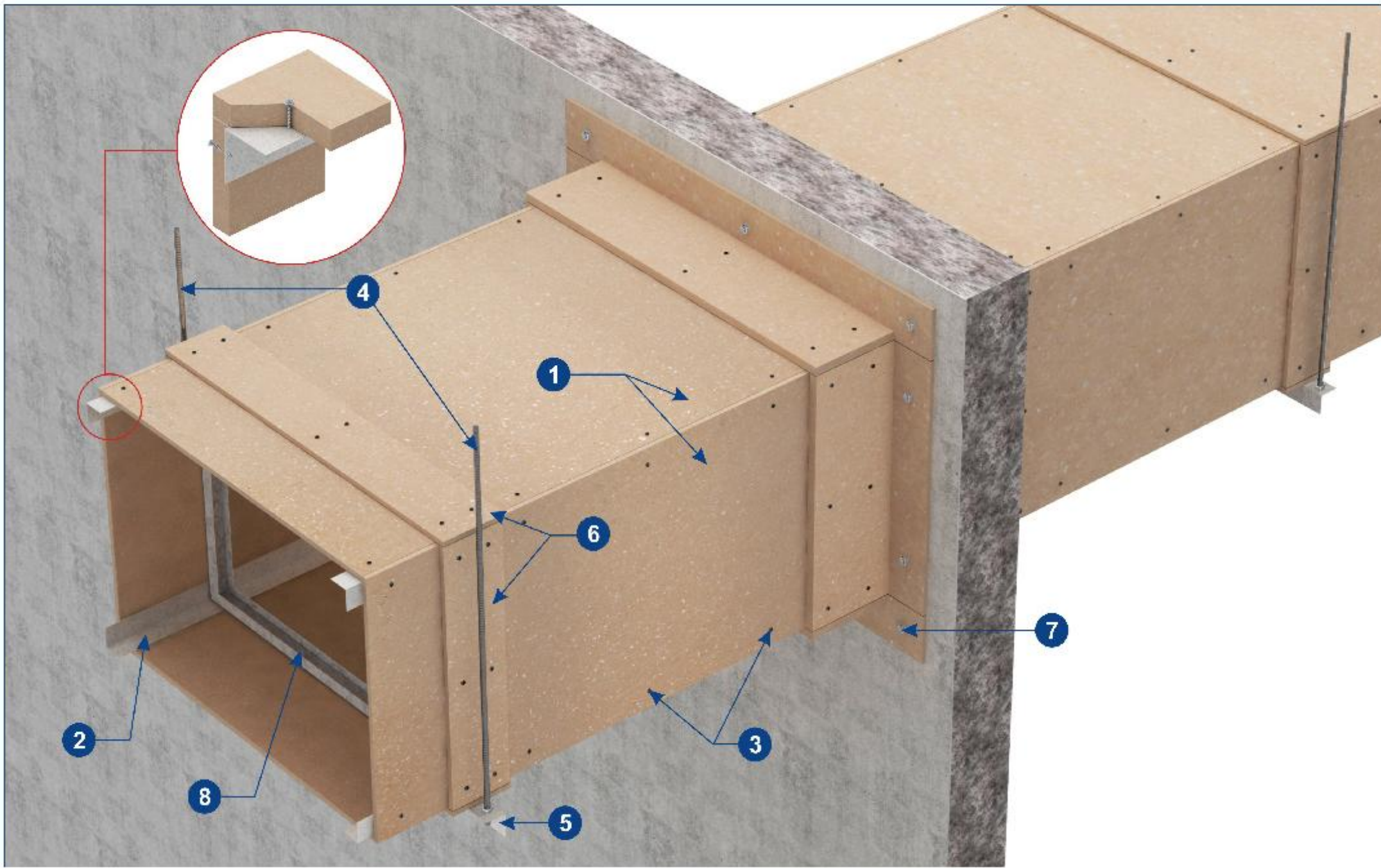
System Introduction

The chimney, vent and valve of smoke-preventing and smoke-exhausting system, must be made by non-combustible materials

Ventilation Smoke Exhaust Duct Fire Protection: A fire system that was made by non-combustible fire resistant board, which can meet the fire endurance requirement.

Hawkpan self-supported smoke exhaust duct, Hawkpan steel smoke exhaust duct and Hawkpan insulation smoke duct are all made by non-combustible materials, and these fire duct systems had perfectly achieved 1hrs ~ 3hrs fire endurance.

Hawkpan Self-supported Smoke Exhaust Duct Fire Protection



- ① Hawkpan 12mm

② L Shape steel channel 40x40x0.6mm

③ Self-taping screws 3.5x25mm @ 250mm

④ Derrick
- ⑤ Pole arm

⑥ Hawkpan strip 100x12mm

⑦ Expansion bolt

⑧ U50x12x0.6mm size steel channel

系统特点

通过权威检测机构检测认可，防火、环保、节能；

较铁皮风管、玻璃钢风管使用寿命长、美观；

漏风量、抗冲击、变形量等

施工快捷，有效缩短施工周期

适用范围

建筑中的机械加压防烟系统、机械排烟系统、通风系统、空气调节系统。

Leading Feature

Passed authoritative testing organizations' test, fireproof, environment friendly, energy-saving.

Fast, efficient construction to shorten the construction cycle.

Longer service life and more artistic compared with steel smoke duct and glass reinforced plastics smoke duct.

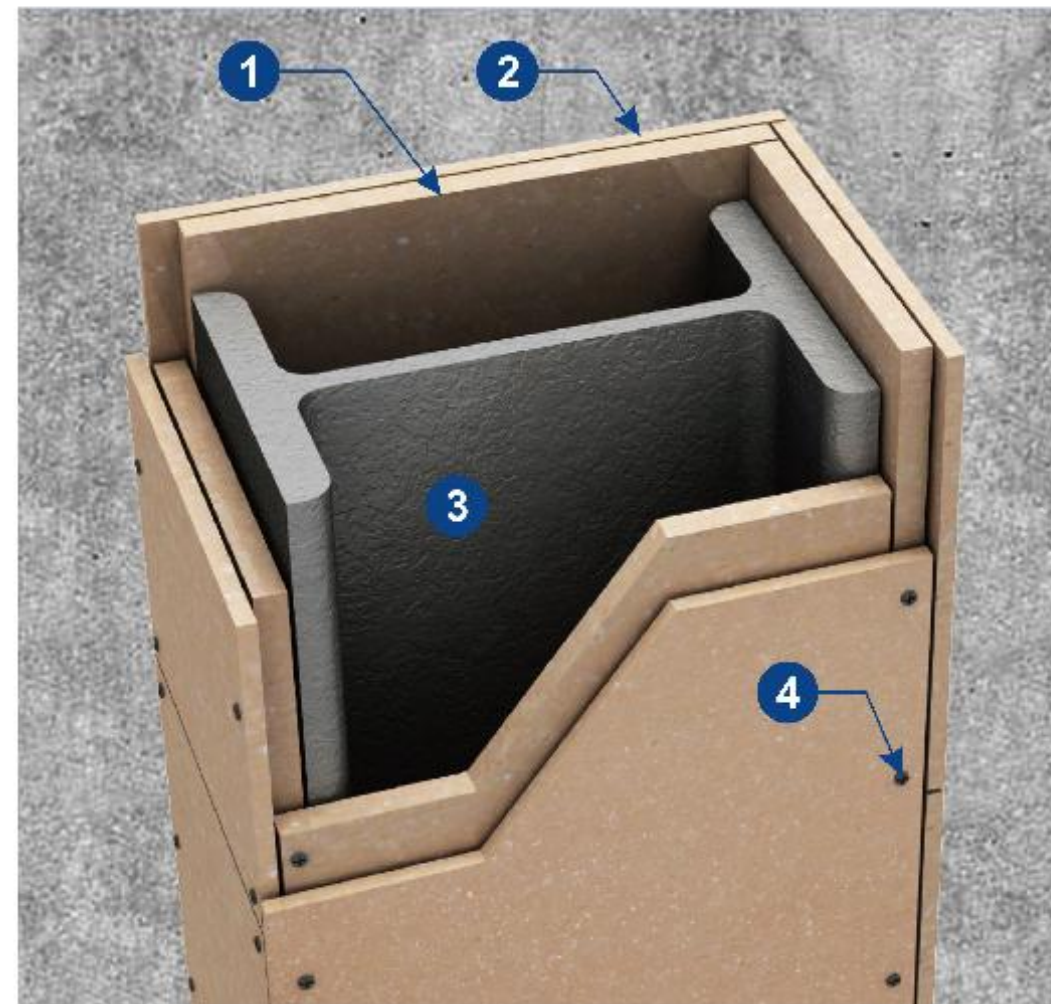
Advantages in air leakage, shock resistance, deformation, and so on.

Quick installation process, save construction period efficiently

Application

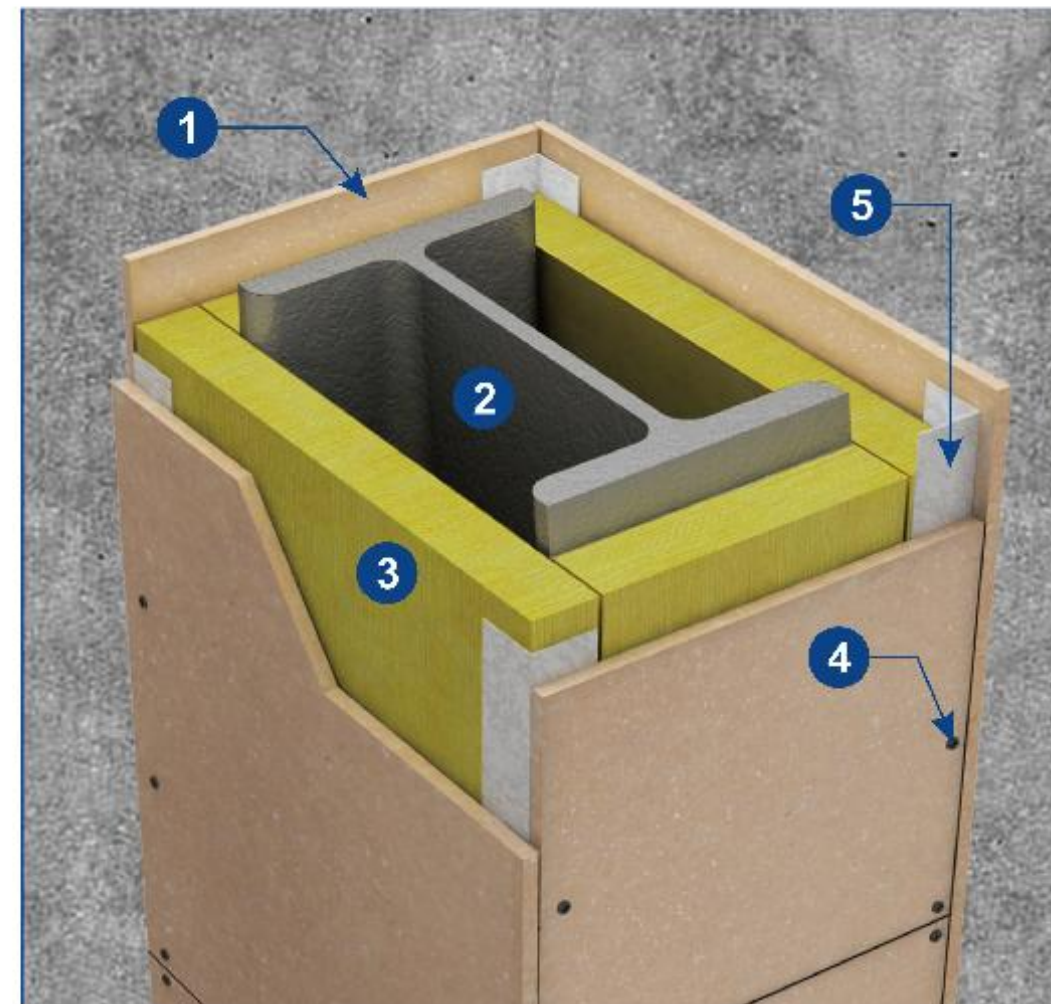
Mechanical compression smoke control system, mechanical smoke exhaust system, ventilation system, air conditioning system,

## Steel Column Fire Protection 1



- ① Hawkpan 12mm
- ② Hawkpan 20mm
- ③ Steel column
- ④ Self-taping screws 3.5x25mm @ 250mm

## Steel Column Fire Protection2



- ① Hawkpan 12mm
- ② Steel column
- ③ Rock wool, 50mm thickness, 100kg/m3 density
- ④ Self-taping screws 3.5x25mm @ 250mm
- ⑤ L Shape steel channel 50x50x0.6mm

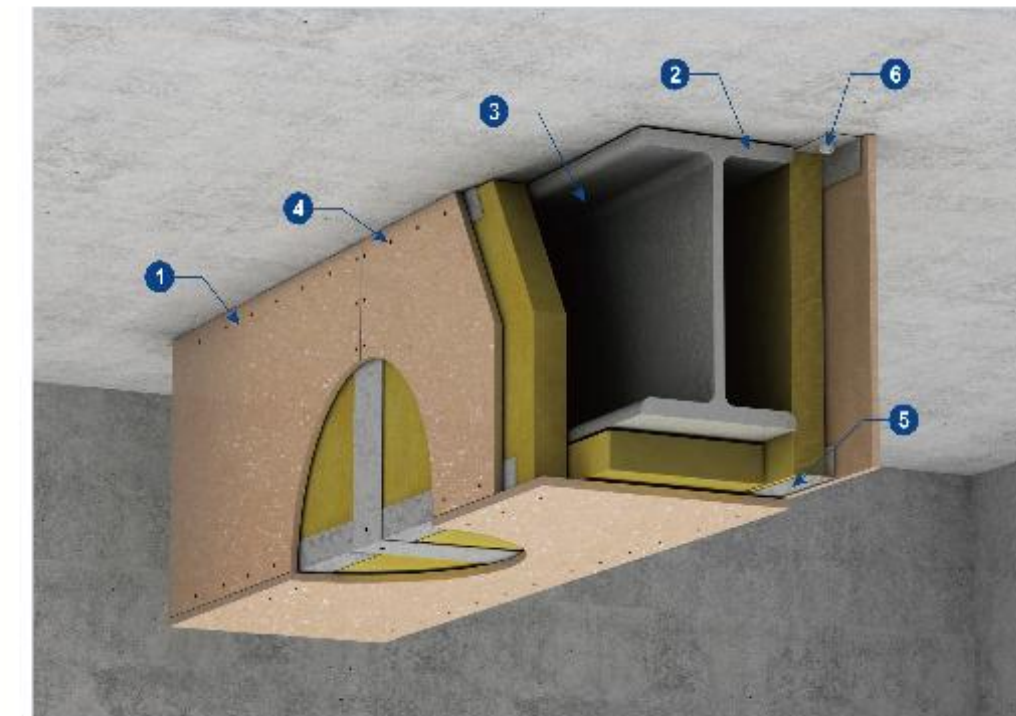
## 系统简介

火克无机防火板辅以轻钢龙骨、自攻螺钉稳固在钢基材表面，由于无机防火板自身导热系数低、隔热性好、耐久性好、加上岩棉层的阻热作用，有效减缓了钢材的温升，提高了钢结构的耐火极限。是诸多防火保护措施中最为安全可靠、经济实用、环保的系统之一。

## System Introduction

Inorganic fire protection boards (Hawkpan) together with steel channels were firmly fixed on the steel structure by self-taping screws. Because of low thermal conductivity, good insulation capability, durability of inorganic fire protection board (Hawkpan) and the heat resistance function of rock wool, the temperature rising speed was efficiently reduced and had enhanced the fire endurance of the whole steel structure. It's the most security, most economic and most healthy steel structure fire protection system among the multiple fire precaution measures.

## Steel Beam Fire Protection



- ① Hawkpan 12mm
- ② Steel Beam
- ③ Rock wool, 50mm thickness, 100kg/m3 density
- ④ Self-taping screws 3.5x25mm @ 250mm
- ⑤ L Shape steel channel 50x50x0.6mm
- ⑥ Expansion bolt



## 系统特点

- ▶ 耐火极限3小时，完全满足《建筑设计防火规范》要求；
- ▶ 轻钢龙骨无机防火板体系，永久固定式安装；
- ▶ 不燃A1级防火，受火后不产生毒气和烟雾；
- ▶ 纤维增强硅酸盐材质，使用寿命50年以上；
- ▶ 集防火、装饰为一体；
- ▶ 干式作业，无需养护期，有效缩短施工周期。

## Leading Features

- ▶ 3hrs Fire endurance, meet the requirement of Code for fire protection design of buildings perfectly.
- ▶ A system combined by steel structure and inorganic fireproof board, permanently fixed installation.
- ▶ Incombustibility Class A1, no smoke and no toxicity release when burning.
- ▶ Fiber Reinforced Calcium Silicate Board, service time is above 50 years.
- ▶ Join fire protection and decoration together.
- ▶ Dry installation, no need maintenance period, and it will save construction period efficiently.

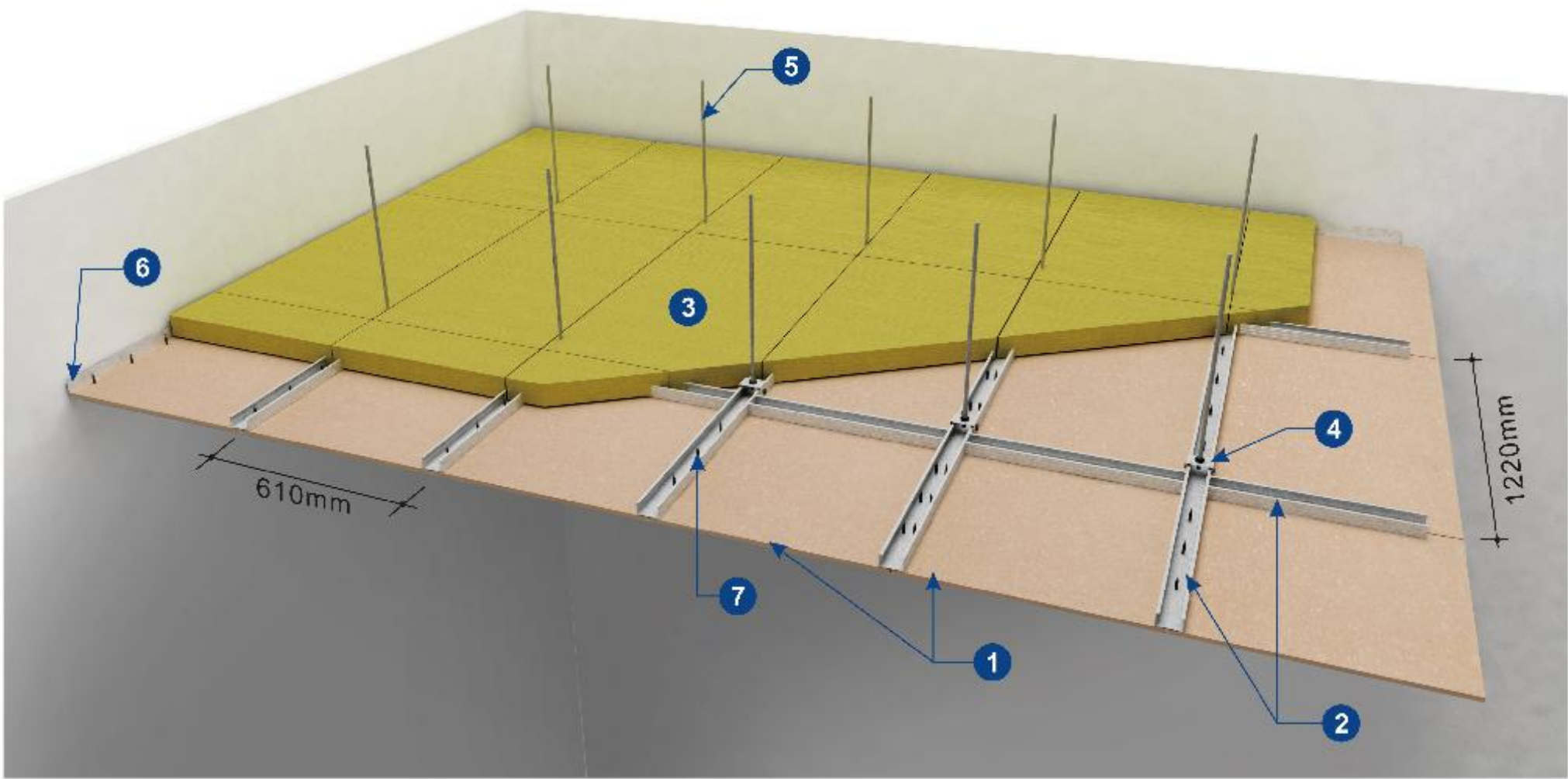
## 适用范围

钢结构因具有高强、高韧、抗震、轻质、价廉、施工周期短等独特的优点，在建筑中得到了越来越广泛的应用，尤其是超高层大跨度商业大厦、低层大跨度仓库、厂房等。

## Application

Because of the advantage of high strength, high toughness, low deadweight, anti-seismic, low cost and short construction time, steel structure is being more and more widely used in construction buildings, especially those super high-rise and big span commercial buildings, low storied and big span storehouses, factories and so on.

Hawkpan Ceiling Fire Protection



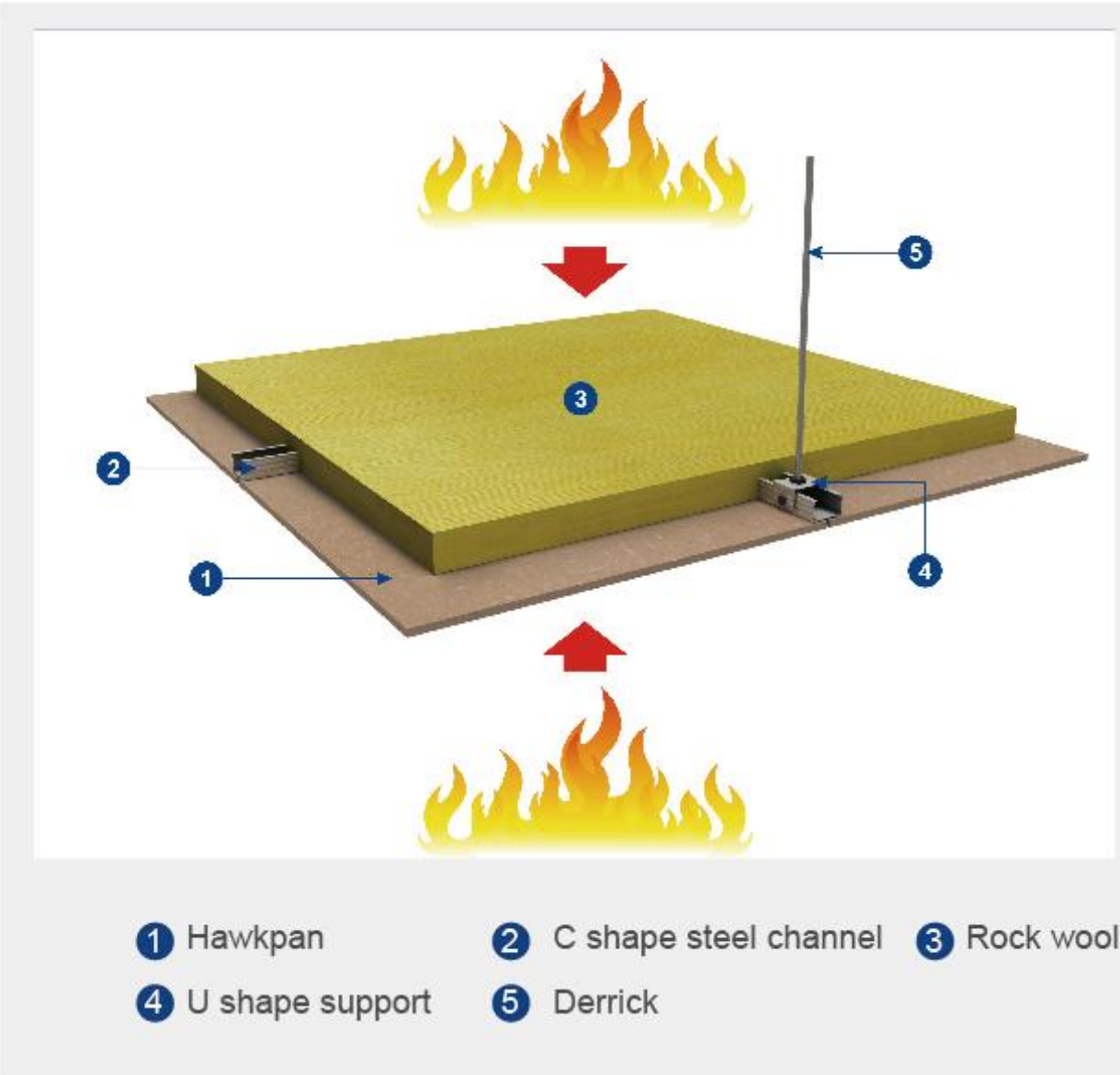
- 1 Hawkpan
- 2 C shape steel channel
- 3 Rock wool
- 4 U shape support
- 5 Derrick
- 6 L shape steel channel
- 7 Self-taping screws

系统简介

火克板防火吊顶系统集优质轻钢龙骨、保温岩棉、A1级不燃无机防火板为一体，通过国家权威检测机构检测，具有0.5-3小时耐火极限构造，为实现建筑中的横向防火分区提供最为安全、经济、实用的解决方案。

System Introduction

Hawkpan Ceiling Fire Protection System is a blend of high quality light-gauge steel channel, rock wool and inorganic incombustibility class A1 fire protection board (Hawkpan). It is a 0.5hrs ~ 3hrs fire endurance structure, and passed every kind of national test concern. The developing of Hawkpan Ceiling Fire Protection System had provided a most security, most economic and most practical solution for lateral fireproof partition in the application of steel structural buildings.



系统特点

- ▶耐火极限0.5~3小时，完全满足《建筑设计防火规范》要求；
- ▶无机防火板，与建筑主体同等使用寿命；
- ▶吊顶系统质量轻，为建筑结构柱和梁减轻荷载负担；
- ▶系统整体厚度薄，有效增大使用空间；
- ▶施工快捷，有效缩短施工周期。

Leading Features

- ▶ 0.5hrs ~3hrs Fire endurance, meet the requirement of Code for fire protection design of buildings perfectly.
- ▶ Inorganic fire protection board, the service time is the same as the life of the construction buildings.
- ▶ Low deadweight ceiling system, will reduce the load-bearing of structural steam and column.
- ▶ Thin ceiling system, will enlarge the room space.
- ▶ Quick installation process, save construction period efficiently

适用范围

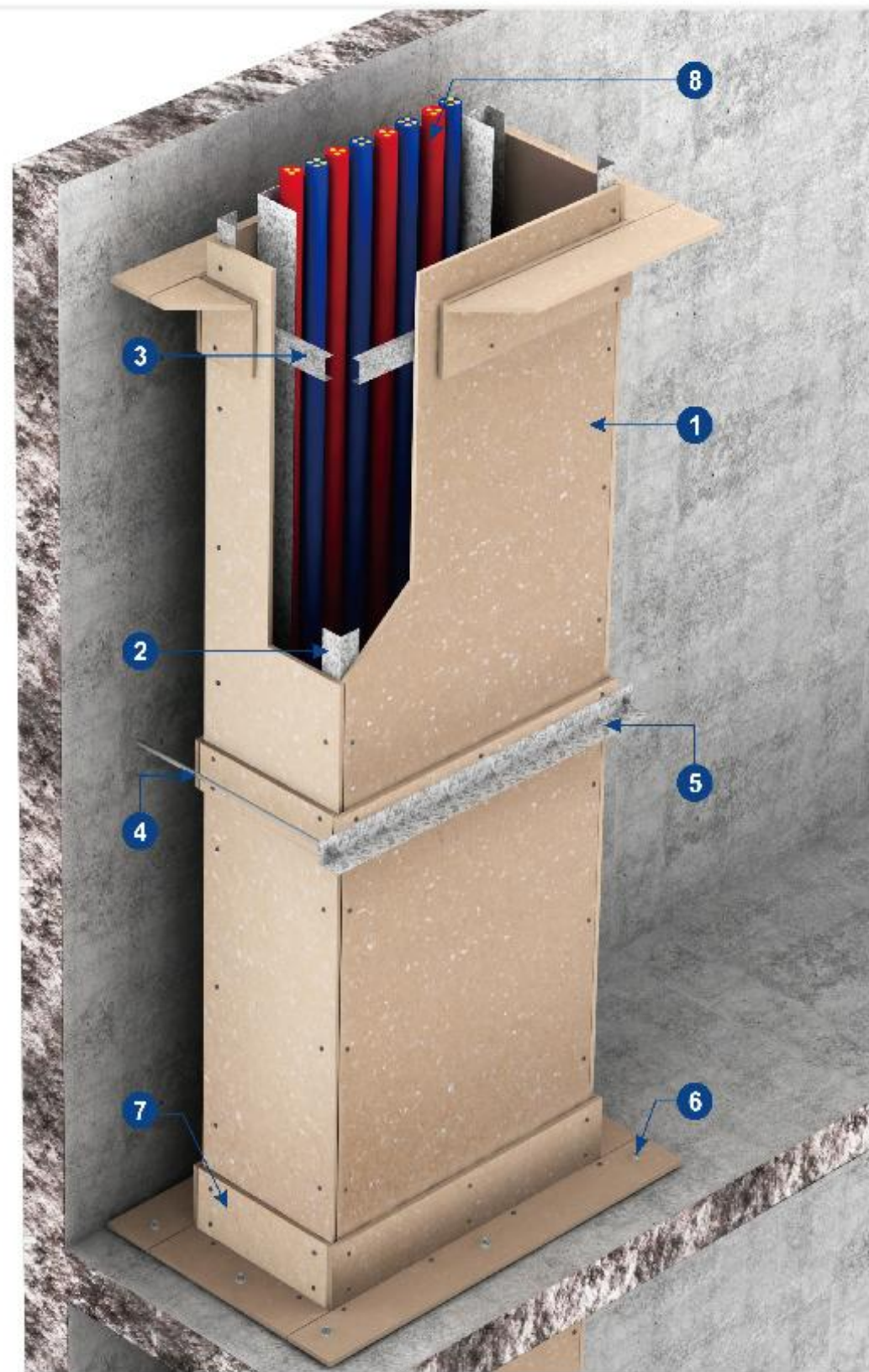
不同的防火吊顶系统构造具有相应的耐火极限，将有效保护建筑中电气、管道、通风、排烟等系统的正常运行。同时对混凝土楼板及钢结构楼面具有很好的防火保护功能。

Application

Different ceiling fire protection system has corresponding fire endurance; it will protect the electric cable, gas pipeline, ventilation system, smoke exhaust system and so on to make sure these systems run without problem. In the meanwhile, concrete floor and the floor system of steel structural buildings are all have good fire protection function.



Vertical Piping Well Fire Protection



系统简介

电缆井、管道井、排烟井、排气道、垃圾道等竖向管道井，应分别独立设置；其井壁应为耐火极限不低于1.00h的不燃烧体；载自GB50016-2006《建筑设计防火规范》7.2.9

System Introduction

Vertical piping well, such as cable pit, piping shaft, smoke shaft, air vent, refuse chute and so on, should be build separately, the fire endurance of the non-combustible materials for the sidewall of the vertical piping well should be no less than 1.00hrs. (The article was first published in GB50016-2006 Code for fire protection design of buildings 7.2.9)

- ① Hawkpan 12mm
- ② L40x40x0.6mm Steel channel
- ③ U50x40x0.6mm Steel channel
- ④ Derrick
- ⑤ Pole arm
- ⑥ M6x80mm Expansion bolt
- ⑦ Hawkpan strip 100x12mm
- ⑧ Cable

系统特点

- 轻钢龙骨骨架体系，很好实现与建筑主体的连接；
- 构件厚度薄，扩大使用空间；
- 施工快捷，有效缩短施工周期。

Leading Features

- Light-gauge steel channel as the main skeleton system, it can achieve a perfect combination with the main building.
- Thin piping shaft sidewall fire protection system, will enlarge the room space.
- Quick construction process, save construction period efficiently



系统简介

消防用电设备的配电线路应满足火灾时连续供电的需要，其敷设应符合下列规定:暗敷时，应穿管并敷设在可燃体结构内且保护层厚度不应小于30mm。明敷时(包括敷设在吊顶内)，应穿金属管或封闭式金属线槽，并应采取防火保护措施；

System Introduction

The distribution line of electric equipment for fire protection and fire extinguishing should meet the continuous power supplying requirement. The construction of cable distribution line should meet the rules below: Concealed cables, should be put into cable pipe, should be laid in a no less than 30mm thickness non-combustible materials. Exposed laying, including the cable laying in the suspended ceiling system, should be put into metal pipe or seal groove, and should take measures for fire protection.

系统特点

- 耐火极限1.5h，符合GA479-2004《耐火电缆槽盒》要求；
- 结构紧凑，占用空间小；
- 施工快捷，有效缩短施工周期。

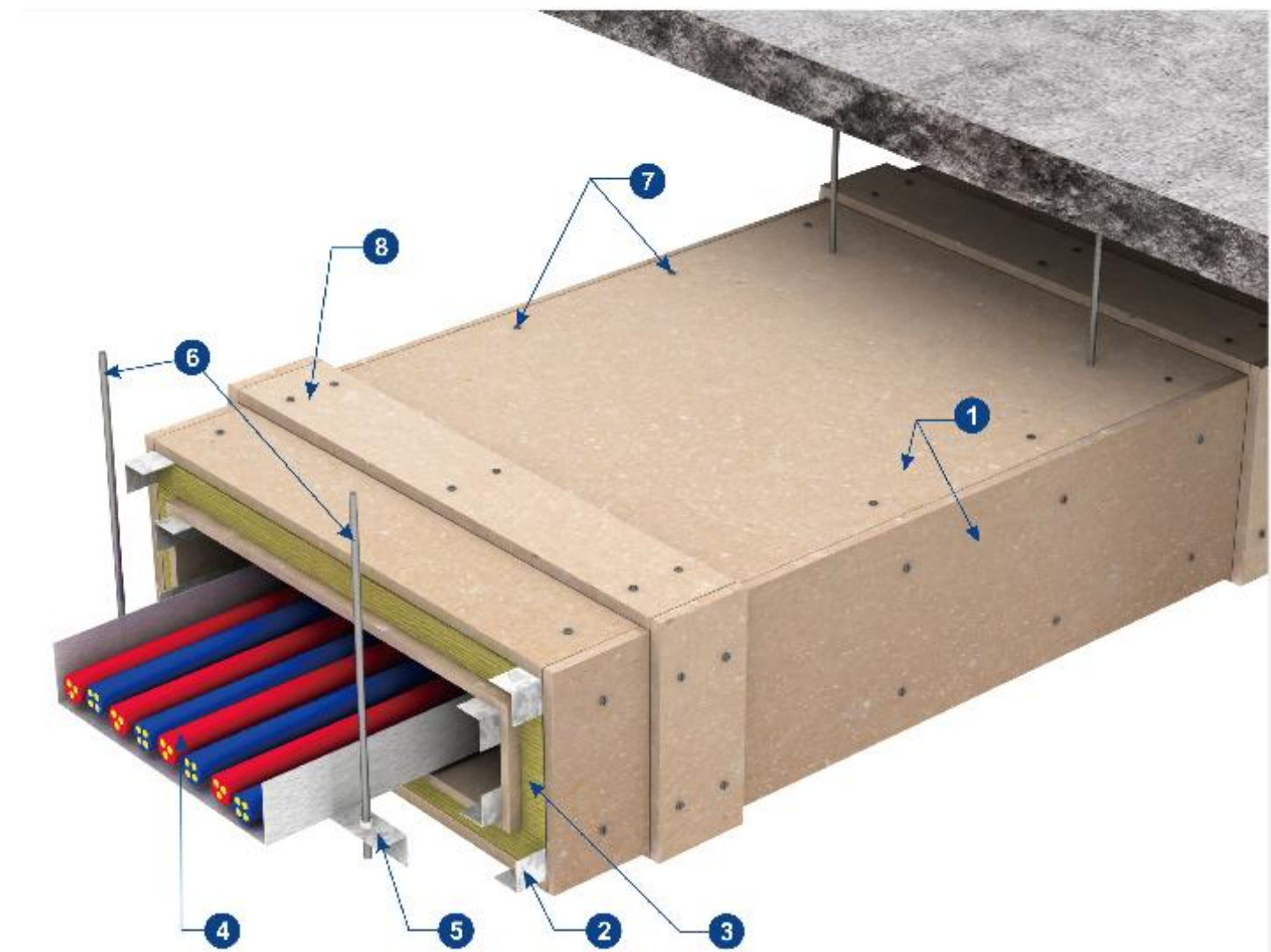
Leading Features

- 1.5hrs Fire endurance, meet the requirement of GA 479-2004 Fire-resistant cable tray perfectly.
- Compact structure, occupy small space.
- Quick construction process, save construction period efficiently

适用范围 Application

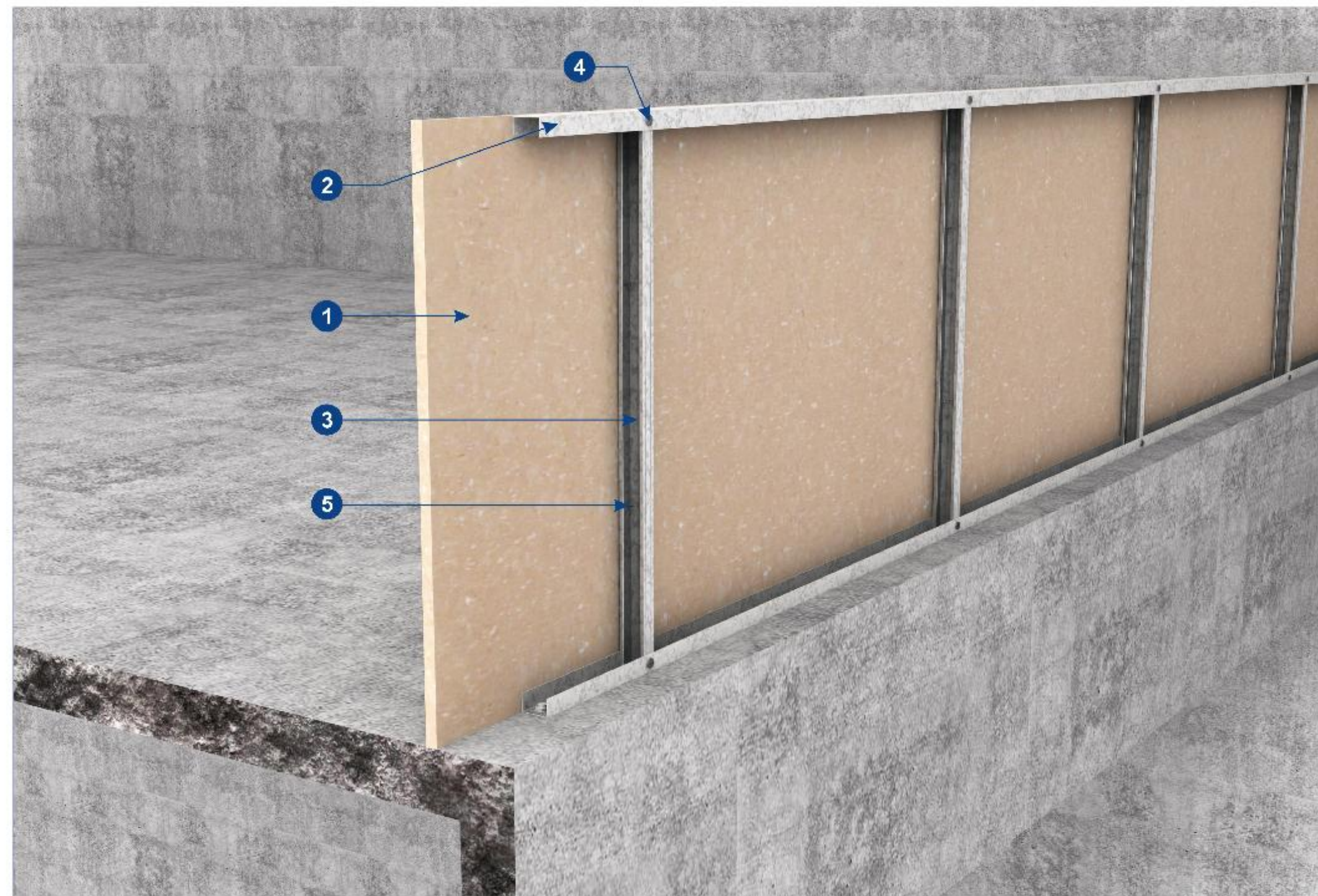
用于建筑物中电力设备的防火保护。  
Electrical equipment fire protection in buildings

Hawkpan Electric Cable Fire Protection



- ① Hawkpan 12mm
- ② L Shape steel channel
- ③ Rock wool, 50mm thickness, 100kg/m3 density
- ④ Electric cable
- ⑤ Pole arm
- ⑥ Derrick
- ⑦ Self-taping screws 3.5x25mm @ 250mm
- ⑧ Hawkpan strip 100x12mm

Glazing Curtain Wall Fire Protection



- 1 Hawkpan 12mm
- 2 U100x40x0.6mm Steel channel
- 3 C100x45x0.6mm Steel channel
- 4 Self-plugging rivet
- 5 Self-taping screws 3.5x25mm @ 250mm

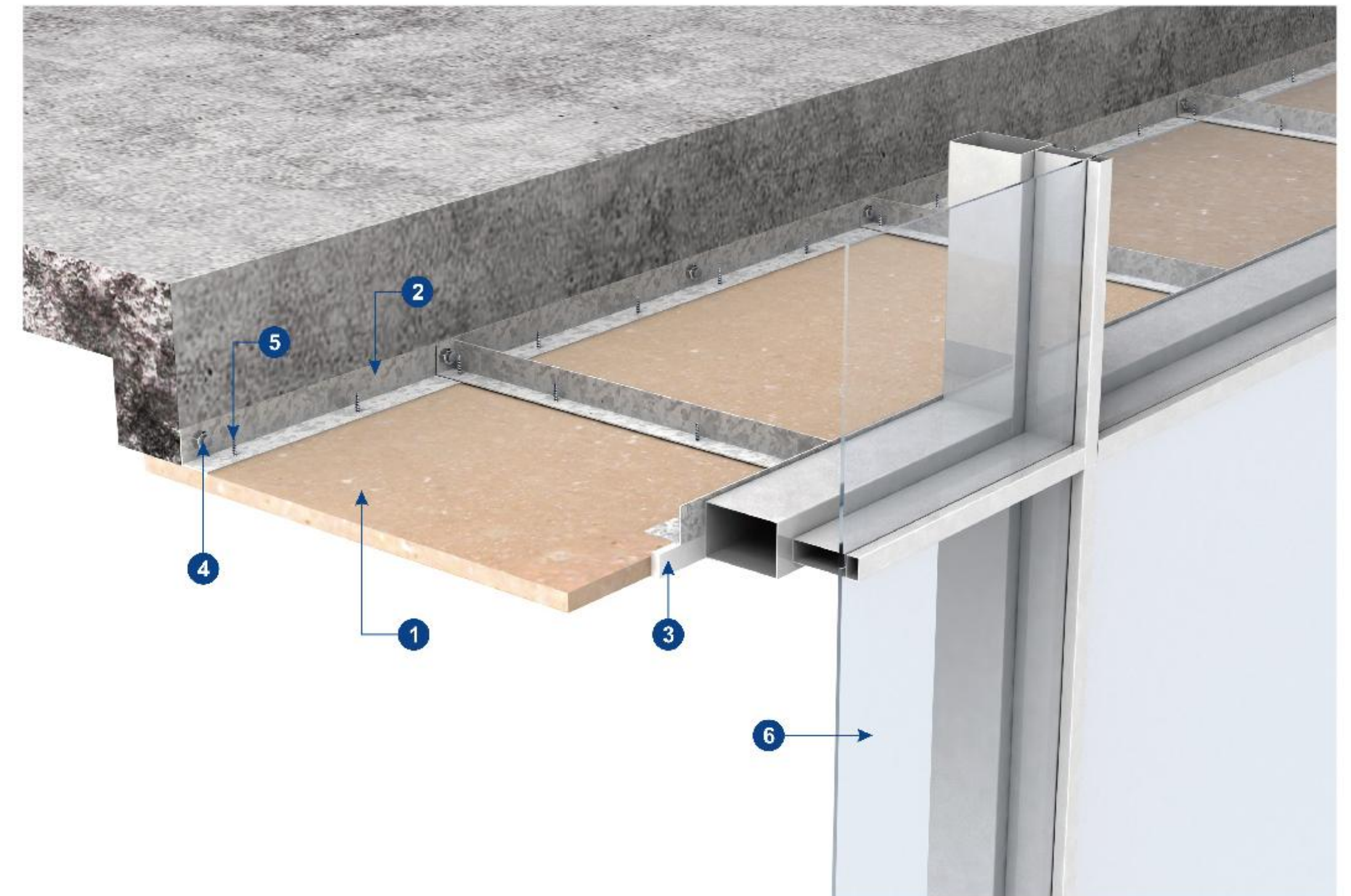
系统简介

无窗间墙和窗槛墙的幕墙，应在每层楼板外沿设置耐火极限不低于1.00h、高度不低于0.8m的不燃烧实体裙墙；幕墙与每层楼板、隔墙处的缝隙应采用防火封堵材料封堵。  
火克板防火墙系统在幕墙防火裙墙及封堵得到广泛使用

System Introduction

For the Curtain wall of blind wall and windowsill, a solid skirt wall with fire endurance of no less than 1hrs and height no less than 0.8meter should be established along each floor edge. Fireproof materials sealing should be applied to the seams among curtain wall, each floor and partitions. Hawkpan fire wall system is being applied to the curtain wall, fire skirt wall and fire sealing practice very frequently.

Glazing Curtain Wall Fire Protection



- 1 Hawkpan 12mm
- 2 L Shape steel channel 50x50x0.6mm
- 3 Fire sealant
- 4 M6x80mm @300mm Expansion bolt
- 5 Self-taping screws 3.5x25mm @ 250mm
- 6 Glazing Curtain Wall

系统特点

- 轻钢龙骨骨架体系，很好实现与建筑主体的连接
- 构件重量轻，有效减轻主体荷载；
- 施工快捷，有效缩短施工周期。

适用范围

用于建筑的幕墙部分楼层间的防火。

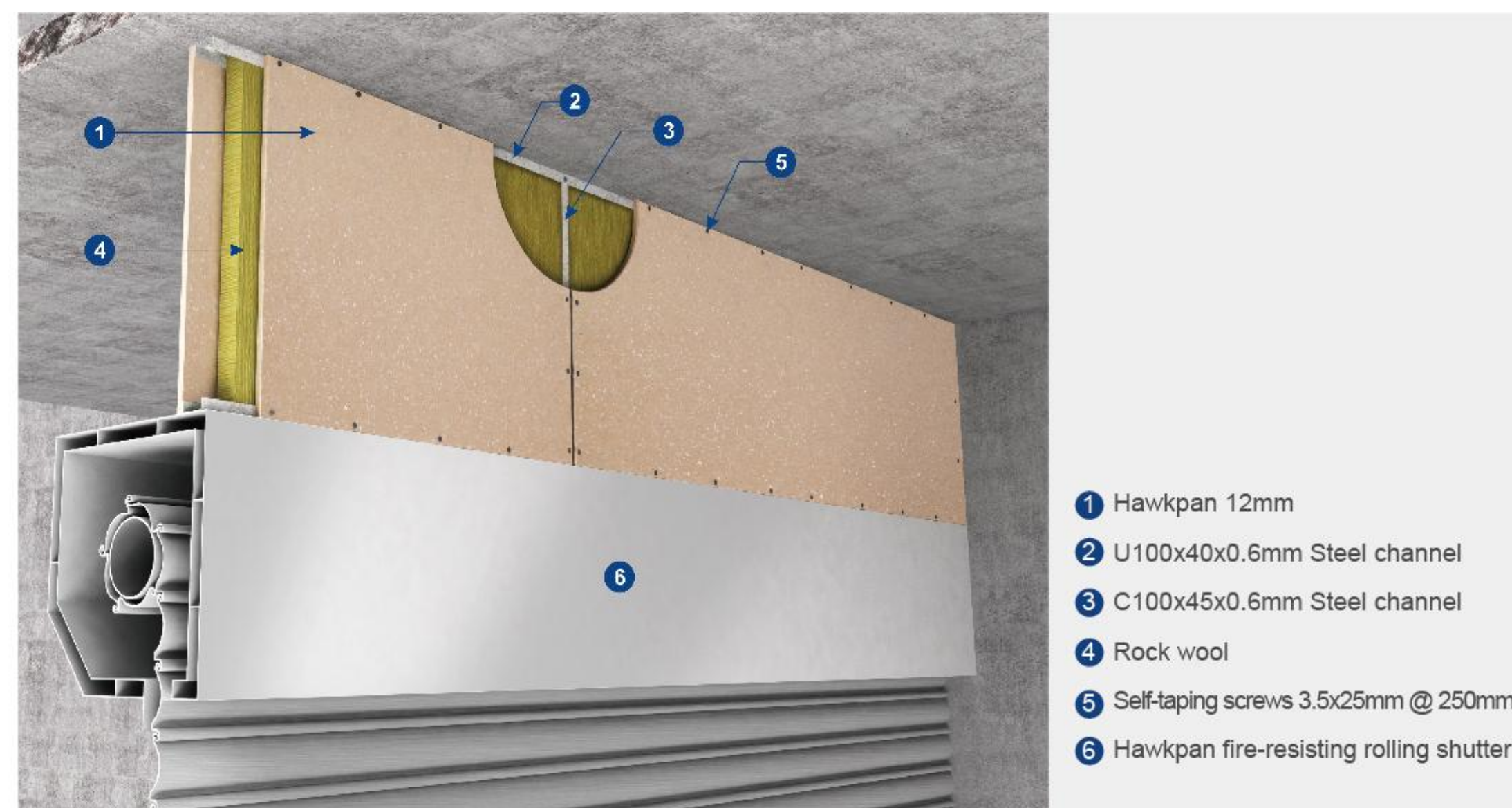
Leading Features

- Light-gauge steel channel as the main skeleton system, it would be a perfect combination with the main building.
- Low deadweight system, will reduce the load-bearing of structural steam and column.
- Quick construction process, save construction period efficiently.

Application

Fire protection of curtain wall

## Fire-resisting Rolling Shutter



### 系统简介

防火分区间采用防火卷帘时，耐火极限应不低于3.00h，卷帘顶部也应达到相应的防火要求。火克板防火墙系统在防火卷帘上部封堵得到广泛使用

### System Introduction

The fire endurance of fireproof rolling curtain system for Building fire zoning should be no less than 3hrs, and the rolling curtain top also should meet the corresponding requirements for fire protection. Hawkpan fire wall system is being widely used in fire shutter upper closure system.

### 适用范围

适用于厂房、仓库等需要安装防火卷帘的项目。

### 系统特点

- 轻钢龙骨骨架体系，很好实现与卷帘主体的连接
- 构件重量轻，有效减轻主体荷载；
- 施工快捷，有效缩短施工周期。

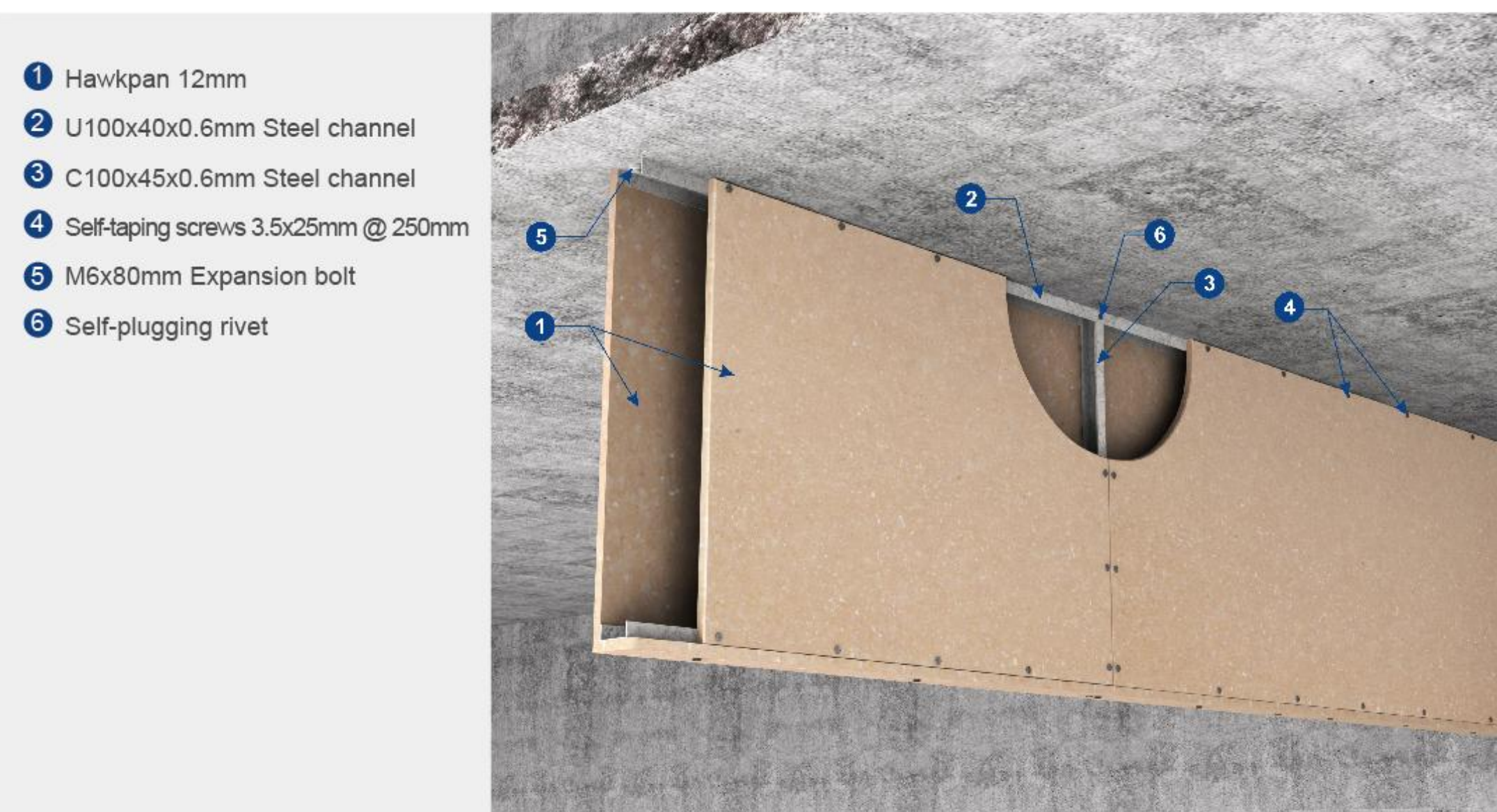
### Leading Features

- Light-gauge steel channel as the main skeleton system, it would be a perfect combination with the curtain wall.
- Low deadweight system, will reduce the load-bearing of structural beam and column.
- Quick construction process, save construction period efficiently.

### Application

Factories, storehouse and those similar projects that need to install fire-resisting rolling shutter.

## Cavity & Smoke Barriers



### 系统简介

需设置机械排烟设施且室内净高不小于6m的场所应划分防烟分区，每个防烟分区的建筑面积不宜超过500m²，防烟分区不应跨越防火分区。

防烟分区宜采用隔墙、顶棚下凸出不小于500mm的结构梁以及顶棚或吊顶下凸出不小于500mm的不燃烧体等进行分割。

火克板防火墙系统在挡烟垂壁中得到广泛使用

### System Introduction

Smoke-prevention zoning should be divided at those places which have a height no less than 6meters and need to build mechanical smoke exhaust system. The building area for each smoke-prevention zoning should be no less than 500 square meters, and the smoke-exhaust zoning can't stride across the fire protection zoning.

Partitions, structural beam with convex border of no less than 500mm under the roof, non-combustible materials with convex border of no less than 500mm under the roof or suspended ceiling are better to be applied for the smoke-prevention system.

Hawkpan fire wall system is being widely used in cavity & smoke barriers system.

### 系统特点

- 轻钢龙骨骨架体系，很好实现与主体的连接；
- 造型可随机调整，集安全、美观为一体；
- 施工快捷，有效缩短施工周期。

### Leading Features

- Light-gauge steel channel as the main skeleton system, it would be a perfect combination with the main building.
- Construction shape can be adjusted according to actual requirement, join security and beauty together.
- Quick construction process, save construction period efficiently.

### 适用范围 Application

用于建筑物有防火、防烟要求的区域。

Those areas that had fire protection requirement and smoke prevention requirement.

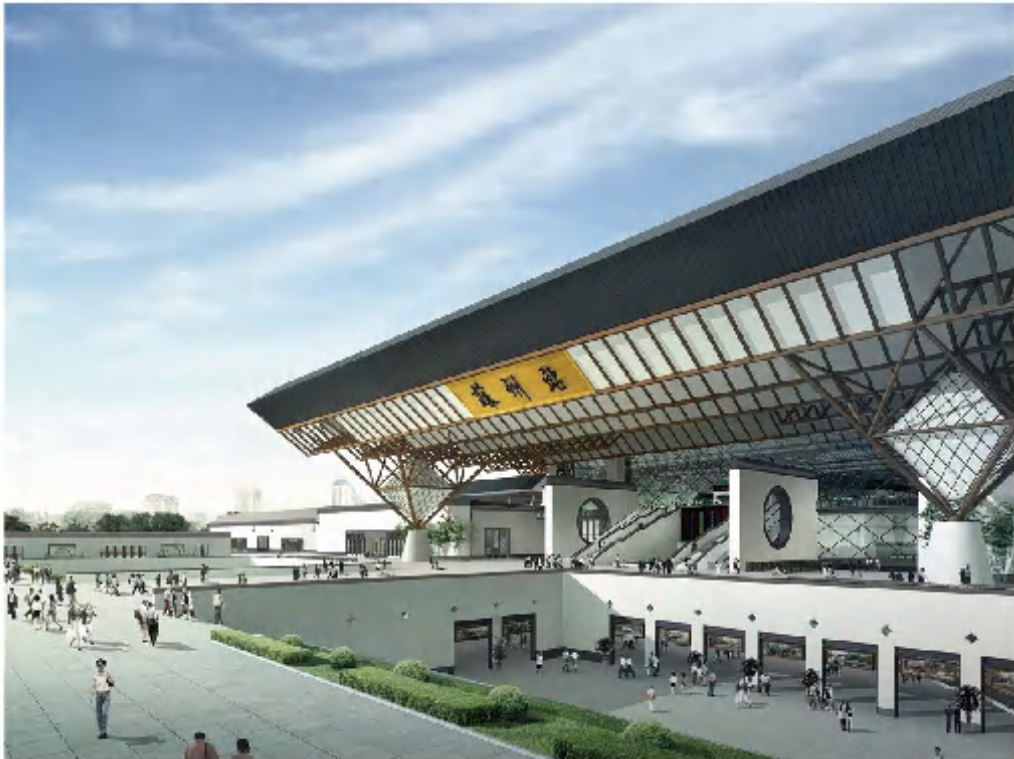
# Demo Projects



- |  |                            |
|--|----------------------------|
| ① China Pavilion of 2010 Shanghai EXPO | ② Guangzhou Baiyun Airport |
| ④ Beijing Subway                       | ③ Suzhou Train Station     |

## Infrastructure Projects

- |                         |   |
|-------------------------|---|
| Shanghai Subway         | Wuxi Subway                               |
| Guangzhou Subway        | Ningbo Subway                             |
| Shenyang Subway         | Shanghai Hongqiao Airport                 |
| Nanjing Subway          | Boeing Hangar of Shanghai Pudong Airport  |
| Chongqing Light Railway | Urumchi Airport                           |
| Xi' an Subway           | South Beijing Train Station               |
| Guangzhou Subway        | South Nanjing Station of Beijing–Shanghai |
| High-speed Railway      |   |



- |   |  |
|---|--|
| ① Baiyun International Conference Center in Guangzhou | ② Head Office of China Minsheng Banking Corp., Ltd |
| ③ Sichuan fire command center                         |  |

## Public construction project

- |  |  |
|--|--|
| Beijing Aerospace Exhibition Center              | Shanghai Zhongshan Hospital                          |
| China Film Base                                  | Henan Arts Centre                                    |
| Kunshan Zong Renqin Hospital                     | Information Center of Bank of China                  |
| National Aquatics Center Renew Project           | Jiaozuo 91 Hospital                                  |
| Shanghai UnionPay Center                         | Workers Stadium                                      |
| Beijing University                               | Offices of The National United Front Work Department |
| Beijing Hospital                                 | Capital University of Economics and Business         |
| Offices of Guangdong Provincial Labor Department | Shanghai Xinhua Hospital                             |
| Shandong Museum                                  | Guangdong Province Land and Building                 |



# Demo Projects



- 1

Guangzhou  
Tikoo Hui
- 2

Grand Gateway plaza shanghai
- 3

Sinopec Headquarter

## Civil Construction Project

- Westin Beijing Hotel

The Shanghai World Financial Center
- Beijing Dazhongsi Market

Shanghai Zhengda Himalaya
- Zhongguancun E World

Beijing Urban Construction Building
- The Olympic Stadium of Beijing underground space

Zhongguancun Financial Center
- Grand Gateway plaza shanghai

Beijing Wealth Centre
- Peace Hotel Shanghai

Beijing Wantong Center



## Industrial Projects

- Changsha Cigarette Factory

Guangdong International Textile Bo

Oishi food factory
- Lop Nor Potash Mine Owned Power Plant

Guizhou Cigarette Factory

China Tobacco Guangdong
- Sichuan Chinese Photovoltaic Factory

Nanjing Liye Electrical

Deyang Oriental Motor Factory
- The Air Ministry of building 207

Wuhan Iron and Steel Plant

Beijing Publishing Base Depot
- Longyan Cigarette Factory

Guiyang Yibai Pharmacy

Chongqing Coca-cola
- Beijing Olympic Taiyanggong Owned Power Plant

Hefei Cigarette Factory

Ningxia Ning Dong Substation
- Elevated Library of Wuhu Double Coin tire

ABB Transformer Factory

Qinghai Province Xining and Polysilicon
- Shanghai Aircraft Manufacturing Factory

Baosteel Steelmaking Plant two

Suning North China of Transit
- Dali Cigarette Factory

Yili Milk

Guodian Hequ Power Plant
- Xinjiang Hami converter station of plus or minus 800000 Volts

Baisha Cigarette Factory

Jiangsu Sunshine EPITECH
- Caofeidian Shougang Steel Plant

Shanghai Boiler Factory

Logistics Base of Jia Shi Tong Medicine
- Qian'an Steel Factory

- 1

Shanghai Electric
- 2

The power plant of Guodiandianli Company
- 3

Refinery of CNPC



# Demo Projects



①

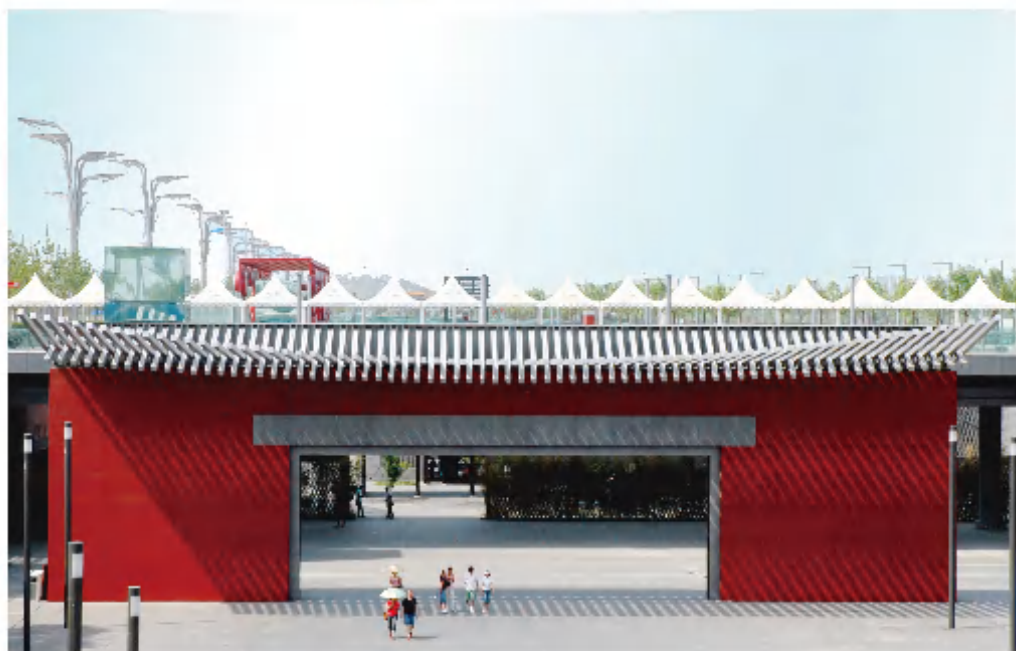
Guangzhou TV Tower

②

Shanghai Pudong International Airport

③

Beijing Olympic underground shopping mall



①

Students' apartment of Capital University of Economics and Business

②

Heaquarter of China Minsheng Banking Corp . Ltd

③

The office building of Guangzhou Municipal People's Congress Standing Committee

