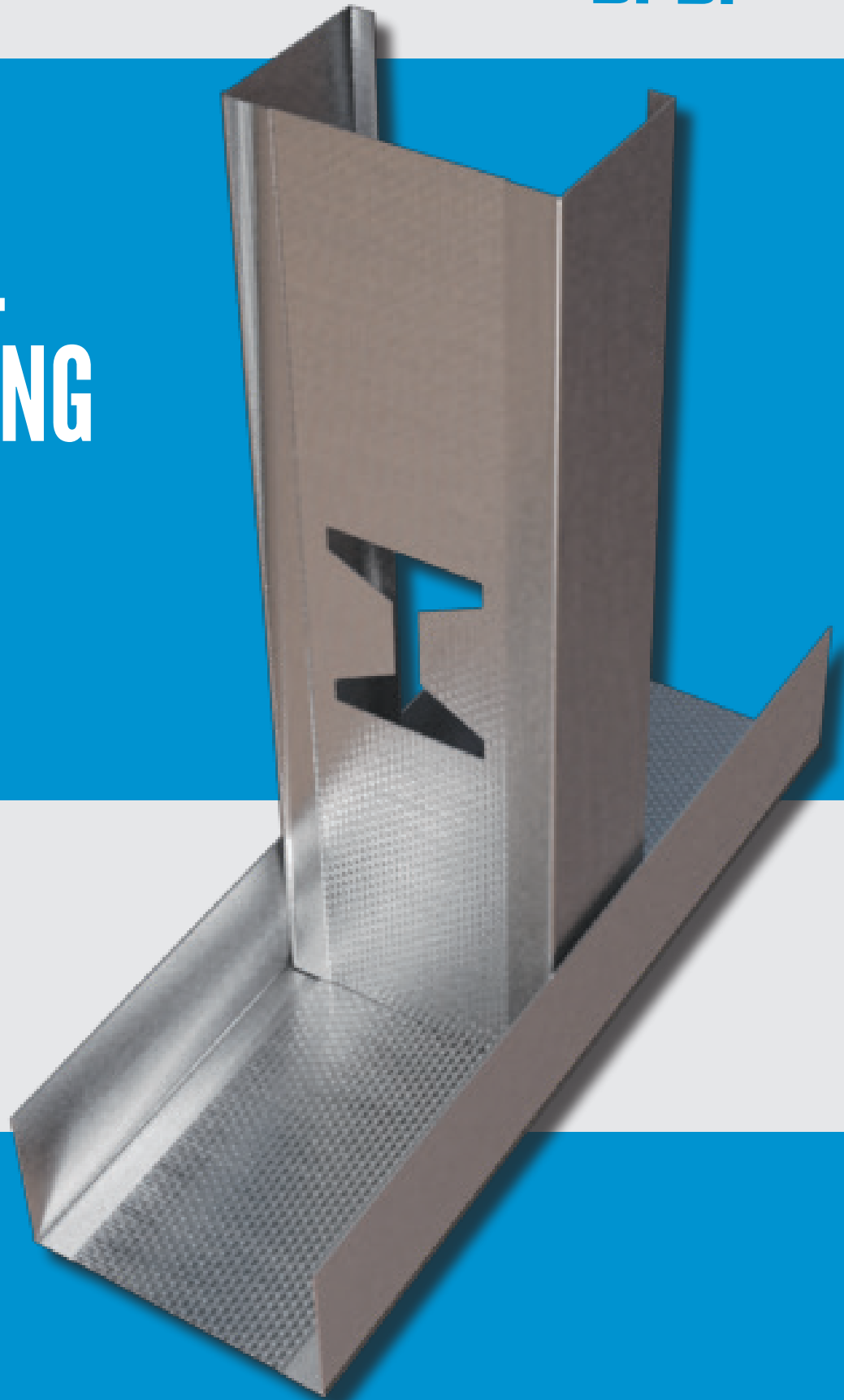


Specialized Factory for Steel Products  
SIGMA Factory for Steel Products



# DRY WALL AND CEILING PROFILES CATALOGUE

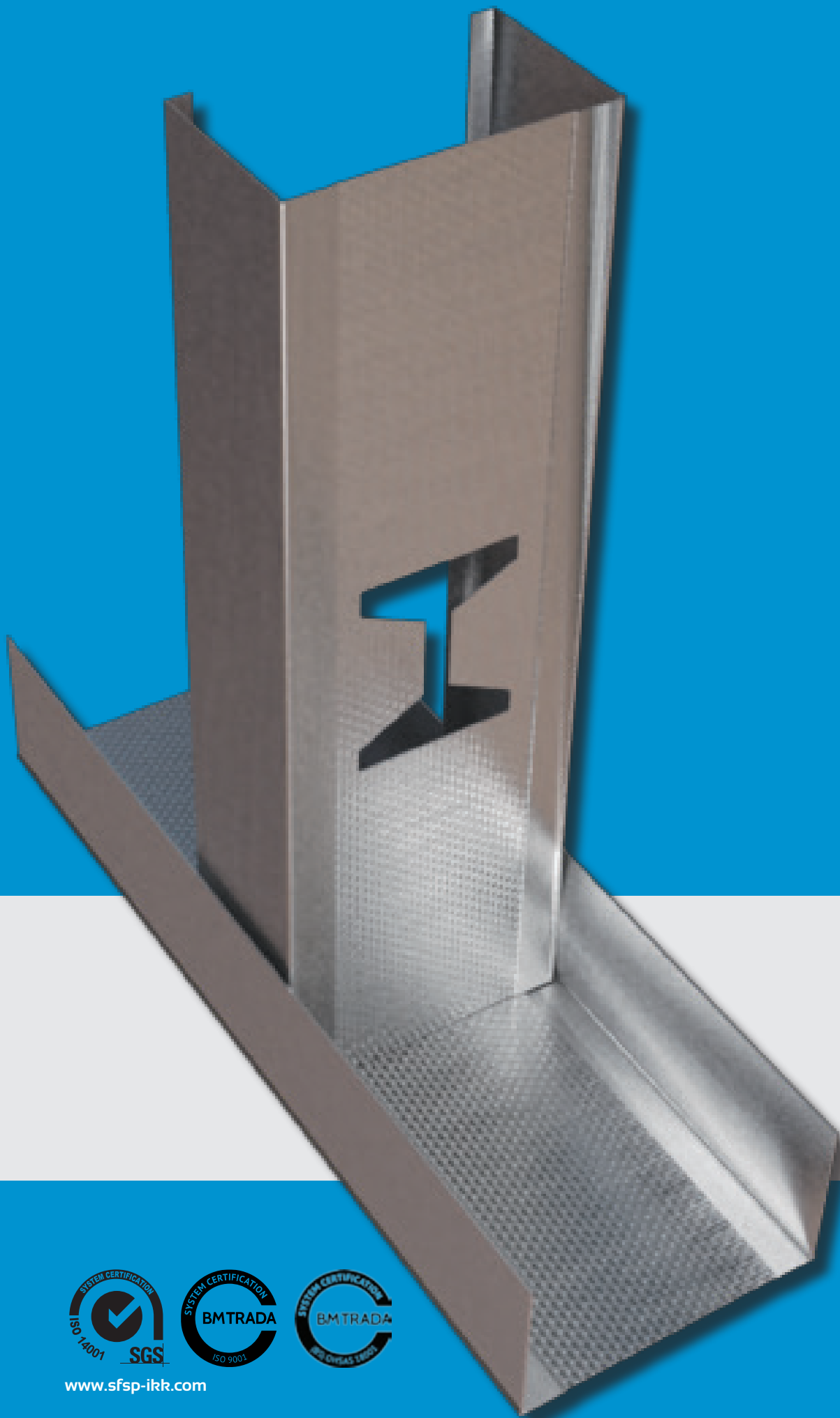


[www.ikkgroup.com](http://www.ikkgroup.com)

# INDEX

## Dry Wall Partition

About SFSP	4
Drywall Stud & Furring Screws Drilling Test to ASTM C645	21
Studs & Runners	24
Dry Wall Partition Systems	30
Suspended Ceiling System	38
Plaster Board Range Ceiling	52
Plaster Accessories	54
Details	57
Locations	78



[www.sfsp-ikk.com](http://www.sfsp-ikk.com)

# ABOUT SFSP



Specialized/Sigma Factory for Steel Products (SFSP) was first established in KSA in 1989 and has been expanding ever since through a variety of products and through its geographical presence.

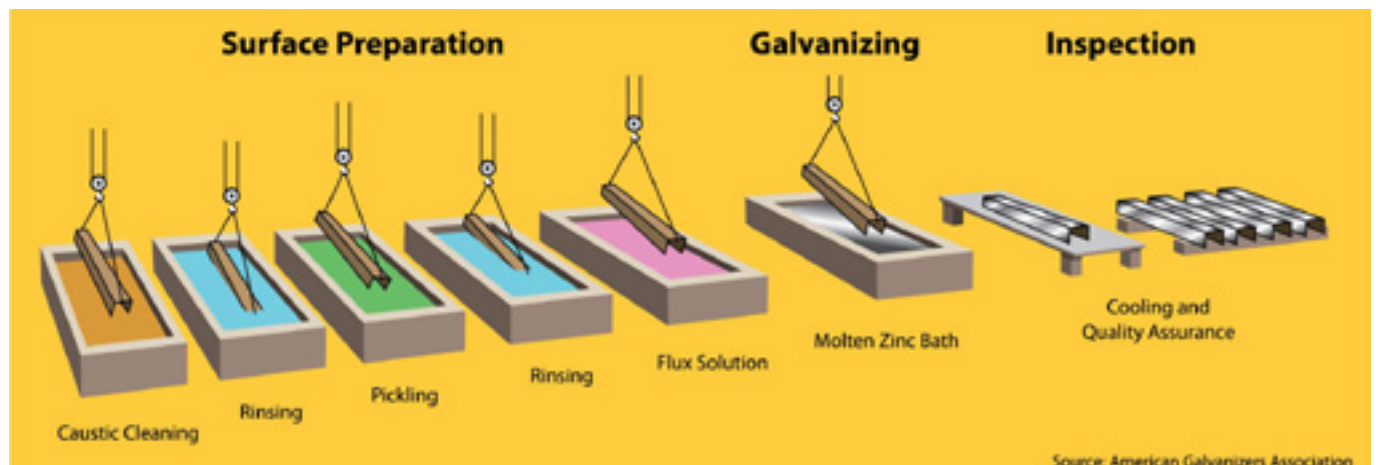
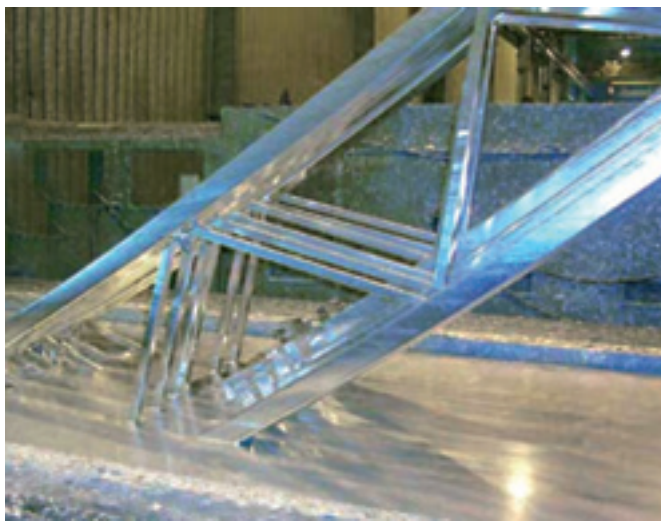
Production at the factory is observed using modern practices of manufacturing methods in the steel construction industry with a definite compliance to international standards of fabrication.

SFSP has manufacturing facilities in KSA, UAE, Egypt, and Lebanon. SFSP adapts quickly and easily to market demands and requirements. The factory is operating a top of the line production machinery, fully automated with highest technology to ensure quality and maintain speed with delicacy.

Quality at SFSP is uncompromised; the factories have been able to acquire ISO 9001: 2015 Quality Management System, ISO 14001:2015 Environmental Management certified factory, and OHSAS 18001:2007 Occupational Health and Safety Management factory.

## HOT-DIP GALVANIZATION

SFSP has an in-house state of the art Hot-Dip Galvanization facility, which permits a full control of the quality of its finished products, offering better services to our clients globally.





## Specialized Factory for Steel Products Co. Ltd

[www.sfsp-ikk.com](http://www.sfsp-ikk.com)

Specialized Factory for Steel Products Co., Ltd, which is part of Isam Khairi Kabbani Group of companies is a leading fabricator of steel construction products serving the kingdom of Saudi Arabia since 1989.

The factory operates under TQM ISO modules, using the latest modern technology in the steel fabrication and manufacturing industry in conformity with International standards for safety and in compliance with the environmental regulations in the Kingdom.

The factory has inaugurated its new manufacturing facilities which is located in the 3rd Industrial Area of Jeddah with a total built facilities of 37,000 squared meters.



The facilities include two manufacturing areas, a hot dip galvanization advanced section, warehousing areas and administrative building. The project is an advanced environmental low emissions factory built with a definite consideration of the safety of its workers and visitors.



## TECHNICAL SERVICES

A crucial factor in the job of a factory is to provide continuous technical services and consultations. That's why SFSP has invested in a professional team of researchers and specialists.

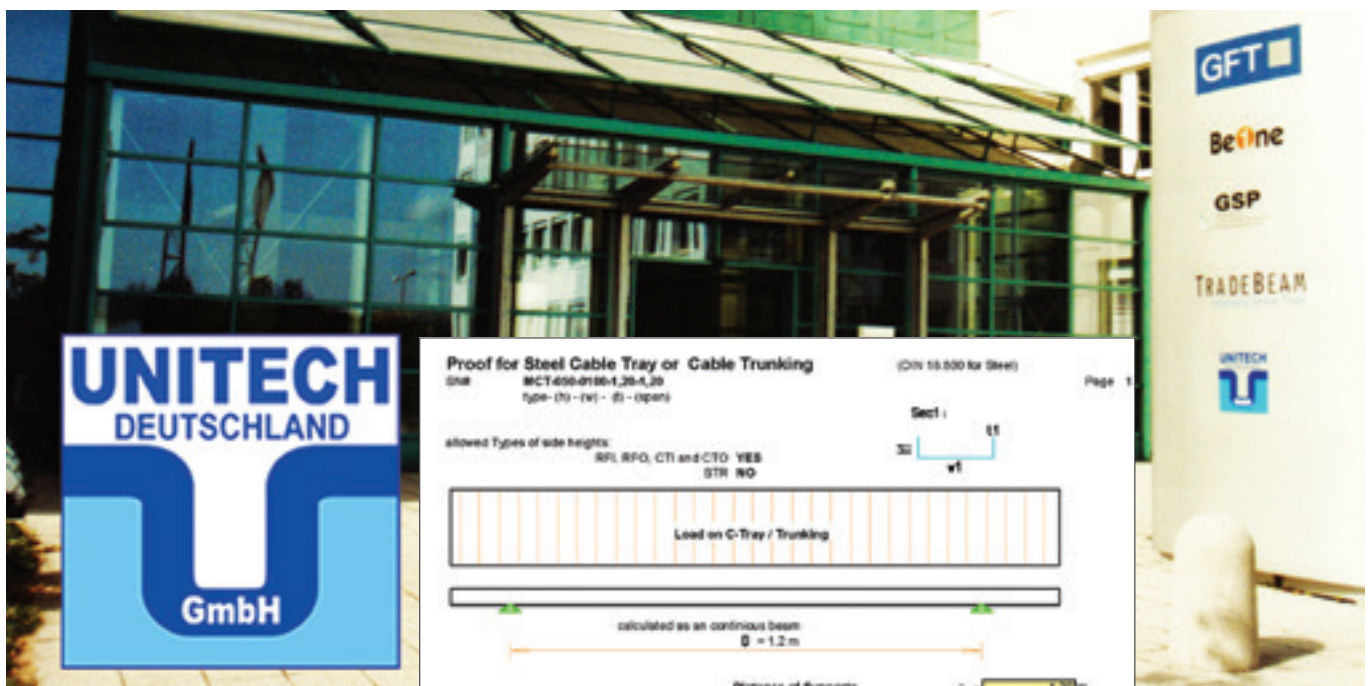
SFSP has recruited brilliant graduates and experienced engineers having the appropriate knowhow on the on latest technology changes and development in the steel building materials industry.

The product range is developed and updated according to the relevant standards of fabrication across markets, whilst the business processes are evaluated to achieve maximum efficiency.

### SFSP R&D Core Objectives

- Carry out responsibilities effectively in a safe and healthy work environment.
- Develop and implement research programs relevant to the products and solutions introduced and ensure that the results are communicated clearly in-house and among the clients , concisely and accurately.

## DESIGN AND ENGINEERING OFFICE - GERMANY



Unitech Deutschland GmbH is the design office of Unitech for Building and Construction Materials and is situated in Stuttgart, Germany.

Proof for Steel Cable Tray or Cable Trunking			
(CIN 15.030 for Steel)			
Page 1			
allowed Types of side heights: RFL, RPD, CTI and CTD: YES STR: NO			
Load on C-Tray / Trunking			
calculated as an continuous beam $l = 1.2 \text{ m}$			
Distance of Supports Load on Cable Tray			
Cable Tray Sec 5:			
*** Center Load only possible for $wf \leq 300 \text{ mm}$ !!			
SN	Mechanical Properties	Equations	Figures unit
1	Type of materials used	$DIN 50102$	S 235 JR02
2	Allow. 0.2 Yield Stress up to 50°C	$F_{0.2} = F_{0.2} / 1.5$	21.82 N/mm <sup>2</sup>
3	Allow. Shear Stress		12.60 N/mm <sup>2</sup>
4	Allow. Deflection	$l/200$	6.00 mm
5	Modulus of Elasticity		21 000 N/mm <sup>2</sup>
Applied Loads			
1	Distance of Supports	$D =$	120.00 cm
2	Self Weight Cable	$W_{c}$	1.74 N/mm
3	Self Weight Cable Tray	$W_{tr} <$	0.02 N/mm
4	Self Weight	$W_{tr} = W_{c} + W_{tr}$	1.76 N/mm
Design of Elements			
1	Cable Tray / Trunking		
1	Description	Equations	Figures unit
Structural Properties of Sec. 5			

## SOCIAL RESPONSIBILITY

Being socially responsible is a part of who we are and how we do our business. We aim to provide useful products and services, to provide jobs and development opportunities for our communities, and to gain satisfaction through meaningful work.

We make a difference by acting on the values and principles of our societies and we inspire others to do so. At SFSP, we anticipate and reduce threats caused by environmental changes or natural disasters, and we are well adapted to significant social changes.

We contribute to a more sustainable society by means of value and support to our consumers, supply chains, and stakeholders. We are keen to identify ways they can improve our impacts on the people and places we work and live in, and thereby become more valuable and valued members of society.

- Organizational governance: We promote accountability and transparency at all levels, thus, promoting responsibility
- Human care: We treat individuals with respect; and make efforts to help members of vulnerable groups
- Labor practices: We provide just, safe and favorable conditions to workers
- Environment: At SFSP, we identify and improve environmental impacts of our operations, including the resource use of natural resources and waste disposal.



- Fair operating practices: Practicing accountability and fairness in dealings with other businesses

At SFSP, we are committed to continuous improvement ongoing learning, process review and innovative thinking that foster new initiatives; and better practices. Our environmental programs evolve to meet today's changing needs while; protecting resources for future generations.

## HEALTH AND SAFETY

The Factory Management regard the health and safety of the employees, clients and all others that may be affected by their operations to be of a major importance.

In support of this, the management promotes health and safety throughout the Factory's operations and endeavour to engender a positive attitude in all employees towards the prevention of accidents and maintenance of healthy working arrangements.

The Factory satisfies the requirements of the Health, Safety and related legislation by setting out the responsibilities of all levels of staff and the arrangements for carrying out those responsibilities and in particular do what is reasonably practicable to:

1. Maintains safe & healthy working conditions.

2. Ensures that all facilities and equipment are safe and properly maintained.
3. Provides products that can be applied and used safely and without risk to health.
4. Provides and maintain working procedures, that are safe and without risk to health, throughout the its operations in respect of:
  - The use, handling, storage, transports and disposal of materials and substances.
  - The use of factory equipment.
  - Potential emergency situations, including first aid, fire and escape of substances.
5. Ensure the competence of employees.

**The factory is an OHSAS 18001:2007 Occupational, Health and Safety Management certified Factory.**



## ENVIRONMENTAL AWARENESS

### SFSP is committed to the following:

- Compliance with all statutory and regulatory requirements related to its activities, products and services and the environmental aspects.
- Identifying quality and environmental objectives by review and audit of the processes both in-house and on-site.
- Formally setting objectives based on the results of the process reviews and their significance in relation to their impact on the environment and the continual improvement of the quality and environmental management system.
- Implementing management programs to achieve these objectives.
- Investing in a well-trained and motivated workforce.
- Working closely with suppliers and customers to ensure mutual understanding and benefits of the environmental aspects consideration.
- Reviewing our policy and objectives as part of the Management Review Process.
- Communicating this policy to all persons working for or on behalf of the organization.
- Preventing and minimizing Pollution to the environment.



SFSP operates under environmental management system certification BS EN ISO 14001:2004 and maintain it through registration and annual review.



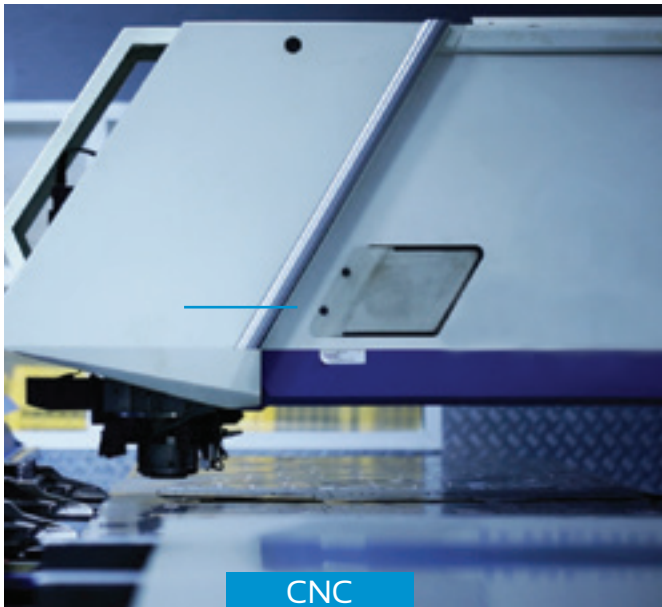
SFSP facilities are equipped with the most technologically advanced machinery amongst are Laser Cut Machines, Robot Bending Sets, Welding Robot Sets, sophisticated Cable Management Production Lines, as well as Specialized Industrial Sections for its Hot Dip Galvanization facilities.



## CNC MACHINES



WELDING  
ROBOT  
SETS



CNC  
PUNCHING



FIBER LASER  
CUT



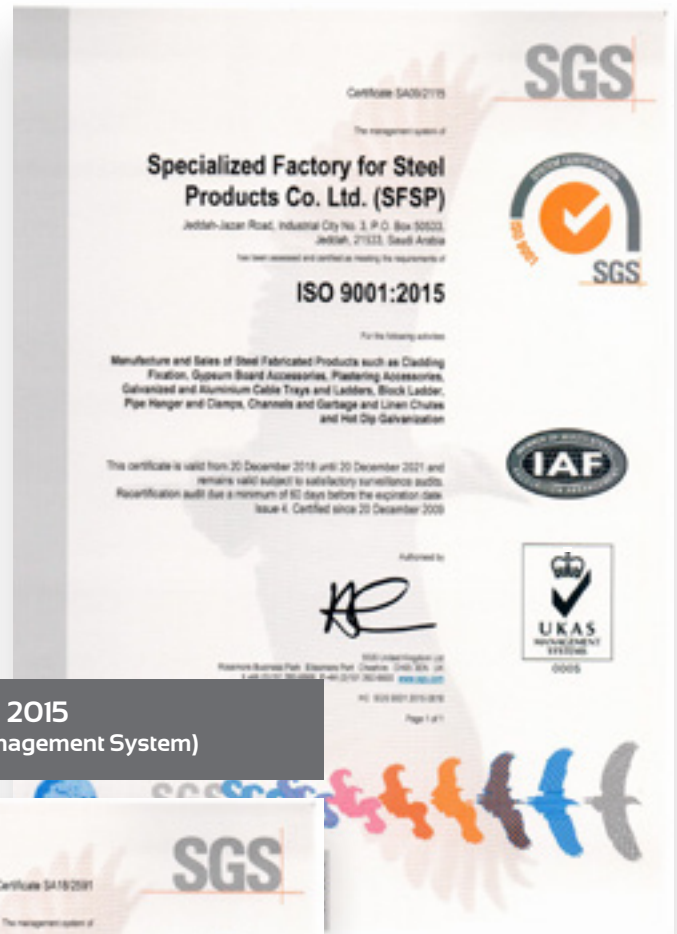
ROBOTIC  
BENDING  
CELL

## SFSP CERTIFICATIONS

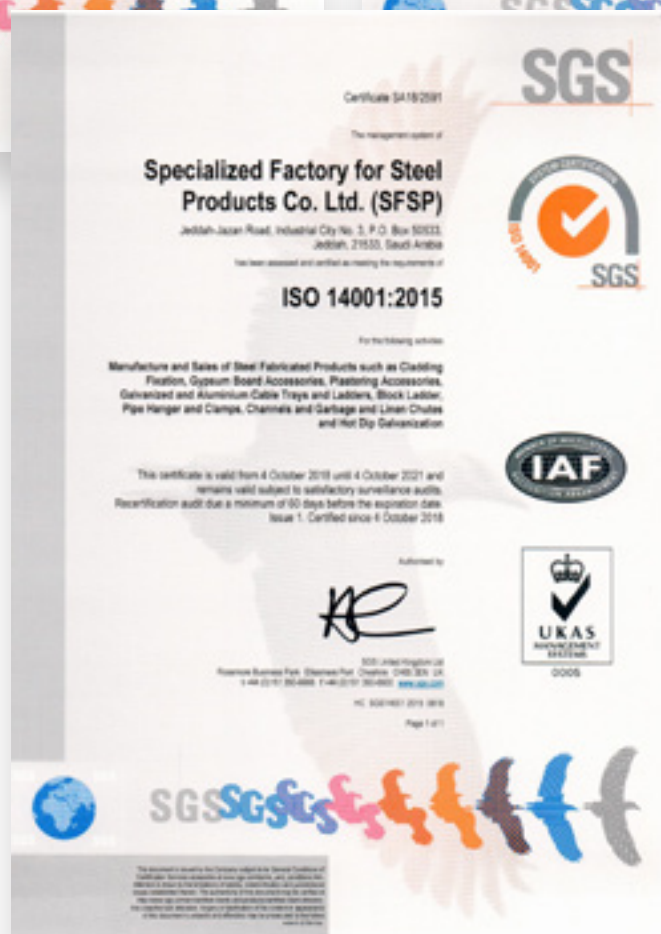
### ISO 45001: 2018 (Occupational Health & Safety)



### ISO 9001: 2015 (Quality Management Systems)



### 14001: 2015 (Environmental Management System)



STD 096  
(Q-Mark Certificate)



CERTIFICATE OF  
REGISTRATION

This is to certify that

**Sigma Factory**  
P.O. Box 37991  
Dubai Industrial City  
Dubai  
United Arab Emirates

Meets the requirements of  
**Fire Door Manufacture**  
which only operate in  
Libya, Oman, Qatar  
products on the attached



Certificate Number  
476  
Date of Initial Certification  
16 June 2014  
Date of last issue  
13 October 2017  
Date of Expiry  
15 June 2020

Exova  
Registered Office  
This certificate remains the  
property of Exova (UK) Ltd or its  
subsidiaries.  
The use of the UKAS accreditation  
mark indicates accreditation in respect of those activities covered by the accreditation certification 012

ISO 14001:2015  
(Environmental Management System)



CERTIFICATE OF REGISTRATION

This is to certify that

**Sigma Factory for Steel Products**  
P.O. Box 37991  
Saih Suhaib - 3, 4 Round About  
Dubai Industrial City  
Dubai  
United Arab Emirates

has been audited and found to meet the requirements of standard  
**ISO 14001:2015 Environmental Management System**

**Scope of certification**  
Trading and Manufacturing of all kinds of Steel related Construction  
Materials

Certificate number: 2524

Issue number: 2018-02

Certificate start date: 22 September 2018

Certificate expiry date: 21 September 2021

Date of initial certification: 22 September 2015

**Karen Prendergast**  
Sector Director - Certification  
Exova BM TRADA

Exova (UK) Ltd, (T/A Exova BM TRADA), Chiltern House, Stocking Lane, High Wycombe, Buckinghamshire, HP14 4ND, UK  
Registered Office: Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian EH28 8PL, United Kingdom. Reg No. SC070429.

This certificate remains the property of Exova (UK) Ltd. This certificate and all copies or reproductions of the certificate shall be returned to Exova (UK) Ltd or destroyed if requested. Further clarification regarding the scope of this certificate and verification of the certificate is available through Exova BM TRADA or at the above address or at [www.exovabmtrada.com](http://www.exovabmtrada.com)  
The use of the UKAS accreditation mark indicates accreditation in respect of those activities covered by the accreditation certification 012

# SFSP CERTIFICATIONS

## OHSAS 18001: 2018 (Health & Safety Management System)



### CERTIFICATE OF REGISTRATION

This is to certify that

**Sigma Factory for Steel Products**

P.O. Box 37991  
Saih Suhaib - 3, 4 Round About  
Dubai Industrial City  
Dubai  
United Arab Emirates

has been audited and found to meet the requirements of standard  
OHSAS 18001:2007 Health & Safety Management System

**Scope of certification**  
Trading and Manufacturing of Steel Related Construction Materials



## ISO 9001: 2015 (Quality Management System)



### CERTIFICATE OF REGISTRATION

This is to certify that

**Sigma Factory for Steel Products**

P.O. Box 37991  
Saih Suhaib - 3, 4 Round About  
Dubai Industrial City  
Dubai  
United Arab Emirates

has been audited and found to meet the requirements of standard  
ISO 9001:2015 Quality Management System

**Scope of certification**  
Trading and Manufacturing of all kinds of Steel Related Construction Materials



**Certificate number:** 1006

**Issue number:** 2018-01

**Certificate start date:** 22 September 2018

**Certificate expiry date:** 11 March 2021

**Date of initial certification:** 22 September 2015

Exova (UK) Ltd,  
Registered Office: Exova (U

This certificate remains the property of Exova (UK) Ltd. This certificate and all copies or reproductions of the certificate shall be returned to Exova (UK) Ltd or destroyed if requested. Further clarification regarding the scope of this certificate and verification of the certificate is available through Exova BM TRADA or at the above address or at [www.exovabmtrada.com](http://www.exovabmtrada.com)

The use of the UKAS accreditation mark indicates accreditation in respect of those activities covered by the accreditation certification 012

**Certificate number:** 5965

**Issue number:** 2018-02

**Certificate start date:** 23 February 2018

**Certificate expiry date:** 22 February 2021

**Date of initial certification:** 23 February 2015

*Karen Prendergast*

**Karen Prendergast**  
Sector Director - Certification  
Exova BM TRADA

Exova (UK) Ltd, (T/A Exova BM TRADA), Chiltern House, Stocking Lane, High Wycombe, Buckinghamshire, HP14 4ND, UK  
Registered Office: Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian EH26 8PL United Kingdom, Reg No. SC070429.

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The use of the UKAS accreditation mark indicates accreditation in respect of those activities covered by the accreditation certification 012

BS EN 61537:2007 (KEMA - KEUR Certified For Cable Management Products)

# CERTIFICATE

Issued to:  
Applicant:  
**Isam Kabbani Trading Est. (Unitech)**  
Rashidiya  
Dubai, United Arab Emirates

Manufacturer/Licensee:  
**Sigma Factory for Steel Products (SFSP)**  
Saih Shuaib 3, 4R/A, Dubai Industrial City,  
Dubai, United Arab Emirates

Product : Cable management system  
Trade name : SFSP  
Types : IE-CT-X-10, IE-CT-X-12, IE-CT-X-15, IE-CT-X-20

The product and any acceptable variation thereto is specified in the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:  
- a type test according to the standard IEC 61537:2006  
- an inspection of the production location according to CENELEC Operational Document CIG 021  
- a certification agreement with the number 2156954.01

DEKRA hereby grants the right to use the KEMA-KEUR BS certification mark.

The KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration of the KEMA-KEUR certification agreement and under the conditions of the KEMA-KEUR BS certification agreement.

This certificate is issued on: 20 January, 2014 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 2156954.01

DEKRA Certification B.V.



drs. G.J. Zoetbrood  
Managing Director



H.R.M. Barends  
Certification Manager

© Integral publication of this certificate is allowed

ACCREDITED BY THE  
DUTCH ACCREDITATION  
COUNCIL



DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands  
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com

BS EN 61537:2007 (KEMA - KEUR BS Certified For Cable Management Products)

# CERTIFICATE

Issued to:  
Applicant:  
**Isam Kabbani Trading Est. (Unitech)**  
Rashidiya  
Dubai, United Arab Emirates

Manufacturer/Licensee:  
**Sigma Factory for Steel Products (SFSP)**  
Saih Shuaib 3, 4R/A, Dubai Industrial City,  
Dubai, United Arab Emirates

Product : Cable management system  
Trade name : SFSP  
Types : IE-CT-X-10, IE-CT-X-12, IE-CT-X-15, IE-CT-X-20

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:  
- a type test according to the standard BS EN 61537:2007 based on IEC 61537:2006  
- an inspection of the production location according to CENELEC Operational Document CIG 021  
- a certification agreement with the number 2156954

DEKRA hereby grants the right to use the KEMA-KEUR BS certification mark.

The KEMA-KEUR BS certification mark may be applied to the product as specified in this certificate for the duration of the KEMA-KEUR BS certification agreement and under the conditions of the KEMA-KEUR BS certification agreement.

This certificate is issued on: 3 February, 2014 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 2156954.02

DEKRA Certification B.V.



drs. G.J. Zoetbrood  
Managing Director



H.R.M. Barends  
Certification Manager

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ACCREDITED BY THE  
DUTCH ACCREDITATION  
COUNCIL



DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands  
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Registered Arnhem 09085396

## UL Certification\* (Cable Trays)

### CERTIFICATE OF COMPLIANCE

Certificate Number 20160816-E483358  
Report Reference E483358-20160816  
Issue Date 2016-AUGUST-16

Issued to: Sigma Factory for Steel Products  
Saii Shuaib 3, 4 R/A Dubai Industrial City  
Opposite DEWA Substation  
Dubai UNITED ARAB EMIRATES

This is to certify that  
representative samples of CABLE TRAY  
Steel Channel  
Very Heavy

Have been  
Standard(s)

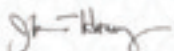
Standard(s) for Safety: ANSI/NFPA  
Additional Information: See the UL  
for additional information

Only those products bearing the ULC Listing Mark should be considered as being covered by UL's  
Listing and Follow-Up Service.

The ULC Listing Mark generally includes the following:  
the word "LISTED"; a control number (may be alpha-numeric); and a category name (product identifier) as indicated in the

To confirm the status, validate the above information

Look for the ULC Listing Mark on the product.

  
Joseph Remy, General Manager, Director of Sales - Canada  
UNDERWRITERS LABORATORIES OF CANADA INC.

Any information and documentation involving ULC Mark services are provided on behalf of Underwriters Laboratories of U.S. For questions, please contact a local ULC Customer Service Representative at

## UL Certification\* (Chute Type Fire Doors)

### CERTIFICATE OF COMPLIANCE

Certificate Number 20170811-R38825  
Report Reference R38825-20170811  
Issue Date 2017-AUGUST-11

Issued to: Sigma Factory for Steel Products  
Saii Shuaib 3, 4 R/A Dubai Industrial City  
Opposite DEWA Substation  
Dubai UNITED ARAB EMIRATES

This is to certify that  
representative samples of

CHUTE-TYPE FIRE DOORS

Chute-type fire door and frame assembly of the insulated  
type, rated up to and including 2 hr, 450°F Temperature  
Rise Rating.

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

Standard(s) for Safety: ANSI/UL 10B, Fire Tests of Door Assemblies  
Additional Information: See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's  
Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

  
Bruce Mahrenholz, Director North American Certification Program  
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please  
contact a local UL Customer Service Representative at <http://ul.com/about/certifications>



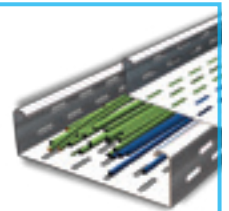


## SFSP PRODUCTS

SFSP produces a variety of products ranging from cable management systems; cable trays, cable ladders, basket trays, trunkings and support systems, to mechanical cladding fixations, steel lintels and block work accessories, plasterers' beads, expanded metal and block work reinforcement, strut channel systems, pipe clamps & hangers, gypsum profiles as well as garbage and linen chutes. With the introduction of new machines and the enhancement of production methods, SFSP continues to develop its production methods systematically as well as thoroughly. Its design office in Stuttgart, Germany provides a comprehensive design and calculation case studies, enabling the factory to have the safety factors required for the usage of its products.

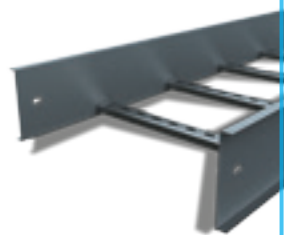
### Cable Trays & Accessories

Cable Trays are designed to meet most requirements of cable and electrical wire installations and comply to local and international standards of fabrications and finishes.



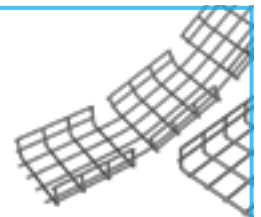
### Cable Ladders (Welded & Swaged)

Cable Ladders of different side heights are available upon request.



### Basket Trays & Accessories

SFSP's Basket Tray systems make connections fast and simple with limited need for tools. Its design allows for continuous airflow, and prevents heating up of cables. SFSP's Basket Tray comes in a full range of sizes and is made with high-strength welded steel wires.



### Cable Trunkings

Cable Trunkings and Accessories are offered in a comprehensive range. Mill galvanized, hot-dip galvanized, and powder coated are the various finishes produced in our factories.



### Underfloor Trunking

Underfloor Trunking Systems solutions incorporate a range of products for the distribution of power and data services, it is a coordinated set of containments that protect, segregate, contain, and route cables within a given environment.



### Cable Management Support Systems

Cable Support Systems are well designed to provide necessary support for cable trays, cable ladders and trunkings. Cable supports are manufactured according to common standards from high quality raw materials.



### C-Channel Strut Systems

SFSP's Metal Framing Systems provide an economical solution for electrical, mechanical and industrial supports with a wide variety of applications in the construction industry.

Applications: - Pipe and Conduit Supports - Tunnel Pipe Stanchions - Racks and Shelvings - Wall Framings.



### Expanded Metals, Plasterers' Beads

Expanded Metals help the formation of joints, protection of corners and resistance against cracks, chips and impact damage.

### Block Ladder Reinforcement

SFSP ladder and truss types are used for the reinforcement of brick and block masonry to give improved tensile strength to walls subjected to lateral loading e.g. wind and seismic. SFSP block reinforcements reduces the risk of cracking either at stress concentration around opening.

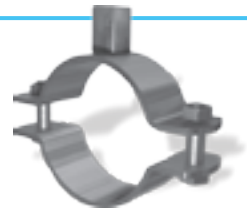
### Steel Lintels & Block Work Accessories

Steel Lintels provide a combination of strength and light weight, resulting in efficient load bearing performance and increased productivity on site. They are characterized by their ease of installation in addition to time as well as money saving.



### Pipe Clamps & Hangers

Pipe Clamps and Hangers from SFSP used in the support of pipes and equipments are manufactured according to the highest standards of fabrication. A diversified choice of Pipe Hangers, Pipe Clamps, EMT Straps, Omega Clamps, Beam Clamps, J and U-Bolts and Threaded Accessories.



### Marble & Granite Fixings

Stangle Cladding Fixation includes design, calculation and production of several types of mechanical fixings and accessories used for cladding purposes. Stainless and galvanized steel are among the various materials used in the fabrication.



### Dry Wall & Ceiling Profiles

SFSP provides a complete product range for dry wall and ceiling constructions. Studs, Runners, Furring Channels, Ceiling Channels and Wall Angles are among the range of products produced to service the dry wall installers.



### Garbage & Linen Chutes

Chutes from SFSP are very convenient, simple and low cost method of controlling and disposing of refuse and linen. Chutes meet the most stringent requirements of environmental health and safety. Chutes are used as original equipment in new buildings, such as : Hotels, Hospitals, High Rises and Residential Towers.





SFSP Products are solely distributed by UNITECH for Building and Construction Materials

All Products Manufactured by SFSP are Solely Distributed by SFSP Sister Companies in the Following Countries

#### KSA

**Isam Kabbani & Partners for Building and Construction Materials Co., Ltd.**

شركة عصام قباني وشركاه لمواد الإنشاء والتعمير المحدودة

#### BAHRAIN

**Isam Kabbani Trading Est.**

مؤسسة عصام قباني التجارية

#### UAE

**Issam Kabbani Trading Est.**

مؤسسة عصام قباني للتجارة

#### KUWAIT

**Hassan Kabbani for General Contracting Est.**

مؤسسة حسان قباني للمقاولات العامة للمباني

#### OMAN

**Isam Kabbani & Partners Trading Co.**

شركة عصام قباني وشركاه للتجارة

#### EGYPT

**UNITECH Egypt for Building Materials**

شركة يونيتك مصر لمواد البناء

#### JORDAN

**Jordan Build Co. for Building & Construction Materials**

شركة بناء الأردن لمواد الإنشاء والتعمير والكهرباء

#### LEBANON

**UNITECH ME s.a.r.l**

شركة يونيتك ميدل إيست ش.م.م

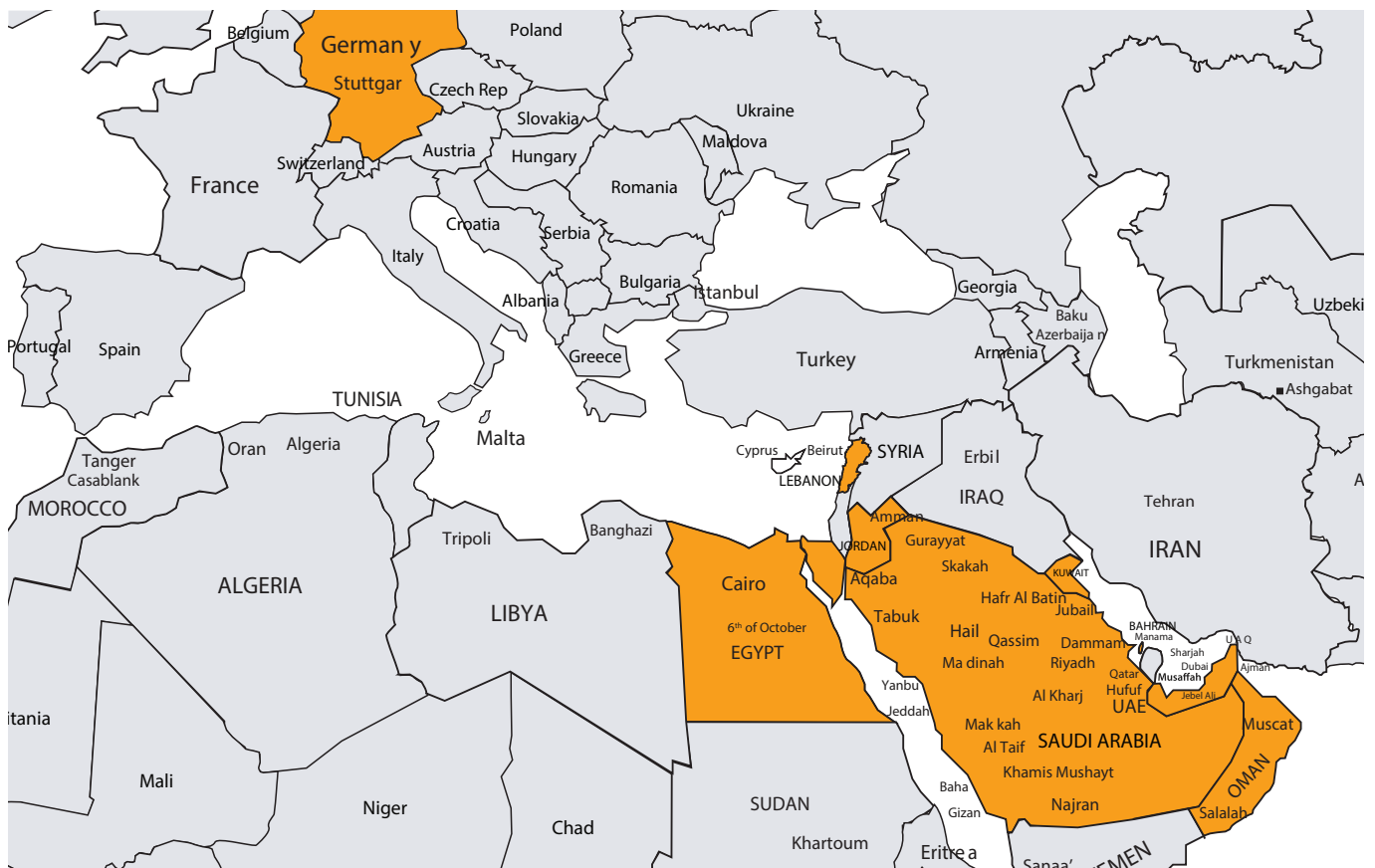
#### SFSP CUSTOMER SERVICE CALL CENTER

#### KSA

+966 13 8590097, Ext. 3214

#### UAE

+971 4 8181925, Ext. 4269



## IKK

### Group of Companies

The IKK Group is a major business institution, serving most of the Arab World in the industrial, construction and trading fields, as well as in specialized maintenance and services.

Today, the IKK Group of Companies is a pioneer in waterproofing, weatherproofing, building material supplies, UPVC and CPVC and high density polyethylene pipes and fittings and several other products for the construction industry.

The Group is also represented in the sanitary products, steel production, kitchen manufacturing, telecommunications, food, decoration, re-insurance and real estate business domain.

Composed of 60 companies, the IKK Group operates through almost 200 divisions, branches and outlets; it is spread over 12 countries, covering all major cities in the region and employing around 13,000 employees.

**Our vision** is to maintain and improve our leading position as a contractor whose reputation is built on the ability to completely satisfy customers by providing high quality services. As specialists in their respective fields, our teams of professionals are dedicated to a standard of excellence for quality and performance, through continuous development, which will set standards in our industry. We are simply providing solutions for a future of success.

**Our mission** is to provide our part of the Arab World with local and reliable services in a variety of sectors and products.

To create employment to thousands of personnel and in-house training for hundreds of young Arab graduates in crucial sectors to the benefit of the IKK Group, the graduates themselves and their own communities.

To set a good example of our basic business philosophy: "Hire well, train well, pay well and treat well."

## UNITECH

### ISAM KABBANI & PARTNERS FOR BUILDING & CONSTRUCTION MATERIALS

Isam Kabbani & Partners for buildings & construction materials co. Ltd (UNITECH) which is part of the IKK group of companies is recognized and acknowledged for the quality and reliability of its products and services as well as for the commitment, professionalism and experience of its employees.

Isam Kabbani & partners for buildings & construction materials co. Ltd (UNITECH) core values are to offer value products and services to its clients, to work closely with them in a lasting business partnership that provides an outstanding performance.

A partnership based on trust, harmony, and a hard to beat services and solutions.

Our Factories have acquired, in addition to ISO 9001:2008 Quality Management System, the ISO 14001:2004 Environmental Management System.

Our care for the environment has been translated via Isam Kabbani & partners for buildings & construction materials co. Ltd (UNITECH)'s membership in the US Green Building Council as a Golden Member.

#### Our Vision

UNITECH to be the Customer's First Choice.

#### Our Mission

We have the conviction to be the leader in building & construction industry through:

- Providing Excellence in Services with Passionate and Educated Sales Force
- Strengthen Culture through Unified Sense of Purpose
- Innovative Product Range which is Customer Centric
- Reputable and Quality Service Company
- Attracting, Engaging and Retaining Talent

## DRY WALL & CEILING PARTITION

Gypsum Boards are considered among the most economic and ideal way for wall partitioning. Easy to install, saves time and money, gypsum boards can be used as a backing for wall treatments such as wall paper, fabric, tile and wood paneling or it can simply be painted.

SFSP provides a complete product range for drywall and ceiling constructions. Studs, Runners, Furring Channels, Ceiling Channels, and Wall Angles are among the range of products produced according to relevant international standards to service the dry wall installers.

### MATERIALS

Pre-galvanized steel complying with:

- BS EN 10142:2000 instead of BS 2989
- ASTM C645 G90 (275 g/sqm) - G60 (180 g/sqm) - G40 (120 g/sqm) - G20 (60 g/sqm)
- ASTM C754 G90 (275 g/sqm) - G60 (180 g/sqm) - G40 (120 g/sqm) - G20 (60 g/sqm)
- DIN EN 10326:2004-09
- BS EN 10143:2006

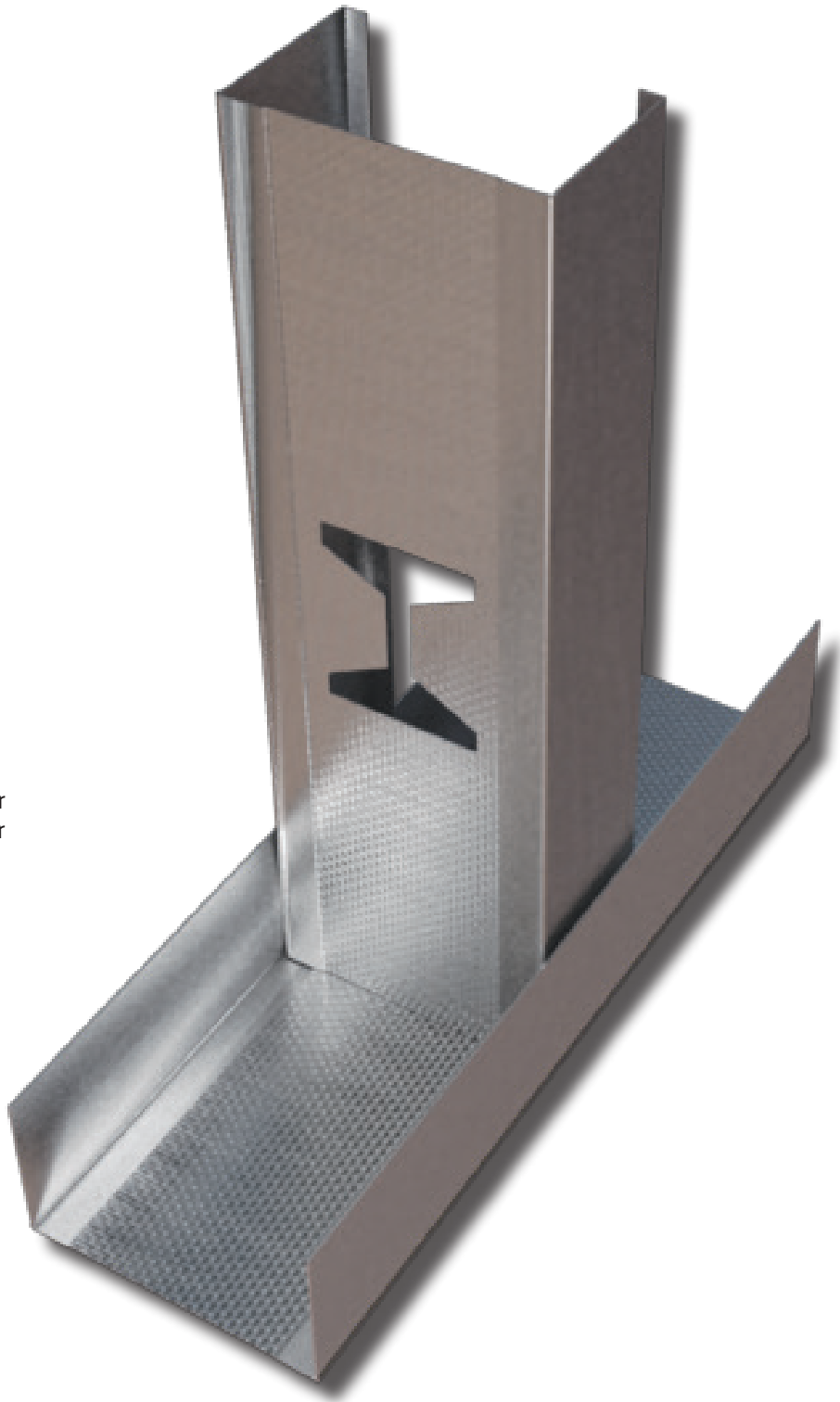
References:

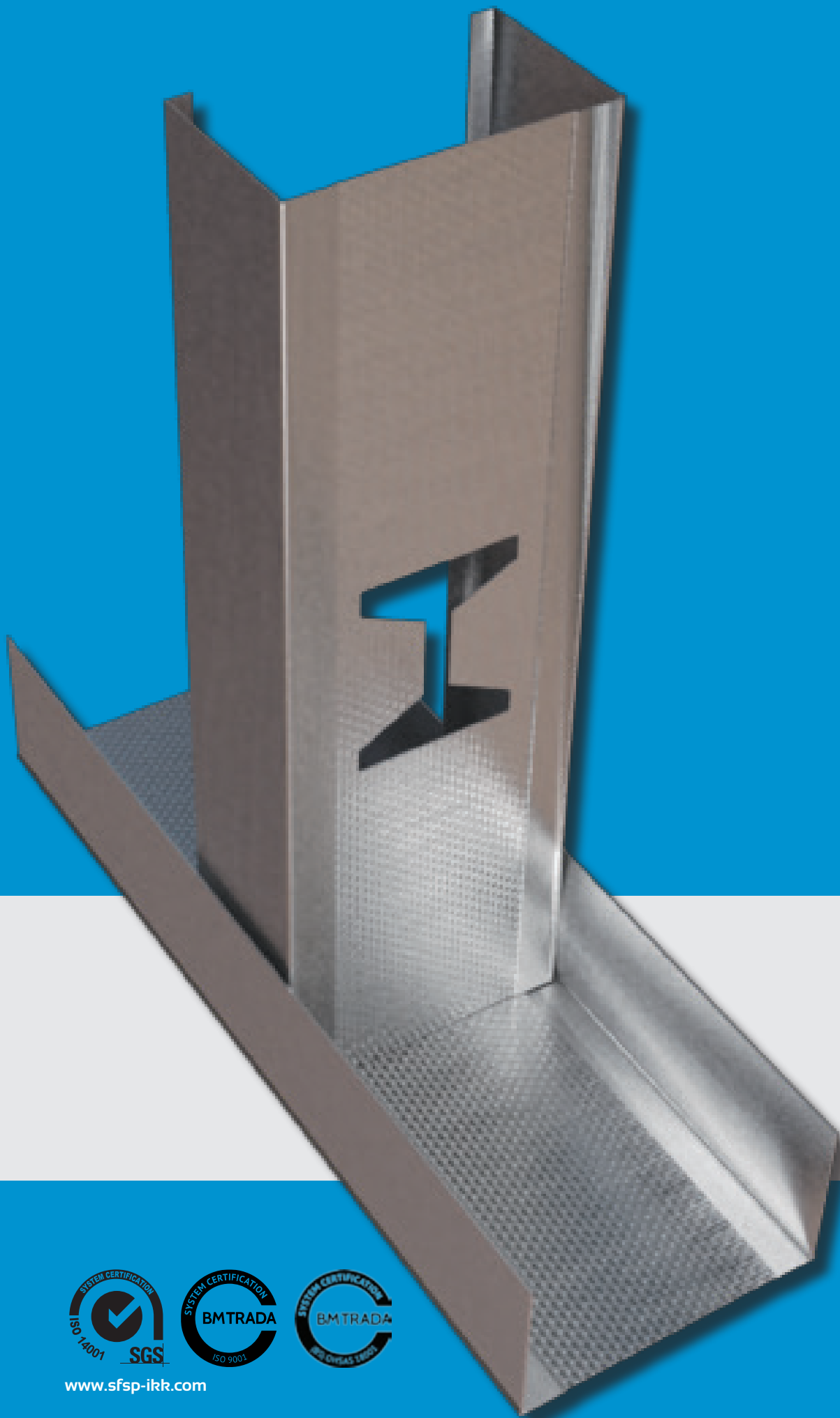
ASTM C1047 : Standard specification for Gypsum Wallboard and Gypsum Veneer Base Accessories.

### PARTITION PROFILES

**STUDS** are vertical profiles inserted into the **RUNNERS**; bearing profiles of the partition; used for fixing of partition covering (Gypsum Boards).

**RUNNERS** are horizontal profiles to fix the partition to floor and ceiling.





[www.sfsp-ikk.com](http://www.sfsp-ikk.com)



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## FINAL REPORT FOR

## DRYWALL STUD & FURRING SCREWS DRILLING TEST

(UNITECH) ISAM KABBANI TRADING EST.

PO BOX 37991 DUBAI, UAE

AS PER ASTM C-645-04A REQUIREMENT



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Page 1 of 18

### I. Introduction

This is the final report of a laboratory testing performed by this firm Thomas Bell-Wright International Consultants (TBWIC), on drilling screws into nonstructural stud and furring channel specimens supplied by Isam Kabbani Trading Est. The specimen in general was supplied with gypsum boards and screws used to construct an assembly for the test. The testing commenced on March 21, 2011, was carried out under the direction of the Senior Testing Engineer of TBWIC, observed and recorded the results of the test in accordance with the ASTM C 645 - 04a Standard. Test photographs are attached in the annex page of this report.

### II. General Parameters

PROJECT NAME:	
TEST SEQUENCE	
Test 1	Screw Penetration Test
ASTM C 645-04a	
RELEVANT INFORMATION	
Type	Galvanized Studs and Furrings
Specimen Size	Studs: 152 mm X 44 mm X 0.9 mm thick
	Furring channel: 22 mm x 35 mm x 0.9 mm thick
	Gypsum Board: 150 mm x 150 mm x 16 mm thk FR
	Screws: Hilti 35 mm

evaluate the ability of the screw to be drilled below the  
as than 2 seconds and without spin out.

	DATE & TIME	PASS / FAIL
Stud members	March 21, 2011 4:50 pm.	PASSED

section was provided and tested in accordance with the report.

re as follows:

Observation	
Screw did not spin out, embedded below the gypsum board face in less than 2 seconds.	
Screw did not spin out, embedded below the gypsum board face in less than 2 seconds.	
Screw did not spin out, embedded below the gypsum board face in less than 2 seconds.	
Screw did not spin out, embedded below the gypsum board face in less than 2 seconds.	
Screw did not spin out, embedded below the gypsum board face in less than 2 seconds.	
Screw did not spin out, embedded below the gypsum board face in less than 2 seconds.	

Furring Channel members.	March 21, 2011 5:11 pm.	PASSED
--------------------------	----------------------------	--------

channel section was provided and tested in accordance with the report.

re as follows:

Wall Stud Drill Test FR.



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Page 2 of 18

Tabulated results and description are as follows:

Sample #	Exit Time	Observation
FS#1	1.89 seconds	Screw did not spin out, embedded below the gypsum board face in less than 2 seconds.
FS#2	1.38 seconds	Screw did not spin out, embedded below the gypsum board face in less than 2 seconds.
FS#3	1.42 seconds	Screw did not spin out, embedded below the gypsum board face in less than 2 seconds.
FS#4	0.82 seconds	Screw did not spin out, embedded below the gypsum board face in less than 1 second.
FS#5	0.94 seconds	Screw did not spin out, embedded below the gypsum board face in less than 1 second.

### B. Description of Modifications or Adjustments

Name was modified.

### C. Compliance Statement

All of the Stud and Furring Channel sections referred to as members in this report was tested as described in this document and has successfully passed all the requirements conforming to the specification of the test standards.

This Final Report is respectfully submitted by:  
Thomas Bell-Wright International Consultants

Manufactured by: (SFS)  
UNITECH DRYWA



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INTERNATIONAL CONSULTANTS

Page 3 of 18

### IV. Test and Performance Requirements

(For both Stud and Furring Channel members)

Test	Criteria	Reference
1. Screw Penetration test		ASTM C 645-04a
Dead Weight and applied force	30 lbf (13.6 Kg force)	
Permitted drill time with out spin	Less than 2 seconds	

Additional material on Curtain Wall testing can be found at [www.bell-wright.com](http://www.bell-wright.com) — Resources — Downloads — Aluminium and Glass Testing Techniques.pdf



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Page 4 of 18

### V. Specification Compliance

Testing was carried out under the direction of Engr. Clarence P. Facun in compliance with the requirements of the Standard.

### VI. Test procedures

#### A. Screw Penetration Test, ASTM C 645-04a

##### a. Preparation

- From a randomly picked supplied stud samples, label the member along with the gypsum board to construct assembly.
- Clamp the labeled member into the jig and put above it the gypsum board together with the screw slightly rested in position for the drilling process.
- Secure the guided dead weight above the drilling tool, and ensure axial application to the assembly.

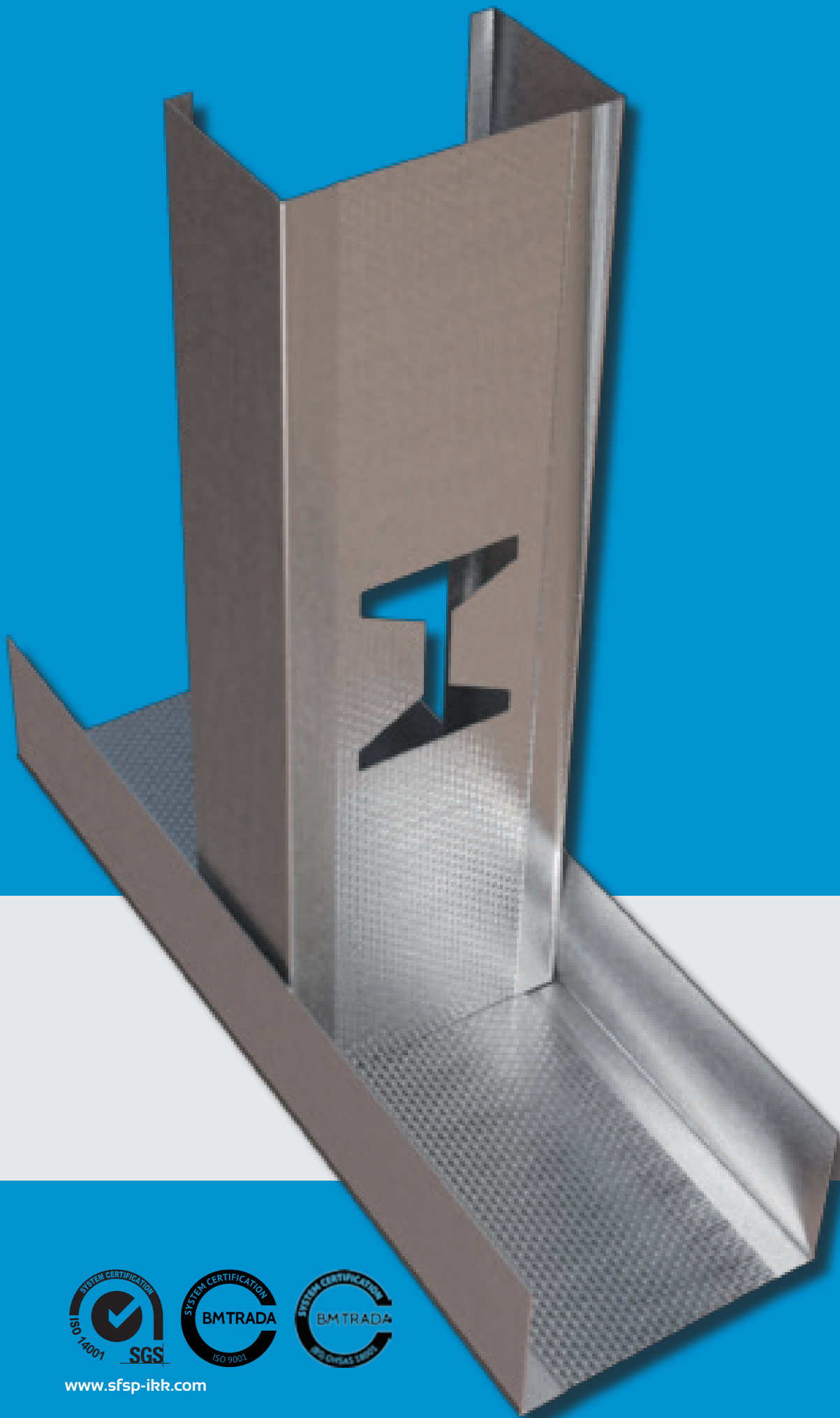
##### b. Test Procedure

- Assemble the member and the gypsum board on the rig together with the positioning of the screw and the electric drill with weight.
- Assure the time monitoring to start simultaneously with the process of driving the screw into the assembly until the head is slightly embedded below the surface of the gypsum board.
- Until the drilling stopped with the head of screw slightly driven below the gypsum board surface, record the lapsed time
- Record if a spin out occurred in the drilling process.
- Repeat the same procedures for the remaining stud members and the furring channel members.

### VII. Testing Equipment

- Makita electric drill for the screw penetration.
- Calibrated stopwatch
- 30 lb steel weight (13.7 kg).

# DRYWALL STUD & FURRING SCREWS DRILLING TEST TO ASTM C645



[www.sfsp-ikk.com](http://www.sfsp-ikk.com)

# STUDS & RUNNERS

# TECHNICAL INFORMATION

## Construction Overview Single Support Wall Sheet Thickness = 0,8 (mm)

Wall type stud/wall thickness	Stud width (mm)	GK	Planking (mm) both sides	Isol. (mm)	Wall thickness (mm) +/-1	Fire- proof	Allowable height in meter						
							Stud Distance* (mm) Mounting area A *			Stud Distance** (mm) Mounting area B**			Acoustic
							625	417	312	625	417	312	db
STD 048/72	47	GKB	2x12,5	45	72		2.75	3.25	3.75	/	2.75	3.25	45
STD 048/72	47	GKF	2x12,5	45	72	F30	2.75	3.25	3.75	/	2.75	3.25	45
STD 048/77	47	GKB	2x15.00	45	77		3.00	3.25	3.75	/	2.75	3.25	47
STD 048/77	47	GKF	2x15.00	45	77	F30	3.00	3.25	3.75	/	2.75	3.25	47
STD 075/99	74	GKB	2x12,5	50	99		3.75	4.5	5.25	3.25	4.00	4.75	47
STD 075/99	74	GKF	2x12,5	50	99	F30	3.75	4.5	5.25	3.25	4.00	4.75	47
STD 075/104	74	GKB	2x15.00	50	104		4.00	4.5	5.25	3.5	4.00	4.75	48
STD 075/104	74	GKF	2x15.00	50	104	F30	4.00	4.5	5.25	3.5	4.00	4.75	48
STD 100/124	99	GKB	2x12,5	50	124			5.5	6.5	4.00	5.00	6.00	50
STD 100/124	99	GKF	2x12,5	50	124	F30		5.5	6.5	4.00	5.00	6.00	50
STD 100/129	99	GKB	2x15.00	50	129		4.5	5.5	6.5	4.00	5.00	6.00	51
STD 100/129	99	GKF	2x15.00	50	129	F30	4.5	5.5	6.5	4.00	5.00	6.00	51
STD 048/97	47	GKB	4x12,5	50	97		3.25	3.75	4.25	2.75	3.25	3.75	51
STD 048/97	47	GKF	4x12,5	50	97	F90	2.25	3.75	4.25	2.75	3.25	3.75	51
STD 075/124	74	GKB	4x12,5	50	124		4.25	5.00	5.75	3.75	4.5	5.25	53
STD 075/124	74	GKF	4x12,5	50	124	F90	4.25	5.00	5.75	3.75	4.5	5.25	53
STD 100/149	99	GKB	4x12,5	50	149		5.00	6.00	7.00	4.5	5.5	6.5	55
STD 100/149	99	GKF	4x12,5	50	149	F90	5.00	6.00	7.00	4.5	5.5	6.5	55
STD 048/122	47	GKB	6x12,5	45	122		4.00	4.5	5.00	3.5	4.00	4.5	57
STD 100/122	47	GKF	6x12,5	45	122	F90	4.00	4.5	5.00	3.5	4.00	4.5	57
STD 075/149	74	GKB	6x12,5	50	149		5.00	5.75	6.5	4.5	5.25	6.00	58
STD 075/149	74	GKF	6x12,5	50	149	F180*	5.00	5.75	6.5	4.5	5.25	6.00	58
STD 100/174	99	GKB	6x12,5	60	174		6.00	7.00	8.00	5.5	6.5	7.5	61
STD 100/174	99	GKF	6x12,5	60	174	F180*	6.00	7.00	8.00	5.5	6.5	7.5	61

F180\* =Rock wool 100kg/m<sup>3</sup>

### Area A\*:

Area of a large number of people ....

### Area B\*\*:

Area of a low number of people

GKB= Plasterboard

GKF= Plaster board Fire proof (fire rated)

### Sheet Thickness & Tolerance according to EN 10143

Thickness Code	Thickness (mm)	Tolerance (mm)
04	0.4	0.34 - 0.46
05	0.5	0.44 - 0.56
06	0.6	0.53 - 0.67
07	0.7	0.63 - 0.77
10	1.0	0.91 - 1.09
12	1.2	1.11 - 1.29
16	1.6	1.48 - 1.72
20	2.0	1.86 - 2.14
25	2.5	2.34 - 2.66

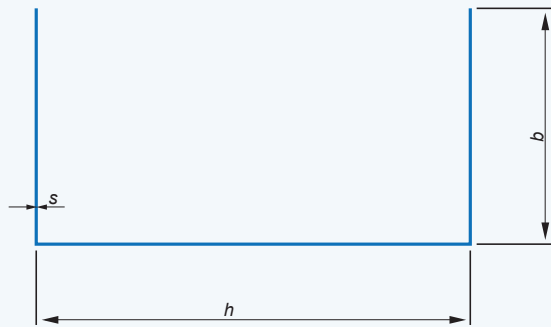
### Sheet Thickness & Tolerance according to DIN 18182 part 1

Thickness Code	Thickness (mm)	Tolerance (mm)
04	0.4	0,40 - 0,46
05	0.5	0,46 - 0,55
06	0.6	0,56 - 0,64
07	0.7	0,66 - 0,74
10	1.0	0,91 - 1,09
20	2.0	1,86 - 2,14

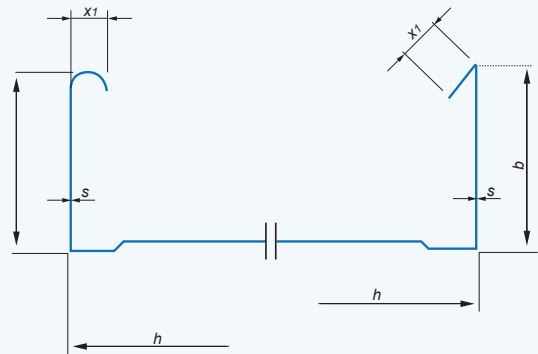
### Soundproofing in dB

Description of wall system				Sound-proofing	
Planking with plasterboard	Planking in each side (mm)	Insulation (mm)	Wall Thickness (mm)	According to DIN 18180 (dB)	Planking plasterboard (dB)
Stud STD 048 / 72	1 x 12.5	45	72	40-43	41-46
Stud STD 075 / 99	1 x 12.5	50	99	40-44	44-49
Stud STD 075 / 99	1 x 12.5	60	99	41-44	47-52
Stud STD 100/ 124	1 x 12.5	45	124	42-45	46-49
Stud STD 100 / 124	1 x 12.5	80	124	42-48	49-53
Stud STD 048 / 97	2 x 12,5	45	97	47-52	51-54
Stud STD 075 / 124	2 x 12,5	45	124	48-52	51-57
Stud STD 075 / 124	2 x 12,5	60	124	49-53	56-57
Stud STD 100 / 124	2 x 12,5	45	124	48-55	52-57
Stud STD 100 / 124	2 x 12,5	80	124	50-56	56-58
Double stud STD 048 + 048 / 150	2 x 12,5	2 x 45	150	59-60	62-64
Double stud STD 075 + 075 / 203	2 x 12,5	60	203	57-58	64
Double stud STD 075 + 075 / 203	2 x 12,5	2 x 60	203	58-60	64-66
Double stud STD 100 + 100 / 253	2 x 12,5	80	253	58-60	65
Double stud STD 100 + 100 / 253	2 x 12,5	2 x 80	253	60-63	67

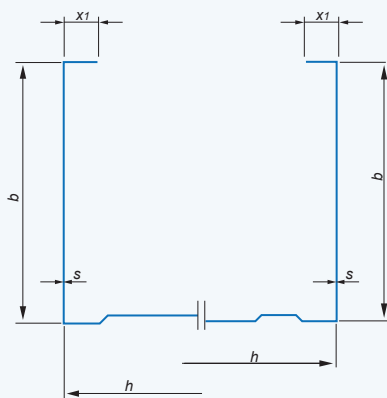
X1 = 6mm, X2 = 3mm



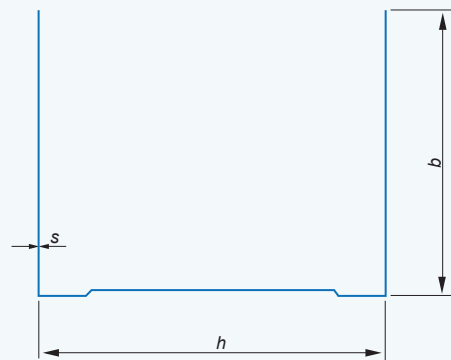
U-Stiffener profile (UA)



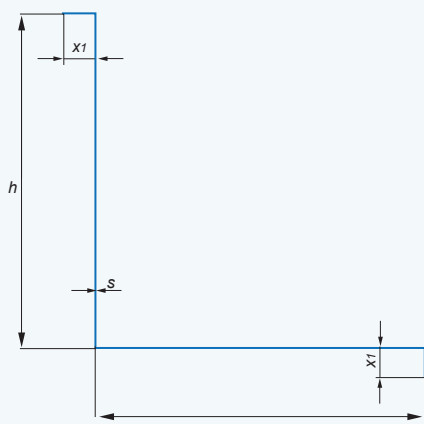
C- Ceiling profile



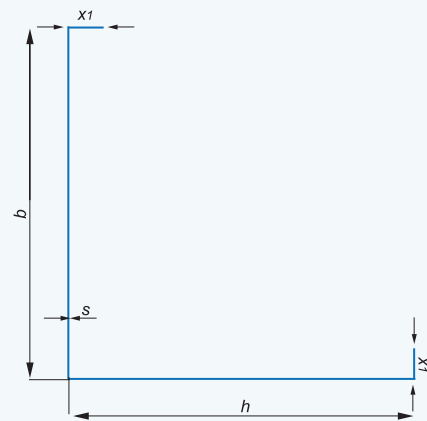
Stud profile (STD)



Runner profile (RNR) | Ceiling profile (MMC)




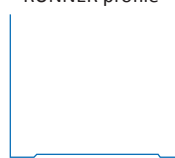
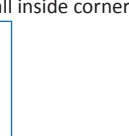




L-Wall inside corner profile



L-Wall outside corner profile

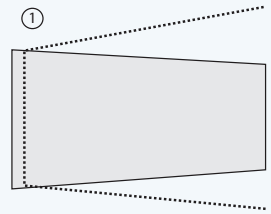
# DIN 18182

Profile		Web	Flange		Thickness						Return Flange	
Type	Code	Width			Code						Single	Double
		h±0.2	b	limiting	04	05	06	07	10	20	X1	X2
<div>C-Ceiling profile</div> 	CC 48	48	27	± 0.2	x	x	x	x	/	/	6	2
	CC 60	60			x	x	x	x	/	/		
<div>Ceiling profile</div> 	MCC 28	28	27	± 0.2	/	/	x	/	/	/	-	-
<div>STUD profile</div> 	Std 40	38.8	32	± 0.3	x	x	x	/	/	/	6	3
	Std 45	43.8			x	x	x	/	/	/		
	Std 50	48.8			x	x	x	x	x	x		
	Std 100	98.8	50		/	/	x	x	x	x	6	-
Std 125	123.8	/		/	x	x	x	x				
<div>RUNNER profile</div> 	RNR 30	30	25	± 0.2	/	x	x	/	/	/		
	RNR 40	40	32	± 0.2	/	x	x	/	/	/		
	RNR 45	45			/	x	x	/	/	/		
	RNR 50	50			/	x	x	/	/	/		
	RNR 60	60			/	x	x	/	/	/		
	RNR 75	75			/	x	x	/	/	/		
	RNR 85	85			/	x	x	/	/	/		
	RNR 100	100			/	x	x	/	/	/		
	RNR 125	125			/	x	x	/	/	/		
<div>L-Wall inside corner profile</div> 	Lwi 50	50	50	± 0.2	/	/	x	/	/	/	6	-
	Lwi 60	60	60		/	/	x	/	/	/		
<div>L-Wall outside- corner profile</div> 	Lwa 50	50	50	± 0.2	/	/	x	/	/	/	6	-
	Lwa 60	60	60		/	/	x	/	/	/		
<div>U- Stiffener profile to use in Ceiling and as door frame</div> 	UA 30	28.8	27	± 0.1	/	/	/	/	/	x		
	UA 40	38.8			/	/	/	/	/	x		
	UA 45	43.8			/	/	/	/	/	x		
	UA 50	48.8			/	/	/	/	/	x		
	UA 60	58.8			/	/	/	/	/	x		
	UA 75	73.8			/	/	/	/	/	x		
	UA 85	83.8			/	/	/	/	/	x		
	UA 100	98.8			/	/	/	/	/	x		
	UA 120	123.8	40		/	/	/	/	/	x		

## Installation of Partition

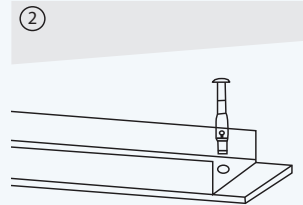
### 1 Chalk line

Mark the dry wall line on the floor. Mark the door opening. Mark the dry wall line on the ceiling.



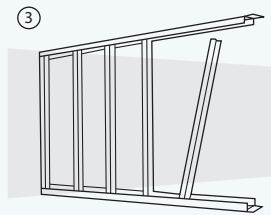
### 2 Runner Profile

Stick the seal to the runner and attach it to the floor and ceiling with anchor each 1000 mm.  
Mark stud locations top and bottom.



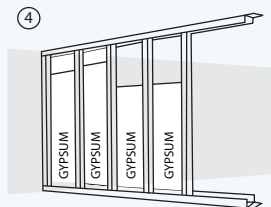
### 3 Stud Profile

Set the stud minimum 15 mm in the ceiling runner. Space the stud either 300 mm, 400mm or 600mm. On center, note allowable wall height table. Ensure that all studs are facing the same way. So that, the screw begins on the stable side of the stud.



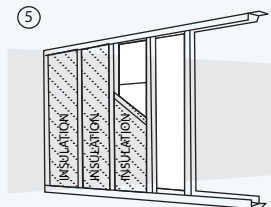
### 4 Gypsum Board first Wall Side

Gypsum Board should be attached advancing toward the open end of the stud.



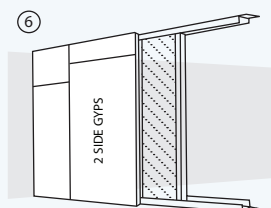
### 5 Sound Proof Insulation

Set insulation to improve the soundproofing and fireproofing.



### 6 Gypsum Board second Wall Side

The dry wall receive a further stability through the planking of the second side. The final leveling of the joints and screw heads provide the permanent stability.





# DRY WALL PARTITION SYSTEMS



[www.sfsp-ikk.com](http://www.sfsp-ikk.com)

Plaster boards are used in all kinds of buildings such as hotels, hospitals, offices, commercial centers, schools, residential houses, prefabricated houses and all building types as a: wall lining, drywall partitions, false ceilings, demountable partitions, and all decoration works related to walls, partitions or ceilings.

## Plasterboard Characteristics

Plasterboard is one of the most important decoration and building materials due to the following reasons:

- Light weight on structure.
- Fast & easy installation.
- Provide more spaces & areas.
- Smooth surfaces which make painting works faster & cheaper.
- Fast & easy installation of concealed water & electrical pipes & cables.
- The ideal way to cover air-conditioning pipes & ducts in ceilings & walls.
- Environmentally friendly due to plaster & cardboard specifications.
- One square metre of drywall weighs one tenth of one square metre of plaster.
- Less weight on your structure means a critical advantage in today's high rise buildings.
- The same insulation value as brick at just a quarter of the thickness.
- Higher sound insulation and fire protection.
- Easy maintenance.

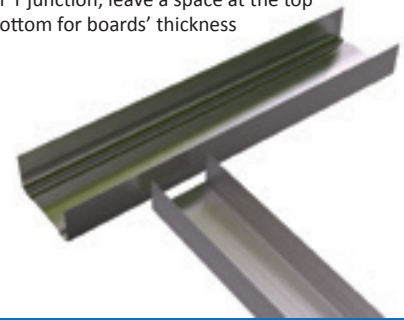
## Specifications

SFSPprofiles for drywall are manufactured in accordance with ASTM-C645 and ASTM-C754 requirements.

At L or T junction, leave a space at the top and bottom for boards' thickness

SFSPprofiles are made from:

- \* Pre-galvanized steel complying with:
  - BS 2989: Zinc grade Z2, zinc coating type G180, G120 and G275.
  - ASTM A653 G90 (275 g/sqm) - G60 (180 g/sqm) - G40 (120 g/sqm) - G20 (60 g/sqm)
  - DIN EN 10147



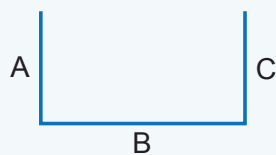
## Codes & Dimensions

### Runner Codes and Dimensions

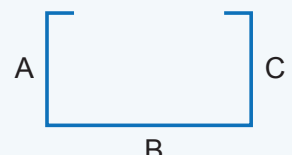
Code	Size	Dimensions			Length (m)	Thickness (mm)
		A	B	C		
SVCTCS_F_00198863	52	25	51	25	3 - 12	0.6 -1.5
SVCTCS_F_00239477	66	25	65	25	3 - 12	0.6 -1.5
SVCTCS_F_00239481	72	25	71	25	3 - 12	0.6 -1.5
SVCTCS_F_00239489	77	25	76	25	3 - 12	0.6 -1.5
SVCTCS_F_00239577	94	25	93	25	3 - 12	0.6 -1.5
SVCTCS_F_00239581	104	25	103	25	3 - 12	0.6 -1.5
SVCTCS_F_00239585	127	25	126	25	3 - 12	0.6 -1.5
SVCTCS_F_00239589	154	25	153	25	3 - 12	0.6 -1.5
Other Lengths up to 6 Meters can be produced on request						

### Stud Codes and Dimensions

Code	Size	Dimensions			Length (m)	Thickness (mm)
		A	B	C		
SCUC_F_00198851	50	32	49	32	3 - 12	0.6 -1.5
SCUC_F_00239593	64	32	63	32	3 - 12	0.6 -1.5
SCUC_F_00239599	70	32	69	32	3 - 12	0.6 -1.5
SCUC_F_00239605	75	32	74	32	3 - 12	0.6 -1.5
SCUC_F_00240305	92	32	91	32	3 - 12	0.6 -1.5
SCUC_F_00240311	102	32	101	32	3 - 12	0.6 -1.5
SCUC_F_00240317	125	32	124	32	3 - 12	0.6 -1.5
SCUC_F_00240323	152	32	151	32	3 - 12	0.6 -1.5
Other Lengths up to 6 Meters can be produced on request						



A and C available 25 - 36 mm  
B will be available according to site request



A and C available 32 - 50 mm  
B will be available according to site request

## Codes & Dimensions

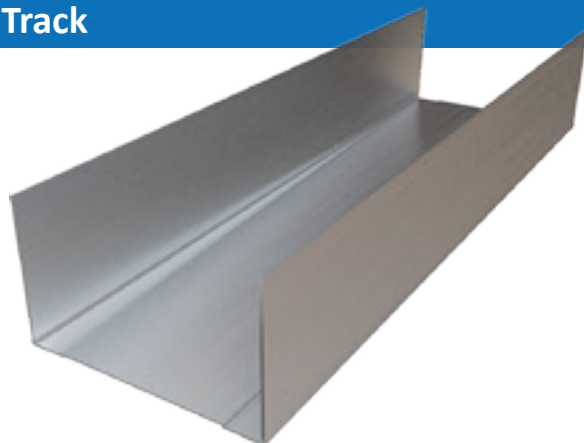
### Construction Overview, Full and Half Height Gypsum Profiles

Profile	Dimensions	Stud. distance (mm)	Layer thickness for each side (mm)	Wall thickness (mm)	Allowable Height		RW db
					Full height Gypsum Board (m)	Half height gypsum board (m)	
Std 70/100	70 x 47 x 0,9	600	1 x 15	100	4, 00	3, 75	47
Std 70/130	70 x 47 x 0,9	600	2 x 15	130	4, 95	4, 00	47
Std 100/130	100 x 47 x 0,9	600	1 x 15	130	4, 50	4, 30	51
Std 100/160	100 x 47 x 0,9	600	2 x 15	160	5, 50	4, 50	51
Std 150/180	150 x 47 x 0,9	600	1 x 15	180	6, 00	5, 10	55
Std 150/210	150 x 47 x 0,9	600	2 x 15	210	7, 00	5, 50	55
Std 150/180	150 x 47 x 0,9	400	1 x 15	180	7, 00	6, 40	55
Std 150/210	150 x 47 x 0,9	400	2 x 15	210	8, 00	6, 80	55
Std 200/230	200 x 47 x 0,9	600	1 x 15	230	6, 50	6, 00	58
Std 200/260	200 x 47 x 0,9	600	2 x 15	260	7, 50	6, 30	58
Std 200/230	200 x 47 x 0,9	400	1 x 15	230	7, 50	7, 30	58
Std 200/260	200 x 47 x 0,9	400	2 x 15	260	9, 00	7, 70	58

### Deflection Track

Code	Dimensions	Height (mm)	Thickness	Length (m)
SCUC_F_00240329	52	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240335	66	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240341	72	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240347	77	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240353	94	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240359	104	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240365	127	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240371	154	50 - 150	0.6 - 1.5	3 - 12

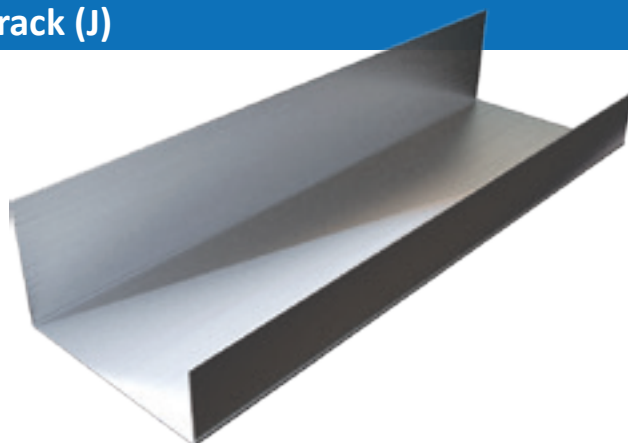
\*Other thickness and lengths available upon site request



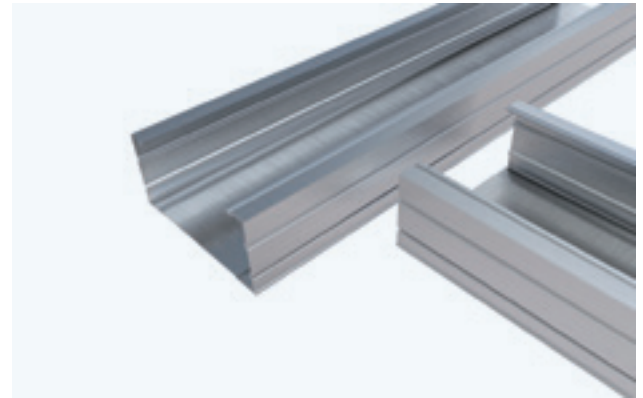
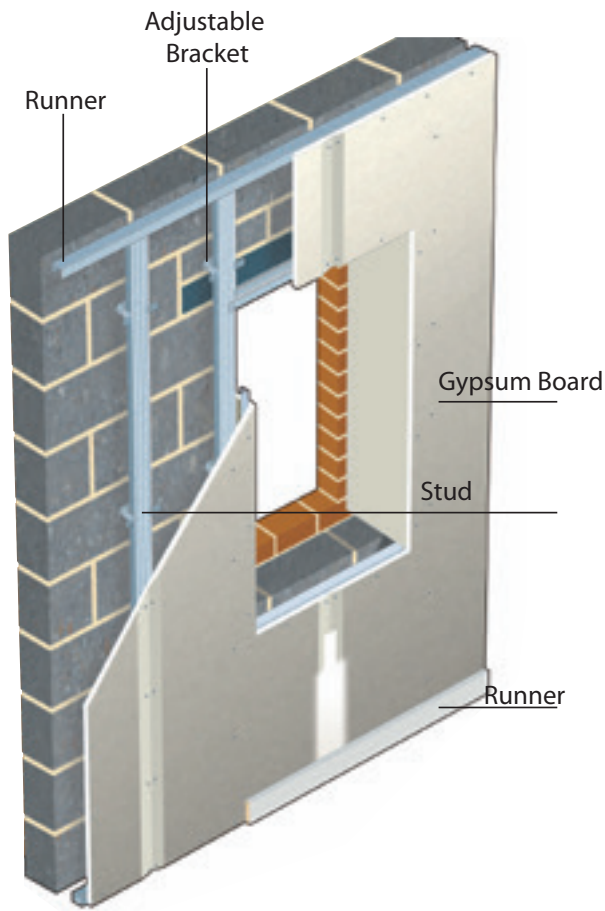
### Shaft Wall Track (J)

Code	Dimensions	Height (mm)	Thickness	Length (m)
SCUC_F_00240329	52	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240335	66	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240341	72	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240347	77	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240353	94	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240359	104	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240365	127	50 - 150	0.6 - 1.5	3 - 12
SCUC_F_00240371	154	50 - 150	0.6 - 1.5	3 - 12

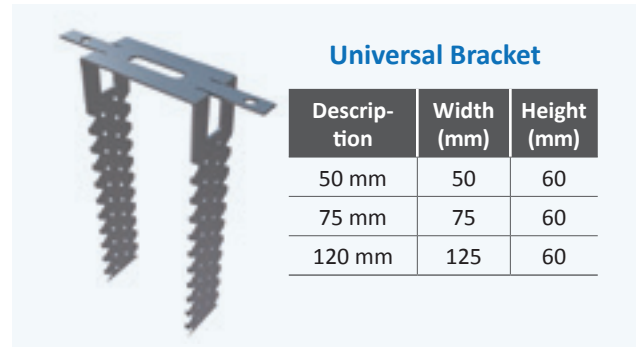
\*Other thickness and lengths available upon site request



## Wall Lining System



Description	Width (mm)	Height (mm)	Thickness (mm)
Wall Liner	60	27	0.5 - 1.5



**Universal Bracket**

Description	Width (mm)	Height (mm)
50 mm	50	60
75 mm	75	60
120 mm	125	60

**SFSP Wall Liner are made from Pre-Galvanized Steel complying with ASTM A 653 Z 120 / Z 180 / Z 275**

### Advantages

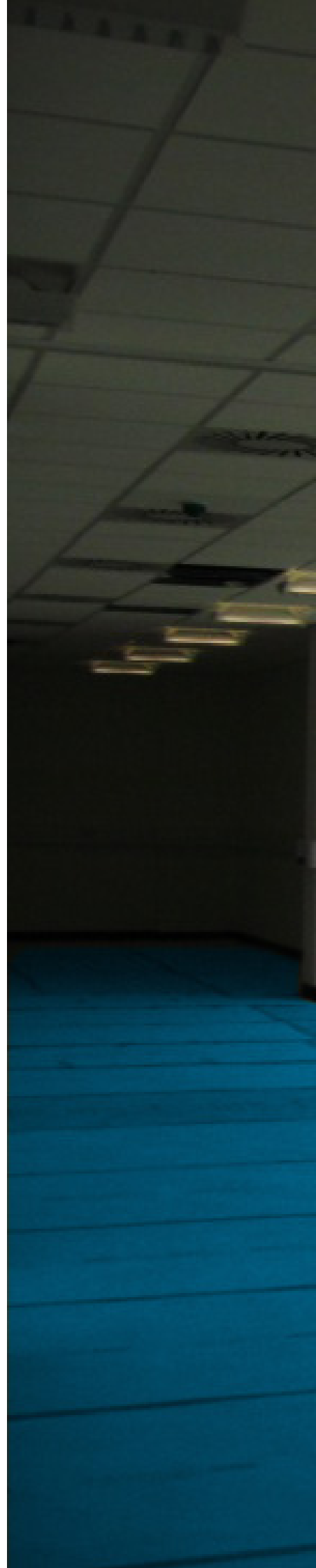
- Quick and easy to install.
- Cost effective.
- Suitable for internal use in all types of application.
- Adjustable and can make cavity up to 120 mm.
- Can be used on masonry or concrete, black granite with uneven wall surfaces.
- Mineral wool for thermal acoustic insulation can be incorporated.

### Installation

- Wall need to be treated from any damp before installation.
- Ceramic tiles or paint can be applied directly with crack resistant surface due to low thermal capacity.
- Established the depth of the cavity and fix all liner track at 600 mm centres to the floor and ceiling with the shallow towards the wall.
- At max 800 mm centre, fix brackets to the wall. Only one bracket is required for heights up to 2.4 m, though brackets not exceed 1200 mm centres on walls more than 2.4 meters high.
- Cut Wall Liner section to length and slot it into the top and bottom track. Adjust brackets to suit board tolerances before final tightening.
- Bend the overhang, if a bracket protrudes beyond the face.
- Fix 1200 mm wide plasterboard at suitable centres using 25 mm drywall screws.



# Installation



## Preparation

- A. Partition layout should be marked accurately, checking individual measurements against overall dimension.
- B. Installation site should be kept dry and in an enclosed shelter.

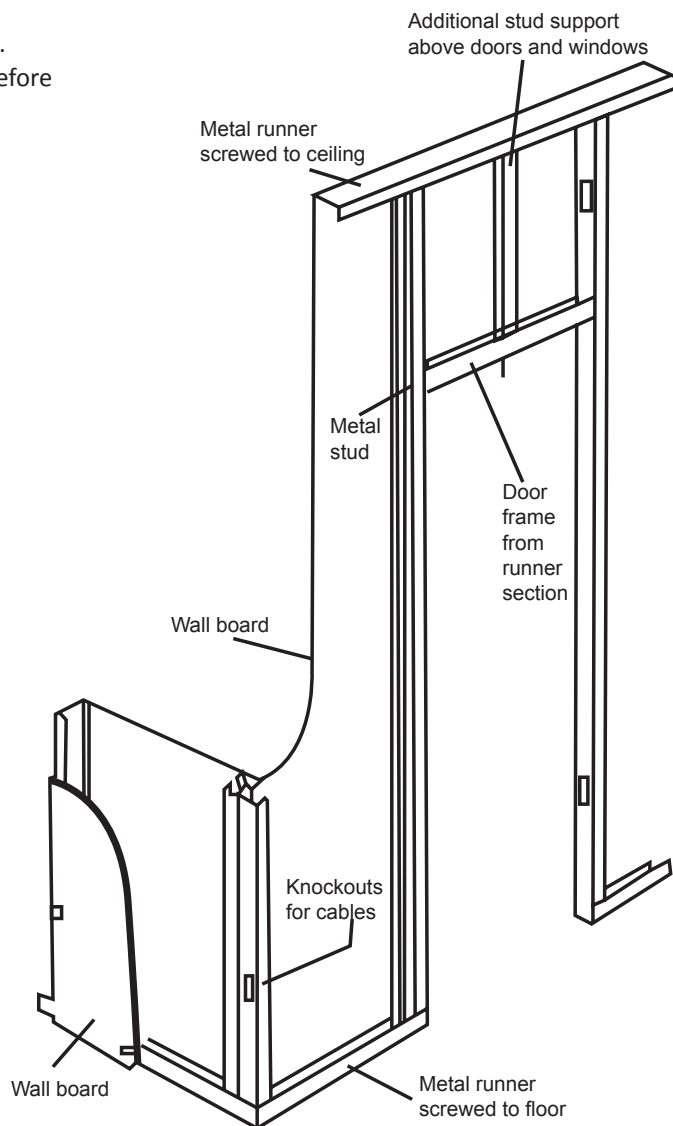
## Installation

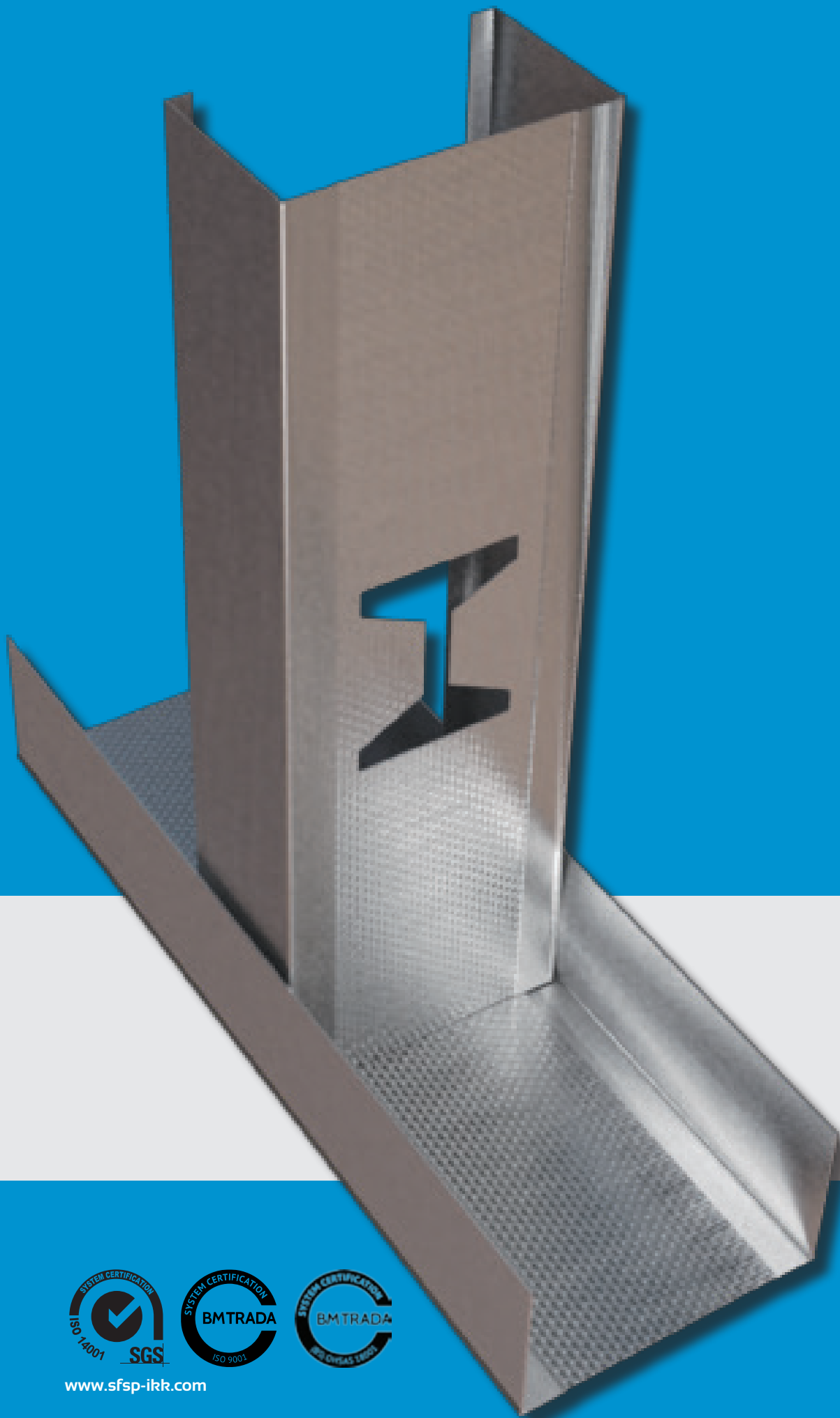
### Partition Framing Installation

- A. Tracks (bottom and top track) should be fastened to structural elements at 50mm in from each ends of the track and spaced at 600mm center to center with suitable masonry fastener (eg. Drive pin, nylon anchor or expansion anchor).
- B. Position studs vertically with open sides facing the same direction, engaging the tracks and spaced at 600 mm center to center.
- C. Studs are not to be fastened to top and bottom tracks.
- D. Cavity Insulation – Install 50mm thick mineral wool with density of 60kg/m<sup>3</sup> in wall cavity, cut neatly between studs to ensure no gaps and/or crushing of the insulation.

## Protection

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.





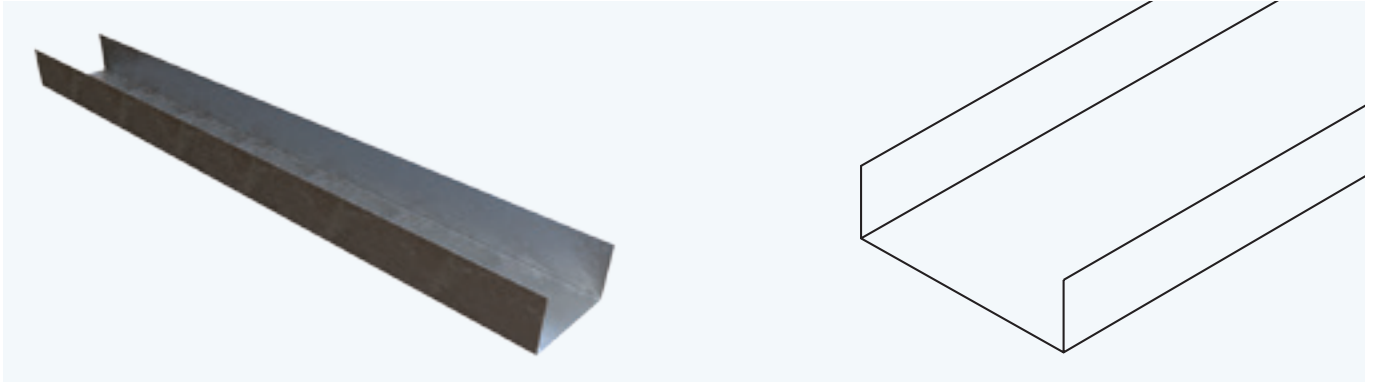
[www.sfsp-ikk.com](http://www.sfsp-ikk.com)

# **SUSPENDED CEILING SYSTEM**

A suspended ceiling has several names as well. Also Known, as a false ceiling or secondary ceiling or a hung ceiling. The suspended ceiling is very widely used in modern construction, especially in offices and basements. A suspended or false ceiling is widely used in modern construction especially in commercial, educational, and health care centers. It provides the convenience for the passage of MEP installation, as well as communication means.

## Main Ceiling Channel

The metal framing members of the ceiling grid are called main ceiling channel. Main ceiling channel is hung from above by suspension hanger. They run between the wall angles and form the support system for the suspended ceiling.



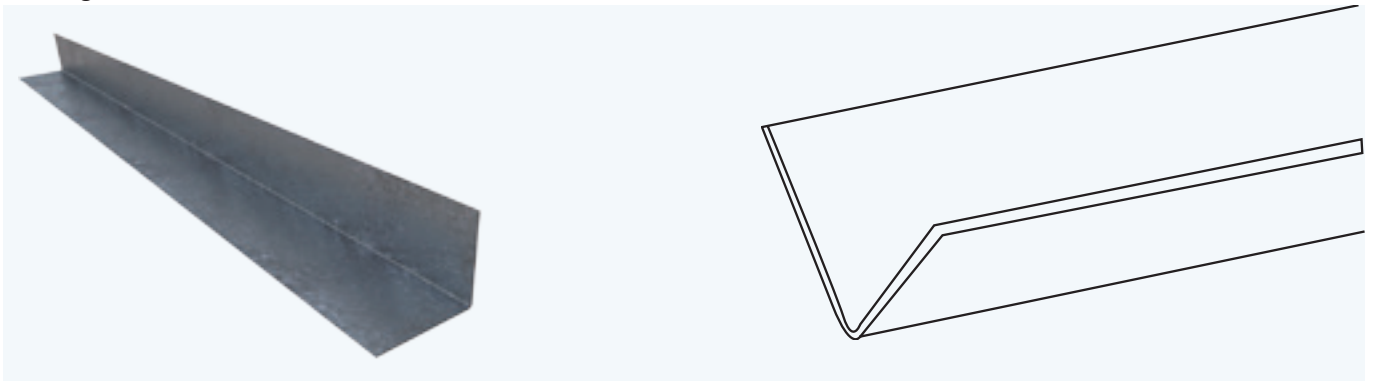
## Furring Channel

Furring channel: also known as cross furring. They run perpendicular to the main ceiling channel and are connected to it with a wire connection clip. Furring channels are used to support the ceiling panel (Gypsum Board)



## Perimeter (Wall) Angle

This “L” shaped mouldings form the perimeter of ceiling. They ensure a finished edge where the ceiling meets the wall and establish the level of ceiling. Perimeter angles are set on all sides of the ceiling and should overlap on inside corners- Miter the wall angle on outside corners.



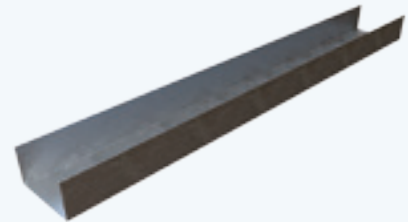
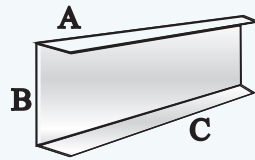
## Suspended Ceiling System

### Requirements Codes & Dimensions

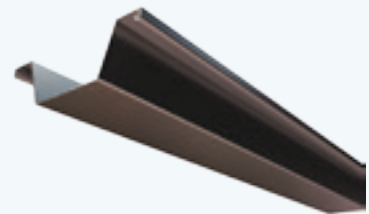
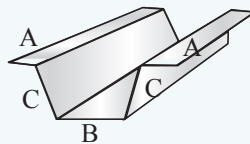
LM: Linear meter

	Code	Description	Dimension (mm)	Approx. requirement per 100 m <sup>2</sup>	length (cm)	Pcs./palletted bundle	Application
Main Ceiling Channel	SVCTCS_F_00179295	Main Ceiling Channel	11 x 38 x 11 mm	110 LM	300	500	Main support for furring channels
Furring Channel	STFP_F_00086719	Furring Channel	12 x 22 x 35 x 22 x 12 mm	200 LM	300	250	Support section where plaster board is fixed
Perimeter Angle	LA_F_00086711	Perimeter Angle (Wall Angle)	25 x 25 mm	40 LM	300	500	Fixed around the perimeter to receive ends of furring channels and outer edges of plaster boards.

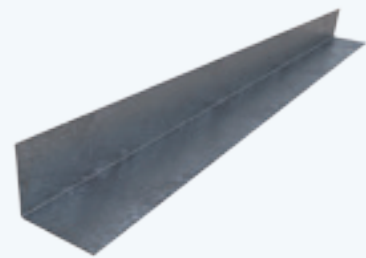
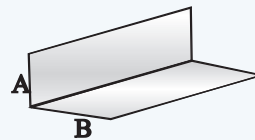
#### MAIN CEILING CHANNEL



#### FURRING CHANNEL



#### PERIMETER (WALL) ANGLE



## Advantages of Suspended Ceiling

A suspended ceiling, having an ideal space between its structure and the actual ceiling enables the installation of building wiring, pipes, duct work and insulation, perceiving an easy access for maintenance.

The area above the suspended ceiling is called a plenum space.

Suspended ceiling provides sound deadening qualities, and reducing acoustic problems in room. In modern construction, the efficiency of a suspended ceiling for sound absorption has greatly been valued as one of the best solutions to control noises in buildings.

### Material requirements / sqm

Main Ceiling Profile	1.10	m
Furring Profile	2.0	m
Perimeter Angle	0.4	m
Suspension Hanger	4	Pcs
Bracket	4	Pcs
Wire Connection Clip	6	Pcs
Screws	17	Pcs



Gypsum board	Gyp.board thickness	Main ceiling channel	Furring channel	Suspended hanger (c)	Ceiling channel distance (a)	Furring distance (b)	Suspended hanger
Articel	(mm)	Articel	Articel	(mm)	(mm)	(mm)	kN
Plasterboard construction plate	12.5	MCC-Profile	FCL-Profile	950	1000	500	0.13
GKB	15.0	MCC-Profile	FCL-Profile	750	1000	550	0.10
	18.0	MCC-Profile	FCL-Profile	750	1000	625	0.12
Plasterboard Fireproof	12.0	MCC-Profile	FCL-Profile	900	1000	500	0.13
GKF	15.0	MCC-Profile	FCL-Profile	750	1000	500	0.10
	18.0	MCC-Profile	FCL-Profile	750	1000	400	0.12
	2 x 12.5	MCC-Profile	FCL-Profile	750	1000	500	0.17
	15.0 + 18.0	MCC-Profile	FCL-Profile	600	750	400	0.22

## Installation of Suspended Ceiling

1. Determine the suspended ceiling height. Keep the new ceiling level above door frames and window opening.
2. Mark the suspended ceiling height and snap a chalk line (Do not take measurement from floor).
3. Align the bottom of the wall angle moulding (perimeter angle) with the chalk line and fix it to the wall.
4. Position the suspension hanger, apply them to the ceiling with eye bolt or hooks.
5. Install the main ceiling channel and adjust with the adjustable suspension hanger to the required height. Distance between wall and first main ceiling channel is 100 – 150 mm.
6. Connect the furring cross channel to the main ceiling channel by using wire connecting clip.
7. Install the ceiling panel (gypsum board) by fixing it with the furring channel using dry wall screw.

# Furring Ceiling System

## System Overview

The furring ceiling system is a method of fixing one or two layers of 12.5 mm. Plasterboard to metal suspended grid to provide a smooth ceiling where additional decoration may be applied.

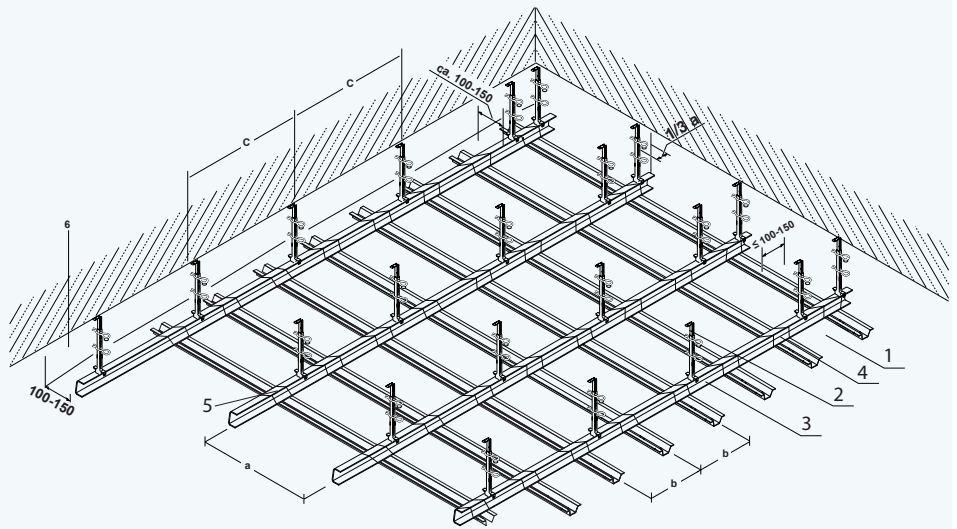
## System Components

- 1 - Furring Channel (35 x 25 mm)
- 2 - Main Channel (38 or 45 mm)
- 3 - Plasterboard
- 4 - Angle (25 x 25 mm)
- 5 - Channel Bracket
- 6 - Wire Clip

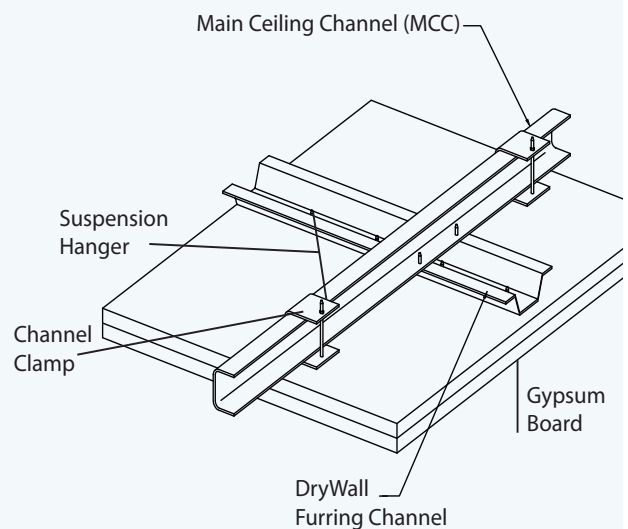
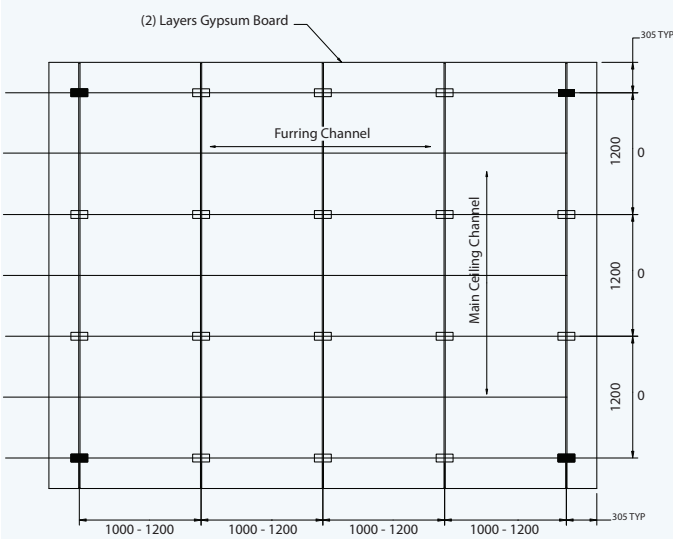
## Material requirements per 1 sqm

Code	Description	Quantity by single layer gypsum
MCC	Main ceiling channel	1.90 m
FCL	Furring channel	2.70 m
PAN	Perimeter angle (wall angle)	0.40 m
	Suspension hanger	1.80 Pcs
	Bracket	1.80 Pcs
	Connecting clip	3.10 Pcs
	dry wall screw	22 Pcs
	Eye bolt	1.80 Pcs

- 1= Gypsum Board  
 2= Suspension Hanger  
 3= Main Ceiling Channel  
 4= Furring Channel  
 5= Connecting Clip (Furring Clip)  
 6= Perimeter angle (L angle)  
 a = Distance between main channel  
 b = Distance between furring channel  
 c = Distance between suspension hanger



## Typical Ceiling Hanger Layout



### NOTES:

No channel shall contact perimeter and create a short - circuit.

## Plan Section

### Furring Ceiling System For Gypsum Board

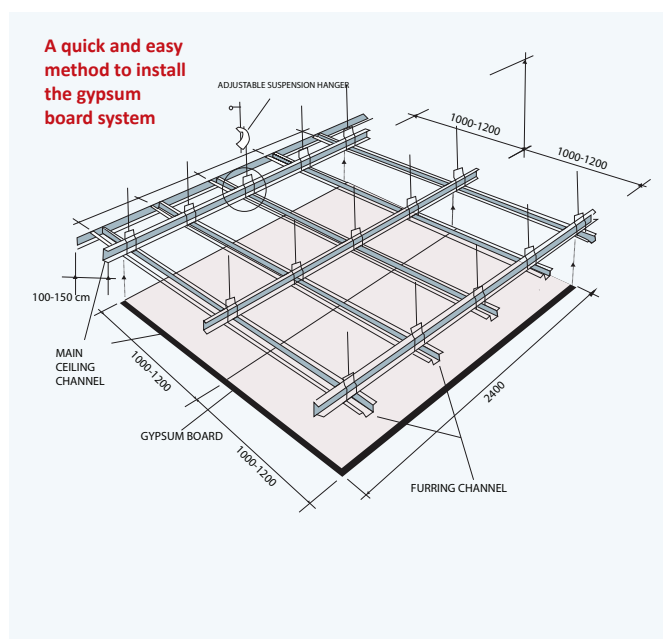
The furring section forms a battening system on to which gypsum board is screwed using dry wall screws with an electric screwdrivers. We recommend our rigid rod adjustable hanger for strength and rigidity. Furring ceiling systems is suspended ceiling system, clad with gypsum boards sheets. The grids are concealed behind the ceiling board. It is commonly used in where plain ceiling is required. Gypsum boards are usually used as the surface material of furring ceiling system. Compared with combustible wooden ceiling, our products are made of incombustible and durable galvanized steel. It is being mostly used in factories, department stores, hospitals, residences, office buildings, restaurants and other commercial offers.

### Specification

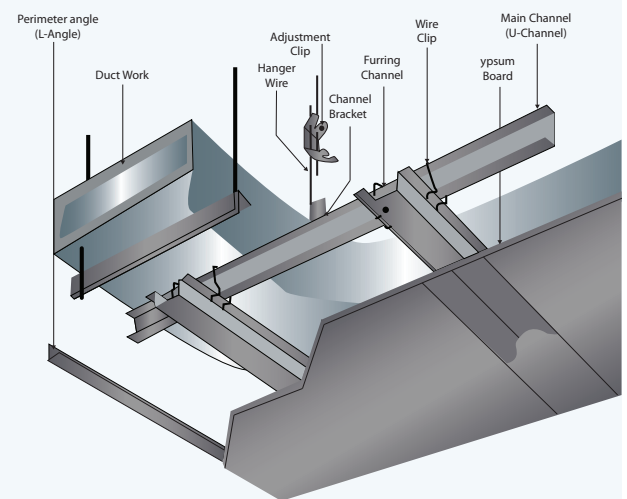
B.S. 2994: 1976 Cold rolled steel sections and B.S. 2989: 1975 hot dipped galvanized plain steel and coil.  
For thickness and sizes see components list.

### Fire

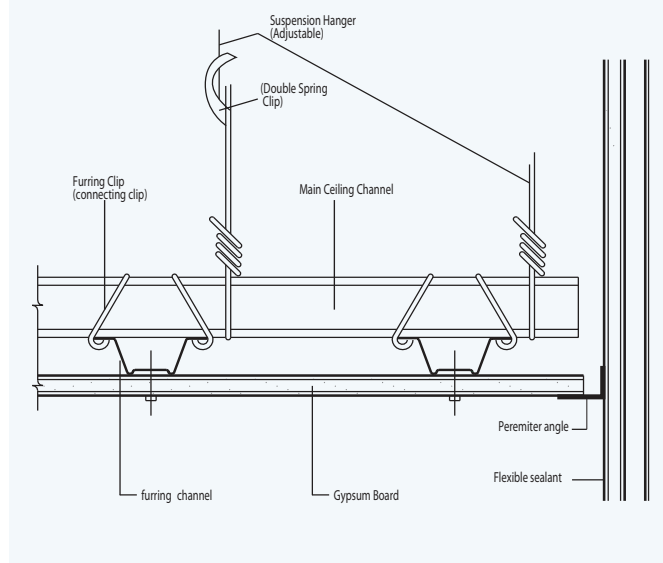
Fire resistance is closely linked to the type of boards used.



### Assembly of Furring Ceiling System



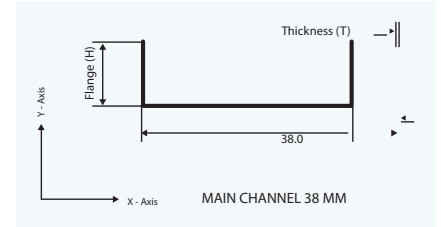
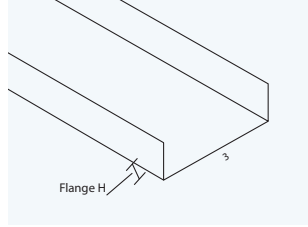
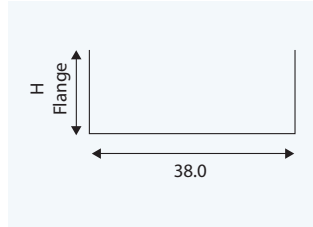
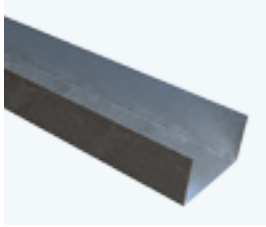
### Control Joint 09250B



## Specifications

### Main Channel 38 mm specifications

The standard main channel profile comes in a width of 38mm and a flange of 13mm.  
Main channels with shorter or longer flanges and of different width can be produced on demand.

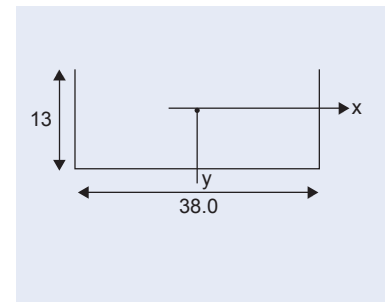


### Physical & Structural Properties

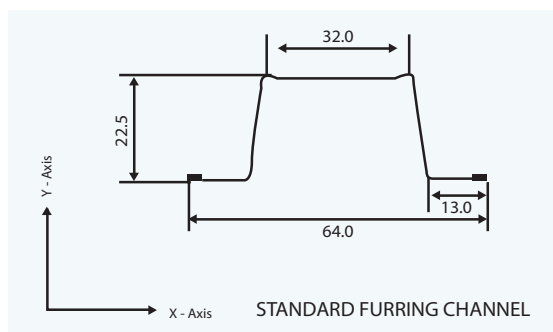
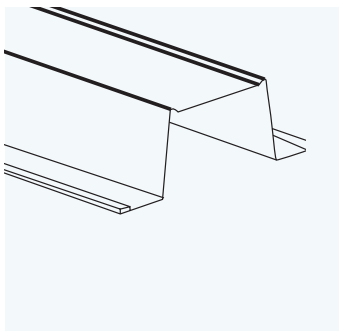
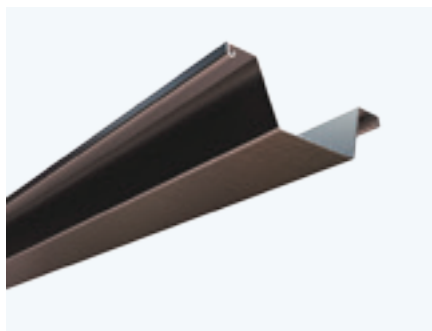
Flange (mm)	Thickness (mm)	Weight (Kg/m)	Cross section area (sq. mm)	About Major Axis			About Minor Axis		
				$\bar{X}$ (mm)	$I_x$ (mm <sup>4</sup> )	$R_x$ (mm)	$\bar{Y}$ (mm)	$I_y$ (mm <sup>4</sup> )	$R_y$ (mm)
13	0.5	0.25	31.5	0	3.9	4.83	2.83	6681	14.6
13	0.60	0.30	37.7	0	3.9	4.84	2.86	7947.3	14.5
13	0.90	0.46	56.0	0	3.9	4.87	2.98	11611.4	14.4
13	1.20	0.61	73.9	0	3.8	4.90	3.10	15078.6	14.3
13	1.50	0.76	91.5	0	3.8	4.90	3.20	18356.1	14.16

$\bar{X}$  - Centroid distance in the x-axis  
 $I_x$  - Moment of inertia about the principal x-axis  
 $R_x$  - Radius of gyration about centroidal of the principal x-axis  
 $\bar{Y}$  - Centroid distance in the y-axis  
 $I_y$  - Moment of inertia about the principal y-axis  
 $R_y$  - Radius of gyration about centroidal of the principal y-axis

Thickness	Section wx modulus wx		Section wx modulus wy		Moment of Inertia	
	Top	Bottom	min	max	$I_x$	$I_y$
mm	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>4</sup>	cm <sup>4</sup>
0.5	-0.047	0.17	-0.352	0.352	0.048	0.668
0.6	-0.057	0.201	-0.421	0.421	0.058	0.802
0.90	-0.085	0.287	-0.626	0.626	0.087	1.202
1.20	-0.114	0.365	-0.829	0.829	0.116	1.603
1.50	-0.143	0.437	-1.028	1.028	0.145	2.005



## Furring Channel 35x22 mm Specifications

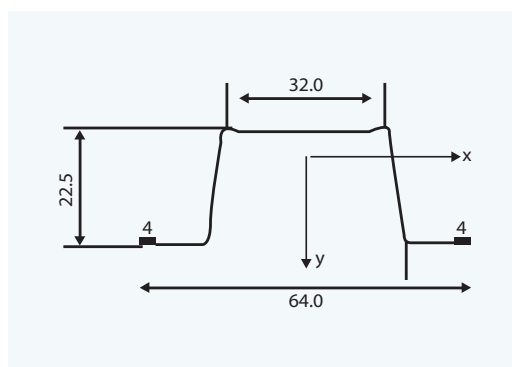


## Physical & Structural Properties

Furring Size (mm)	Thickness (mm)	Weight (Kg/m)	Cross section area (sq. mm)	About major axis			About minor axis		
				$\bar{X}$ (mm)	$I_x$ (mm <sup>4</sup> )	$R_x$ (mm)	$\bar{Y}$ (mm)	$I_y$ (mm <sup>4</sup> )	$R_y$ (mm)
32x22.5	0.45	0.37	46.5	0.0	4150	15.3	12.04	15151.9	18
	0.50	0.42	51.7	0.0	4610	15.3	12.06	16820.6	18
	0.60	0.50	62.0	0.0	5530	15.3	12.08	20149.2	18
	0.90	0.75	93.0	0.0	8290	15.4	12.18	30064.9	17.97
	1.20	1.00	124.0	0.0	11060	15.5	12.27	39876.8	17.90
	1.50	1.25	155.1	0.0	13830	15.6	12.40	49586.7	17.88

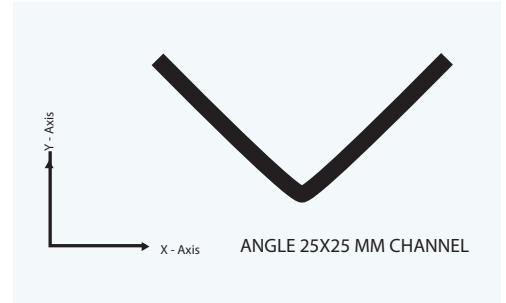
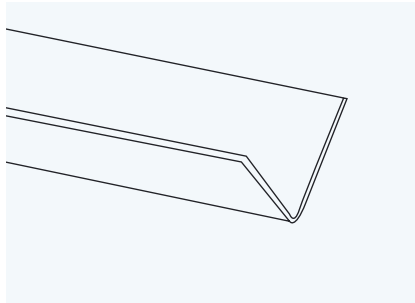
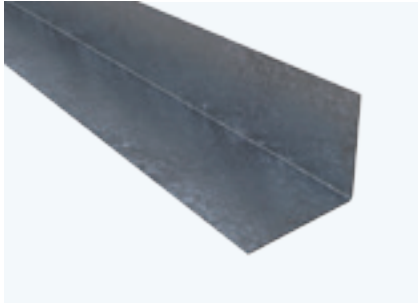
$\bar{X}$  - Centroid distance in the x-axis  
 $I_x$  - Moment of inertia about the principal x-axis  
 $R_x$  - Radius of gyration about centroidal of the principal x-axis  
 $\bar{Y}$  - Centroid distance in the y-axis  
 $I_y$  - Moment of inertia about the principal y-axis  
 $R_y$  - Radius of gyration about centroidal of the principal y-axis

Cross Section Area	Thickness t	Section $w_x$ modulus $w_x$		Section $w_y$ modulus $w_y$		Moment of Inertia	
	t	Top	Bottom	min	max	$I_x$	$I_y$
cm <sup>2</sup>	mm	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>4</sup>	cm <sup>4</sup>
0.465	0.45	0.383	0.342	-0.477	0.477	0.415	1.527
0.517	0.50	0.425	0.379	-0.53	0.53	0.461	1.697
0.62	0.60	0.507	0.453	-0.636	0.636	0.553	2.037
0.93	0.90	0.751	0.671	-0.955	0.955	0.829	3.055
1.24	1.20	0.988	0.855	-1.273	1.273	1.106	4.074
1.55	1.50	1.219	1.093	-1.591	1.591	1.383	5.092



## Perimeter Angle 25x25 mm Specifications

SFSPSections manufactures angles 25x25 in different standard sizes and stock lengths. This product's specifications sheet cover the 0.45, 0.50, 0.6, 0.7, 0.90, 1.0, 1.20 and 1.50 mm gages. However, if you have specific requirements with different gauges, leg sizes or lengths please contact us for a detailed offer.

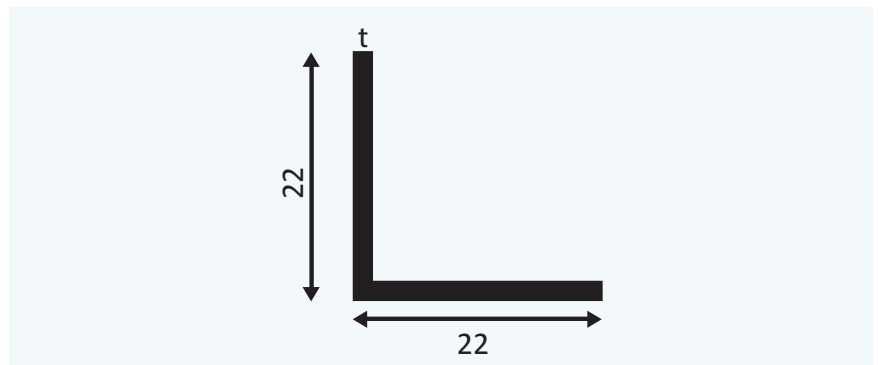


### Physical & Structural Properties

Profile	Thickness (mm)	Weight (Kg/m)	Cross section area (sq. mm)	About major axis			About minor axis		
				$\bar{X}$ (mm)	$I_x$ (mm <sup>4</sup> )	$R_x$ (mm)	$\bar{Y}$ (mm)	$I_y$ (mm <sup>4</sup> )	$R_y$ (mm)
AE 25	0.45	0.18	22.30	6.4	1470	10.25	6.4	1470	10.25
AE 25	0.50	0.20	24.75	6.4	1630	10.25	6.4	1630	10.25
AE 25	0.60	0.24	29.60	6.47	1950	10.27	6.47	1950	10.27
AE 25	0.90	0.36	44.19	6.58	2930	10.30	6.58	2930	10.30
AE 25	1.20	0.48	58.56	6.70	3910	10.34	6.70	3910	10.34
AE 25	1.50	0.60	72.75	6.80	4890	10.38	6.80	4890	

$\bar{X}$  - Centroid distance in the x-axis  
 $I_x$  - Moment of inertia about the principal x-axis  
 $R_x$  - Radius of gyration about centroidal of the principal x-axis  
 $\bar{Y}$  - Centroid distance in the y-axis  
 $I_y$  - Moment of inertia about the principal y-axis  
 $R_y$  - Radius of gyration about centroidal of the principal y-axis

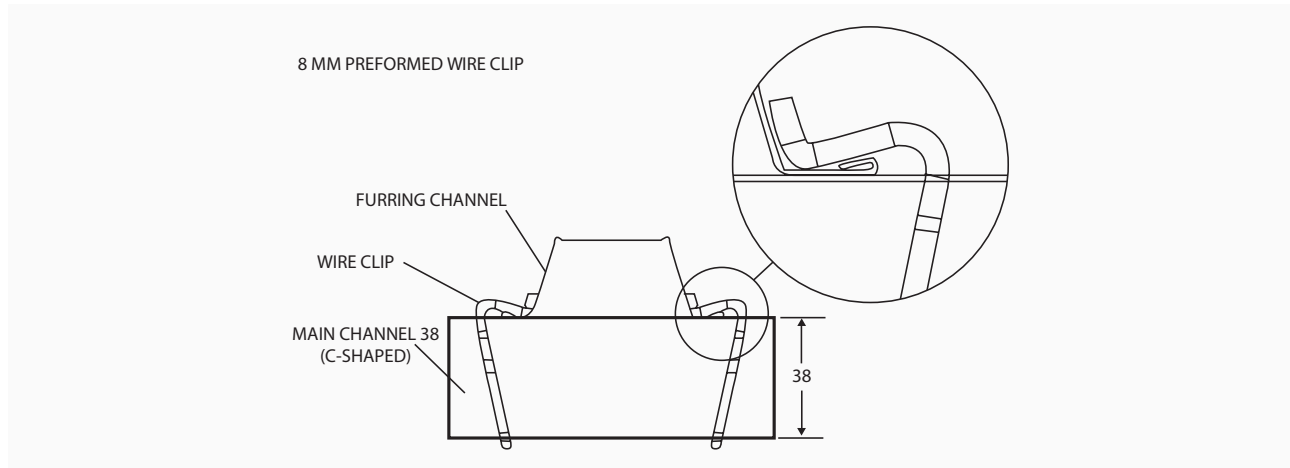
Thickness t	Section modulus $w_x$ cm <sup>3</sup>		Moment of Inertia
	Top	Bottom	
t			I
mm	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>4</sup>
0.45	0.08	0.226	0.147
0.50	0.09	0.250	0.163
0.60	0.104	0.298	0.195
0.90	0.156	0.437	0.293
1.20	0.209	0.571	0.391
1.50	0.261	0.699	0.489



The preformed wire clip is used to attach a furring channel to a main channel in a spring-loaded condition. Our precisely formed clip ensures easy-installation and optimum grip.

#### Durability

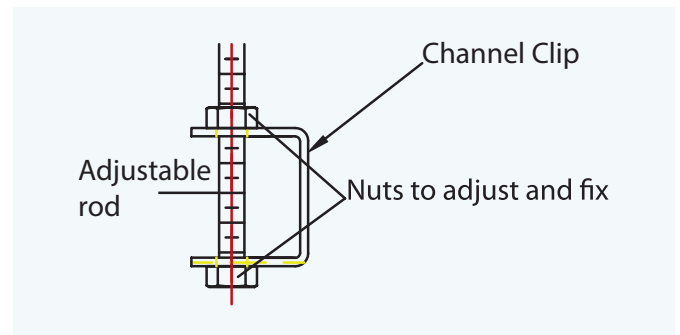
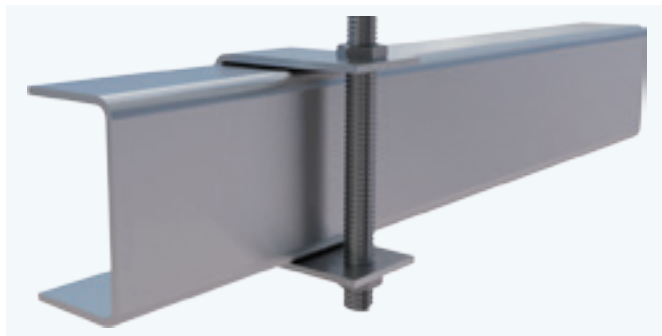
Our 38 mm preformed wire clip conforms to the highest standards. It is made from high quality galvanized steel wire. The galvanized steel wire has a G90 / Z275 coating and confirm to ASTM standards.



### Connecting the main ceiling channel to the bracket

#### Channel Clamp (Channel Bracket)

Is used to hold the main ceiling by a threaded Rod, an adjustment spring is not required. The adjustment takes place with nut as shown. Slide the Main Ceiling Channel through the channel bracket of the leveling bolt. The grid can be adjusted to level, by loosening of the bottom nut of the leveling bolt / channel bracket.



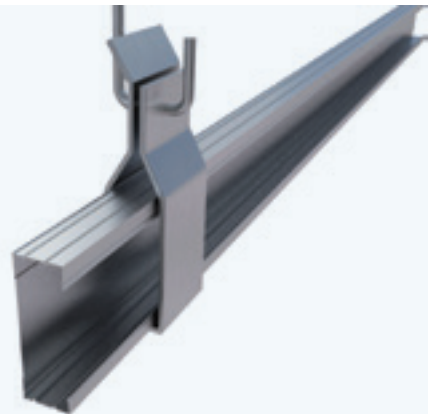
### Channel Clamp

38 mm channel clamp to hold channel to ceiling by threaded rod



### Channel Bracket

38mm channel bracket to hold channel to ceiling by threaded rod.



### Double Spring Clip

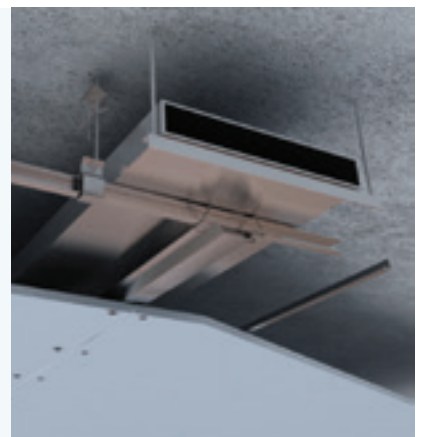
Double spring adjustable clip ceiling level.



### Furring Clip

(connecting clip)

2.5mm dia preformed wire clip to fit furring channel and main ceiling channel.



## Accessories



Corner tape



Drywall joint tape



Bracket



Universal bracket 50 - 75mm



Framing screw



Ready mix joint compound



Chalk line



Adjustable suspension Hanger



Drywall screw



Power screw driver



Power Tools



Tie Wire

## Tool Kits



Measuring tape



Drywall joint tape



Plumb line



Wire connecting clip



Tinsnips



Wallboard hand saw



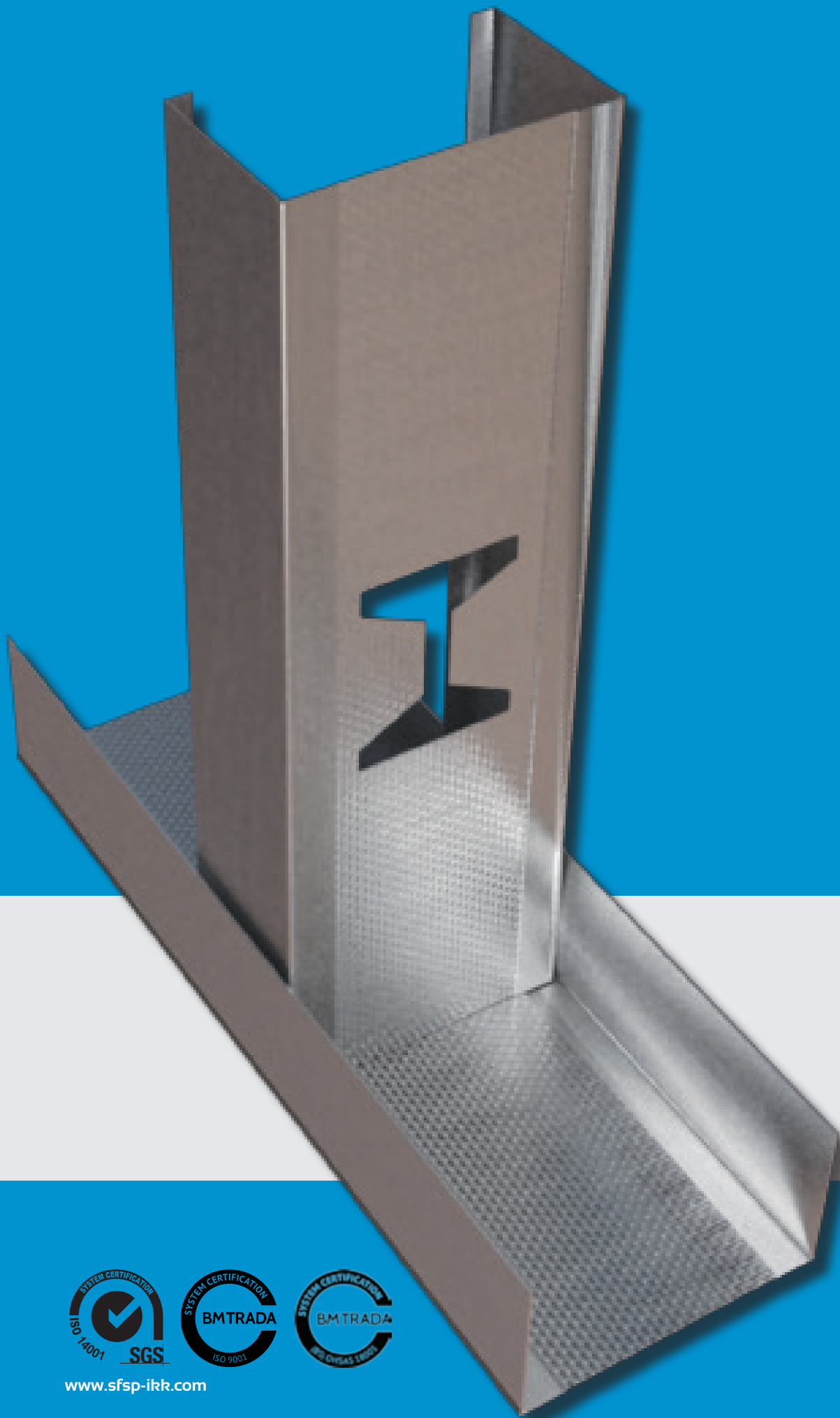
Utility knife



BMI Level



Taping knife



[www.sfsp-ikk.com](http://www.sfsp-ikk.com)

# **PLASTER BOARD RANGE CEILING**

Boards are composed of a gypsum core encased in paper on the face side and a paperliner on the back side. The face paper is folded around long edges to reinforce and protect the core. The ends are square cut and finished smoothly. The long edges are tapered on the face side to form a shallow channel for the joint reinforcement. Gypsum boards may also be available with long square edges.

## Advantages & Applications

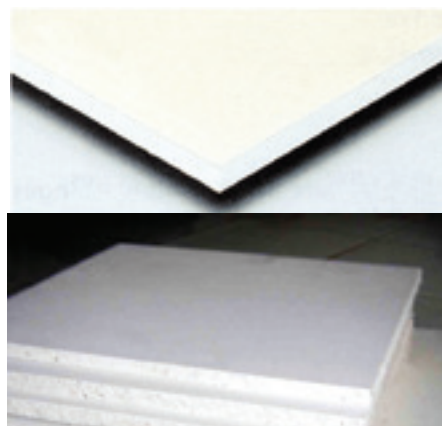
### Advantages

- \* Eliminate excessive moisture in construction.
- \* Exceptionally resistant to cracks caused by minor frame movements, vibrations or settlements.
- \* Quickly and easily applied, low cost installation.
- \* Suitable for all decorations: paint, textile, wallpaper and tiling.
- \* Excellent fire-resistive building material
- \* Effectively help control sound transmission
- \* Versatile and durable

### Applications

For internal use only:

- \* Ceiling
- \* Under roofing
- \* Wall lining
- \* Partitioning



#### Regular boards

Thickness mm (± 0.4 mm)	Width mm (+0 mm - 5 mm)	Approx. weight kg/m <sup>2</sup>	Length mm (+ 0.5 mm)
9.5	1 200	7.9	1800 - 4000
12.5	1 200	10.2	1800 - 4000
15	1 200	12.1	1800 - 4000
18	1 200	14.9	1800 - 4000

#### Technical characteristics

##### Thermal resistance

9.5 mm	0.03 m <sup>2</sup> . K/W
12.5 & 15 mm	0.04 m <sup>2</sup> . K/W
18 mm	0.05 m <sup>2</sup> . K/W

## Water Resistant

Boards are covered with a multi sheet cellulose impregnated with silicon.

The core of the boards is also treated with silicone oil. This treatment provides a high protection against water and moisture.

### Properties

The main technical properties of gypsum boards are:

- Moisture absorption according to ASTM C 473
- Surface absorption less than 160 gm. after 2 hours. Immersion absorption less than 5% of the weight after two hours of immersion.

### Applications

The main application is for walls and partitions where there is a risk of flooding, such as: bathrooms, kitchens, gymnasiums, technical rooms, basements, etc.

## Fire Resistant

Gypsum board is an excellent fire-resistive building material. Its noncombustible core contains nearly 21% chemically combined water, which, under high heat, is slowly released as steam. Because steam will not exceed 100 degrees under normal atmospheric pressure, it very effectively retards the transfer of heat and the spread of fire. Even after complete calcination, when all the water has been released from its core, gypsum board continues to serve as a heat-insulating barrier. Moreover, tests conducted in accordance with ASTM E 84 show that gypsum board has a low flame-spread index and a low smoke-density index. When installed in combination with other materials in laboratory-tested wall and ceiling assemblies, gypsum board serves to effectively protect building elements from fire for prescribed time periods.

## Properties & Applications

The longer fire resistance of those boards make them specially adequate for buildings where a special fire protection is required.  
Thermal conductivity (W/M2 Oc): 0.18.  
Classified M-1, non flammable.

### Standard Dimensions (mm).

Thickness	12.5	15
Width	1200	1200
Length	2400 - 3000	2400 - 3000

## Specifications

### Storage

Stacks of boards should be stored on a level surface in a dry place, preferably inside a building and protected from damp and rainy weather. It is possible to stack 4 pallets one on each other.

### Handling

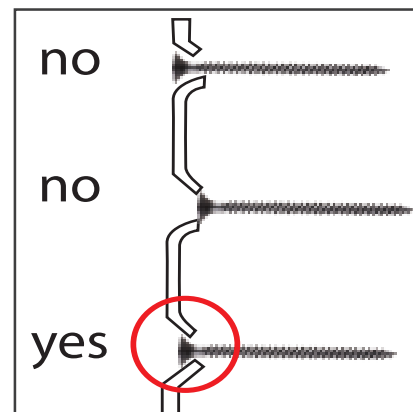
Boards should be carried on edge.

### Cutting

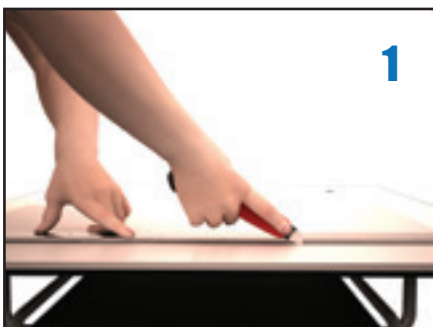
With a knife or cutter. Cutting metal studs and runners is done with tins nips from one flange to the other.

### Screwing of Gypsum Boards

Use a power screwdriver and self tapping screws, adjust the chuck of the screwdriver for proper depth.

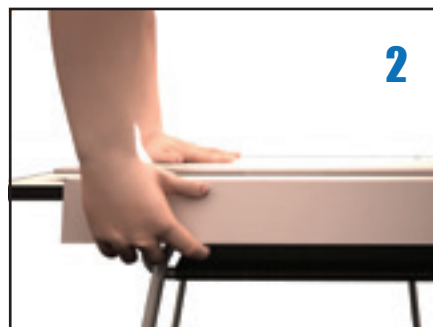


## Bords Working



1

Make a cut into the facing liner, guided by a straight edge.



2

Break it by snapping.



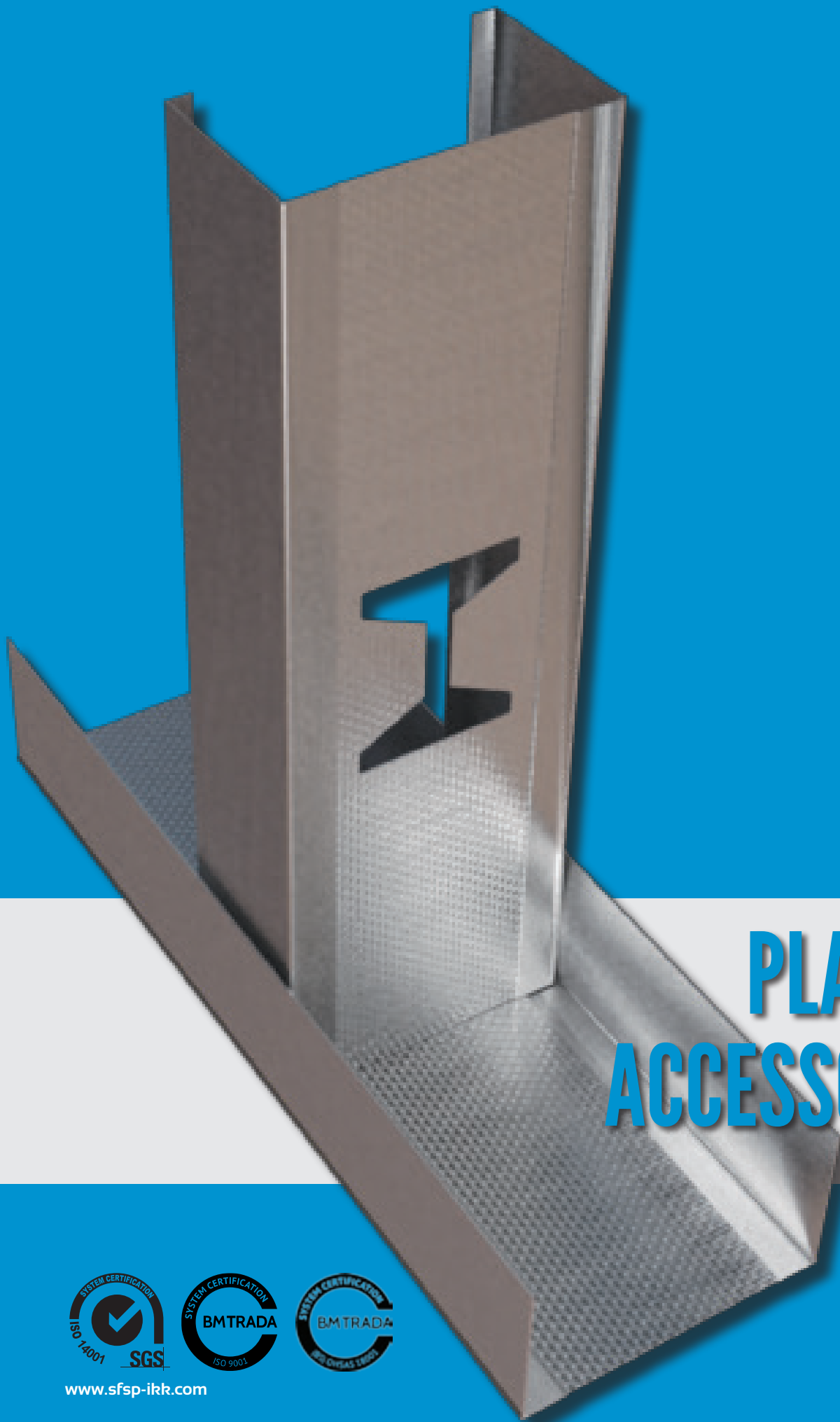
3

Turn the board over and bend it. The grey liner is easy to cut.



4

With a hand saw, Make out the line and saw off.



# PLASTER ACCESSORIES



[www.sfsp-ikk.com](http://www.sfsp-ikk.com)

Our plaster accessories include Perforated Corner Bead, Board Trim, J-Trim and Zinc Control Joint.

## Perforated Corner Bead

SFSP produce an economical hot-dipped galvanized corner bead for excellent corrosion protection.

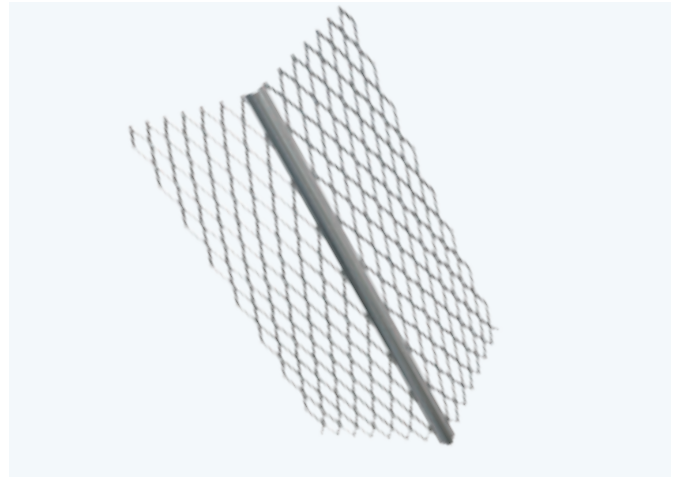
### Product Data & Ordering information:

Material: 0.40 mm thickness, Hot-Dipped Galvanized Steel.  
Dimensions: 25 - 30 x 25 - 30 wing.

Size	Length	Pcs./ctn.
25 x 25 mm	3000 mm	50
30 x 30 mm	3000 mm	50

### ASTM & Code Standards:

- ASTM C 840 / C1047
- All drywall accessories are fabricated from prime galvanized steel zinc coating by the hot dipped method, conforming to steel and coating specification ASTM A-653/A-653M.



### Storage:

All stored materials shall be kept dry. Materials shall be stacked off the ground, supported on a level platform, and protected from the weather and surface contamination conforming to ASTM C-1063.

## Board Trim

### Short flange casing to terminate stucco/plaster edge

Used as a stucco/plaster stop to provide a screwed edge and protective finish trim while terminating plaster in a clear straight line at doors, windows, and or other openings. Also, recommended as an edge divider between plaster and other dissimilar materials. The board trim is used where an expanded flange is not required.

### Product Data & Ordering information:

Material: 0.40 mm Gauge, Hot-dipped galvanized steel, ASTM A 653.

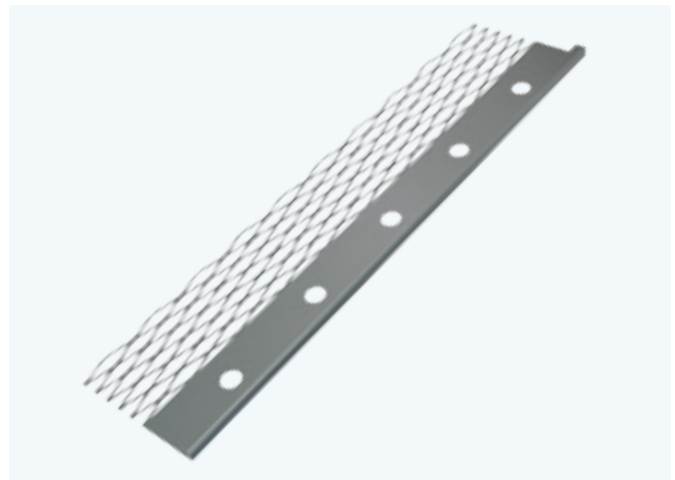
Dimension: 10 to 30 mm Grounds, 3000 mm length

Packaging: 50 pcs per carton.

Pcs./ctn.	Length	Size
10 mm	3000 mm	50
12.5 mm	3000 mm	50
19 mm	3000 mm	50

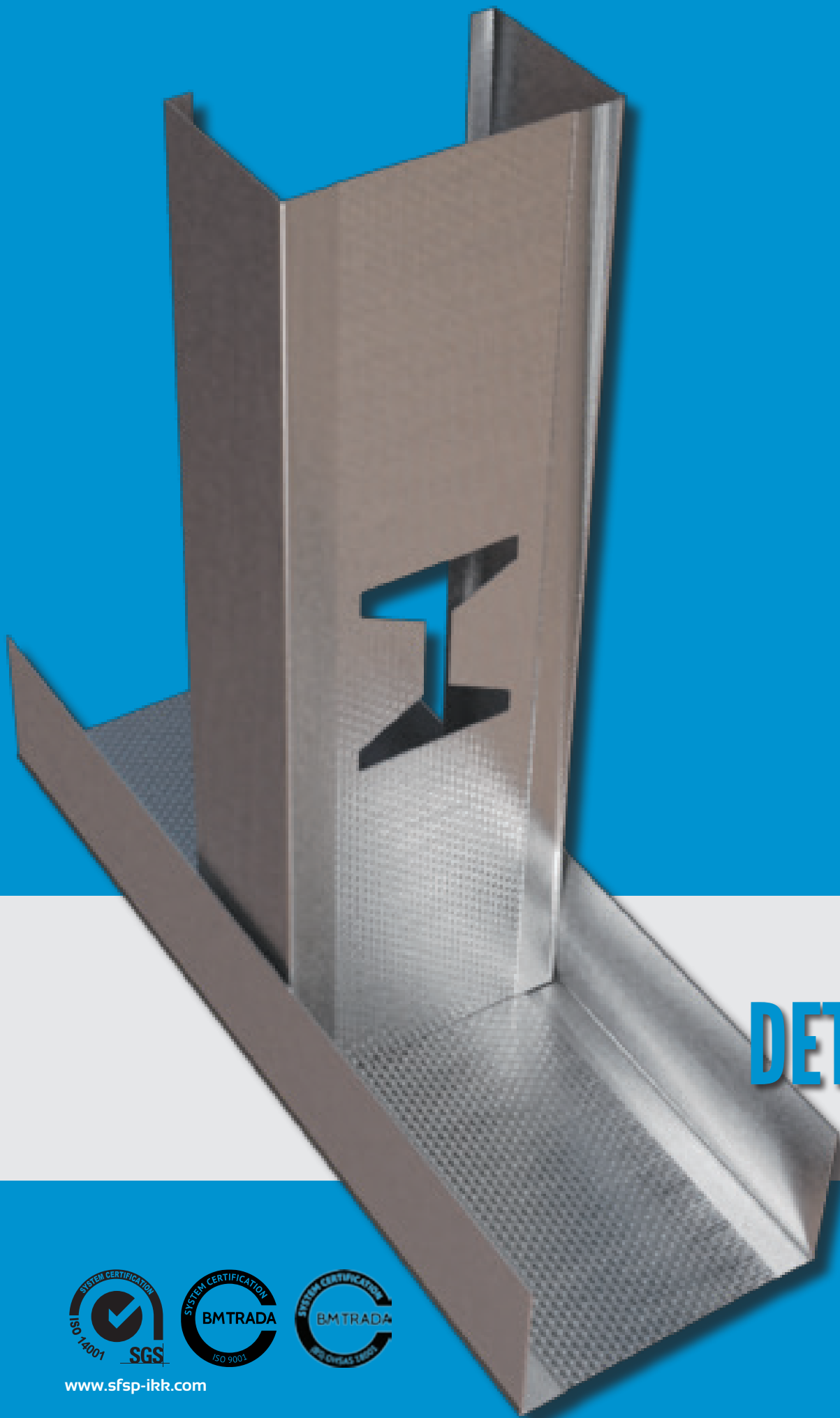
### ASTM & Code Standards:

- ASTM C 840 / C 1047
- All board trim accessories are fabricated from galvanized steel coating by the hot dipped method, conforming to steel and coating specification ASTM A-ASTM A-653.
- For installation and placement instruction refer to ASTM C1063, C841 and C926.



### Storage:

All stored materials shall be kept dry. Materials shall be stacked off the ground, supported on a level platform, and protected from the weather and surface contamination conforming to ASTM C-1063.



# DETAILS



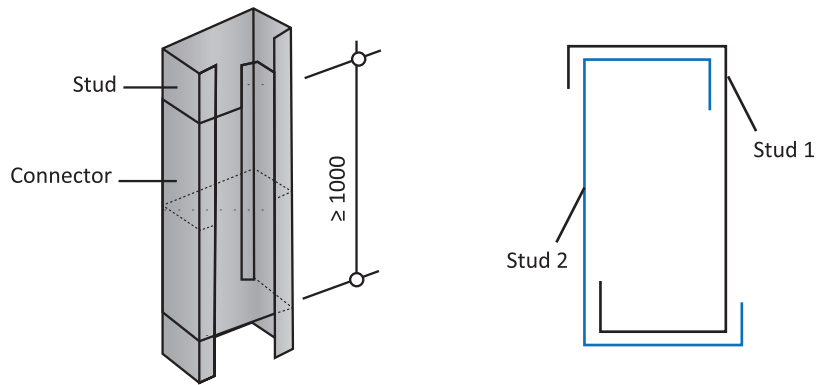
[www.sfsp-ikk.com](http://www.sfsp-ikk.com)

## Material requirement per m<sup>2</sup>

Profile	Profile			Plaster board (m²)		Fast screw	Strip	Joint	Felt	Headline	Socket	Mineral
	Stud		Runner	12.5	15		joint	filler	strip	dowels		fiber
	Stud spacing				18							
	600(cm)	400(cm)	(m)	(m²)	20	pieces	(m)	Kg	(m)	pieces	(m)	(m²)
Single stud, single board	m	m	m	m²	m²	pieces	(m)	Kg	(m)	pieces	(m)	(m²)
STD 048	1,8	2,4	0,8	2,0	/	26	3,3	0,5	1,3	1,6	0,8	1,0
STD 075	1,8	2,4	0,8	2,0	/	26	3,3	0,5	1,3	1,6	0,8	1,0
STD 100	1,8	2,4	0,8	2,0	/	26	3,3	0,5	1,3	1,6	0,8	1,0
Single stud, double board												
STD 048	1,8	2,4	0,8	4,0	(4,0)	9 + 26	3,3	0,65	1,3	1,6	0,8	1,0
STD 075	1,8	2,4	0,8	4,0	(4,0)	9 + 26	3,3	0,65	1,3	1,6	0,8	1,0
STD 100	1,8	2,4	0,8	4,0	(4,0)	9 + 26	3,3	0,65	1,3	1,6	0,8	1,0
Single stud, three board												
STD 100	1,8	2,4	0,8	6,0	/	9 + 9 + 26	3,3	0,8	1,3	1,6	0,8	1,0
Double stud, double board												
STD 048+048	3,6	4,8	1,6	4,0	(4,0)	9 + 26	3,3	0,65	5,4	3,2	0,8	1,0
STD 075+075	3,6	4,8	1,6	4,0	(4,0)	9 + 26	3,3	0,65	5,4	3,2	0,8	1,0
STD 100+100	3,6	4,8	1,6	4,0	(4,0)	9 + 26	3,3	0, 65	5, 4	3, 2	0, 8	1, 0

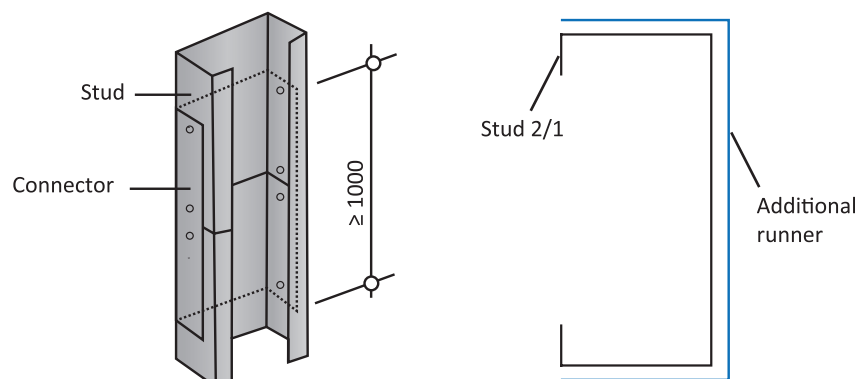
### Stud Splicing for wall height > 5m

Stud connection  
for wall height > 5m



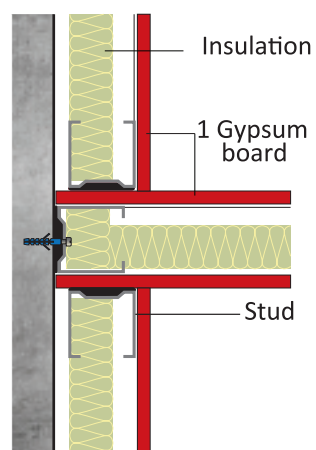
### Stud Splicing for wall height < 5m

Stud connection  
for wall height < 5m



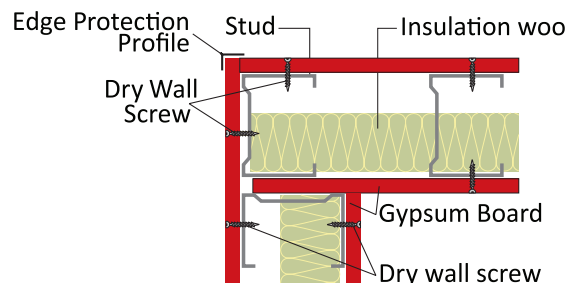
## Corner

Conjunction  
for wall height > 5m

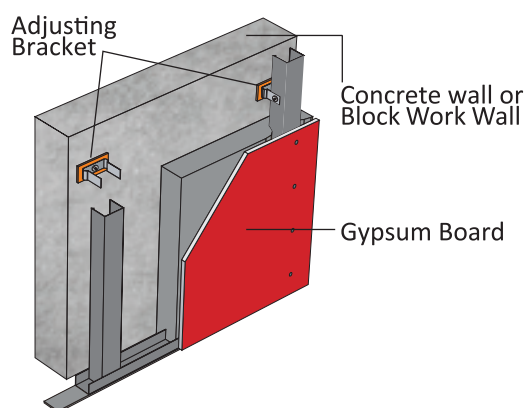


## Corner

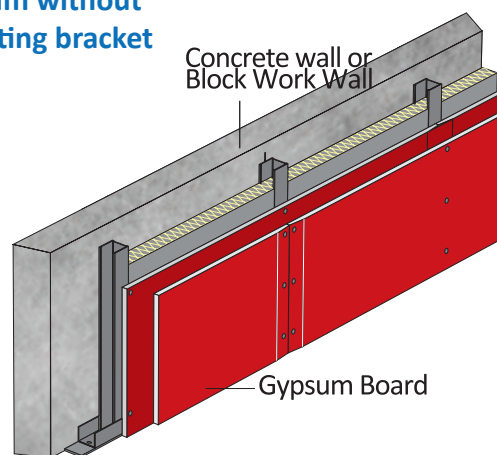
Corner for wall  
height > 5m



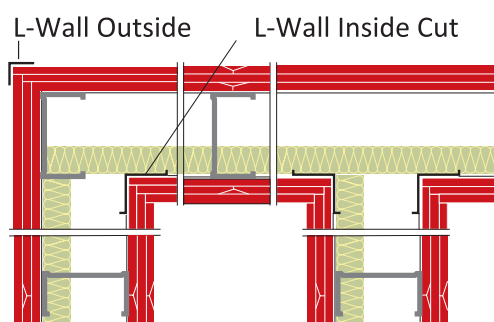
## Chase wall gypsum with adjusting bracket



## Chase wall gypsum without adjusting bracket

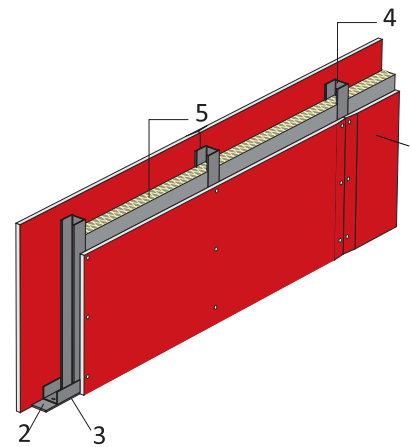
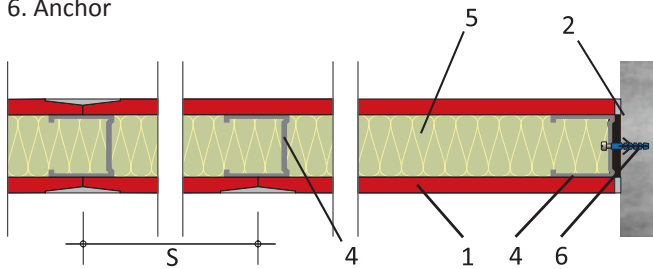


## Edge Protection Profile



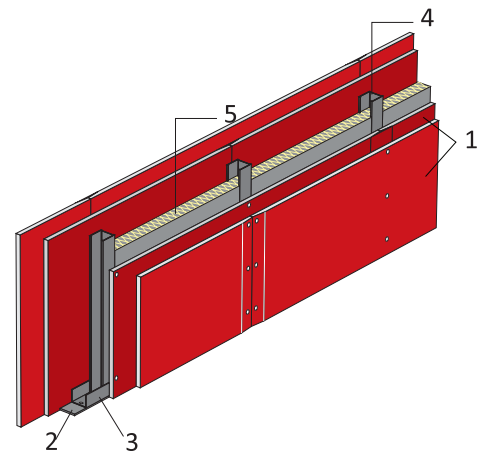
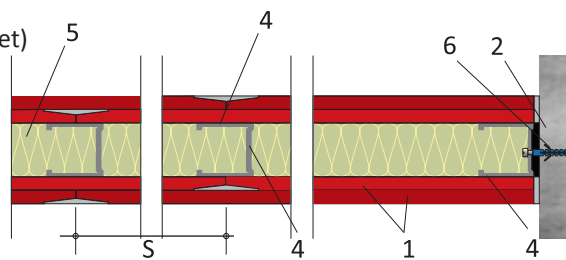
### Wall Detail: Single Support One Layer Gypsum Board

1. One layer planking gypsum board
2. Seal
3. Runner (RNR)
4. Stud (STD)
5. Insulation soundproofing
6. Anchor



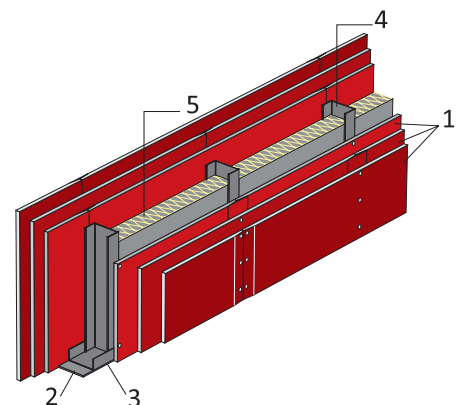
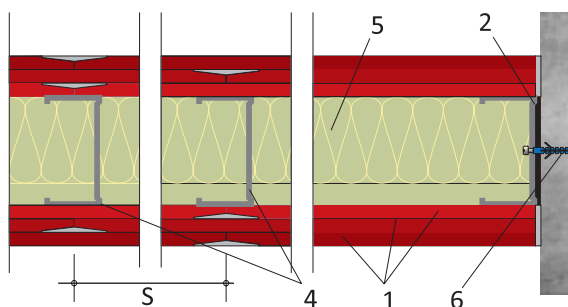
### Wall Detail: Single Support Two Layers Gypsum Board

1. Two layer planking gypsum board double
2. Seal
3. Runner
4. Stud
5. Insulation
6. Anchor
7. Base profile (Socket)

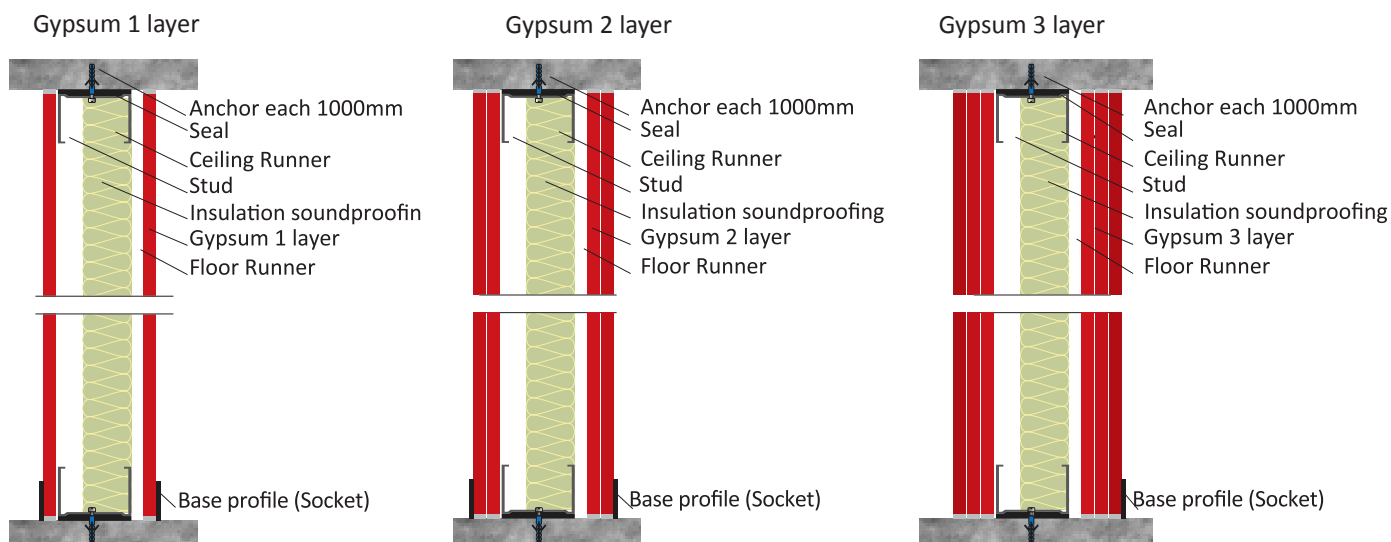


### Wall Detail: Single Support Three Layers Gypsum Board

1. Three layer planking gypsum board
2. Seal fire resistance
3. Runner
4. Stud
5. Insulation soundproofing
6. Anchor
7. Base profile (Socket)

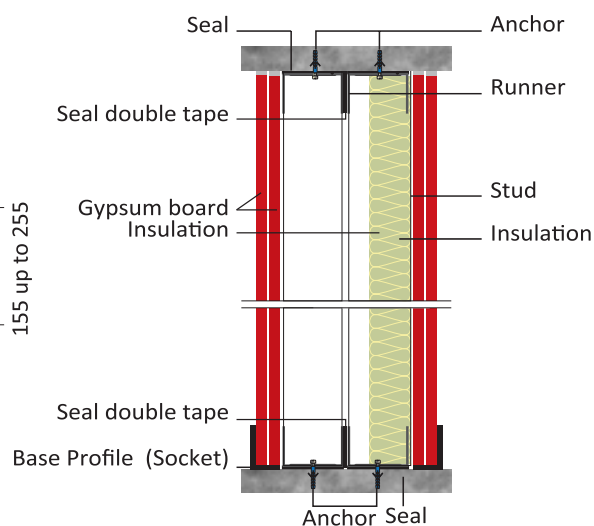
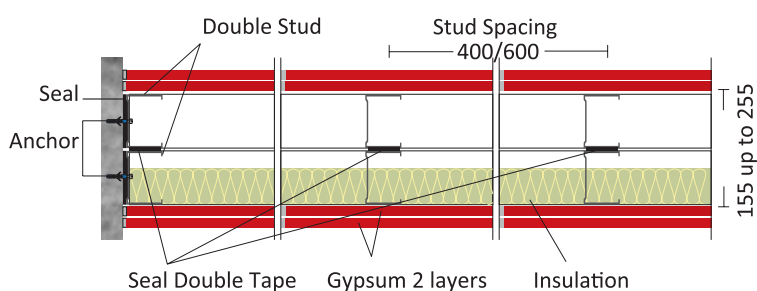


## Gypsum Board Cross Section

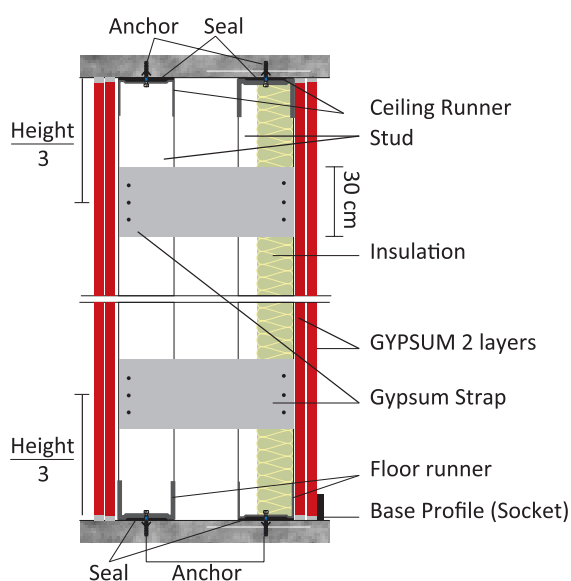
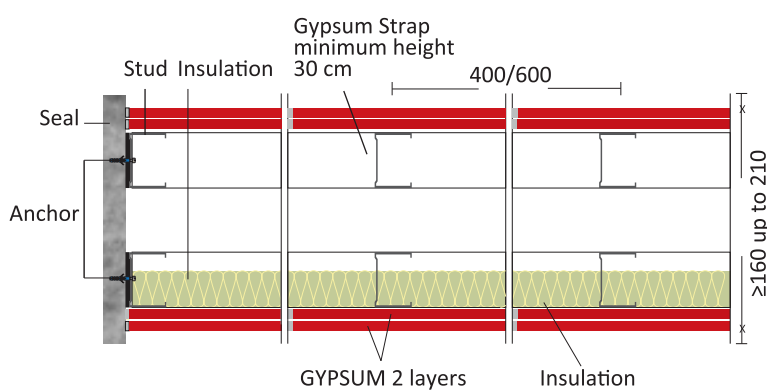


## Double Stud

### Seal Double Tape



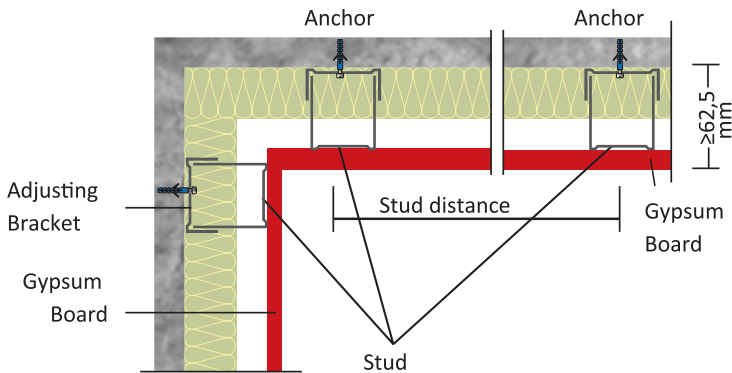
## Installation Wall



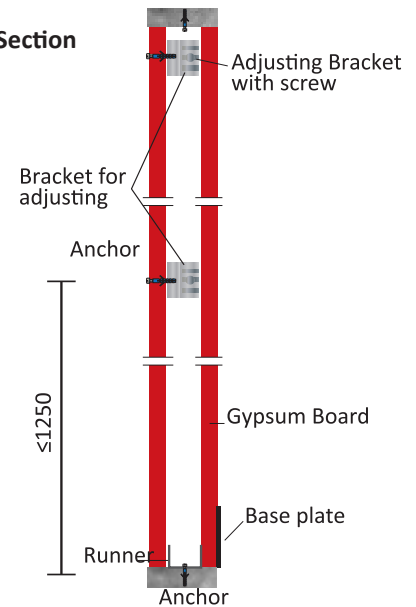
## Chase Wall one layer

### Plan Section

Gypsum sections with adjusting bracket

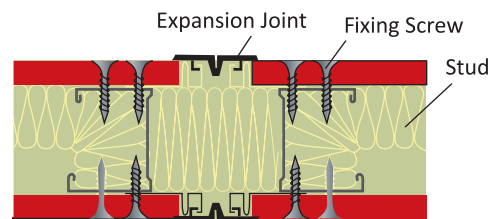
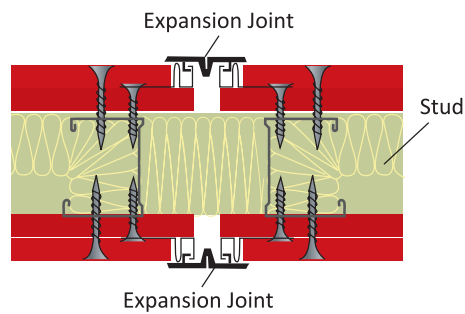
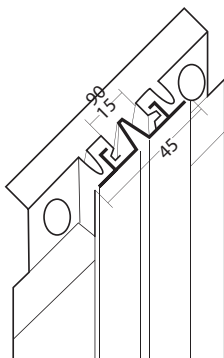


### Cross Section

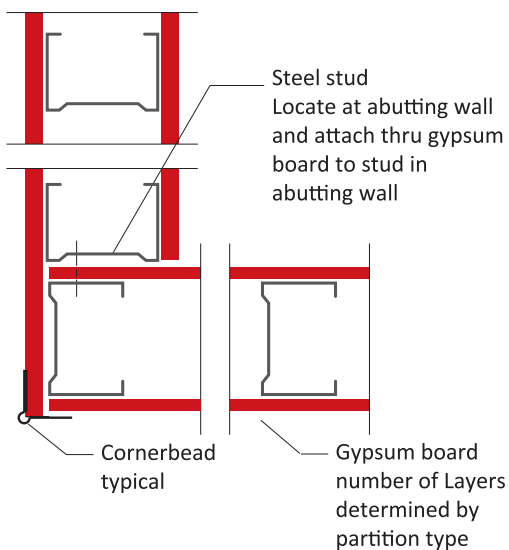


## Expansion Joint

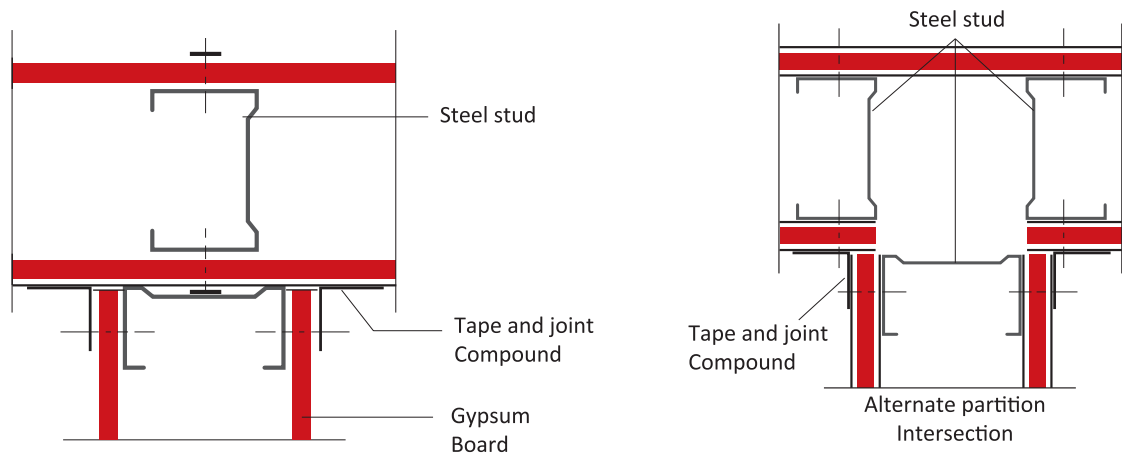
Expansion Joint not fire rated



## Corner Detail

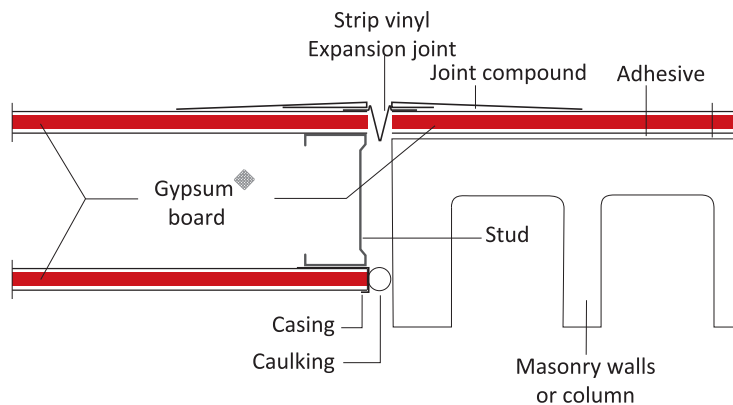


## Partition Intersection



## Joint where Wall Framing Changes

Expansion Joint not fire rated

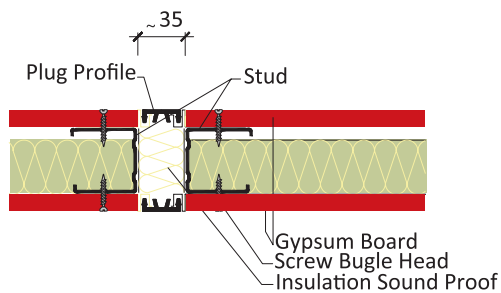


## Movement Joint

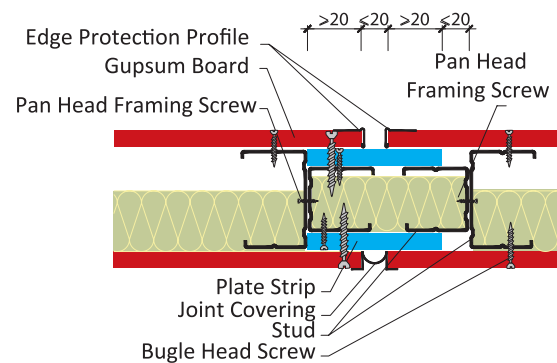
The Arrangement of movement joint is required by dry wall with a length of more than 15.0m (according to DIN 18181).

- Opening has to be covered with plug profile.
- The distance between the movement joint shall not exceed 15.0 m
- If fireproofing is required, so use a gypsum plate strip to close the joint, set the plate strip under the main gypsum board

### MOVEMENT JOINT WHERE FIRE PROOF NOT REQUIRED

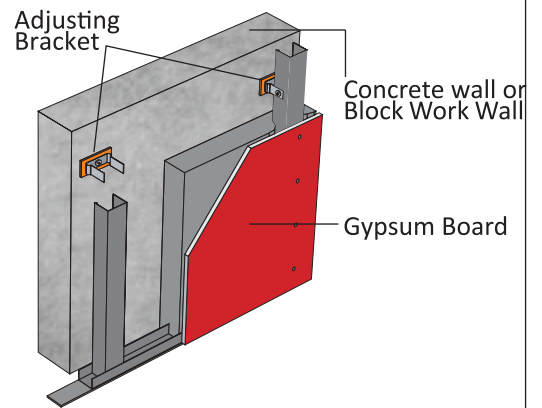
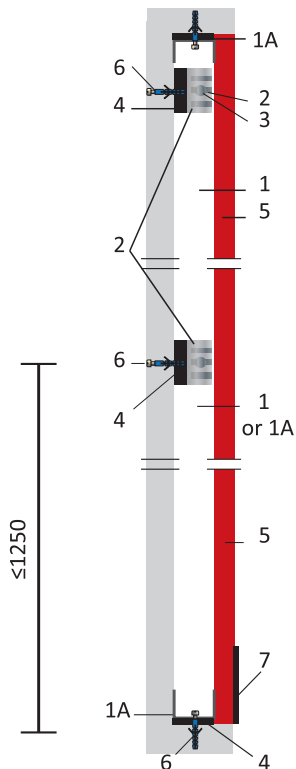
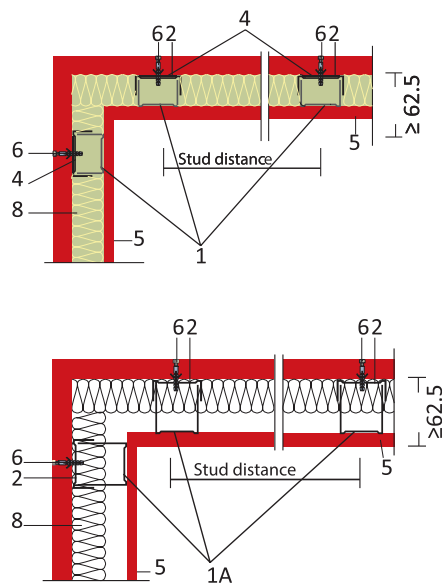


### MOVEMENT JOINT WHERE FIRE PROOF IS REQUIRED



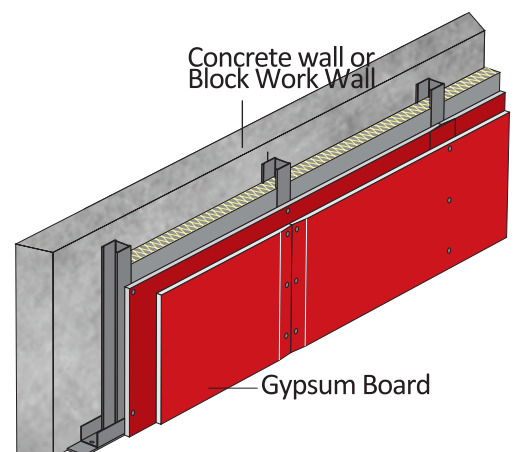
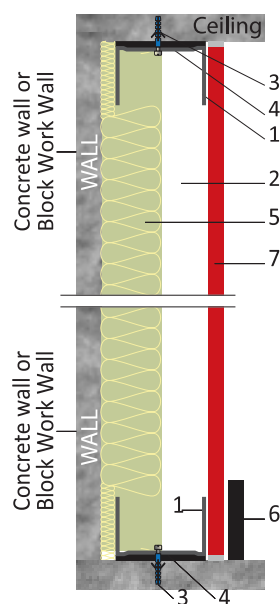
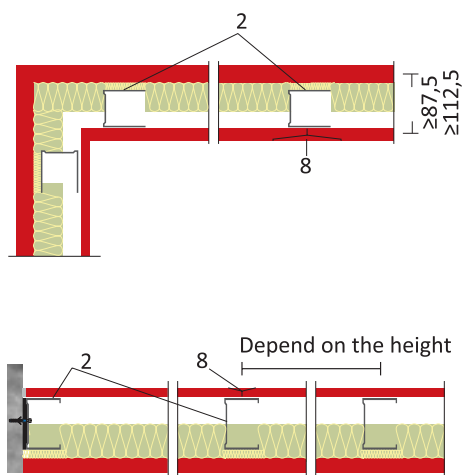
## Chase Wall with Adjusting Bracket

- |                      |                 |
|----------------------|-----------------|
| 1. Ceiling channel   | 5. Gypsum board |
| 1 A. Runner          | 6. Anchor       |
| 2. Adjusting bracket | 7. Base profile |
| 3. Dry wall screw    | 8. Insulation   |
| 4. Seal              |                 |



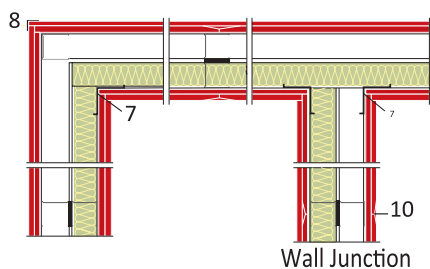
## Chase Wall without Adjusting Bracket

- |           |                          |
|-----------|--------------------------|
| 1. Runner | 5. Insulation            |
| 2. Stud   | 6. Base profile (socket) |
| 3. Anchor | 7. Gypsum board          |
| 4. Seal   | 8. Joint filler          |

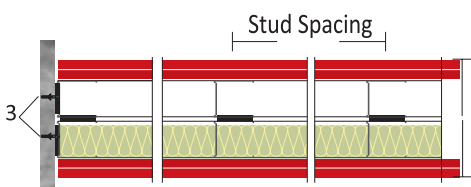


## Double Stud for Increased Acoustic (Soundproofing)

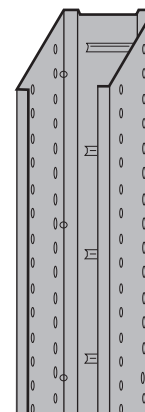
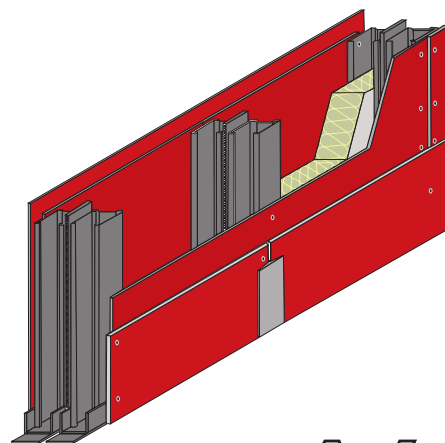
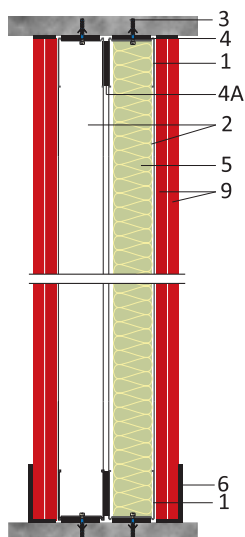
- |                      |                            |
|----------------------|----------------------------|
| 1. Runner            | 5. Insulation              |
| 2. Stud              | 6. Base profile (socket)   |
| 3. Anchor            | 7. L angle inside corner   |
| 4. Seal              | 8. Edge protection profile |
| 4a. Seal double tape | 9. Gypsum board            |



Wall Junction

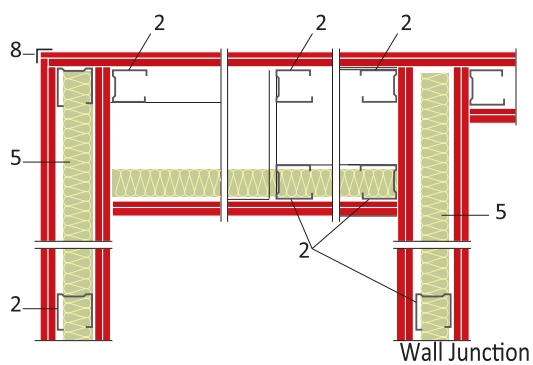


Stud Spacing

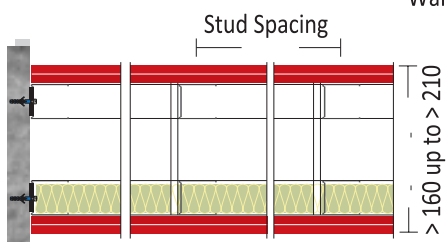


## Installation Wall

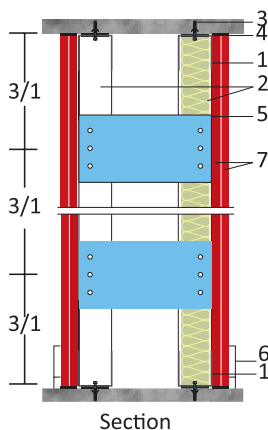
- |               |                            |
|---------------|----------------------------|
| 1. Runner     | 6. Base profile (socket)   |
| 2. Stud       | 7. Gypsum board            |
| 3. Anchor     | 8. Edge protection profile |
| 4. Seal       |                            |
| 5. Insulation |                            |



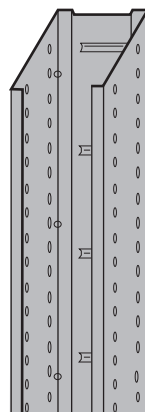
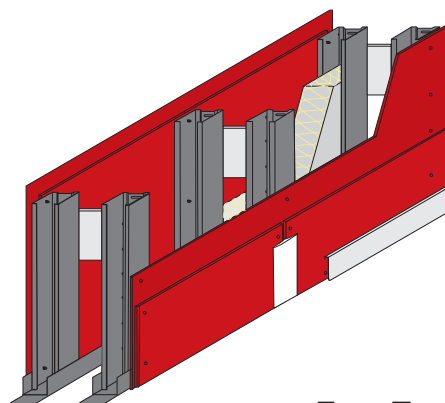
Wall Junction



Stud Spacing



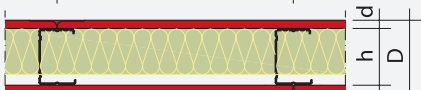
Section



## Technical Data / Sound Protection / Thermal Insulation

Technical Data						Sound Protection proof R <sub>w,R</sub>	Insulation nominal thickness	Thermal Insulation U Value
Dimension				Weight				
Wall	Stud	Board						
thickness	cavity	thickness	Type					
D	h	d		approx.				
	(mm)	(mm)	(mm)		kg/m² 1	dB 2)	mm 3)	W/(m²K)

### Metal Stud Partiton Single metal stud frame - single layer cladding

	75	50	12.5	GKB GKF	25	41	40	0.66			
	100	75				42	40	0.65			
	125	100				43	60	0.50			
						42	40	0.65			
						43	60	0.49			
						44	80	0.40			

### Metal Stud Partiton Single metal stud frame - double layer cladding

	100	50	2 x 12.5	GKB GKF	45	50	40	0.61			
	125	75				51	40	0.60			
	150	100				52	60	0.47			
						51	40	0.60			
						52	60	0.46			
						53	80	0.38			

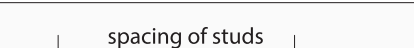
### Metal Stud Partiton Double metal stud frame - double layer cladding

	155	105	2 x 12.5	GKB GKF	48	59	2X40	0.37			
	205	155				58	60	0.47			
	255	205				61	2X60	0.27			
						60	80	0.37			
						63	2X80	0.21			

## Technical Data / Sound Protection / Thermal Insulation

	Technical Data					Sound Protection proof R <sub>w,R</sub>	Insulation nominal thickness	Thermal Insulation U value
	Dimension				Weight			
	Wall	Stud	Board					
	thickness	Cavity	Thickness	Type				
	D	h	d		Approx.			
	(mm)	(mm)	(mm)		kg/m² 1	dB 2)	mm 3)	W/(m²K)

### Metal Stud Partiton Single metal stud frame - tripple layer gypsum board

	125	50	3 x 12.5	GKB GKF	66	51	40	0.57
	150	75				53	60	0.44
	172	100				55	80	0.36

GKB: Gypsum Board.

GKF: Gypsum Board Fire Proof (Fire Resistance).

## Installation Wall Double metal stud frame - double layer gypsum board

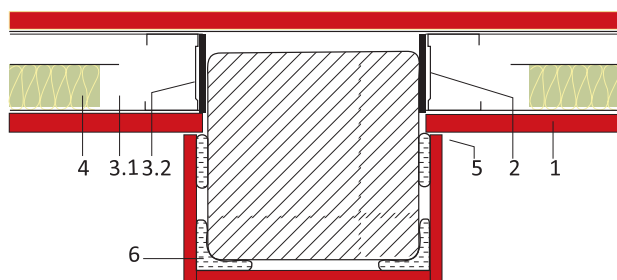
	$\geq 220 \geq 170$	2 x 12.5	GKB GKF	49	52	40	0.60
--	---------------------	----------	------------	----	----	----	------

GKB: Gypsum Board.

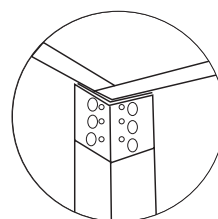
GKF: Gypsum Board Fire Proof (Fire Resistance).

## Dry Wall Metal Stud Combined With Columns

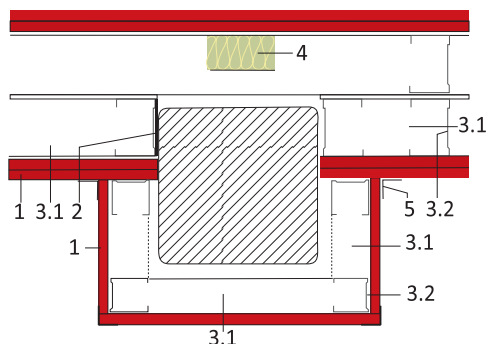
### Single Stud One Layer Gypsum Board



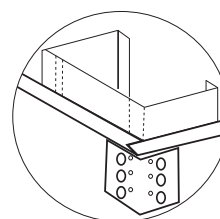
Corner bead leveling on corner



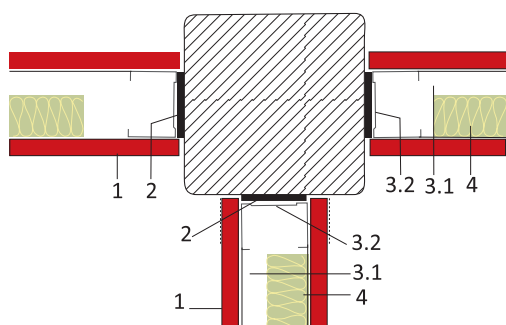
### Double Stud Two Layers Gypsum Board



Corner bead leveling on corner



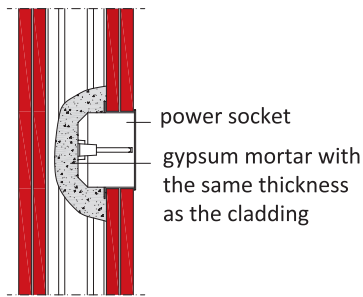
## Dry Wall Metal Stud Combined with Columns



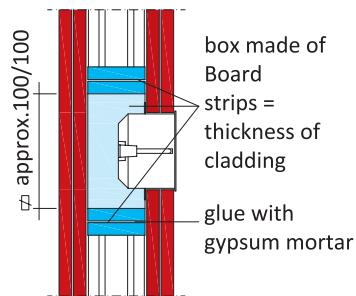
- 1 . Gypsum Board / single stud one or two layer
- 2 . Seal
- 3 . Main profile
  - 3 . 1 Runner
  - 3 . 2 Stud
- 4 . Insulation | Mineral Wool | Sound Proofing
- 5 . Corner mesh (if necessary) | Leveling on corner
- 6 . Binder

## Installation of Power Sockets

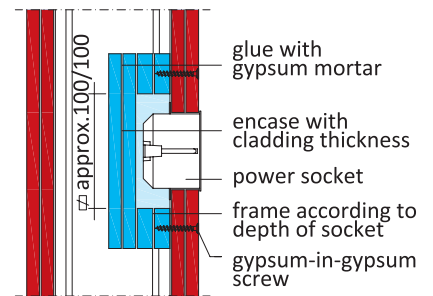
### Partitions with insulation min. B2 resp. without insulation



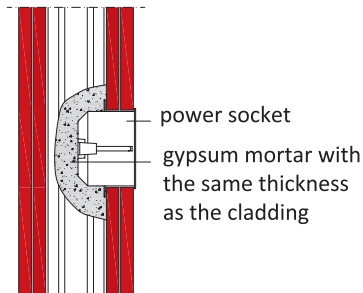
power sockets covering with gypsum mortar



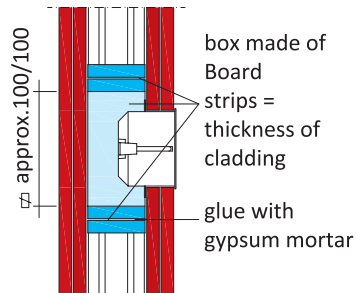
Power sockets covering with gypsum boards



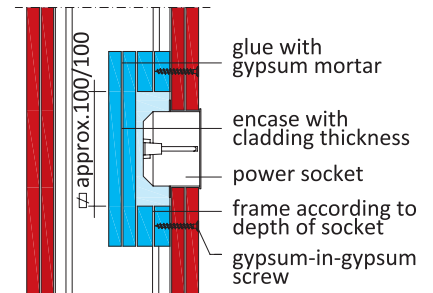
### Only for single metal stud partitions



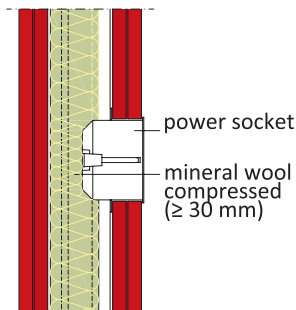
power sockets covering with gypsum mortar



Power sockets covering with gypsum boards



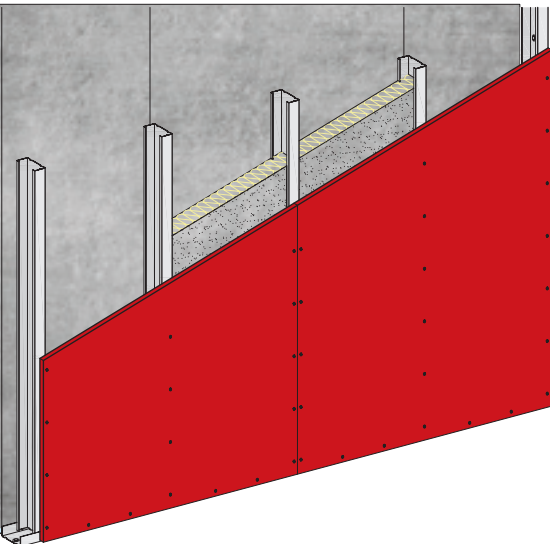
### Partitions according to DIN 4102-4 with mineral wool insulation melting point $\geq 10000$ c



Insulation layers that are necessary for fire protection should be preserved but are allowed to be compressed down to  $\geq 30$ mm.

#### NOTE



Power sockets, switch sockets, splitter sockets etc. are allowed to be installed at any position, but not opposite to each other.  
Entry of single electric cables is allowed.  
The remaining opening has to be closed with gypsum mortar.



**Area A\*:**  
Areas with a low collection of people like homes, hotels, offices,...

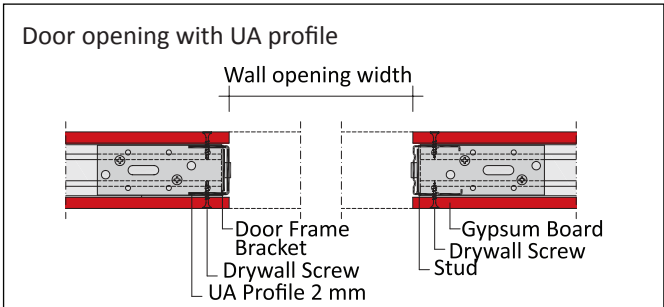
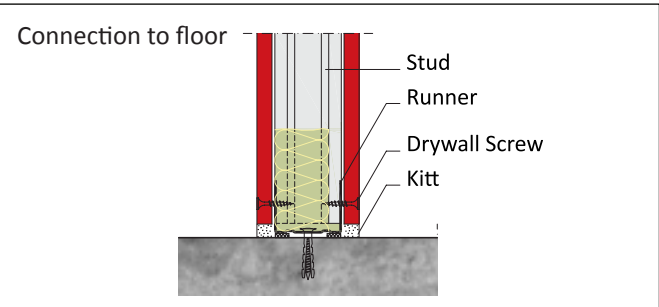
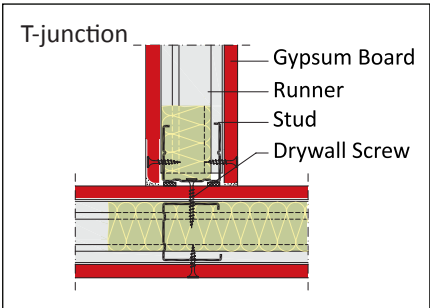
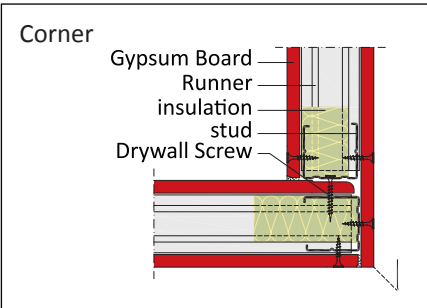
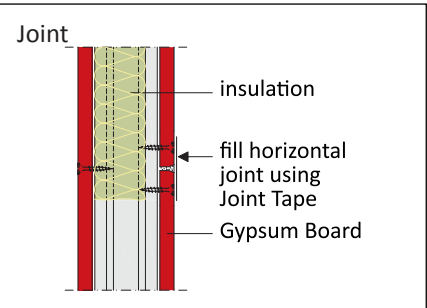
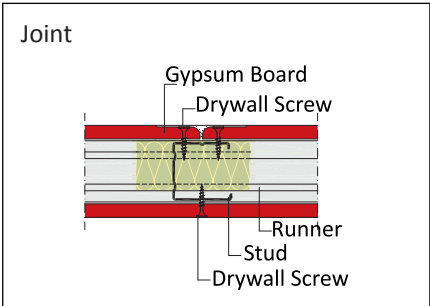
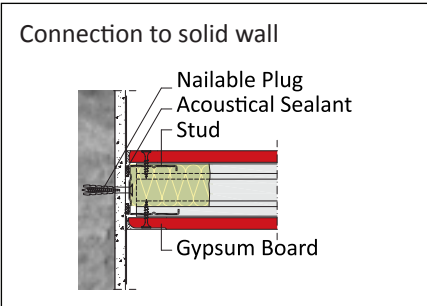
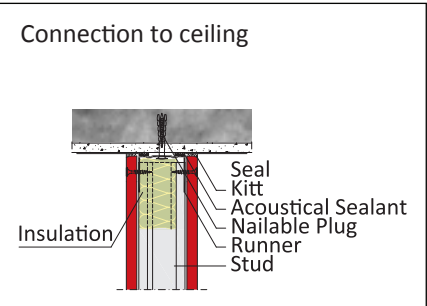
**Area B\*\*:**  
Areas with a large collection of people like school rooms, exhibition halls, selling spaces (mall),...

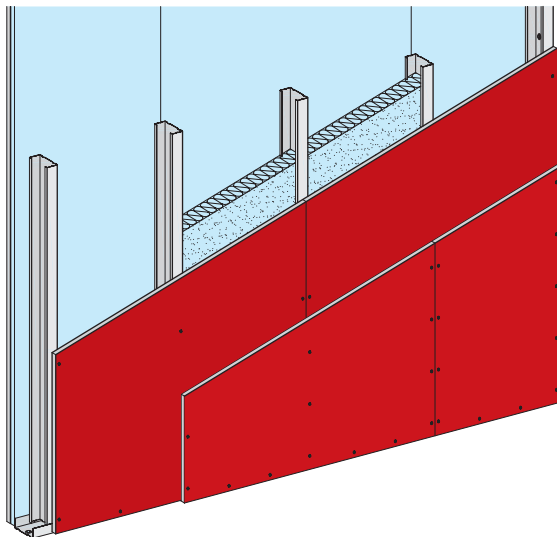
Wall heights

Stud	Spacing of studs	Maximum wall heights			
		Without fire protection		Incl. fire protect	
		Installation zone		I	II
Metal		I	II	I	II
Thickness 0.6 mm	(cm)	(m)	(m)	(m)	(m)
 Stud 50	60	<b>3</b>	<b>2.75</b>	<b>3</b>	<b>2.75</b>
	40	4	3.75	-	-
	30	5	4.75	4	-
 Stud 75	60	<b>4.5</b>	<b>3.75</b>	<b>4.5</b>	<b>3.75</b>
	40	6	5.25	-	-
	30	7	6.25	5	-
 Stud 100	60	<b>5</b>	<b>4.25</b>	<b>5</b>	<b>4.25</b>
	40	6.5	5.75	-	-
	30	8	7.25	5	-

Bold printed values are maximum allowable heights of metal stud partitions according to DIN 18183

Details






**Area A\*:**

Areas with a low collection of people like homes, hotels, offices,...

**Area B\*\*:**

Areas with a large collection of people like school rooms, exhibition halls, selling spaces (mall),...

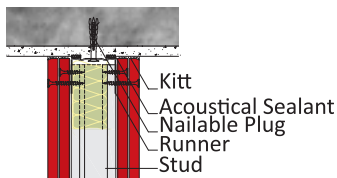
## Wall heights

Stud	Spacing of studs (cm)	Maximum wall heights			
		Without fire protection		Incl. fire protect	
		Installation zone		I	II
Metal Thickness 0.6 mm		I (m)	II (m)	I (m)	II (m)
 Stud 50	60	<b>3</b>	<b>2.75</b>	<b>3</b>	<b>2.75</b>
	40	4	3.75	-	-
	30	5	4.75	4	-
 Stud 75	60	<b>4.5</b>	<b>3.75</b>	<b>4.5</b>	<b>3.75</b>
	40	6	5.25	-	-
	30	7	6.25	5	-
 Stud 100	60	<b>5</b>	<b>4.25</b>	<b>5</b>	<b>4.25</b>
	40	6.5	5.75	-	-
	30	8	7.25	5.5	-

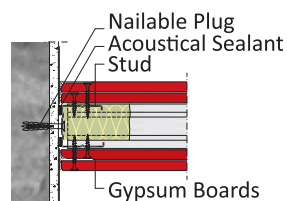
*Bold printed values are maximum allowable heights of metal stud partitions according to DIN 18183*

## Details

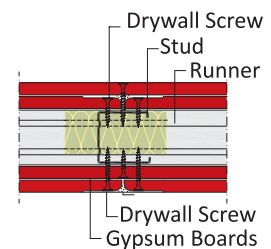
## Connection to ceiling



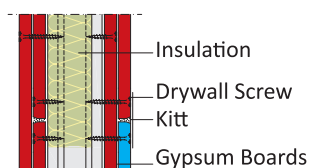
## Connection to solid wall



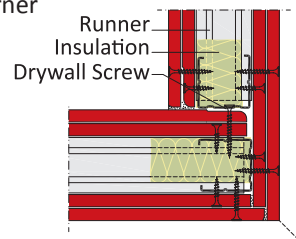
## Joint



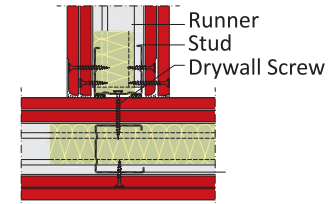
## Joint



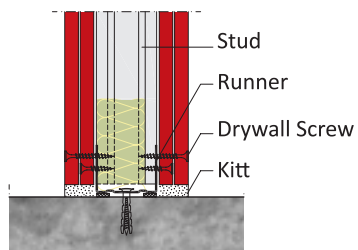
## Corner



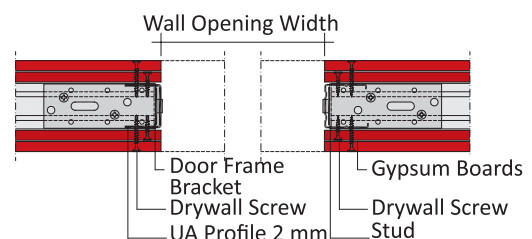
## T-junction

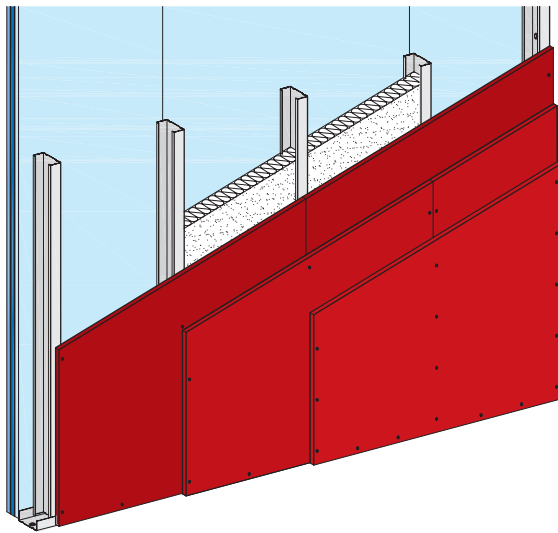


## Connection to floor



## Door opening with UA profile








#### Area A\*:

Areas with a low collection of people like homes, hotels, offices,...

#### Area B\*\*:

Areas with a large collection of people like school rooms, exhibition halls, selling spaces (mall),...

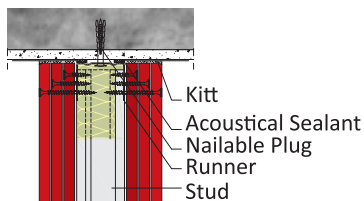
### Wall heights

Stud	Spacing of studs (cm)	Maximum wall heights			
		Without fire protection		Incl. fire protect	
		Installation zone		I	II
Metal Thickness 0.6 mm		I (m)	II (m)	I (m)	II (m)
 Stud 50	62.5	<b>4.5</b>	<b>4</b>	<b>4</b>	<b>3.5</b>
	41.7	5.5	5	5	4.5
	31.25	6.5	6	6	5.5
 Stud 75	62.5	<b>6</b>	<b>5</b>	<b>5.5</b>	<b>5</b>
	41.7	7	6.5	6.5	6
	31.25	8	7.5	7.5	7
 Stud 100	62.5	<b>7</b>	<b>6.5</b>	<b>6.5</b>	<b>5.75</b>
	41.7	8	7.5	7.5	7
	31.25	9.5	9	9	8.5

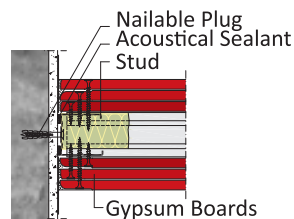
*Bold printed values are maximum allowable heights of metal stud partitions according to DIN 18183*

### Details

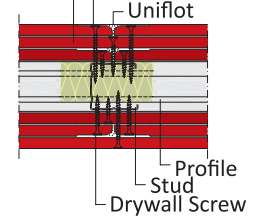
#### Connection to ceiling



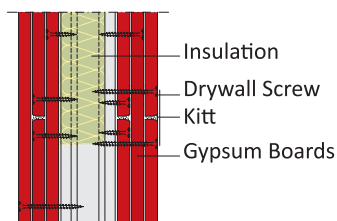
#### Connection to solid wall



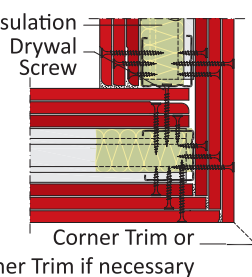
#### Joint



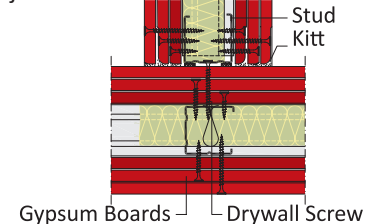
#### Joint



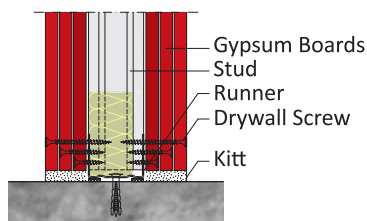
#### Corner



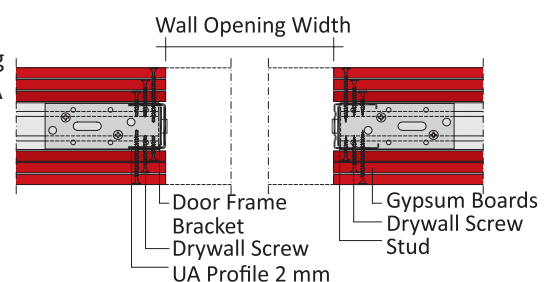
#### T-junction

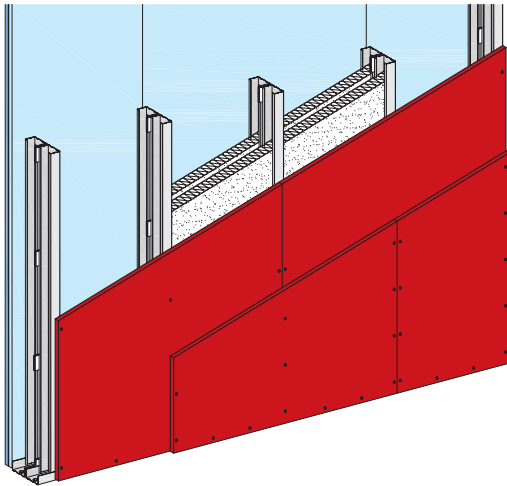


#### Connection to floor



#### Door opening with UA profile





## Wall heights

Stud	Spacing of studs (cm)	Maximum wall heights			
		Without fire protection		Incl. fire protect	
		Installation zone		I	II
Metal Thickness 0.6 mm		I (m)	II (m)	I (m)	II (m)
Stud 50	62.5	<b>3.3</b> (4.5)	<b>2.8</b> (4)	<b>3.3</b> (4.5)	<b>2.8</b> (4)
Stud 75	62.5	<b>4.5</b> (6)	<b>3.3</b> (5.5)	<b>4.5</b> (6)	<b>4</b> (5.5)
Stud 100	62.5	<b>5.5</b> (6.5)	<b>5</b> (6)	<b>5.5</b> (6.5)	<b>5</b> (6)

## Area A\*:

Areas with a low collection of people like homes, hotels, offices,...

## Area B\*\*:

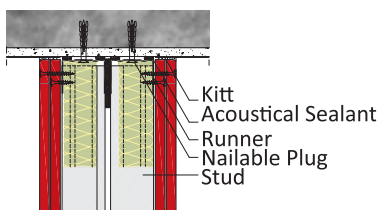
Areas with a large collection of people like school rooms, exhibition halls, selling spaces (mall),...

*Bold printed values are recommended by SFSP*

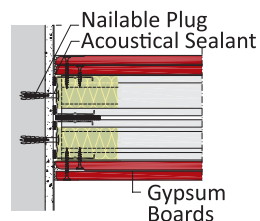
*() values are maximum allowable heights of metal stud partitions acc. to DIN 18183*

## Details

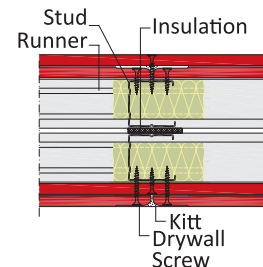
## Connection to ceiling



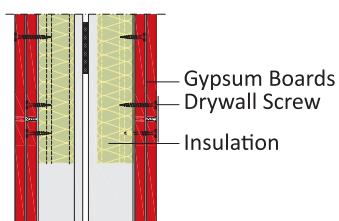
## Connection to solid wall



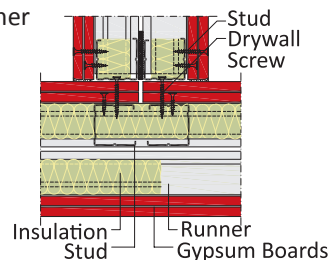
## Joint



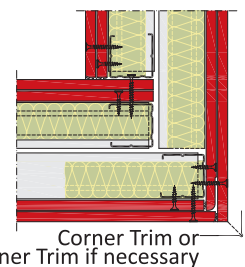
## Joint



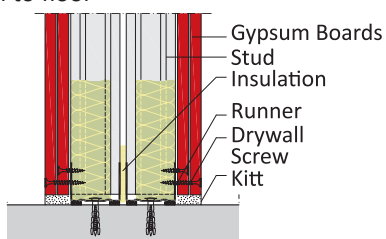
## Corner



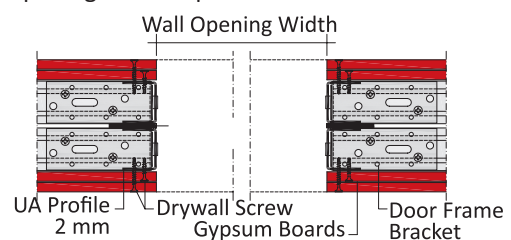
## T-junction

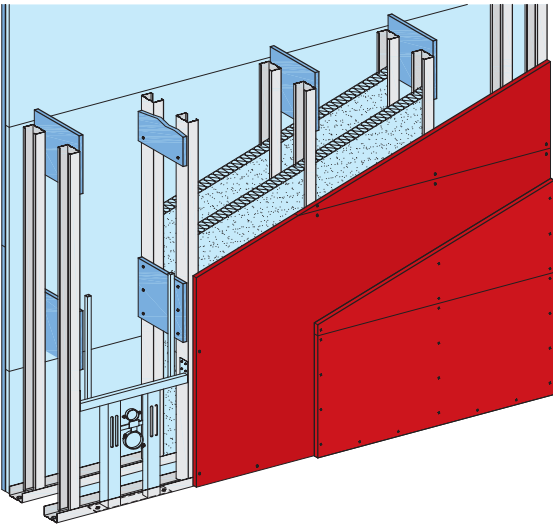


## Connection to floor



## Door opening with UA profile








**Area A\*::**  
Areas with a low collection of people like homes, hotels, offices,...

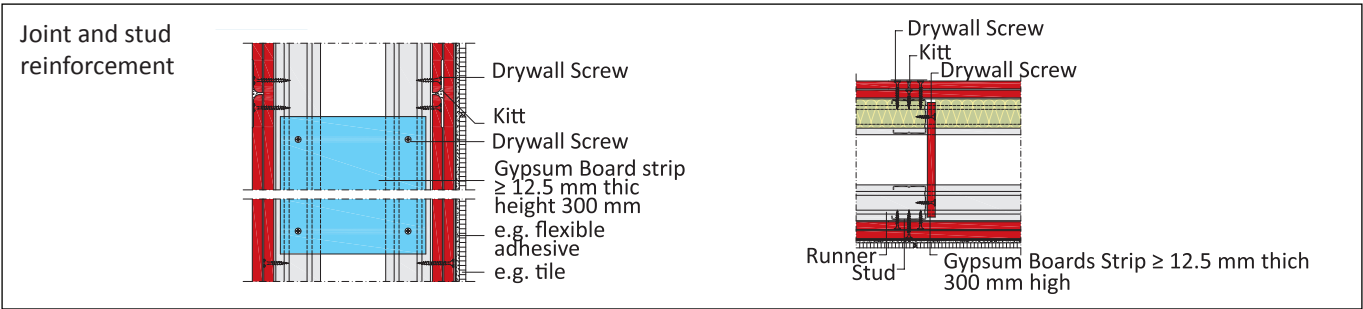
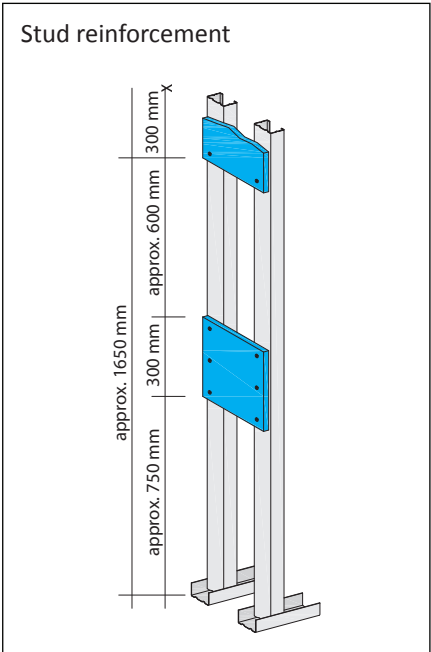
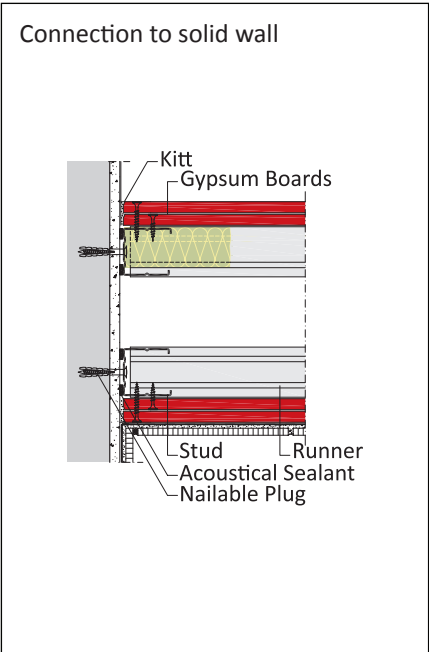
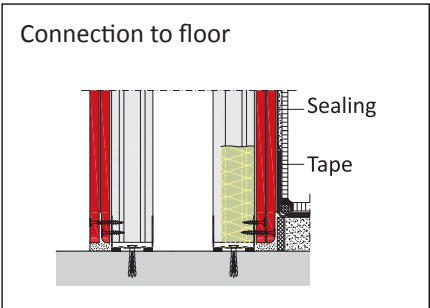
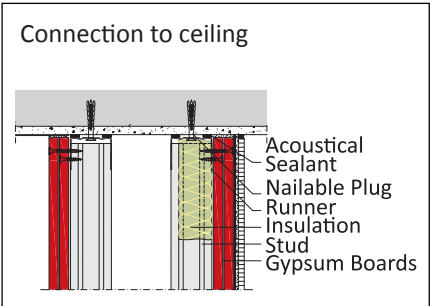
**Area B\*\*:**  
Areas with a large collection of people like school rooms, exhibition halls, selling spaces (mall),...

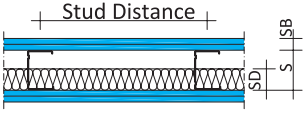
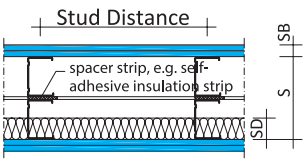
Wall heights

Stud	Spacing of studs	Maximum wall heights			
		Without fire protect.		Incl. fire protect	
		Installation zone		I	II
Metal		I	II	I	II
Thickness 0.6 mm	(cm)	(m)	(m)	(m)	(m)
 Stud 50	62.5	4.5	4	4.5	4
 Stud 75	62.5	6	5.5	6	5.5
 Stud 100	62.5	6.5	6	6.5	6

Sheet thickness 0.8 mm

Details

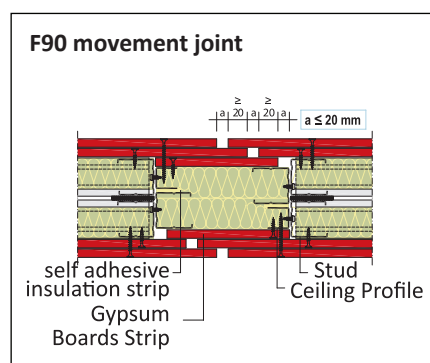
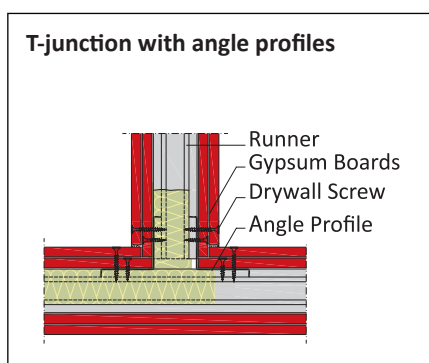
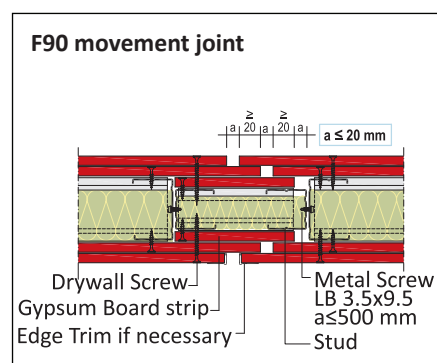
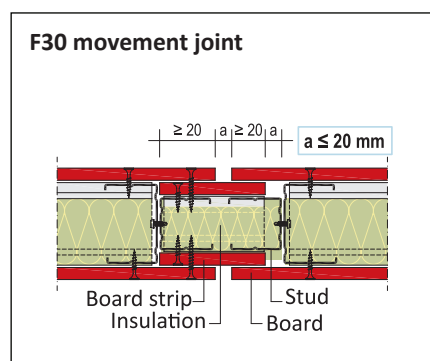
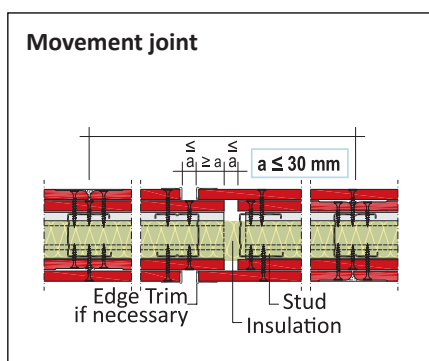
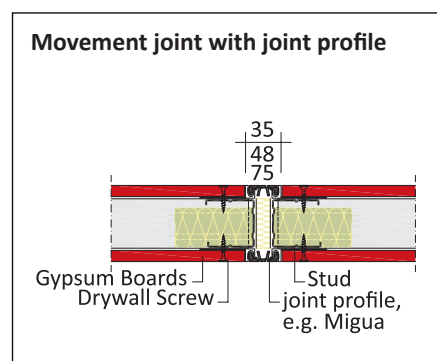


Examples		Stud <sup>2)</sup>	Minimum clearance between gypsum board	Minimum insulation thickness	R <sub>W1R</sub>
	SB <sup>1)</sup>		S	SD	dB
	12.5	Stud 50 x 0.6	50	40	39
		Stud 75 x 0.6	75	40	39
		Stud 100 x 0.6	100	40	41
				60	42
				80	43
	2x12.5	Stud 50 x 0.6	50	40	46
		Stud 75 x 0.6	75	40	46
		100x0.6	100	60	49
				40	47
				60	49
	2x12.5	Stud 50 x 0.6	105	80	58
		Stud 100 x 0.6	205	80	59

1) Thickness of cladding according to DIN 18180, applied according to DIN 18181, joints filled. The weight per unit area of the boards has to be at least 8,5 kg/m<sup>2</sup>.


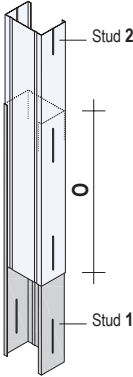
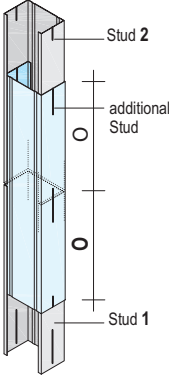
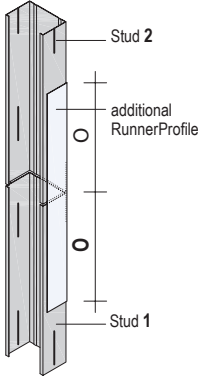
2) Letter symbol for C studs and metal thickness according to DIN 18182-1 dimensions in mm.

## Details: Movement Joints / T-Junctions / Corners



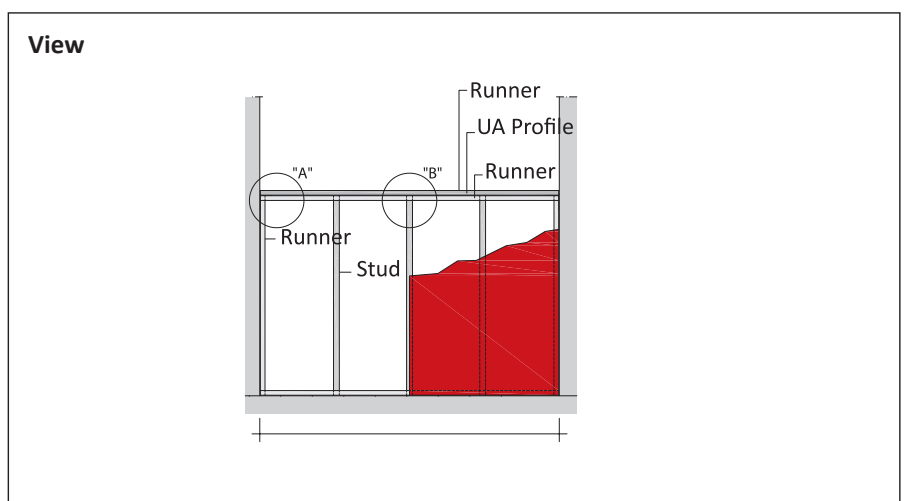
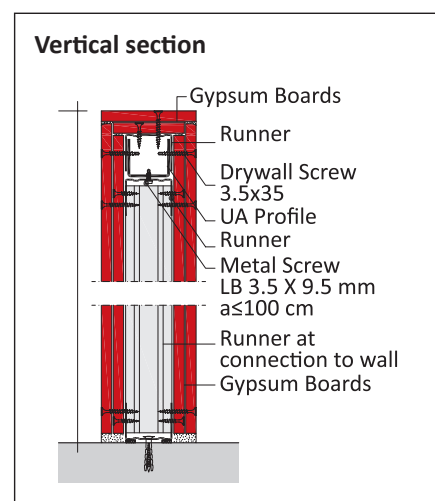
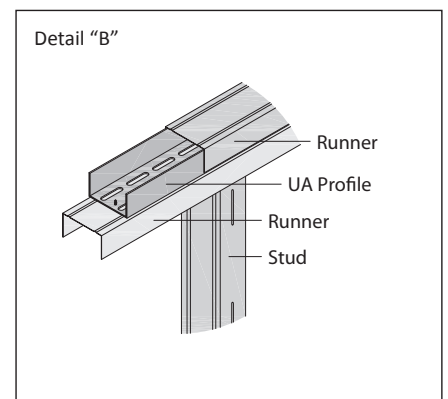
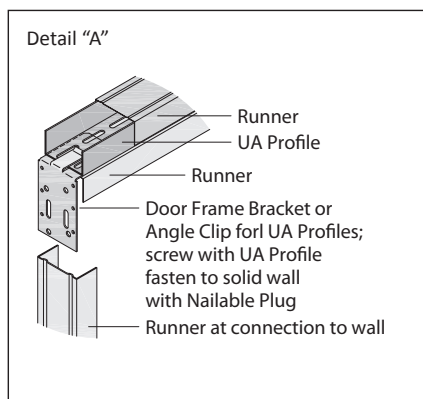
## Stud Joints / Partitions without Connection to Ceiling

### Vertical stud joints

Stud	Overlap O	Variation 1	Variation 2	Variation 3
Stud 50	$\geq 50$	2 Studs interlaced as box	2 studs butt joint interlaced with additional Stud	2 studs butt joint interlaced with additional Runner
Stud 75	$\geq 75$			
Stud 100	$\geq 100$			
Displace stud joints vertically fit-up aid: Crimp, rivet or screw Studs at overlap   Stamp Pliers				

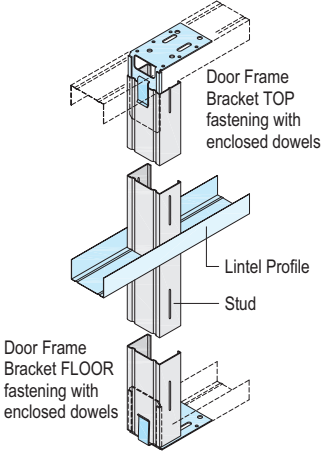
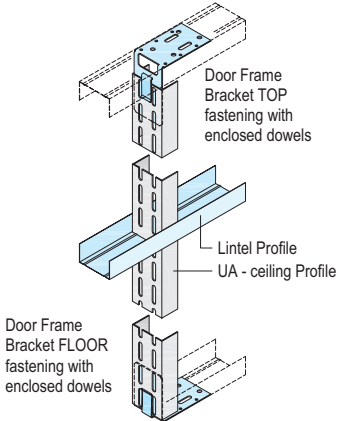
## Partitions without connection to ceiling

Max. partition length (span of UA profile)		
UA profile	Maximum allowable partition width Cladding	
	12.5 mm	2 x 12.5 mm
Metal thickness 2 mm	(m)	(m)
UA 50	3	4
UA 75	4.5	5.5
UA 100	5	6.5

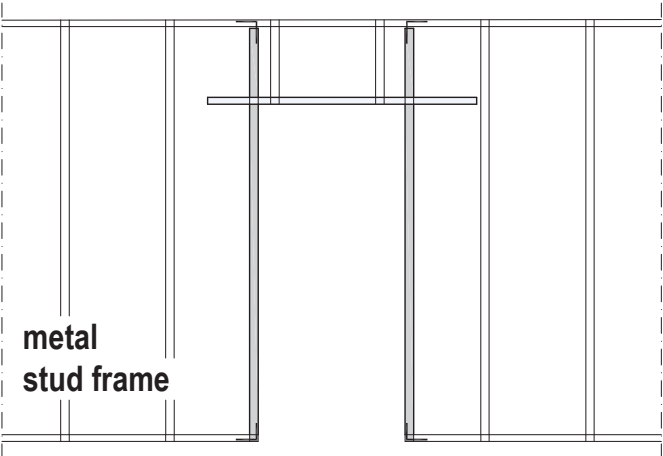
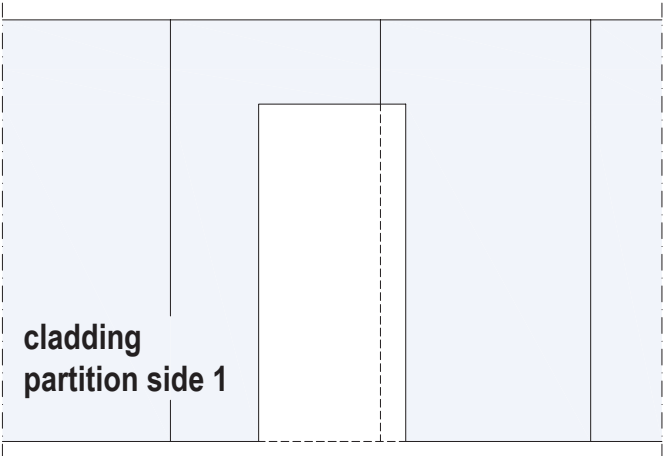
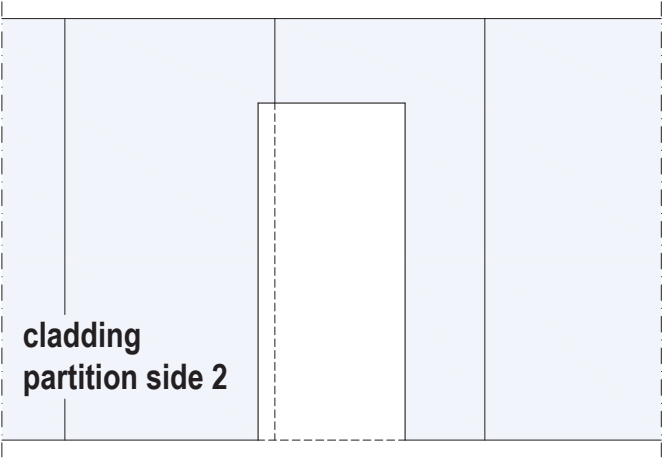



# Door Openings: Stud Construction Cladding / Door Panel Weight

## Stud construction

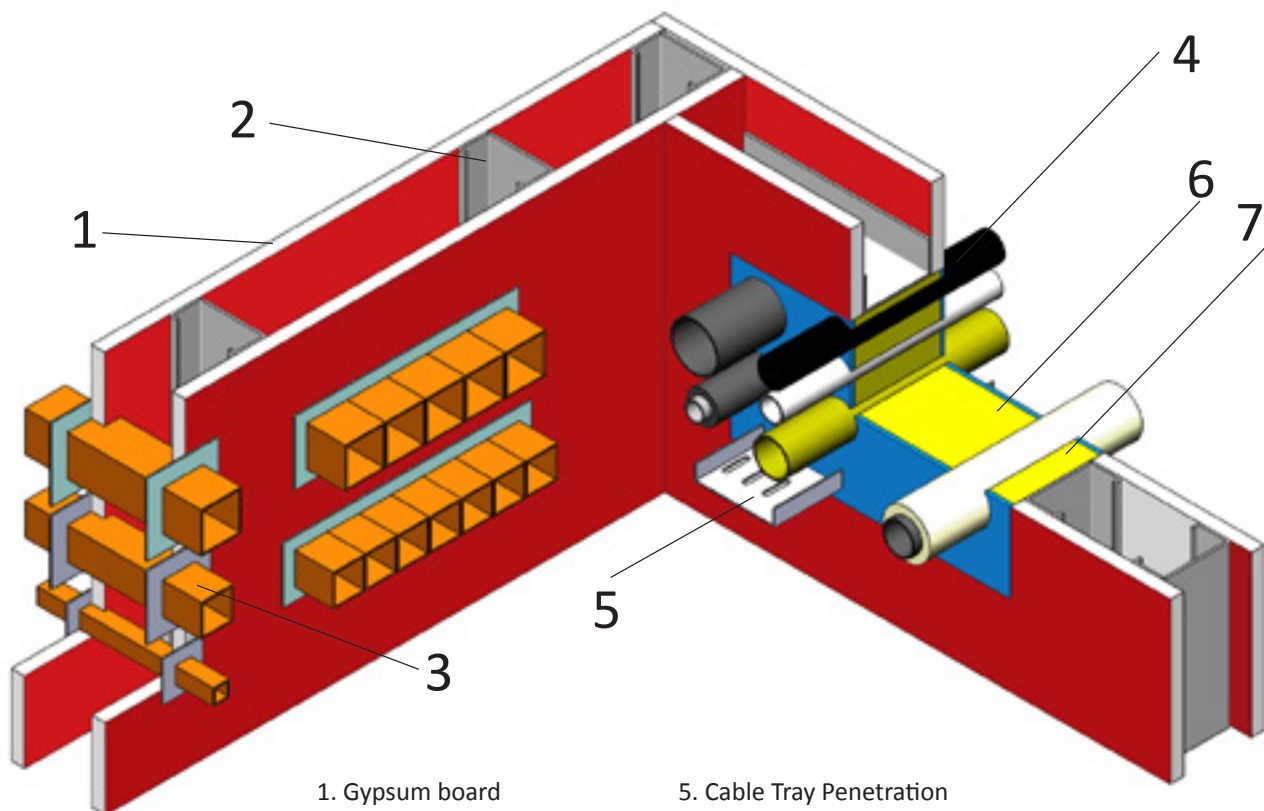
Variation stud	Variation UA	Deflection head
<p>- Acc. to DIN 18340 Wall heights ≤ 2.60 m Door width ≤ 0.885 m Door panel weight ≤ 25 kg</p> 	<p>Remove plastic strip from Door Frame Bracket - Acc. to DIN 18340 Wall heights ≤ 2.60 m Door width ≤ 0.885 m Door panel weight ≤ 25 kg</p> 	<p>Possible with Stud or 4A ceiling profile</p>

## Scheme Drawings

 <p>metal stud frame</p>	 <p>cladding partition side 1</p>
 <p>cladding partition side 2</p>	

## Drywall system with fire stop solutions

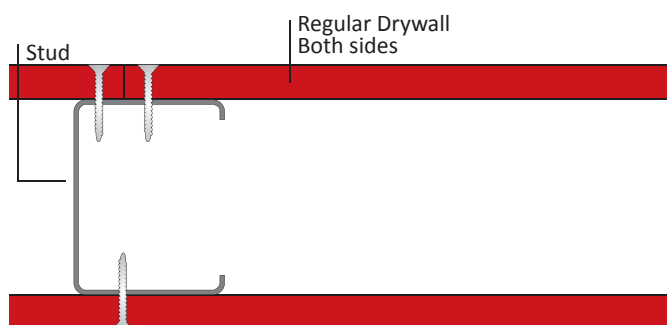
For cabling and wiring installation and the penetration of piping and ducts



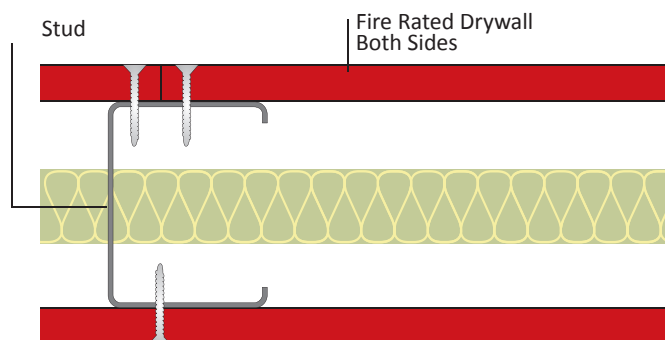
- 1. Gypsum board
- 2. Stud
- 3. Fire Rated Pathways
- 4. Pipe Penetration

- 5. Cable Tray Penetration
- 6. Fire Rated Insulation
- 7. Insulated Pipe

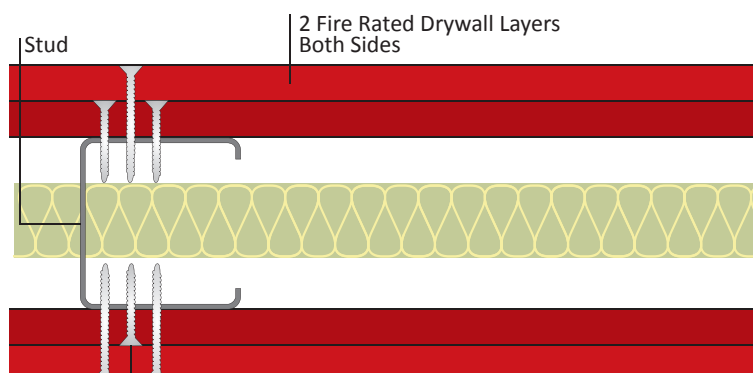
## Drywall Design for Fire Safety Partition

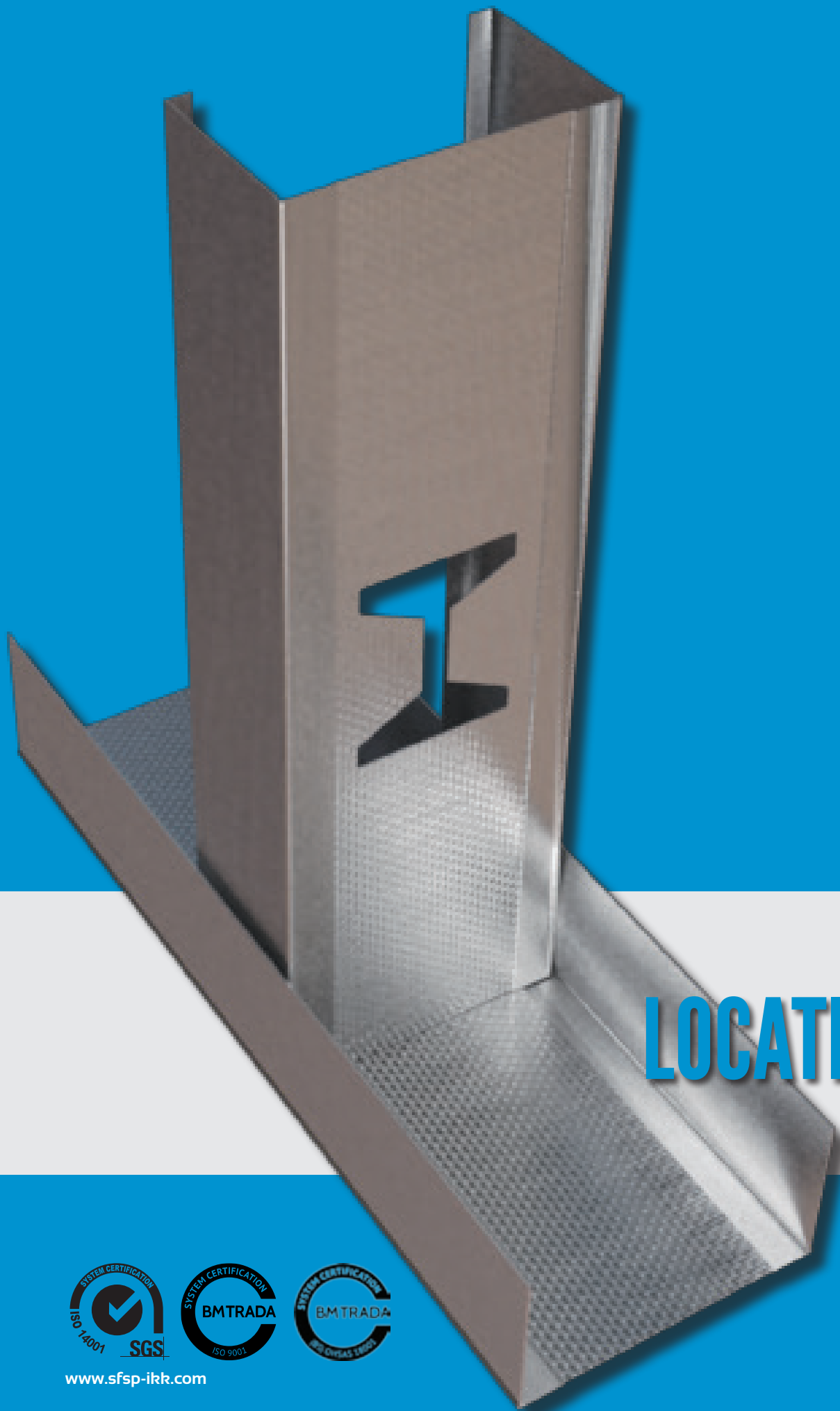


## Fire Performance



## Maximum Fire Performance





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