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Dry Wall Partition

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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, 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.
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)

ISO 14001: 2015
(Environmental Management System)
CERTIFICATE OF REGISTRATION

This is to certify that

Sigma Factory for Steel Products
P.O. Box 37991
Sari Sobha 3, 4 Round About
Dubai Industrial City
United Arab Emirates

Meets the requirements of the Code of Practice (ISO 14001:2015 Environmental Management System) and has been audited and found to meet the requirements of standard ISO 14001:2015 Environmental Management System.

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 2018

Karen Prendergast
Sector Director - Certification
Exova BM TRADA

The certificate is the property of Exova Ltd. The certificate is subject to the conditions of sale of any certificate and may be withdrawn if the conditions of the certificate are not met. The use of the ISO 14001:2015 logo is a mark of license to use the system and to use the ISO 14001:2015 logo.
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
Sahh Saheb - J, 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 and Safety Management System

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

Certificate number: 1006
Issue number: 2016-01
Certificate start date: 22 September 2018
Certificate expiry date: 22 September 2021
Date of initial certification: 15 January 2019

ISO 9001: 2015
(Quality Management System)

CERTIFICATE OF REGISTRATION

This is to certify that

Sigma Factory for Steel Products
P.O. Box 37991
Sahh Saheb - J, 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: 5965
Issue number: 2016-02
Certificate start date: 22 February 2018
Certificate expiry date: 22 February 2021
Date of initial certification: 22 February 2019

Karen Prendergast
Sector Director - Certification
Exova BM TRADA

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## 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

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

**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

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- 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 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 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
CERTIFICATE OF COMPLIANCE

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

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

This is to certify that representative samples of CABLE TRAYS
Steel Channels, Heavy
Very Heavy

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

Standard(s) for Safety: ANSI/NFPA
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark should be considered as being covered by UL’s Certification and Follow-Up Service. Look for the UL Certification Mark on the product.
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.
Issuer Kabbani Trading Est.

BAHRAIN
Isam Kabbani Trading Est.

OMAN
Isam Kabbani & Partners Trading Co.

LEBANON
UNITECH ME s.a.r.l.

KUWAIT
Hassan Kabbani for General Contracting Est.

JORDAN
Jordan Build Co. for Building & Construction Materials

SFSP CUSTOMER SERVICE CALL CENTER

KSA
+966 13 8590097, Ext. 3214

UAE
+971 4 8181925, Ext. 4269
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.”

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
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, title 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:

**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.
This is the final report of a laboratory testing performed by this firm. Thomas Belling International Consultants (TBMC), on drilling screws into monolithic stud and furring channel specimens supplied by Unitech Trading Ltd. The specimens in general were supplied with gypsum board and screws used to construct an assembly for the test. The testing commenced on March 23, 2011, and was carried out under the direction of the Senior Consultant, Mr. John D. Bell, and recorded the results of the test in accordance with the ASTM C 645-04a Standard.

Test photographs are attached in the page span of this report.

II. General Presentation

PROJECT NAME:          TEST SEQUENCE
Drywall Stud & Furring Screws Drilling Test  Test 1: Screw Perforation Test: ASTM C 645-04a

RELEVANT INFORMATION
Type: Gypsumboard & Furring
Specimen Size: 300 mm x 75 mm x 9 mm thick
Gypsum Board: 150 mm x 150 mm x 6.4 mm thick
Contact Hole: 25 mm

Evaluate the ability of the screw to be drilled below the
than 2 seconds and without split out.

DATE & TIME          PAGES
1. March 20, 2011     Page 1
2. March 24, 2011     Page 2
3. March 29, 2011     Page 3

C. Test and Performance Requirements

<table>
<thead>
<tr>
<th>Test</th>
<th>Criteria</th>
<th>Reference</th>
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<tbody>
<tr>
<td>1. Screw Perforation test</td>
<td>30 lb (13.6 Kg) force</td>
<td>ASTM C 645-04a</td>
</tr>
<tr>
<td>Permitted drill time with out split</td>
<td>Less than 2 seconds</td>
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Additional material on Curtain Wall testing can be found at www.bell-weight.com — Resources — Downloads — Aluminum and Glass Testing Techniques.pdf

V. Specimen Compatibility

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

VI. Test Procedures

A. Screw Perforation Test, ASTM C 645-04a

1. Preparation
   i. From a randomly picked supplied stud samples, label the member along with the
gypsum board to construct assembly.
   ii. Clamp the loaded member into the jig and just above it the gypsum board
together with the screw lightly recessed in position for the drilling process.
   iii. Secure the gypsiul dust weight above the drilling tool, and ensure equal application
for the procedure.

2. Test Procedure
   i. Assemble the member and the gypsum board on the rig together with the
      positioning of the screw and the electric drill with weight.
   ii. Secure 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.
   iii. Until the drilling stopped with the head of screw slightly driven below the gypsum
      board surface, record the elapsed time.
   iv. Record if a split-out occurred in the drilling process.
   v. Repeat the same procedures for the remaining stud members and the furring
      channel members.

B. Testing Equipment

i. Marking electric drill for the screw perforation.
ii. Collected equipment.
iii. 20 lbs steel weight (13.7 kg).

VII. Testing Equipment
STUDS & RUNNERS
# Technical Information

## Construction Overview Single Support Wall

**Sheet Thickness = 0.8 (mm)**

<table>
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<tr>
<th>Wall type</th>
<th>Stud/wall thickness</th>
<th>Stud width (mm)</th>
<th>GK</th>
<th>Planking (mm) both sides</th>
<th>Isol. (mm)</th>
<th>Wall thickness (mm) +/-1</th>
<th>Fire-proof</th>
<th>Stud Distance* (mm)</th>
<th>Mountering area A*</th>
<th>Allowable height in meter</th>
<th>Stud Distance** (mm)</th>
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F180* =Rock wool 100kg/m³

**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

<table>
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<tr>
<th>Thickness Code</th>
<th>Thickness (mm)</th>
<th>Tolerance (mm)</th>
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<td>0.91 - 1.09</td>
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<td>1.11 - 1.29</td>
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<td>1.86 - 2.14</td>
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### Sheet Thickness & Tolerance according to DIN 18182 part 1

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### Soundproofing in dB

<table>
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<tr>
<th>Description of wall system</th>
<th>Planking with plasterboard</th>
<th>Planking in each side (mm)</th>
<th>Insulation (mm)</th>
<th>Wall Thickness (mm)</th>
<th>According to DIN 18180 (dB)</th>
<th>Planking plasterboard (dB)</th>
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<tbody>
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<td>72</td>
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<td>99</td>
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<td>44-49</td>
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<tr>
<td>Stud STD 100 / 124</td>
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<td>124</td>
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<td>48-55</td>
<td>52-57</td>
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<td>64-66</td>
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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
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<th>Web Width</th>
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<td></td>
<td>CC 60</td>
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<td>32 ± 0.3</td>
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<td>6 3</td>
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<td>/ / / / / x</td>
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</table>
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
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

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

SFSP profiles 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

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.
### Codes & Dimensions

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

<table>
<thead>
<tr>
<th>Profile</th>
<th>Dimensions</th>
<th>Stud. distance (mm)</th>
<th>Layer thickness for each side (mm)</th>
<th>Wall thickness (mm)</th>
<th>Allowable Height</th>
<th>RW db</th>
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<tbody>
<tr>
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<td>70 x 47 x 0.9</td>
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<td>4, 00</td>
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<td>1 x 15</td>
<td>130</td>
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<td>4, 30</td>
</tr>
<tr>
<td>Std 100/160</td>
<td>100 x 47 x 0.9</td>
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<td>2 x 15</td>
<td>160</td>
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<td>4, 50</td>
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*Other thickness and lengths available upon site request*

### Deflection Track

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<tr>
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<tbody>
<tr>
<td>SCUC_F_00240329</td>
<td>52</td>
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<td>3 - 12</td>
</tr>
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*Other thickness and lengths available upon site request*

### Shaft Wall Track (J)

<table>
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<td>50 - 150</td>
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<td>3 - 12</td>
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<td>3 - 12</td>
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<td>0.6 - 1.5</td>
<td>3 - 12</td>
</tr>
</tbody>
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*Other thickness and lengths available upon site request*
**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/m³ 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.
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**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Dimension (mm)</th>
<th>Approx. requirement per 100 m²</th>
<th>length (cm)</th>
<th>Pcs./palleted bundle</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVCTCS_F_00179295</td>
<td>Main Ceiling Channel</td>
<td>11 x 38 x 11 mm</td>
<td>110 LM</td>
<td>300</td>
<td>500</td>
<td>Main support for furring channels</td>
</tr>
<tr>
<td>STFP_F_00086719</td>
<td>Furring Channel</td>
<td>12 x 22 x 35 x 22 x 12 mm</td>
<td>200 LM</td>
<td>300</td>
<td>250</td>
<td>Support section where plaster board is fixed</td>
</tr>
<tr>
<td>LA_F_00086711</td>
<td>Perimeter Angle (Wall Angle)</td>
<td>25 x 25 mm</td>
<td>40 LM</td>
<td>300</td>
<td>500</td>
<td>Fixed around the perimeter to receive ends of furring channels and outer edges of plaster boards.</td>
</tr>
</tbody>
</table>

## MAIN CEILING CHANNEL

![Main Ceiling Channel Diagram](image)

## FURRING CHANNEL

![Furring Channel Diagram](image)

## PERIMETER (WALL) ANGLE

![Perimeter Angle (Wall Angle) Diagram](image)
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

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

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Quantity by single layer gypsum</th>
</tr>
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<tbody>
<tr>
<td>MCC</td>
<td>Main ceiling channel</td>
<td>1.90 m</td>
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<tr>
<td>FCL</td>
<td>Furring channel</td>
<td>2.70 m</td>
</tr>
<tr>
<td>PAN</td>
<td>Peremiter angle (wall angle)</td>
<td>0.40 m</td>
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<tr>
<td></td>
<td>Suspension hanger</td>
<td>1.80 Pcs</td>
</tr>
<tr>
<td></td>
<td>Bracket</td>
<td>1.80 Pcs</td>
</tr>
<tr>
<td></td>
<td>Connecting clip</td>
<td>3.10 Pcs</td>
</tr>
<tr>
<td></td>
<td>dry wall screw</td>
<td>22 Pcs</td>
</tr>
<tr>
<td></td>
<td>Eye bolt</td>
<td>1.80 Pcs</td>
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</table>

Typical Ceiling Hanger Layout

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

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


For thickness and sizes see components list.

**Fire**

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

<table>
<thead>
<tr>
<th>Flange (mm)</th>
<th>Thickness (mm)</th>
<th>Weight (Kg/m)</th>
<th>Cross section area (sq. mm)</th>
<th>About Major Axis</th>
<th>About Minor Axis</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X (mm)</td>
<td>Ix (mm²)</td>
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<td>13</td>
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<td>0.25</td>
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</table>

X - Centroid distance in the x-axis
Ix - Moment of inertia about the principal x-axis
Rx - Radius of gyration about centroidal of the principal x-axis
Y - Centroid distance in the y-axis
Iy - Moment of inertia about the principal y-axis
Ry - Radius of gyration about centroidal of the principal y-axis

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Section wx modulus wx</th>
<th>Section wx modulus wy</th>
<th>Moment of Inertia</th>
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<tr>
<td></td>
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<td>cm³</td>
<td>cm³</td>
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Furring Channel 35x22 mm Specifications

Physical & Structural Properties

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<th>Weight (Kg/m)</th>
<th>Cross section area (sq. mm)</th>
<th>About major axis</th>
<th>About minor axis</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X (mm)</td>
<td>Ix (mm^3)</td>
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Cross Section Area

<table>
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<tr>
<th>Cross Section Area</th>
<th>Thickness t (mm)</th>
<th>Section wx modulus wx (cm^3)</th>
<th>Section wy modulus wy (cm^3)</th>
<th>Moment of Inertia (cm^4)</th>
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<tr>
<td></td>
<td>t</td>
<td>Top cm^3</td>
<td>Bottom cm^3</td>
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<tr>
<td>cm^2</td>
<td>mm</td>
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<td></td>
<td></td>
</tr>
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<td>0.383</td>
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</table>

- X - Centroid distance in the x-axis
- Ix - Moment of inertia about the principal x-axis
- Rx - Radius of gyration about centroidal of the principal x-axis
- Y - Centroid distance in the y-axis
- Iy - Moment of inertia about the principal y-axis
- Ry - Radius of gyration about centroidal of the principal y-axis
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

<table>
<thead>
<tr>
<th>Profile</th>
<th>Thickness (mm)</th>
<th>Weight (Kg/m)</th>
<th>Cross section area (sq. mm)</th>
<th>X (mm)</th>
<th>Ix (mm$^4$)</th>
<th>Rx (mm)</th>
<th>Y (mm)</th>
<th>Iy (mm$^4$)</th>
<th>Ry (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE 25</td>
<td>0.45</td>
<td>0.18</td>
<td>22.30</td>
<td>6.4</td>
<td>1470</td>
<td>10.25</td>
<td>6.4</td>
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<tr>
<td>AE 25</td>
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<td>0.20</td>
<td>24.75</td>
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<td>1630</td>
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<td>10.25</td>
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<tr>
<td>AE 25</td>
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<td>AE 25</td>
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<td>6.58</td>
<td>2930</td>
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</tr>
<tr>
<td>AE 25</td>
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<td>0.48</td>
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<td>6.70</td>
<td>3910</td>
<td>10.34</td>
<td>6.70</td>
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<tr>
<td>AE 25</td>
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<td>0.60</td>
<td>72.75</td>
<td>6.80</td>
<td>4890</td>
<td>10.38</td>
<td>6.80</td>
<td>4890</td>
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</table>

Thickness $t$ | Section modulus $wxcm^3$ | Moment of Inertia $I$
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>t</td>
<td>Top</td>
<td>Bottom</td>
</tr>
<tr>
<td>mm</td>
<td>cm$^3$</td>
<td>cm$^3$</td>
</tr>
<tr>
<td>0.45</td>
<td>0.08</td>
<td>0.226</td>
</tr>
<tr>
<td>0.50</td>
<td>0.09</td>
<td>0.250</td>
</tr>
<tr>
<td>0.60</td>
<td>0.104</td>
<td>0.298</td>
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<tr>
<td>0.90</td>
<td>0.156</td>
<td>0.437</td>
</tr>
<tr>
<td>1.20</td>
<td>0.209</td>
<td>0.571</td>
</tr>
<tr>
<td>1.50</td>
<td>0.261</td>
<td>0.699</td>
</tr>
</tbody>
</table>

$X$ - Centroid distance in the x-axis
Ix - Moment of inertia about the principal x-axis
Rx - Radius of gyration about centroidal of the principal x-axis
$Y$ - Centroid distance in the y-axis
Iy - Moment of inertia about the principal y-axis
Ry - Radius of gyration about centroidal of the principal y-axis
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.
**Specifications**

**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.
<table>
<thead>
<tr>
<th><strong>Accessories</strong></th>
<th><strong>Corner tape</strong></th>
<th><strong>Drywall joint tape</strong></th>
<th><strong>Bracket</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Universal bracket 50 - 75mm</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Framing screw</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ready mix joint compound</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Chalk line</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Adjustable suspension Hanger</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Drywall screw</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power screw driver</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Power Tools</strong></td>
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<tr>
<td><strong>Tie Wire</strong></td>
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<tr>
<td>Tool Kits</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring tape</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drywall joint tape</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plumb line</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wire connecting clip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tinsnips</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wallboard hand saw</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utility knife</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taping knife</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Thickness (± 0.4 mm)</th>
<th>Width (±0 mm - 5 mm)</th>
<th>Approx. weight (± 0.5 mm)</th>
<th>Length (±0 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.5</td>
<td>1 200</td>
<td>7.9</td>
<td>1800 - 4000</td>
</tr>
<tr>
<td>12.5</td>
<td>1 200</td>
<td>10.2</td>
<td>1800 - 4000</td>
</tr>
<tr>
<td>15</td>
<td>1 200</td>
<td>12.1</td>
<td>1800 - 4000</td>
</tr>
<tr>
<td>18</td>
<td>1 200</td>
<td>14.9</td>
<td>1800 - 4000</td>
</tr>
</tbody>
</table>

#### Technical characteristics

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Thermal resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.5 mm</td>
<td>0.03 m² K/W</td>
</tr>
<tr>
<td>12.5 &amp; 15 mm</td>
<td>0.04 m² K/W</td>
</tr>
<tr>
<td>18 mm</td>
<td>0.05 m² K/W</td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th>Standard Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
</tr>
<tr>
<td>Width</td>
</tr>
<tr>
<td>Length</td>
</tr>
</tbody>
</table>

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 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
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.

<table>
<thead>
<tr>
<th>Size</th>
<th>Length</th>
<th>Pcs./ctn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 x 25 mm</td>
<td>3000 mm</td>
<td>50</td>
</tr>
<tr>
<td>30 x 30 mm</td>
<td>3000 mm</td>
<td>50</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Pcs./ctn.</th>
<th>Length</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mm</td>
<td>3000 mm</td>
<td>50</td>
</tr>
<tr>
<td>12.5 mm</td>
<td>3000 mm</td>
<td>50</td>
</tr>
<tr>
<td>19 mm</td>
<td>3000 mm</td>
<td>50</td>
</tr>
</tbody>
</table>

**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.
### Material requirement per m²

<table>
<thead>
<tr>
<th>Profile</th>
<th>Stud spacing</th>
<th>Plaster board (m²)</th>
<th>Fast screw</th>
<th>Strip</th>
<th>Joint</th>
<th>Felt</th>
<th>Headline</th>
<th>Socket</th>
<th>Mineral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stud</td>
<td>Runner</td>
<td>12.5</td>
<td>15</td>
<td>pieces</td>
<td>(m)</td>
<td>Kg</td>
<td>(m)</td>
<td>pieces</td>
</tr>
<tr>
<td>Single stud, single board</td>
<td>m</td>
<td>m</td>
<td>m²</td>
<td>m²</td>
<td>pieces</td>
<td>(m)</td>
<td>Kg</td>
<td>(m)</td>
<td>pieces</td>
</tr>
<tr>
<td>STD 048</td>
<td>1,8</td>
<td>2,4</td>
<td>0,8</td>
<td>2,0</td>
<td>/</td>
<td>26</td>
<td>3,3</td>
<td>0,5</td>
<td>1,3</td>
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<tr>
<td>STD 075</td>
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<td>/</td>
<td>26</td>
<td>3,3</td>
<td>0,5</td>
<td>1,3</td>
</tr>
<tr>
<td>STD 100</td>
<td>1,8</td>
<td>2,4</td>
<td>0,8</td>
<td>2,0</td>
<td>/</td>
<td>26</td>
<td>3,3</td>
<td>0,5</td>
<td>1,3</td>
</tr>
<tr>
<td>Single stud, double board</td>
<td>m</td>
<td>m</td>
<td>m²</td>
<td>m²</td>
<td>pieces</td>
<td>(m)</td>
<td>Kg</td>
<td>(m)</td>
<td>pieces</td>
</tr>
<tr>
<td>STD 048</td>
<td>1,8</td>
<td>2,4</td>
<td>0,8</td>
<td>4,0</td>
<td>(4,0)</td>
<td>9 + 26</td>
<td>3,3</td>
<td>0,65</td>
<td>1,3</td>
</tr>
<tr>
<td>STD 075</td>
<td>1,8</td>
<td>2,4</td>
<td>0,8</td>
<td>4,0</td>
<td>(4,0)</td>
<td>9 + 26</td>
<td>3,3</td>
<td>0,65</td>
<td>1,3</td>
</tr>
<tr>
<td>STD 100</td>
<td>1,8</td>
<td>2,4</td>
<td>0,8</td>
<td>4,0</td>
<td>(4,0)</td>
<td>9 + 26</td>
<td>3,3</td>
<td>0,65</td>
<td>1,3</td>
</tr>
<tr>
<td>Single stud, three board</td>
<td>m</td>
<td>m</td>
<td>m²</td>
<td>m²</td>
<td>pieces</td>
<td>(m)</td>
<td>Kg</td>
<td>(m)</td>
<td>pieces</td>
</tr>
<tr>
<td>STD 100</td>
<td>1,8</td>
<td>2,4</td>
<td>0,8</td>
<td>6,0</td>
<td>/</td>
<td>9 + 9 + 26</td>
<td>3,3</td>
<td>0,8</td>
<td>1,3</td>
</tr>
<tr>
<td>Double stud, double board</td>
<td>m</td>
<td>m</td>
<td>m²</td>
<td>m²</td>
<td>pieces</td>
<td>(m)</td>
<td>Kg</td>
<td>(m)</td>
<td>pieces</td>
</tr>
<tr>
<td>STD 048+048</td>
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<td>(4,0)</td>
<td>9 + 26</td>
<td>3,3</td>
<td>0,65</td>
<td>5,4</td>
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<tr>
<td>STD 075+075</td>
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<td>4,8</td>
<td>1,6</td>
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<td>(4,0)</td>
<td>9 + 26</td>
<td>3,3</td>
<td>0,65</td>
<td>5,4</td>
</tr>
<tr>
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<td>3,6</td>
<td>4,8</td>
<td>1,6</td>
<td>4,0</td>
<td>(4,0)</td>
<td>9 + 26</td>
<td>3,3</td>
<td>0,65</td>
<td>5,4</td>
</tr>
</tbody>
</table>

### Stud Splicing for wall height > 5m

#### Stud connection for wall height > 5m

![Stud Splicing for wall height > 5m](image)

### Stud Splicing for wall height < 5m

#### Stud connection for wall height < 5m

![Stud Splicing for wall height < 5m](image)
**Corner**

Conjunction for wall height > 5m

- Insulation
- 1 Gypsum board
- Stud

**Corner**

Corner for wall height > 5m

- Edge Protection Profile
- Stud
- Insulation wood
- Dry Wall Screw
- Gypsum Board
- Dry wall screw

**Chase wall gypsum with adjusting bracket**

- Adjusting Bracket
- Concrete wall or Block Work Wall
- Gypsum Board

**Chase wall gypsum without adjusting bracket**

- Concrete wall or Block Work Wall
- Gypsum Board

**Edge Protection Profile**

- L-Wall Outside
- L-Wall Inside Cut
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

Gypsum 1 layer
- Anchor each 1000mm
- Seal
- Ceiling Runner
- Stud
- Insulation soundproofing
- Gypsum 1 layer
- Floor Runner
- Base profile (Socket)

Gypsum 2 layer
- Anchor each 1000mm
- Seal
- Ceiling Runner
- Stud
- Insulation soundproofing
- Gypsum 2 layer
- Floor Runner
- Base profile (Socket)

Gypsum 3 layer
- Anchor each 1000mm
- Seal
- Ceiling Runner
- Stud
- Insulation soundproofing
- Gypsum 3 layer
- Floor Runner
- Base profile (Socket)

Double Stud

Seal Double Tape
- Seal
- Anchor
- Double Stud
- Stud Spacing 400/600
- Seal Double Tape
- Gypsum 2 layers
- Insulation

Installation Wall
- Anchor
- Seal
- Ceiling Runner
- Stud
- Insulation
- GYPSUM 2 layers
- Insulation
- GYPSUM Strap minimum height 30 cm
- 400/600
- Height 3
- 12 cm
- Floor runner
- Base Profile (Socket)
Chase Wall one layer

**Plan Section**
Gypsum sections with adjusting bracket

**Cross Section**
- Adjusting Bracket with screw
- Bracket for adjusting
- Gypsum Board
- Base plate
- Runner
- Anchor

Expansion Joint

**Expansion Joint not fire rated**

Corner Detail

- Steel stud
  - Locate at abutting wall and attach thru gypsum board to stud in abutting wall
- Cornerbead typical
- Gypsum board number of Layers determined by partition type
**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
2. Adjusting bracket
3. Dry wall screw
4. Seal
5. Gypsum board
6. Anchor
7. Base profile
8. Insulation

Chase Wall without Adjusting Bracket

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

Adjusting Bracket
Concrete wall or Block Work Wall
Gypsum Board

Concrete wall or Block Work Wall
Gypsum Board

Depend on the height
Double Stud for Increased Acoustic (Soundproofing)

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

Installation Wall

1. Runner
2. Stud
3. Anchor
4. Seal
5. Insulation
6. Base profile (socket)
7. Gypsum board
8. Edge protection profile
### Technical Data / Sound Protection / Thermal Insulation

<table>
<thead>
<tr>
<th>Technical Data</th>
<th>Weight</th>
<th>Sound Protection proof $R_{wa}$</th>
<th>Insulation nominal thickness</th>
<th>Thermal Insulation $U$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall thickness</td>
<td>Stud</td>
<td>Board</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cavity thickness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td>Approx.</td>
<td>kg/m² 1</td>
<td>dB 2)</td>
</tr>
<tr>
<td>D (mm)</td>
<td>h (mm)</td>
<td>d (mm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Metal Stud Partition** Single metal stud frame - single layer cladding

<table>
<thead>
<tr>
<th>Spacing of studs</th>
<th>75</th>
<th>50</th>
<th>12.5</th>
<th>GKB</th>
<th>41</th>
<th>40</th>
<th>0.66</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>75</td>
<td></td>
<td>GKF</td>
<td>42</td>
<td>40</td>
<td>0.65</td>
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<tr>
<td></td>
<td>125</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spacing of studs</th>
<th>100</th>
<th>50</th>
<th>2 x 12.5</th>
<th>GKB</th>
<th>50</th>
<th>40</th>
<th>0.61</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>125</td>
<td>75</td>
<td></td>
<td>GKF</td>
<td>51</td>
<td>40</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Metal Stud Partition** Single metal stud frame - double layer cladding

<table>
<thead>
<tr>
<th>Spacing of studs</th>
<th>155</th>
<th>105</th>
<th>2 x 12.5</th>
<th>GKB</th>
<th>59</th>
<th>2X40</th>
<th>0.37</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>205</td>
<td>155</td>
<td></td>
<td>GKF</td>
<td>58</td>
<td>60</td>
<td>0.47</td>
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<td></td>
<td>255</td>
<td>205</td>
<td></td>
<td></td>
<td></td>
<td>2X60</td>
<td>0.27</td>
</tr>
</tbody>
</table>

**Technical Data / Sound Protection / Thermal Insulation**

<table>
<thead>
<tr>
<th>Metal Stud Partition</th>
<th>Single metal stud frame - double layer cladding</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Spacing of studs</th>
<th>125</th>
<th>50</th>
<th>3 x 12.5</th>
<th>GKB</th>
<th>66</th>
<th>51</th>
<th>40</th>
<th>0.57</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>150</td>
<td>75</td>
<td></td>
<td>GKF</td>
<td>53</td>
<td>60</td>
<td>0.44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>172</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>80</td>
<td>0.36</td>
<td></td>
</tr>
</tbody>
</table>

**Metal Stud Partition** Single metal stud frame - triple layer gypsum board

**GKB**: Gypsum Board.

**GKF**: Gypsum Board Fire Proof (Fire Resistance).
**Installation Wall** Double metal stud frame - double layer gypsum board

<table>
<thead>
<tr>
<th>spacing of studs</th>
<th>≥ 220 ≥ 170</th>
<th>2 x 12.5</th>
<th>GKB</th>
<th>GKF</th>
<th>49</th>
<th>52</th>
<th>40</th>
<th>0.60</th>
</tr>
</thead>
</table>

GKB: Gypsum Board.
GKF: Gypsum Board Fire Proof (Fire Resistance).

**Dry Wall Metal Stud Combined With Columns**

**Single Stud One Layer Gypsum Board**

**Double Stud Two Layers Gypsum Board**

**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, 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.

---

**Partitions according to DIN 4102-4 with mineral wool insulation melting point \( \geq 10000 \, ^\circ C \)**

Insulation layers that are necessary for fire protection should be preserved but are allowed to be compressed down to \( \geq 30 \, \text{mm} \).

---

**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.
Single Metal Stud Frame, Single Layer

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

<table>
<thead>
<tr>
<th>Stud</th>
<th>Spacing of studs</th>
<th>Maximum wall heights</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(cm)</td>
<td>Without fire protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>Metal</td>
<td>Thickness 0.6 mm</td>
<td>60</td>
</tr>
<tr>
<td>50</td>
<td>(m)</td>
<td>(m)</td>
</tr>
<tr>
<td>Stud</td>
<td></td>
<td>3.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.75</td>
</tr>
<tr>
<td>75</td>
<td></td>
<td>4.5</td>
</tr>
<tr>
<td>Stud</td>
<td></td>
<td>4.5</td>
</tr>
<tr>
<td>100</td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

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

Details

Connection to ceiling

Connection to solid wall

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

<table>
<thead>
<tr>
<th>Metal Thickness 0.6 mm</th>
<th>Stud 50</th>
<th>Stud 75</th>
<th>Stud 100</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without fire protection</td>
<td>Installation zone</td>
<td>Incl. fire protection</td>
</tr>
<tr>
<td></td>
<td>I (m)</td>
<td>II (m)</td>
<td>I (m)</td>
</tr>
<tr>
<td>60</td>
<td>3</td>
<td>2.75</td>
<td>3</td>
</tr>
<tr>
<td>40</td>
<td>4</td>
<td>3.75</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>5</td>
<td>4.75</td>
<td>4</td>
</tr>
<tr>
<td>60</td>
<td>4.5</td>
<td>3.75</td>
<td>4.5</td>
</tr>
<tr>
<td>40</td>
<td>6</td>
<td>5.25</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>7</td>
<td>6.25</td>
<td>5</td>
</tr>
<tr>
<td>60</td>
<td>5</td>
<td>4.25</td>
<td>5</td>
</tr>
<tr>
<td>40</td>
<td>6.5</td>
<td>5.75</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>8</td>
<td>7.25</td>
<td>5.5</td>
</tr>
</tbody>
</table>

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),...

#### Connection to ceiling
- Kitt
- Acoustical Sealant
- Nailable Plug
- Runner
- Stud

#### Connection to solid wall
- Nailable Plug
- Acoustical Sealant
- Stud
- Gypsum Boards

#### Joint
- Drywall Screw
- Stud
- Runner
- Drywall Screw
- Gypsum Boards

#### Corner
- Runner
- Insulation
- Drywall Screw
- Drywall Screw
- Stud
- Gypsum Boards

#### T-junction
- Runner
- Drywall Screw

#### Connection to floor
- Stud
- Runner
- Drywall Screw
- Kitt

#### Door opening with UA profile
- Wall Opening Width
- Door Frame Bracket
- Drywall Screw
- UA Profile 2 mm
- Gypsum Boards
- Drywall Screw
- Stud
**Single Metal Stud Frame, Triple Layer**

### Wall heights

<table>
<thead>
<tr>
<th>Stud</th>
<th>Spacing of studs</th>
<th>Maximum wall heights</th>
<th>Metal Thickness 0.6 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(cm)</td>
<td>Without fire protection</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Installation zone</td>
<td>(m)</td>
</tr>
<tr>
<td>Stud 50</td>
<td></td>
<td>I</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>41.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31.25</td>
</tr>
<tr>
<td>Stud 75</td>
<td></td>
<td>I</td>
<td>62.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>41.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31.25</td>
</tr>
<tr>
<td>Stud 100</td>
<td></td>
<td>I</td>
<td>62.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>41.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31.25</td>
</tr>
</tbody>
</table>

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),...

- **Connection to ceiling**
  - Kitt
  - Acoustical Sealant
  - Nailable Plug
  - Runner
  - Stud

- **Connection to solid wall**
  - Nailable Plug
  - Acoustical Sealant
  - Stud
  - Gypsum Boards

- **Joint**
  - Gyosum Boards
  - Drywall Screw
  - Stud
  - Kitt

- **Corner Insulation**
  - Drywall Screw
  - Corner Trim or Alu Corner Trim if necessary

- **Connection to floor**
  - Gypsum Boards
  - Stud
  - Runner
  - Drywall Screw
  - Kitt

- **Door opening with UA profile**
  - Door Frame Bracket
  - Drywall Screw
  - UA Profile 2 mm

**Connection to ceiling**

**Connection to solid wall**

**Joint**

**Corner Insulation**

**Connection to floor**

**Door opening with UA profile**
Double Metal Stud Frame, Double Layer (version 1)

Sheet thickness 0.8 mm

Wall heights

<table>
<thead>
<tr>
<th>Stud</th>
<th>Spacing of studs</th>
<th>Maximum wall heights</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Without fire protection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I (m)</td>
</tr>
<tr>
<td>Metal</td>
<td>Thickness 0.6 mm</td>
<td>cm</td>
</tr>
<tr>
<td>Stud 50</td>
<td>62.5</td>
<td>3.3 (4.5)</td>
</tr>
<tr>
<td>Stud 75</td>
<td>62.5</td>
<td>4.5 (6)</td>
</tr>
<tr>
<td>Stud 100</td>
<td>62.5</td>
<td>5.5 (6.5)</td>
</tr>
</tbody>
</table>

Bold printed values are recommended by SFSP
( ) values are maximum allowable heights of metal stud partitions acc. to DIN 18183

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),...

Details

Connection to ceiling

Connection to solid wall

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),...
Double Metal Stud Frame, Double Layer (version 2)

Wall heights

<table>
<thead>
<tr>
<th>Stud</th>
<th>Spacing of studs</th>
<th>Maximum wall heights</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(cm)</td>
<td>Without fire protect.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Installation zone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>Metal</td>
<td>Thickness 0.6 mm</td>
<td>(m)</td>
</tr>
<tr>
<td>I</td>
<td>Stud 50</td>
<td>62.5</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Stud 75</td>
<td>62.5</td>
</tr>
<tr>
<td>IV</td>
<td>Stud 100</td>
<td>62.5</td>
</tr>
</tbody>
</table>

Sheet thickness 0.8 mm

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),...

Connection to ceiling
- Acoustical Sealant
- Nailable Plug
- Runner
- Insulation
- Gypsum Boards

Connection to floor
- Sealing
- Tape

Connection to solid wall
- Kitt
- Gypsum Boards

Stud reinforcement
- Drywall Screw
- Kitt
- Drywall Screw
- Gypsum Board strip ≥ 12.5 mm thick
- height 300 mm
- e.g. flexible adhesive
- e.g. tile
- Runner
- Gypsum Boards Strip ≥ 12.5 mm thick
- 300 mm high
Sound Protection: DIN 4109 Supplement 1, Amendment A1: 2003-09, Table 23 | Dimensions in mm

<table>
<thead>
<tr>
<th>Examples</th>
<th>Stud 2)</th>
<th>Minimum clearance between gypsum board</th>
<th>Minimum insulation thickness</th>
<th>$R_{\text{W1A}}$</th>
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</thead>
<tbody>
<tr>
<td>12.5 SB 1)</td>
<td>Stud 50 x 0.6</td>
<td>50</td>
<td>40</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Stud 75 x 0.6</td>
<td>75</td>
<td>40</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Stud 100 x 0.6</td>
<td>100</td>
<td>40</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>80</td>
<td>43</td>
</tr>
<tr>
<td>2x12.5</td>
<td>Stud 50 x 0.6</td>
<td>50</td>
<td>40</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Stud 75 x 0.6</td>
<td>75</td>
<td>40</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Stud 100 x 0.6</td>
<td>100</td>
<td>40</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>80</td>
<td>50</td>
</tr>
<tr>
<td>2x12.5</td>
<td>Stud 50 x 0.6</td>
<td>105</td>
<td>80</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Stud 100 x 0.6</td>
<td>205</td>
<td>80</td>
<td>59</td>
</tr>
</tbody>
</table>

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/m².

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

Details: Movement Joints / T-Junctions / Corners

- **Movement joint with joint profile**
- **Movement joint**
- **F30 movement joint**
- **F90 movement joint**
- **T-junction with angle profiles**
- **F90 movement joint**
### Stud Joints / Partitions without Connection to Ceiling

#### Vertical stud joints

<table>
<thead>
<tr>
<th>Stud</th>
<th>Overlap O</th>
<th>Variation 1</th>
<th>Variation 2</th>
<th>Variation 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stud 50</td>
<td>≥ 50</td>
<td>2 Studs interlaced as box</td>
<td>2 studs butt joint interlaced with additional Stud</td>
<td>2 studs butt joint interlaced with additional Runner</td>
</tr>
<tr>
<td>Stud 75</td>
<td>≥ 75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stud 100</td>
<td>≥ 100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Displace stud joints vertically fit-up aid: Crimp, rivet or screw Studs at overlap

![Diagram of stud joints](image)

### Partitions without connection to ceiling

**Max. partition length (span of UA profile)**

<table>
<thead>
<tr>
<th>UA profile</th>
<th>Maximum allowable partition width (Cladding)</th>
<th>Cladding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.5 mm</td>
<td>2 x 12.5 mm</td>
</tr>
<tr>
<td>Metal thickness</td>
<td>(m)</td>
<td>(m)</td>
</tr>
<tr>
<td>2 mm</td>
<td>UA 50</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>UA 75</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>UA 100</td>
<td>5</td>
</tr>
</tbody>
</table>

![Diagram of partition details](image)

**Vertical section**

- Gypsum Boards
- Runner
- Drywall Screw 3.5x35
- UA Profile
- Runner
- Metal Screw LB 3.5 X 9.5 mm as100 cm
- Runner at connection to wall
- Gypsum Boards

**View**

- Runner
- UA Profile
- Runner
- Stud
**Door Openings: Stud Construction**

**Cladding / Door Panel Weight**

### Stud construction

<table>
<thead>
<tr>
<th>Variation stud</th>
<th>Variation UA</th>
<th>Deflection head</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>- Acc. to DIN 18340</strong>&lt;br&gt;Wall heights $\leq 2.60$ m&lt;br&gt;Door width $\leq 0.885$ m&lt;br&gt;Door panel weight $\leq 25$ kg</td>
<td><strong>Remove plastic strip from Door Frame Bracket</strong>&lt;br&gt;- Acc. to DIN 18340&lt;br&gt;Wall heights $\leq 2.60$ m&lt;br&gt;Door width $\leq 0.885$ m&lt;br&gt;Door panel weight $\leq 25$ kg</td>
<td><strong>Possible with Stud or 4A ceiling profile</strong></td>
</tr>
</tbody>
</table>

- [Diagram of stud construction](#)
- [Diagram of UA construction](#)

### Scheme Drawings

- [Scheme drawings of metal stud frame](#)
- [Scheme drawings of cladding partition side 1](#)
- [Scheme drawings of cladding partition side 2](#)
Drywall system with fire stop solutions
For cabling and wiring installation and the penetration of piping and ducts

Drywall Design for Fire Safety
Partition

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

Fire Performance

1. Stud
2. Fire Rated Drywall Layers Both Sides

Maximum Fire Performance

1. Stud
2. Fire Rated Drywall Layers Both Sides
### LOCATIONS

#### KIGDOM OF SAUDI ARABIA
unitech.ksa@ikkgroup.com

<table>
<thead>
<tr>
<th>Location</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeddah</td>
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<td>Tabuk</td>
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<td>Mak kah/Taif</td>
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<td>Riyadh</td>
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<td>Khamis Mushayt</td>
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<td>Jubail</td>
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<tr>
<td>Muscat</td>
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<th>Location</th>
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<td>Cairo 6th of October City</td>
<td>Tel: +20 2 3820 6477</td>
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<td>Amman</td>
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<td>Fax: +962 6 554 7911</td>
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<tr>
<td>Aqaba</td>
<td>Tel: +962 6 556 3030</td>
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<td>Fax: +971 4 2591 774</td>
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<tr>
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<th>Location</th>
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<th>Location</th>
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<td>Beirut</td>
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