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# FireLine®

# Fire Protection

The consequences of a fire occurring in a building can lead to serious loss of life and property. In addition, the disruption to business activity can result in the loss of vital customers and orders. It is therefore essential that adequate consideration is given to fire safety requirements and the provision of fire protection measures.

In order to safeguard life and property, it is important that the correct level of fire resistance is incorporated in the overall design of buildings. Individual elements of construction should be specified so as to minimize contribution to fire growth. It is essential that fire protection is correctly installed within the building. The effectiveness of fire protection measures can be significantly impaired by substitution of materials, deviation from the recommended fixing methods or poor workmanship/supervision.

Fire protection includes both 'passive' and 'active' provision. Passive measures are generally built-in to the structure, such that the building can withstand a fire for the design period. Their purpose is to protect the structure and the lives of persons inside in the event of a fire, by reducing or preventing internal and external fire spread, maintaining the stability of the building and the safety and escape routes for the occupants.

Passive provision includes compartmentation and structural fire protection, the provision of good access to buildings for firefighting personnel, and the provision and protection of safe and effective means of escape. Active measures are designed to operate when a fire breaks out, and include the provision of detection and alarm systems, automatic sprinklers, fusible link doors and shutters, emergency lighting and smoke ventilation systems.

Saint-Gobain Gyproc® Malaysia through its wide range of GypWall® products and systems provide excellent passive fire protection solutions ranging from 1 hour to 4 hours taking care of all 3 elements - the stability, integrity and insulation requirements of the system in equal measure.



# Components used in Gyproc® Fire Rated Systems

Gyproc® Fire Rated Systems are built to ensure that performance is never compromised. Components used to assemble the systems are crucial and play an important role in sustaining performance. Gyproc® strongly recommends the component specified here for reliable, effective and efficient systems.

Gyproc® FireLine®



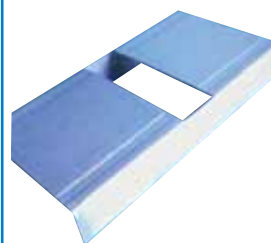
GypFrame® C-Stud



GypFrame® U-Track



GypFrame® Nogging Channel



GypFrame® Channel  
ML50A



GypFrame® GA1 Steel  
Angle



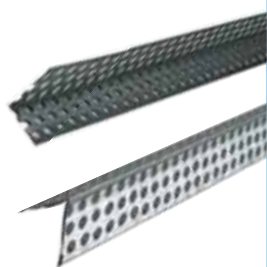
ProTop™ Ready Mixed  
Joint Compound



Gyproc® Paper Tape



Metal Corner Bead



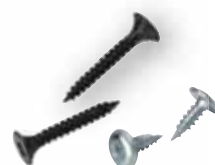
CasoLine® Connecting  
Clip ML9A



Expansion Bolts



Drywall Screws &  
Wafer Head Screws





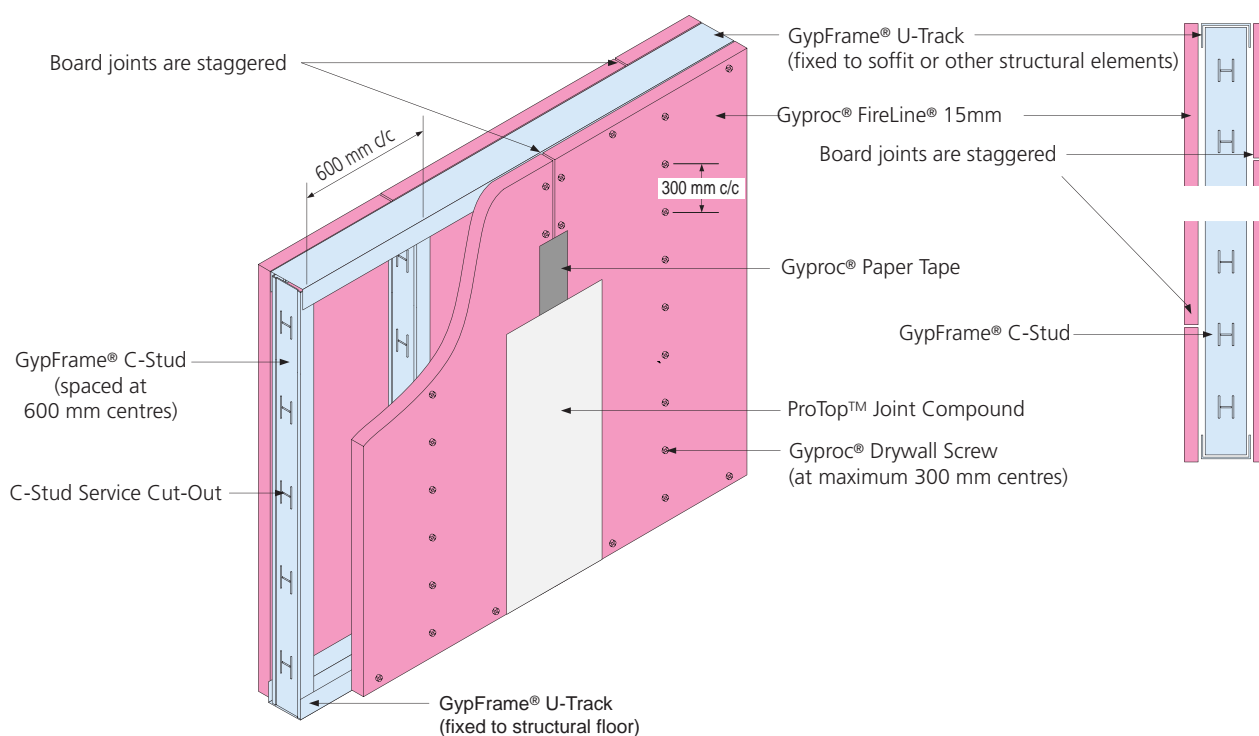
# Gyproc® GypWall® Classic

## Fire Rated Wall Systems

Gyproc® GypWall® CLASSIC Fire Rated Wall System provides 1 Hour, 2 Hours & 4 Hours fire protection that are fast and simple to erect, providing robust fire walls. The systems provide smooth seamless surfaces which can be decorated using most finishes.

## 1 Hour Fire Rated Partitions

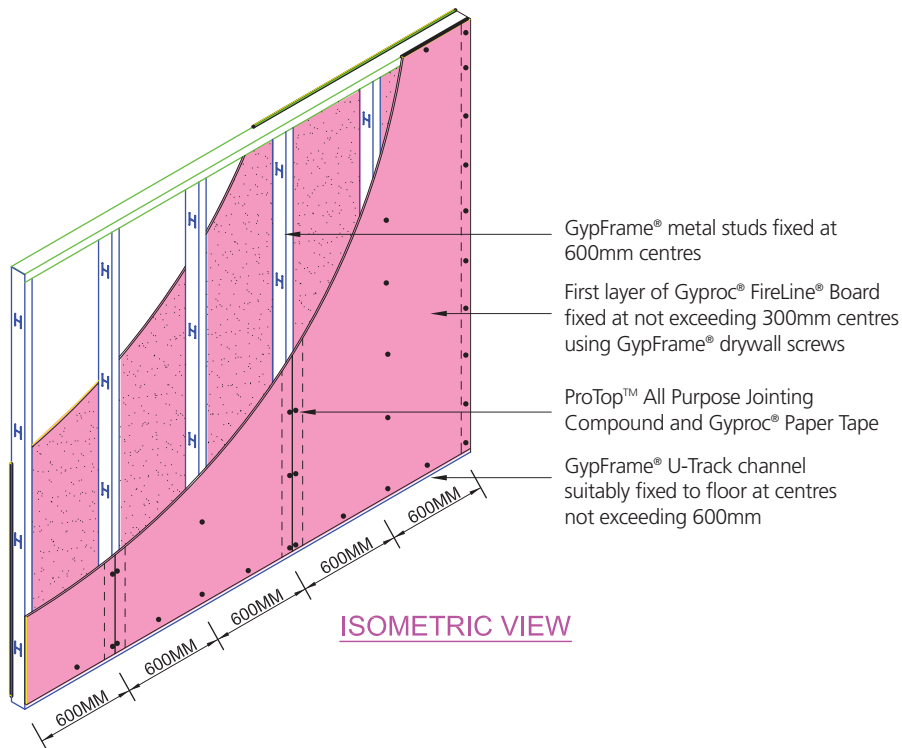
### Specifications



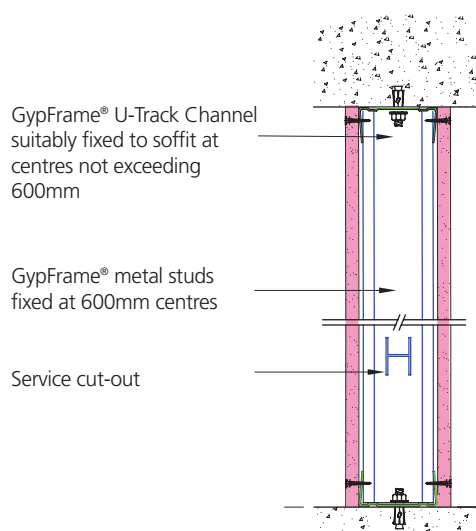
### Example using 62mm C-Stud and 64mm U-Track:

Overall Width	Overall Weight	Fire Rating (BS 476 Pt. 22)	Sound Insulation (R <sub>w</sub> )	Max. Height	Partition Duty (BS 5234 Pt. 2)	Bomba Reference No.
92 ± 2 mm	29 kg/m <sup>2</sup>	1 hour	37 dB	3.4 m	Heavy	JPBM:BKK/005/19/12/105

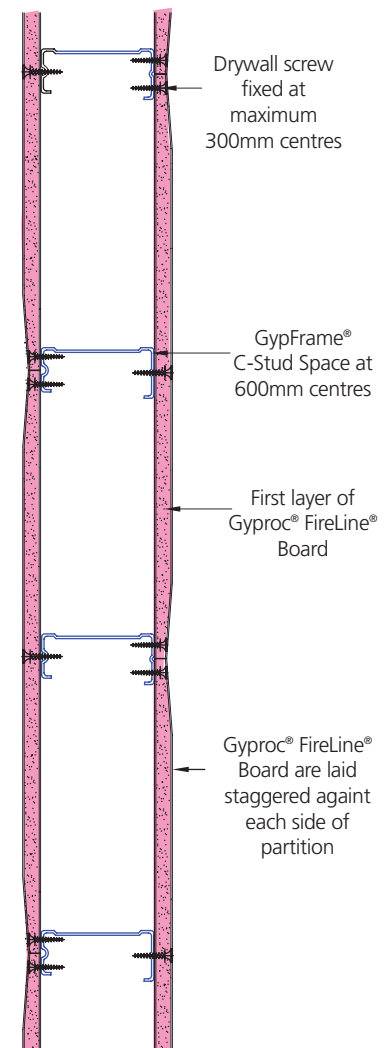
## Installation Method



ISOMETRIC VIEW



SECTIONAL VIEW



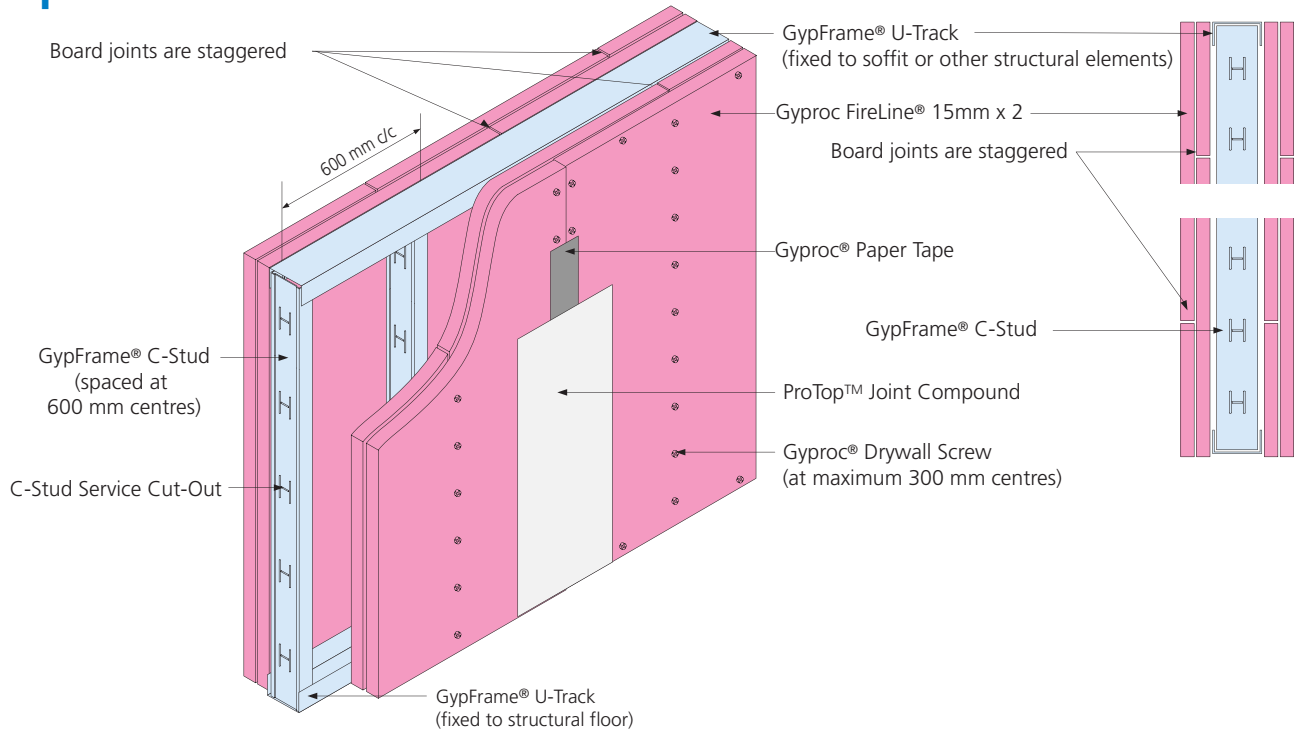
Single layer Gyproc® FireLine® Board Staggered Arrangement

PLAN VIEW

\* For Gyproc® FireLine® board that are in imperial dimensions, e.g. 4' x 8', the C-Stud spacings are at 2'

# 2 Hours Fire Rated Partitions

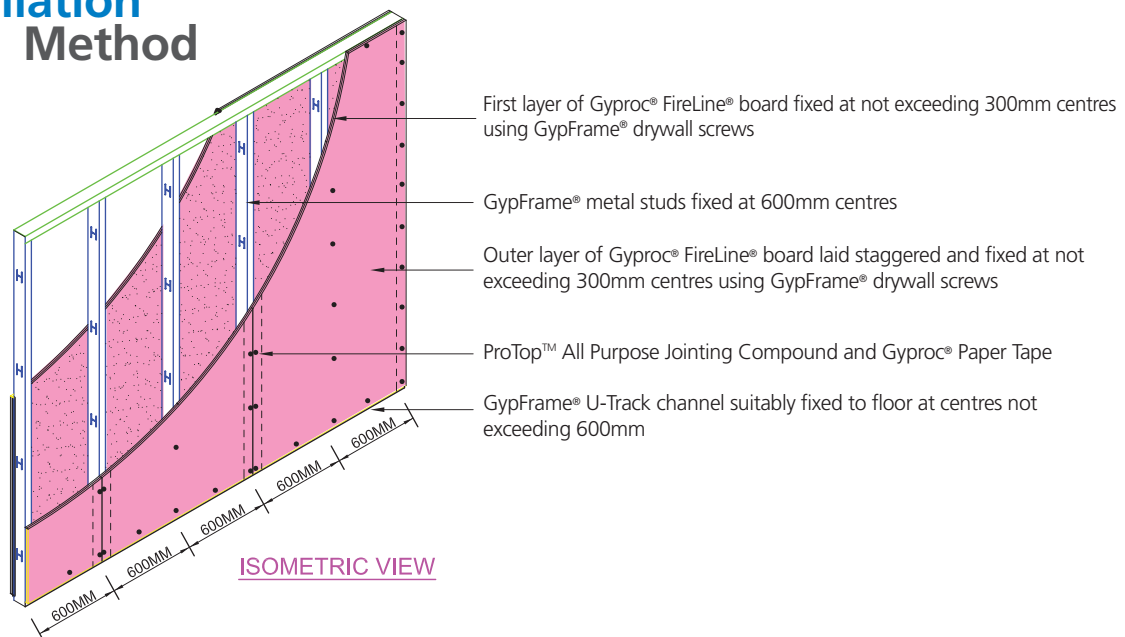
## Specifications



### Example using 62mm C-Stud and 64mm U-Track:

Overall Width	Overall Weight	Fire Rating (BS 476 Pt. 22)	Sound Insulation ( $R_w$ )	Max. Height	Partition Duty (BS 5234 Pt. 2)	Bomba Reference No.
122 ± 2 mm	54 kg/m <sup>2</sup>	2 hour	45 dB	4.4 m	Severe	JPBM:BKK/005/19/12/96

## Installation Method



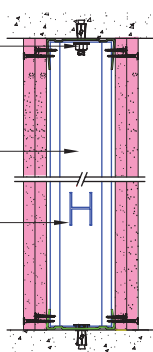
\* For Gyproc® FireLine® board that are in imperial dimensions, e.g. 4' x 8', the C-Stud spacing are at 2'

# Installation Method

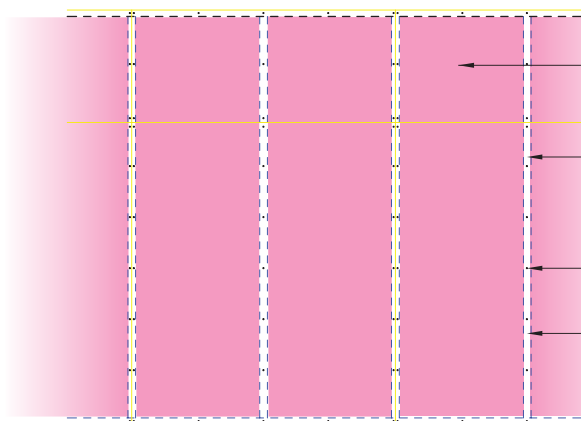
GypFrame® U-Track Channel suitably fixed to soffit at centres not exceeding 600mm

GypFrame® metal studs fixed at 600mm centres

Service cut-out



SECTIONAL VIEW



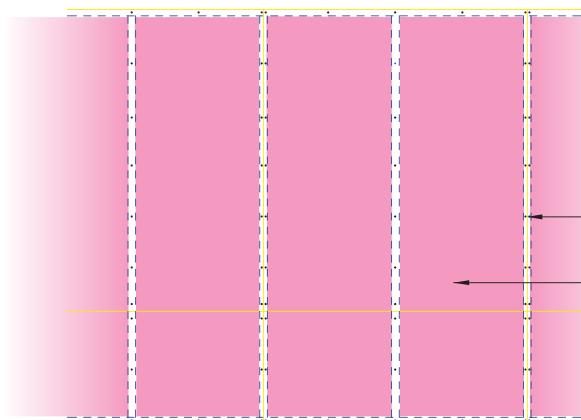
ELEVATION VIEW - FIRST LAYER

Extension of Gyproc® FireLine® board on inner layer

GypFrame® C-Stud spaced at 600mm centres

Drywall screws are fixed at maximum 300mm centres

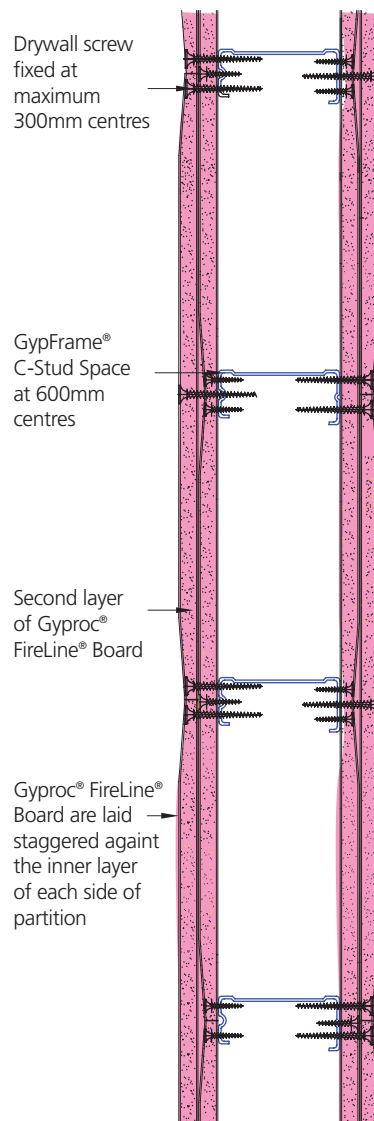
Gyproc® FireLine® board



ELEVATION VIEW - SECOND LAYER

Drywall screws are fixed at maximum 300mm centres

Second layer of Gyproc® FireLine® board laid staggered to first layer



Double layer Gyproc® FireLine® Board Staggered Arrangement

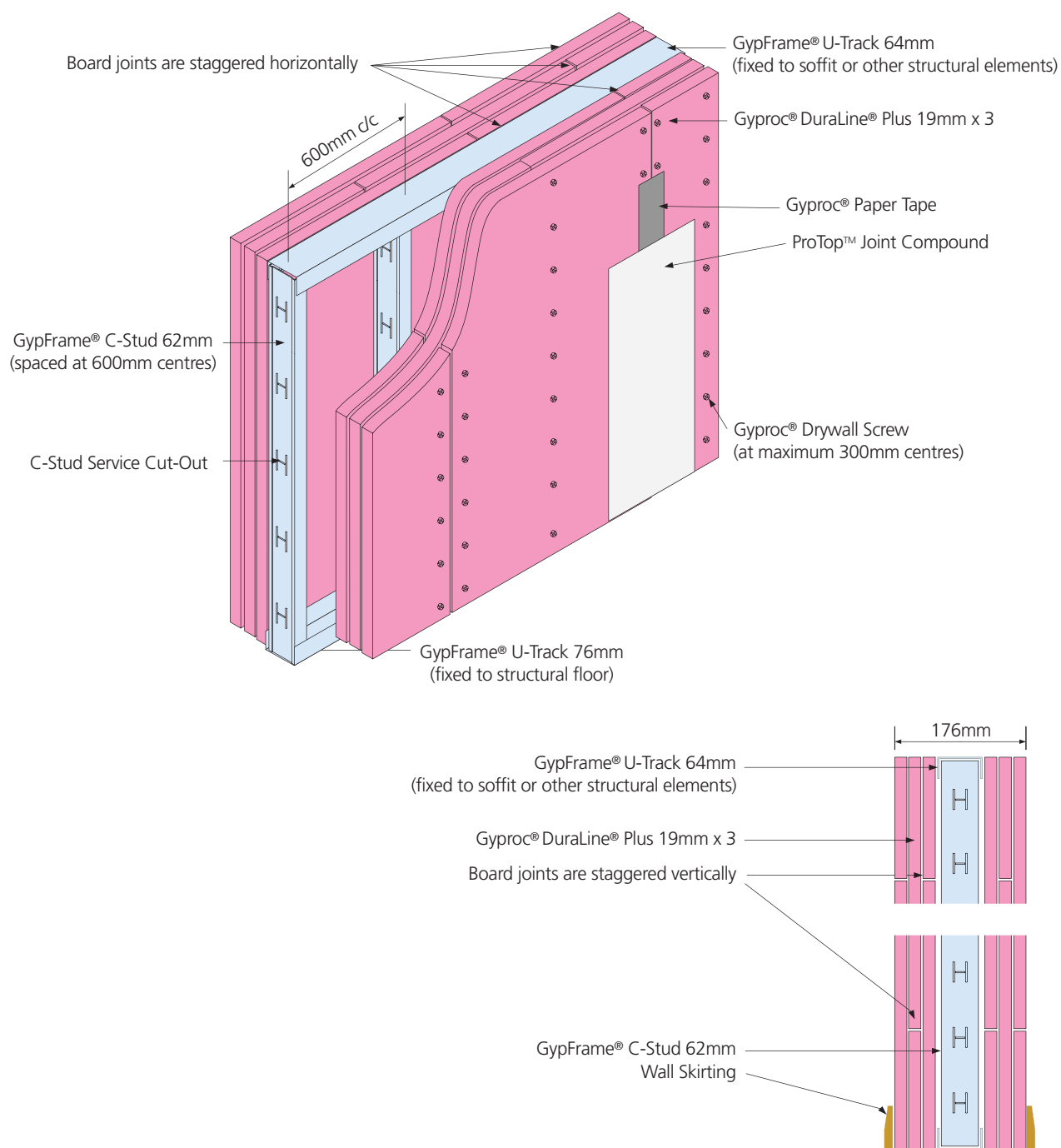
PLAN VIEW

\* For Gyproc® FireLine® board that are in imperial dimensions, e.g. 4' x 8', the C-Stud spacing are at 2'

\* Length drywall screw must be 10mm longer than total fixing thickness

# 4 Hours Fire Rated Partitions

## Specifications

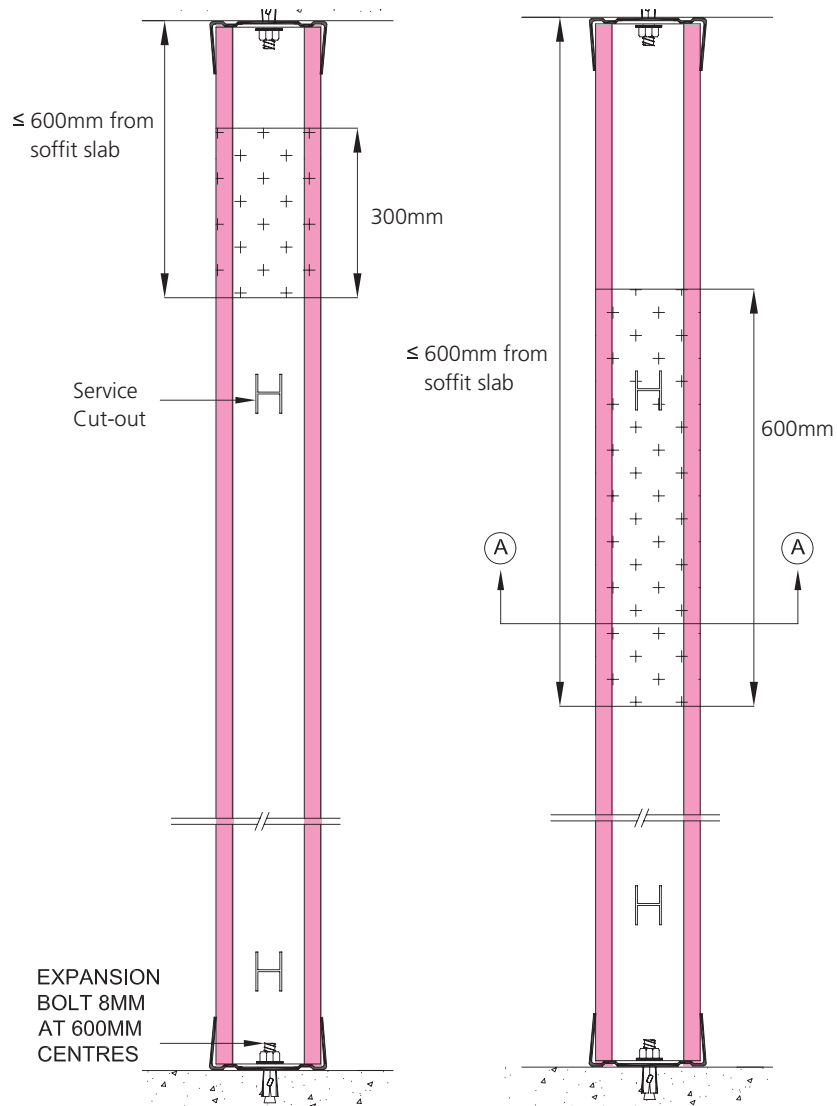


\* Please contact Gyproc® Malaysia on project details for optimal design specifications.

Overall Width	Overall Weight (GypWall® only)	Fire Rating (BS 476 Pt. 22)	Sound Insulation (STC)	Max. Height (L/240 at 200 Pa)	Partition Duty (BS 5234 Pt. 2)
176 ± 2 mm	106 kg/m <sup>2</sup>	4 hour	57	4.4 m	Severe

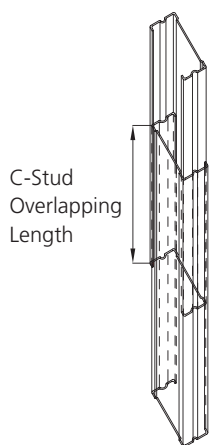


# Installation Method

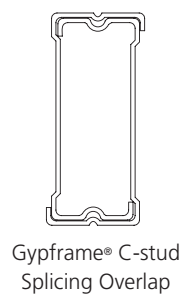


EXTENSION WITH MAXIMUM HEIGHT FROM SUPPORT TO OVERLAP NOT MORE THAN 600MM, OVERLAP STUDS AT 300MM

EXTENSION WITH MAXIMUM HEIGHT FROM SUPPORT TO OVERLAP MORE THAN 600MM, OVERLAP STUDS AT 600MM

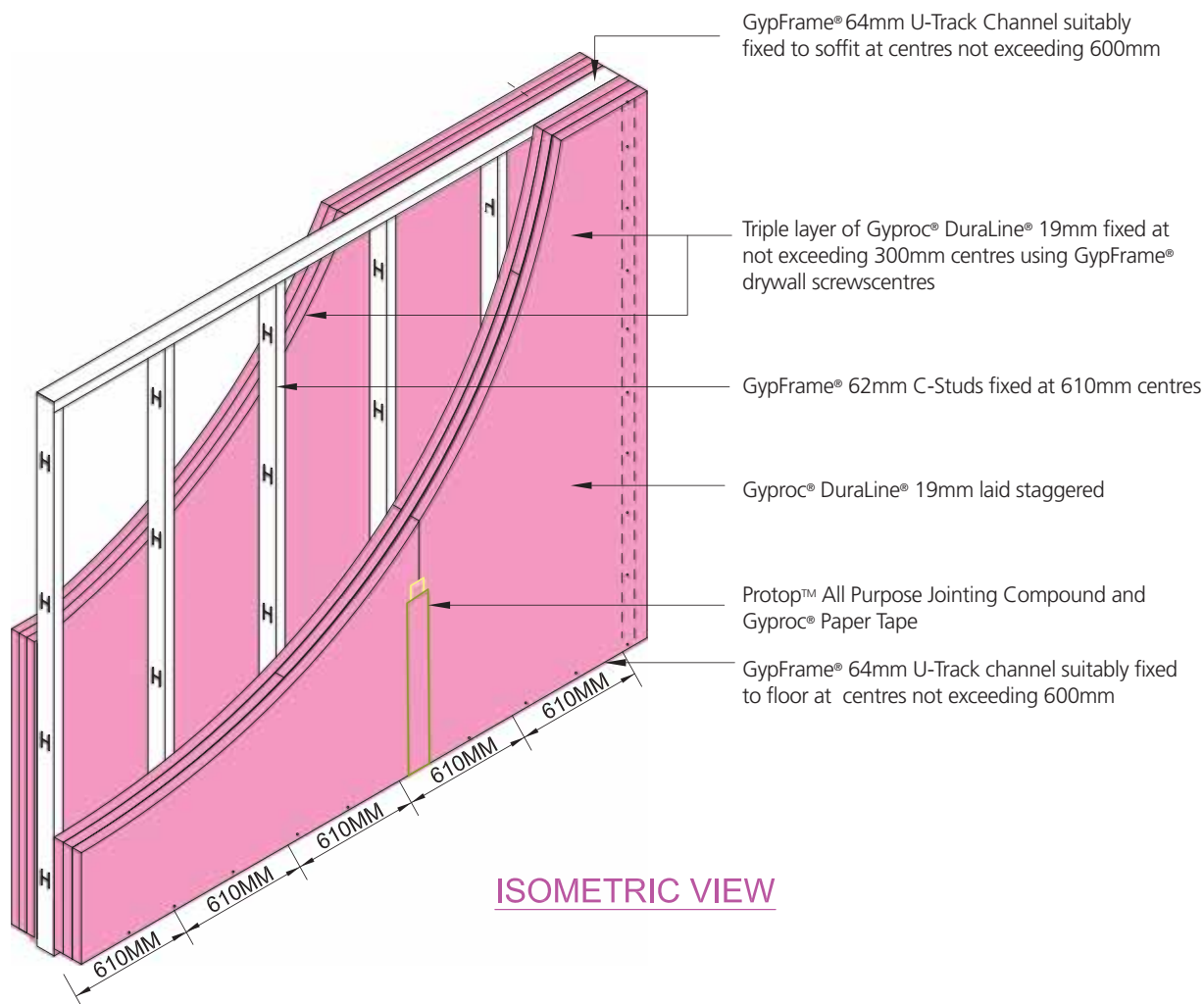


ISOMETRIC VIEW OF C-STUD OVERLAP DETAILS

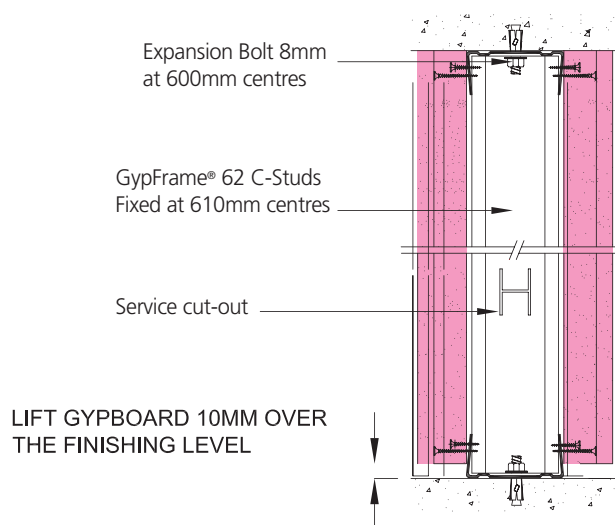


VIEW A-A

## Installation Method



**ISOMETRIC VIEW**



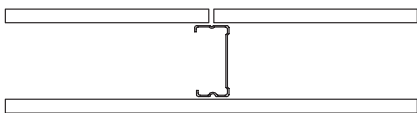
**SECTIONAL VIEW**

# Technical Information Table

The use of Gyproc® FireLine® boards ensures that the fire protection performance meets local and international standards, be it for peace of mind or to meet building regulations.

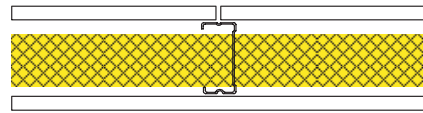
## 1 Hour Fire Rated Partitions

1



Single Layer of Gyproc® FireLine® 15mm on each side of stud

2

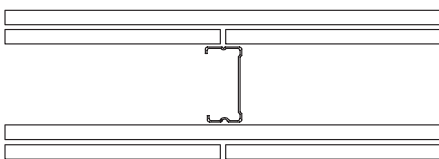


Single Layer of Gyproc® FireLine® 15mm on each side of stud plus 50mm stonewool 40kg/m³ in the cavity

Detail	Stud size (mm)	Overall Thickness (mm)	Approx. Weight (kg/m²)	Max. Height (mm)	Fire Resistance (hour)	Sound Insulation (dB)	Partition Duty (BS 5234 Part 2)
1	49	81	27	2.8	1	36	Heavy
2	49	81	29	2.8	1	42	Heavy
1	62	94	27	3.4	1	37	Heavy
2	62	94	29	3.4	1	44	Heavy
1	74	106	27	3.8	1	37	Heavy
2	74	106	29	3.8	1	44	Heavy
1	92	124	27	4.7	1	40	Heavy
2	92	124	29	4.7	1	43	Heavy

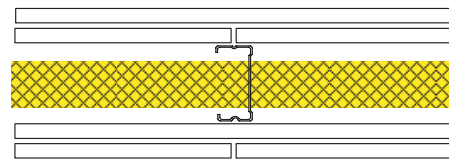
## 2 Hours Fire Rated Partitions

1



Double Layer of Gyproc® FireLine® 15mm on each side of stud

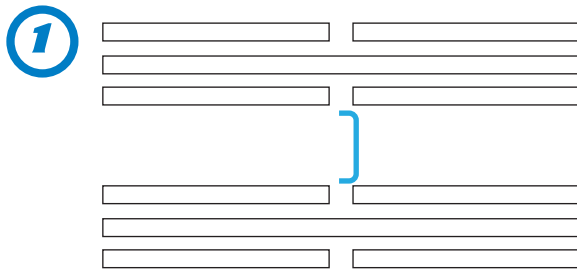
2



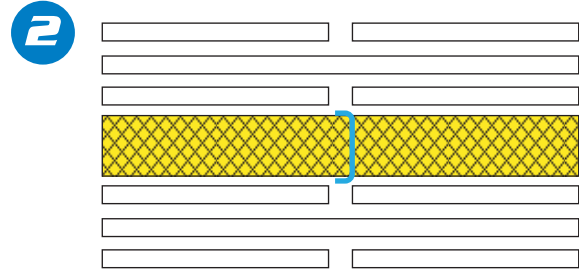
Double Layer of Gyproc® FireLine® 15mm on each side of stud plus 50mm stonewool 40kg/m³ in the cavity

Detail	Stud size (mm)	Overall Thickness (mm)	Approx. Weight (kg/m²)	Max. Height (mm)	Fire Resistance (hour)	Sound Insulation (dB)	Partition Duty (BS 5234 Part 2)
1	49	111	52	3.7	2	45	Severe
2	49	111	54	3.7	2	49	Severe
1	62	124	52	4.4	2	45	Severe
2	62	124	54	4.4	2	49	Severe
1	74	136	52	4.9	2	50	Severe
2	74	136	54	4.9	2	50	Severe
1	92	154	52	5.9	2	48	Severe
2	92	154	54	5.9	2	50	Severe

## 4 Hours Fire Rated Partitions



Triple Layers of Gyproc® DuraLine® PLUS 19mm on each side of the stud



Triple Layers of Gyproc® DuraLine® PLUS 19mm on each side of the stud plus 50mm stonewool 40kg/m<sup>3</sup> in the cavity

Detail	Stud size (mm)	Overall Thickness (mm)	Approx. Weight (kg/m <sup>2</sup> )	Max. Height (mm)	Fire Resistance (hour)	Sound Insulation (dB)	Partition Duty (BS 5234 Part 2)
1	49	163	104	3.7	4	56	Severe
2	49	163	106	3.7	4	64	Severe
1	62	176	104	4.4	4	57	Severe
2	62	176	106	4.4	4	64	Severe
1	74	188	104	4.9	4	58	Severe
2	74	188	106	4.9	4	64	Severe
1	92	206	104	5.9	4	59	Severe
2	92	206	106	5.9	4	64	Severe

\*For more information, please contact Gyproc Malaysia.



***“We aim to be the preferred choice for interior building and lightweight construction systems that provide innovative design solutions”***

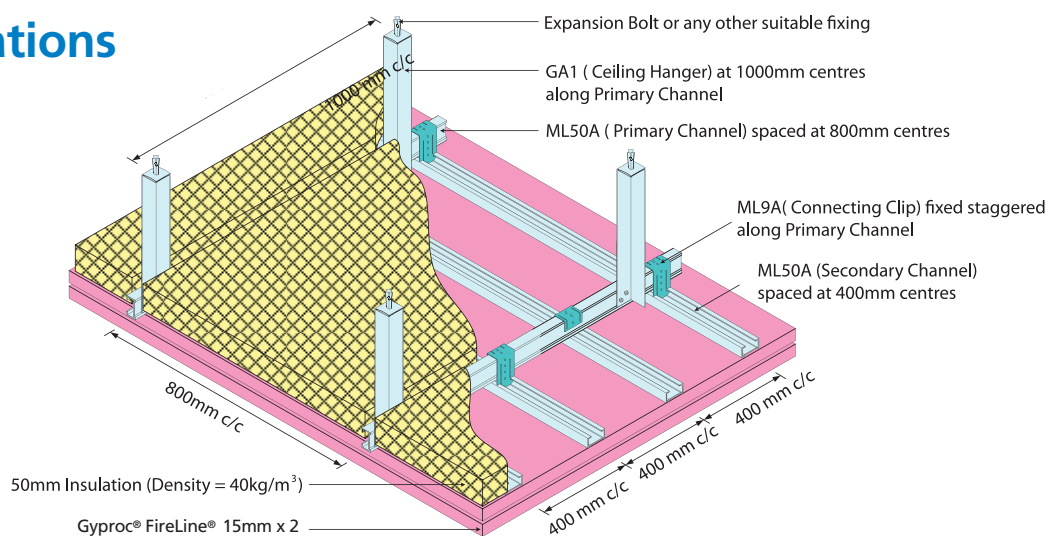
# Gyproc® CasoLine®

## Concealed Fire Rated Ceiling System

Gyproc® CasoLine® Concealed Fire Rated Ceiling System provides up to 1-hour fire protection is commonly used for services above the ceiling.

### 1 Hour Fire Rated Ceiling

#### Specifications



#### Overall Weight (Ceiling System only)

28 kg/m²

#### Maximum Allowable Load

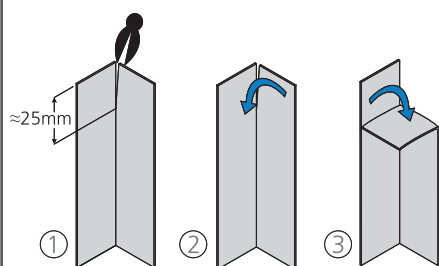
3 kg/m²

#### Bomba Reference No.

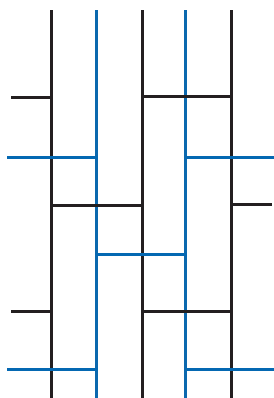
JPBM:BKK/005/19/12/93

\* For Gyproc® FireLine® board that are in imperial dimensions, e.g. 4' x 8', the secondary channel spacings are at 16"

#### Installation Method

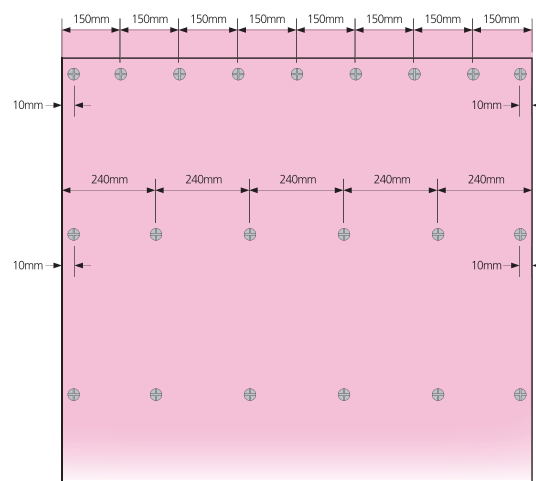


① Cutting and Folding of Steel Angle to form Ceiling Hanger



Boards are laid in Cross Bond  
All inner layer and outer layer joints are laid staggered.

Inner layer  
Outer layer



Boards are fixed at 240mm centres at the centre and 150mm centres at the board ends

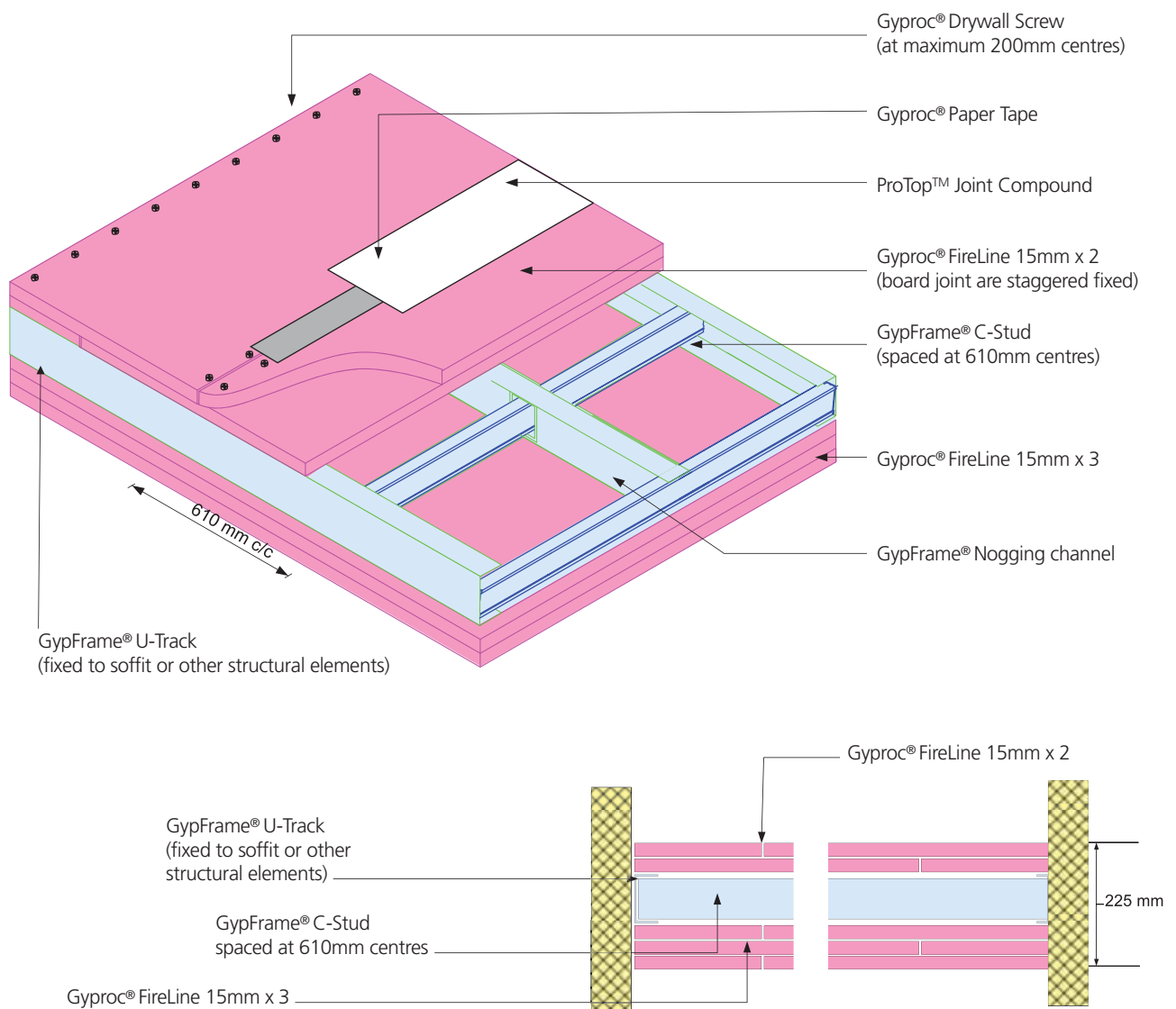


# 2 Hours Self-Supported Fire Rated Ceiling

CasoLine® 2-Hours Self-Supported Fire Rated Ceiling System provides up to 2-hours of top and bottom fire protection

## Specifications

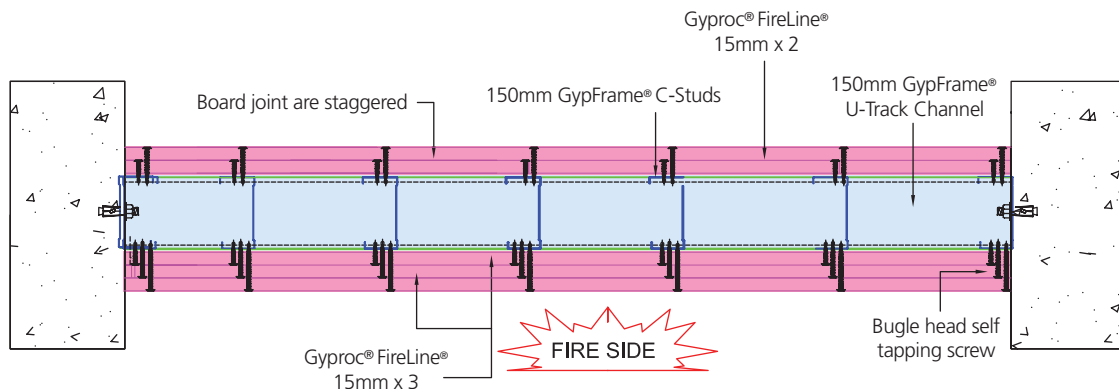
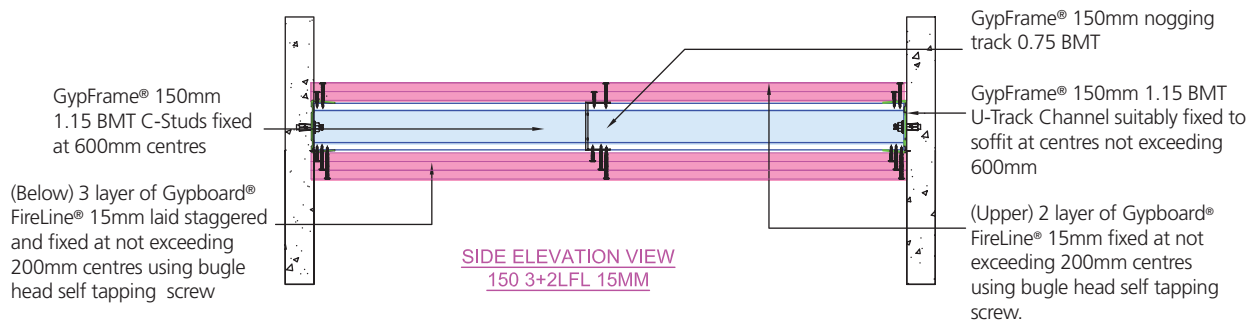
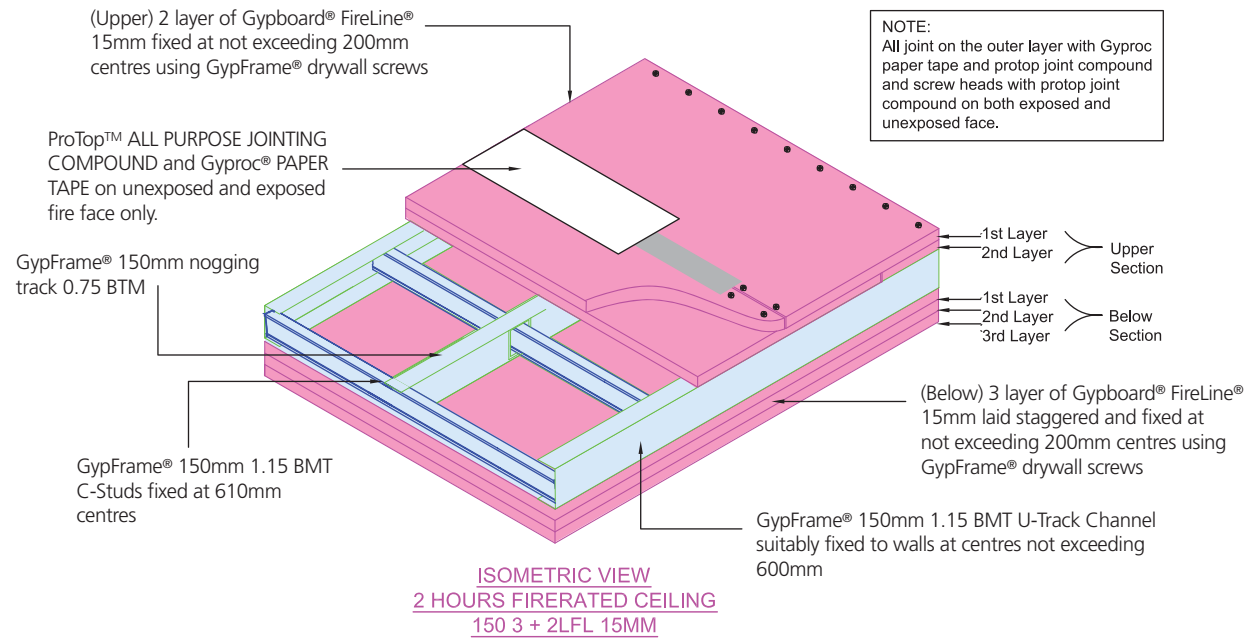
\*For GypFrame® that is more than 0.8mm BMT,  
use Bugle Head Self Tapping screws to fix FireLine® 15mm.



\* Please contact Gyproc® Malaysia on project details for optimal design specifications.

Overall Width	Overall Weight	Fire Rating (BS 476 Pt. 22)	Gypframe Size	Sound Insulation ( $R_w$ )	Max. Span	Fire Performance
225 ± 2 mm	70 kg/m <sup>2</sup>	2 hour	150mm	55 dB	3.10 m	From top & below

# Installation Method



**DETAILS A-A VIEW**

\* Please contact Gyproc® Malaysia on project details for optimal design specifications.

# Gyproc® Fire Rated Partition Requirements

## Issuance of Bomba Certification and C2 Forms

### Terms and Conditions

Full Gyproc® Fire Rated Systems are used

Installation to complete according to Gyproc®'s recommendations

Compliant to Gyproc® Fire Rated Partitions Inspection Procedures

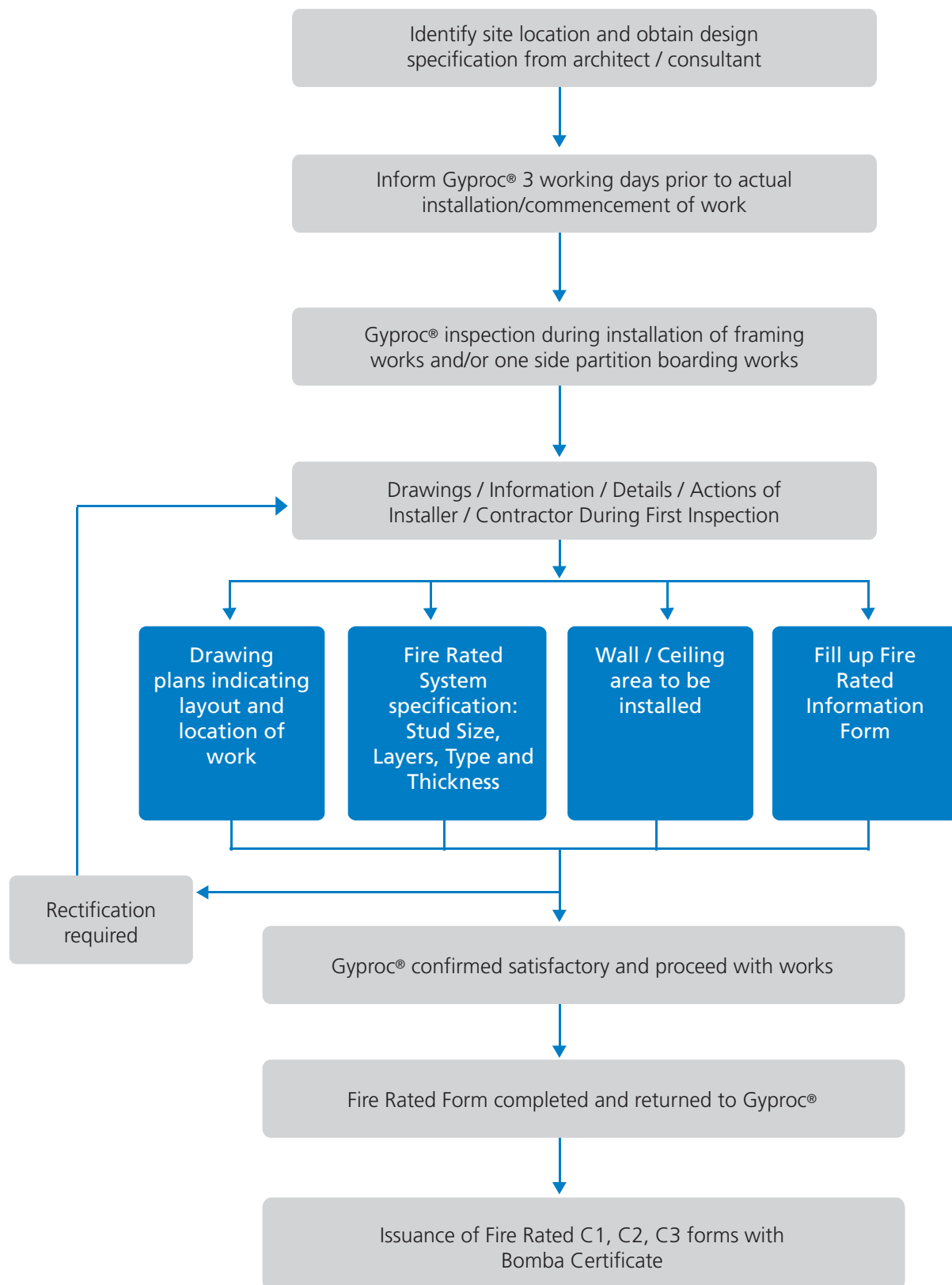
Gyproc® Fire Rated Partitions are based on imperforate construction

Gyproc® issues C2 Form



*"Your Preferred Choice  
for Interior Building  
Systems"*

# Procedures of Fire Rated Partition Inspection



# KeyFacts

- ✓ Satisfies insurance company requirement for enhanced fire performance
- ✓ Satisfies BS 5234 requirements up to and including Severe Duty
- ✓ Minimal wall thickness with optimal fire resistance
- ✓ Achieve 60 minutes and 120 minutes Fire Resistance to BS476 Part 22 Standard
- ✓ Accommodate Services within the Stud Cavity



# Applications

- ✓ Data server rooms (to prevent data lost due to fire)
- ✓ Shopping / Commercial complexes
- ✓ Office spaces
- ✓ Metro terminals
- ✓ Electrical rooms
- ✓ Valuables storage room



# Sectors

- ✓ Office / Commercial
- ✓ Retail
- ✓ Sport and leisure
- ✓ Education
- ✓ Health Care
- ✓ Industrial





# Benefits of Gyproc® System



**Fire-Rated** wall and ceiling systems limit internal fire spread to enable you to exit safely in the event of a fire



Excellent **sound insulation** that provides a pleasant and peaceful environment in your home and commercial spaces  
i.e. To achieve the same level of sound insulation, a GypWall system (with insulation) is approximately 1/10 of the weight of conventional brickwall in total wall build-up



**Robust** walls that are sturdy and durable enabling heavy weight applications of up to 120kg  
i.e. A wall mounted 42" Plasma TV max weighs 44kg and 55" weighs 55kg



**Flexibility** in creating and dividing living spaces according to your needs



**Versatility** of the systems enables use in all internal areas of your home and commercial spaces



**Aesthetic appeal** that result in seamless and crack-free surfaces, allowing ease of decoration via paint, tiles or wallpapers



**Excellent thermal** insulation to help reduce electricity consumption especially in rooms with air conditioning



**Moisture resistant** properties enabling usages in intermittently damp areas such as bathrooms and kitchen



Made from **recyclable and environmental friendly** products. Conforms to ASTM D5 116-06 (determination of organic emissions from indoor materials/products)



FireLine® comprises of gypsum compound mixed with special ingredient in the core, bounded in pink faced paper. It is universally used in Gyproc wall partitioning systems, wall linings and ceiling systems to give increased fire protection.

#### Technical Information

##### Characteristics

Gypsum plasterboard uses special ingredient in the core to improve the cohesive properties of board at high temperatures.

##### Application

Universally used for walls and ceiling system that requires fire performance.

##### Thickness

- 15mm

##### Nominal Sizes

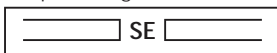
- 1200mm x 2400mm • 1220mm x 2440mm (4' x 8')

##### Standards

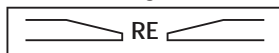
- ASTM C1396 • BS EN 520 • BS 476 Part 4 • BS 476 Part 22

##### Edge Type

Square Edge, SE



Recessed Edge, RE



For other specs, please contact our Customer Service department

##### Certified by

- Jabatan BOMBA dan Penyelamat Malaysia • TÜV SÜD PSB Corp Pte Ltd

##### Fire Resistance

- Provides up to 120 minutes fire resistance in accordance with BS 476 Part 22 (FireLine® in GypWall® system)
- Classify as non-combustible material when tested in accordance with BS 476 Part 4

##### Moisture Resistance

- Available with water repellent additives in the core – FireLine® MR
- Used in GypWall® system where both fire protection and moisture resistance are required

##### Thermal Insulation

- Thermal resistance value (R) between 0.06 - 0.1 sq m K/W (depending on thickness)
- Low thermal convection (U) between 10 – 16.7K/W (depending on thickness)

##### Workability

- Lightweight • Quick and easy installation

##### Health and Environmental Friendly

- Recyclable material
- Does not produce toxic fumes or hazardous substance that are harmful to health

Image provided is for reference only, kindly obtain confirmation from Gyproc's Technical Support Personnel before submission of specification for any project.

#### Saint-Gobain Malaysia Sdn. Bhd. (636775-T)

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