SPEEDPANEL®

CONCRETE CONNECTIONS

SPEEDPANEL®

Edition

2

1st Release

COVER PHOTO

Project: Australia 108, Melbourne
Architects: Fender Katsalidis Architects
Developer: World Class Land Pte Ltd (subsidiary of Aspial Corporation Ltd)
Builder: Multiplex

Speedpanel® features extensively throughout this project, speeding up program time via its use within:

- **Fire stair walls**
- **Plant room walls**
- **Pressurised shafts**
- **Risers**
- **Electrical cupboards**

SPEEDPANEL® CONCRETE CONNECTIONS
Inner cover image courtesy of Fender Katsalidis Architects & Multiplex.

421 Dorset Rd, Bayswater, VIC 3153 | +61 3 9115 6666

2nd Edition; Published October 2022

Contents

IMPORTANT INFORMATION & DISCLAIMER

THIS BROCHURE AND SPEEDPANEL® SYSTEMS

The information contained within this brochure and any reports, specifications, installation guides and other supplementary documents and information referred to in this marketing collateral ("Supplementary material") have been prepared by or on behalf of Speedpanel® systems Pty Ltd ("us", "we" or "our") to assist the user of this brochure ("you" or "your") to design and construct Speedpanel® systems only in general (not project or site specific) applications.

Before designing and/or installing Speedpanel® systems, you must engage, or seek advice from suitably qualified persons (such as an engineer, architect and/or other design consultant) to, amongst other things:

- Review all relevant content in this brochure, the supplementary material and all other product information, installation guides and data available from us upon request;
- Assess whether or not Speedpanel® systems are appropriate and suitable for your proposed design and/or construction project;
- If appropriate & suitable, prepare project specific information and documentation for the design and construction of Speedpanel® systems for your proposed design and/or construction project;
- Ensure that Speedpanel® products separately and collectively, when used in Speedpanel® systems, meet the requirements of any building laws, rules, regulations, codes, standards, orders or declarations applicable in the state, territory or location in which Speedpanel® systems are to be designed and constructed; and
- Ensure that the configuration, design and/or details of the means of constructing & interfacing Speedpanel® systems with other building members and/or structures remain 'serviceable' (structurally sound) under ambient conditions and under different loads that Speedpanel® systems may be subjected to in your proposed design and/or construction project.

Unless stated otherwise, the limitations, requirements and design details in this brochure and the supplementary material must be precisely followed and implemented. Failure to do so could reduce the expected Fire Resistance Level (FRL) and performance of Speedpanel® systems.

PERFORMANCE CRITERIA AND QR CODES

Speedpanel® systems may be used to provide passive fire protection. In order to satisfy the requirements of AS1530.4, you must ensure that Speedpanel® systems are supported by elements having at least the same FRL as those specific in AS1530.4. Supporting elements having a lesser FRL may cause the consequential collapse of Speedpanel® systems.

Specific fire performance criteria for various Speedpanel® systems is contained in the reports which can be accessed via the QR Codes referred to in this brochure. Other specific performance criteria for, amongst others; acoustics, wind loading, pressurisation, and deflection, can be obtained from or discussed with us by contacting our office on +61 3 9115 6666.

Whilst we make all reasonable efforts to ensure that the QR codes in marketing literature and the supplementary material remain current and up to date, we cannot guarantee that they will always be up to date. Please contact us on +61 3 9115 6666 to ensure you are working from the latest information and to obtain general advice on whether or not Speedpanel® systems may be used in your proposed design and/or construction project.

CARE, SKILL AND ATTENTION REQUIRED

The performance criteria, ratings and specifications for various Speedpanel® systems have been developed and certified by independent testing bodies. Products, components or fixings that are not specifically sold by us must be certified for use within Speedpanel® systems by an independent testing body prior to their use within Speedpanel® systems or otherwise approved by us. Use of products, components or fixings within Speedpanel® systems that are not Speedpanel® products or certified by independent testing bodies or approved by us will void warranties on Speedpanel® systems. We disclaim all liability for any loss and damage suffered by you from your use of product's, components or fixings within Speedpanel® systems that are not Speedpanel® products or certified by independent testing bodies or approved by us. It is critical that you carefully consider the details of your design, construction and workmanship and carry out the same with due care, skill and diligence. Failure to do so could result in the performance of the Speedpanel® systems being significantly compromised and/or may result in failure of Speedpanel® systems in your proposed design and/or construction project.

SPECIFICATION

The dimensions, weights and other specifications, components and fixings detailed within this brochure and the supplementary material are indicative and intended to provide general information for the design and construction of Speedpanel® systems only in general (not project or site specific) applications, examples of which are contained within this brochure.

All Speedpanel® systems are subject to building standards and tolerances. We accept no responsibility or liability for any loss or damage arising out of any design or construction of Speedpanel® systems by you that does not incorporate these standards and tolerances or when using Speedpanel® products. For information on our standards and tolerances please contact our office on +61 3 9115 6666.

MATERIAL SAFETY DATA SHEET

A Material Safety Data Sheet (MSDS) is available on request from us or from our website: **www.speedpanel.com.au**
The MSDS provides information on the properties and potential hazards of Speedpanel®, how to use Speedpanel® safely and what to do if there is an emergency. The MSDS should be reviewed thoroughly by you and/or suitably qualified persons (such as an engineer, architect and/or other consultant) before using, designing and/or constructing Speedpanel® systems.

LIMITATIONS

The recommended maximum vertical span for Speedpanel® systems designed for certain FRL's is contained within this brochure and supplementary material. Vertical spans of greater height than those recommended will need to be subjected to specific and careful engineering design, for which we cannot and will not accept responsibility. Adhesive fixings cannot replace mechanical fasteners in such Speedpanel® systems. For information on maximum vertical spans and fixings, please contact our office on +61 3 9115 6666.

You must not install Speedpanel® systems above the span and height limits stated in this brochure, or the supplementary material.

External wall system limitations for design serviceability Limit State wind pressure +-2.5 kPa. Please contact us on +61 9115 6666 if your requirements fall outside of this range.

TRANSPORT, HANDLING AND STORAGE

Generally, Speedpanel® products are delivered to your building or other site on long trailers and articulated trucks, and access to and on your site must be adequate to accommodate these types of vehicles. Unloading and site storage or cranage of Speedpanel® products onto site is your responsibility and suitable arrangements should be made by you prior to delivery. You must handle Speedpanel® products carefully prior to their installation. Avoid knocks, bumps and scratches which may lead to maintenance issues. Keep Speedpanel® products completely dry prior to installation.

Speedpanel® products are packed and reasonably protected against damage during delivery; but care must be exercised by you during unloading. Speedpanel® products must be adequately supported during unloading, particularly long lengths of the Speedpanel® products. Where packs are broken or Speedpanel® products are lifted by hand, care must be taken not to slide or drag them or scrape their finished surfaces.

Where it is necessary for Speedpanel® products to be stored on a building site they should be placed away from building operations, if possible, in the order in which they will be fixed and/or used in construction. If stored on a building site, it is recommended to store Speedpanel® products flat or in their pallets. Storage should provide a firm dry base and be protected from the weather, accidental damage and moisture. The products should be stored on bearers placed not more than 2000mm apart. Stack heights must not exceed 8 pallets. Speedpanel® products should be stored in clean, dry and ventilated conditions. Adequate cover should be provided and water should not be allowed to lie on the surfaces of the products for extended periods as this can cause staining and degradation of the surface coatings.

STRIPPABLE FILM

Speedpanel® products are typically manufactured with a protective plastic film to provide defence against staining and cosmetic damage during manufacturing, handling and transportation. In all applications the plastic film is required to be removed prior to installation.

Failure to remove the plastic film may lead to difficulties with its removal.

CLEANING

At the completion of construction of Speedpanel® systems and at the end of each day's work, it is essential that all completed areas be thoroughly cleaned of all swarf, rivet stems, nails, drillings, screws and the like normally associated with the installation of metal panels. Hot swarf should not be allowed to contact any pre-painted sheet material, including pre-painted Speedpanel® products. Any grinding, welding or drilling carried out above the wall level should be done with the panels appropriately covered to avoid swarf contact. Failure to do so may result in unsightly staining of the surface as the metal may rust, oxidise or cause other damage.

INSTALLATION

Specific design advice should be sought from us if you intend to subject Speedpanel® systems to loads other than our wind loading limitations. You must also ensure that the connection between each Speedpanel® product is properly made and that materials and steps used to connect Speedpanel® systems to structures are in accordance with relevant and current; certifications, installation literature, drawings and or material. If you are uncertain about how to properly install Speedpanel® systems , or what the current and correct version of installation documents are relevant to your specific application, please contact us on +61 3 9115 6666.

DO NOT SUBSTITUTE ANY COMPONENT

Substitution of any Speedpanel® products, components or fixings within any Speedpanel® systems specified in this brochure and the supplementary material, may compromise the performance and safety of Speedpanel® systems. Please contact us immediately if you are unsure of which Speedpanel® products, components or fixings to use within any Speedpanel® systems.

Without limiting the above, we disclaim all liability or responsibility for any loss or damage arising from or attributable to your use of incorrect Speedpanel® products, components and/or fixings.

EXTERNAL WALL APPLICATIONS

Before designing and/or installing Speedpanel in external wall applications, you must engage, or seek advice from a suitably qualified person(s), including but not limited to; architects, façade consultants, engineer(s) and others, to ensure suitability, as well as account for specific design considerations unique to the proposed application. Failure to do so could result in the performance of the Speedpanel® systems being significantly compromised and/or may result in failure of Speedpanel® systems in your proposed design and/or construction.

Speedpanel accept no responsibility or liability for any loss or damage arising out of any design or construction of Speedpanel® systems, which we have deemed not designed and/or installed correctly.

SEALANTS

Speedpanel systems incorporate various types of sealants. These sealants are often condition specific e.g. fire rating, acoustics, air pressurisation or weather resistance and are also application specific e.g. service penetrations. When choosing sealants, please refer to the relevant certifications to ensure that you are selecting the correct sealant for the application.

Failure to select the correct sealant may result in a lack of system performance and be in breach of the relevant certification. For further information please contact our office on +61 3 9115 6666.

MAINTENANCE

Like all cladding products, Speedpanel® products are subject to the cumulative effects of weather, dust and other deposits. You must implement maintenance regimes in accordance with maintenance recommendations relative to the environment in which Speedpanel® systems are used. For information on maintenance regimes, please contact our office on +61 3 9115 6666.

WARRANTY

Our goods come with warranties that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for defective Speedpanel® systems and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if Speedpanel® products are not of acceptable quality.

Without limiting the previous paragraph, to the extent permissible at law, we supply Speedpanel® products and warrant that they will be free from defects in material and workmanship. We will (at our own discretion) replace and/or repair any Speedpanel® products found to be defective, provided such products have been stored, installed and maintained strictly in accordance with the requirements and recommendations set out in our current literature, installation guides, supplementary material and or otherwise specified by us. Please contact us on +61 3 9115 6666. This warranty is in addition to your other statutory rights. We cannot be held responsible for deterioration to galvanised or colour steel Speedpanel® products caused by poor handling or storage practices after such products have arrived at your building or other site.

DISCLAIMER

This brochure and the supplementary material are provided to you as a general guide only and should not be relied upon by you without additional advice from a suitably qualified person(s).

We do not and will not, under any circumstances, warrant, guarantee or represent, and we disclaim any responsibility or liability for the accuracy, completeness or efficacy of the information contained in this brochure or the supplementary material. You must make your own independent assessments, investigations, inspections and enquiries with respect to the matters the subject of this brochure content or the supplementary material, and your proposed design and/or construction of Speedpanel® systems.

We reserve the right, at any time, at our own discretion and without notice, to discontinue or change the features, designs, materials, colours and other specifications of any Speedpanel® systems and to either permanently or temporarily withdraw any such systems or products from sale without incurring any liability.

This brochure and the supplementary material must not be used in preference to detailed technical advice from suitably qualified persons, especially but not limited to, where your design and construction differs from the types of design and construction described within this brochure and the supplementary material.

To the best of our knowledge, all information in this brochure and the supplementary material is correct as at the date of preparation of such information. Whilst every effort has been made to ensure the information contained within this brochure and the supplementary material is accurate and correct, to the extent permissible at law, no responsibility or liability, in part or whole by us or the authors, editors or publishers of those documents will be accepted for any reliance thereon, nor from any misuse, misreading or deviation from the requirements and recommendations within those documents.

PROTECTION OF STRUCTURAL ELEMENTS

Speedpanel® is a non-load bearing product that requires structural elements to support it (or brace it) under ambient and fire conditions. These structural elements are required to be engineered by others to ensure the structure can support the load(s) that are imposed by Speedpanel® as well as continue to support other live and dead loads, if any.

As such, Speedpanel® typically comprises of the following components: Panels, C-tracks/J-tracks/angles, fire-rated sealants, fixings and flashings.

Based on 3rd party test evidence and fire engineered assessments by accredited laboratories , Speedpanel® can provide advice on how to connect to structural elements and distance between fixings, however these structural elements are to be protected to the same FRL as the Speedpanel® wall they are supporting/bracing. If the Speedpanel® wall is required to provide fire protection from:

- One direction only; as long as the structural elements supporting (and/or bracing) the Speedpanel® wall are installed on the opposite side of the Speedpanel® to the side of the anticipated fire source - then the structure will be protected to the same FRL as that of the Speedpanel® wall; or
- Either direction; then the structural elements are to be:
    1. Installed on one side of the wall (or between wall sections) and protected using 3rd party passive fire products (e.g. fire-rated plasterboard, calcium silicate board, Promatect, Vermiculite spray, etc.) installed to the manufacturer's and project fire engineer's specifications; or
    2. Installed on BOTH sides of the Speedpanel® wall and fixed with sacrificial connections to allow the wall to break free from the burning structure on the fire side (preventing the collapse of the wall).

LIABILITY

To the extent permissible at law and without limiting any other right or remedy we may have, we accept no liability for any loss or damage arising if any Speedpanel® systems are not designed and constructed strictly in accordance with the instructions contained in this brochure and/or the supplementary material or as otherwise instructed by us.

IS THIS PUBLICATION CURRENT?

This brochure and the supplementary material may be superseded by new versions. We accept no liability for reliance upon publications that have been superseded. If you are unsure of whether or not this brochure or the supplementary material are current publications, please call us on +61 3 9115 6666 to confirm.

MANUAL HANDLING

In line with the requirements of Occupational Health, Safety and Welfare Regulations, employers and employees must all work together to manage manual handling risks on site.

Proper assessment of all risks and hazards must be conducted prior to any manual or assisted handling of Speedpanel products. Assessments should identify tasks involved in the successful installation of Speedpanel, considering all movements and their effects on the body. These need to be considered in conjunction with the specifics of the Speedpanel being installed, factoring in length, weight, access and the environment. Careful consideration must also be placed on appropriate Personal Protective Equipment (PPE) and a safe Method Work Statement (SWMS) may need to be completed.

For further information please speak with your site's OHS representative or contact the Work Safe / Safe Work regulatory body in your state.

SCAN FOR MORE INFORMATION

GLOSSARY

Acoustic: Refers to the Speedpanel® ability to control sound insulation.

BMT (Base Metal Thickness): BMT relates to the steel substrate of our product not including any galvanised or colour coatings which may be applied. BMT is specified due to our steel being the component that provides structural strength, rigidity and other mechanical properties.

Bottom Track: Refers to the standard C-track. Located at the bottom of the wall to provide the space for panels to be fixed into position.

Ctr: Ctr is an adjustment factor which is used to account for low frequency noise - typically the biggest problem with sound insulation.

DnT,w & DnT,w + Ctr Measured on-site: These values are the equivalent of Rw and Rw + Ctr, but measured on-site. Rw is the value measured in an acoustic laboratory, while DnT,w is measured onsite.

Female end: The concave (or 'Groove') interlocking edge of the Speedpanel®.

Fire compartment: An area (corridor/stair/etc.) that is protected from fire for a period of time.

Fire side: The side of the wall/ceiling that is exposed to the fire.

FRL: FRL indicates the term 'Fire Resistance Level' which is the technical description of the level of fire protection of a particular structure. The FRL of a member or structure is summarised as a series of three numbers representing the nominal grading period in minutes;

1. Structural Adequacy is a measure of the length of time in minutes before the test item fails under load when subjected to fire.
2. Integrity is a measure of the cracks or openings appearing in the test item that permit the escape of hot flames or gases.
3. Insulation is the measure of the temperature on the side of the test item not exposed to fire and it's rise above the limit stated specified under AS1530.4.

Head track: Refers to the standard C-track located at the top of the wall to provide the space for panels to be fixed into position.

Head track protection: An element (fire rated plasterboard or metal flashing) for further protection to the Head track.

Horizontal orientation: Horizontally orientated panels.

Independent Testing Body: Means a laboratory facility or other testing body that has an accredited quality assurance program approved by the National Association of Testing Authorities, Australia (NATA) or other authority.

Male end: The convex (or 'Tongue') interlocking edge of the Speedpanel®.

Notched: A special technique to cut and join C-tracks to form corners. Refer to "page 94" in general penetrations for more information.

Panel joint: The location where the female end and male end of the panels meet each other and are fixed.

Pressurised: A technique to keep the air pressure static in specific areas of the application.

Rw: The Weighted Sound Reduction Index (Rw) is a number used to rate the effectiveness of a soundproofing system or material.

Rw + Ctr: Rw + Ctr is equal to Rw with the addition of a low frequency sound correction.

Ripped panel: A panel that is cut lengthways from female end or male end. (See pages 55 or 73 for illustrations).

Sealant: A product used to block the passage of fire, heath, smoke, weather, sound through the surface of joints or openings in panels. Speedpanel systems incorporate various types of sealants. Sealants are often condition specific e.g. fire rating, acoustics, air pressurisation or weather resistance and are also application specific e.g. service penetrations. (See page 47 for further details).

Side track: Refers to the standard C-track. Located at the start or finishing edge of the wall where the panels are fixed into position.

Speedpanel®, Speedpanel® wall, Speedpanel® incline wall, Speedpanel® panel, Speedpanel® ceiling, Speedpanel® fire rated bulkhead, Speedpanel® joint, wall, incline wall, panel, ceiling, fire rated bulkhead or joint: Each mean the relevant Speedpanel® Product or part of the Speedpanel® Product or Speedpanel® System referred to in this installation guide (as the context requires).

Speedpanel® products: Products manufactured by us and any other products that have been tested and certified by an Independent Testing Body, for use within Speedpanel® systems.

Speedpanel® systems: Any system made up of Speedpanel® Products, examples of which are contained within this guide, and are not load bearing and do not incorporate or include any specific performance criteria, unless expressly stated or referred to in this guide or otherwise specified by us.

Structure: Refers to any element in the building that carries load (eg; floor slab/load bearing wall/etc.)

Wall height: Refers to the height of the Speedpanel® wall from the bottom of the wall to the top of the wall.

Vertical orientation: Vertically orientated panels.

In this installation guide, unless the context otherwise requires, the singular includes the plural and the plural includes the singular.

01

INTRODUCTION

1.1

WHAT IS IMPORTANT TO US?

SERVICE.

SIMPLICITY.

QUALITY.

INGENUITY.

About Speedpanel®

We are an Australian owned and operated company which manufactures and markets cutting edge fire and acoustic rated wall systems.

Invented in Australia; the light weight composition, ease of installation and superior fire and acoustic performance of Speedpanel® has seen its broad acceptance throughout the building industry.

The innovative "click" together technology makes Speedpanel® systems a fast and easy method to construct walls in various building applications. Our systems replace traditional methods of partition systems because they save time and eliminate unnecessary costs.

Our team has many years of experience in the construction industry. We combine an eye for innovation with practical real world knowledge of the realities faced by builders, contractors, architects and engineers. We work proactively to develop the right solution for your project and are determined to make it a success.

Product development is one of our key passions. Our systems are tested at independent laboratories as they would be constructed on sites. You can rest easy knowing that your building is safe and sound.

We are proud of our green initiatives and dedication to sustainable practices. Whether it be creating products using recycled components, developing construction systems that reduce wastage, or refining manufacturing practices; we maintain an eco-friendly ethos.

At Speedpanel® our purpose is simple; combine high end service with practical solutions and certified quality systems that will add value to your project.

SUSTAINABILITY...

- Speedpanel® components are 100% recyclable.
- Speedpanel® is committed to eco-friendly practices.
- Speedpanel® is made using 29.5% recycled materials.
- Speedpanel® systems can be dismantled and reused several times.
- Speedpanel® can have 100 years of durability in certain conditions.

WHAT IS IMPORTANT TO YOU?


TIME
COST
PERFORMANCE

HOW WE ADD VALUE

FIRE RATED
Speedpanel® systems are tested, certified & may provide up to a -/240/240 FRL.

ACOUSTIC RATING
Increased Acoustic performance. Tested & certified systems for sound peace of mind.
Ratings from Rw 32 to Rw 80.

LIGHTWEIGHT
Speedpanel® product range begins at 7.4kg/lm.

SUSTAINABLE
Made from 29.5% recycled materials, can be dismantled, reused and is 100% recyclable. Also, Speedpanel® can last up to 100 years.

TONGUE & GROOVE
"Click" together simplicity makes for rapid construction & easy installation.

CUT TO LENGTH
All panels can be cut to length in pack lots leaving less wastage and labour on site.

EASY TO INSTALL
Speedpanel® can be easily installed by carpenters, plasterers or blocklayers. No specialist installers are required.

ZERO WET TRADES
Speedpanel® systems will remove wet trades from the site to allow a smoother construction process.

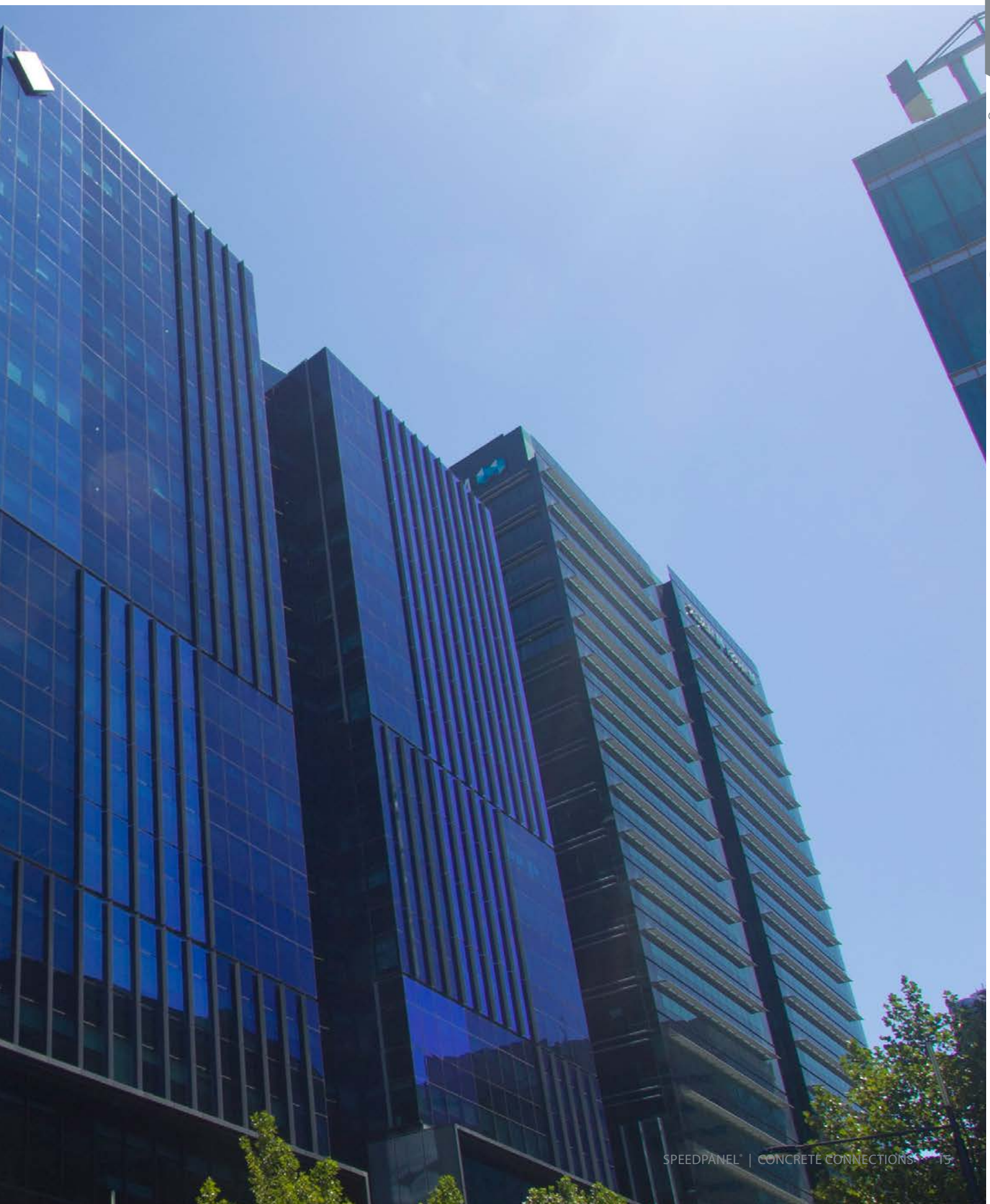
WEATHER RESISTANT
When installed, Speedpanel® systems are not adversely affected by weather.

CYCLONIC TESTED
Speedpanel® is now cyclonic tested in accordance with AS/NZS 1170.2.

SPAN & HEIGHT
Unrivalled span and height performance, requiring significantly less structural support than other non load bearing wall systems.

GREATER BUILD EFFICIENCIES
Speedpanel® systems can drastically speed up construction program, saving both time and money.

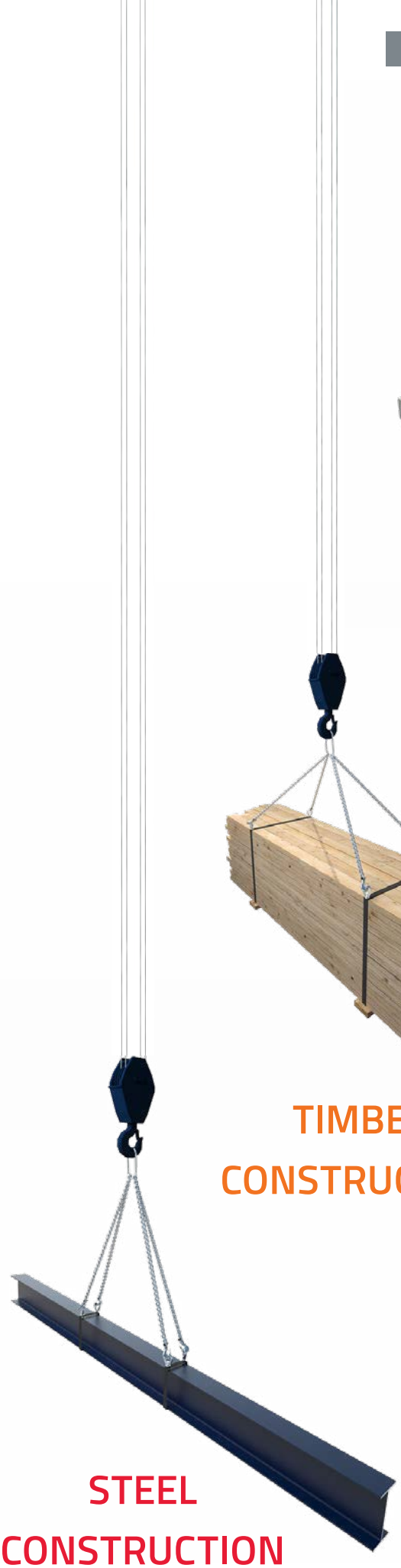
TO YOUR PROJECT...



1.2 SPEEDPANEL® SYSTEM APPLICATIONS

CONCRETE CONSTRUCTION

TIMBER CONSTRUCTION



STEEL CONSTRUCTION

CONNECTIONS TO CONCRETE CONSTRUCTION

FEATURED IN THIS BROCHURE

SHAFTS & RISERS

SCISSOR STAIRS

CAR PARK WALLS

EXTERNAL WALL SYSTEMS

CORRIDORS

INTERTENANCY WALLS

MULTI-RESIDENTIAL TIMBER, INDUSTRIAL & CINEMA STEEL CONSTRUCTION

FEATURED IN OTHER LITERATURE

BOUNDARY WALLS

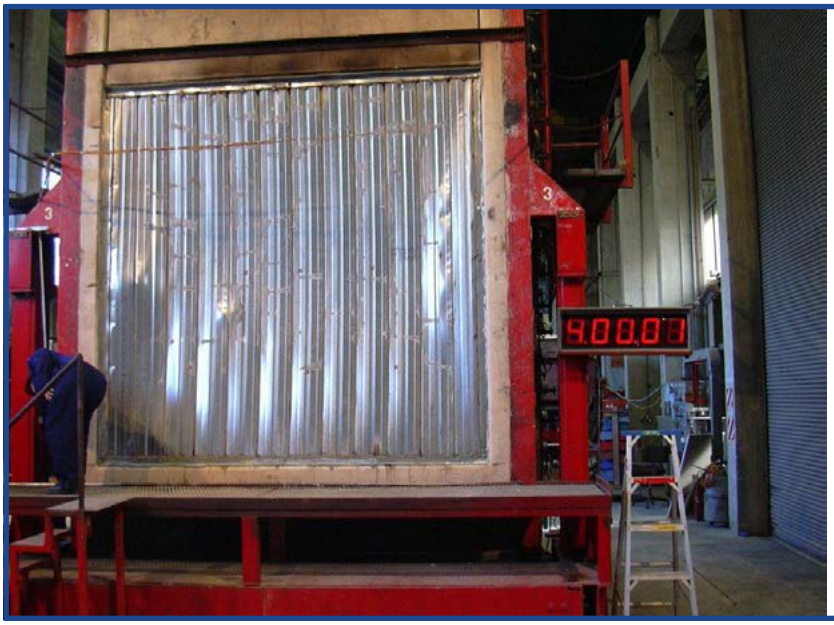
PARTY WALLS & CORRIDOR WALLS

CINEMAS / THEATERS & STUDIO WALLS

BOUNDARY & SEPARATION WALLS IN FACTORIES & WAREHOUSES

FOR MORE INFORMATION ON THE MULTI-RESIDENTIAL TIMBER, INDUSTRIAL & CINEMA STEEL APPLICATIONS CONTACT US ON +61 3 9115 6666

SPEEDPANEL® PERFORMANCE
TESTED, CERTIFIED & PROVEN



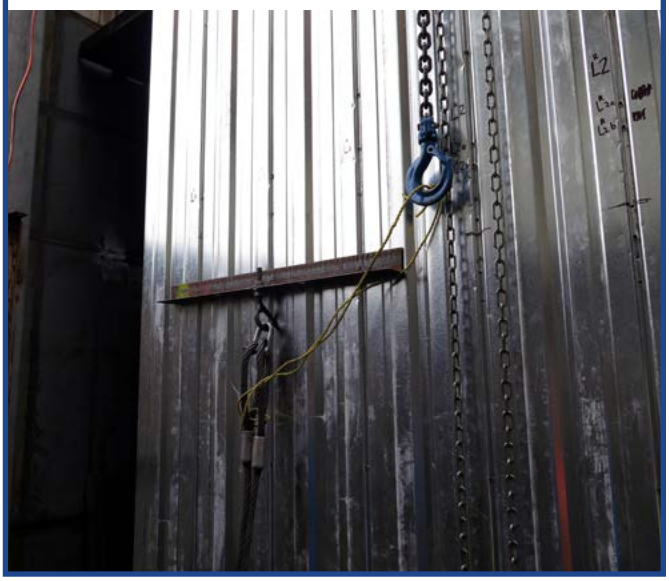
SPEEDPANEL® | FIRE TESTING |

Speedpanel® systems are tested across various NATA approved laboratories in different everyday building scenarios to ensure the system performance will never be compromised.

Picture on left tested by BRANZ: 78mm Speedpanel® in furnace at 4 hours.

SPEEDPANEL® | SEISMIC TESTING |

51mm Speedpanel® being tested at VIPAC Engineers & Scientists LTD for seismic requirements.



SPEEDPANEL® | ACOUSTIC TESTING |

Speedpanel® systems are tested and certified for acoustic requirements.

SPEEDPANEL® - 2 HOUR TEST

A combination of vertical 78mm Speedpanel® supported by horizontal 78mm Speedpanel® at Exova Warringtonfire Laboratory in Dandenong, Victoria.

Non-fire side after 2 hours


Fire side after 2 hours

SPEEDPANEL® - 4 HOUR TEST

Two single fire-rated doors being tested in a 78mm Speedpanel® wall at BRANZ laboratory, New Zealand.

Non-fire side after 4 hours


Fire side after 4 hours

SHAFT WALLS

WHY USE SPEEDPANEL®?

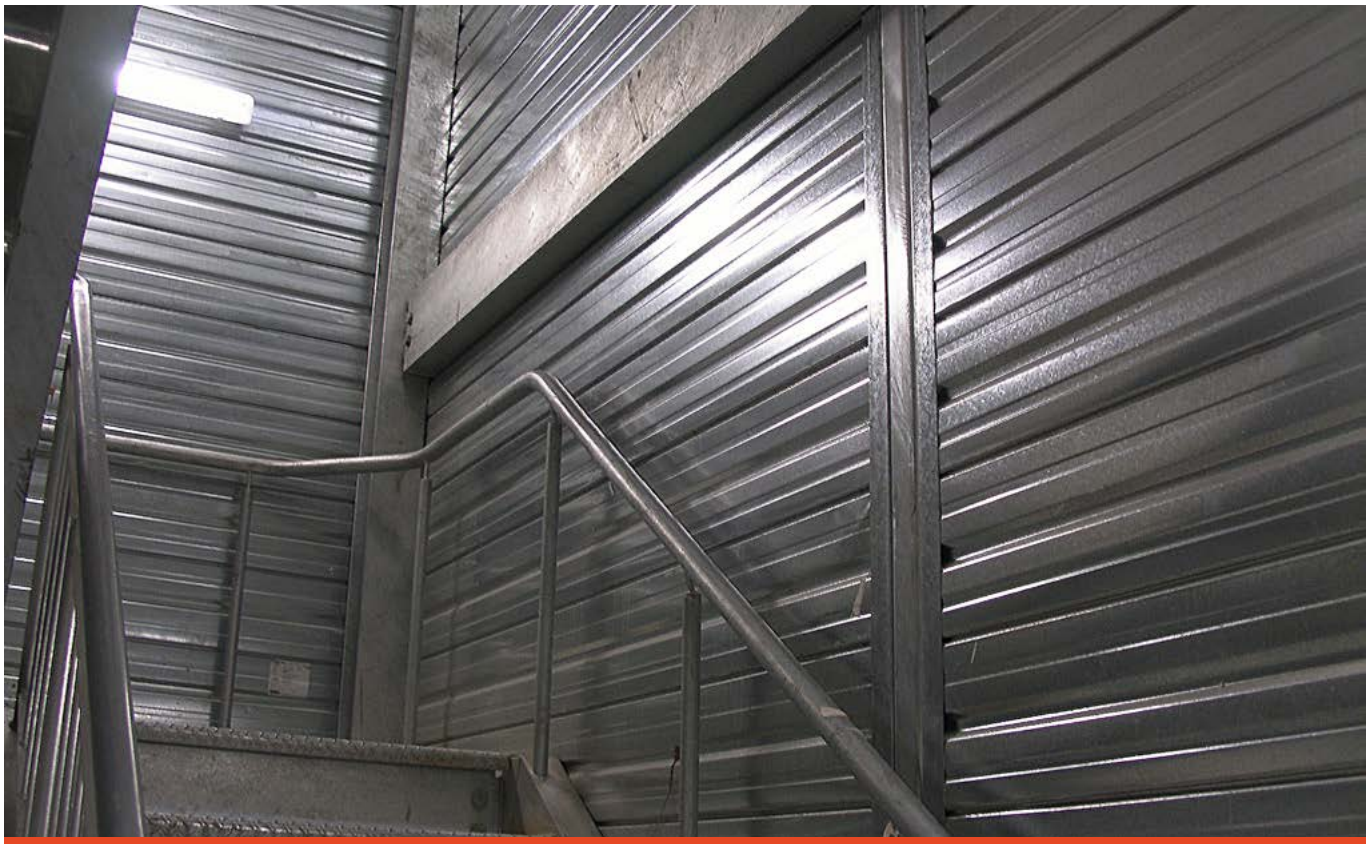
Extensive fire testing and the adaptable nature of Speedpanel® systems allow design flexibility that surpasses traditional building systems. By utilising the strength of vertically installed Speedpanel® as a supporting structure, horizontally stacked Speedpanel® can be built in a single continuous wall in high rise buildings to unlimited heights. At Eureka Tower in Melbourne, Speedpanel® was continuously stacked over 80 floors!

Using the unlimited height horizontal walls, connected to vertically installed walls which span from floor slab to soffit around the edge of an open core, Speedpanel® systems provide the complete solution to multiple shaft divisions. By simply caulking the Speedpanel® joints, the system can be pressurised. In these cases, the Speedpanel® fire-rated walls can provide a dual purpose and completely eliminate the need for mechanical ductwork.

Due to the connection methods of the Speedpanel® system, traditional structure in these areas such as lintels are significantly reduced. Speedpanel® is able to provide systems which can be built from one direction. This means access issues in shafts are no longer a problem and savings are made on costly items such as scaffolding.

The time and cost savings available to builders and contractors in these situations make Speedpanel® the smart choice for your project.

STAIR WALLS

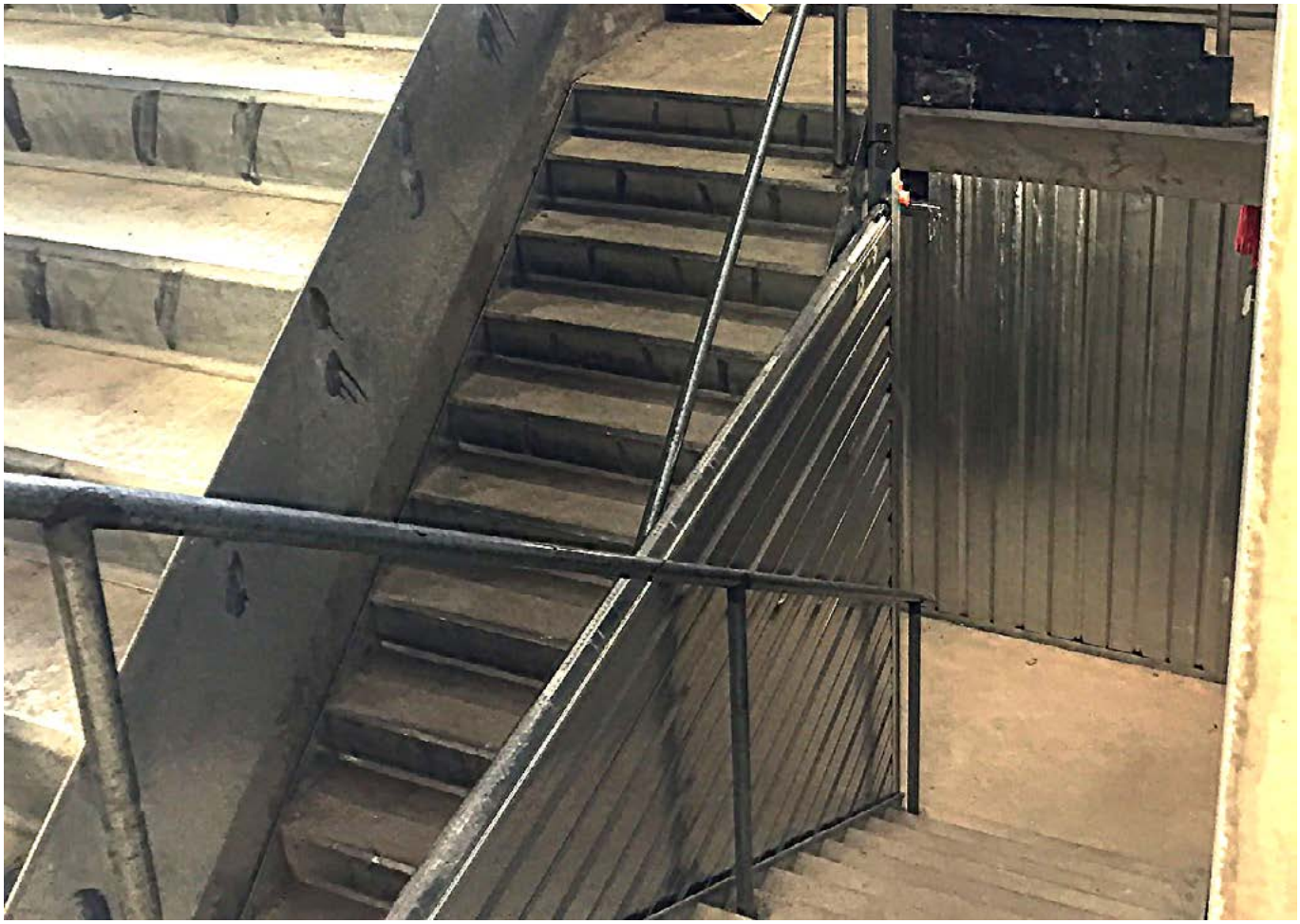


WHY USE SPEEDPANEL®?

Wherever possible Speedpanel® systems look to adapt to existing structures within building projects. Speedpanel® has specifically set out to create certified solutions with unlimited height walls in scissor stair applications. These walls adopt a horizontal panel orientation and fix to existing stair stringers using off the shelf angles.

During construction, the fire stairwells of a building are heavily used for accessing each floor. This is often far quicker than using the temporary lifts provided, therefore for building efficiencies it is important to not clog these areas up with slow methods of construction when developing fire separation walls.

Removing the need for messy, wet materials such as grout and mortar makes for cleaner work areas, which can be occupied by multiple trades far sooner. Due to the easy handling and lightweight of Speedpanel® components, and the fact that most systems can be constructed from one direction, the need for scaffolding to access areas is often no longer required.



INTERTENANCY & CORRIDORS

WHY USE SPEEDPANEL®?

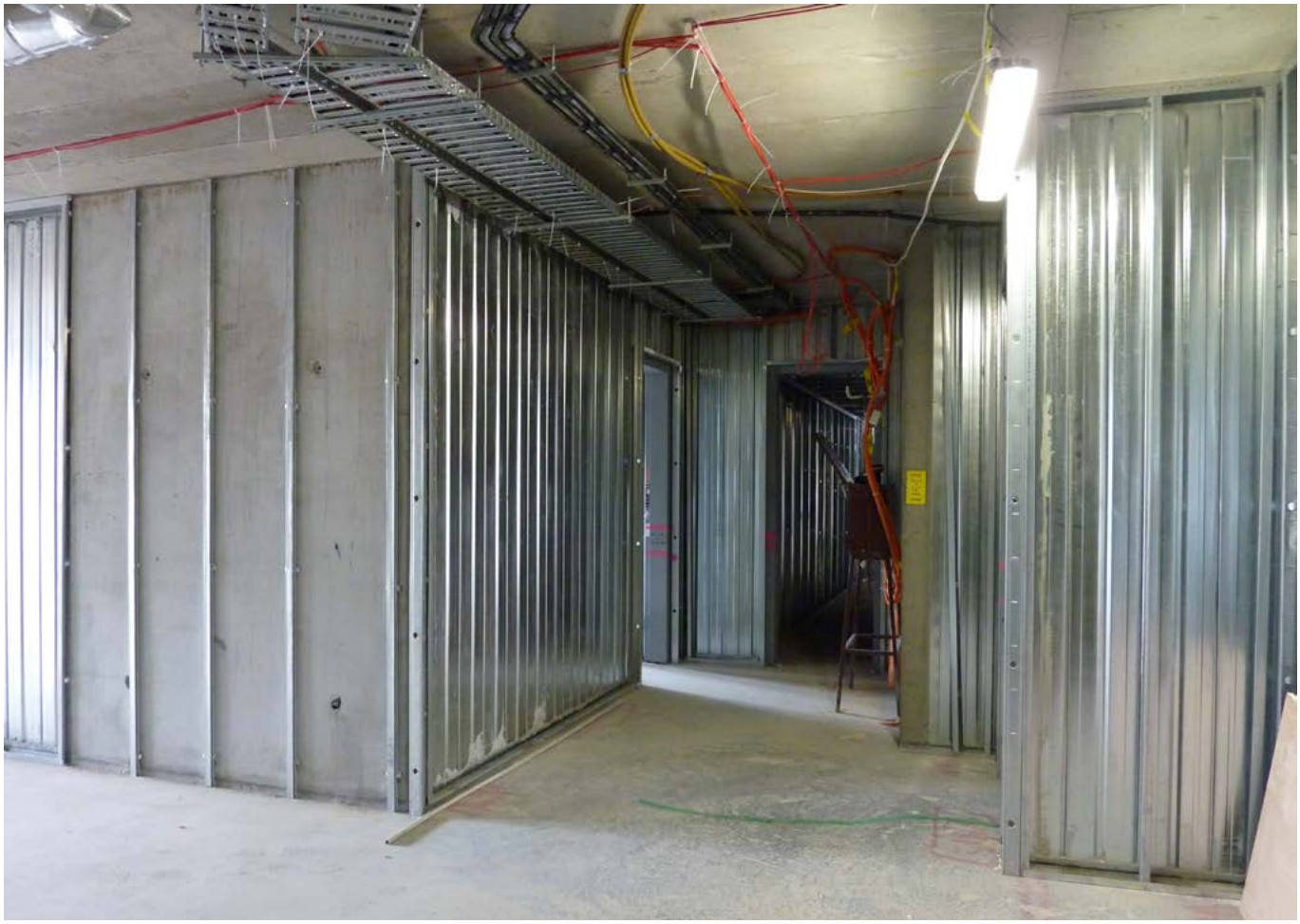
Speedpanel® understands how easily small costs can add up and become prohibitive. It is with this in mind that when testing Speedpanel® systems, we construct easy to build, real-life scenarios in acoustic laboratories. This includes cutting holes in the plasterboard for down-lights, GPOs and light switches.

We also aim to remove unnecessary costs that come with slow, fiddly labour such as wasteful plasterboard above ceiling height and costly fire boxes behind GPOs. This can only be done due to solid Speedpanel® that acts as the heart of the wall system.

As Speedpanel® provides fire ratings, multiple layers of heavy fire-rated plasterboard can be switched for single layers of lighter, cheaper standard plasterboard, and treatment of service penetrations in the plasterboard for fire purposes can be eliminated.

The strength and weather resistance of Speedpanel® systems also provide extensive wind loading capacity. This means that the walls can sometimes be built before the external skin of a building is completed, which allows service trades to begin and finish sooner. The plastering contractor only needs access once before the area is completed, which results in major cost savings through program speed.

Real-life testing scenarios result in equivalent field test results. Everyone can rest easy knowing noise complaints or costly defects will be avoided when using Speedpanel® systems. Occupants have also enjoyed the added security benefits that Speedpanel® provides.



CAR PARKS

WHY USE SPEEDPANEL®?

The overarching speed and ease of installation that Speedpanel® systems offer make it a natural choice in car park areas which are traditionally made in block-work or concrete. Where these trades can often be slow and messy, Speedpanel® aids speed of program by offering a simple alternative.

In car park areas, impact protection is required. Where Speedpanel® runs from slab to slab, wheel stops can be adopted to avoid cars touching the wall. Another alternative is to use block-work up to 1m high where no scaffolding is required, and then have a Speedpanel® system continue to soffit, offering the best of both worlds.

As Speedpanel® comes in multiple finishes, including the complete colour steel range or in a bright reflective galvanised finish, the Speedpanel® system saves time by eliminating the need to paint these areas afterwards.

Due to the nature of the Speedpanel® composition of a steel outer shell filled with a lightweight aerated cement inner core, Speedpanel® cannot be easily broken into without power tools. This leads to increased security benefits which are often requested in high end buildings.


SMALL
CAR
SPACE
59
SMALL
CAR
SPACE

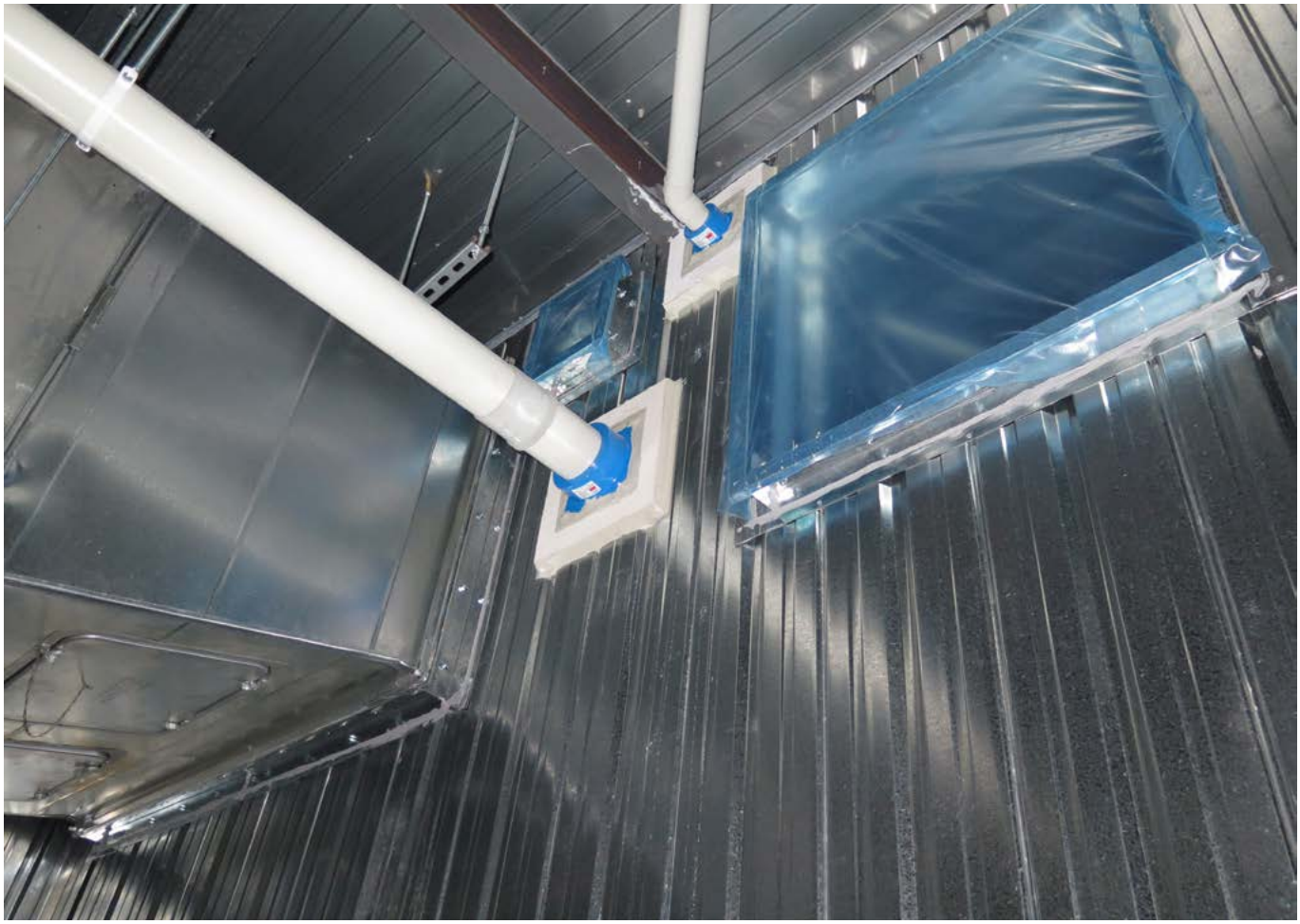
PLANT ROOMS

WHY USE SPEEDPANEL®?

Speedpanel® systems can be partially constructed and then finished at a later time, or can even be dismantled and reassembled. This allows walls which are semi constructed to leave access for service trades during the development of a project, reducing overall program time-frames.

Unlike other light weight partitions, Speedpanel® systems do not require any additional framing for general penetrations. Penetrations are easily cut into Speedpanel® at any stage of construction without any pre-planning as to location. Speedpanel® have certification covering apertures up to 4m^2 with as little as a 100mm gap between the next aperture, which is also up to 4m^2.

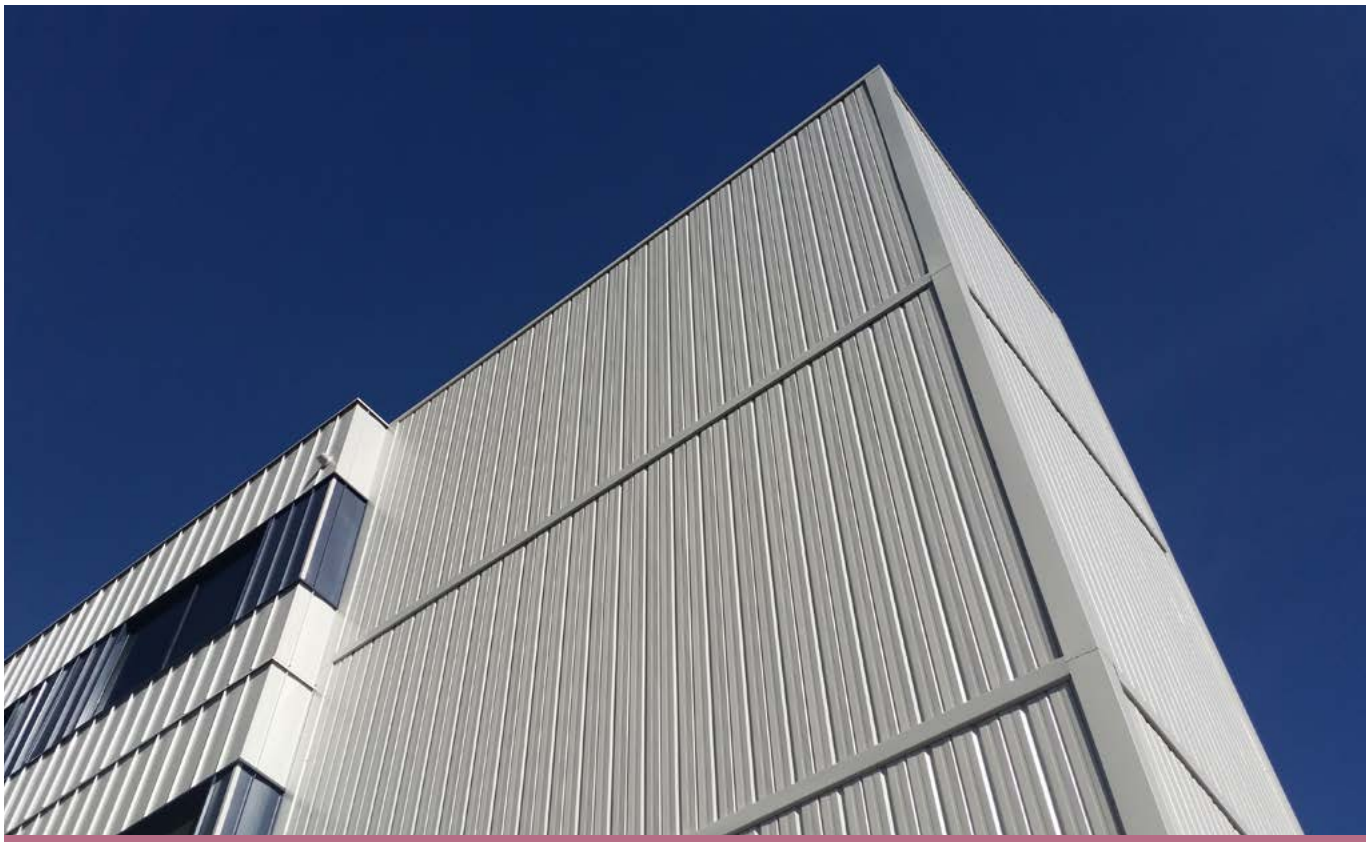
Speedpanel® comes in small, pre-fabricated panels which can be butt jointed in certain applications, making it an easy solution for construction in tight and difficult work zones.




DANGER
AUTHORISED PERSONS ONLY
LOW VOLTAGE SWITCHROOM


Downer

FAÇADE SYSTEMS

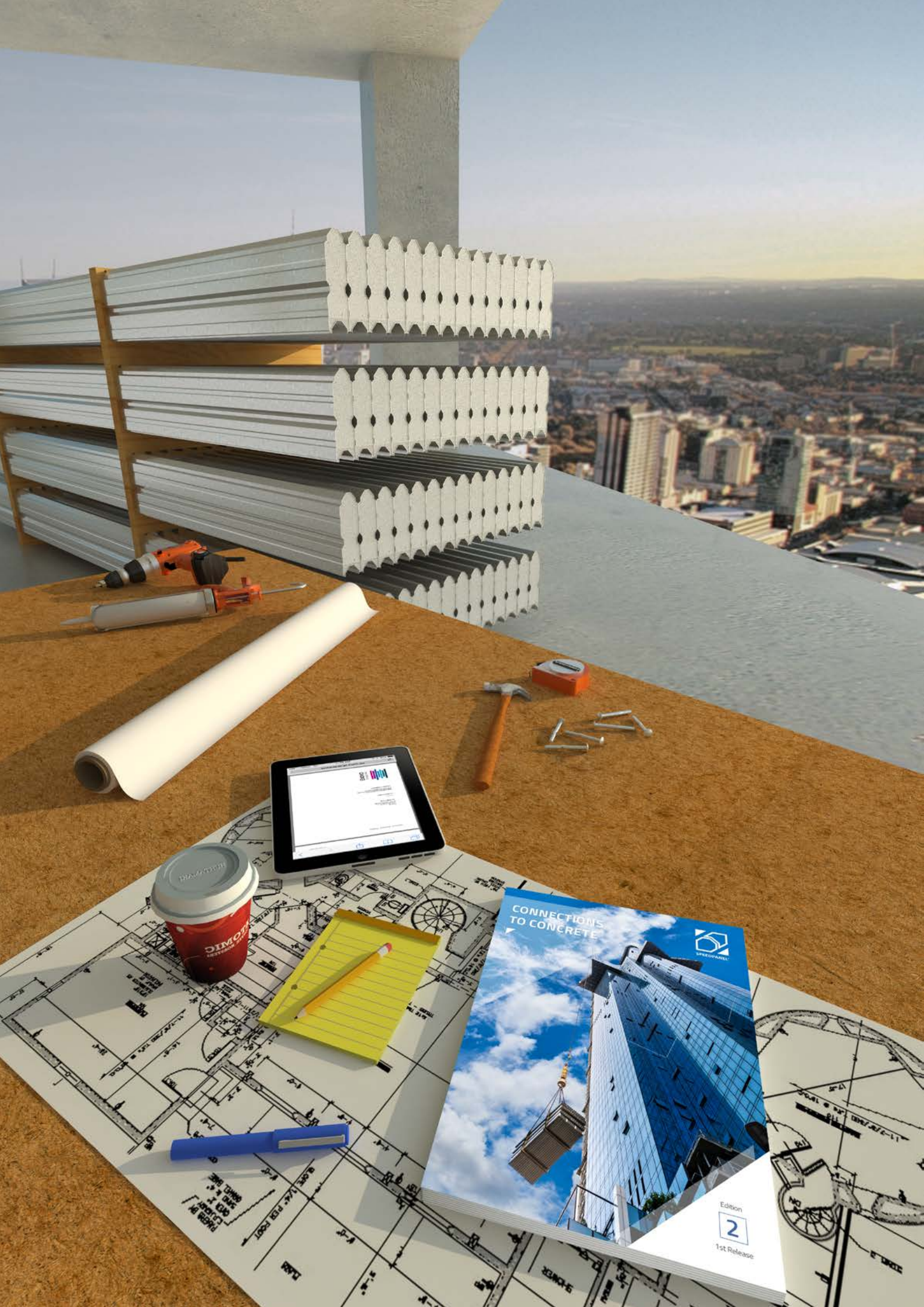


WHY USE SPEEDPANEL®?

Speedpanel® systems provide a pre-finished aesthetic with various galvanised or colour steel options. This often negates the need for additional finishes and painting requirements.

When working on an external or boundary wall of a building, it is often impossible to erect expensive scaffolding, or to even gain access to other elevated work platforms. Therefore, Speedpanel® have developed systems that allow all fixings and sealants to be constructed from one side of the wall. This means that Speedpanel® walls can be built on a boundary without requiring any access to the neighbouring property.

Speedpanel® have completed testing on wind loading and deflection requirements and created systems that have been suitable for building applications; such as external façade elements in either a horizontal or vertical fashion, in standard or low wind regions of Australia and New Zealand, up to the highest 'wind region' category (including region C & D) as defined in AS/NZ 1170.2:2011. Always ensure that a Speedpanel® / Façade combination has been sufficiently designed by a qualified engineer before proceeding.


CONNECTIONS
TO CONCRETE
Edition
2
1st Release

02

SPEEDPANEL®

INSTALL GUIDE

2.1

DESIGN CONSIDERATIONS

IMPORTANT NOTICE

Your project will have various building code requirements in line with the NCC. It is the responsibility of the reader of this guide to determine the suitability of Speedpanel®, Speedpanel® Products or Speedpanel® systems for your project.

All construction information contained within this guide has been written in conjunction with documented fire tests and assessments in accordance with AS1530.4. Furthermore, these assessments have been based on an internal environment that is subject to internal wind loads.

The construction guidance herein is subject to the particular acoustic performance criteria when constructed to methods outlined within "Speedpanel® Acoustic Systems", visit www.speedpanel.com.au for further information.

Whilst Speedpanel® have carried out testing and gained various assessments for performance criteria including but not limited to seismic, air infiltration, structural, wind loading and cyclonic conditions, unless specifically stated in this guide these performance characteristics may not be applicable to all scenarios described or illustrated within this guide.

The list below (which is not exhaustive) is provided for consideration on your project, and advisement of additional information available. It in no way means that all scenarios have been tested accumulatively on a single configuration system, thereby meaning that the information mentioned within this guide may only be applicable to one form of test standard performance, rather than multiple criteria at once.

FIRE

All Speedpanel Systems have been tested to AS1530.4 to determine their fire resistance performance and tested to AS1530.1 to confirm their non-combustible product properties. Speedpanel utilises assessments issued by 3rd party NATA certified test laboratories to extend the scope of application of its tested systems.

ACOUSTICS

Speedpanel® systems have been tested by NATA certified laboratories in accordance with AS 1191 for acoustic ratings of the panels by themselves and Speedpanel® proprietary acoustic systems. Furthermore, all acoustic data has been modelled by qualified acoustic engineers to produce bespoke higher acoustic rating systems.

WIND LOADING / DEFLECTION

All wind loading deflection testing has been undertaken by NATA registered laboratories in accordance with AS 4040.2-1992 (non-cyclone regions).

CYCLONIC

Cyclonic wind load debris testing has been undertaken by James Cook University (Townsville, Australia) in accordance with the guidance of AS/NZS 1170.2 for impact testing of horizontal trajectories. Testing was undertaken for regions, as defined in AS 1170.2, up to region D for a 10,000 year event.

STRUCTURAL

Speedpanel® panels have been subjected to individual structural tests in Column, Flat Beam, Local Loading and Two-Panel Compression modes by accredited 3rd party structural laboratories based in Australia.

SEISMIC

Speedpanel® panels are tested and assessed by accredited laboratories to AS/NZS 1170.0, AS 1170.4 (Australia Earthquake Actions) and AS 1170.5 (New Zealand Earthquake Actions).

AIR INFILTRATION

Speedpanel® can be used in a fire-rated pressurised plenum or shaft that needs to be air tight. Panels have been tested in accordance with AS/NZS 4284:2008 using NATA accredited laboratory equipment.

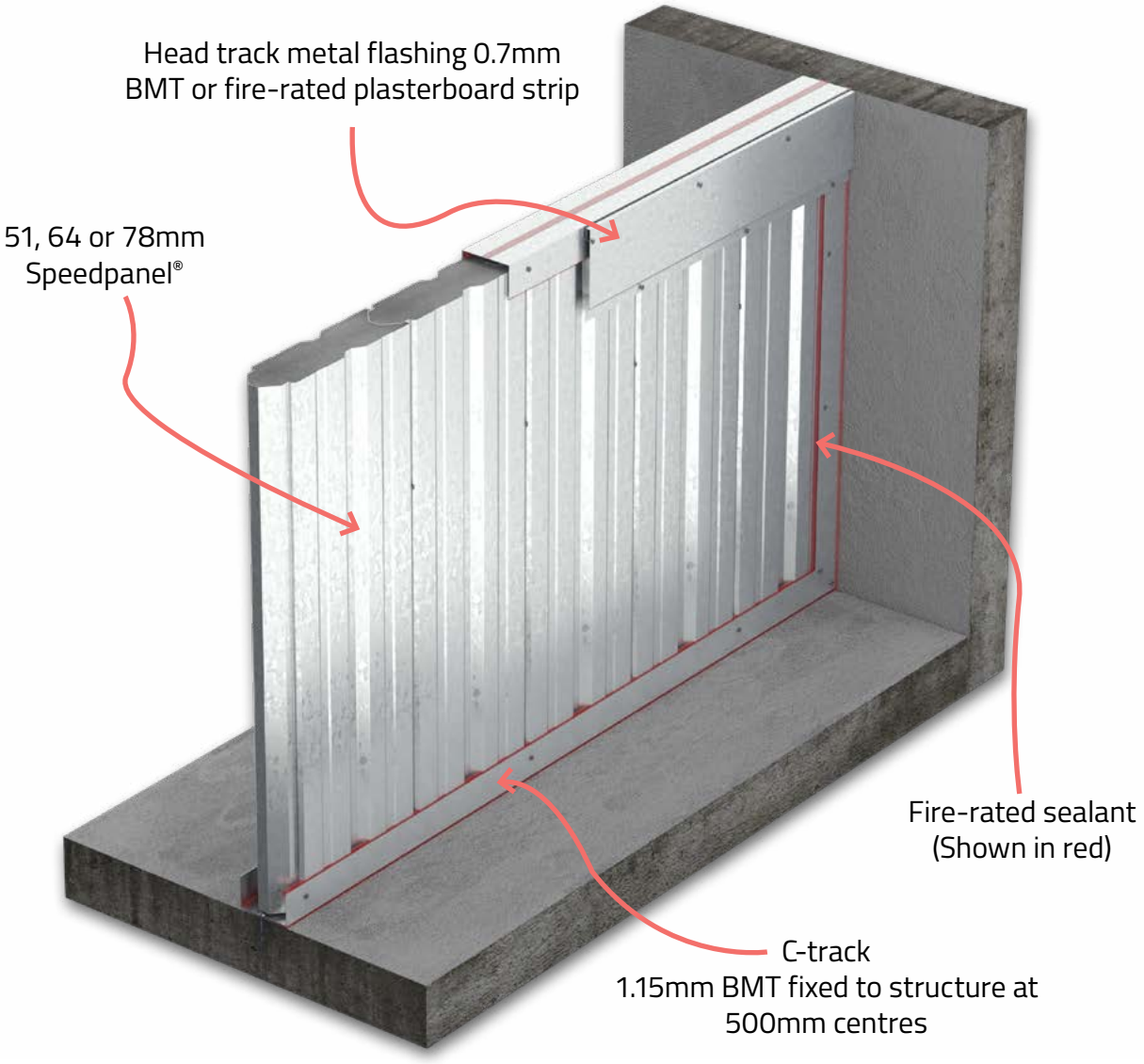
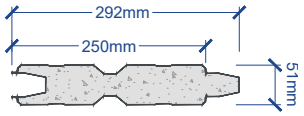
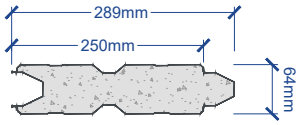
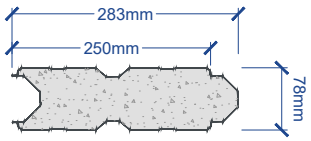


Figure 1

SPEEDPANEL® PROPERTIES

The tables below illustrate Speedpanel® properties for all three panel sizes. For more information regarding other Speedpanel® densities please contact our office on +61 3 9115 6666.

TABLE 1: PANEL PROPERTIES

Panel profile	51						64						78					
Series ^	435	550	650	750	850	950	435	550	650	750	850	950	435	550	650	750	850	950
Weight per lm (kg) W1	7.7	9.0	10.2	11.3	12.5	13.6	9.1	10.8	12.3	13.8	15.3	16.7	10.7	12.8	14.6	16.4	18.2	20.0
Weight per m² (kg) W2	30.9	36.2	40.8	45.4	50.0	54.6	36.5	43.3	49.2	55.1	61.0	66.9	42.6	51.0	58.3	65.6	72.9	80.2
Dimensions																		
Shell material	0.4 BMT galvanised steel																	
Core material	Lightweight aerated cement																	

SPEEDPANEL® FRL AND ASSOCIATED SPANS - WALL SYSTEMS

The table below illustrates Speedpanel® FRL and associated spans in Speedpanel® Wall Systems. Please read this table in conjunction with the relevant chapter and fire assessment for each specific system. The maximum allowable spans listed below are compliant to fire ratings only. Any additional forces anticipated (e.g.) wind loading may result in a reduction of the maximum allowable spans.

SPEEDPANEL® WALL SYSTEM

Panel profile	51		64		78		
Fire rating	-/60/60		-/90/90		-/120/120		
Direction of fire rating	Both Ways		Both Ways		Both Ways		
Panel orientation	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
						All other applications	Scissor Stair application only
Max. span between structural connections	5.0m	3.0m	5.0m	3.0m	6.0m	4.5m	5.0m
Max. wall length (Single span)	Unlimited	3.0m	Unlimited	3.0m	Unlimited	4.5m	5.0m
Max. wall height (Single span)	5.0m	5.0m	5.0m	5.0m	6.0m	Unlimited	Unlimited
Max. wall length (Multiple structural connections)*	N/A	Unlimited	N/A	Unlimited	N/A	Unlimited	N/A
Max. wall height (Multiple structural connections)**	14.0m	N/A	14.0m	N/A	14.0m	N/A	N/A

^ Series label based on 435, 550, 650, 750, 850 & 950 kg/m³ Speedpanel densities, +/- manufacturing tolerances.

W1 & W2 Published weight per lineal metre and per square metre values are strictly indicative only. Panel weight subject to change based on, residual moisture, exposure to environmental factors and storage. Speedpanel strongly recommends seeking advice from a suitably qualified professional such as a engineer and/or other design consultant(s) when considering Speedpanel in project design.

* Intermediate fire rated structure between "Max. wall length" panel dimensions.

** Based on 600 kg/m³ density panel core. Reduced density may result in reduced height.

For more information please contact our office on +61 3 9115 6666.

SPEEDPANEL® WIND LOADING DATA

The tables below illustrate wind loading data for 51, 64 and 78mm Speedpanel® with 435kg/m³ density.

51 & 64mm SPEEDPANEL® WIND LOADING TABLE*

Span (m)	ULS	L/150 (kPa)	L/200 (kPa)	L/250 (kPa)	L/300 (kPa)
2.0	7.66	7.66	6.20	4.96	4.13
2.5	4.90	4.12	3.18	2.54	2.12
3.0	3.40	2.41	1.84	1.47	1.22
3.5	2.49	1.53	1.16	0.92	0.77
4.0	1.91	1.03	0.77	0.62	0.51
4.5	1.50	0.73	0.54	0.43	0.36
5.0	1.22	0.53	0.39	0.31	0.26

78mm SPEEDPANEL® WIND LOADING TABLE

Span (m)	ULS	L/150 (kPa)	L/200 (kPa)	L/250 (kPa)	L/300 (kPa)
2.0	10.69	10.69	9.37	8.03	7.10
2.5	6.87	6.04	4.96	4.21	3.66
3.0	4.79	3.63	2.95	2.48	2.13
3.5	3.53	2.36	1.90	1.58	1.35
4.0	2.71	1.62	1.30	1.07	0.91
4.5	2.14	1.17	0.92	0.76	0.64
5.0	1.74	0.87	0.68	0.56	0.46
5.5	1.44	0.66	0.52	0.42	0.35
6.0	1.21	0.52	0.40	0.33	0.27
6.5	1.03	0.41	0.32	0.26	0.21
7.0	0.89	0.34	0.26	0.21	0.17
8.0	0.68	0.23	0.18	0.14	0.11

* Theoretical values based on testing of 4.2m span panels.

SPEEDPANEL® AIR INFILTRATION DATA

Pressure (Pa)	Unsealed (L/m².s)	Sealed (L/m².s)
+300	7.7	<0.1
-300	-9.0	<-0.1
+750	N/A	+0.1
-750	N/A	-0.1
+1000	N/A	+0.1
-1000	N/A	-0.2
+1500	N/A	+0.2
-1500	N/A	-0.3

QUICK & SIMPLE

PICK THE RIGHT DETAIL...

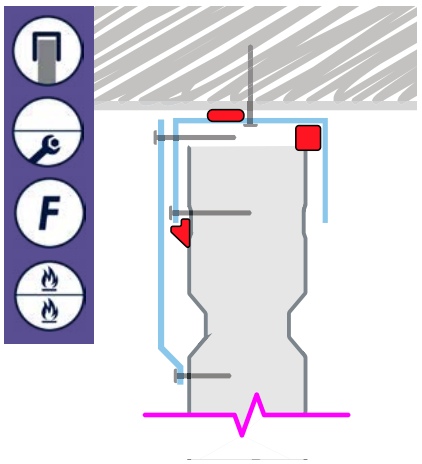
Throughout this publication there are instances where you will have several options available when approaching a building design solution.

To help you narrow down the most suitable options, we have developed a guide to assist in recognising the attributes of each construction method or detail.

Each symbol represents a different option. Once you have established which symbols match your requirements, you only have to locate the details with the relevant symbols.

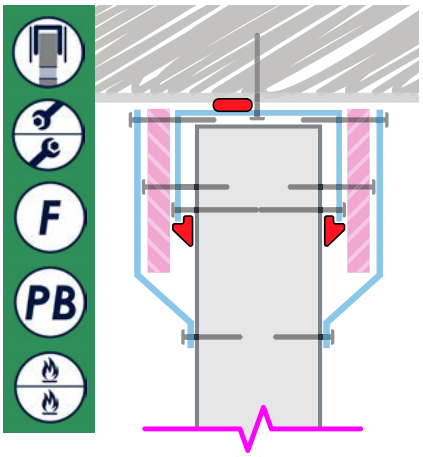
Please have a look at the examples below to get a better understanding of the symbols.

EXAMPLE



The head detail above must be constructed using C-tracks and Metal flashing. This detail is fire-rated from both sides and the installer needs only one side access to the wall in order to build this detail.

EXAMPLE



The head detail above must be constructed using C-tracks, fire-rated plasterboard and metal flashing. This detail is fire-rated from both sides and the installer must have access to the both sides of the wall in order to build this detail.

HEAD DETAIL CONSTRUCTION OPTIONS:

OPTION A: C-TRACK HEAD DETAIL

C-section head tracks require 50% less fixings into the slab than the angle head track option and 75% of the quantity of fire-rated sealant. However, C-tracks require additional head track protection. This can be either a 13mm fire-rated plasterboard strip or our aesthetic metal flashing option.

OPTION B: ANGLE HEAD DETAIL

Angles enable significantly easier construction of walls in confined spaces where panel maneuverability is limited. The angle solution allows the final panels to be easily placed without any cutting or maneuverability issues in tight areas. Angles are also the most suitable option for curved walls.

OPTION C: SUSPENDED HEAD DETAIL

Used when large penetrations are required in a Speedpanel® wall, suspended head details require additional head track protection and fixings due to the nature of this construction.

SPEEDPANEL® QUICK REFERENCE SYMBOLS:

ACCESS TO ONE SIDE

When build ability or access restrictions mean installation from both sides of the wall is not possible.

ACCESS TO BOTH SIDES

When the Speedpanel® wall being constructed is freely accessible from either side.

FIRE PROTECTION: FLASHING

Metal Flashing offered is custom shaped and has a metal aesthetic similar to match the galvanised finish of Speedpanel®.

FIRE PROTECTION: PLASTERBOARD

Plasterboard is easily cut to size and is often freely available on building sites.

FIRE PROTECTION ONE SIDE

When protection from fire is required from one side only.

FIRE PROTECTION TWO SIDES

These details are designed for when protection from fire is required from either side.

TESTED & CERTIFIED

THAT EXTRA PEACE OF MIND.

Speedpanel® systems are fire tested & certified by Independent Testing Bodies including Warringtonfire, Branz and CSIRO.

This extensive certification includes several heights, spans and connecting configurations allowing large span and unlimited height in specific applications. Complete service penetration requirements including pipes, cables, ducts, cable trays, dampers and doors have all been accredited.

Speedpanel® systems may provide up to a -/240/240 FRL.

Note: Not all of our assessments are referenced in this guide. Please refer to our website or contact our office to access further certification and assessments. Ph: + 61 3 9115 6666.

HOW TO USE QR CODES

You can download a QR Code reader app on your smart-phone to scan the codes provided in this guide.

You will find these QR-Codes at the start of each chapter which will lead you to the relative assessments used for that specific chapter.

Below you will find all the assessment reports used in this guide with a short description.

1 - REPORT 21622

The fire resistance performance of 51mm, 64mm and 78mm thick Speedpanel® walls incorporating various apertures for penetrations and dampers when tested in accordance with AS1530.4.

1 - REPORT 21622

2 - REPORT 28928

An assessment of the fire resistance performance of 51mm, 64mm and 78mm thick vertically orientated Speedpanel® walls if tested in accordance with AS1530.4.

2 - REPORT 28928

3 - REPORT 28961

An assessment of the fire resistance performance of walls made from 51mm, 64mm and 78mm thick horizontally orientated Speedpanel® if tested in accordance with AS1530.4.

3 - REPORT 28961

4 - REPORT 22551

An assessment of the fire resistance performance of vertical 78mm thick Speedpanel® 6.0m wall systems with angled or curved walls when tested in accordance with AS1530.4.

4 - REPORT 22551

5 - REPORT 31919000

An assessment of the fire resistance performance of external Speedpanel® walls with parapet detail if tested in accordance with AS1530.4.

5 - REPORT 31919000

6 - REPORT 3580

An assessment of a non load-bearing continuous height, horizontal orientated Speedpanel® wall interfaced with a horizontal Speedpanel® wall.

6 - REPORT 3580

7 - REPORT 3584

An assessment of a non load-bearing continuous height, horizontal orientated Speedpanel® wall interfaced with a horizontal Speedpanel® wall.

7 - REPORT 3584

8 - REPORT 3789

An assessment of the fire resistance of a junction detail using horizontal to vertical orientated Speedpanel® in accordance with AS530.4.

8 - REPORT 3789

9 - REPORT 3895

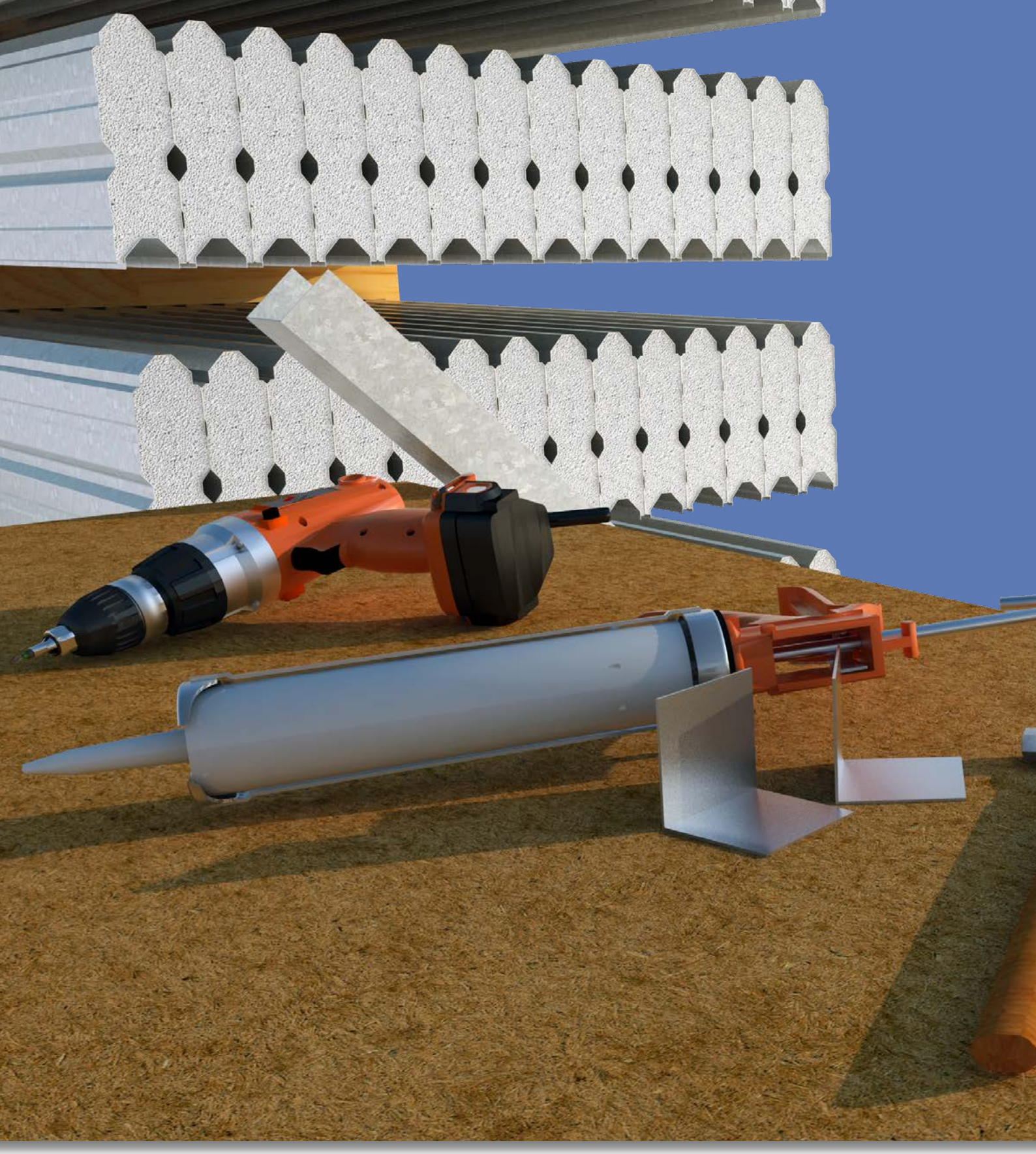
An assessment of a non load-bearing horizontal and vertical orientated Speedpanel® wall with variations to connection details.

9 - REPORT 3895

10 - REPORT 35875300

The fire resistance performance of a 78mm thick horizontally orientated Speedpanel® wall installed in a scissor stair configuration when tested in accordance with AS1530.4.

10 - REPORT 35875300



Personal Protective Equipment

It is important to wear protective equipment when handling Speedpanel®, including durable gloves and steel cap boots. When panels or C-track are required to be cut, further protection including safety glasses, noise cancelling headwear and a dust mask is recommended.

2.2

SCAN THE QR-CODE BELOW TO DOWNLOAD OUR SPEEDPANEL® SYSTEM COMPONENTS GUIDE

COMPONENTS GUIDE

SYSTEM COMPONENTS OVERVIEW

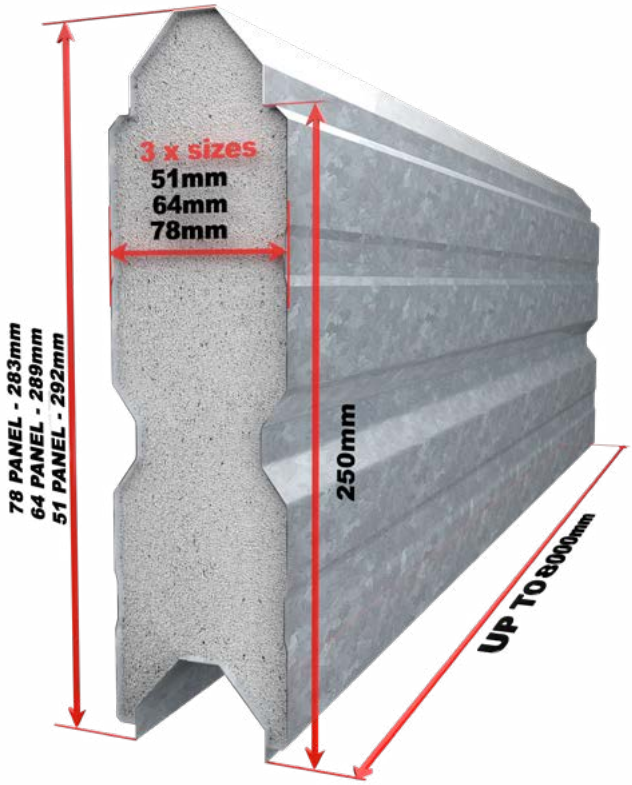
2.2 SYSTEM COMPONENTS OVERVIEW

SPEEDPANEL®

Different panel thicknesses are available to suit your fire rating or footprint. For external or visible walls, our 78mm panel is available in the entire colour steel range.

PANEL SIZE		FRL
51	51 mm	-/60/60
64	64 mm	-/90/90
78	78 mm	-/120/120

SPEEDPANEL® READY FOR TRANSPORT



SPEEDPANEL® CRITICAL DIMENSIONS
FIGURE 2

*Minimum order quantities may apply for some colours

C-TRACK

1.15mmor 1.95mm BMT Galvanised 55mm Deep x Width of Speedpanel® for general use around perimeter of Speedpanel® walls and encapsulating square & rectangular apertures.

FIGURE 3

J-TRACK

Used similar to the C-track, a J-track enables difficult connections between Speedpanel® systems. Used typically where a suitable fixing location to a regular C-track would be covered up. Where a C-track is unable to be drilled/ screwed an elongated flange is used.

Note: Custom flange lengths can be made to suit project.

FIGURE 4

WEEP HOLE J-TRACK

1.15mm BMT Galvanized J-track with Weep Holes at every 250mm. Weep holes are only required in the base J-track of external Speedpanel® walls. Weep holes are orientated facing outside and are designed to prevent pooling of water within the J-tracks.

FIGURE 5

TWO 50x50mm EQUAL ANGLES

Equal Angles 1.15mm BMT for general use around perimeter of Speedpanel® walls as a secondary option to C-track.

FIGURE 6

BACK TO BACK C-TRACK FLASHING

Back to back connections require additional protection from fire. This thermal barrier is achieved by using a back to back flashing over the connection. Flashing should fully cover both C-tracks & leave a 5mm minimum gap from all surfaces of C-track flashings 0.7mm thick, screw fixed into track and panel at 500mm centres.

FIGURE 7

HEAD TRACK PROTECTION

Head tracks in Speedpanel® systems **MUST** be protected by either a 0.7mm BMT metal flashing or a 13mm fire rated plasterboard. Fixings are to be staggered at 125mm centres horizontally at the top and bottom as shown in Figures: 31-32 (page 59).

Note: Additional protection is required only on the top 'C-track to structure connection'.

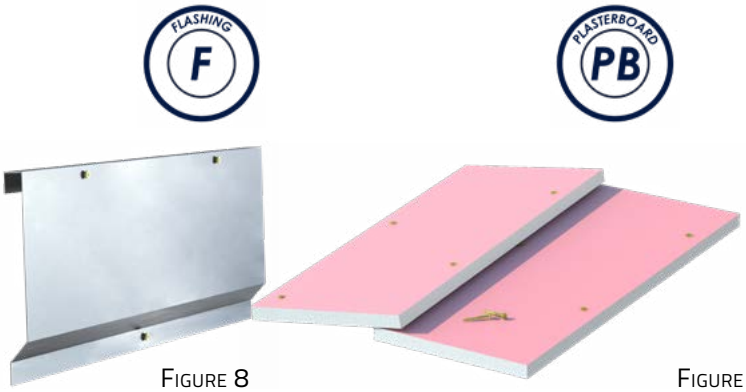


FIGURE 8

FIGURE 9

SPEEDPANEL® COVER SKINS

Cover skins are thin sheets of steel that fit over the profile of Speedpanel®. It can be useful to cover blemishes on panels or to protect butt joint panels. Cover skins can be ordered in our full range of colour steel and galvanised finishes. Please refer to Chapter 2.9 "Alternative Speedpanel® Wall Systems" and certification for fixing and sealing requirements.

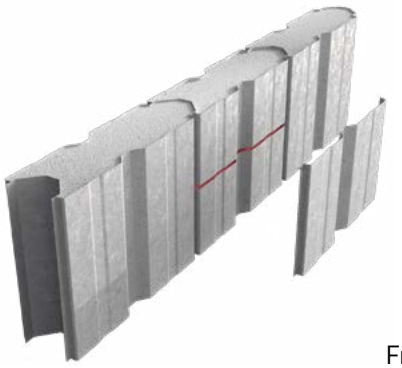


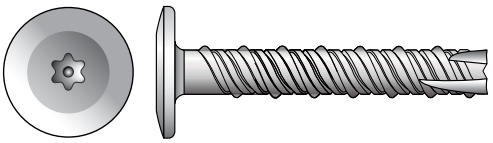
FIGURE 10

Typical Fixings

FIXING INTO CONCRETE

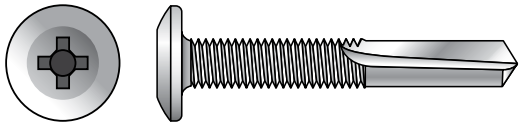
MUSHROOM HEAD SPIKES
M6.5 x 50mm

HILTI® SCREW ANCHOR HUS3-P
6x60/5/25

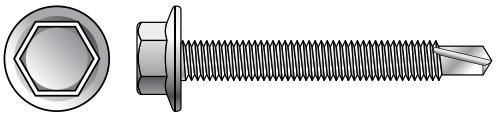


FIXING INTO STEEL

SDS 12 GAUGE X 38mm (500 SERIES)

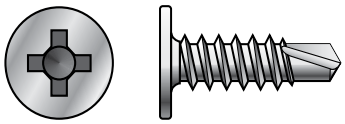


SDS 14-10 GAUGE X 30mm
(HEX HEAD)

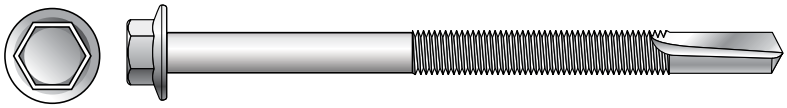


FIXING INTO PANELS

SDS 10 GAUGE X 16mm
(CLASS 3)

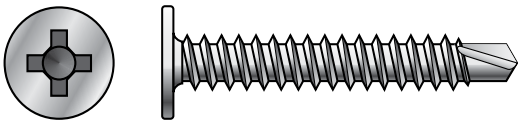


SDS 14-12 GAUGE X 115mm
(HEX HEAD)



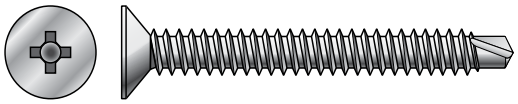
FIXING INTO C-TRACK

SDS 10 GAUGE X 30mm (CLASS 3)



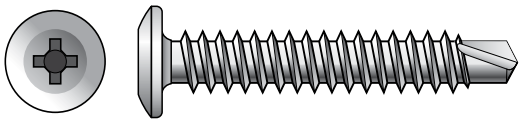
FIXING INTO PLASTERBOARD

SDS 12 GAUGE X 45mm
(BUGLE HEAD)



FIXING INTO STEEL ANGLE

SDS 12 GAUGE X 30mm
(WAFER HEAD)



Sealant

SEALANTS

Speedpanel systems incorporate various types of sealants. These sealants are often condition specific e.g. fire rating, acoustics, air pressurisation or weather resistance and are also application specific e.g. service penetrations. When choosing sealants, please refer to the relevant certifications to ensure that you are selecting the correct sealant for the application. Failure to use the correct sealant may result in a lack of system performance and be in breach of the relevant certification.

For internal applications, Speedpanel recommends acrylic sealants such as **Hilti Flexible firestop CP 606** sealant for sealing gaps, joints and between panels and the perimeter tracks and angles. This sealant is represented in **RED** throughout this Guide.

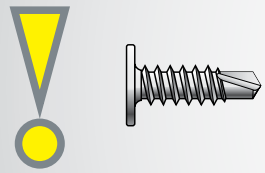
For external wall applications, applications where moisture may be present and/or applications requiring pressurisation, Speedpanel recommends a polyurethane weather resistant sealant, such as **Sikaflex®-400 Fire.** This sealant is also represented in **RED** throughout this Guide.

Protection of structural steel often requires specific sealants and materials to be used as part of its independent fire protection system. This system and the selection, use and application of sealant and materials falls outside of the scope of Speedpanel and should be installed/applied as per the manufacturer's and project engineer's specifications. This specific sealant is represented in **BLUE** throughout this guide.

Although Speedpanel have tested various brands and types of sealants within our wall systems, not every brand has currently been tested in every application referenced in this brochure. For further information please contact our office +61 3 9115 6666.

FIGURE 11

Alternative fixings and sealants



Alternative fixings or sealants to those shown may affect the performance of the Speedpanel systems. Fixings or sealants shown have been tested and certified under real fire conditions. Please contact Speedpanel to confirm the compatibility of any alternative desired fixings or sealants.

Supplementary Components

FIRE RATED PENETRATIONS

Penetrations are easily cut directly through Speedpanel. Various branded passive fire products are certified to fire rate many forms of service penetrations. To view our current certification please visit: **speedpanel.com.au**

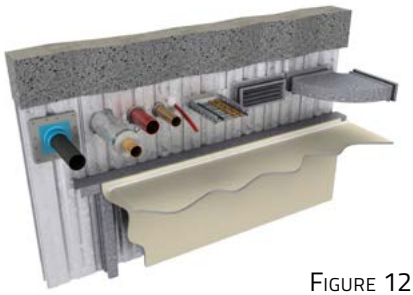


FIGURE 12

OTHER THIRD PARTY PRODUCTS

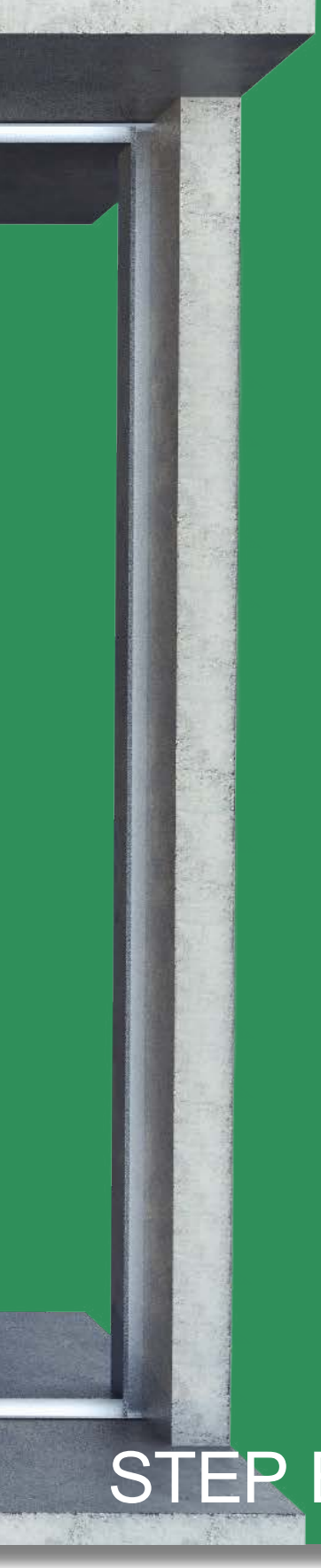
Speedpanel systems are thoroughly tested not just with our own product range, but with many leading third party products. We aim to provide the user with the most versatile and fully tested systems on the market. For more information on Speedpanel systems and acoustic performance please contact our office on +61 3 9115 6666.

FIGURE 13

SCAN THE QR-CODES BELOW TO DOWNLOAD THE ASSESSMENT REPORTS USED IN THIS CHAPTER.

1 - REPORT 21622

2 - REPORT 28928



2.3 A

STEP BY STEP

VERTICAL INSTALLATION

2.3A VERTICAL INSTALLATION

PART A (C-TRACK)

KEY INFORMATION TO ASSIST IN

ORDERING SPEEDPANEL®

1. Notify us of your fire and acoustic requirements.
2. Notify us of your wall spans - we pre-cut to size.
3. Nominate: coloured steel or standard galvanised finish.
4. Determine how many panels you require.

$$\frac{\text{WALL LENGTH (MM)}}{\text{PANEL LENGTH 250 (MM)}} = \text{AMOUNT OF PANELS REQUIRED (ROUND UP TO NEAREST WHOLE NUMBER)}$$

VERTICAL SPEEDPANEL® SYSTEM

Note that the head protection (flashing or fire-rated plasterboard) is not shown for clarity purposes.

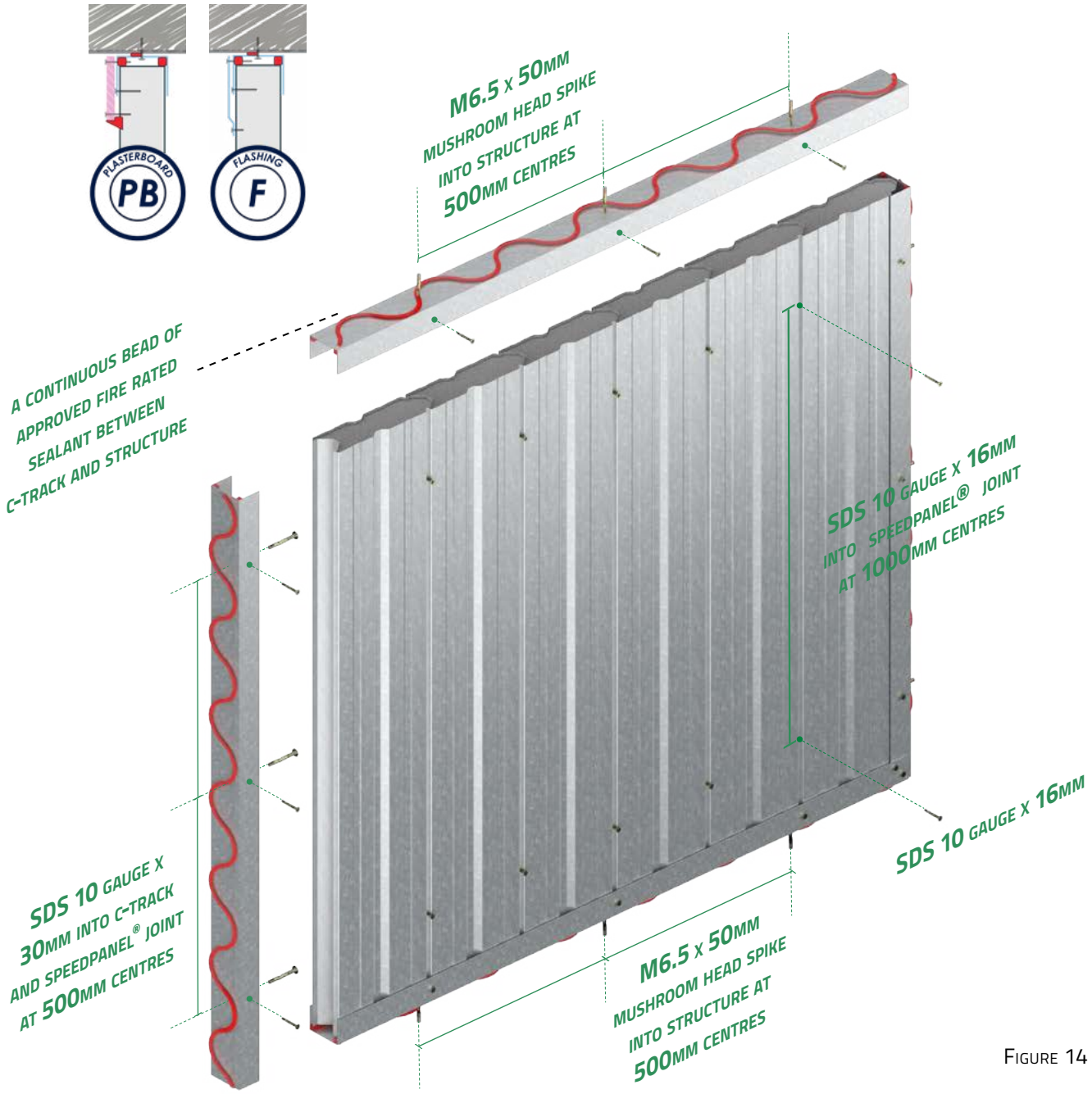


FIGURE 14

STEP 1 - APPLY SEALANT BETWEEN STRUCTURE AND C-TRACK

Before C-track/angles are fixed to structure, place a continuous bead of Speedpanel® approved fire-rated sealant between C-track/angles and structure for the entire perimeter - top, bottom and both sides.

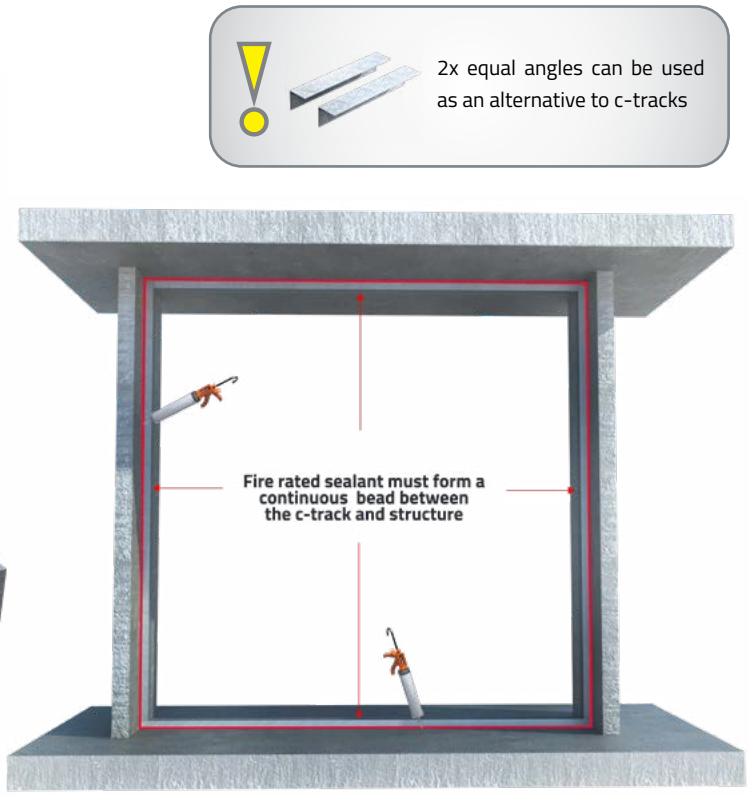


FIGURE 15

STEP 2 - PRE-DRILL C-TRACK TO STRUCTURE

Pre-drill through C-track/angles into structure at 500mm centres with a masonry drill bit.

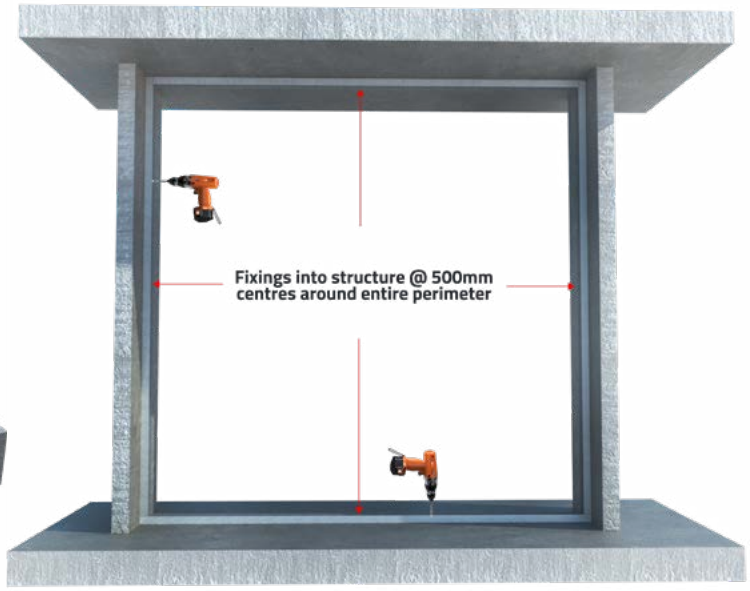


FIGURE 16

Vertical Installation

STEP 3 - FIX C-TRACK TO STRUCTURE

Place fixings through the C-track or angles into structure at 500mm centres.

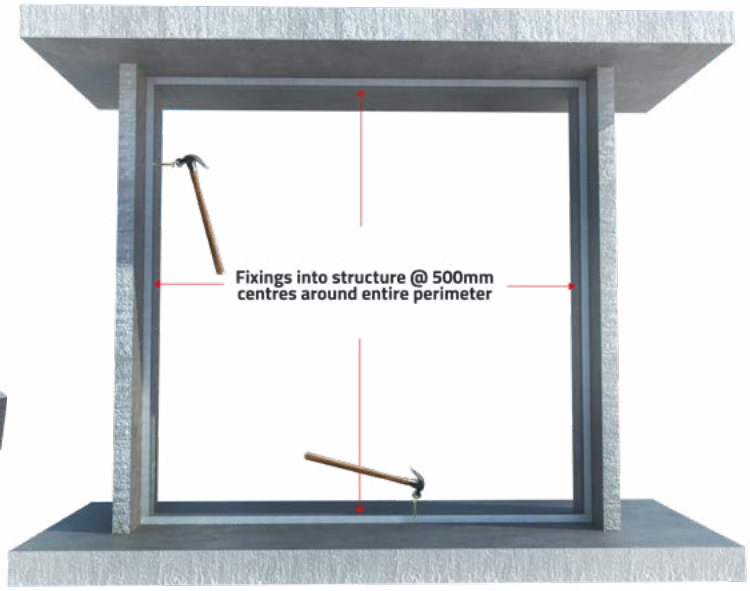


FIGURE 17

STEP 4 - APPLY SEALANT

Place a continuous bead of fire-rated sealant along the internal corner of one side of the C-track. Sealant to be applied for the entire internal perimeter - top, bottom and both sides.

Due to unevenness in the substrate, it may be necessary to place a bead of sealant after the C-track has been secured to ensure a proper seal.

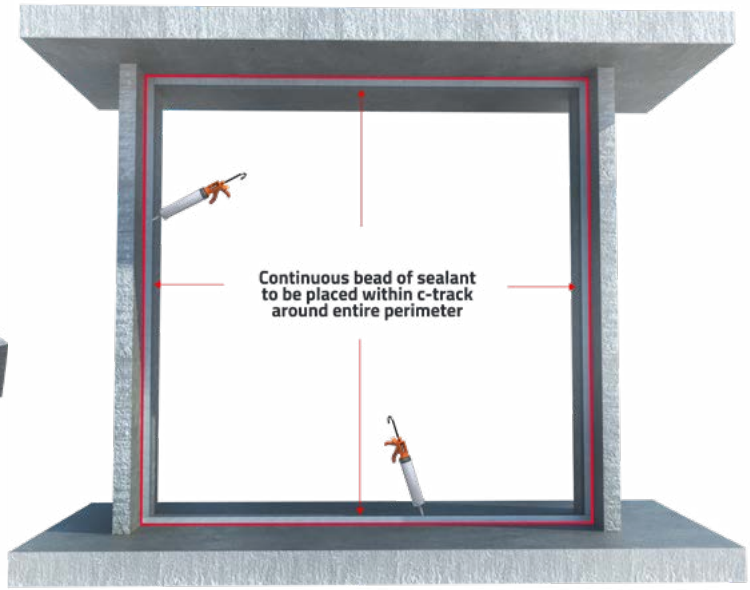


FIGURE 18

STEP 5 - NOTCHING & FOLDING C-TRACK

Cut and fold out the top and bottom C-tracks with an angle grinder, perform cuts in line, to both top and bottom C-tracks on the internal flange of the C-tracks [notching and folding will enable the last few panels to be installed with ease].

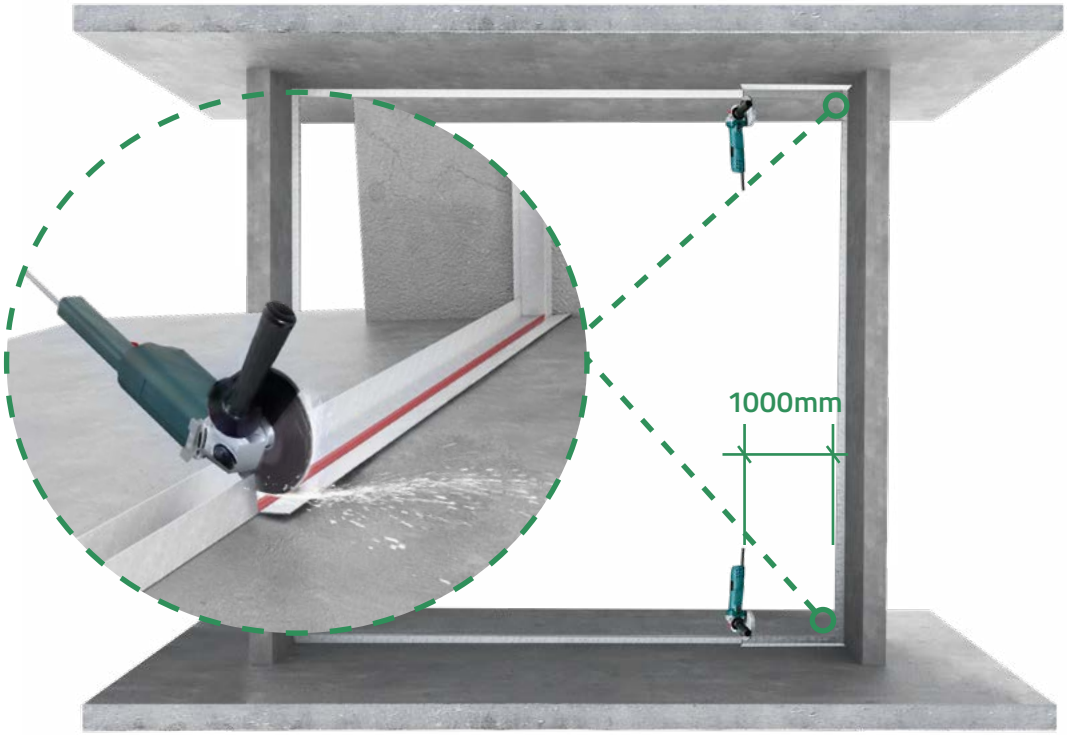


Figure 19

STEP 6 - INSTALL SPEEDPANEL® VERTICALLY

Remove plastic film and slide each of your panels into the C-track, stopping at the folded C-track mark. Panels should be a maximum of 20mm shorter than the tight dimension between structures to assist with fitting. Eg; slab to slab = 4.0m panel length of panel will be: 3.98m.

Each panel must fully interlock before fixing to ensure your fire rating and acoustic properties are maintained.

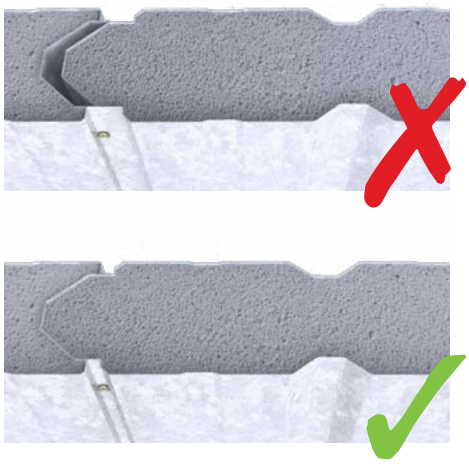


Figure 20

Speedpanel® products are typically manufactured with a protective plastic film to provide defence against staining and cosmetic damage during manufacturing, handling and transportation. In all applications the plastic film is required to be removed prior to installation. Please refer to page 5 for more information.

Figure 21

Vertical Installation

STEP 7 - FITTING FINAL PANELS

Installing the last four panels is done by placing the panels in an arc, and in 'one movement', snapping them into place.

SNAPPING ACTION SHOWN BELOW.

FIGURE 22

FOLD C-TRACK FLANGE BACK & PLACE SEALANT OVER NOTCHES

Once the wall is completed, fold back the C-track flange to its original location, fix and seal the notch cut with fire-rated sealant.

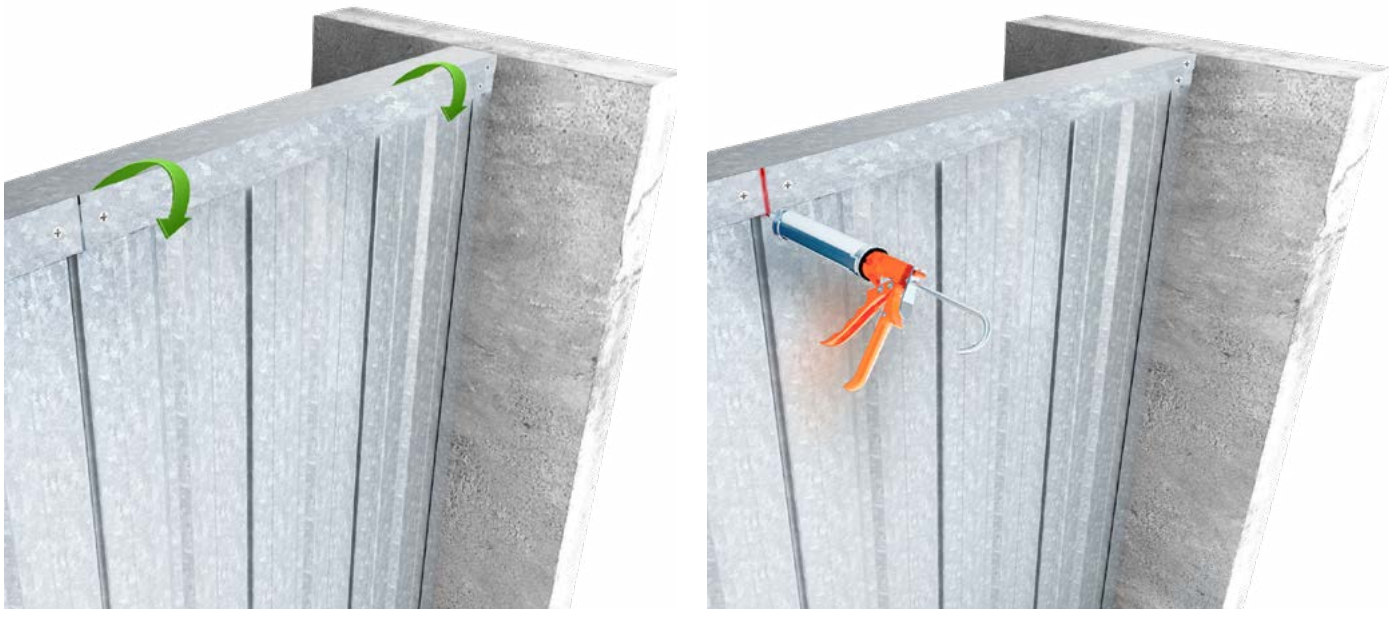


FIGURE 23

STEP 8 - RIPPING PANELS

To complete the Speedpanel® wall, a panel may need to be cut lengthways. This is known as ripping. The reason a panel may need to be ripped is due to the fact that most wall lengths will not be specific to 250mm incremental measurements (250mm is the coverage of installed Speedpanel®).

The recommended tools to use when ripping a Speedpanel® are:

- Sabre saw (also known as a reciprocating saw)
- Radial saw with dust extraction (recommended cutting disc: Hilti DC-D 305/22)

FIGURE 24

FITTING FINAL PANELS (RIPPED)

Using the snapping together method of finishing a wall, outlined in step 7, the newly ripped panel is used as the finishing panel to the wall, placing the open cut edge into the C-track.

Where a ripped panel may be required between doors or other penetrations the minimum width of panel is to be 110mm.

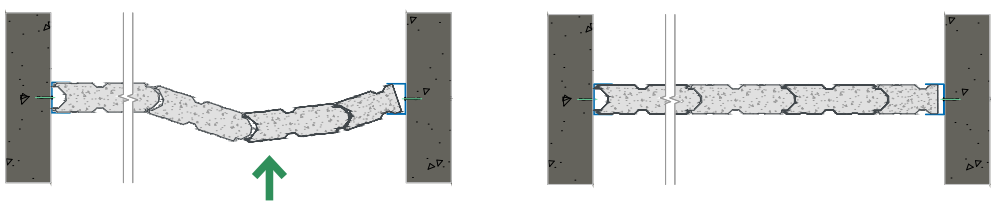


FIGURE 25

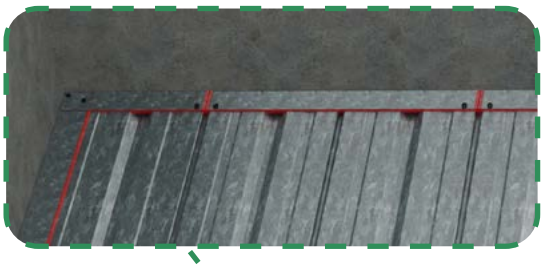
Vertical Installation

STEP 9 - STANDARD FIXINGS OF VERTICAL WALLS

A) WALLS UP TO 5.0m IN HEIGHT

All panels have fixings screwed directly into the panel joints vertically at 1.0m centres and horizontally at 250mm centres. C-tracks/angles enclosing the panels are fixed at 500mm centres. At C-track/angle corner junctions there are to be two fixings screwed at 45° as shown.

Panel size	Max. height
51mm / 64mm	Up to 5.0m
78mm	Up to 6.0m



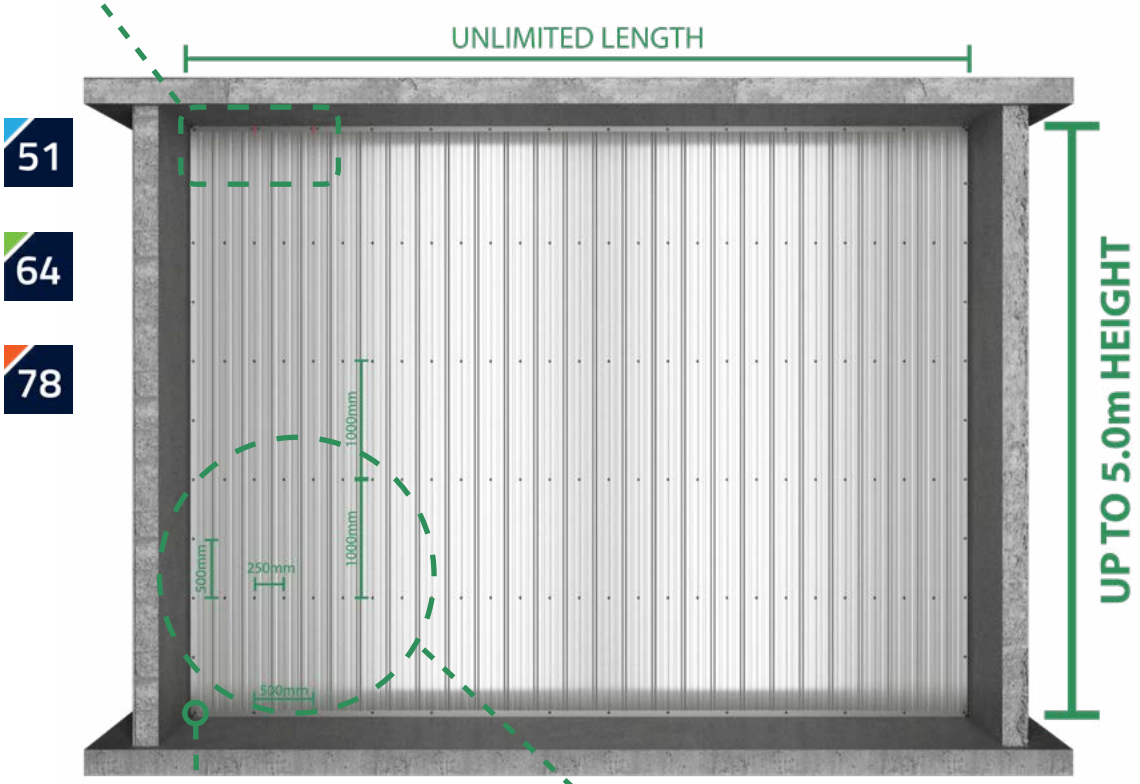
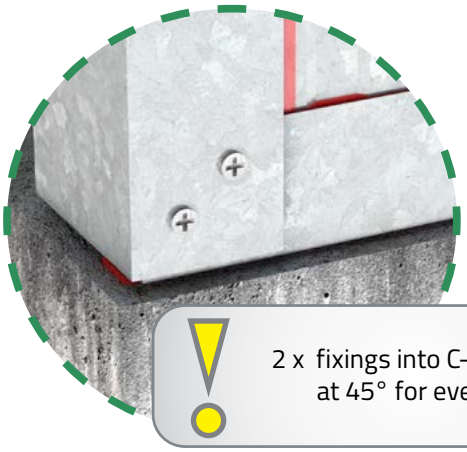
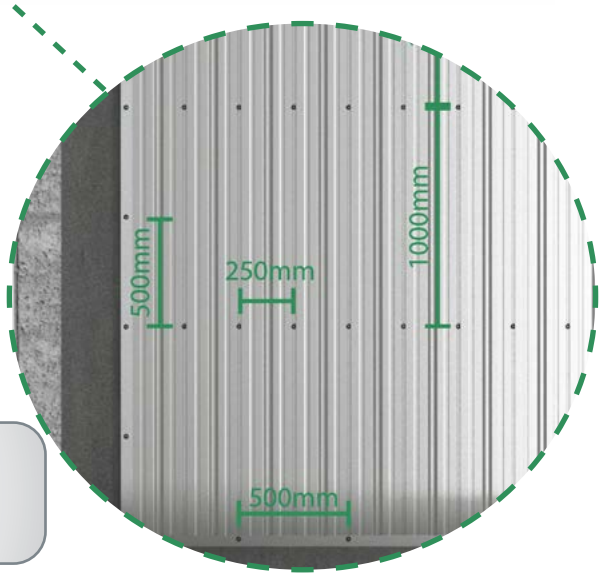


FIGURE 26



2 x fixings into C-track junction at 45° for every corner.



B) WALLS UP TO 6.0m IN HEIGHT

Walls up to 6m high require additional fixings to withstand the extra load. Working your way toward the centre (from both sides) fix the first two panels at 500mm, the second two at 750mm and the rest at 1000mm centres vertically as shown below.

Note: Only 78mm panels can be used for walls up to 6.0m height.

Speedpanel® walls greater than 6m high must be supported with additional structures. Please contact our office for more information.

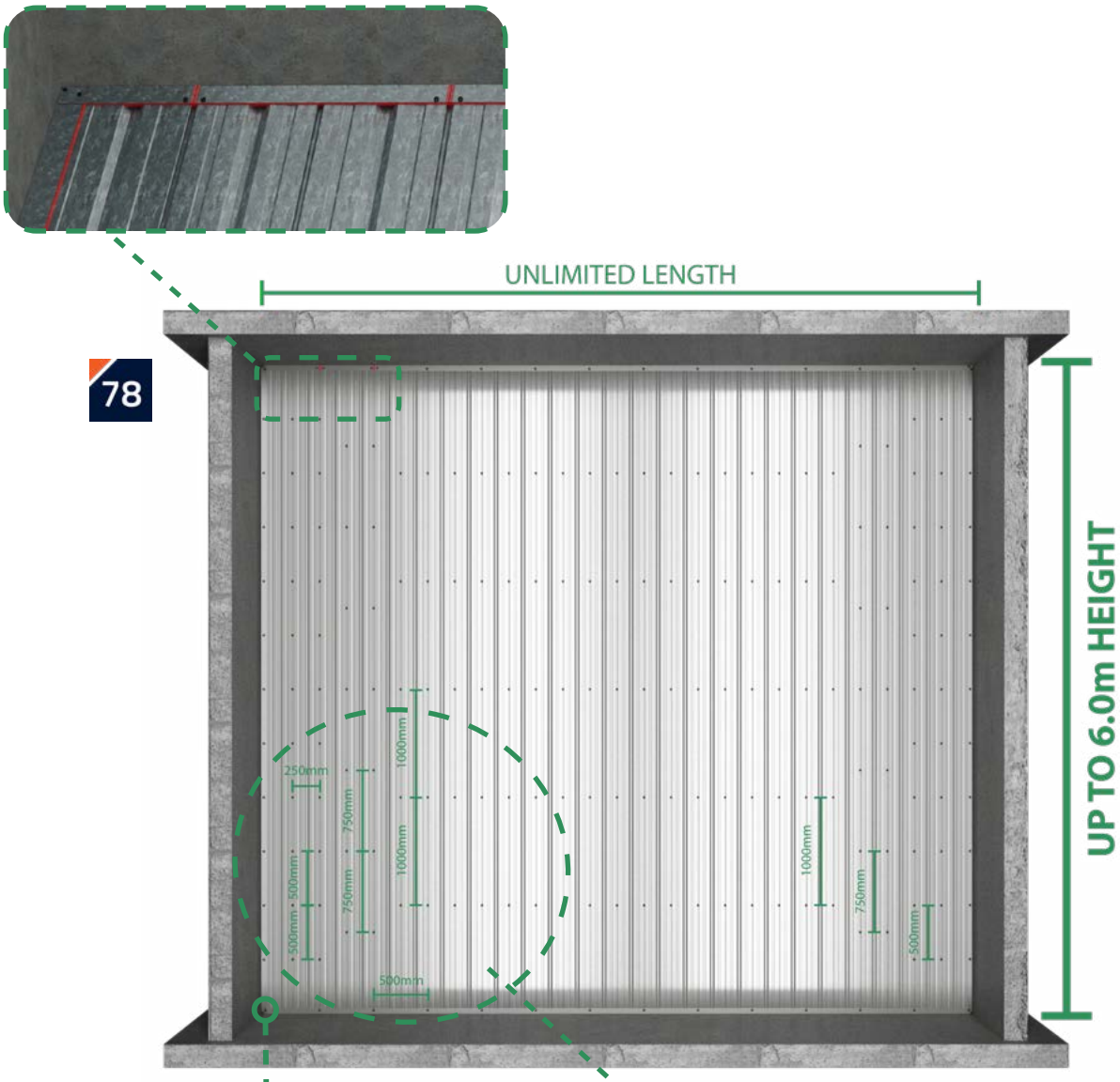
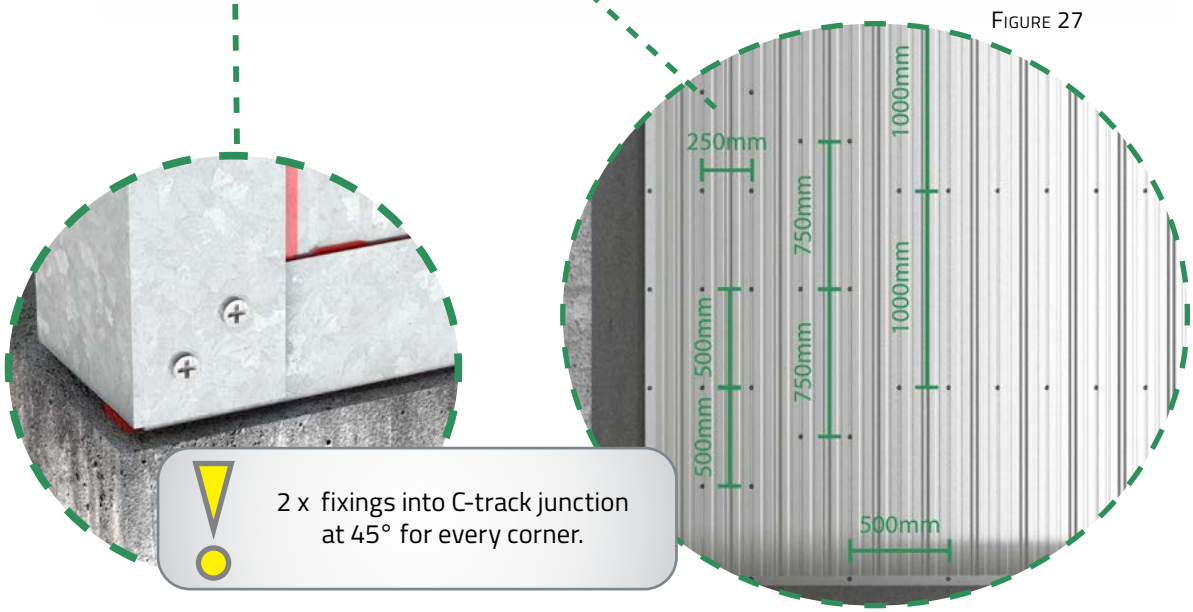


FIGURE 27



2 x fixings into C-track junction at 45° for every corner.

Vertical Installation

STEP 10 - PLACE SEALANT BEAD TO C-TRACK PERIMETER

Fire-rated sealant applied along one side of the length of C-track or angle only where Speedpanel® meets C-track or angle - 3 beads of sealant required. A bead of sealant must always be between the surface of the substrate and the track. Refer to Figures 28, 29 and 30.

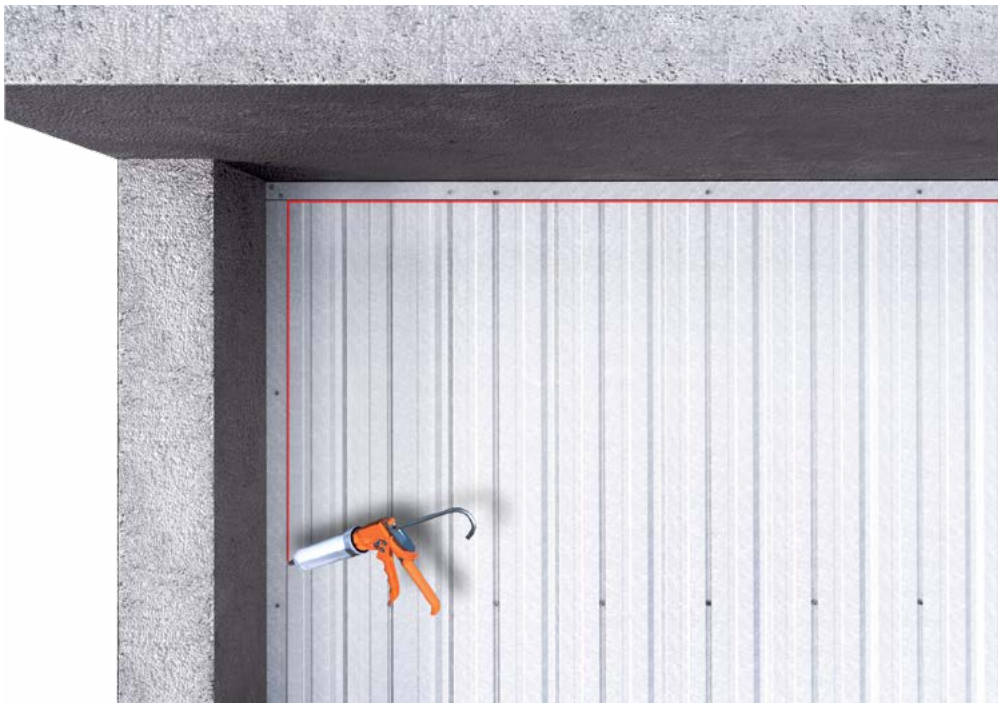


Figure 28

Vertical sectional view showing one sealant placement option. For further options see pages 60 to 63.

Figure 29 [1]

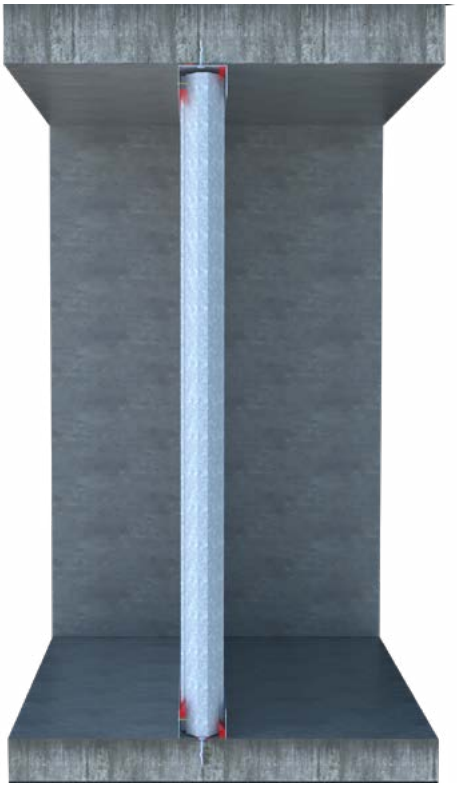


Figure 30

1. Exova Warringtonfire - Report No. 21622

STEP 11 - HEAD-TRACK PROTECTION

A) METAL FLASHING (ARCHITECTURAL OPTION)

A 130mm deep sheet of head-track protection is required on the top C-track only. Head-track protection is fixed with 30mm self drilling screws at 500mm centres (staggered at 250mm) in two rows fixed through to top C-track.

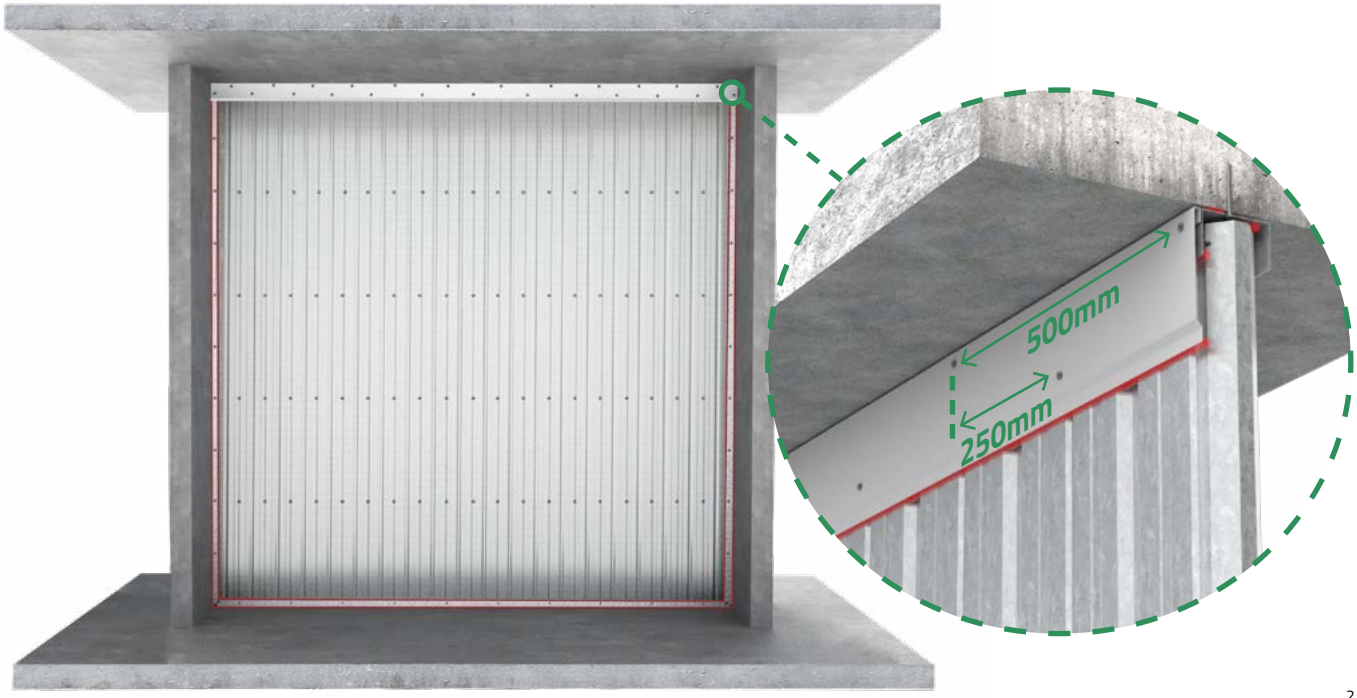


FIGURE 31 [2]

B) FIRE-RATED PLASTERBOARD (COMMON OPTION)

A 120mm deep fire rated plasterboard sheet of head-track protection is required on the top C-track only. Head-track protection is fixed with 40mm x 6 Gauge self drilling screws at 250mm centres (staggered at 125mm) in two rows fixed through to top C-track. Fire-rated plasterboard strips are required to be butt joint and sealed with a fire-rated sealant.

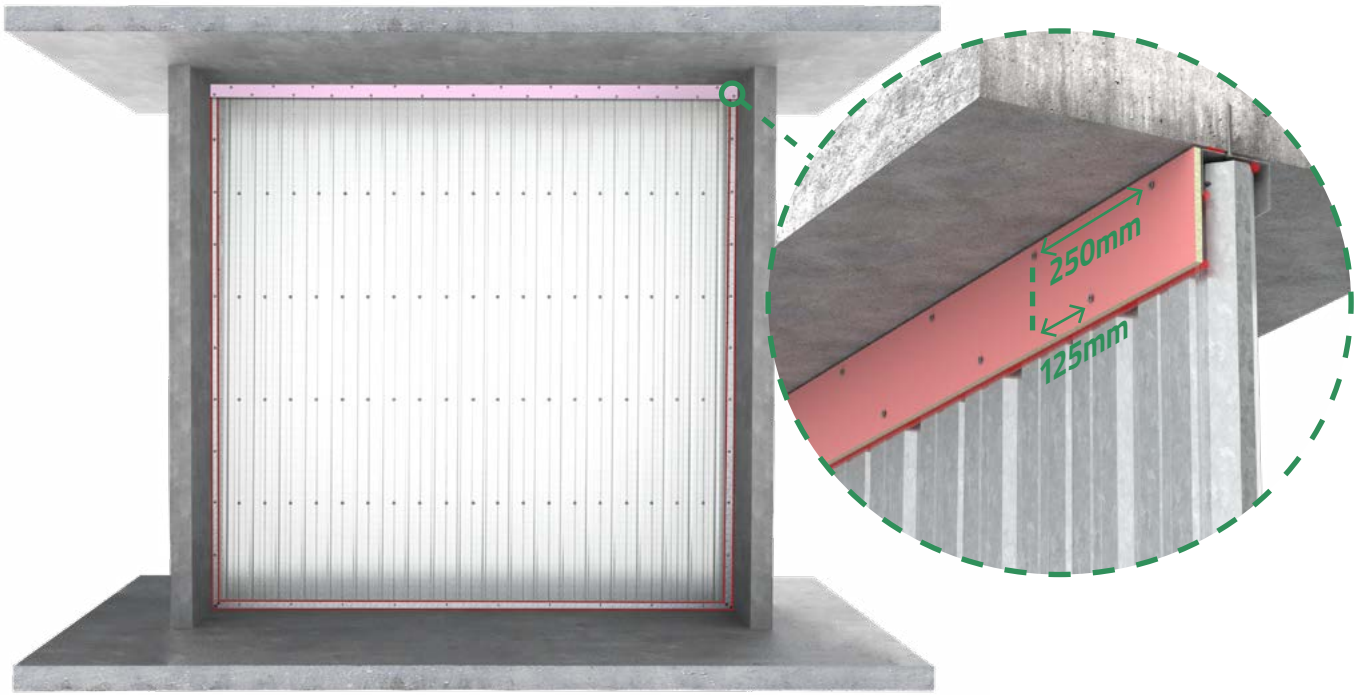


FIGURE 32 [2]

2. Exova Warringtonfire - Report No. 28928

Sealant Options

PLASTERBOARD PROTECTED HEAD-TRACK

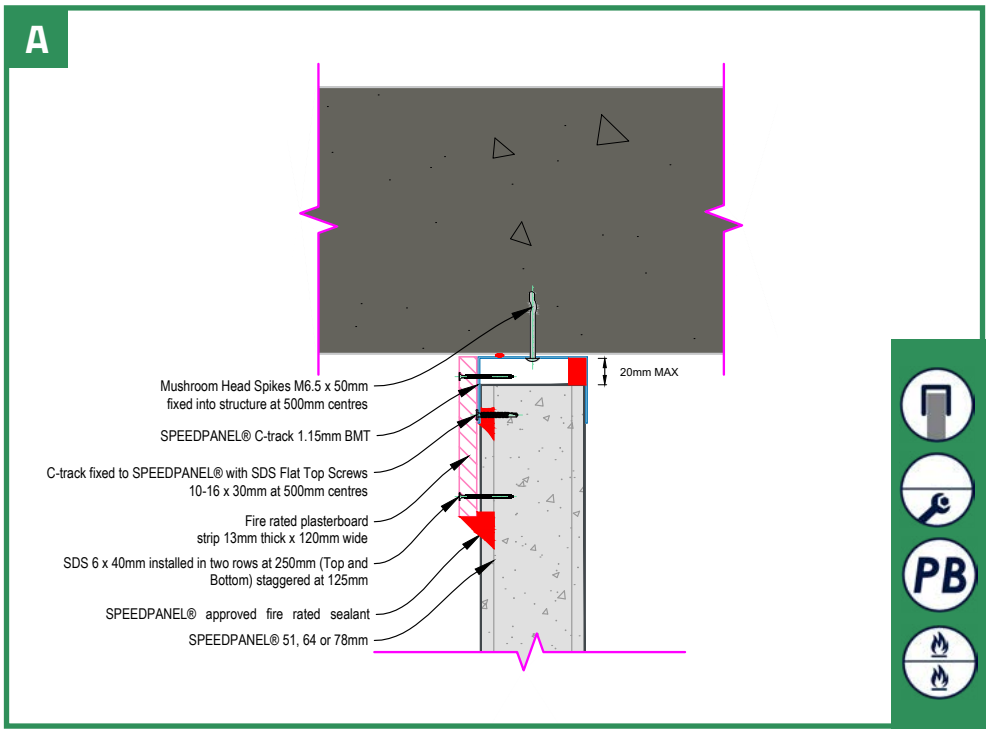


FIGURE 33 [1]

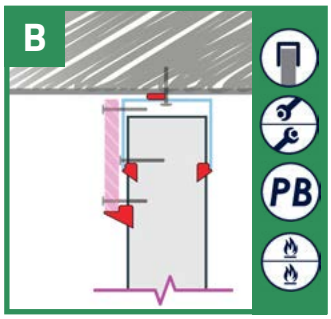


FIGURE 34 [1]

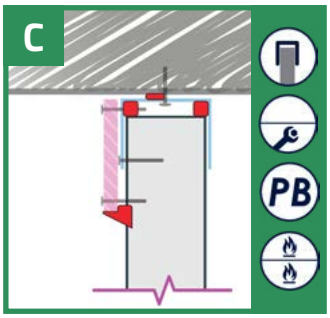


FIGURE 35 [1]

1. Exova Warringtonfire - Report No. 28928

METAL FLASHING PROTECTED HEAD-TRACK

0.7BMT x 130mm flashing strip sealant options.

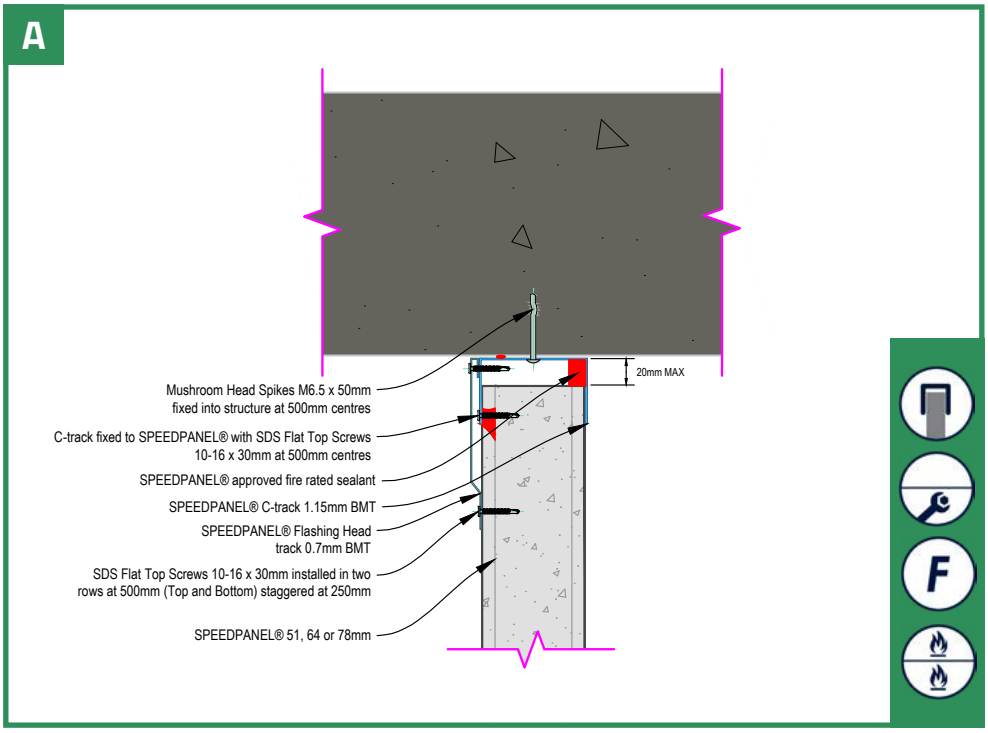


FIGURE 36 [2]

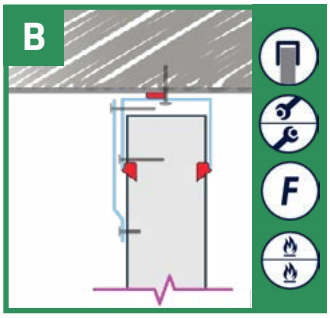


FIGURE 37 [1]

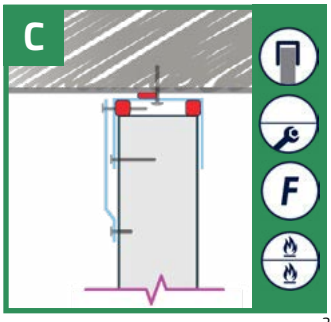


FIGURE 38 [2]

SUSPENDED HEAD-TRACK

Requirement options for particular wall penetrations. (Refer to the General Penetrations chapter for more information).

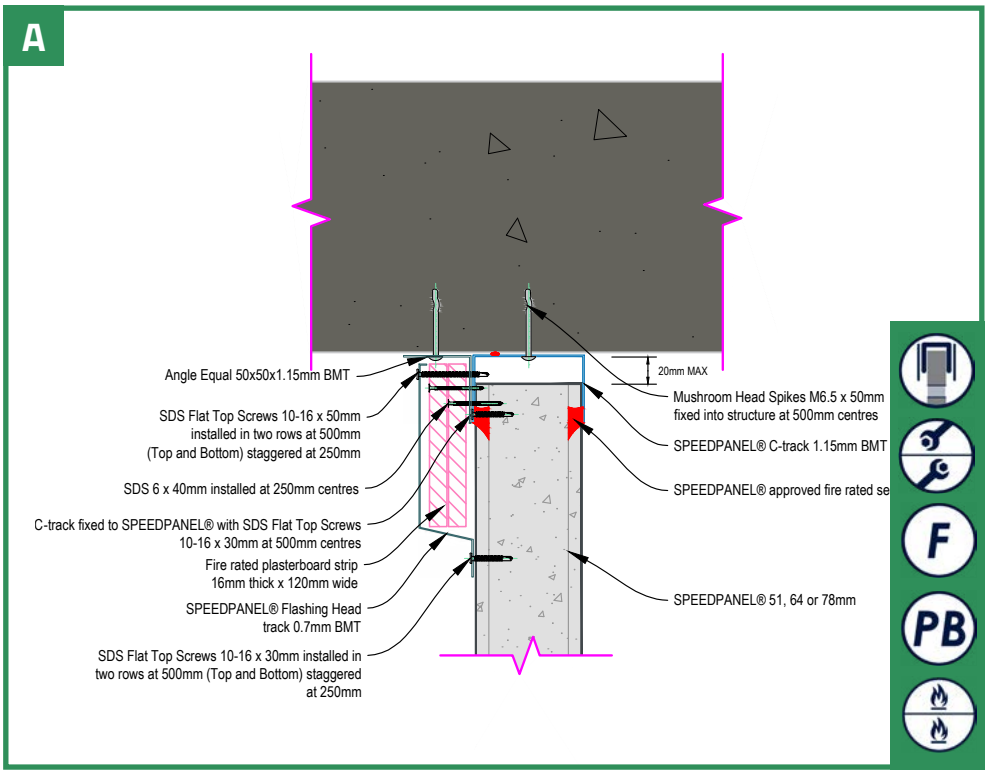


FIGURE 39 [1]

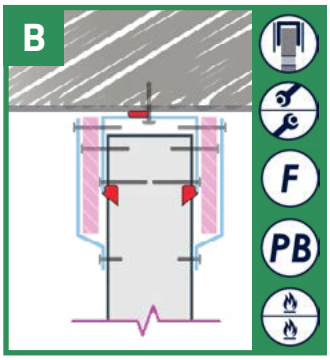


FIGURE 40 [2]

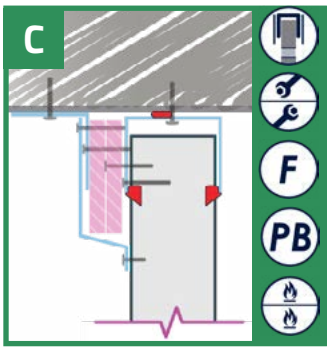


FIGURE 41 [1]

1. Exova Warringtonfire - Report No. 21622
2. Exova Warringtonfire - Report No. 28928

Sealant Options

VERTICAL WALL FEMALE ENDS

Sealant position options for full size female end panels.

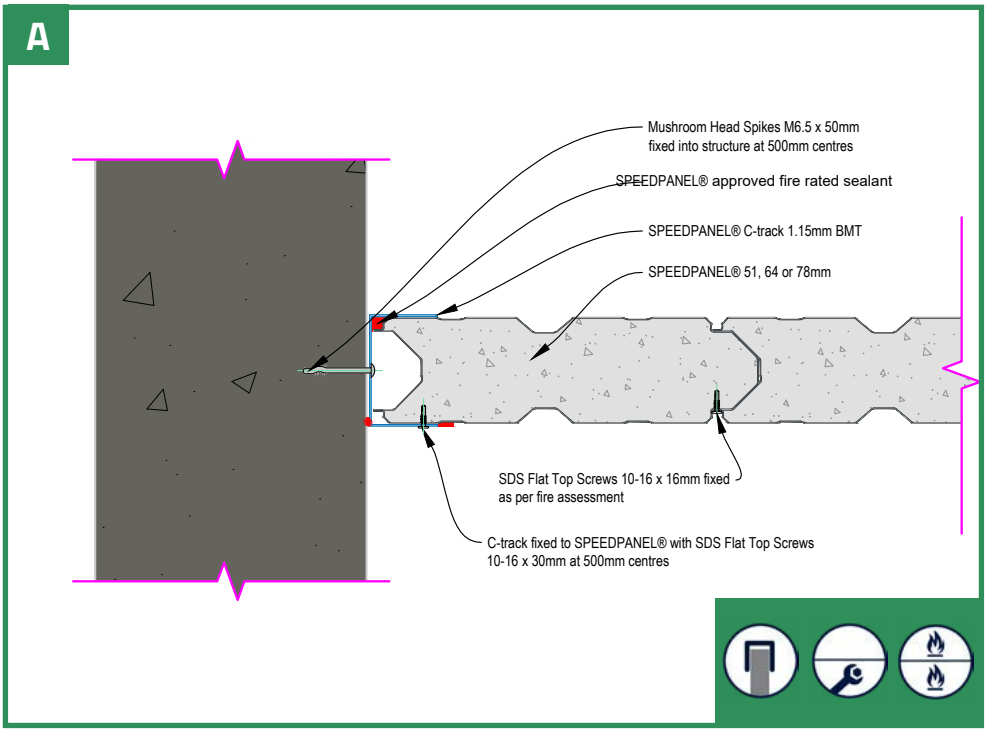


FIGURE 42

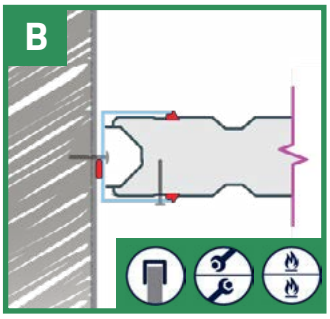


FIGURE 44 [1]

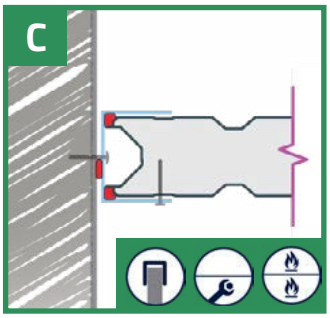


FIGURE 46 [1]

VERTICAL WALL MALE ENDS

Sealant position options for full size male end panels.

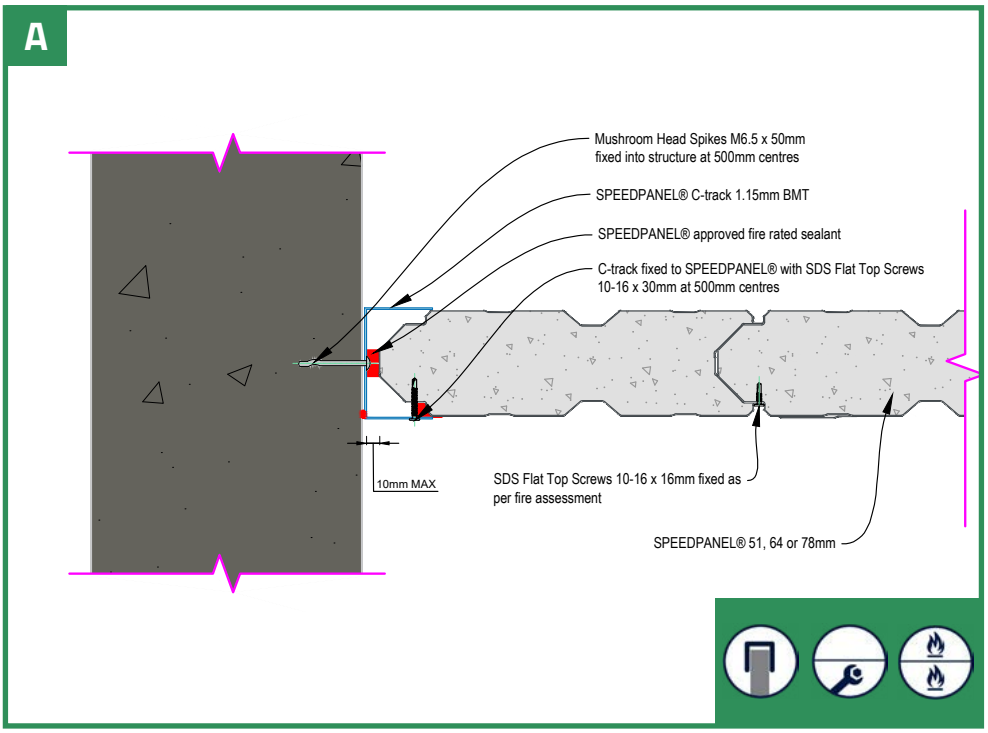


FIGURE 43

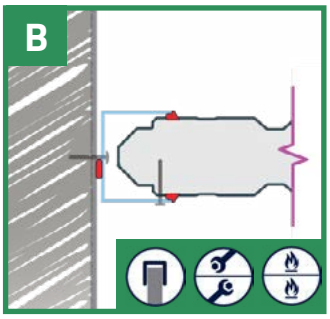


FIGURE 45 [1]

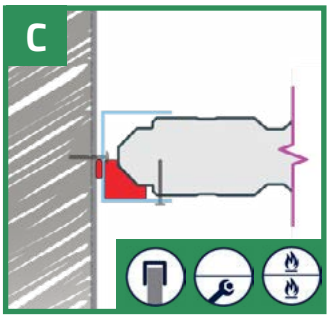


FIGURE 47 [1]

1. Exova Warringtonfire - Report No. 21622

VERTICAL WALL RIPPED ENDS

Sealant position options for ripped end panels.

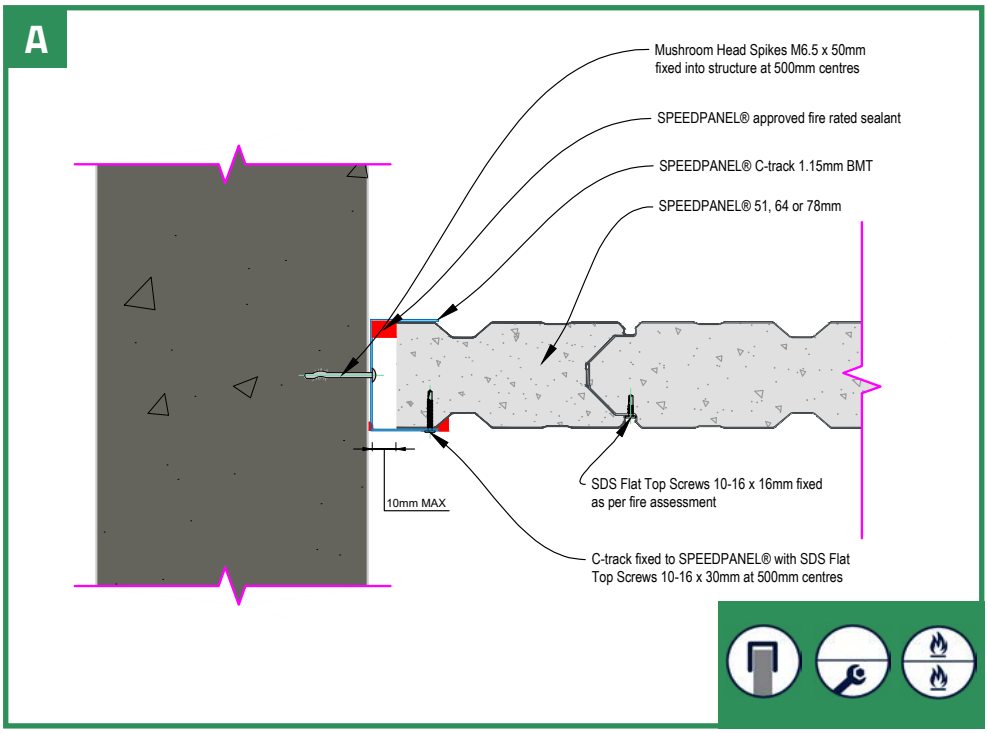


FIGURE 48

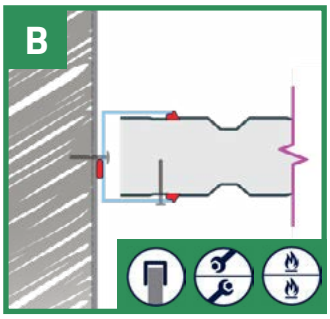


FIGURE 50

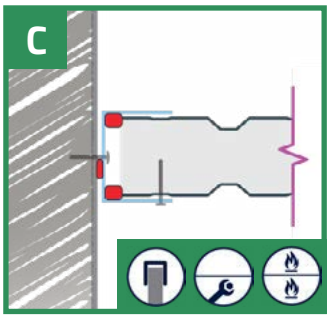


FIGURE 52

BASE OF VERTICAL WALLS

Bottom track sealant position options.

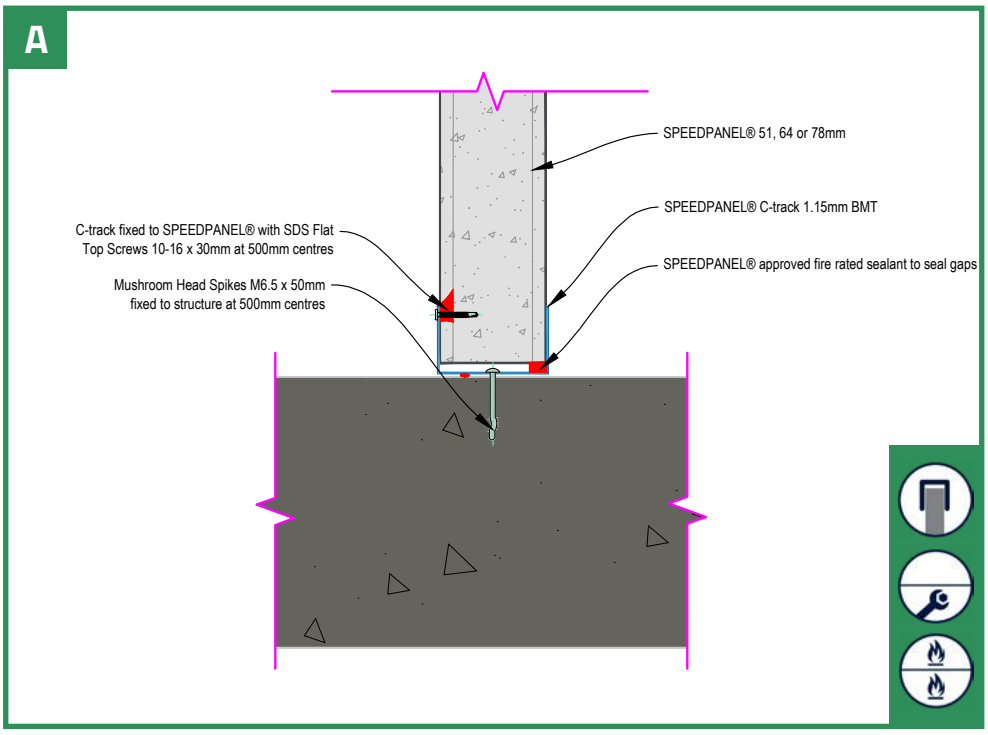


FIGURE 49

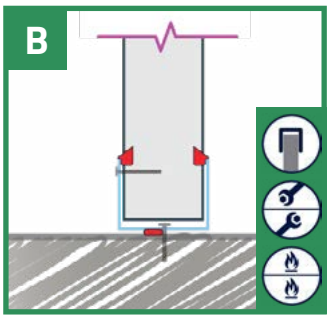


FIGURE 51 [1]

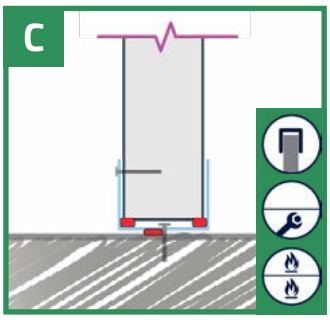
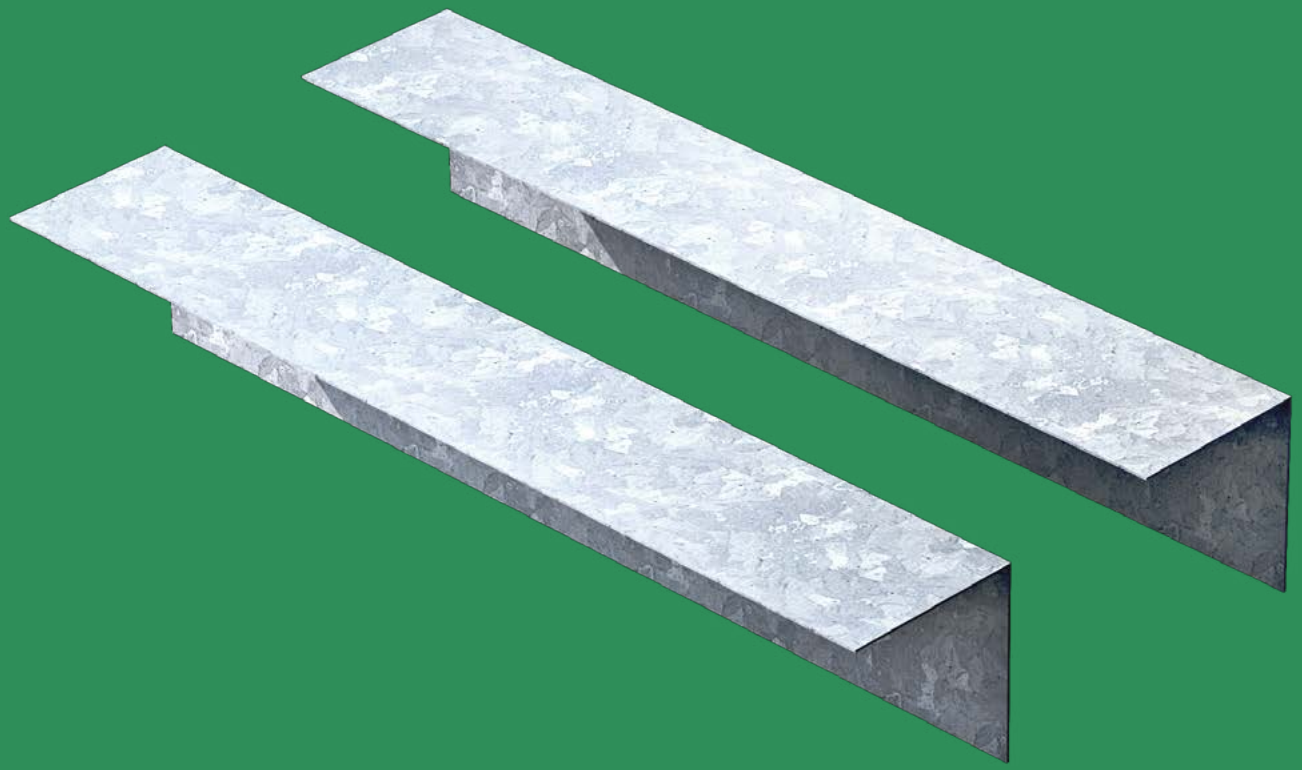


FIGURE 53 [1]

1. Exova Warringtonfire - Report No. 21622

2.3 B

ALTERNATIVE HEAD-TRACK OPTION: STEEL ANGLES



EQUAL ANGLES CAN BE USED AS AN ALTERNATIVE TO C-TRACK

2.3B VERTICAL INSTALLATION

PART B (EQUAL STEEL ANGLE)

STEP 1 - INSTALL ANGLE INTO PLACE

As an alternative to a head C-track, two 50 x 50 x 1.15mm BMT equal angles can be used for easier installation in difficult areas. Fit equal angle first in line with wall position.

Note: Remember to apply sealant as explained previously in Chapter 2.3A.

FIGURE 54

INSTALL FINAL PANELS AS PER NORMAL C-TRACK INSTALLATION.

FIGURE 55

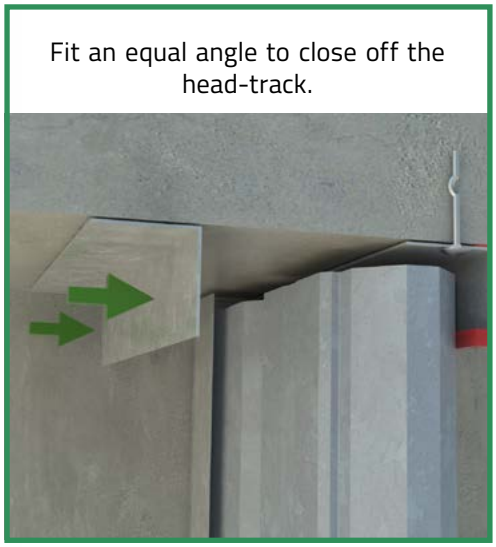


FIGURE 56

Equal angle: Vertical walls

STEP 2 - CLOSING OFF THE BOTTOM TRACK

As an alternative to using a folded down flap on C-track, equal angle can be fitted to close off a wall. Once equal angle is fitted, fix and seal as per normal C-track requirements.

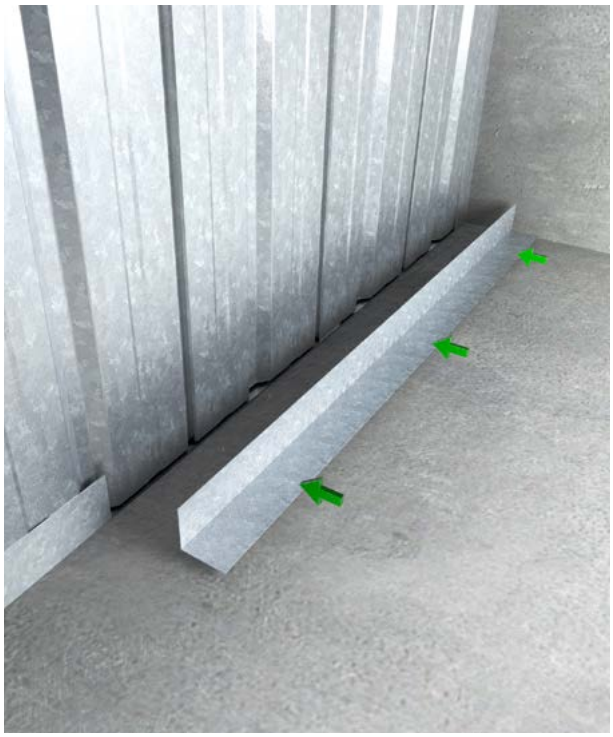


FIGURE 57

FIGURE 58

STEP 3 - SEALANT & HEAD TRACK PROTECTION

Fit and apply sealant as per normal C-track installation. Head track protection can now be fitted as per normal C-track protection, using metal flashing or fire-rated plasterboard when the air gap is larger than 10mm between soffit and Speedpanel® (max. 20mm).

FIGURE 59

FIGURE 60

SEALANT OPTIONS

Equal angle option details for sealant positions on metal flashing or fire-rated plasterboard.

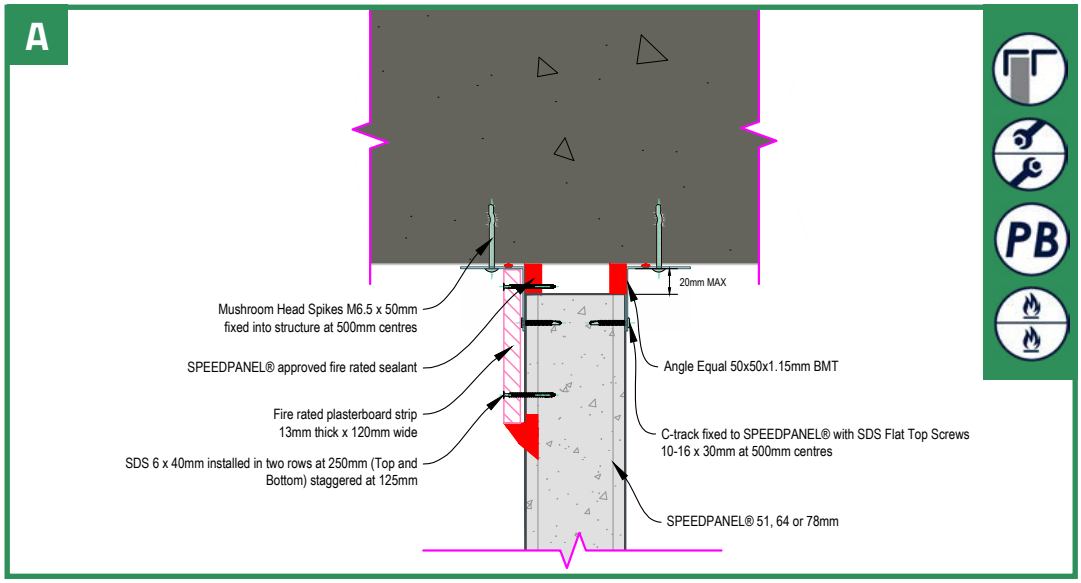


FIGURE 61 [2]

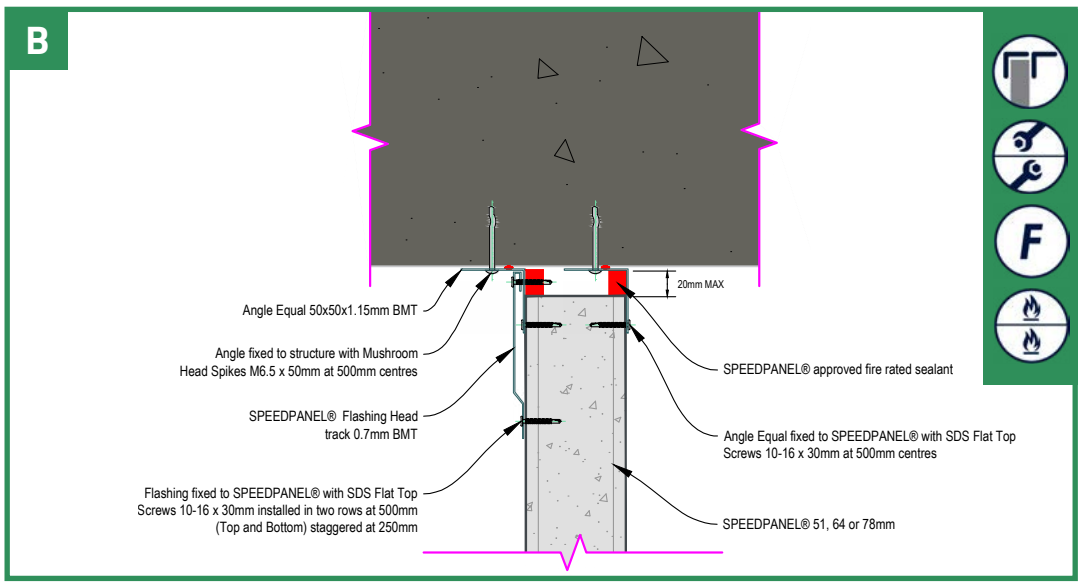


FIGURE 62

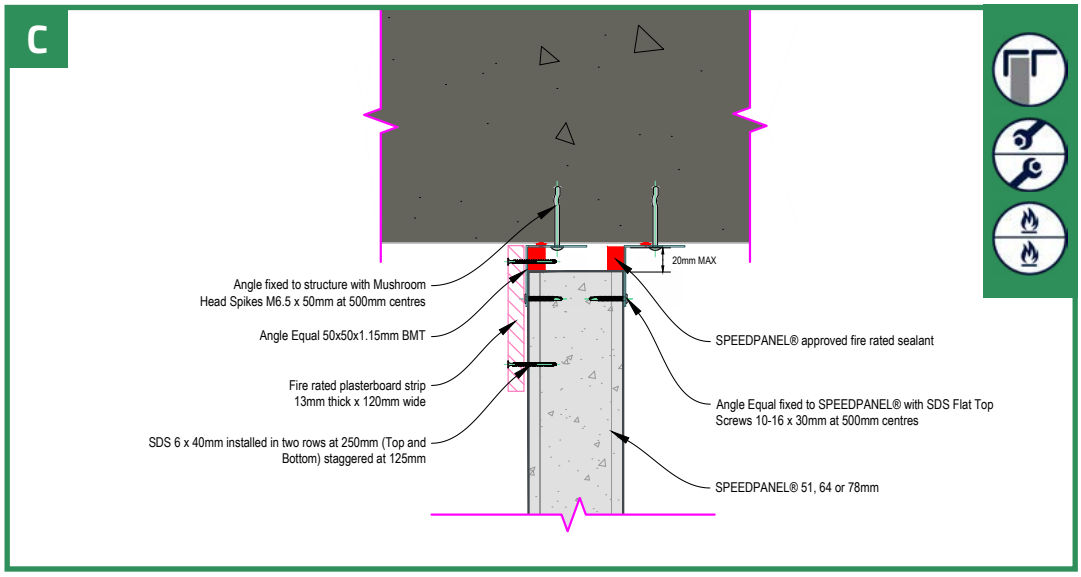


FIGURE 63 [1]

1. Exova Warringtonfire - Report No. 21622
2. Exova Warringtonfire - Report No. 28928

SCAN THE QR-CODES BELOW TO DOWNLOAD THE ASSESSMENT REPORTS USED IN THIS CHAPTER.

1 - REPORT 21622

3 - REPORT 28961

2.4 A

STEP BY STEP

HORIZONTAL INSTALLATION

2.4 HORIZONTAL INSTALLATION

PART A (C-TRACK)

KEY INFORMATION TO ASSIST IN

ORDERING SPEEDPANEL®

1. Notify us of your fire and acoustic requirements.
2. Notify us of your wall spans - we pre-cut to size.
3. Nominate: coloured steel or standard galvanised finish.
4. Determine how many panels you require.

$$\frac{\text{WALL HEIGHT (MM)}}{\text{PANEL LENGTH 250 (MM)}} = \text{AMOUNT OF PANELS REQUIRED (ROUND UP TO NEAREST WHOLE NUMBER)}$$

HORIZONTAL SPEEDPANEL® SYSTEM

Note that the head protection (flashing or fire-rated plasterboard) is not shown for clarity purposes.

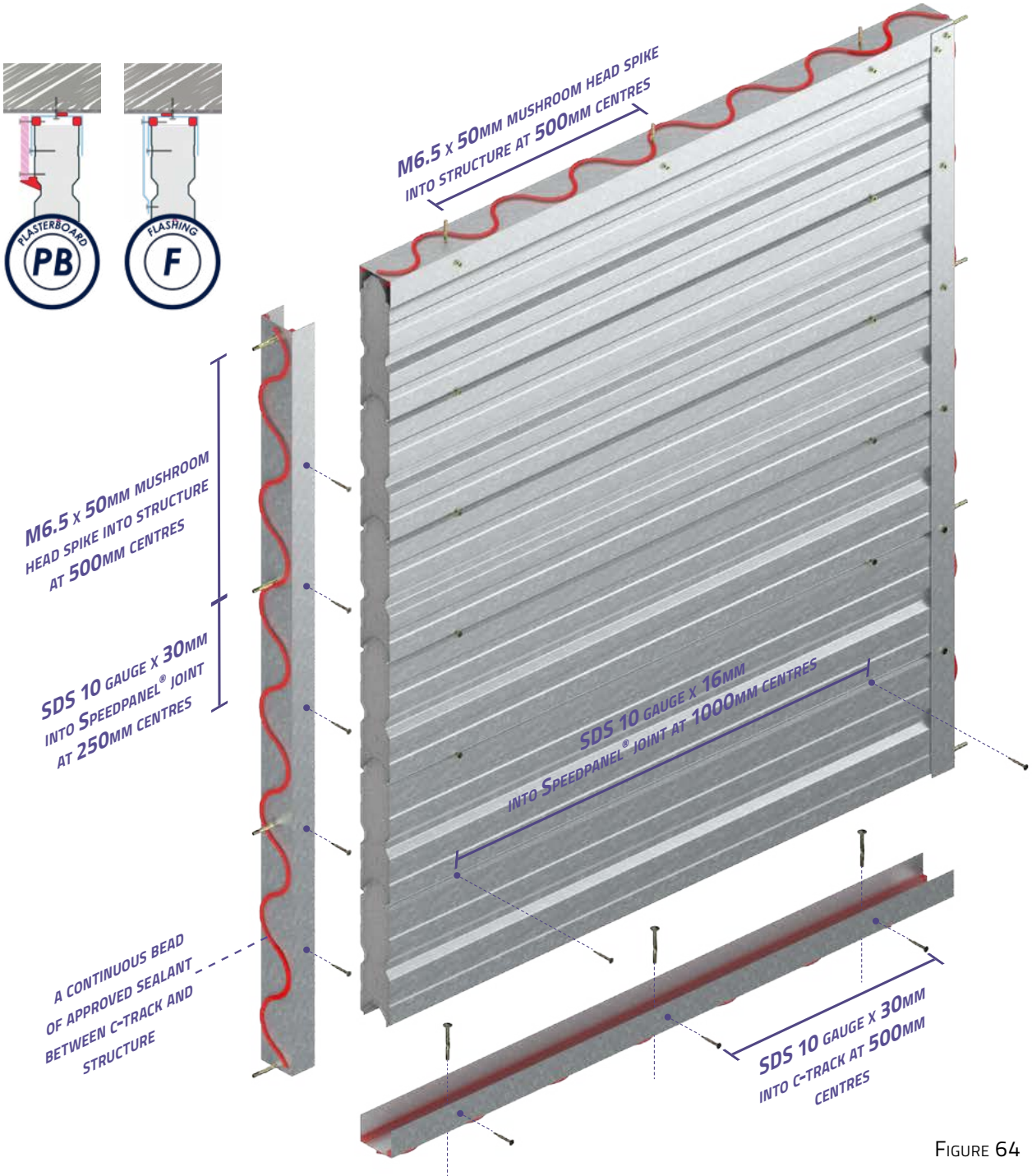


FIGURE 64

STEP 5 - NOTCHING & FOLDING C-TRACK

Cut and fold out the side C-tracks with an angle grinder, perform cuts in-line to side C-tracks on the internal flange of the C-tracks (notching & folding will enable the last few panels to be installed with ease).

> For Steps 1-4 of this installation please refer to Vertical Installation chapter on pages 51-52.

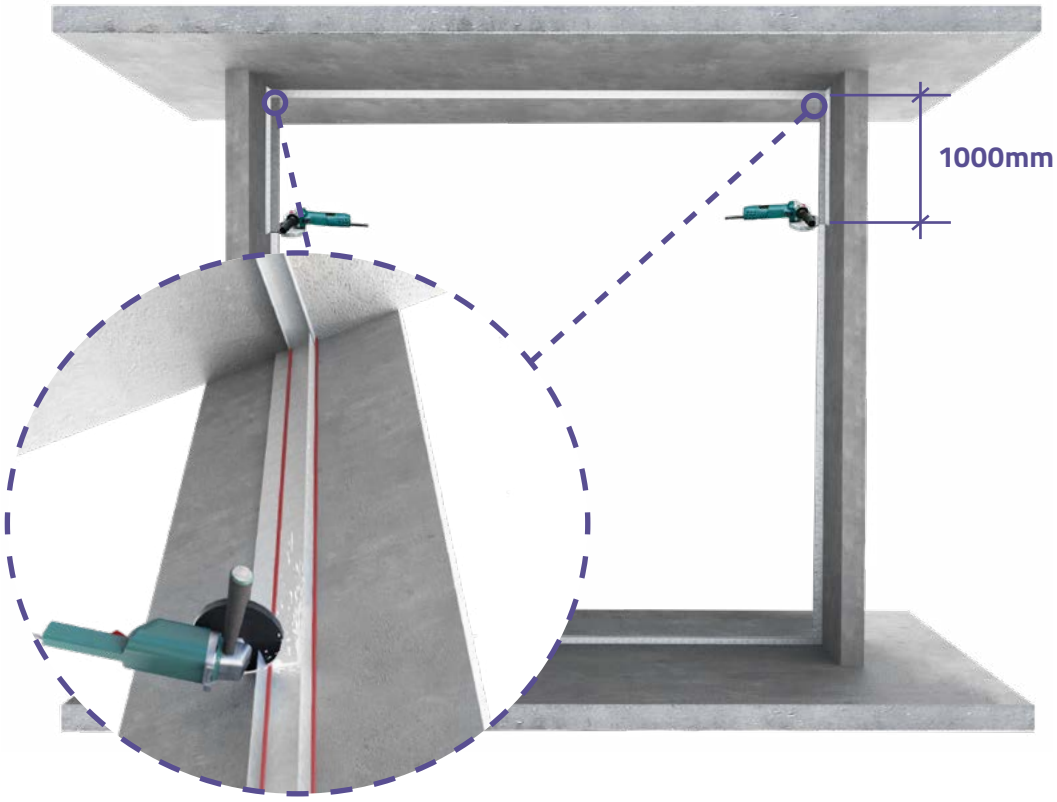


Figure 65

STEP 6 - INSTALL SPEEDPANEL® HORIZONTALLY

Remove plastic film and slide each of your panels within the C-track, stopping at the folded C-track mark. To assist fitting panels, panels should be a maximum of 20mm shorter than the tight dimension between structures. Eg; concrete wall to concrete wall = 4.0m Speedpanel® length will be: 3.98m.

> Speedpanel® products are typically manufactured with a protective plastic film to provide defence against staining and cosmetic damage during manufacturing, handling and transportation. In all applications the plastic film is required to be removed prior to installation. Please refer to page 5 for more information.

Each panel must fully interlock before fixing to ensure your fire rating and acoustic properties are maintained.

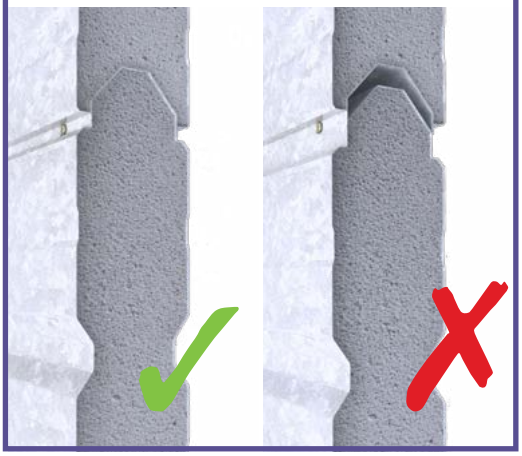


Figure 66

Figure 67

Horizontal Installation

STEP 7 - FITTING FINAL PANELS

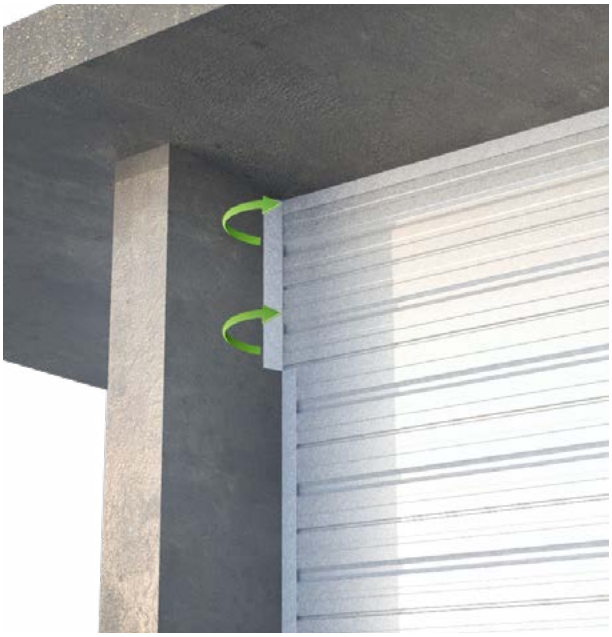
Installing the last two panels is done by placing the panels in an arc and in one movement snapping them into place.

Snapping action shown below.

Figure 68

FOLD C-TRACK FLANGE BACK & PLACE SEALANT OVER NOTCHES

Once the wall is completed, fold back the C-track flange to its original location, fix and seal the notches cut with fire-rated sealant, both top and bottom.



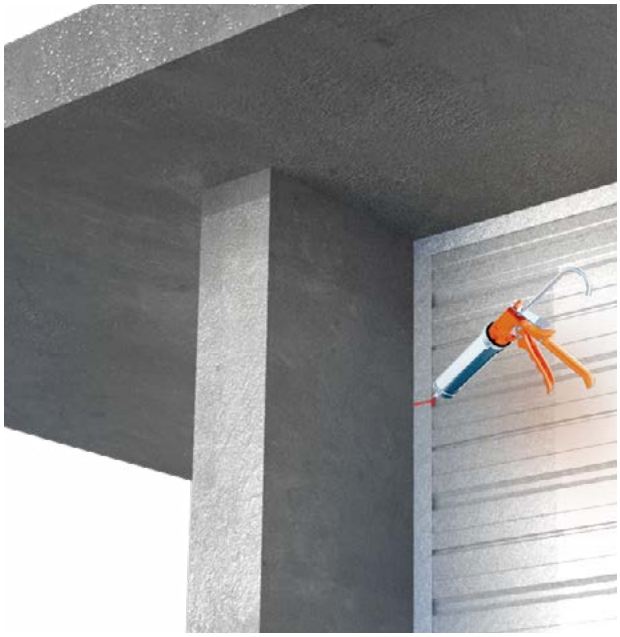


Figure 69

STEP 8 - RIPPING PANELS

To complete the Speedpanel® wall, a panel may need to be cut lengthways. This is known as ripping. The reason a panel may need to be ripped is due to the fact that most wall lengths will not be specific to 250mm incremental measurements. (250mm is the coverage of an installed Speedpanel®).

The recommended tools to use when ripping a Speedpanel® are:

- Sabre saw (also known as a reciprocating saw)
- Radial saw with dust extraction (recommended cutting disc: Hilti DC-D 305/22)

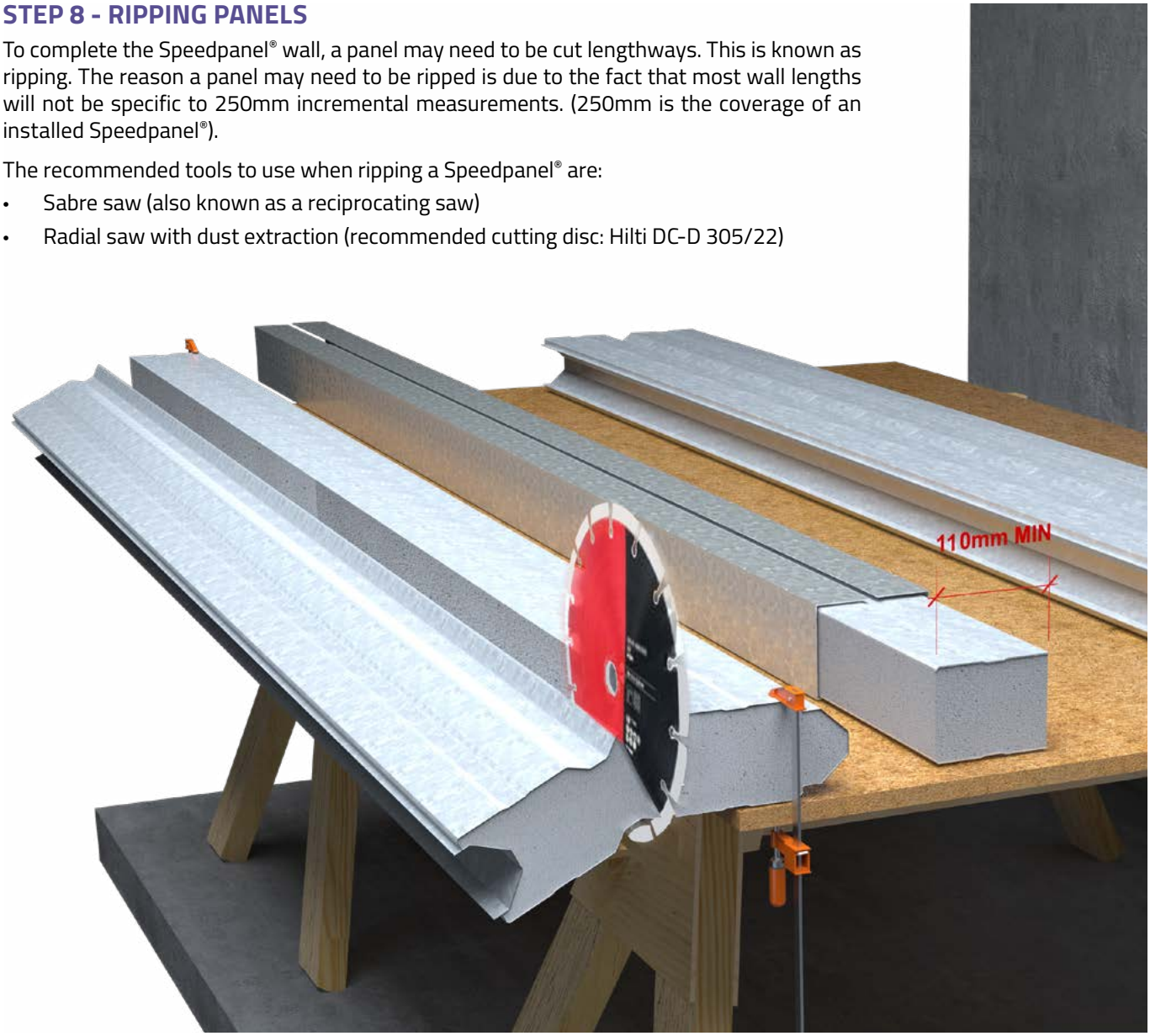


Figure 70

FITTING FINAL PANELS (RIPPED)

Using the snapping together method of finishing a wall, outlined in step 3, the newly ripped panel is used as the finishing panel to the wall, placing the open cut edge into the C-track.

Where a ripped panel may be required between doors or other penetrations the minimum width of the panel is to be 110mm.

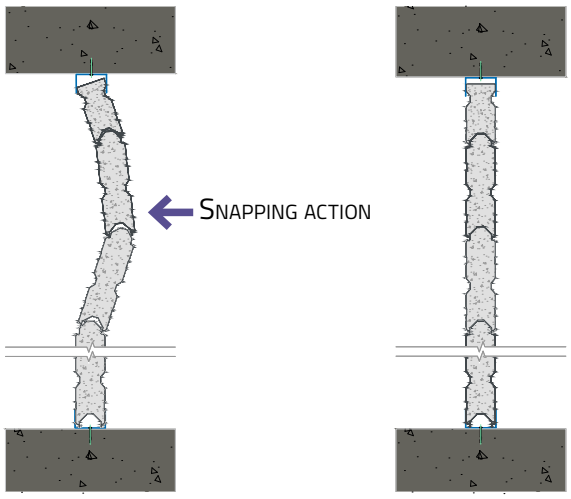


Figure 71

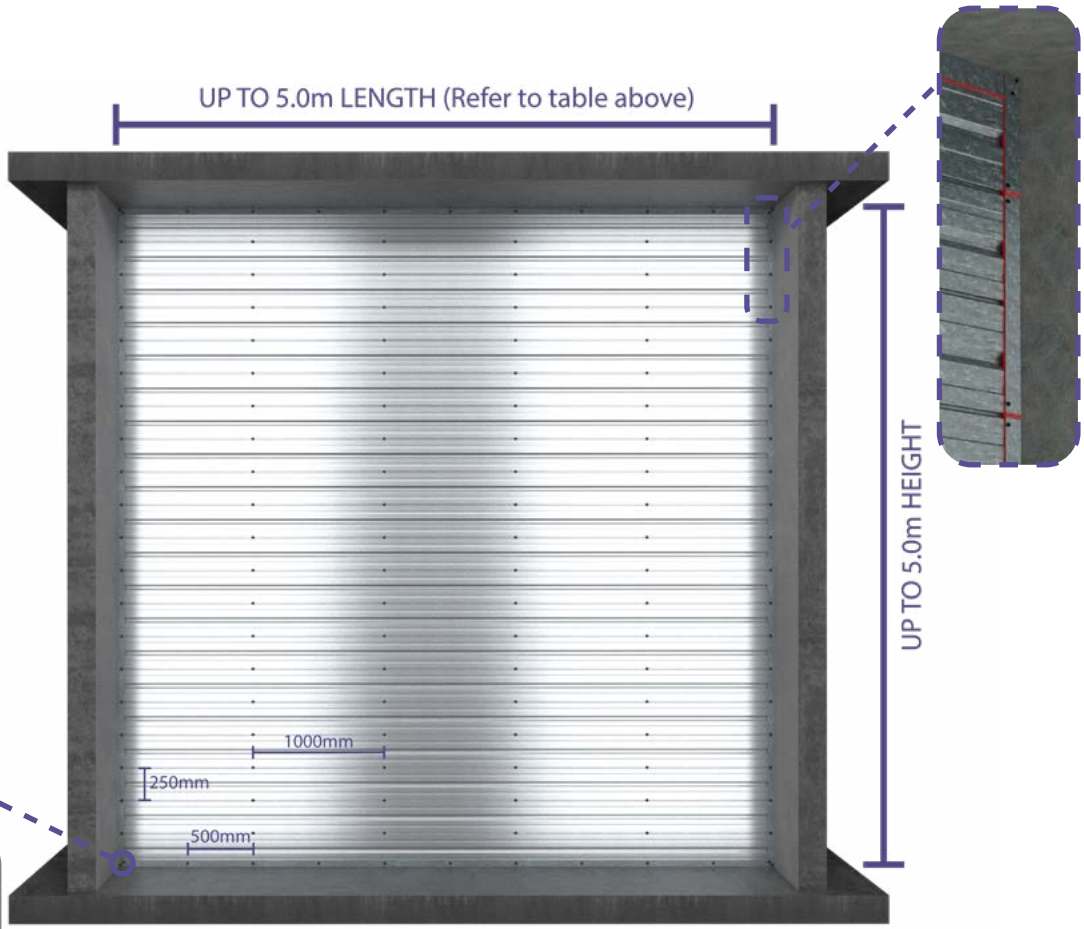
Horizontal Installation

STEP 9 - HORIZONTAL WALL STANDARD FIXING

All panels have fixings screwed directly into the panel joints vertically at 250mm centres on both sides and 1000mm centres horizontally into panel joints. Side C-track/angles enclosing the panels are fixed at 250mm centres while top and bottom tracks are fixed at 500mm centres. Where two C-tracks or angles meet there are to be two fixings screwed at 45° as shown.

Panel size	Max. length
51mm / 64mm	Up to 3.0m
78mm	Up to 5.0m

Unlimited height can be achieved up to 4.5m spans by using 78mm panels only. Panels with 78 specific fixings and structural support.



2 x fixings into C-track junction at 45° for every corner.

FIGURE 72

Fire-rated sealant applied along one side of the length of C-track or angle only where Speedpanel® meets C-track or angle - must be top, bottom and sides.

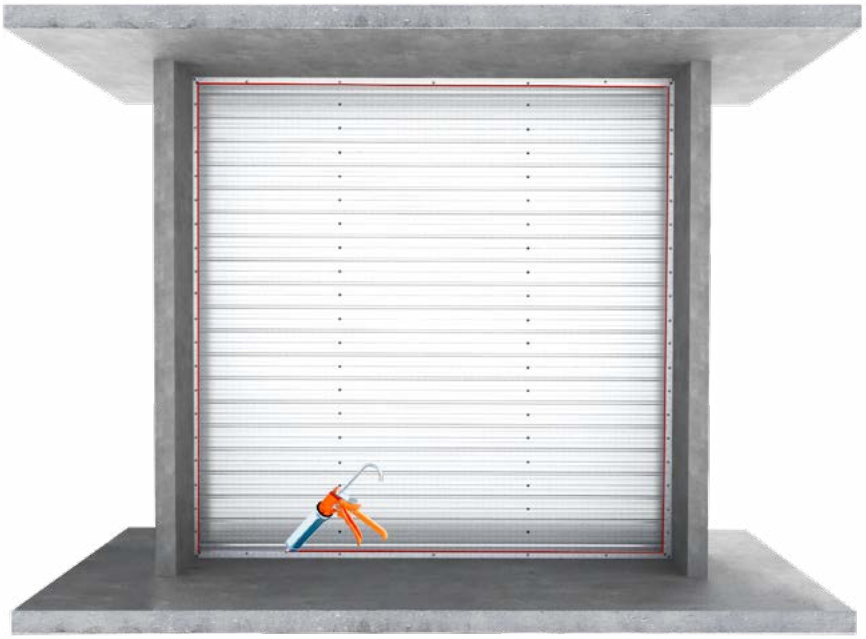


FIGURE 73

STEP 11 - HEAD TRACK PROTECTION

A) METAL FLASHING (ARCHITECTURAL OPTION)

A 130mm deep sheet of head track protection is required on the top C-track only. Head track protection is fixed with 30mm self drilling screws at 500mm centres (staggered at 250mm) in two rows fixed through to top C-track.

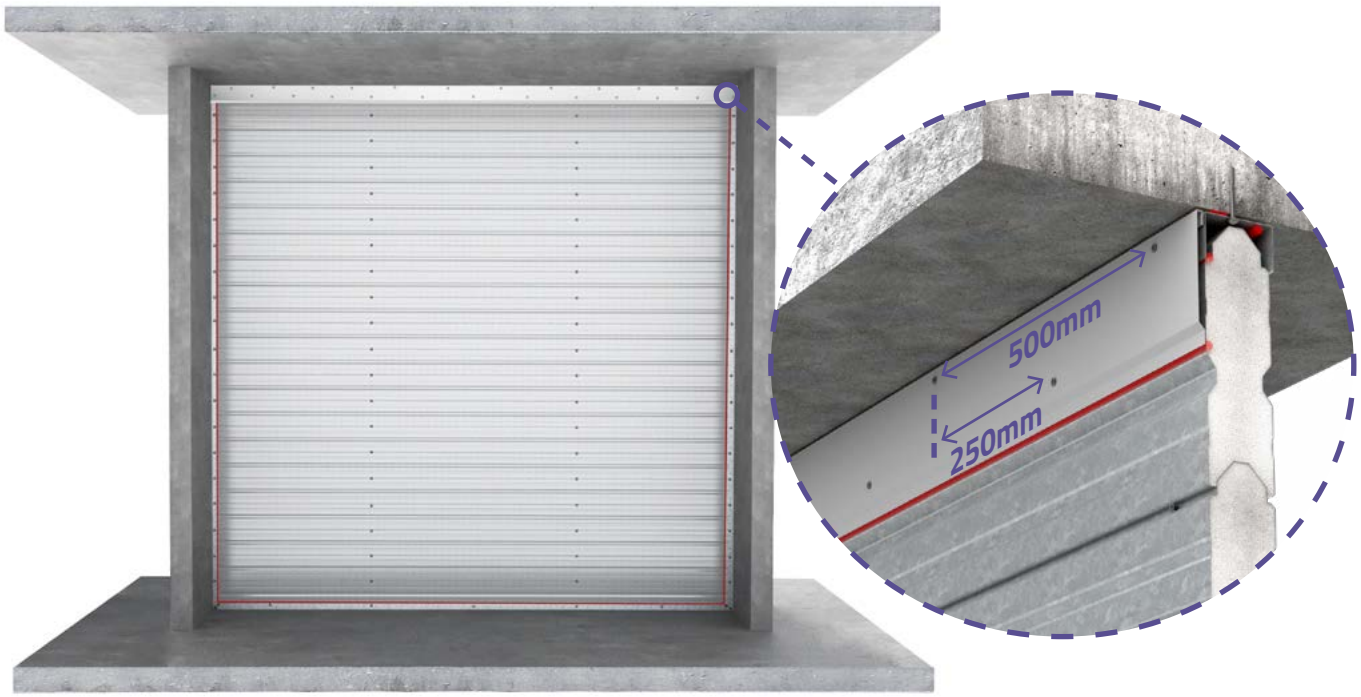


FIGURE 74 [3]

B) FIRE-RATED PLASTERBOARD (COMMON OPTION)

A 120mm deep sheet of head track protection is required on the top C-track only. Head track protection is fixed with 40mm x 6 Gauge self drilling screws at 250mm centres (staggered at 125mm) in two rows fixed through to top C-track. Fire-rated plasterboard is required to be butt jointed and sealed with a fire-rated sealant.

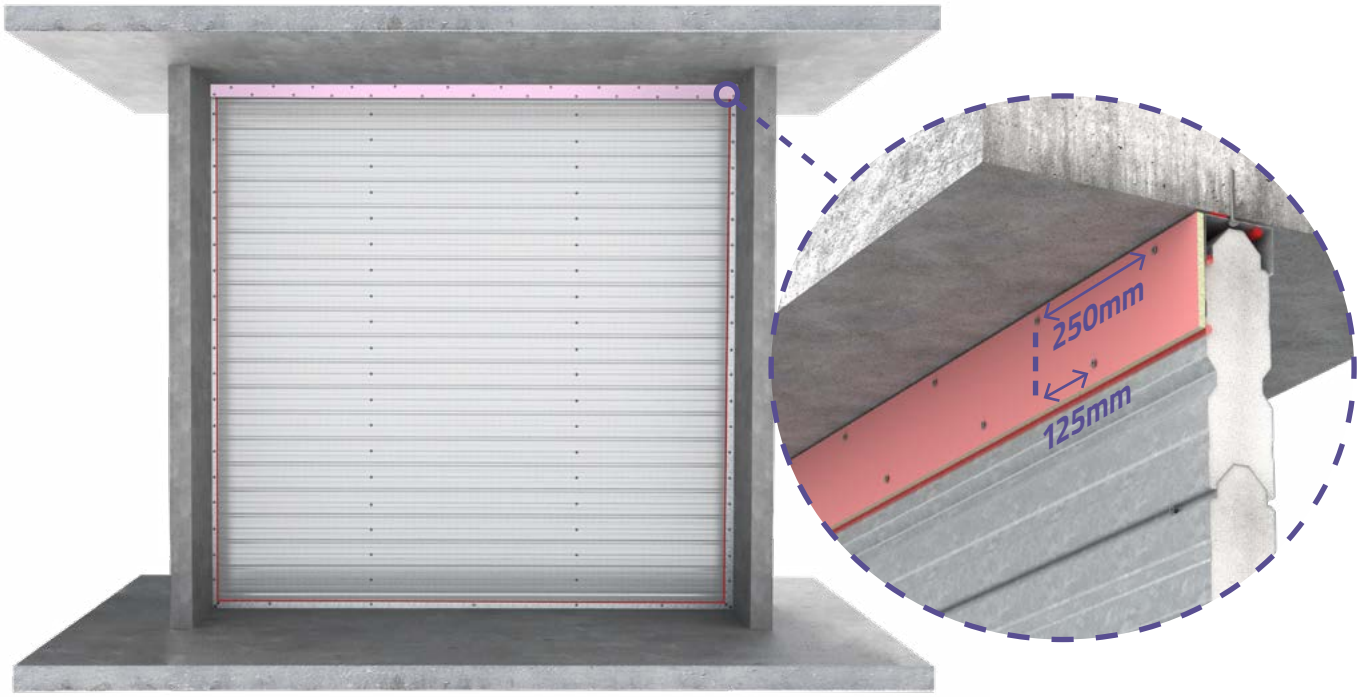


FIGURE 75 [3]

3. Exova Warringtonfire - Report No. 28961

Sealant Options

PLASTERBOARD PROTECTED RIPPED PANEL HEAD TRACK

Fire-rated plasterboard 13mm x 120mm strip sealant options.

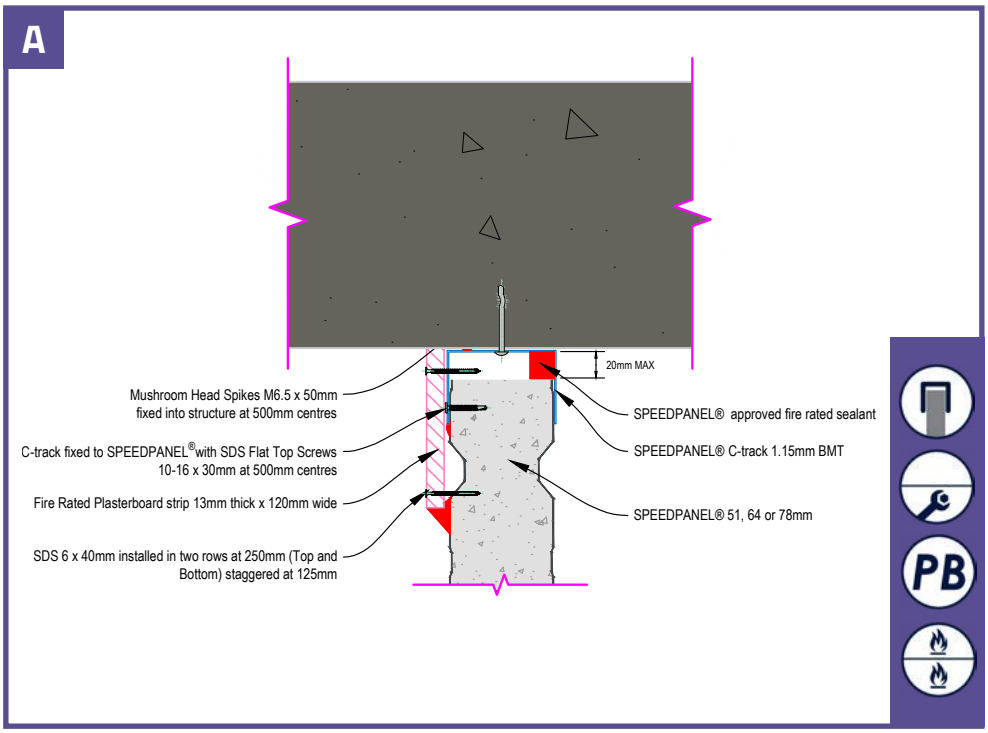


FIGURE 76

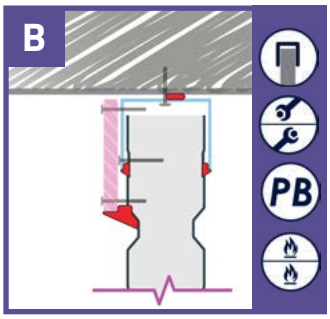


FIGURE 78

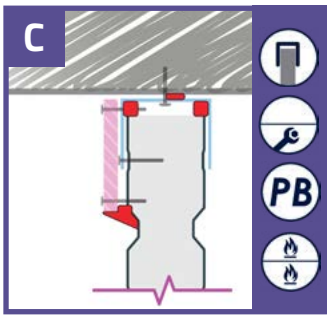


FIGURE 79

METAL FLASHING PROTECTED RIPPED PANEL HEAD TRACK

0.7BMT x 130mm strip sealant options.

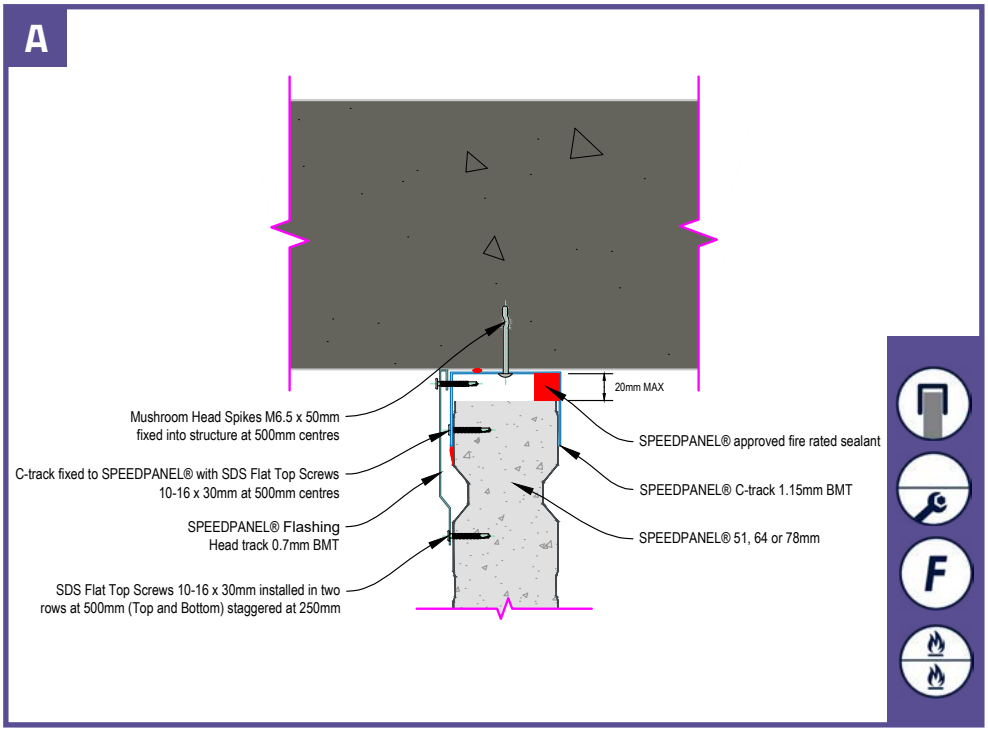


FIGURE 77

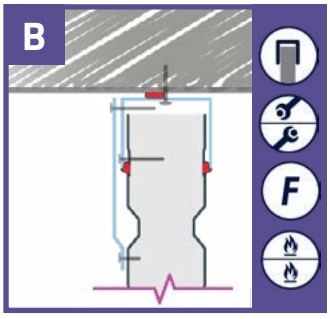


FIGURE 80

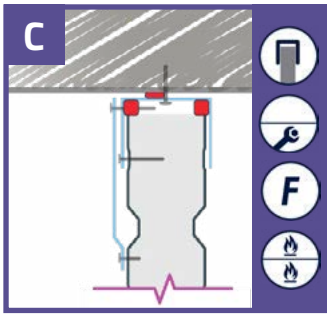


FIGURE 81

3. Exova Warringtonfire - Report No. 28961

HORIZONTAL WALL ENDS

Sealant position options of full size end panels.

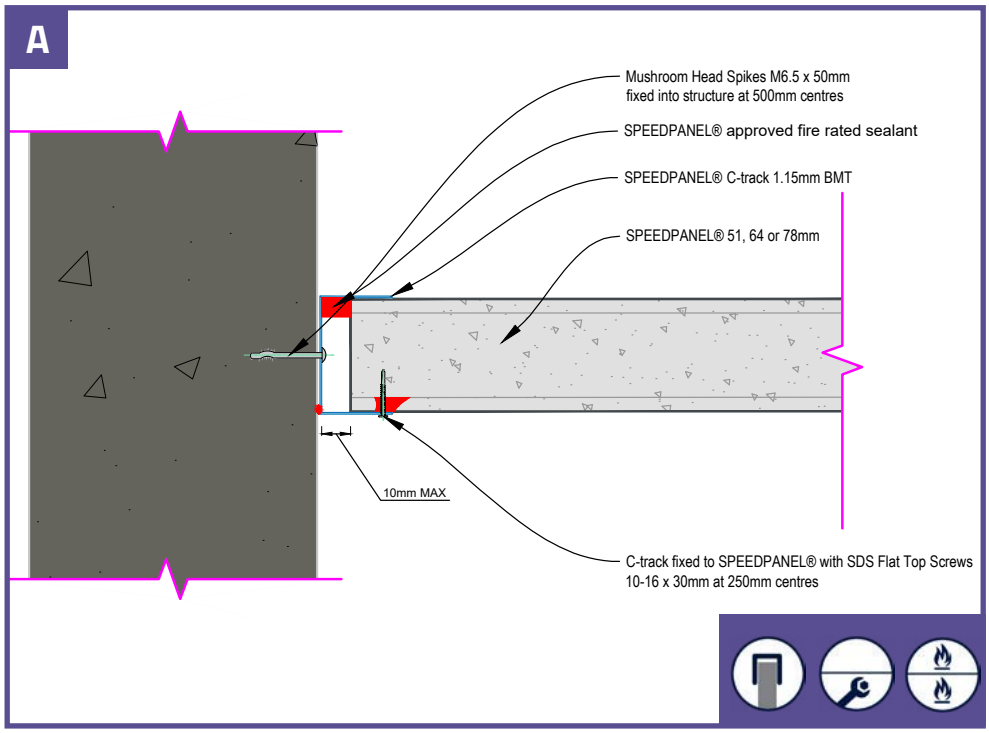


FIGURE 82

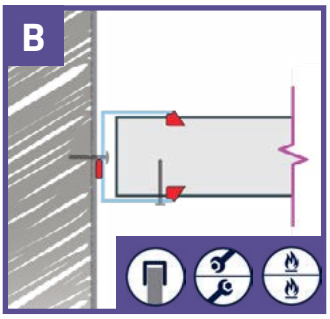


FIGURE 83 [1]

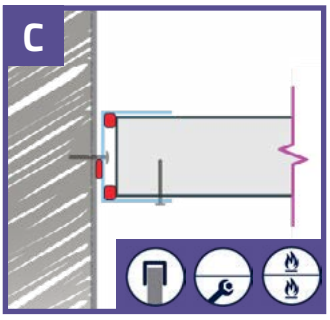


FIGURE 84 [1]

BASE OF HORIZONTAL WALLS

Bottom track sealant position options.

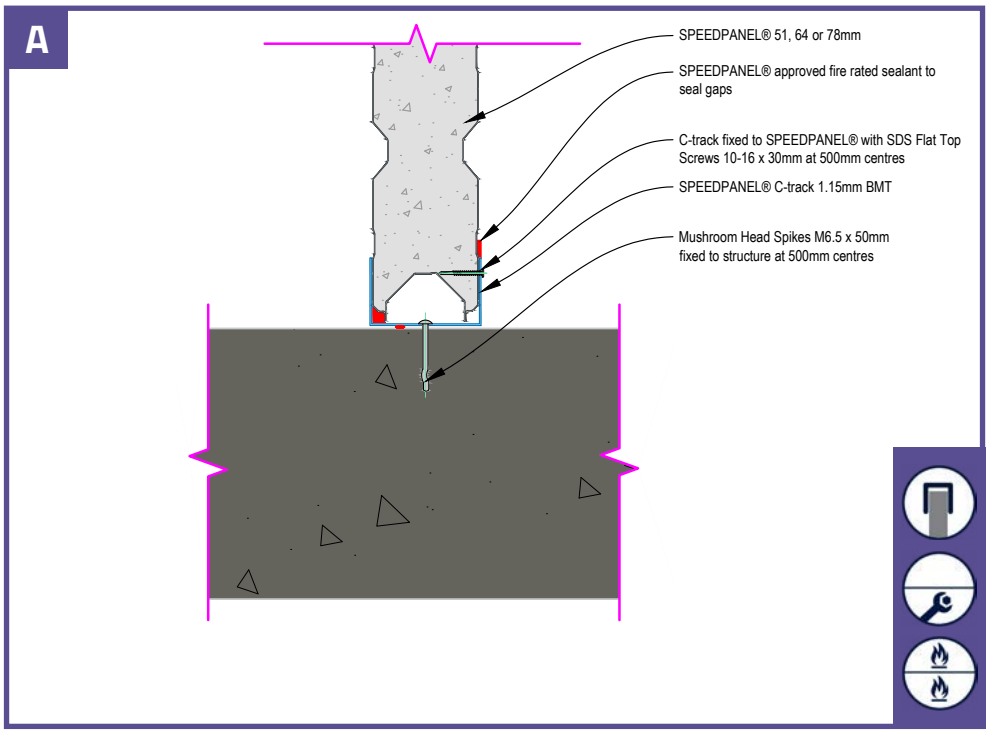


FIGURE 85

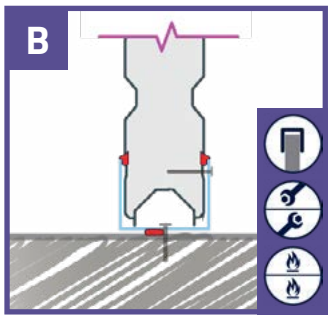


FIGURE 86 [1]

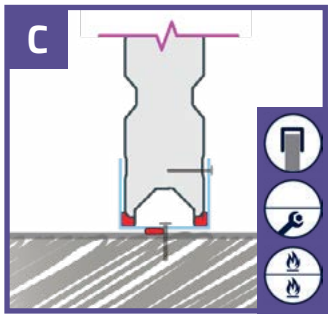
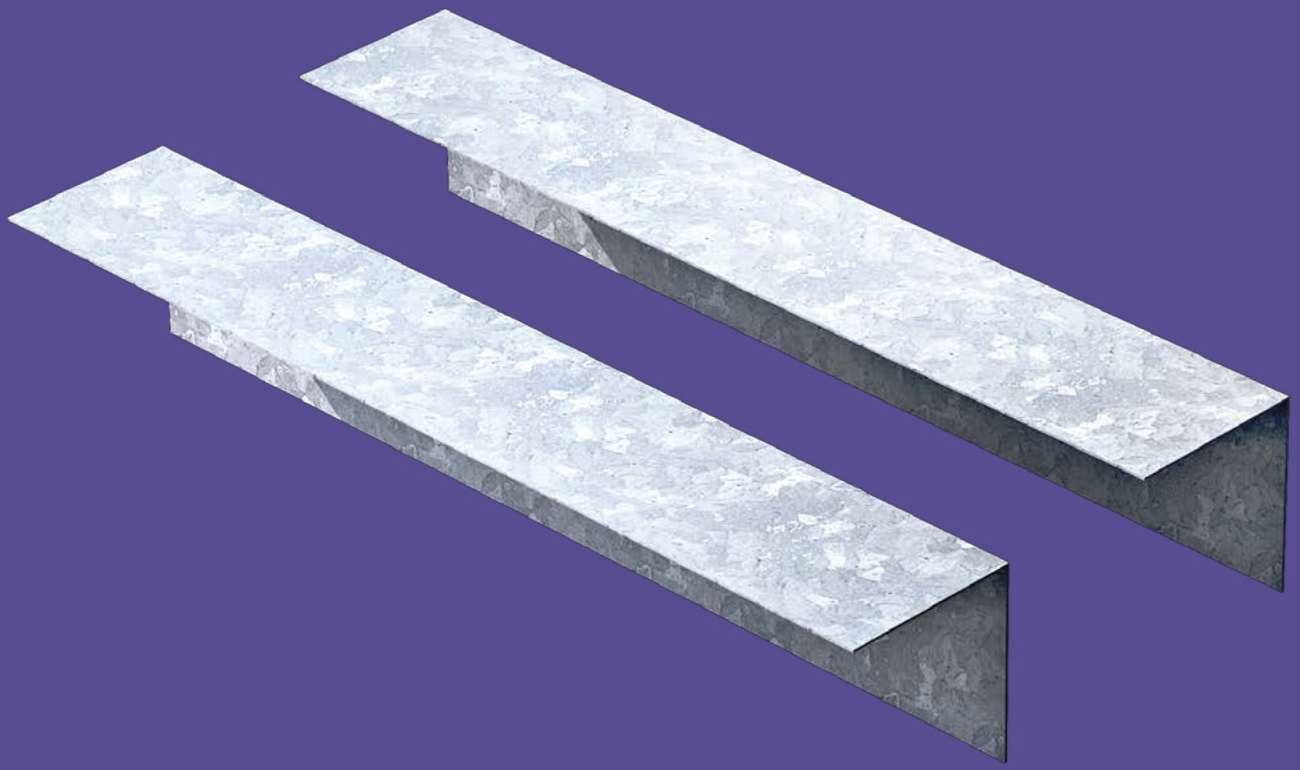


FIGURE 87 [1]

1. Exova Warringtonfire - Report No. 21622

2.4 B

ALTERNATIVE HEAD-TRACK OPTION: STEEL ANGLES



EQUAL ANGLES CAN BE USED AS AN ALTERNATIVE TO C-TRACK

2.4B HORIZONTAL INSTALLATION

PART B (EQUAL STEEL ANGLE)

STEP 1 - INSTALL ANGLE INTO PLACE

As an alternative to a head C-track, two 50 x 50 x 1.15mm BMT equal angles can be used for easier installation in difficult areas. Fit the first equal angle in line with wall position.

FIGURE 88

STEP 2 - FOLD C-TRACK FLANGE & PLACING THE EQUAL ANGLE

Following final panel installation, fold C-track back against panels then fix and seal joint.

FIGURE 89

FIGURE 90

Equal angle: Horizontal walls

STEP 3 - FIX AND SEAL

Once equal angle is fitted, fix and seal as per normal C-track requirements.

FIGURE 91

FIGURE 92

STEP 4 - HEAD TRACK PROTECTION

Final protection is now to be fitted as per normal C-track protection, using fire-rated plasterboard or metal flashing. Lastly, finish off the installation by adding the final sealants around the plasterboard if necessary.

FIGURE 93

FIGURE 94

HORIZONTAL PANEL HEAD TRACK

Below are the approved options for sealant positions on both metal flashing and fire-rated plasterboard options.

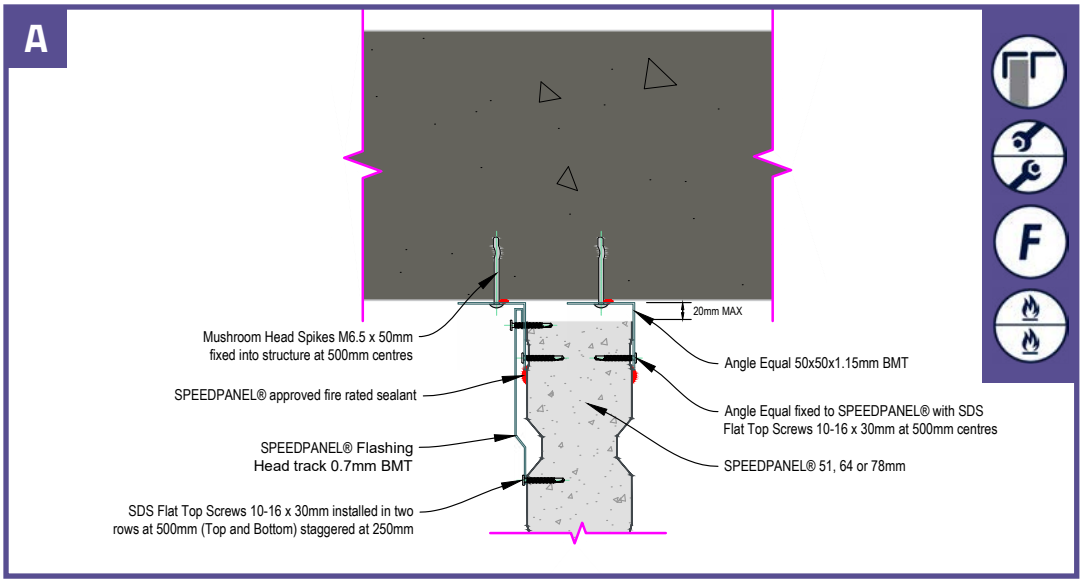


FIGURE 95

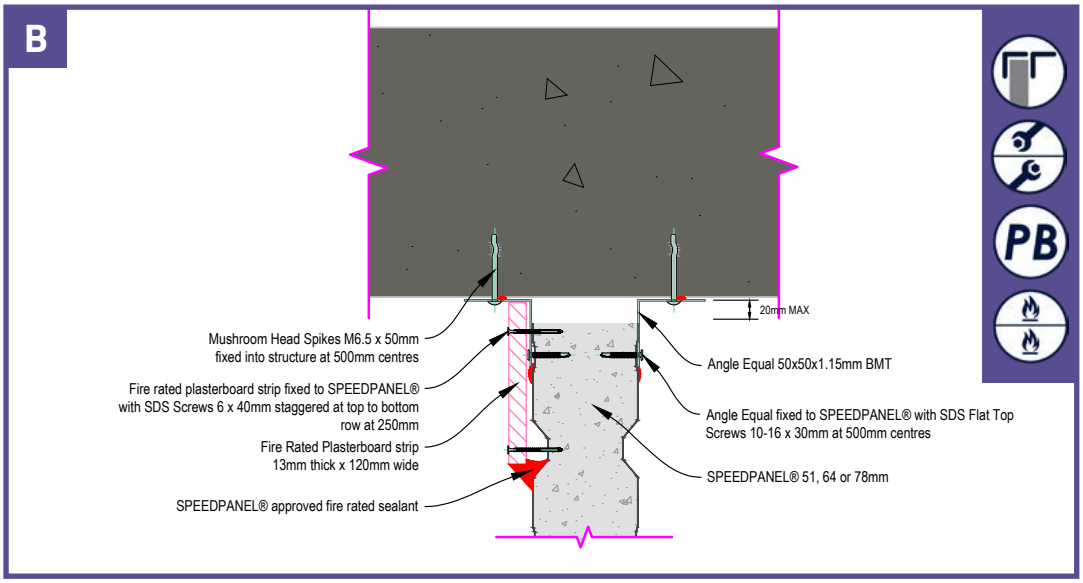


FIGURE 96

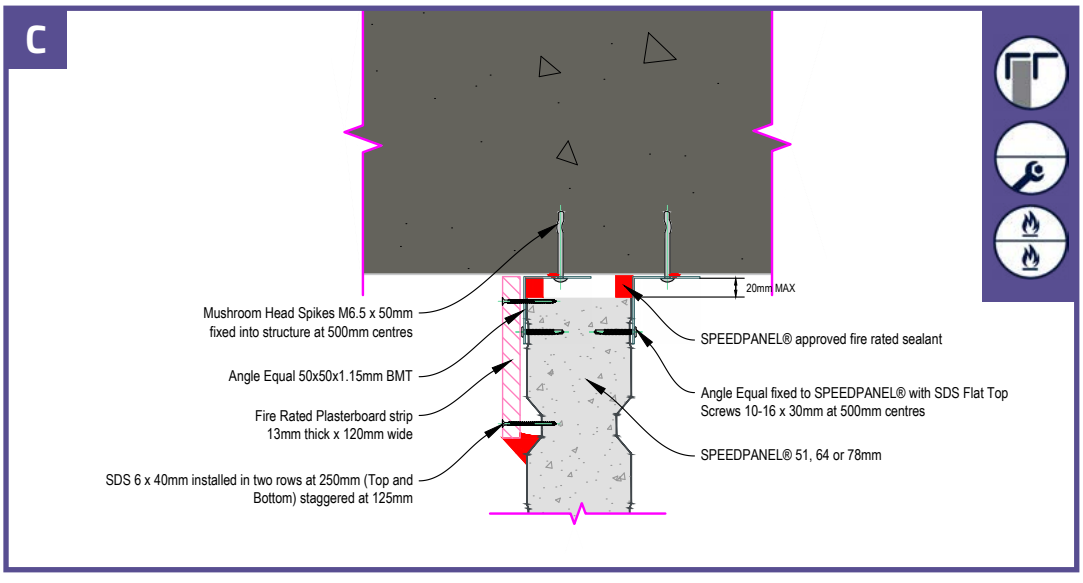


FIGURE 97

SCAN THE QR-CODES BELOW TO DOWNLOAD THE ASSESSMENT REPORTS USED IN THIS CHAPTER.

1 - REPORT 21622

4 - REPORT 22551

5 - REPORT 31919000

2.5

CORNERS & INTERSECTIONS

Right Angles

VERTICAL WALL 90° CORNER DETAIL

A) Ideal positioning of fixings and sealants on corner detail with vertical panels supported by top and bottom floor slabs.

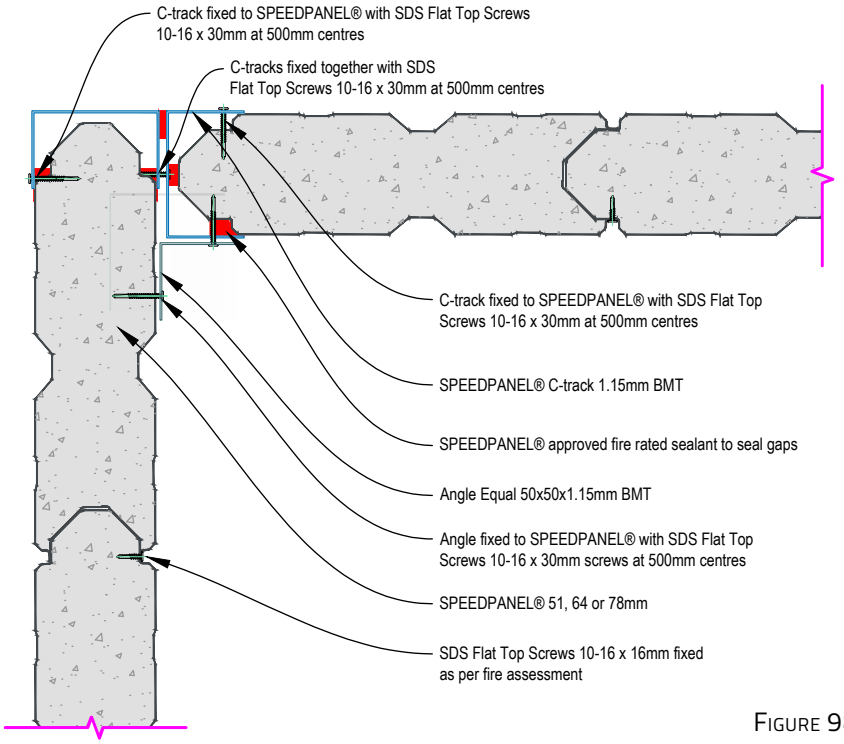


FIGURE 98

B) Secondary option for positioning fixings and sealants on corner detail with vertical panels supported by top and bottom floor slabs.

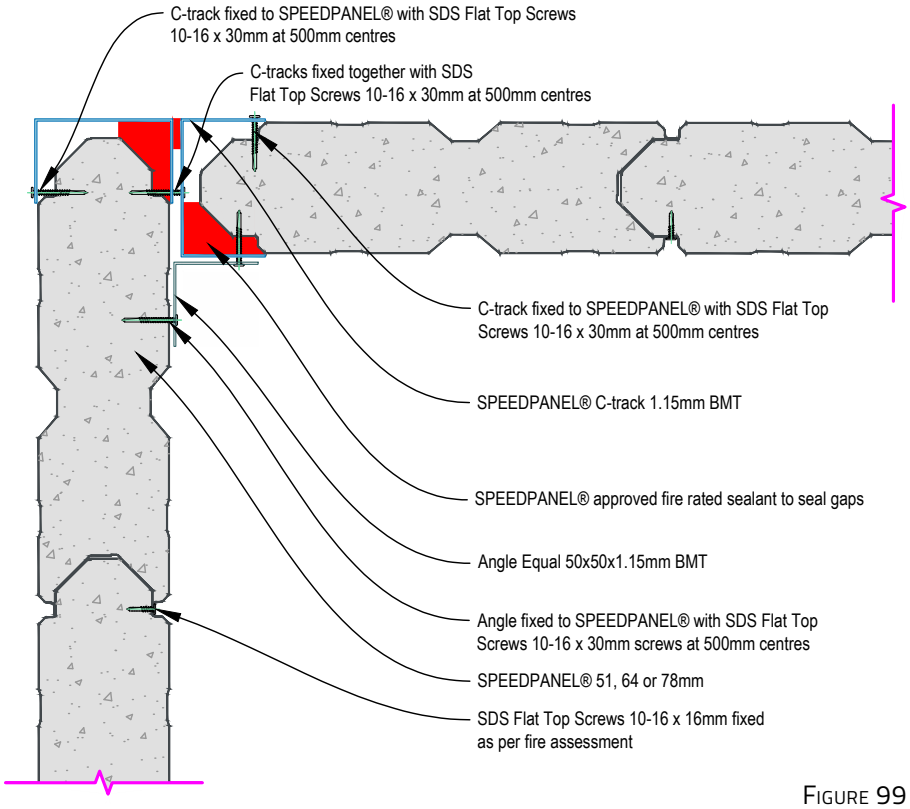


FIGURE 99 [1]

1. Exova Warringtonfire - Report No. 21622

VERTICAL WALL CONNECTION DETAIL

Ideal positioning of fixings and sealants on corner detail in a scenario where a vertical wall meets a masonry or concrete wall at corners.

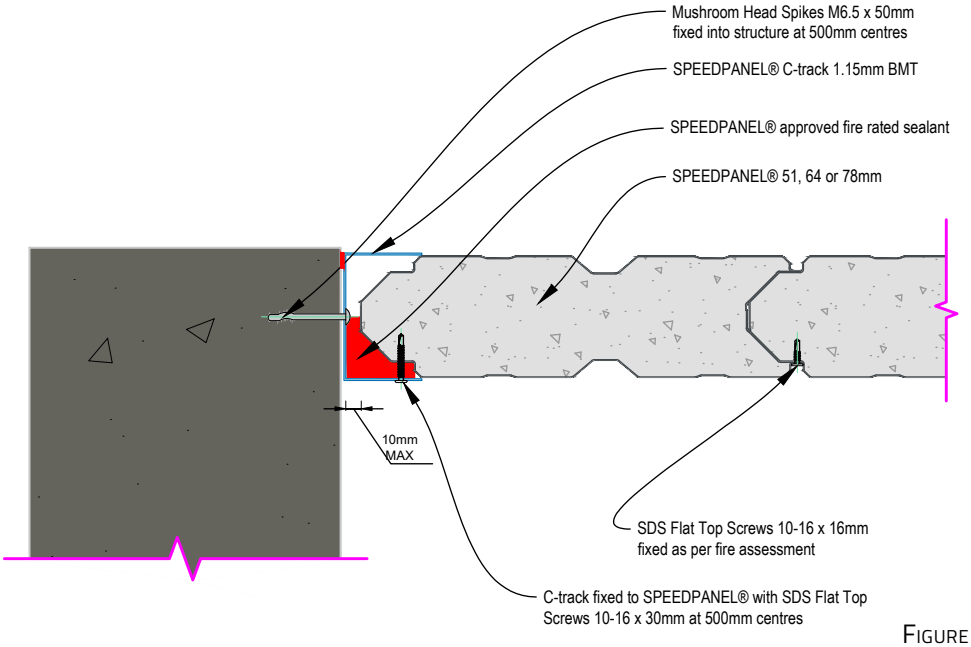


FIGURE 100 [1]

VERTICAL AND HORIZONTAL WALL CORNER DETAILS

Arrangement of fixings and sealants on corner detail when vertical panels are connected to horizontal panels from one side and concrete/masonry wall from the other. Note that these panels are supported by top and bottom floor slabs not the concrete/masonry wall.

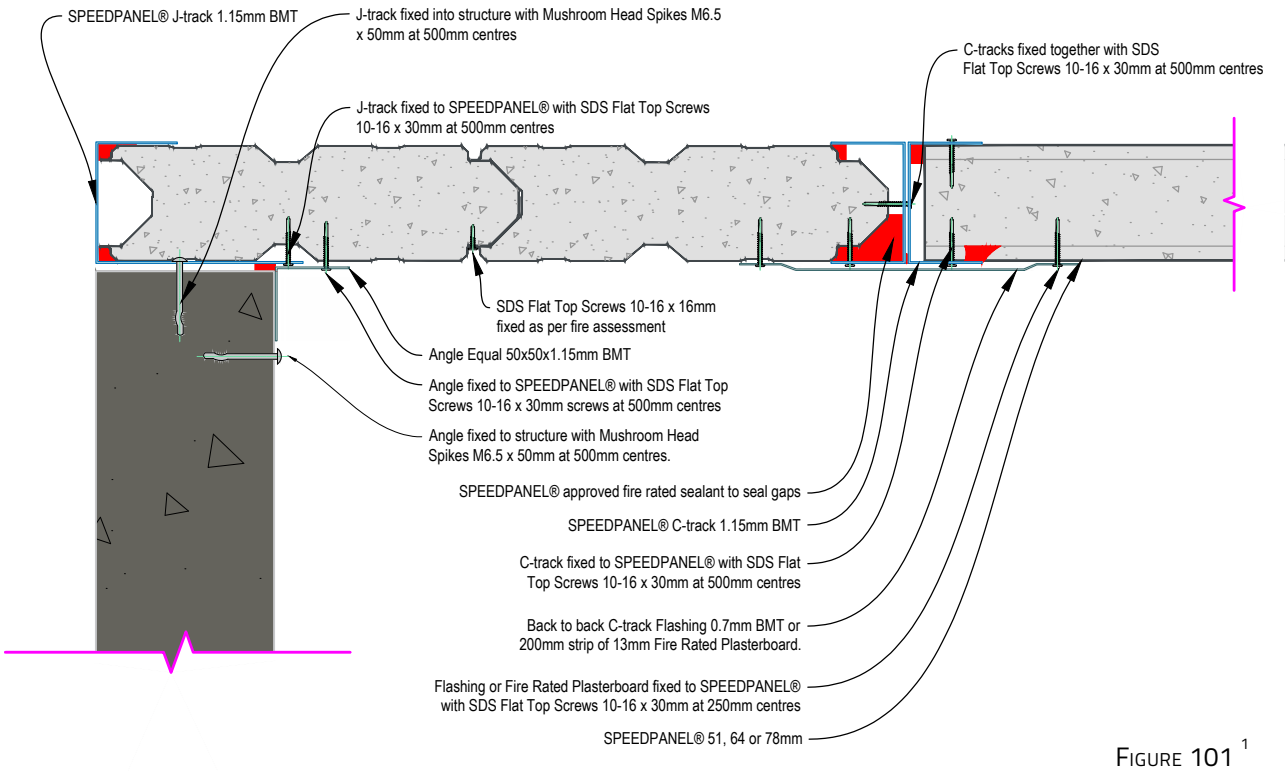


FIGURE 101 [1]

1. Exova Warringtonfire - Report No. 21622

Right Angles (continued)

VERTICAL AND HORIZONTAL WALL CONNECTION DETAIL

Arrangement of various fixings and sealant options on corner detail where vertical and horizontal panels meet each other. All of the vertical panels are supported by the top and bottom floor slabs and horizontal panels are supported by the vertical panels.

A)

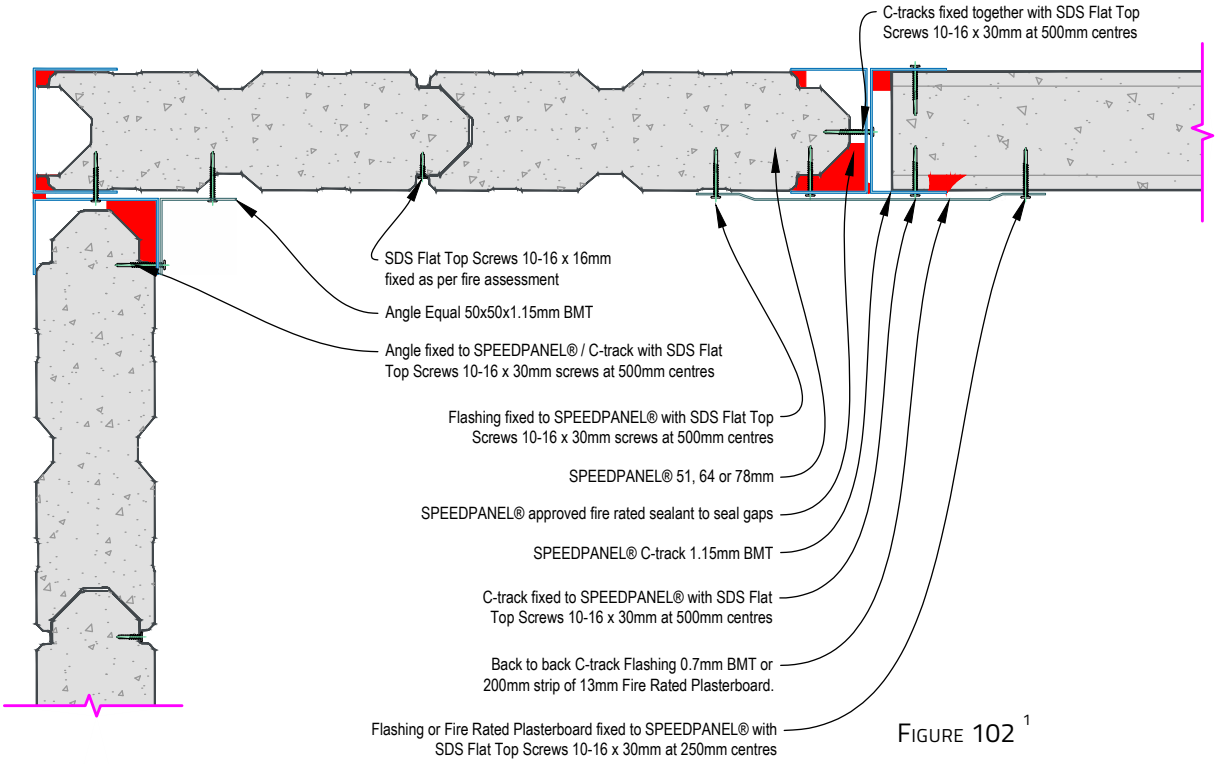


FIGURE 102 [1]

B)

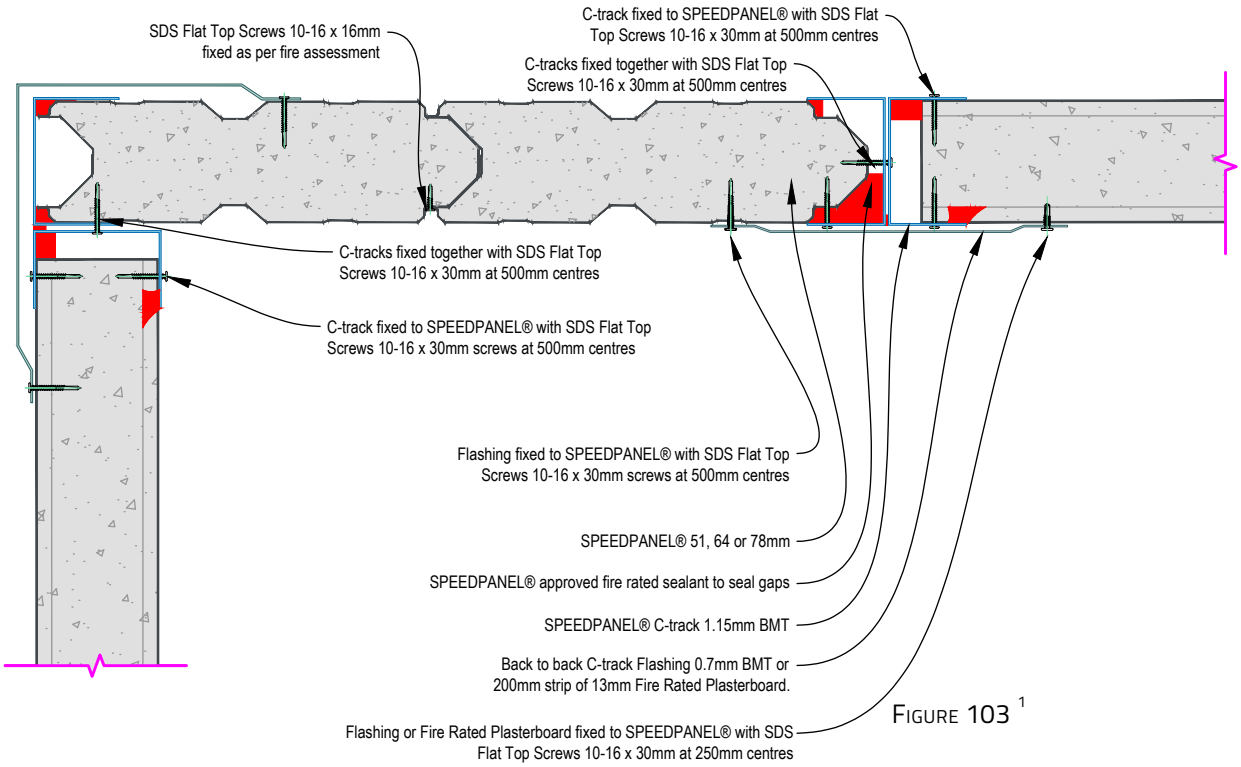


FIGURE 103 [1]

1. Exova Warringtonfire - Report No. 21622

Obtuse Angles

OBTUSE ANGLE DETAIL

A) Position of sealant and fixings where two ripped vertical panels meet each other in the range of 90°-166°angle.

Note: For the further protection of these panels on this detail, an additional protection lining is needed (13mm thick fire grade plasterboard, 20mm thick PROMATECT® 100 board or 50mm thick Intubatt is recommended).

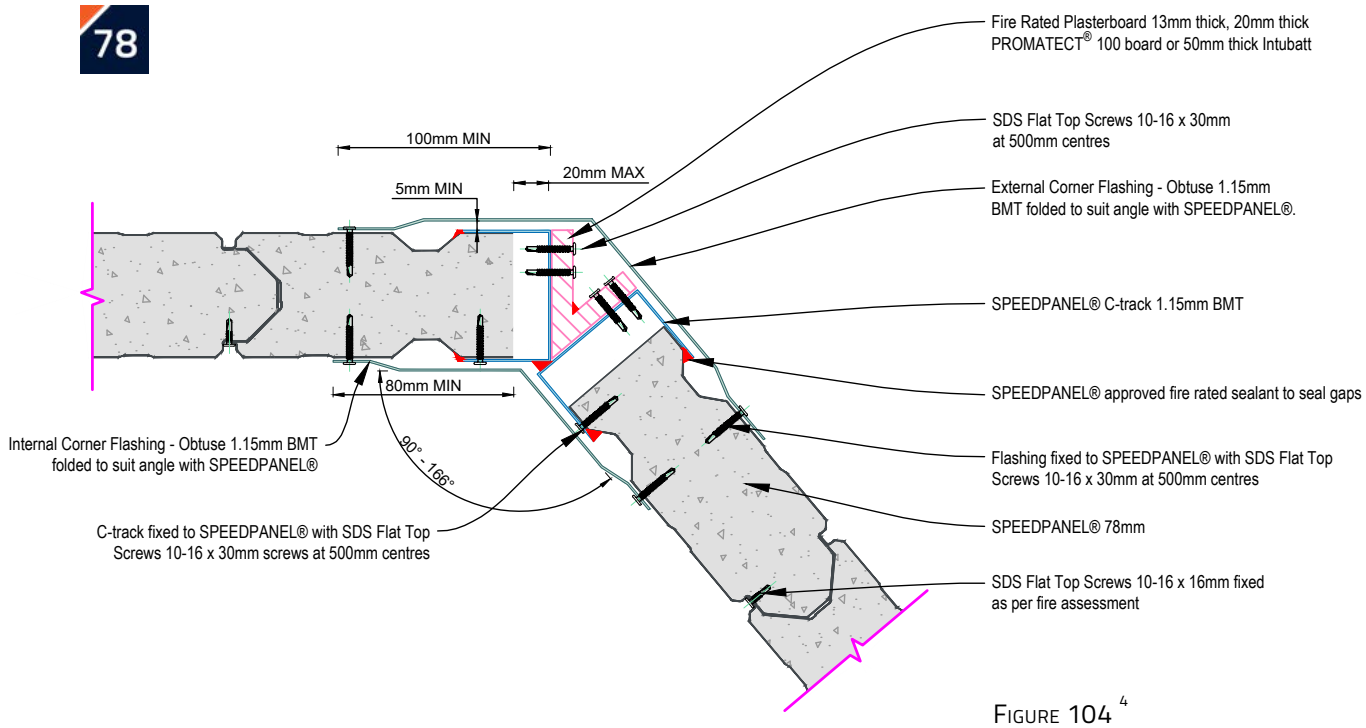


FIGURE 104 [4]

B) Position of sealant and fixings where two vertical panels meet each other in the range of 166°-180° angle.

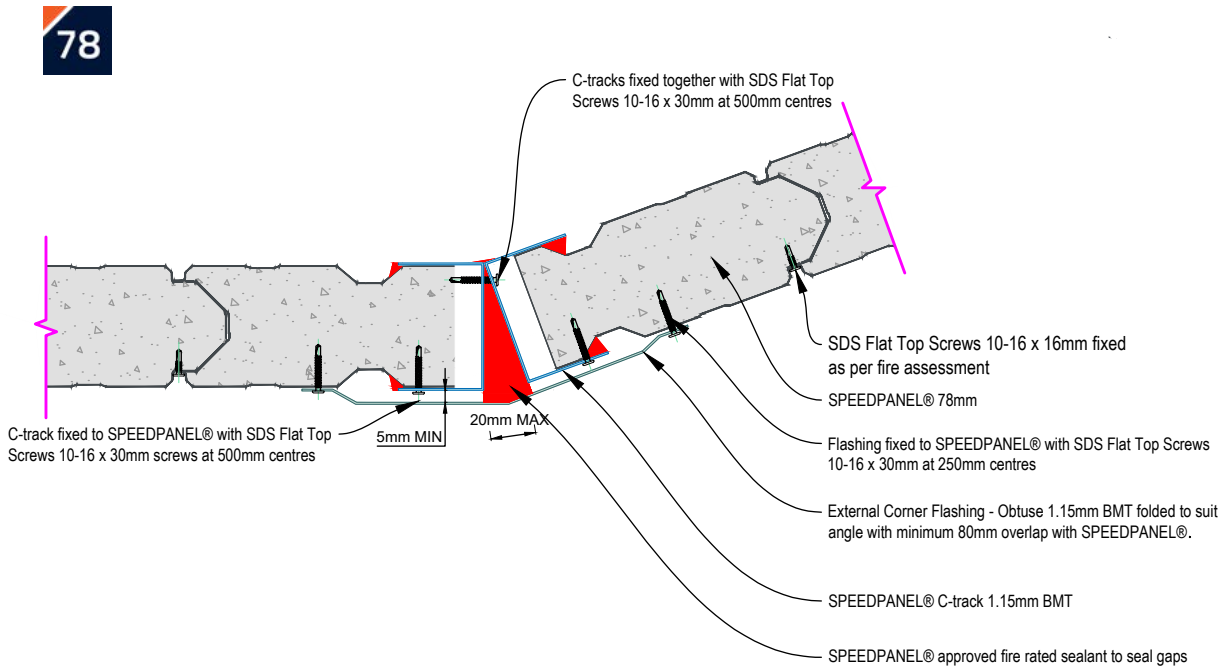


FIGURE 105 [4]

4. Exova Warringtonfire - Report No. 22551

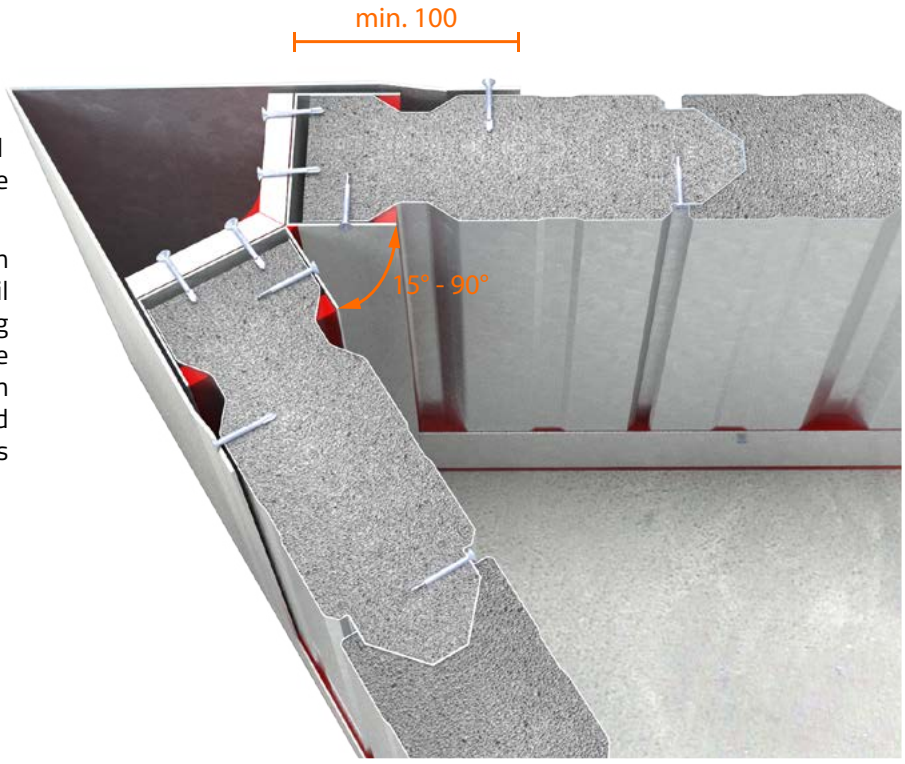
Acute Angles

78

ACUTE ANGLES

Position of sealant and fixings where two ripped vertical panels meet each other in the range of 15° - 90° angle.

Note: For the further protection of these panels on this detail an additional protection lining is needed. (13mm thick fire grade plasterboard, 20mm thick PROMATECT® 100 board or 50mm thick Intubatt is recommended).



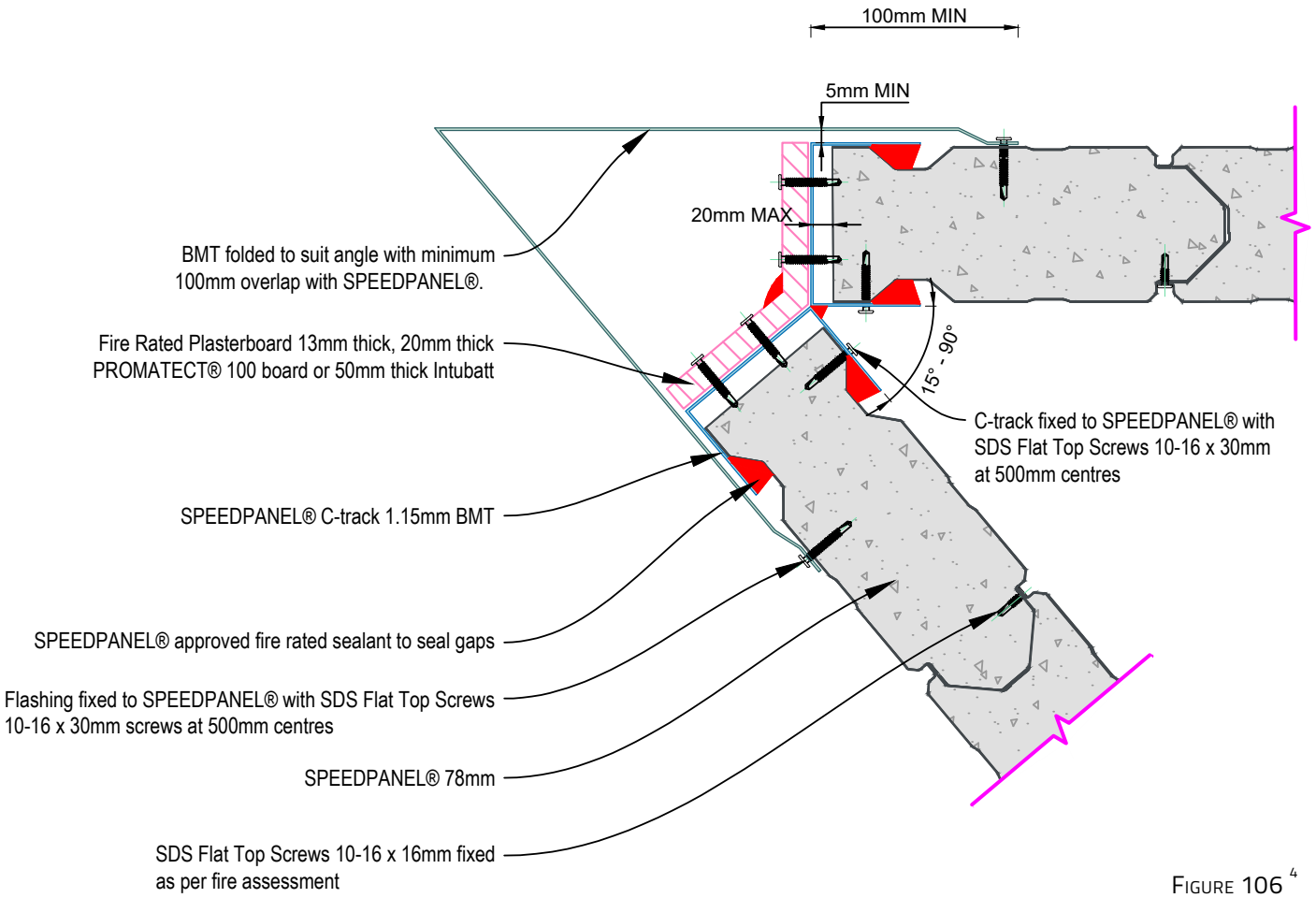


FIGURE 106 [4]

4. Exova Warringtonfire - Report No. 22551

Radius Connections

78

JOINTS WITH RADIUS DETAIL

Position of sealant and fixings in a radial wall comprising Speedpanel®.

Note: The radius of the curved wall can vary from 1.5 to 3.32m (in plan). However the radius of the curvature wall in plan will directly effect the joint fixing spacing and the overall wall height.

Please refer to the table below for more detailed information.

Note: This application is only valid for 78mm Speedpanel®.

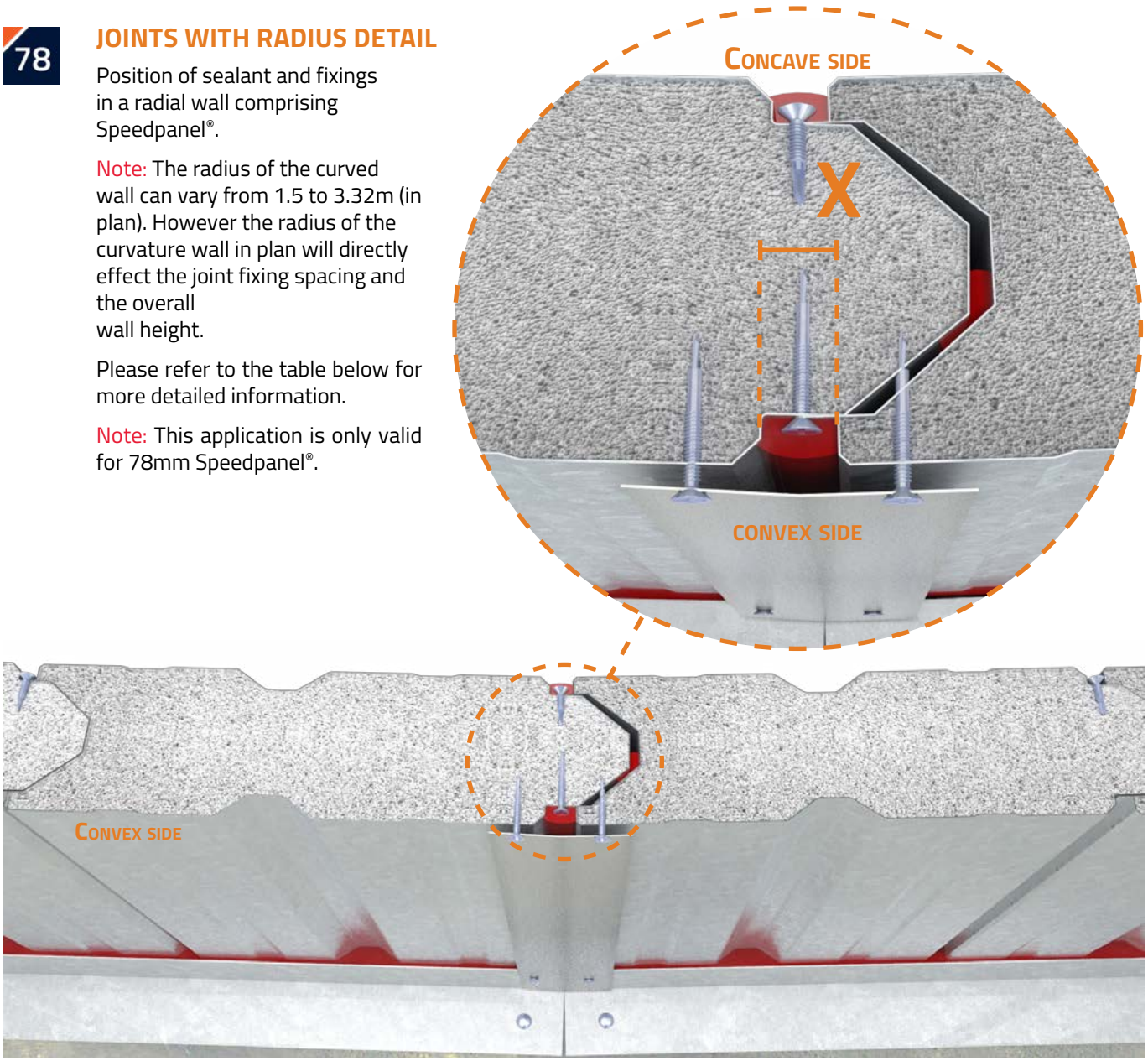


FIGURE 107 [4]

Radius of curvature in plan (m)	Max. wall height (m)	Increase in joint on concave side (mm)	Joint overlap on convex side X (mm)	Panel joint fixing spacing
3.32	6.0	0.6	14.4	The panels shall be fixed at 500mm centres
3.0		0.7	14.3	
2.5		1.0	14.0	
2.3		1.2	13.8	
2.0		1.6	13.4	
1.8		1.9	13.1	
1.5	4.9	2.8	12.2	The panels shall be fixed at 300mm centres

4. Exova Warringtonfire - Report No. 22551

T-Intersections

T-JUNCTIONS WITH VARIOUS VERTICAL AND HORIZONTAL PANELS

The illustrations below show how the position of the fixings and sealant change in T-junctions. Note that Speedpanel® systems must intersect at adjacent panel joints as shown below.

A)

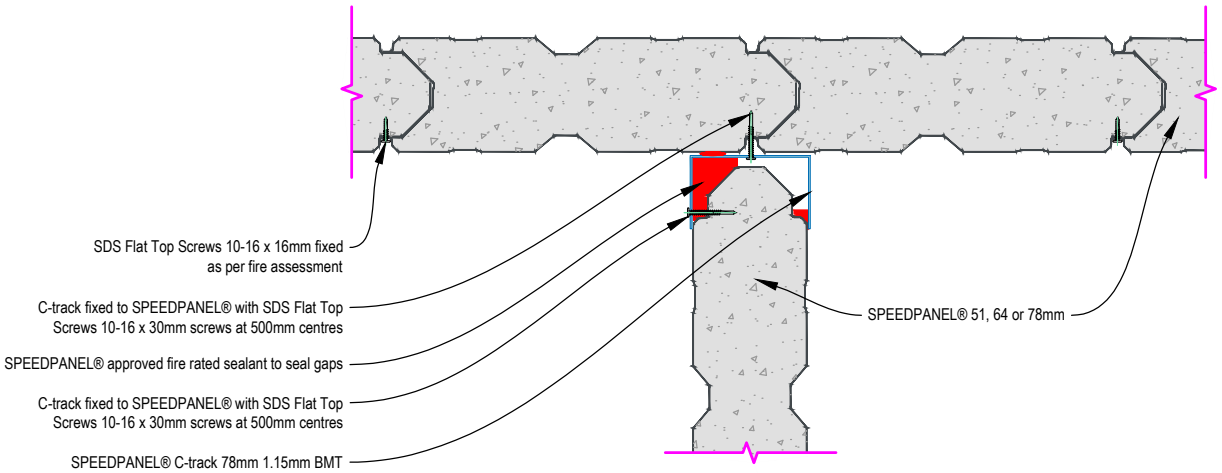


FIGURE 108 [1]

B)

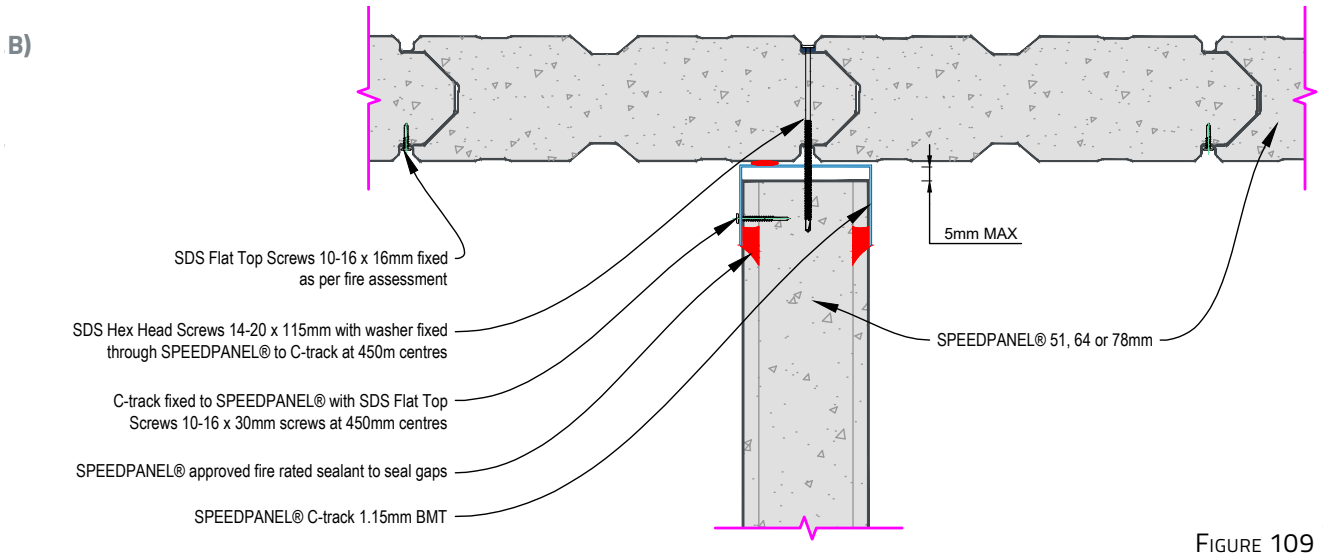


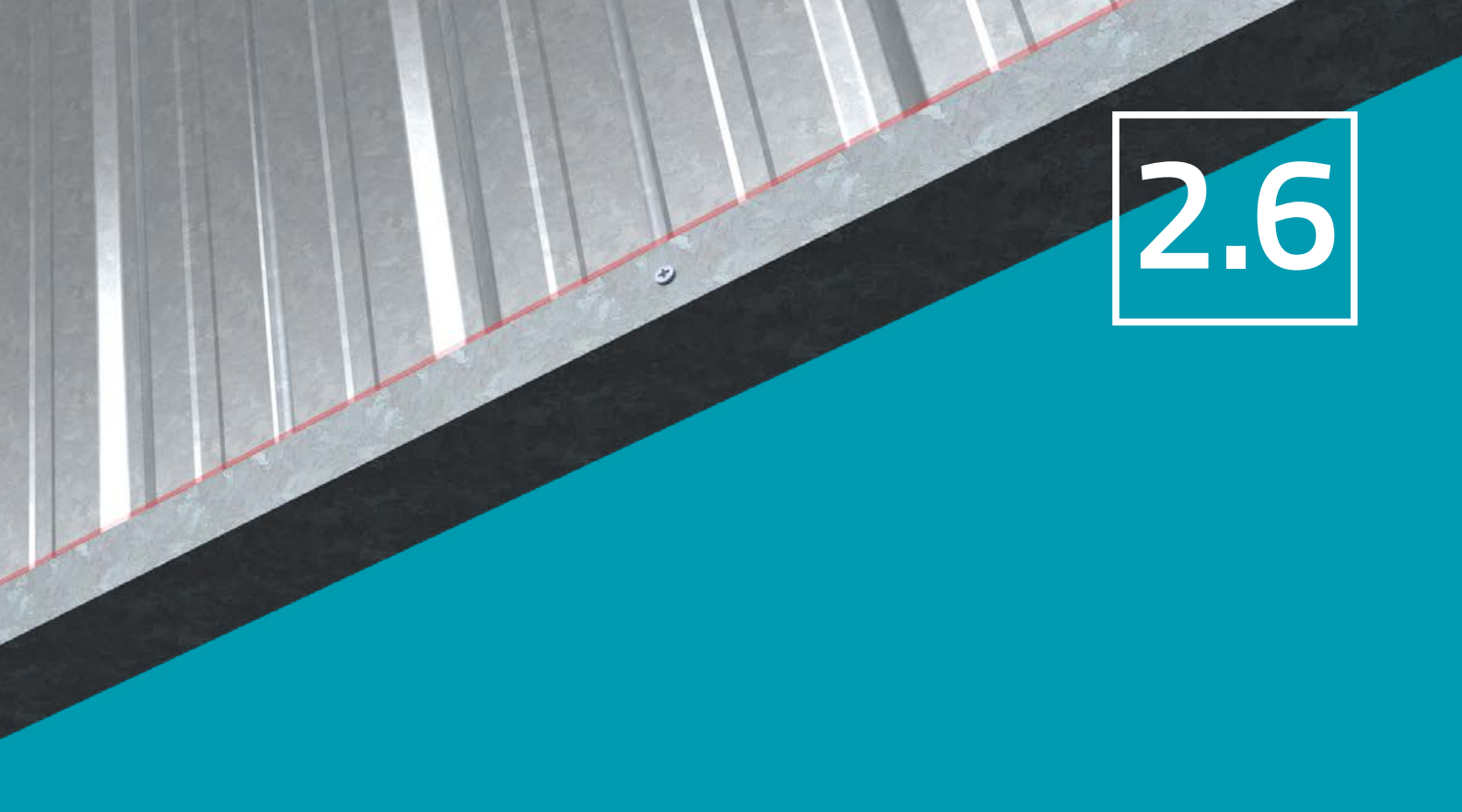
FIGURE 109 [1]

1. Exova Warringtonfire - Report No. 21622

Notes

SCAN THE QR-CODES BELOW TO DOWNLOAD THE ASSESSMENT REPORTS USED IN THIS CHAPTER.

1 - REPORT 21622



2.6

GENERAL PENETRATIONS

2.6 GENERAL PENETRATIONS

C-TRACK

C-track is to be notched out as shown 55mm into each end of the C-track. Once all C-tracks are notched, the C-tracks can be placed into an aperture and fixed at each corner diagonally and at 500mm centres around the perimeter fixing to the Speedpanel®.

Note: C-tracks do not come pre-drilled or notched.

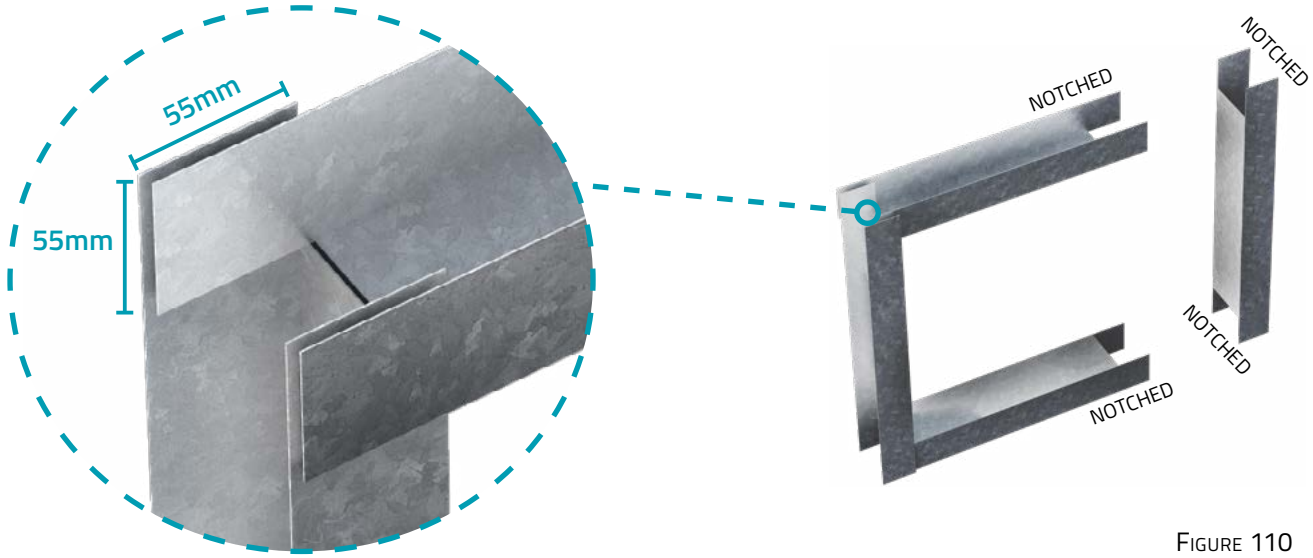


FIGURE 110

PENETRATION CORNER FIXING

Use 10 gauge self drilling screws and fix into the corners at 45° as shown.

FIGURE 111

DOORS IN SPEEDPANEL® SYSTEMS

Various doors can be fitted into Speedpanel® systems (for details please refer to our website or contact our office).

Disclaimer: For illustration purposes only. Please refer to certification for doors, penetrations and services treatment available on our website or contact our office.

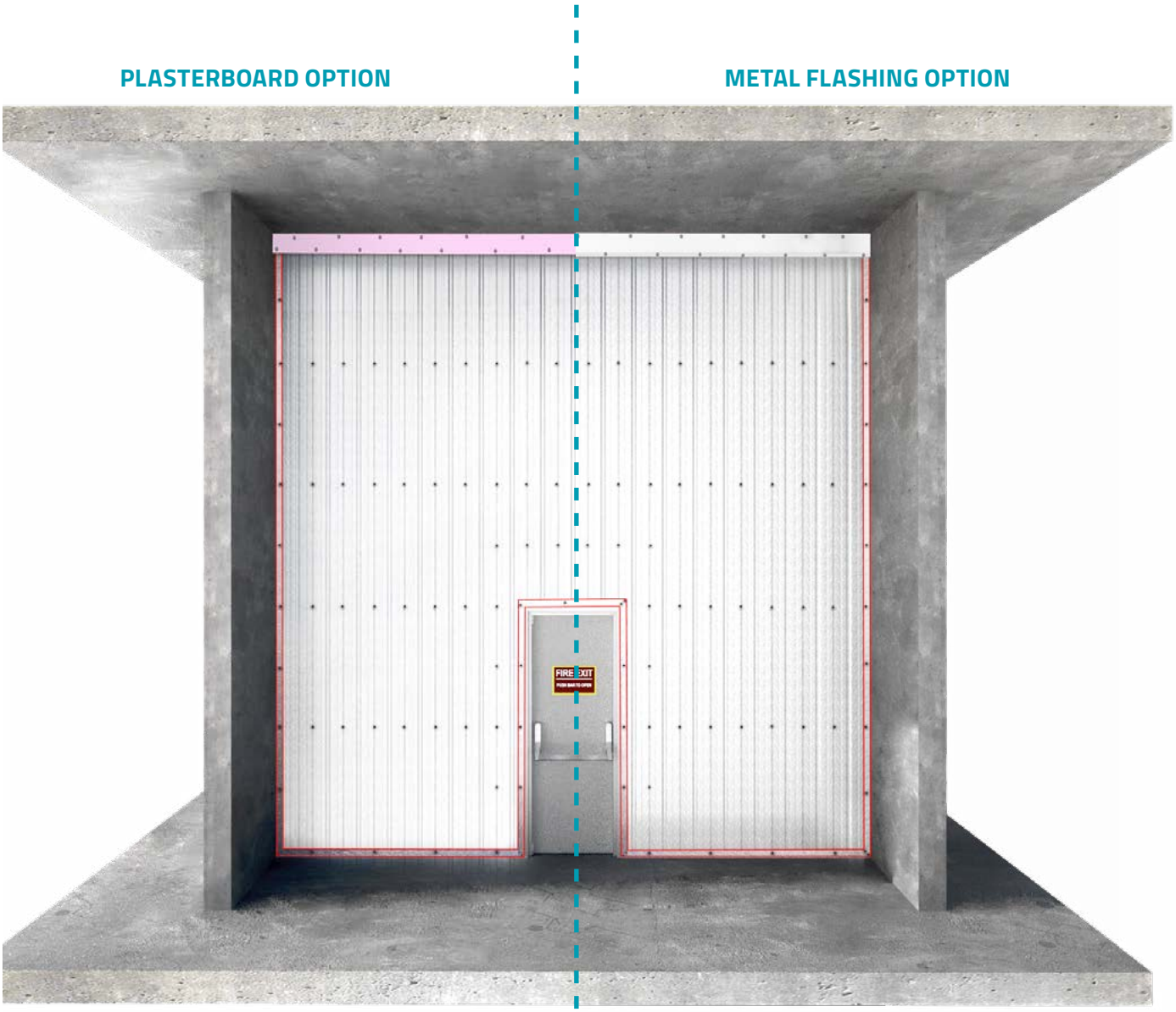


FIGURE 112 *

Disclaimer: For illustration purposes only. Please refer to:

- EWFA 28249900.1 - 51, 64 and 78mm Speedpanel® - (Pyropanel)
- CSIRO FCO - 2992 - 78mm Speedpanel® - (Firecore)
- CSIRO FCO - 2124 - 78mm Speedpanel® - (E+Core)

General Penetrations

VERTICAL SPEEDPANEL® SYSTEMS SINGLE PENETRATIONS

Vertical Speedpanel® systems can have rectangular or square penetrations up to 4m². Refer to table and illustration below for full details.

51 64 78

51mm Panel	64mm Panel	78mm Panel	Max. area A x B	Bmax (mm)	Ymax (mm)	Head detail
Wall height (mm)						
3000	-	-	4m²	2000	35-1000	Fig. 33-38 & Fig. 61-63
-	5000	-	4m²	2200		
-	-	5000	4m²	2400		
5000	-	-	4m²	2400	>1000	Fig. 39-41
-	5000	-				
-	-	6000				

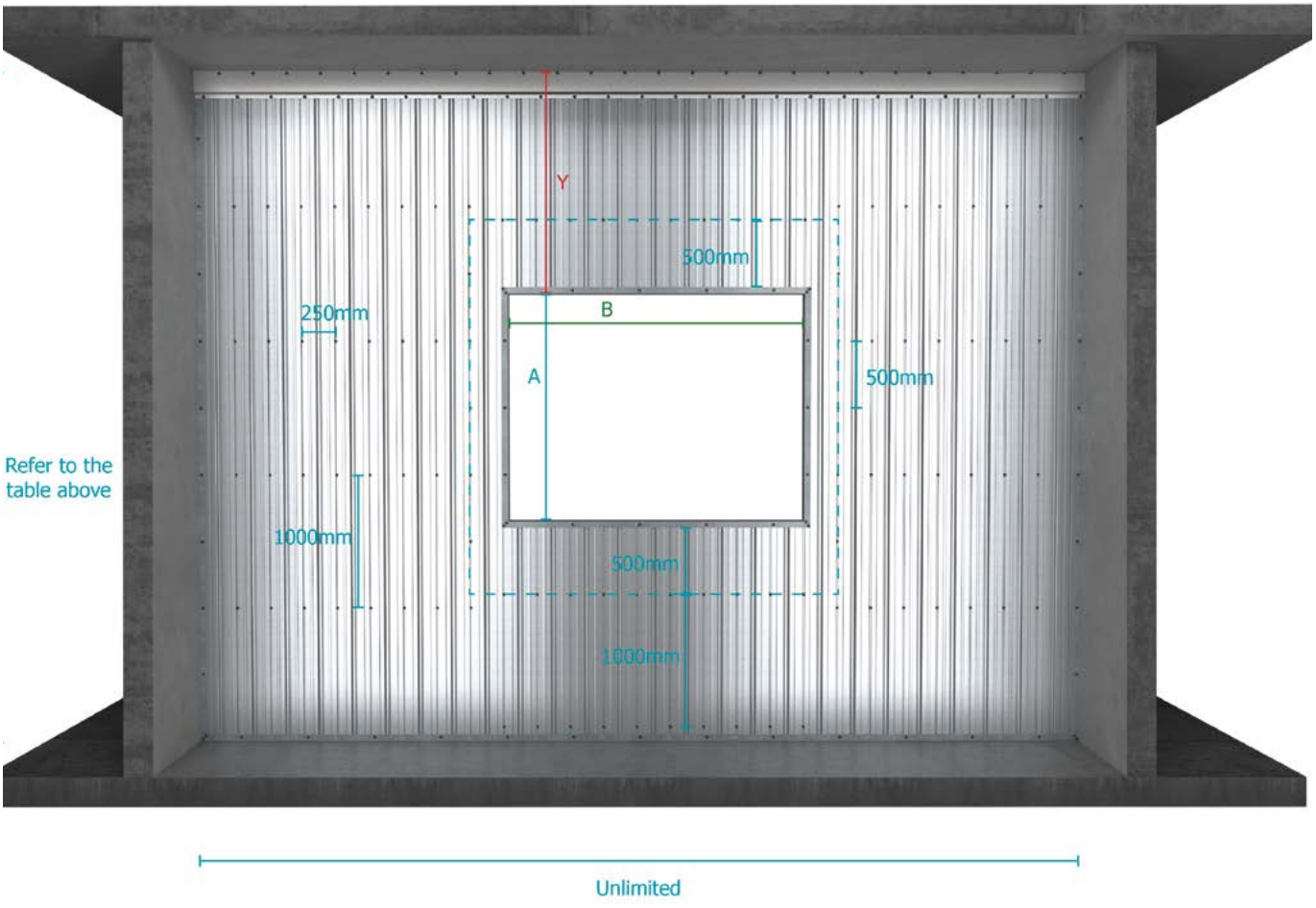


FIGURE 113 [1]

1. Exova Warringtonfire - Report No. 21622

VERTICAL SPEEDPANEL® SYSTEMS SERVICE PENETRATIONS

Various services can penetrate Speedpanel® walls including ducts, dampers, cable trays and existing pipes in the building. Where multiple small services run through a wall, these can be considered to be grouped into a rectangle with a total area not exceeding 4m². Refer to the table and illustration below for the full details.

51 64 78

51mm Panel	64mm Panel	78mm Panel				
Wall height (mm)			Max. area A x B	Bmax (mm)	Ymax (mm)	Head detail
3000	-	-	4m²	2000	35-1000	Fig. 33-38 & Fig. 61-63
-	5000	-	4m²	2200		
-	-	5000	4m²	2400		
5000	-	-	4m²	2400	>1000	Fig. 39-41
-	5000	-				
-	-	6000				

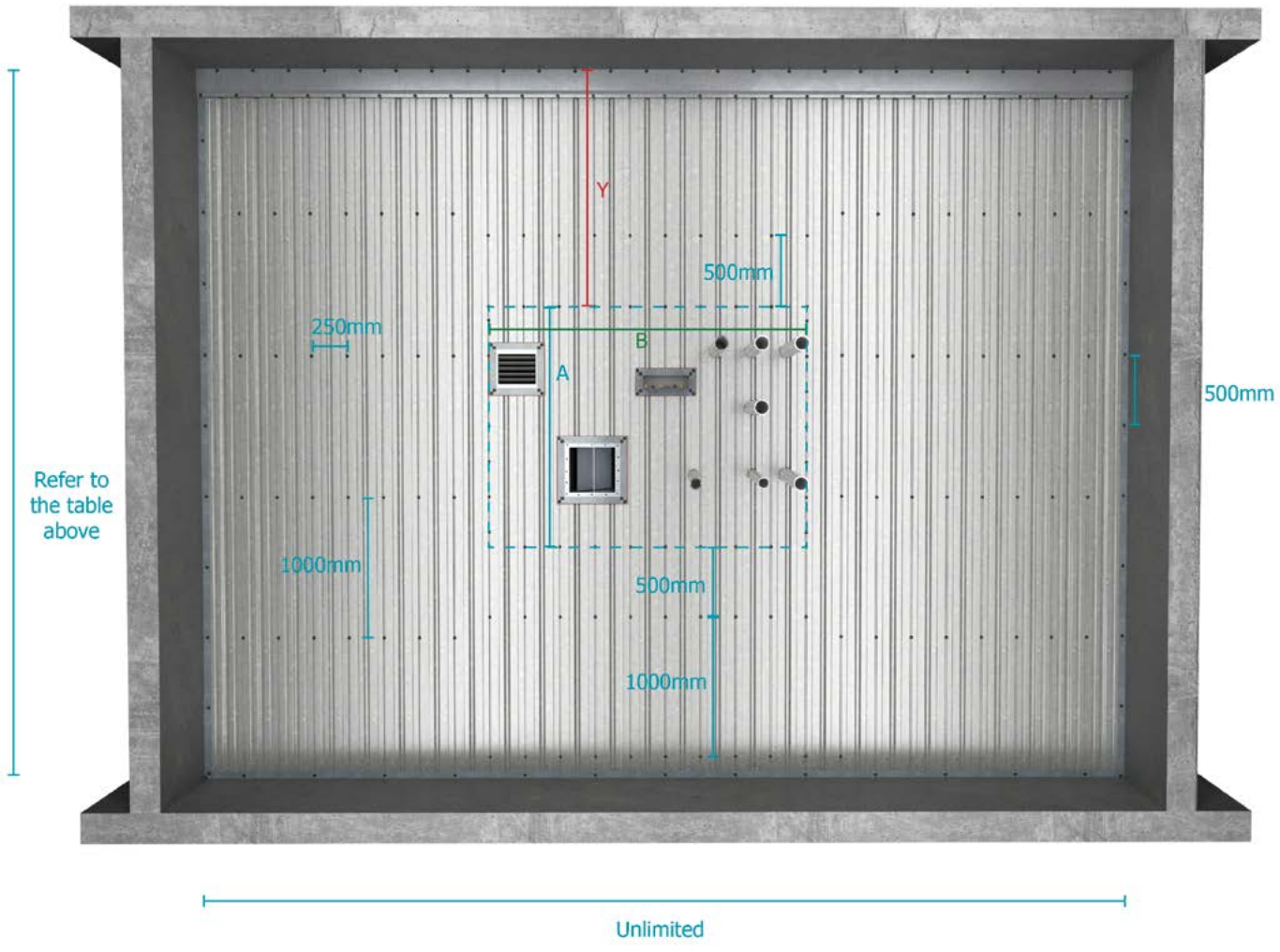


FIGURE 114 [1]

1. Exova Warringtonfire - Report No. 21622

General Penetrations

VERTICAL SPEEDPANEL® SYSTEMS MULTIPLE PENETRATIONS

Vertical Speedpanel® systems can have multiple apertures. Refer to the table and illustration below for the full details.

51 64 78

51mm Panel	64mm Panel	78mm Panel	Max. area A x B	Bmax (mm)	Ymax (mm)	Zmin (mm)	Head detail
Wall height (mm)							
3000	-	-	4m²	2000	35-1000	200	Fig. 33-38 & Fig. 61-63
-	5000	-	4m²	2200			
-	-	5000	4m²	2400			
5000	-	-	4m²	2400	>1000	200	Fig. 39-41
-	5000	-					
-	-	6000					

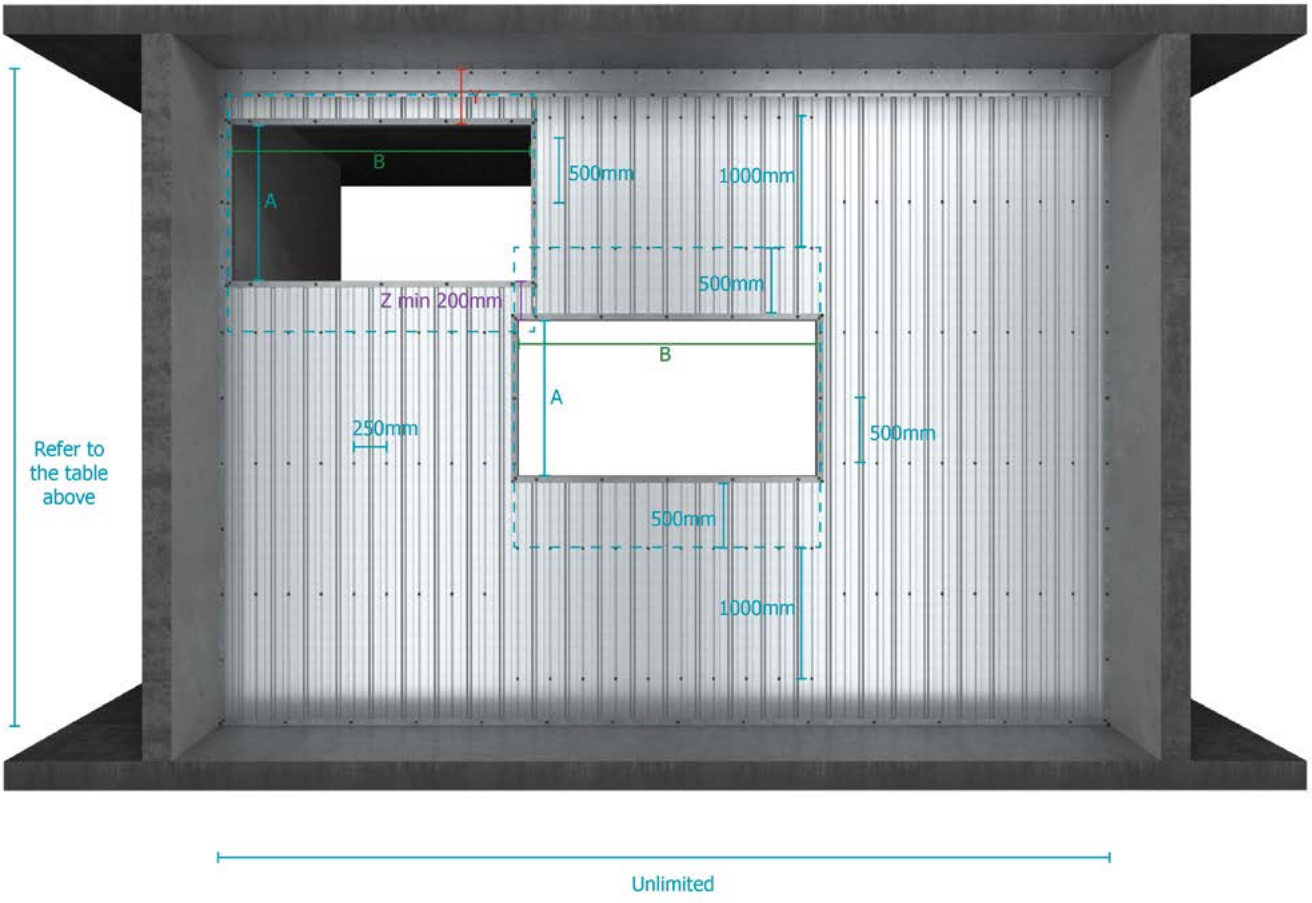


FIGURE 115 [1]

1. Exova Warringtonfire - Report No. 21622

VERTICAL AND HORIZONTAL SPEEDPANEL® SYSTEMS COMBINATION PENETRATIONS

Vertical and horizontal Speedpanel® orientation can be adopted so that the wall application can have multiple apertures. Refer to the table and illustration below for the full details.

51mm Panel	64mm Panel	78mm Panel	Max. area A x B	Amax & Bmax (mm)	Ymax (mm)	Head detail
Wall height (mm)						
3000	-	-	4m²	2444	35-1000	Fig. 33-38 & Fig. 61-63
-	5000	-	4m²			
-	-	5000	4m²			
5000	-	-	4m²		>1000	Fig. 39-41
-	5000	-				
-	-	6000				

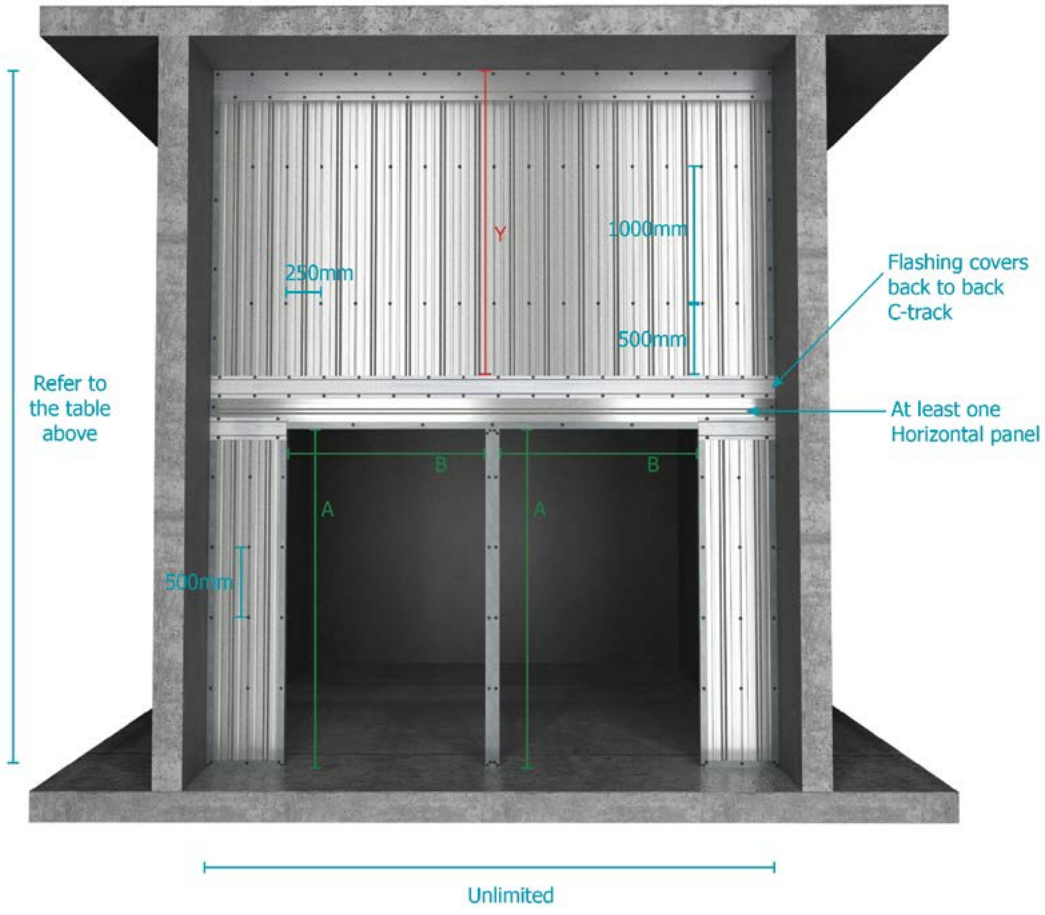


FIGURE 116 [1]

1. Exova Warringtonfire - Report No. 21622

General Penetrations

HORIZONTAL SPEEDPANEL® SYSTEMS SINGLE PENETRATIONS

Horizontal Speedpanel® systems can handle penetrations up to 4m². Refer to table and illustration below for full details.

51mm Panel	64mm Panel	78mm Panel	Max. area A x B	Bmax (mm)	Head detail
Wall height (mm)					
3000	-	-	4m²	2444	Fig. 76-81 & Fig. 95-97
-	5000	-			
-	-	5000			
5000	-	-			
-	5000	-			
-	-	6000			

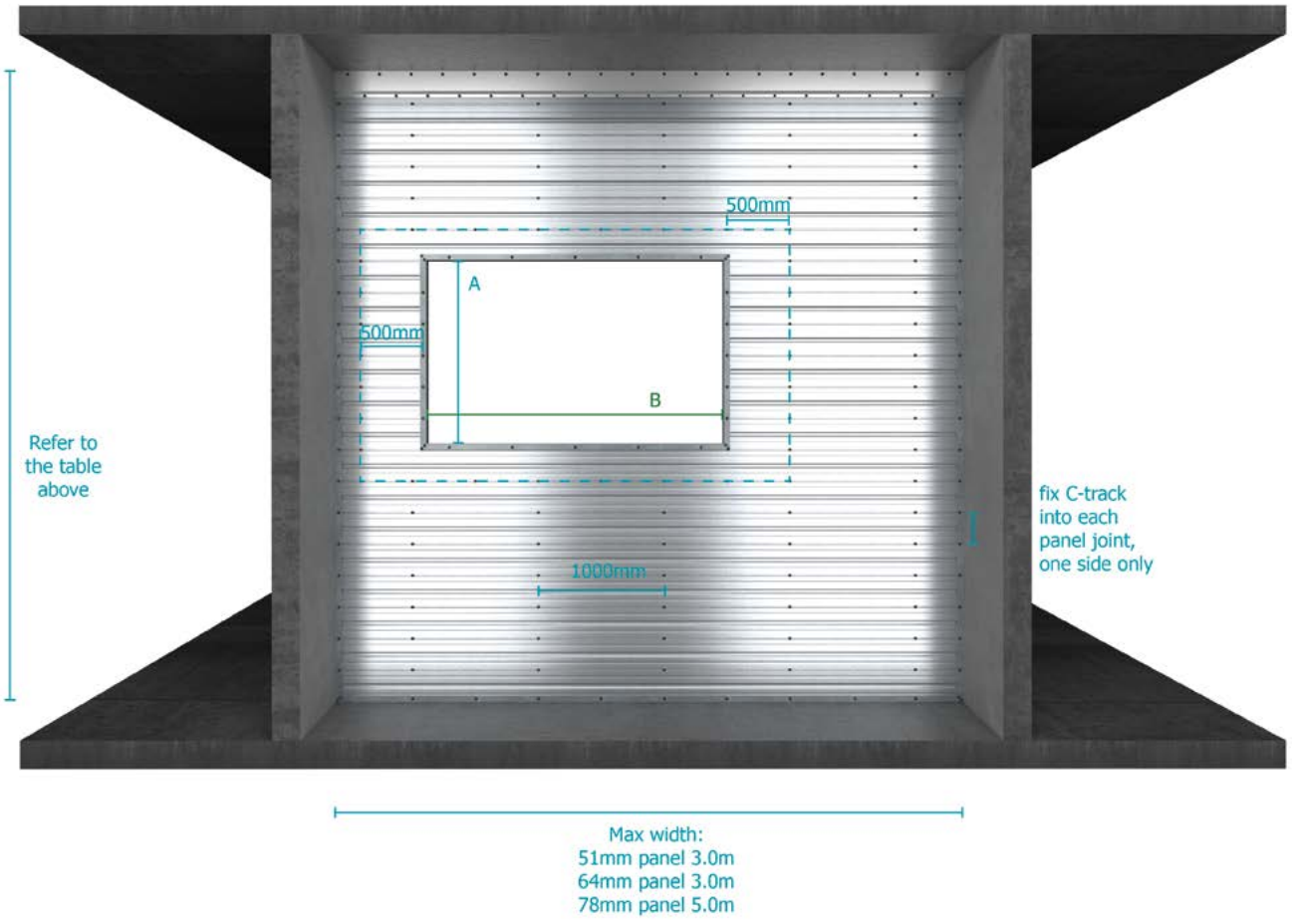


FIGURE 117 [1]

1. Exova Warringtonfire - Report No. 21622

HORIZONTAL SPEEDPANEL® SYSTEMS SERVICE PENETRATIONS

Various services can penetrate Speedpanel® walls including ducts, dampers, cable trays and existing pipes in the building. Where multiple small services run through a wall, these can be considered to be grouped into a square or rectangle with a total area up to 4m^2. Refer to the table and illustration below for the full details.

51mm Panel	64mm Panel	78mm Panel	Max. area A x B	Bmax (mm)	Head detail
Wall height (mm)					
3000	-	-	4m^2	2444	Fig. 76-81 & Fig. 95-97
-	5000	-			
-	-	5000			
5000	-	-			
-	5000	-			
-	-	6000			

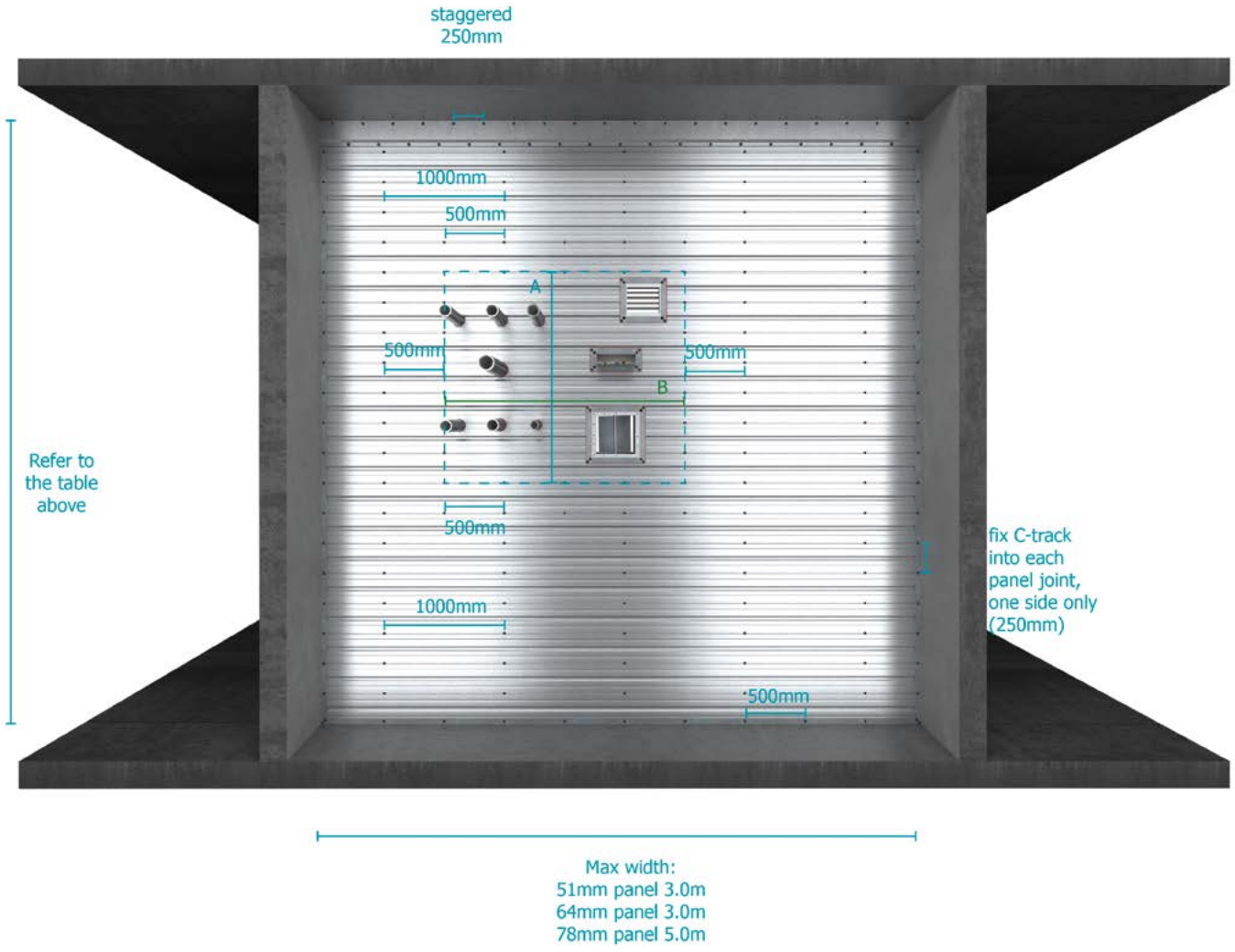


FIGURE 118 [1]

1. Exova Warringtonfire - Report No. 21622

General Penetrations

HORIZONTAL SPEEDPANEL® SYSTEMS MULTIPLE PENETRATIONS

Horizontal Speedpanel® systems can handle multiple apertures. Please refer to the table and illustration below for the full details.

51 64 78

51mm Panel	64mm Panel	78mm Panel	Max. area A x B	Bmax (mm)	Zmin (mm)	Head detail
Wall height (mm)						
3000	-	-	4m²	2444	200	Fig. 76-81 & Fig. 95-97
-	5000	-				
-	-	5000				
5000	-	-				
-	5000	-				
-	-	6000				

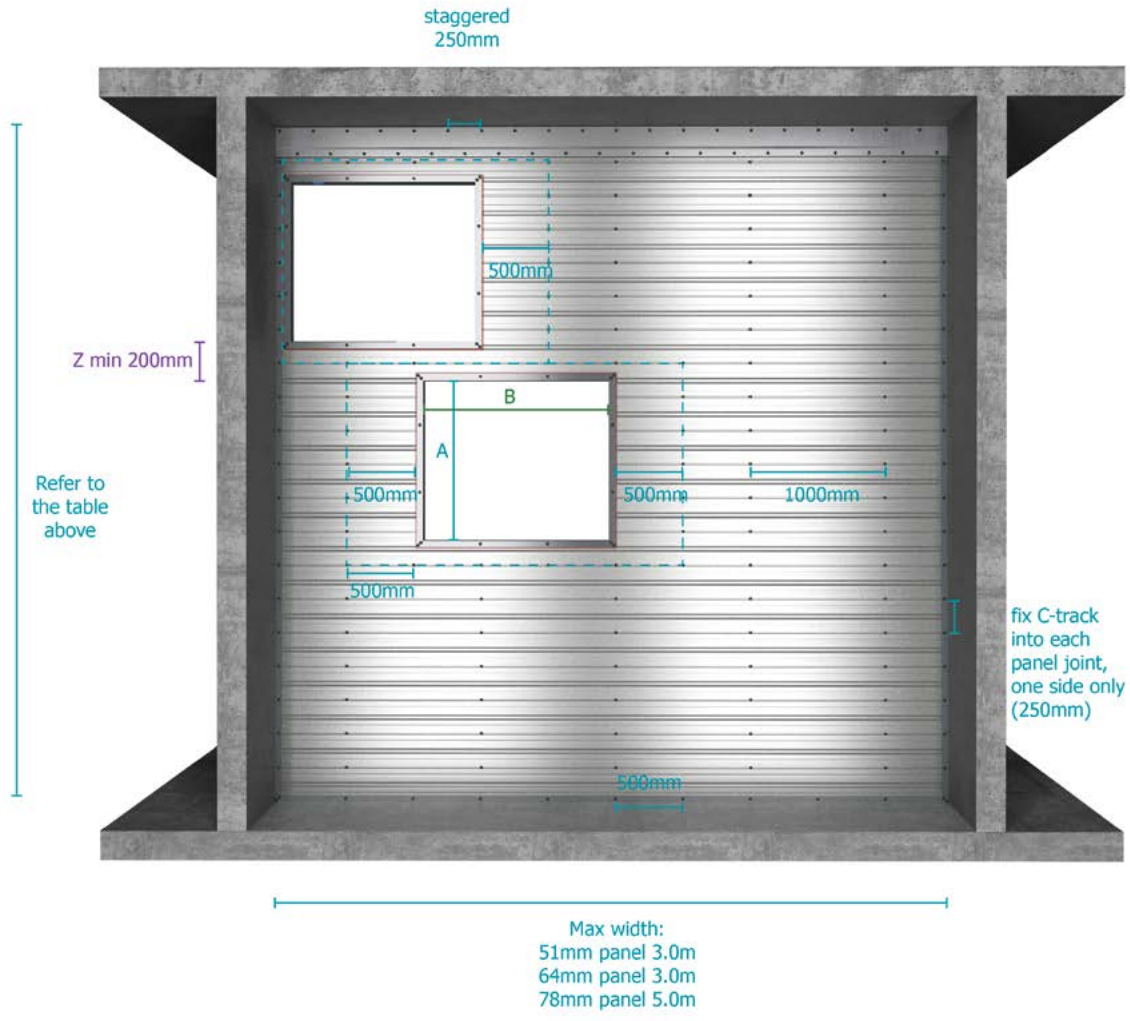


FIGURE 119 [1]

1. Exova Warringtonfire - Report No. 21622

VERTICAL AND HORIZONTAL SPEEDPANEL® SYSTEMS COMBINATION PENETRATIONS

A combination of vertical and horizontal Speedpanel® systems can be adopted so that the wall can handle multiple apertures. Please refer to the table and illustration below for the full details.

51mm Panel	64mm Panel	78mm Panel	Max. area A x B	Amax & Bmax (mm)	Head detail
Wall height (mm)					
3000	-	-	4m²	2444	Fig. 76-81 & Fig. 95-97
-	5000	-			
-	-	5000			
5000	-	-			
-	5000	-			
-	-	6000			

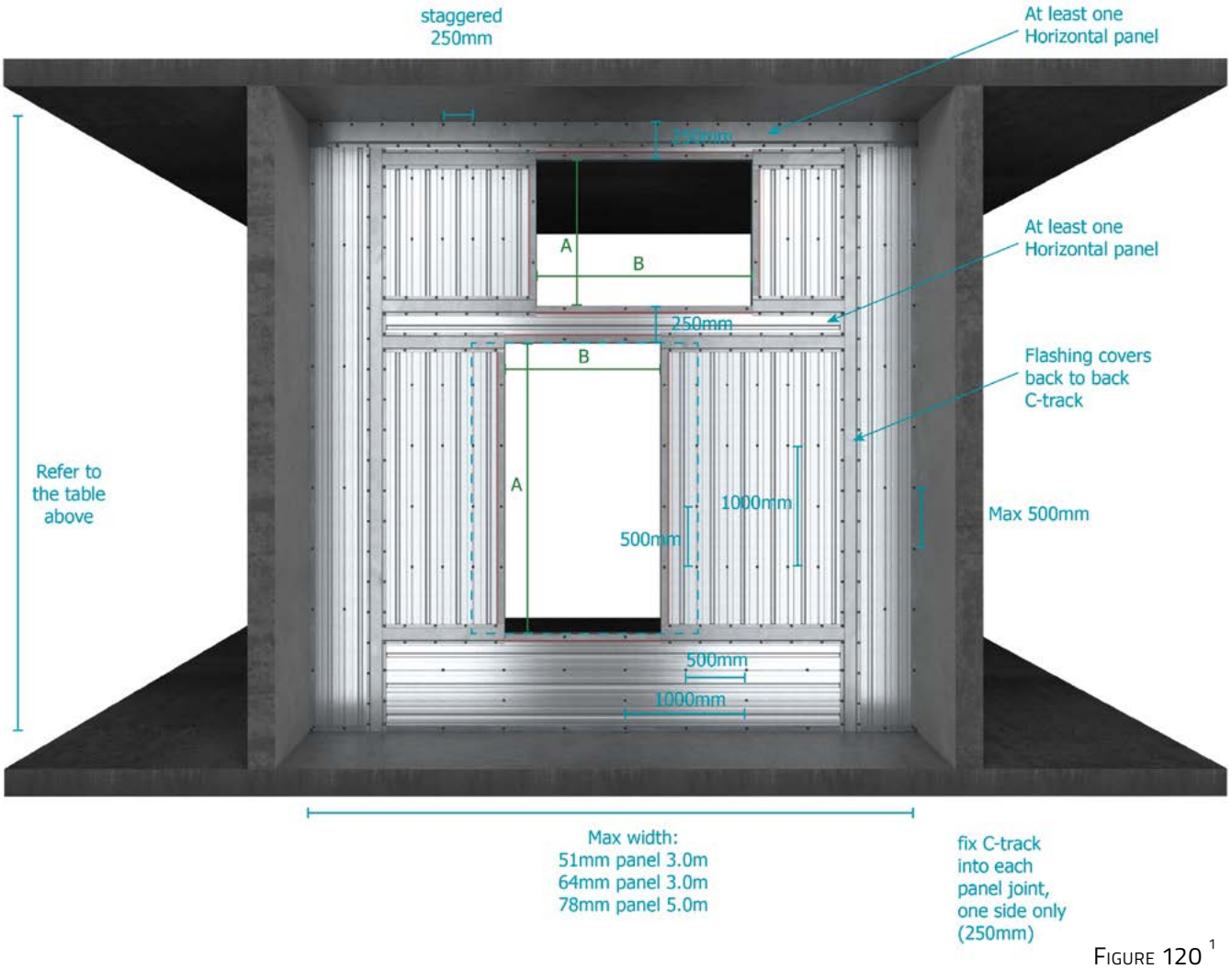
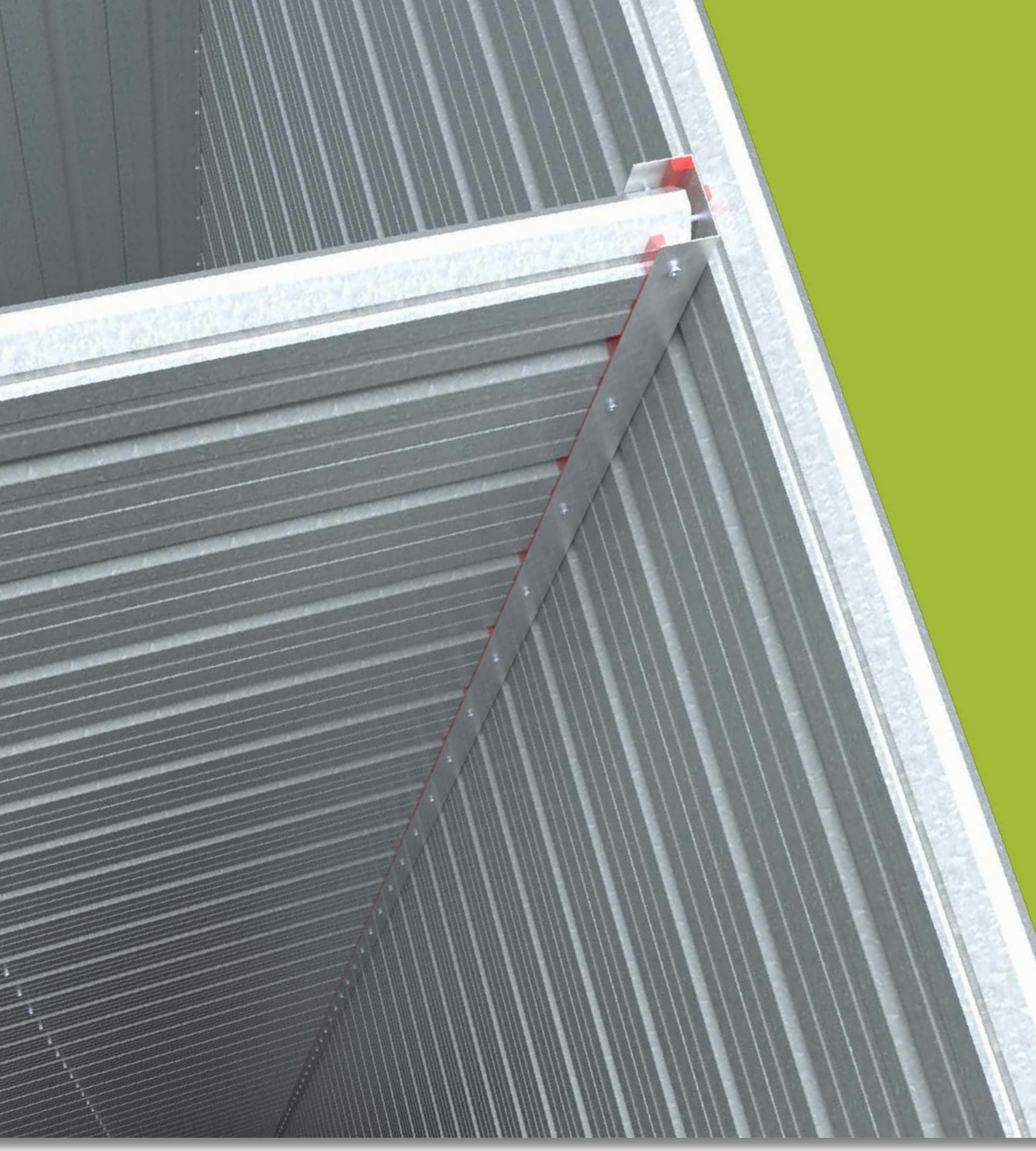


FIGURE 120 [1]

1. Exova Warringtonfire - Report No. 21622



SCAN THE QR-CODES BELOW TO DOWNLOAD THE ASSESSMENT REPORTS USED IN THIS CHAPTER.

6 - REPORT 3580

7 - REPORT 3584

8 - REPORT 3789

9 - REPORT 3895

78

IMPORTANT!

Speedpanel® systems used in Shafts & Risers have been certified for a fire rating of -/120/120 with the 78mm panels.

Please ensure design complies with project wind loads. System structurally tested in normal internal circumstances only.

2.7

STEP BY STEP

SHAFT WALLS

2.7 SHAFT WALLS

SHAFTS & RISERS

One of the most common applications for Speedpanel® systems is for building shafts and risers. The key advantage here is that the horizontal panels can be installed without any height limit using 78mm panels only.

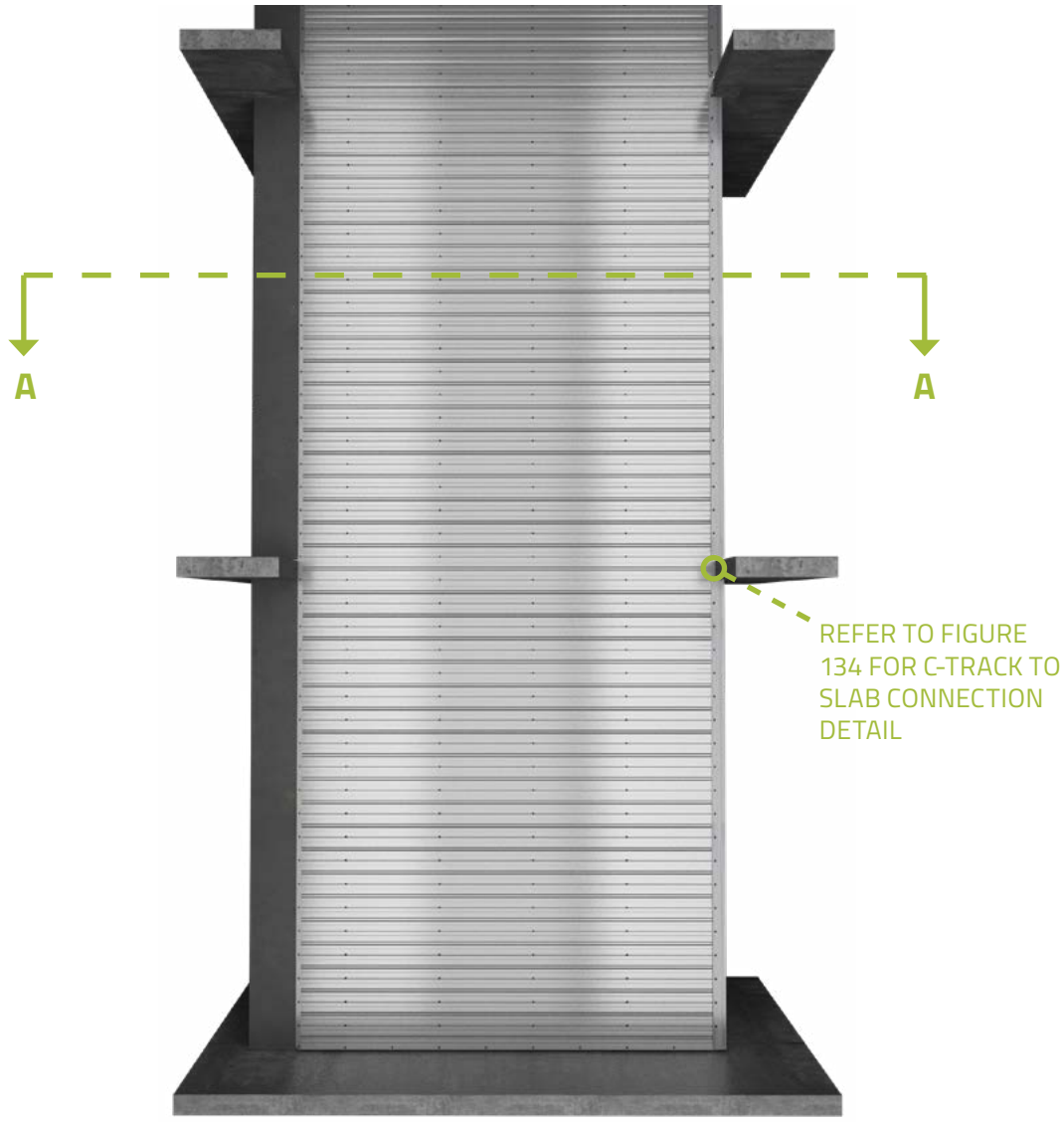
FIGURE 121 [6]

6. Branz - FAR No. 3580

78

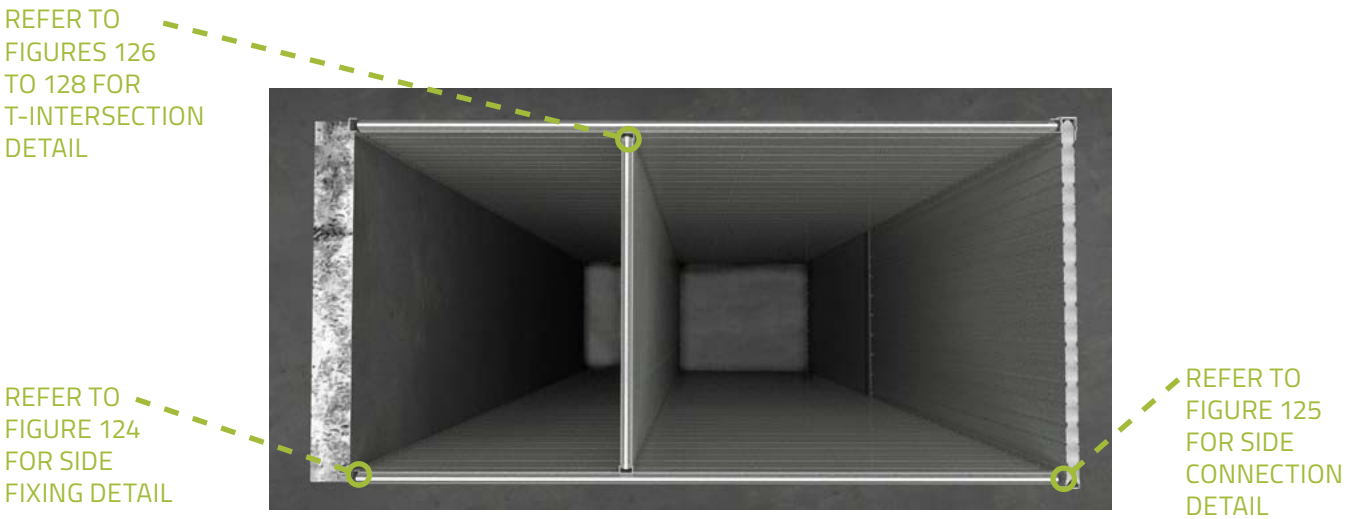
UNLIMITED HEIGHT HORIZONTAL INSTALLATION

Horizontal Speedpanel® walls can reach unlimited heights with maximum spans of 4.5m as long as there is a support on both sides (this could be a vertical Speedpanel® wall, concrete or any other load bearing wall).



SPEEDPANEL® SYSTEMS UNLIMITED HEIGHT INSTALLATION DETAIL

FIGURE 122 [7]



SECTION A-A PLAN VIEW

FIGURE 123 [7]

7. Branz - FAR No. 3584

Shaft Details

78

HORIZONTAL SPEEDPANEL® SYSTEMS FIXING FOR WALLS OVER 5.0m IN HEIGHT

Any horizontal Speedpanel® wall that is over 5.0m high needs to have fixings on both sides of the side C-tracks at 250mm centres into every panel joint. Figure below illustrates this detail:

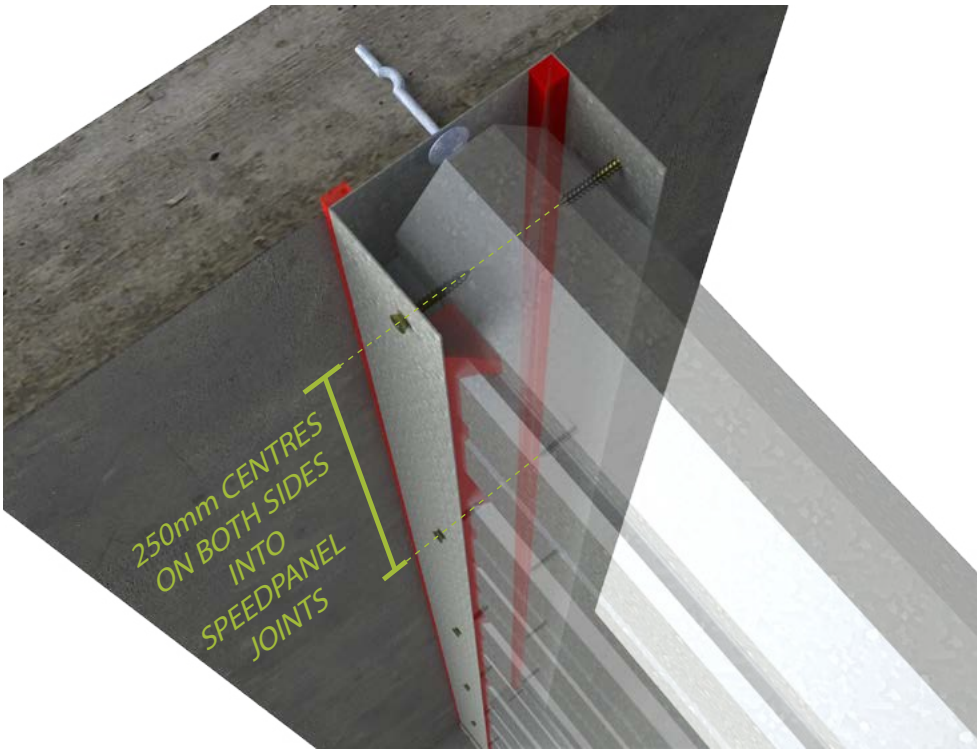


FIGURE 124 [6]

78

CORNER HORIZONTAL PANEL TO VERTICAL PANEL DETAIL

The C-tracks are to be secured together at 250mm centres through both sides and the skin of the next panel with a pair of 10 gauge x 16mm long SDS screws. On the inside of the junction a mild steel angle nominally 50mm x 50mm x 1.15mm thick will be secured at 250mm centres to each panel.

The approved fire-rated sealant must be applied between panels, under the angle section and between the end of the panels and C-tracks, as well as between C-tracks, as shown below.

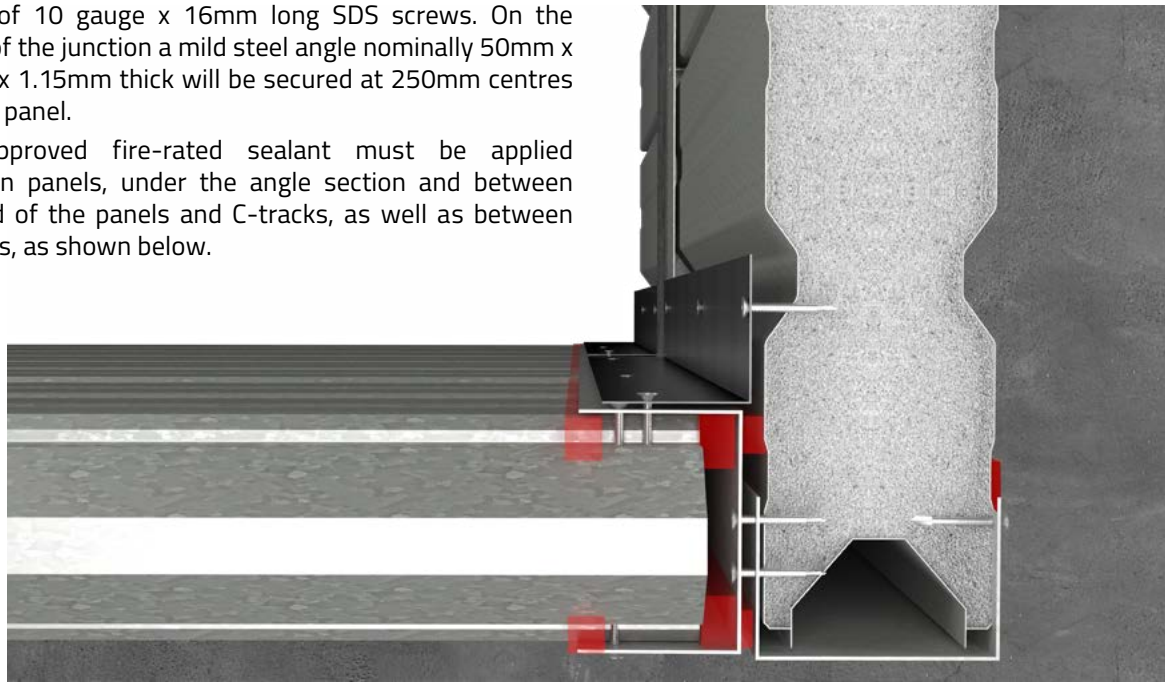


FIGURE 125 [9]

6. Branz - FAR No. 3580
9. Branz - FAR No. 3895

78

T-INTERSECTION DETAILS

Figures below illustrate the details of the T-intersection on shafts and risers or walls over 5.0m high.

A) Use C-track and 30mm SDS screws for this option. Note that fixings need to be on both sides of the C-track at 250mm centres into every panel joint.

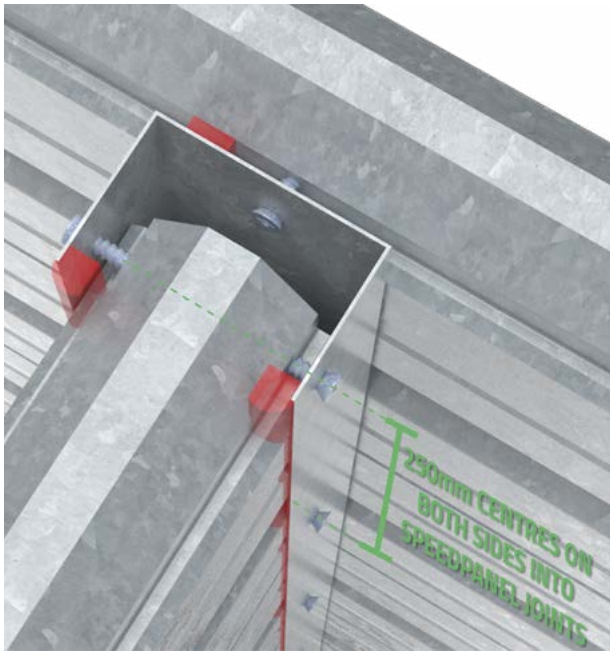


FIGURE 126 [7]

B) Use 50 x 50 x 1.15mm angle and 30mm SDS screws for this option. Note that fixings need to be on both sides of the C-track at 250mm centres into every panel joint.

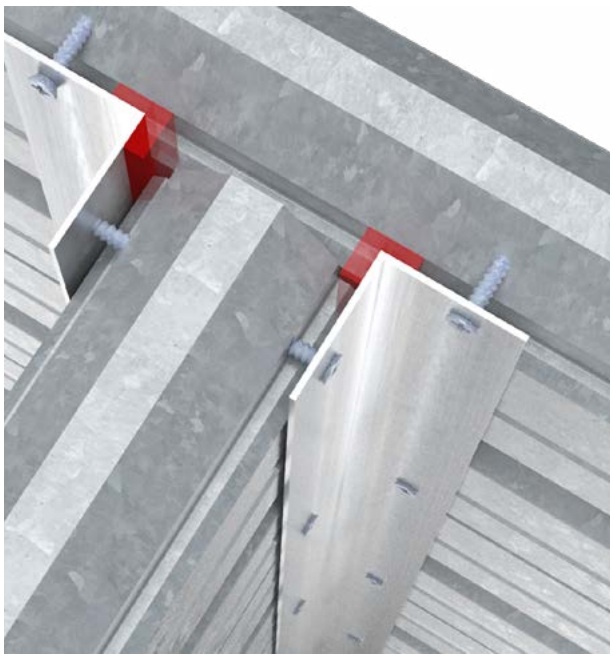


FIGURE 127 [7]

C) In some scenarios you may need to install one wall after the other. In this case you need to fix panels with a SDS 14 Gauge 20tpi x 115mm and 50 x 3mm steel washer at every 450mm centres. See picture below for sealant positions.

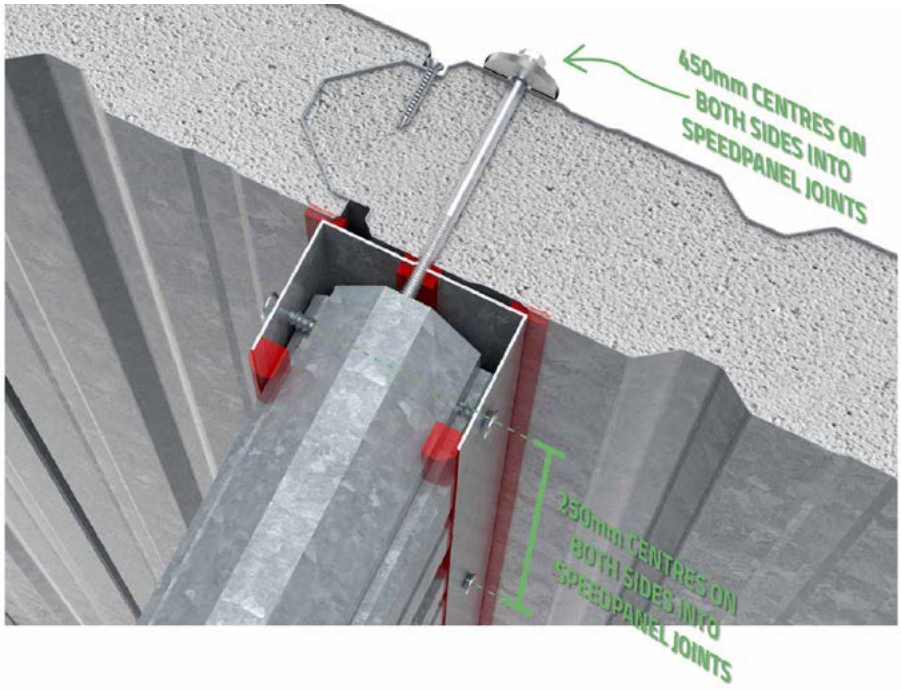


FIGURE 128 [8]

7. Branz - FAR No. 3584
8. Branz - FAR No. 3789

Shafts & Risers Installation

78

STEP 1 - MAXIMUM SPAN AND HEIGHT

Lay out C-track in wall configuration and fix using standard installation methods mentioned in previous chapters.

The combined load of walls "X" and "Z" on vertical "Y" walls faced between floor slabs should not exceed 180kg per l/m (Figure 130). Variation to this will require project specific structural analysis.

Remember: Maximum spans of horizontal and vertical installation applies. Where multiple horizontal walls are supported off one another, spans may be reduced. Refer to Branz assessments related to this chapter for more information.

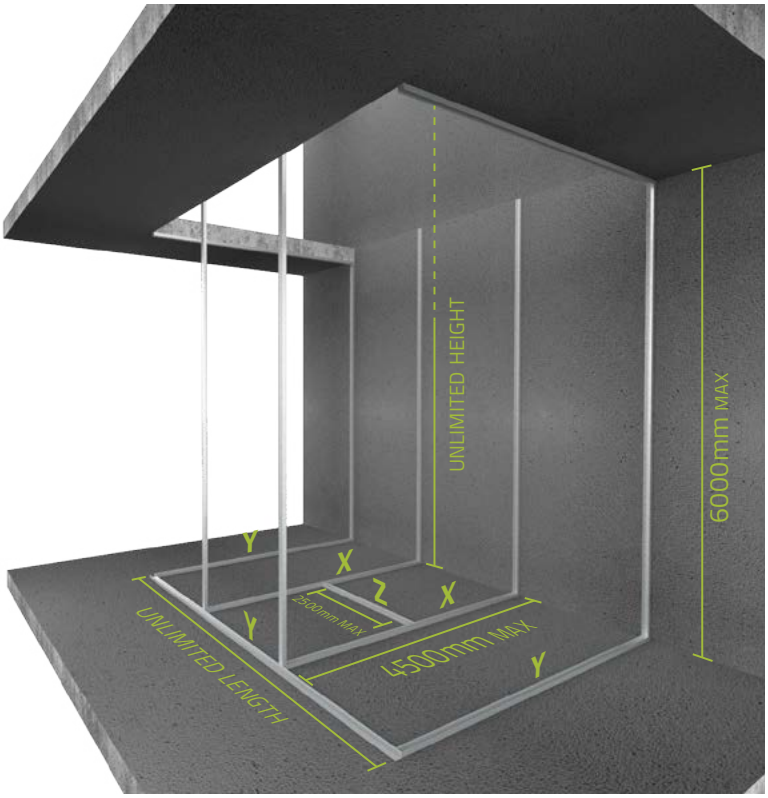


FIGURE 129 [6]

78

STEP 2 - PLACING HORIZONTAL PANELS

Begin installing horizontal Speedpanel® to divide compartments.

Refer to Figure 134 for C-track to slab edge connection detail between floors.

Remember: Ensure you plan the sequence of wall construction, fixing and sealing each wall during panel installation process to avoid losing access to the required work area.

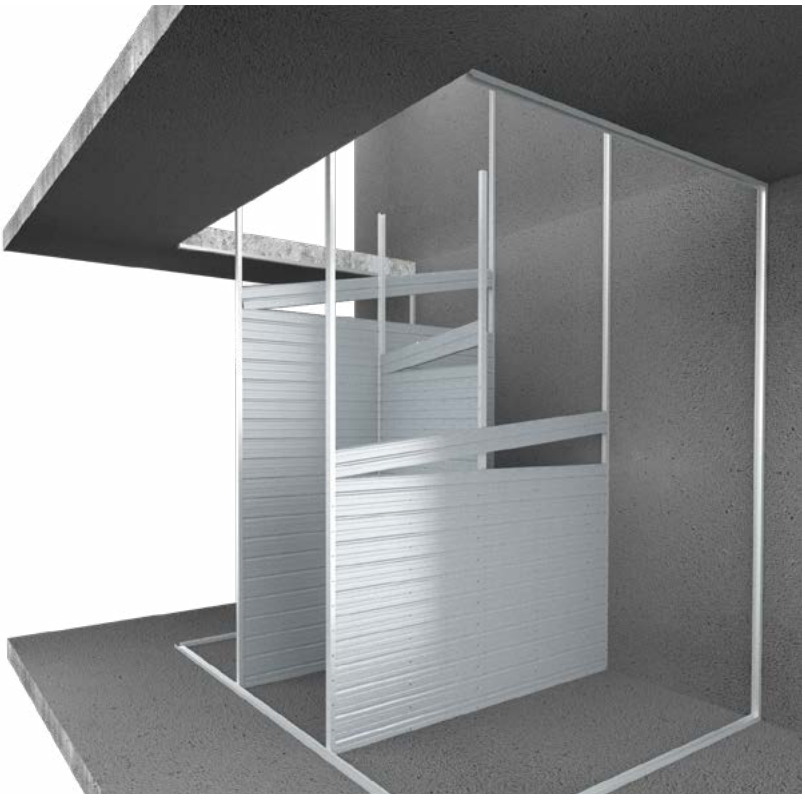


FIGURE 130 [7]

6. Branz - FAR No. 3580
7. Branz - FAR No. 3584

STEP 3 - PLACING VERTICAL PANELS

After horizontal walls are installed, close out the shaft or risers by utilising standard vertical Speedpanel® installation outlined in Chapter 2.3A 'Vertical Installation'.

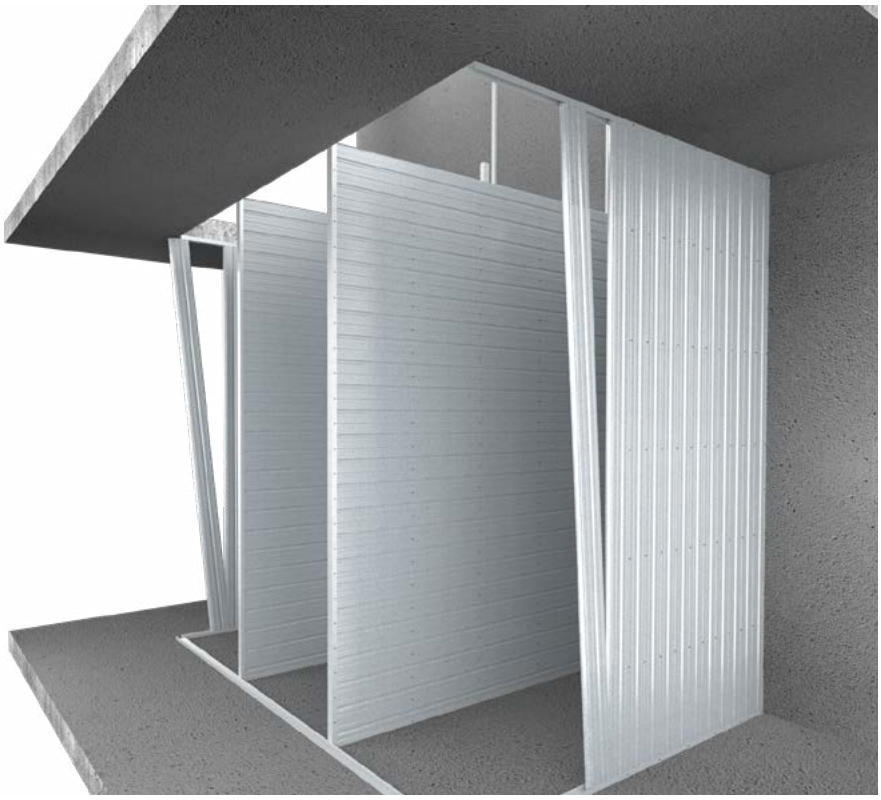


FIGURE 131 [7]

STEP 4 - CLOSING OFF THE FIRST COMPARTMENT

Below illustrations demonstrate final vertical panels closing off the shafts and risers.

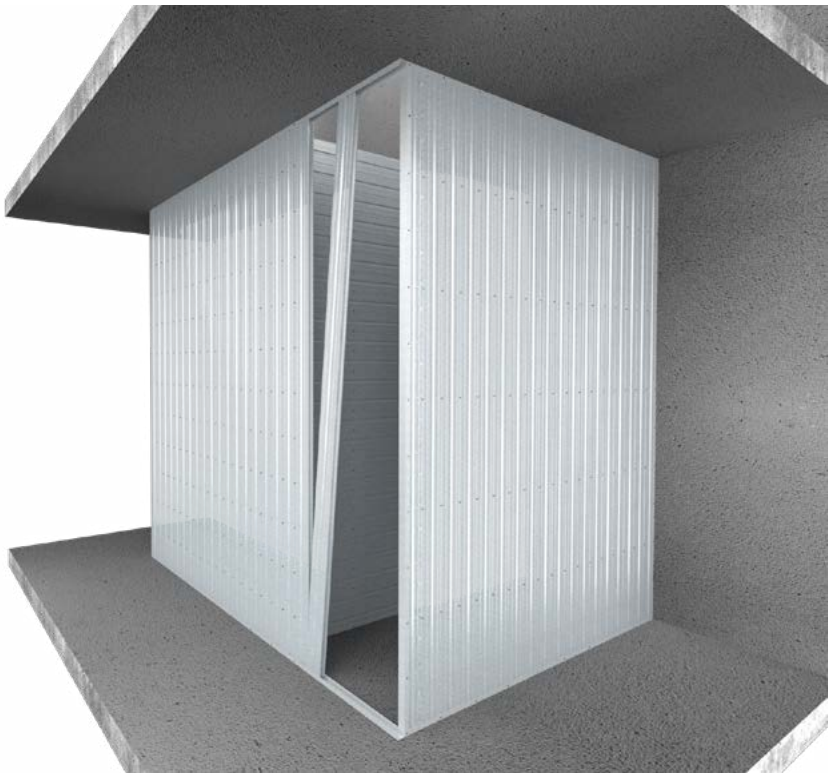


FIGURE 132 [7]

7. Branz - FAR No. 3584

Shafts & Risers Installation

78

STEP 5 - PREPARING TO INSTALL THE NEXT LEVEL

Below illustrations demonstrate final vertical panels closing off the shafts and risers.

FIXING SPEEDPANEL® THROUGH A SPEEDPANEL® WALL

In addition to the standard vertical and horizontal fixings outlined in previous chapters, where vertical and horizontal junctions meet and fixing access is limited, a 115mm SDS 14 Gauge x 20tpi screw can be fixed through the Speedpanel® into C-track fixing of horizontal wall and can be applied from the vertical side with 50 x 3mm steel washer at 450mm.

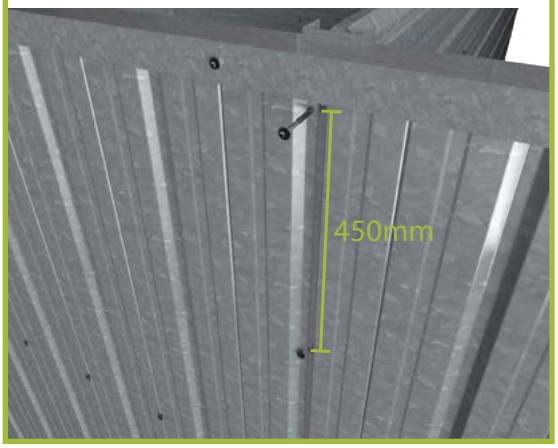


FIGURE 133

PREPARING NEXT LEVEL C-TRACKS

C-track fixings to structure on continuous horizontal walls are to be fixed at slab edges using two Dynabolt M8 steel bolts (minimum).

FIGURE 134

78

STEP 6 - REPEATING THE SAME PROCESS

This process can be repeated on each floor as the building is constructed with no limit to the height of the continuous horizontal 78mm Speedpanel®.

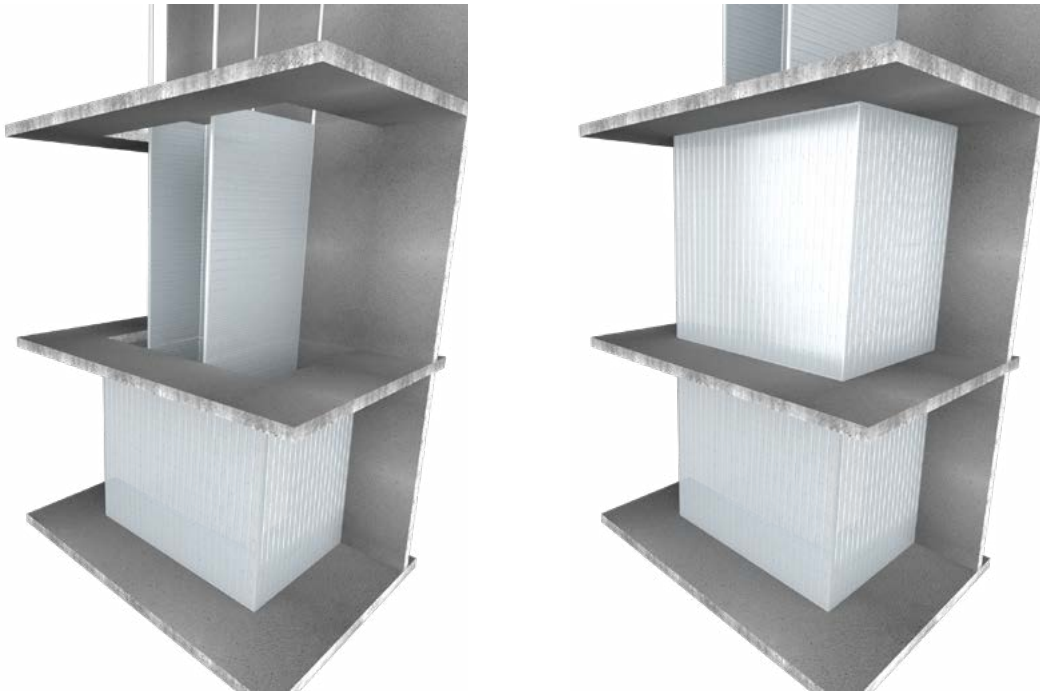


FIGURE 135

Air Pressurisation

78

PRESSURISED SHAFTS

Enclosures comprising Speedpanel® walls achieve a level of pressurisation when a polyurethane based weather resisting sealant is applied. Firstly, run a bead of sealant around the wall perimeter on the inside and outside of the C-tracks. Secondly, apply sealant along each Speedpanel® joint. This is additional to standard sealing requirements. (Please contact our office for data regarding leakage rates).

Speedpanel® approved **polyurethane** based weather resisting sealant is strongly recommended in applications requiring pressurisation.

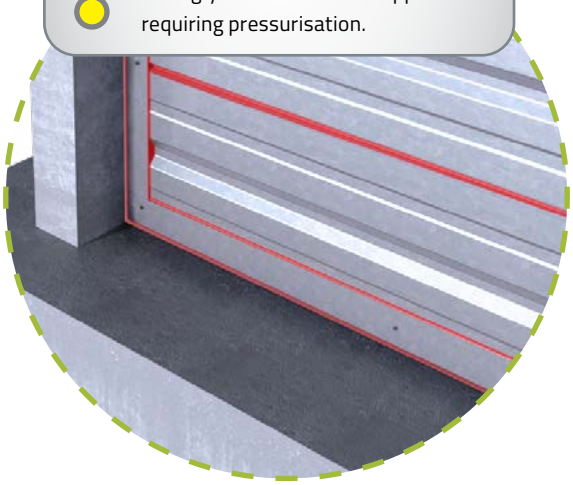


FIGURE 136 *

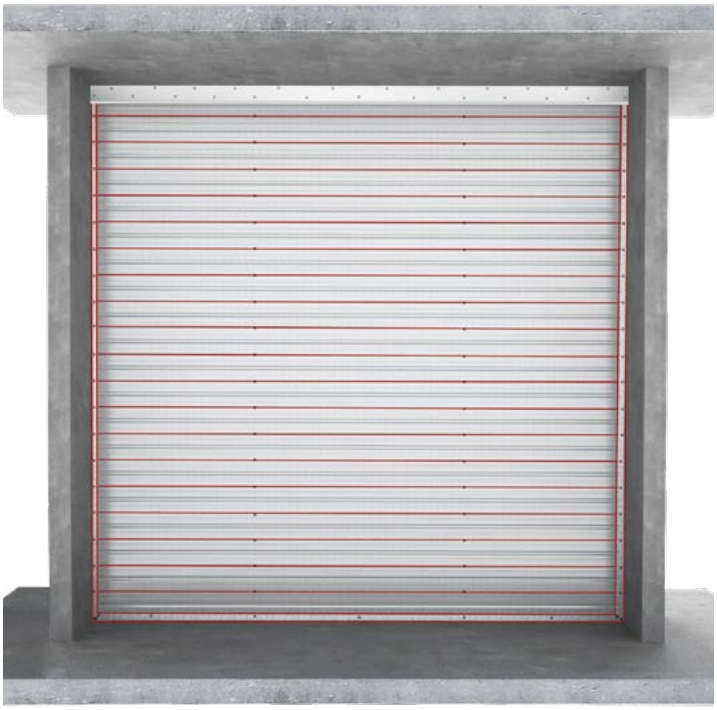


FIGURE 137 *

78

EXTRA SEALING FOR PRESSURISED SHAFTS

In addition to sealing the Speedpanel® joints, additional treatment of air gap at the panel C-track junction shown in Figure 138 is required. It is important to seal the inside of the C-track at the wall intersections to ensure each shaft or riser is pressurised independently. This application requires the usage of a 30mm polyethylene foam backing rod (shown in green). Refer to steps in Figures 145 to150.

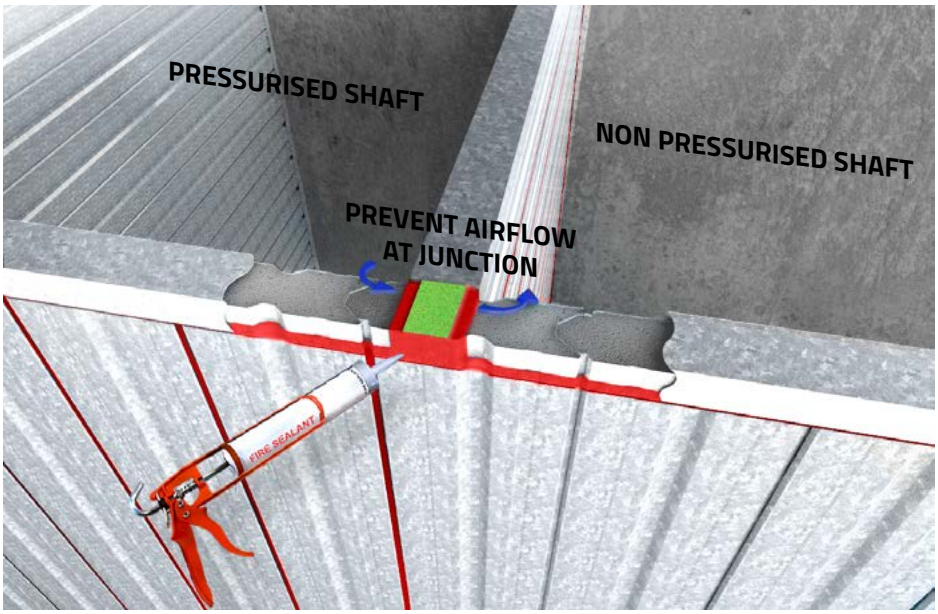


FIGURE 138 *

* Ian Bennie and Associates Test Report No. 2011-082-S1

Air Pressurisation sealing

78

CORRECT SEALANT APPLICATION IN PRESSURISED SYSTEMS

The below illustrations demonstrate the correct methods to apply sealant to Speedpanel in air pressurisation applications. It is also strongly advised that you clean all surfaces to be sealed prior to application of sealant.

SEALANT - PANEL TO PANEL

INCORRECT SEALANT LOCATION

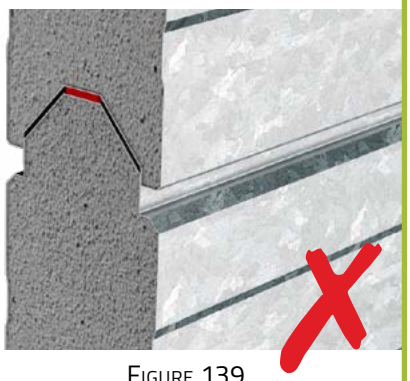


FIGURE 139

In pressurised Speedpanel systems, the sealant should be applied in the panel joints neatly and consistently. The sealant should NOT be applied in-between the engaged panels.

Refer to Figure 143

OVERFILLED SEALANT

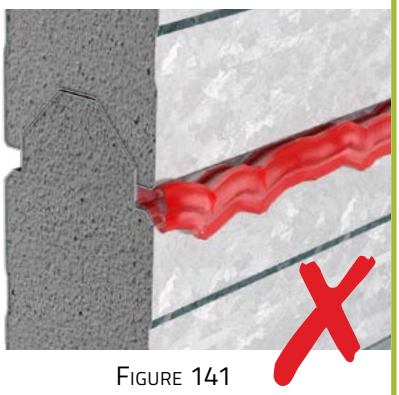


FIGURE 141

Do not overfill the joints with excessive amounts of sealant, as this may have a detrimental effect on pressursation and performance. The sealant should be applied neatly and consistently.

Refer to Figure 143

CORRECT SEALANT

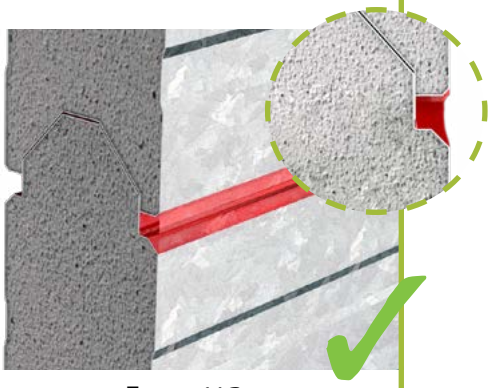


FIGURE 143

The correct method of sealing pressurised Speedpanel systems, is to apply a neat and consistent bead of sealant in the joint rebate of all panels.

SEALANT - PANEL TO TRACK

INCORRECT LOCATION SEALANT

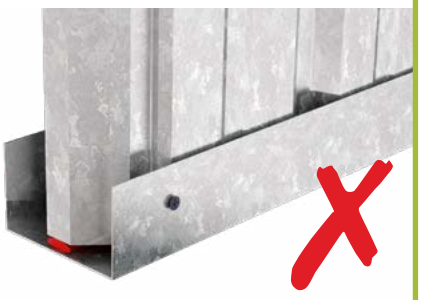


FIGURE 140

Speedpanel recommend that you do not apply the sealant to the underside or top of the panel. To ensure the highest levels of pressurisation, you should seal the Speedpanel shell to the track on both sides.

Refer to Figure 144

OVERFILLED SEALANT

FIGURE 142

The panel shell should be sealed to the C-track without overfilling with excessive amounts of sealant, as this may have a detrimental effect on pressurisation and performance.

Refer to Figure 144

CORRECT SEALANT

FIGURE 144

In pressurised Speedpanel systems, the sealant should be applied neatly and consistently panel to track connections.

Speedpanel® approved polyurethane based weather resisting sealant is strongly recommended in applications requiring pressurisation.

Speedpanel® strongly recommend that you do not overfill joins and gaps. Using excessive amounts of sealant may have a detrimental effect on pressurisation and performance.

Steps for sealing pressurised shafts

78

STEP 1 - INSTALL SEALANT INTO BOTTOM TRACK

Apply a 20mm bead of sealant across the inside of the bottom track.

FIGURE 145

STEP 2 – INSTALL PANELS

Install the vertical panels as per steps in chapter 2.3A, up to the panel that will be connecting to the proposed horizontally stacked shaft separation wall.

FIGURE 146

STEP 3 - INSTALL SEALANT INTO TOP TRACK

Apply a 20mm bead of sealant between the underside of the top track and the top of the panel.

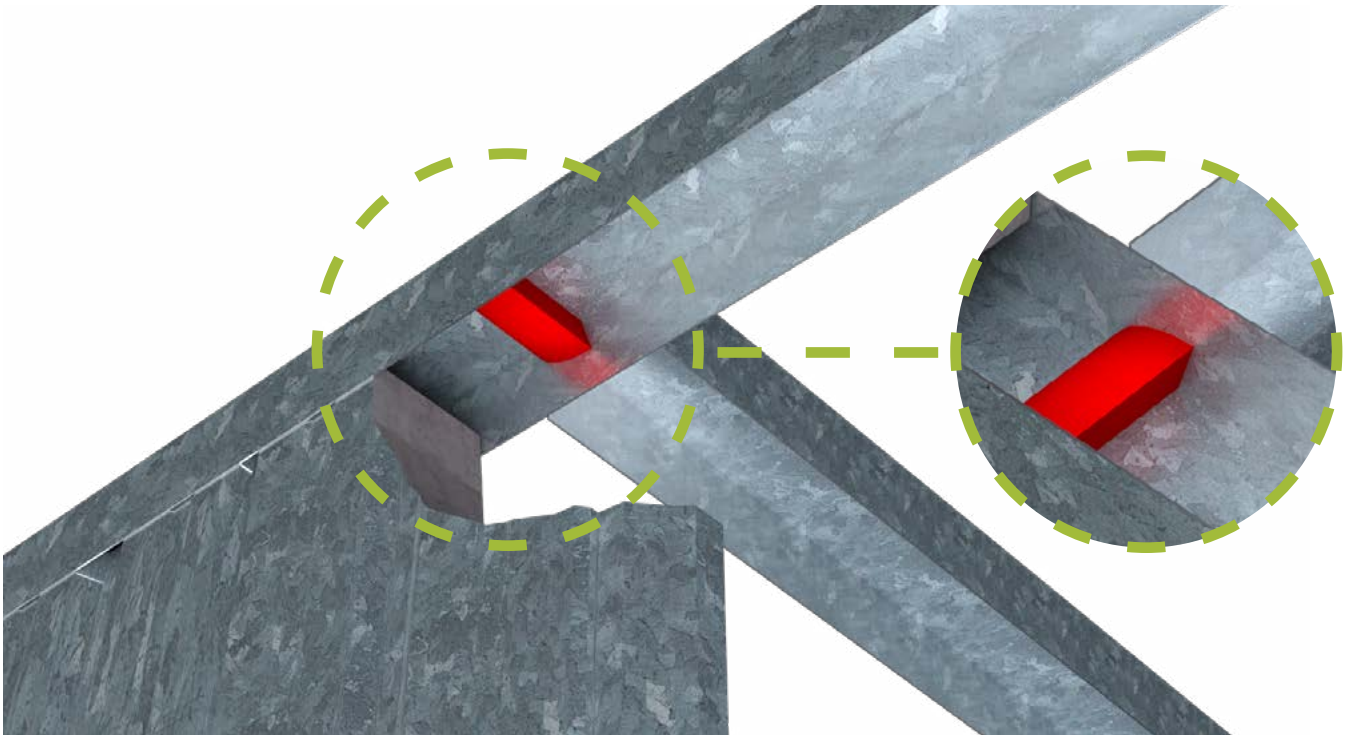


FIGURE 147

STEP 4 - INSTALL FOAM ROD INTO TOP TRACK

Install 30mm polyethylene foam backing rod (shown in green) into the sealant.

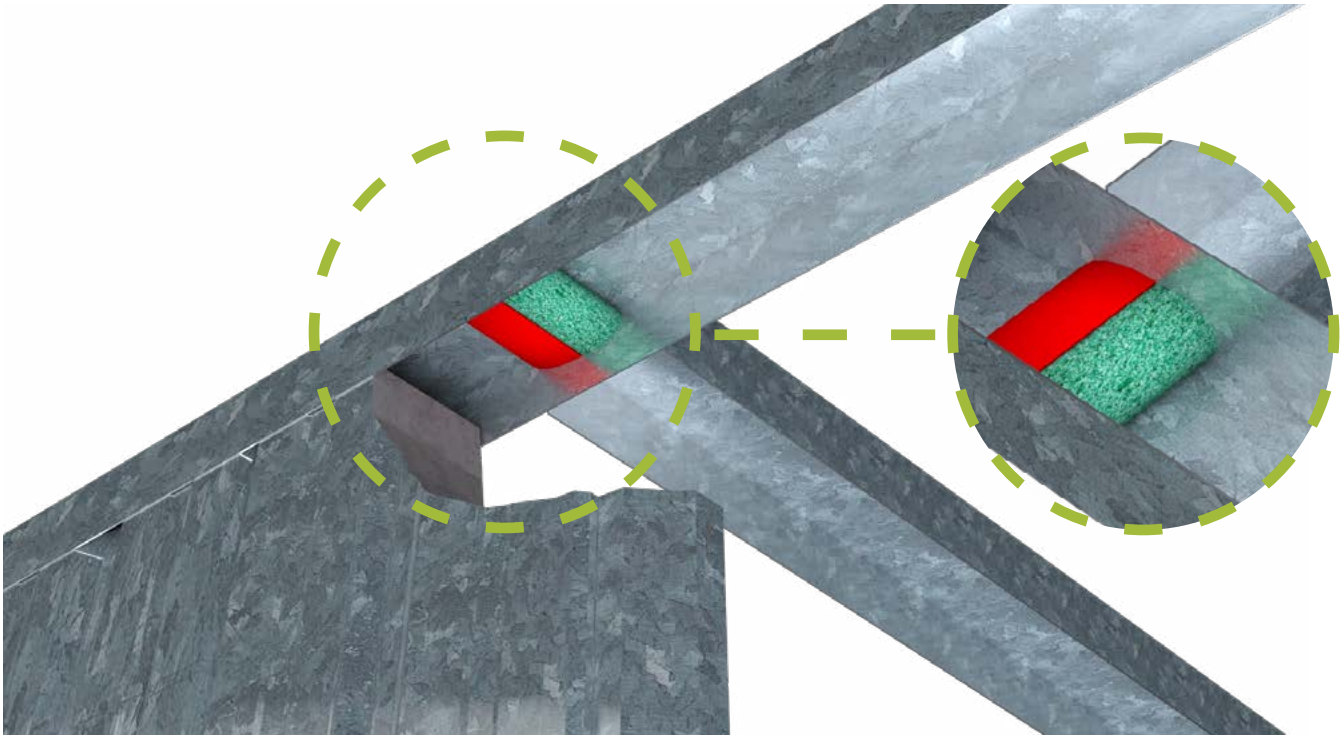


FIGURE 148

STEP 5 - INSTALL SEALANT INTO TOP TRACK

Apply another 20mm bead of sealant between the underside of the top track over the polyethylene foam backing rod (from step 4). Continue to install the vertical panels as per the steps in chapter 2.3A.

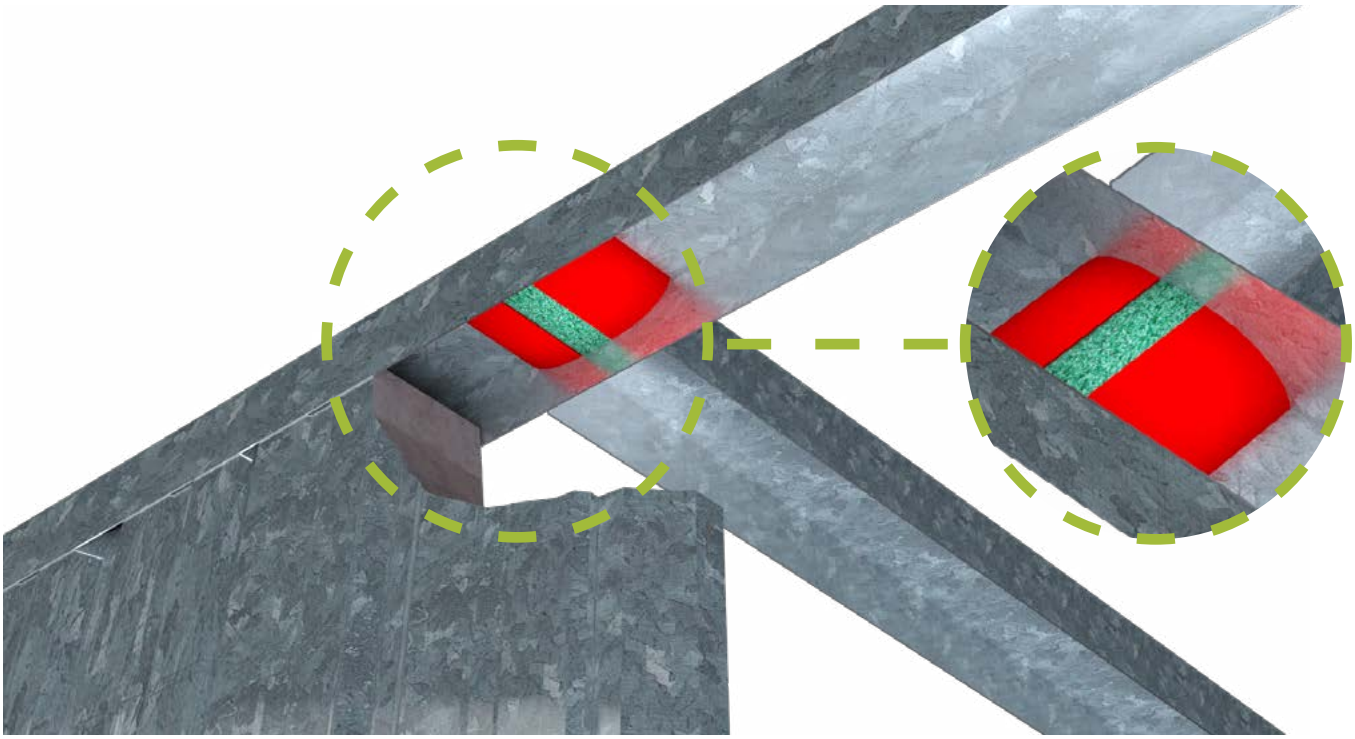


FIGURE 149

STEP 6 - CONTINUE INSTALLATION

Continue to install the vertical panels as per the steps in chapter 2.3A.

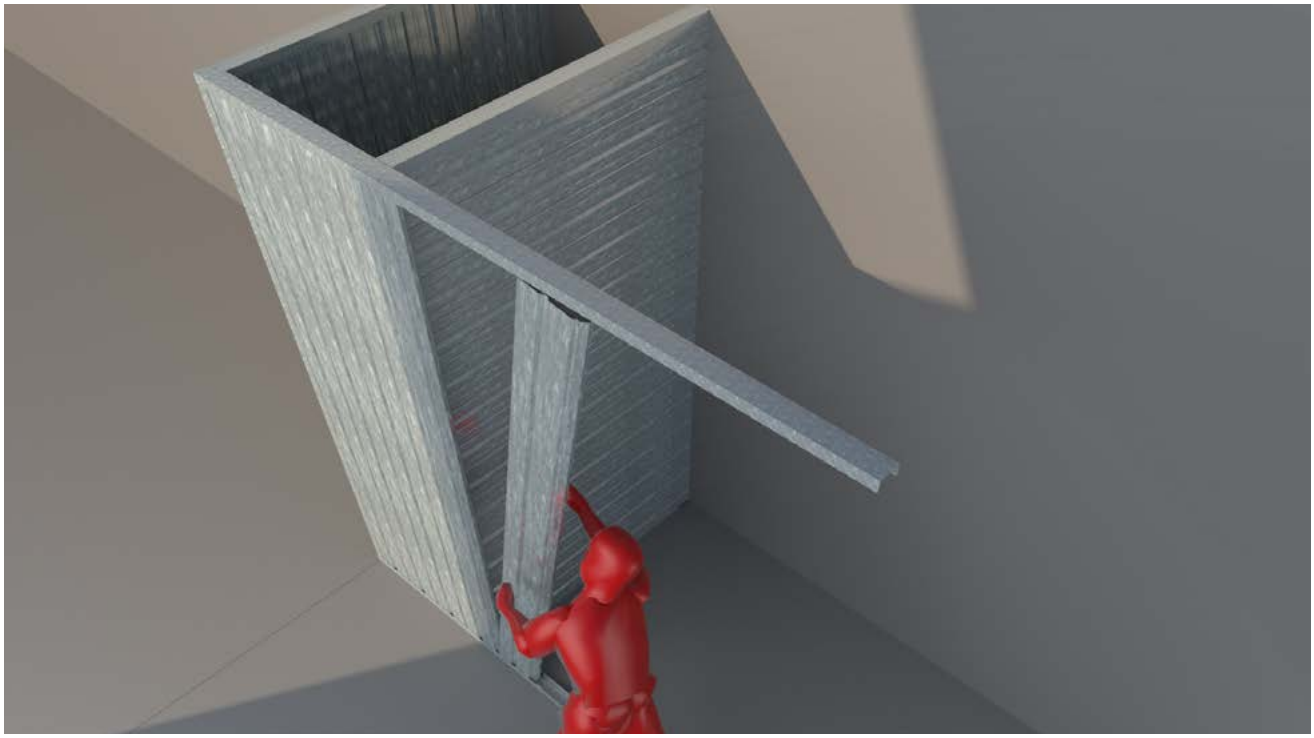
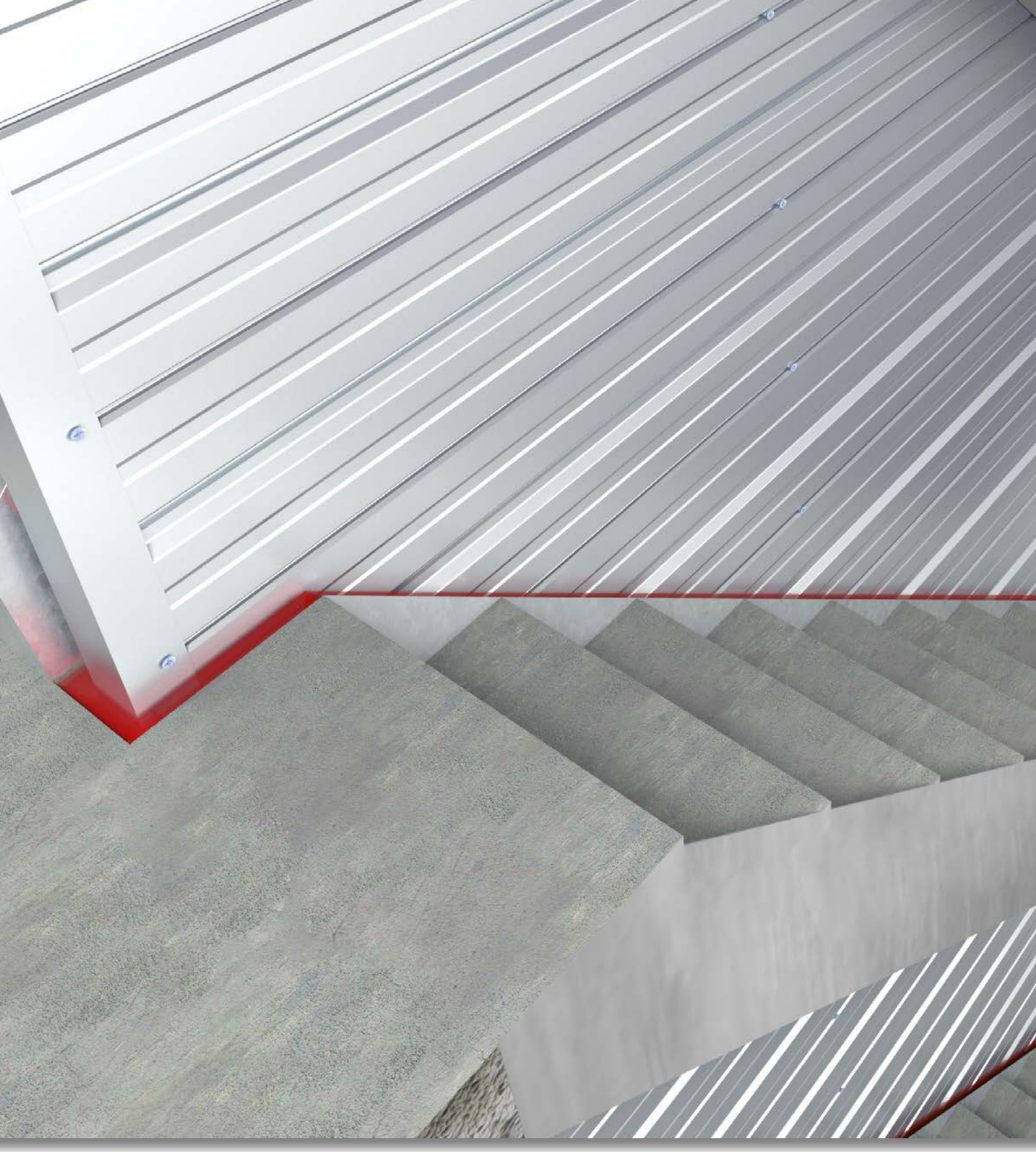


FIGURE 150



SCAN THE QR-CODES BELOW TO DOWNLOAD THE ASSESSMENT REPORTS USED IN THIS CHAPTER.

6 - REPORT 3580

10 - REPORT 35875300

78

IMPORTANT!

Speedpanel® systems used in Stair Walls have been certified for a fire rating of -/120/120 with the 78mm panels.

Remember: Handrails have been removed from drawings for clarity purposes. Stair handrails cannot be fixed to Speedpanel® wall.

2.8

STAIR WALLS

2.8 STAIR WALLS

SCISSOR STAIRS - HORIZONTAL ORIENTATION

Figure below illustrates the configuration of the horizontal scissor stairs during the assembly.

This Figure emphasises the usage of the polyethylene foam backing rod (shown in green) and the fire-rated sealant (shown in red) which should be used all the way around Speedpanel® wall. Refer to Figures 153 to 156 for detailed information.

Note: Speedpanel® Systems sealant locations not shown for clarity purposes. Standard horizontal fixings and sealant apply to Speedpanel® systems installation as per Chapter 2.4 'Horizontal Installation'.

78

IMPORTANT!

Speedpanel® systems used in Stair Walls have been certified for a fire rating of -/120/120 with the 78mm panels.

Remember: Handrails have been removed from drawings for clarity purposes. Stair handrails cannot be fixed to Speedpanel® wall.

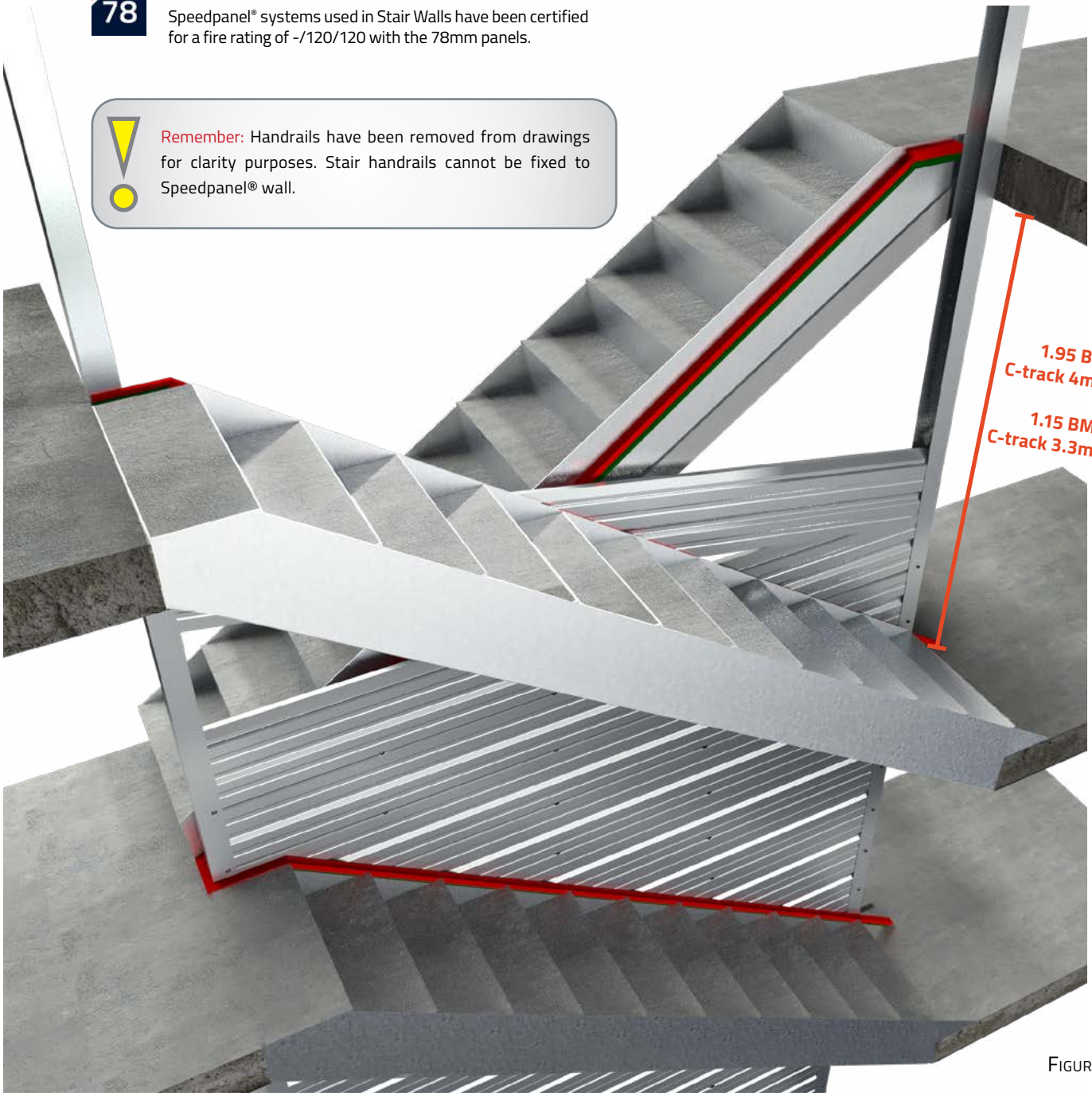


FIGURE 151

10. Exova Warringtonfire - Report No. 35875300

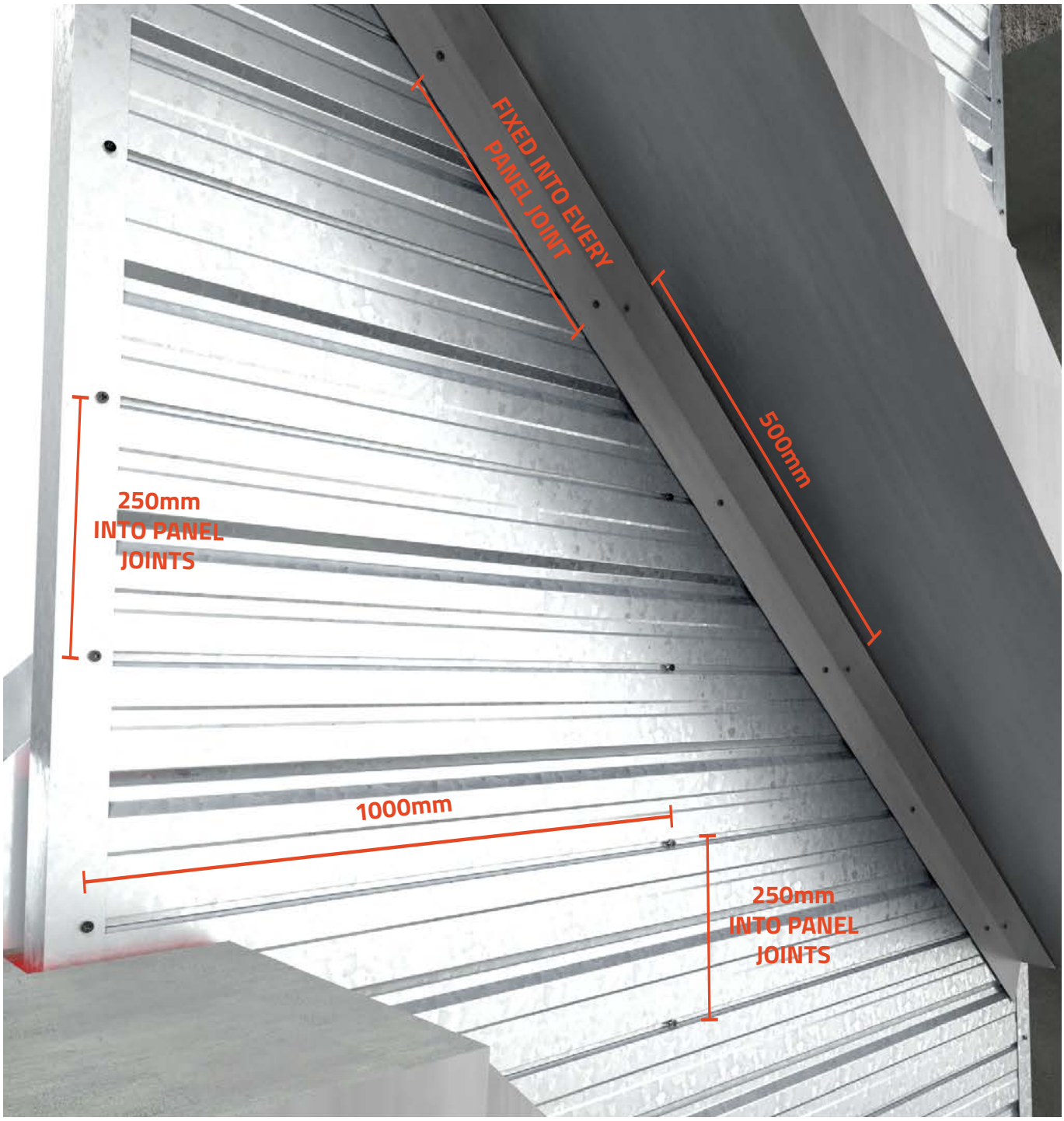
78

FIXINGS AND DIMENSIONS - HORIZONTAL ORIENTATION

Figure below illustrates the standard fixings on scissor stair applications.

- The wall shall be fixed to the stair tread stringer on both sides of the wall with a steel angle with options for 0-10mm, 10-20mm, 20-35mm, 35-95mm gaps
- The height of Speedpanel® wall is unlimited
- The length of Speedpanel® wall is limited to 5.0m maximum

Note: Normal Speedpanel® systems sealant locations not shown for clarity purposes. Standard horizontal fixings and sealant apply to Speedpanel® installation.



Note: Speedpanel® systems scissor stair applications require a head track fixing for protection Refer to Figures 74 and 75.

FIGURE 152

10. Exova Warringtonfire - Report No. 35875300

Stair Walls

78

WALL TO STAIR JOINT DETAILS

Select the appropriate detail according to the gap between the Speedpanel® wall and the stair edge.

Note: The HILTI CP606 sealant (shown in red) shall be minimum 20mm deep on all details below.

All four details provided below are applicable to both Horizontal and Vertical Speedpanel® Stair applications.

DETAIL A

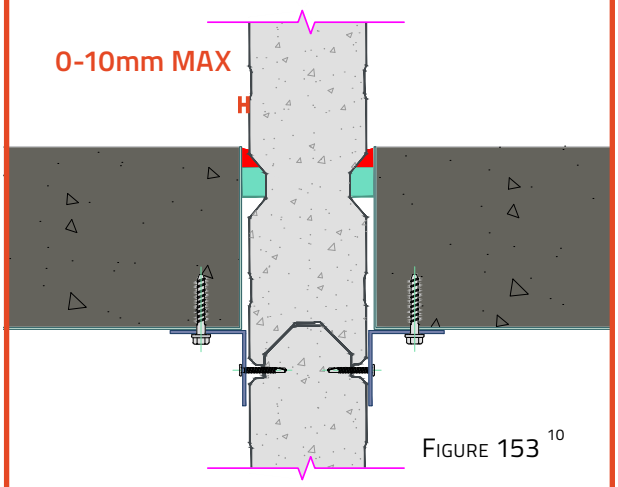


FIGURE 153 [10]

This detail will be used in a scenario where the gap between the stair and Speedpanel® wall is 0-10mm. The steel angle on this detail shall be 50 x 50 x 2mm. Angle fixed to concrete structure with min. 8mm mechanical anchor with 60mm embedment and equivalent load capacity as Powers FS0885 at 500mm centres.

Use the Ø10mm polyethylene foam backing rod for the 0-8mm max joint width and if the joint width is 8-12mm use a Ø15mm polyethylene foam backing rod.

DETAIL B

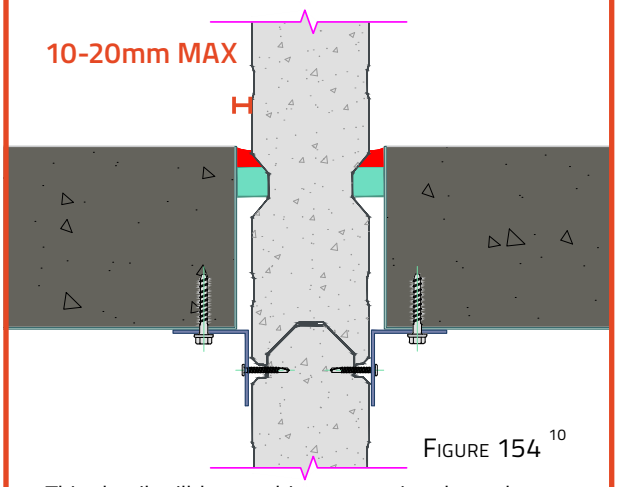


FIGURE 154 [10]

This detail will be used in a scenario where the gap between the stair and Speedpanel® wall is 10-20mm. The steel angle on this detail shall be 50 x 50 x 4mm. Angle fixed to concrete structure with min. 8mm mechanical anchor with 60mm embedment and equivalent load capacity as Powers FS0885 at 500mm centres.

Use the Ø15mm polyethylene foam backing rod for the a 12mm joint width and if the joint width is 12-20mm use a Ø25mm polyethylene foam backing rod.

DETAIL C

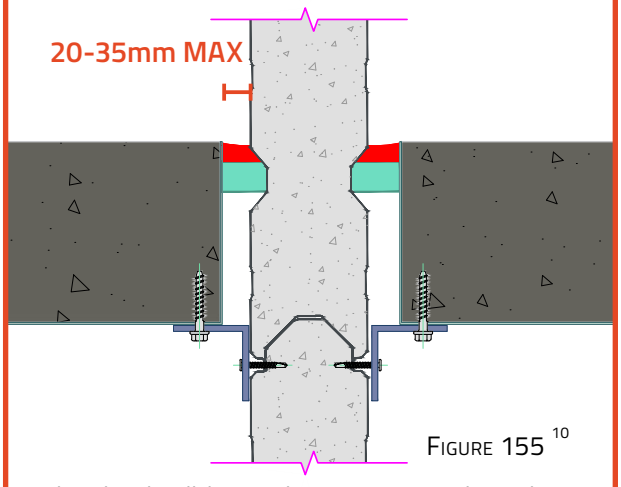


FIGURE 155 [10]

This detail will be used in a scenario where the gap between the stair and Speedpanel® wall is 20-35mm. The steel angle on this detail shall be 75 x 75 x 5mm. Angle fixed to concrete structure with min. 8mm mechanical anchor with 60mm embedment and equivalent load capacity as Powers FS0885 at 500mm centres.

Use rock-wool insulation with a minimum density of 180kg/m³ as a backfilling material.

DETAIL D

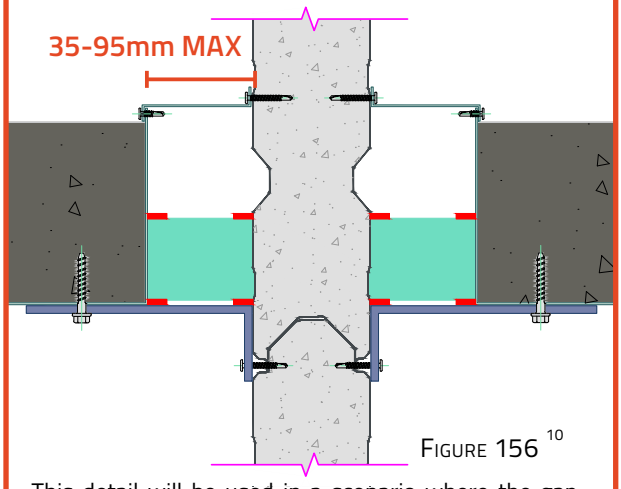


FIGURE 156 [10]

This detail will be used in a scenario where the gap between the stair and Speedpanel® wall is 35-95mm. The steel angle on this detail shall be 50 x 150 x 5mm. Also, a 0.55 BMT flashing is used for aesthetics. Angle fixed to concrete structure with min. 8mm mechanical anchor with 60mm embedment and equivalent load capacity as Powers FS0885 at 250mm centres.

Use rock-wool insulation with a minimum density of 180kg/m³ as a backfilling material.

10. Exova Warringtonfire - Report No. 35875300

78

C-TRACK FIXING

C-tracks must be fixed to each concrete slab using Dynabolt M8 (minimum) steel bolt or equivalent. Fixing position relative to slab edge to comply with fixing manufacturers requirements.

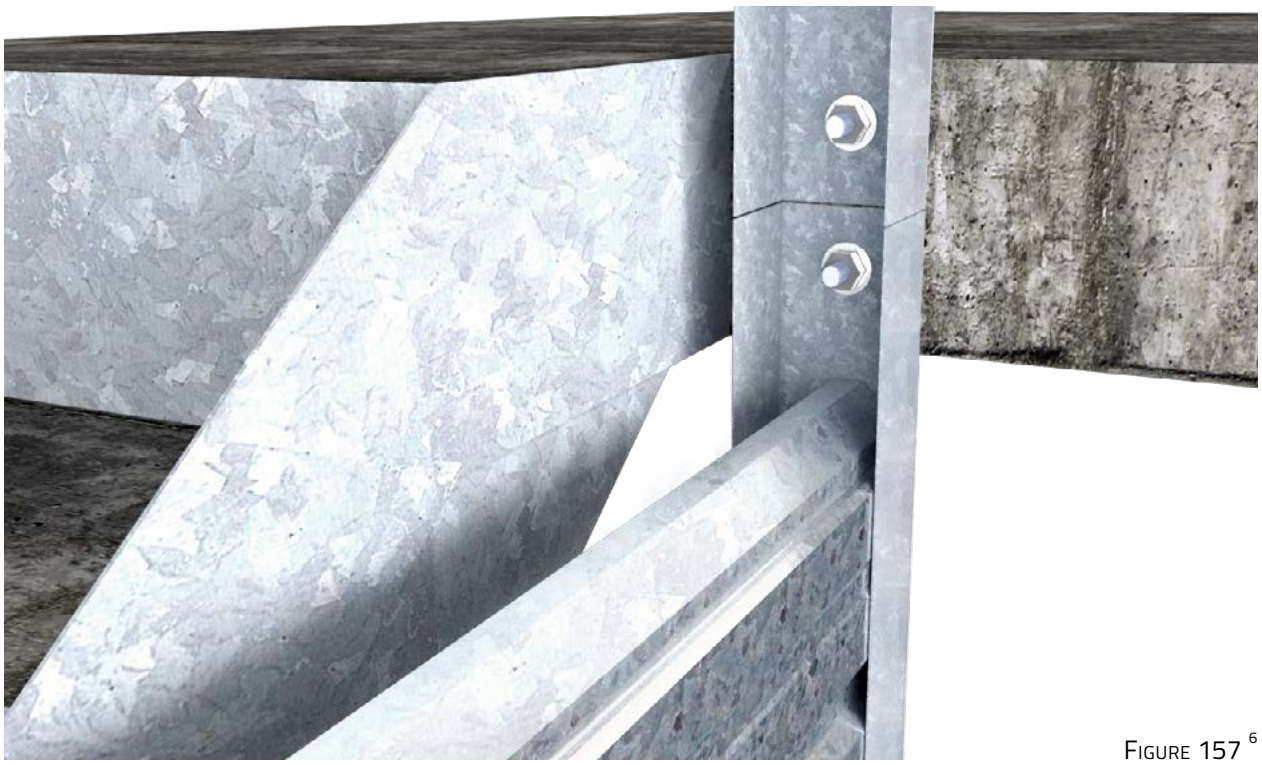


FIGURE 157 [6]

78

FIRE SEPARATION PART AND BRACING

Figure below illustrates the bracing (highlighted in red) and fire separation part of the wall (highlighted in yellow).

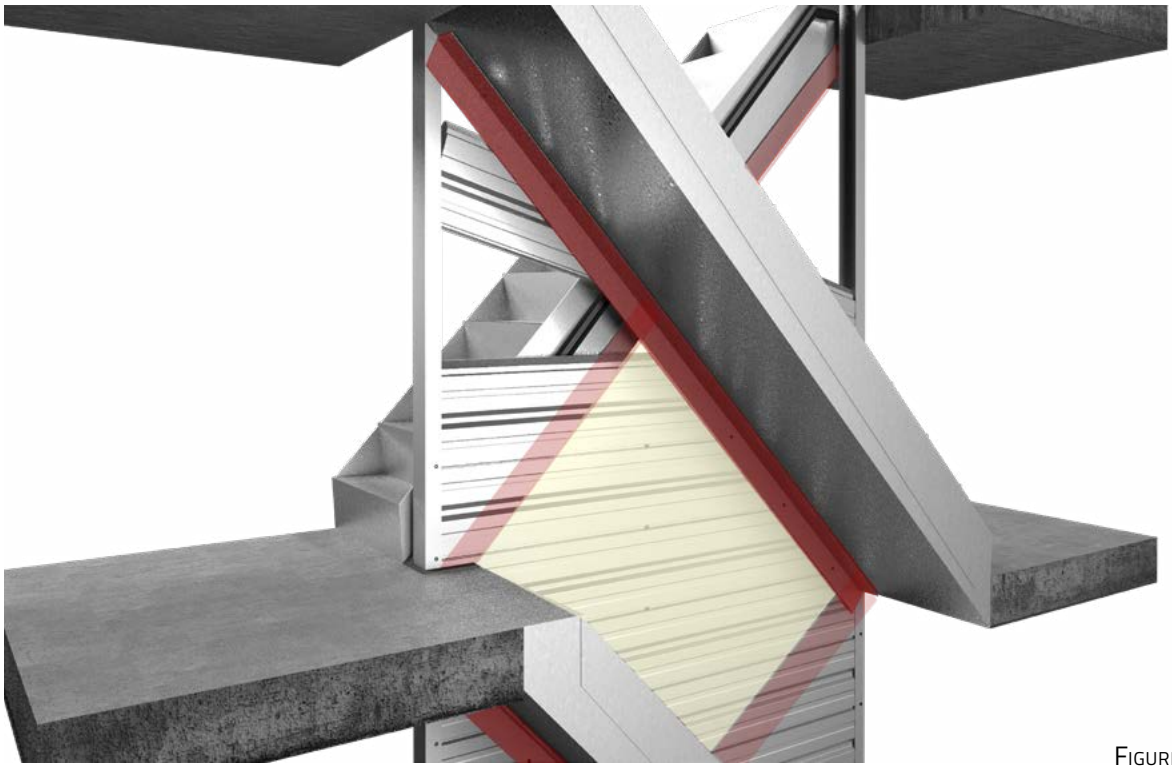


FIGURE 158 [10]

6. Branz - FAR No. 3580
10. Exova Warringtonfire - Report No. 35875300

Stair Walls

78

SCISSOR STAIRS (VERTICAL ORIENTATION)

As per standard installation of the Speedpanel® Vertical System, scissor stairs can be installed by using vertically orientated 78mm Speedpanel®. Below are some of the key factors of this application:

- The wall shall be fixed to the stair tread stringer on both sides of the wall with a steel angle with options for 0-10mm, 10-20mm, 20-35mm, 35-95mm gaps. (See page 122).
- The height of Speedpanel® wall is unlimited, however the maximum Speedpanel® panel vertical span between concrete landings (floor to floor) is 3.0m high.
- The length of the Speedpanel® wall is unlimited.
- The back to back C-tracks shall be protected with a 0.7mm thick steel flashing on one side only.

Note: Speedpanel® systems sealant locations not shown for clarity purposes. Standard vertical fixings and sealant apply to Speedpanel® installation as per Chapter 2.3 'Vertical Installation'.

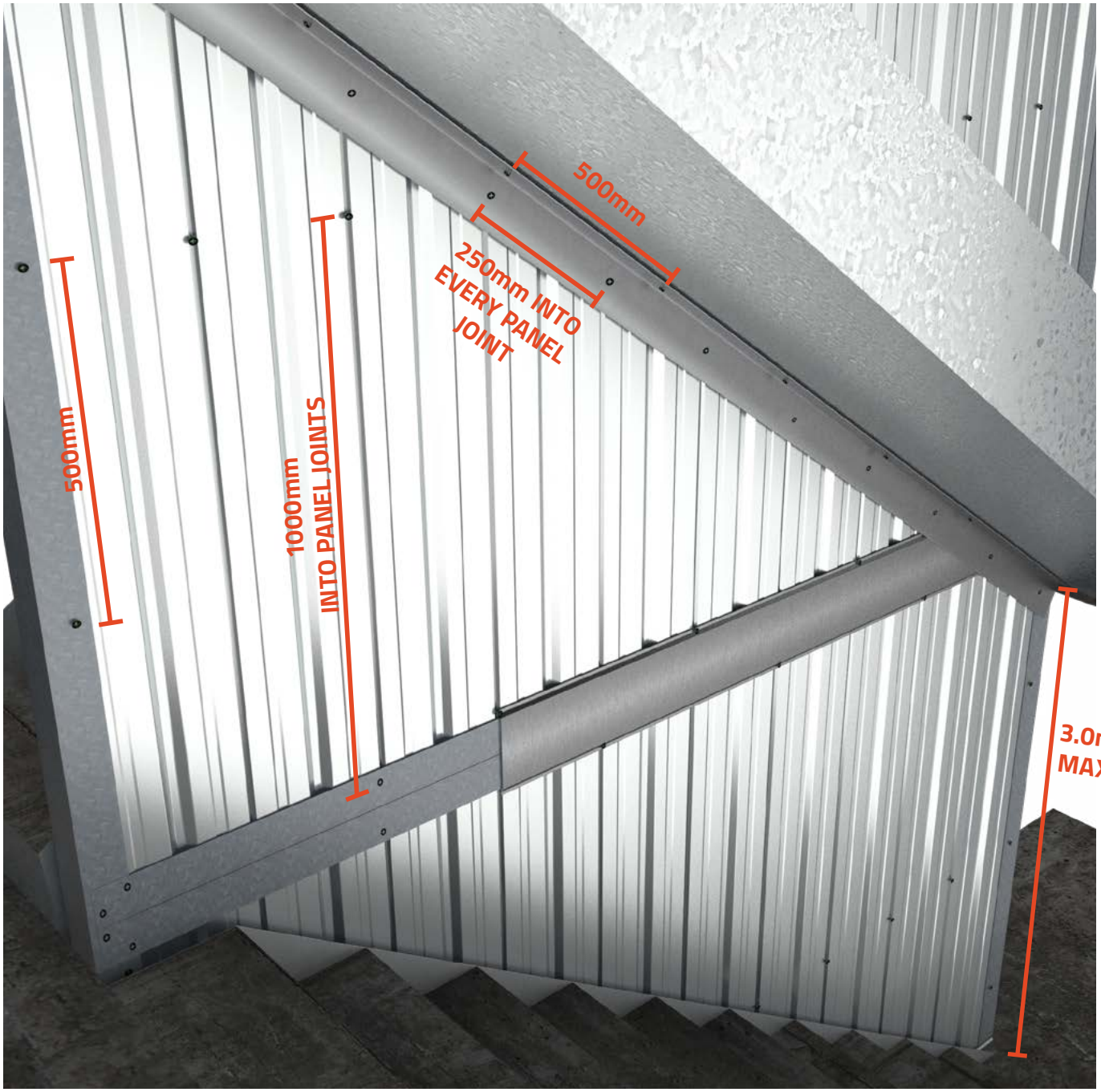


FIGURE 159 [10]

10. Exova Warringtonfire - Report No. 35875300

78

SPEEDPANEL® STAIR SHAFT

A shaft can be created centrally within a stairwell by using horizontal Speedpanel® systems. Please contact our office on +61 3 9115 6666 for more information regarding this application.

FIGURE 160

78

OTHER SPEEDPANEL® STAIR APPLICATIONS

Where larger spans occur or multiple landings are required, Speedpanel® has various configuration available. Please contact our office on +61 3 9115 6666 for more information regarding this application.

FIGURE 161 [10]

10. Exova Warringtonfire - Report No. 35875300

SCAN THE QR-CODES BELOW TO DOWNLOAD THE ASSESSMENT REPORTS USED IN THIS CHAPTER.

1 - REPORT 21622

4 - REPORT 22551

- INCLINE WALLS
- BUTT JOINTS
- INTERTENANCY WALL SYSTEMS
- CAR PARKS

2.9

ALTERNATIVE SPEEDPANEL®

WALL SYSTEMS

2.9 ALTERNATIVE SPEEDPANEL® WALL SYSTEMS

VERTICAL ORIENTATION INCLINE WALLS

Figure 162 illustrates the Speedpanel® incline wall. Refer to the table on the following page for incline angle and the maximum wall height dimensions. Note that this application is only valid for 78mm panels.

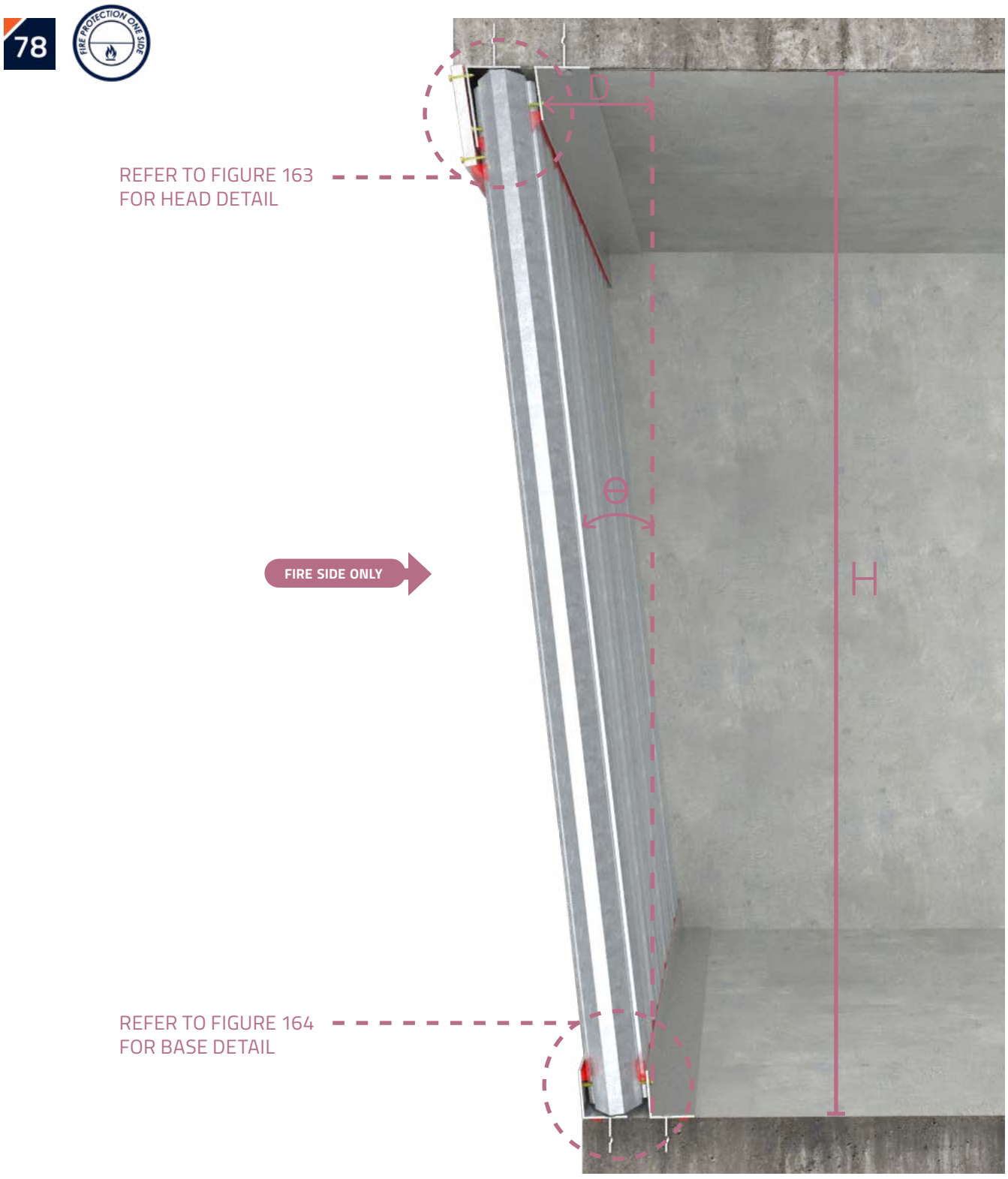


FIGURE 162 [4]

4. Exova Warringtonfire - Report No. 22551

Below are recommended details for Speedpanel® incline walls. All fixing dimensions are as per standard 6.0m vertical installation. Refer to Chapter 2.3 'Vertical Installation' (page 65) for fixing details.

HEAD DETAIL

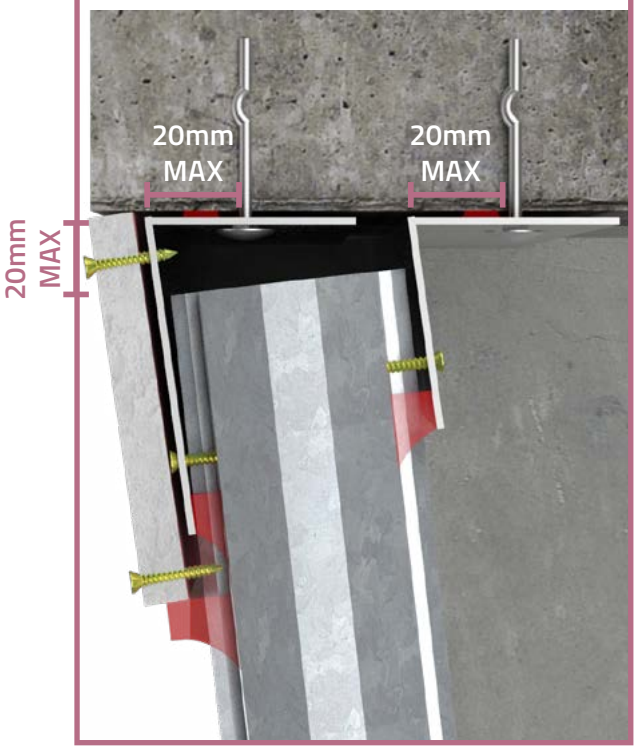


FIGURE 163 [4]

BASE DETAIL

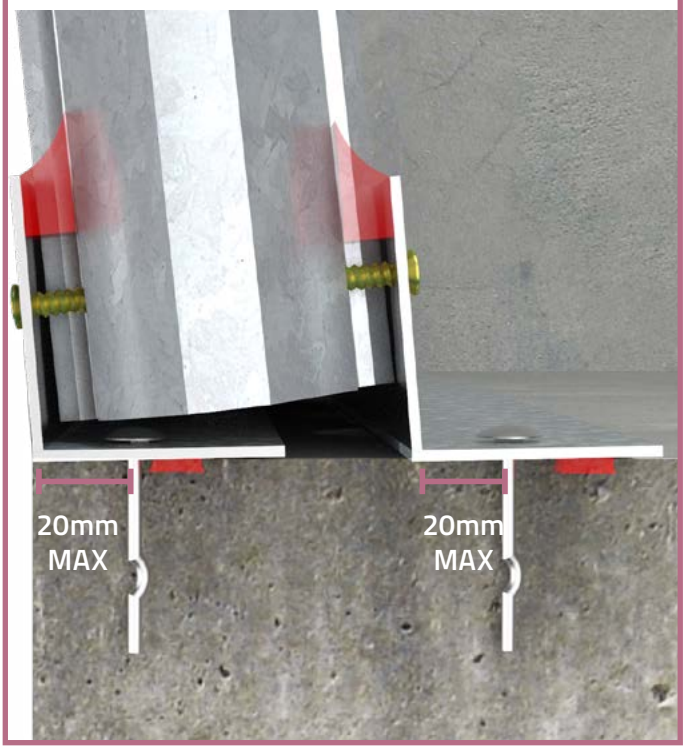


FIGURE 164 [4]

Wall height H (m)	Max. incline distance D (m)	Max. incline angle E (m)	FRL
4	1.34	19	-/120/120 (from one side only)
4.2	1.18	16	
4.5	0.94	12	
4.7	0.79	10	
4.8	0.71	8	
4.9	0.64	7	
5	0.58	6	
5.2	0.42	5	
5.5	0.19	2	
5.7	0.04	0	
5.8	0	0	

4. Exova Warringtonfire - Report No. 22551

Butt Joints

SINGLE PANEL BUTT JOINT

This application can be used in a scenario where panels have been ordered too short or when using leftover stock. It also allows the use of short panels where site access is limited.

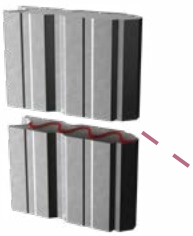
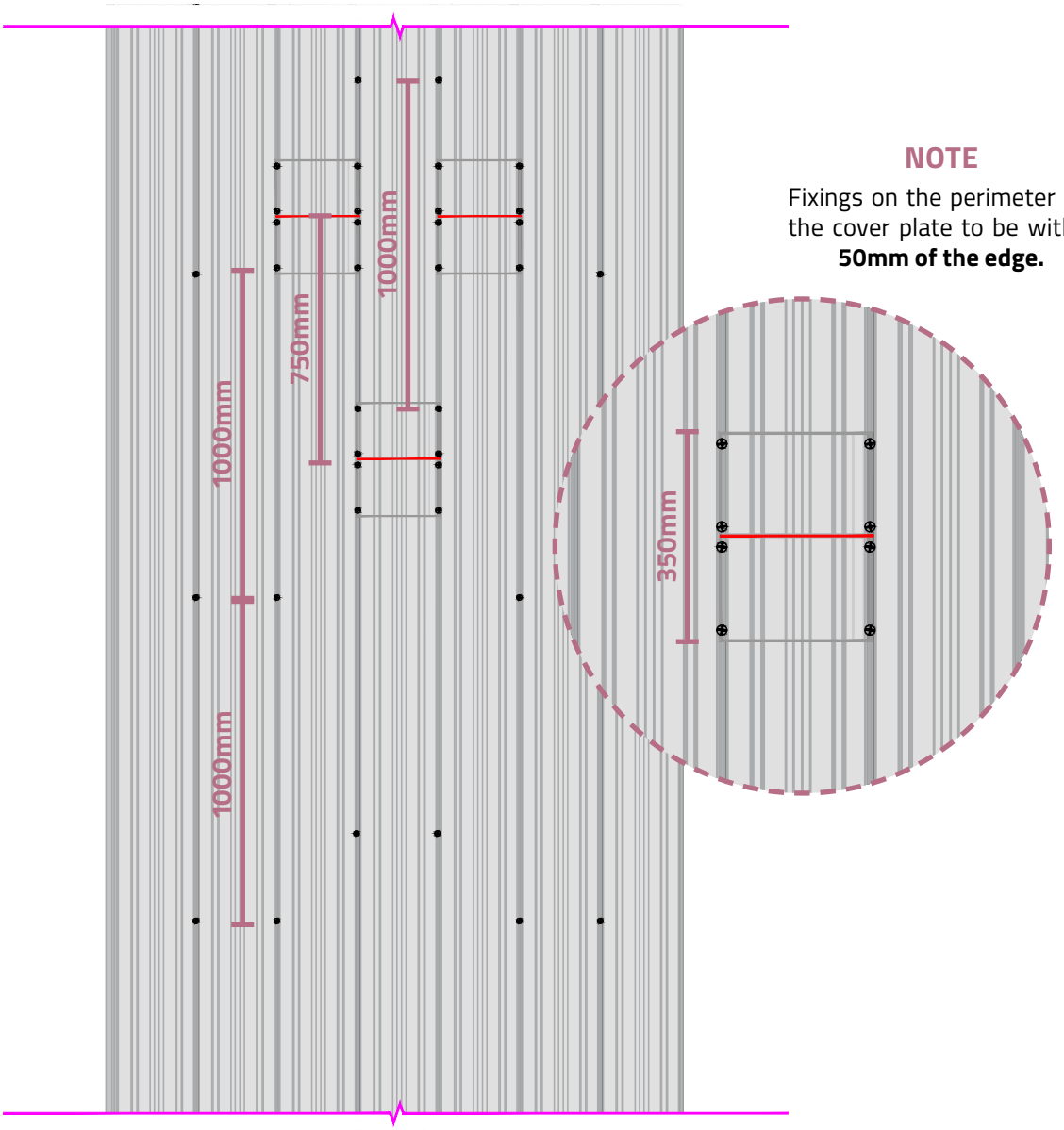


FIGURE 165 [1]

ONE PANEL

FIGURE 166 [1]

FIGURE 167 [1]



NOTE

Fixings on the perimeter off the cover plate to be within **50mm of the edge.**

SINGLE PANEL BUTT JOINT
STAGGERED ARRANGEMENT

FIGURE 168 [1]

1. Exova Warringtonfire - Report No. 21622

TWO PANEL BUTT JOINT

This application can be used in the scenario where panels have been ordered too short or when using leftover stock. It also allows the use of short panels where site access is limited.

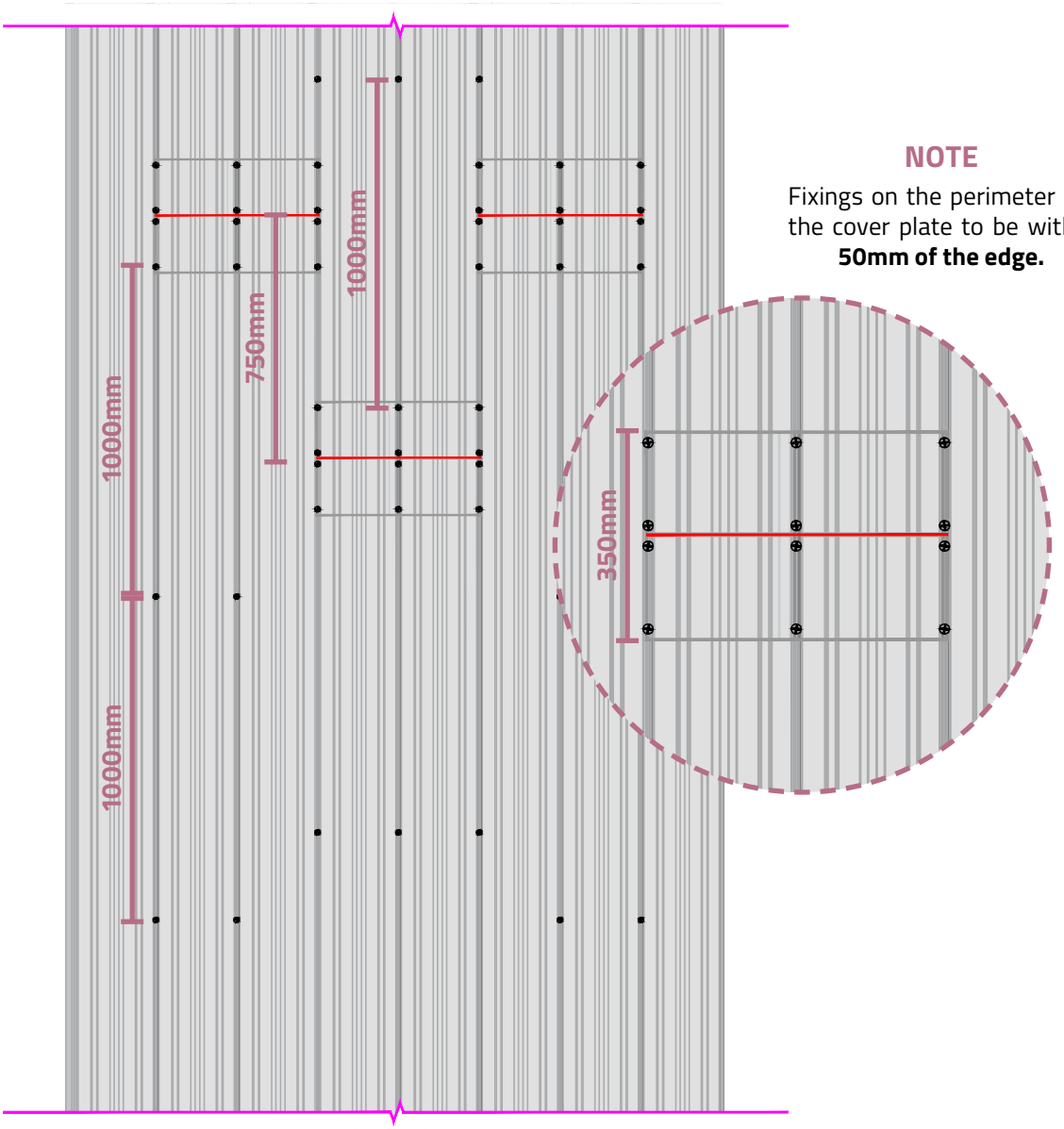
FIGURE 169 [1]

10mm DIAMETER BEAD OF SEALANT

TWO PANELS

FIGURE 170 [1]

FIGURE 171 [1]



NOTE

Fixings on the perimeter off the cover plate to be within **50mm of the edge.**

TWO PANEL BUTT JOINT STAGGERED ARRANGEMENT

FIGURE 172 [1]

1. Exova Warringtonfire - Report No. 21622

Car Parks

SPEEDPANEL® CAR PARK WALL VARIATIONS FOR IMPACT PROTECTION

There are two different ways to install Speedpanel® as a car park wall:

- Speedpanel® slab to slab wall with wheel stops (Figure 173)
- Speedpanel® installed over 1.0m height block-work without wheel stops (Figure 174)

SPEEDPANEL® WALL WITH WHEEL STOP

FIGURE 173

SPEEDPANEL® WALL WITH CORE FILLED BLOCK-WORK

FIGURE 174

Intertenancy Wall Systems

SPEEDPANEL® INTERTENANCY WALL SYSTEMS

One of the main advantages of the Speedpanel® Intertenancy Systems in terms of acoustic treatment is that there is no need to have plasterboard all the way up to the concrete soffit, as the plasterboard can be stopped at ceiling line (Figure 175). In addition to this there is no need to have fire boxes behind GPOs as the Speedpanel® wall is the fire barrier element (Figure 176). The detail and picture below will illustrate these factors.

FIGURE 175

As Speedpanel® is the fire and acoustic barrier element in the wall system, no extra treatment is needed for small penetrations such as GPOs, light switches, etc. In the case of installing GPO, simply cut the plasterboard and install the standard GPO in desired location. Some advantages of the Speedpanel® System compared to the other fire and acoustic systems are:

- No fire-rated protection for GPOs
- No boxing around plasterboard penetrations
- No fire-rated sealant needed to seal the penetrations on plasterboard
- Small holes in plasterboard will not effect acoustic performance
- Holes in plasterboard will not effect the fire rating performance of the system regardless of the size

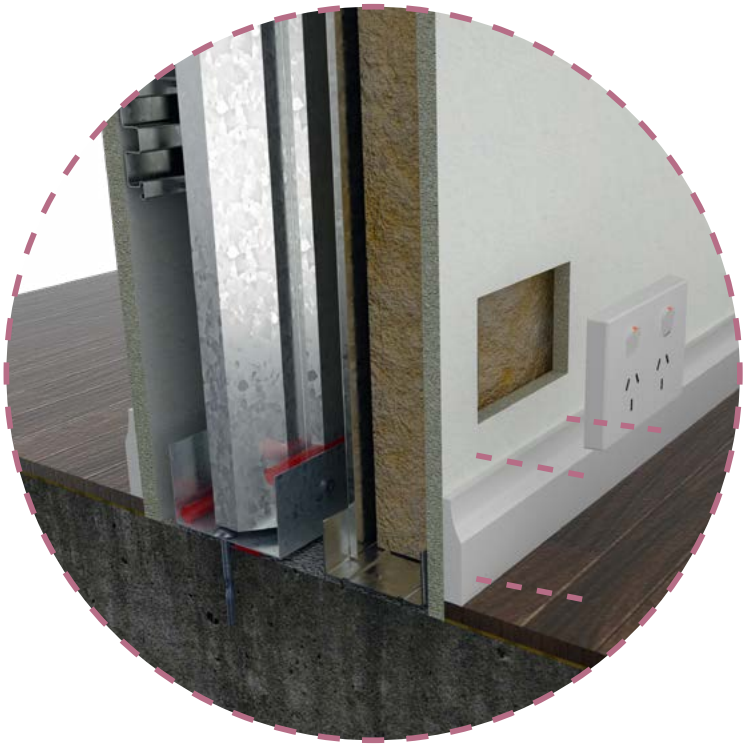


FIGURE 176

SPEEDPANEL® ACOUSTIC SYSTEMS

Speedpanel have an extensive range of tested acoustic systems, with ratings from Rw 32 to Rw 80. For further information on the range please contact us on +61 3 9115 6666 or visit our website.

SEE SPEEDPANEL® ACOUSTIC SYSTEMS

Notes

Notes

THE INDUSTRY'S MOST TRUSTED, CERTIFIED & ADVANCED

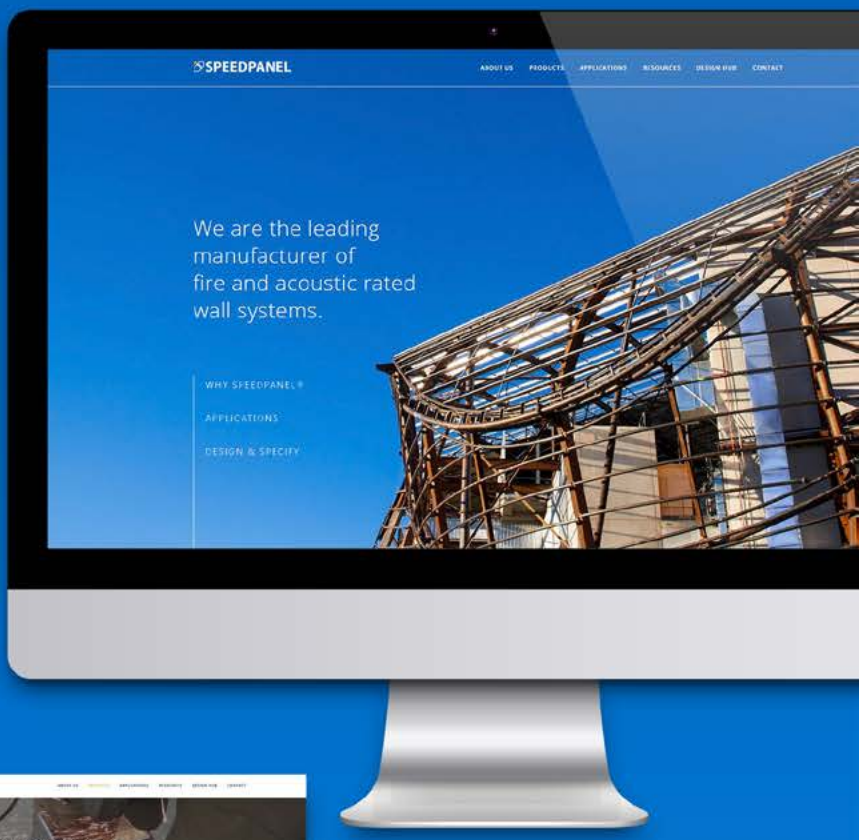
FIRE AND ACOUSTIC RATED PANEL SYSTEMS.

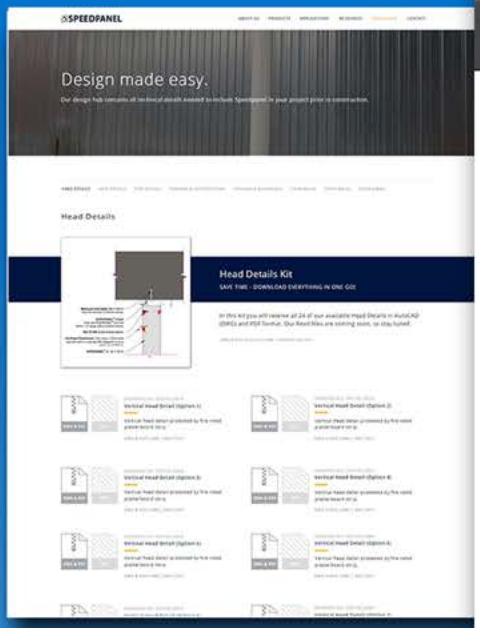
SPEEDPANEL®

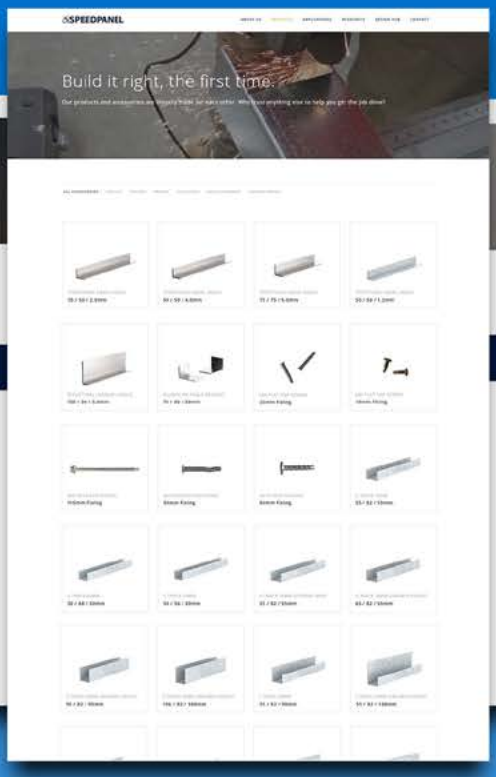
SPEEDPANEL

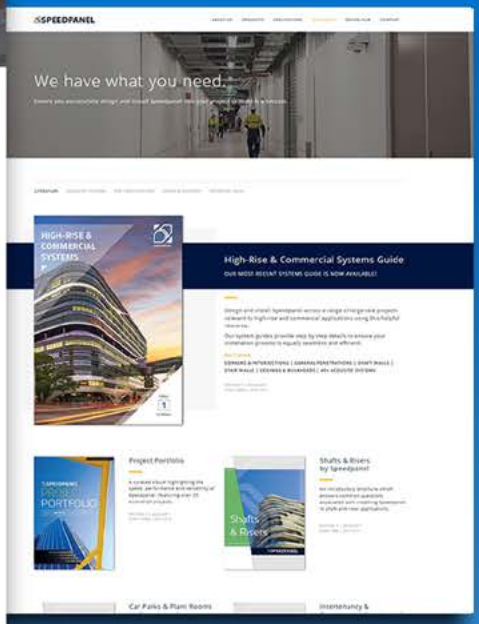
Visited us online lately?

Our systems can save time and money on site, and now our new website will simplify the design and specification too!









DESIGN HUB

AutoCAD & PDF files for construction details and all wall types.

PRODUCT LISTINGS

Detailed information for our available panels, accessories and colour range.

RESOURCE LIBRARY

Access to installation guides, acoustic systems, fire certification and more!

www.speedpanel.com.au

SPEEDPANEL®

www.speedpanel.com.au

SP-BR-MS-003
Rev: 03

SPEEDPANEL® CONCRETE CONNECTIONS
421 Dorset Rd, Bayswater, VIC 3153 | +61 3 9115 6666

2nd Edition; Published October 2022