



GT SHELL



TECHNICAL DATA SHEETS



www.guardtech.com



0330 113 0303



sales@guardtech.com



Guardian House, Unit 1A Homefield Road, Haverhill, Suffolk, CB9 8QP



DIRECTORY



Introduction **pg 4**



GT Shell Max **pg 6**



GT Shell Pro **pg 12**



GT Shell Plus **pg 20**



GT Shell Lite **pg 22**



GT Shell Fire **pg 24**



Comparisons **pg 28**



GT SHELL CLEANROOM WALLS



Guardtech offer a range of cleanroom wall solutions to best suit the needs of your application. Whether it's budget, lead time or performance that matters most, Guardtech provide a comprehensive choice of wall options to ensure your process requirements are achieved.

Whether it's a more economical PIR option all the way up to a sophisticated fully flush integrated interlocking panel system, the Guardtech Group's Directors, Design Engineers and Installation team have worked together to carefully select four industry-leading ceiling options for your consideration.

Read on to discover the benefits and compromises of the different choices we have, then use this guide to make the most informed cleanroom wall choice possible.

Let Guardtech take your operation to the next level.



SHELL MAX

GT Shell Max is Guardtech's elite-level cleanroom wall solution – a high-spec, customisable, modular, flush controlled environment system featuring a de-mountable joint with an aluminium extrusion to all sides.



SHELL PRO

GT Shell Pro's insulated panel system features a unique castellated and symmetrical de-ended tongue-and-groove joint which achieves high thermal and structural performance..



SHELL PLUS

GT Shell Plus is Guardtech's lower mid-level cleanroom wall solutions – a high-performance insulated wall panel that maintains hygiene-safe requirements when exposed to corrosive cleaning agents.



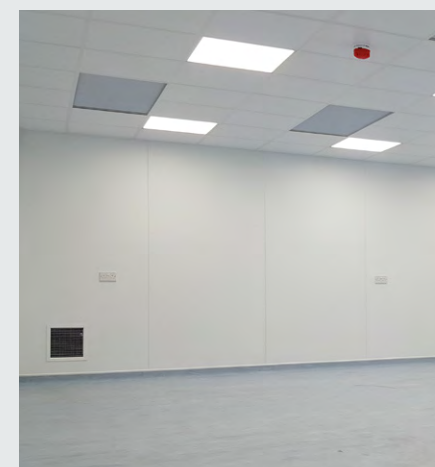
SHELL LITE

GT Shell Lite is Guardtech's entry-level cleanroom wall solution – a PIR insulated powder-coated modular composite panel that can be used for a wide range of cleanroom applications.



SHELL FIRE

GT Shell Fire is Guardtech's fire-rated wall solution – a high-quality cleanroom grade panel which provides a tested fire resistance to match the performance required for internal firewalls.





GT SHELL MAX



GT Shell Max is Guardtech's elite-level cleanroom wall solution – a high-spec, customisable, modular, flush controlled environment system featuring a demountable joint with an aluminium extrusion to all sides.

GT Shell Max is a customisable, modular fully flush cleanroom system that features a demountable joint with an aluminium extrusion to all sides.

It is suitable for specialist cleanroom applications that demand specific core performance, aiding compliance to EU GMP Annex 1, ISO 14644-1 and US FS209E.

This intelligent fully flush modular system

for specialist cleanroom applications comes with a choice of three core options: QuadCore, Mineral Fibre Core and Aluminium Honeycomb.

Attention to utility integration is a key part of GT Shell Max, with specially designed raceways and conduits that are embedded within the panel system to eliminate any surface mounted wiring or pipe-work and containment, also facilitating flush integrated sockets.



TECHNICAL FEATURES

DIMENSIONS, WEIGHT & PERFORMANCE

OVERALL THICKNESS (MM)	60, 80
STANDARD WIDTHS* (MM)	1200
LENGTH (MM)	300-5700mm
WEIGHT (0.63 / 0.63 STEEL)	14kg/m ²

*Variable widths available as non standard, in 10mm increments. Minimum width 150mm.

PRODUCT TOLERANCES

LENGTH (MM)	+1.5	-1.5
WIDTH (MM)	+1.5	-1.5
THICKNESS (MM)	+2.0	-2.0
FLATNESS (PER METRE) (MM)	+1.0	-1.0
END SQUARENESS (MM)	+2.0	-2.0

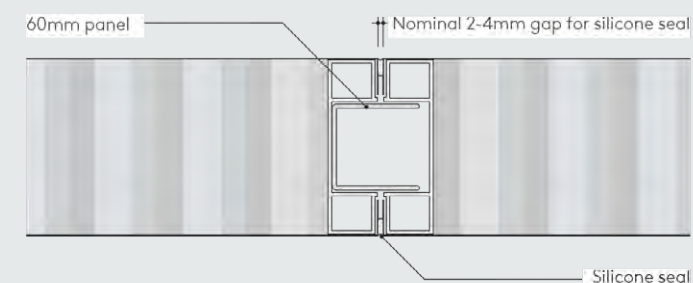


TECHNICAL DRAWINGS

GT SHELL MAX PANEL CORE OPTIONS



The Guardtech Group utilises high-performance QuadCore panel core as standard, but clients do have the option to consider aluminium honeycomb and mineral fibre.



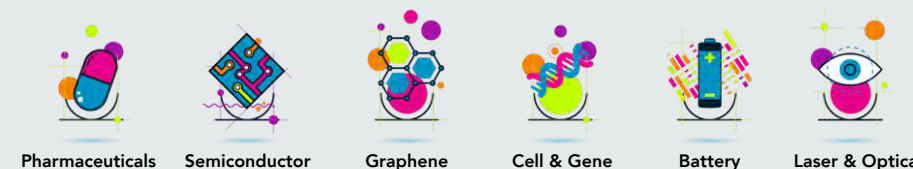
BENEFITS

- cGMP compliant solution
- 60mm panel joint features an optional service cavity for incorporation of services
- Integrated envelope solution – doors, windows, corners, floor tracks and other components
- Choice of cores – QuadCore, Mineral Fibre core or Aluminium Honeycomb
- Wide range of CLEANsafe coating systems
- Ultra-airtight system
- Available in both 60mm and 80mm thicknesses providing superior load bearing capacity and stability
- Flexibility – variable widths to suit layout

COMPROMISES

- The most expensive option in the GT Shell range
- Potentially longer lead times than other options in the range
- Heavier panels than both those used in GT Shell Pro and Plus systems

APPLICATIONS



GT Shell Max suits the most demanding of applications, typically where particulate needs to be controlled to extremely tight tolerances. This often includes cleanrooms with an ISO5 or 6 classification, as well as those required to comply with cGMP conditions outlined in EU GMP Annex 1, ISO 14644-1 and US FS209E.



GT SHELL MAX



Factory cut opening
(grille by others)

Vertical
electrical
raceway

Optional service cavity

GT Shell Max
integrated
service
conduit

Technical
panel

GT Shell Pro
integrated
window detail

Integrated door
detail (viewed
from inside)

Integrated flush
push button

Recessed
adjustable
floor track
detail

Pre-formed
corner panel



GT SHELL MAX

Suitable for all internal cleanroom applications across a variety of sectors including Pharmaceutical and Biotechnology laboratories, Healthcare, Medical Research and Advanced Technology facilities.



60 mm QuadCore® GT Shell Max wall panels have an optional 25 mm UL rated service void along the length of the panels.

POWERED BY
QuadCore
TECHNOLOGY

Standard Lengths (mm)	300 - 5,700
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DIMENSIONS, WEIGHT & THERMAL PERFORMANCE

Core Thickness (mm)	60	80
U-VALUE (W/M2K)	0.47	0.36
R-VALUE (M2K/W)	2.12	2.77
WEIGHT (KG/M2)	16.5	17.3

AIR TIGHTNESS

The joint of the GT Shell Max panels can achieve air tightness of less than 0.003 m3/hr/m2 at 50Pa in accordance with BS EN 14509 (BE EN 12114). For further information on air tightness please contact Kingspan Tech-eXchange.



RECOMMENDED CLEANING PRODUCTS

GT Shell Max CLEANsafe 55 and CLEANsafe 120 panel coatings have been tested by STERIS Corporation Life Sciences for compatibility.



A range of STERIS cleaning agents commonly used in the Pharmaceutical industry were selected and no adverse reactions with the panel coating were reported. The range of cleaning agents used in the tests were:

- Environ™ LpHTM Phenolic disinfectant
- Environ™ Vesphene™ se Phenolic disinfectant
- Sepithol® Sterile Alcohol Solution
- Spor-Klenz® RTU cold Sterilant
- Vesta-Syde® SQ Quaternary Ammonium Disinfectant

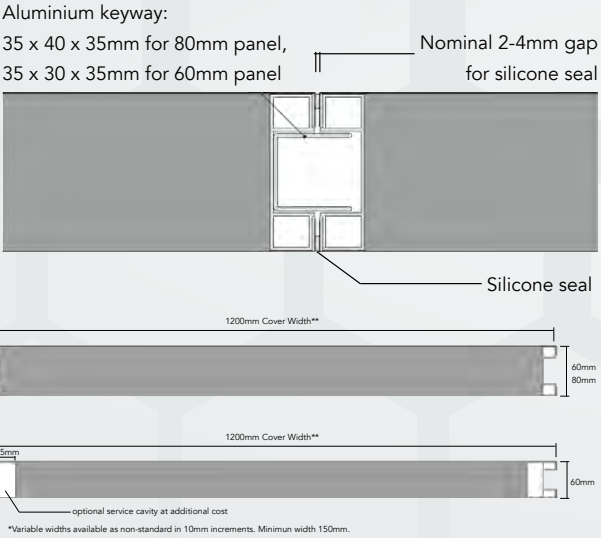


TECHNICAL DRAWINGS

PANEL JOINT

QuadCore® GT Shell Max Panels feature a unique aluminium perimeter profile on all sides to create a fully flush joint.

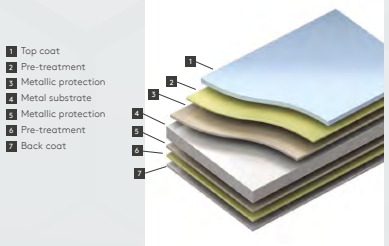
The panel side joint can accommodate a hygienic silicone seal finish. The joint created between the wall panels also allows for concealment of services.



COATINGS

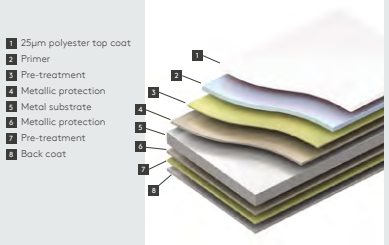
CLEANsafe 15

A chemically inert polyester (PE) coating, applied to pre-treated metal, suitable for nonaggressive internal environments.



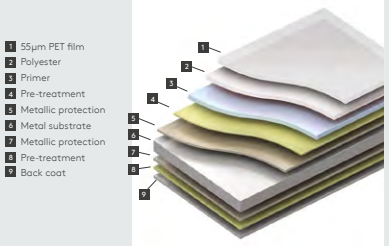
CLEANsafe 25

A chemically inert polyester (PE) coating, applied to pre-treated metal, suitable for moderately aggressive internal environments.



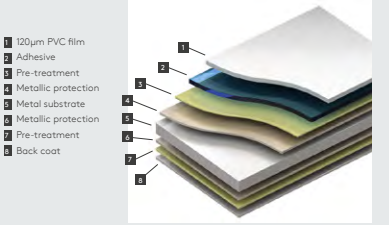
CLEANsafe 55

A chemically inert co-laminated polyethylene terephthalate (PET) film and polyester (PE) paint, applied to pre-treated metal, suitable for humid and chemically aggressive internal environments.



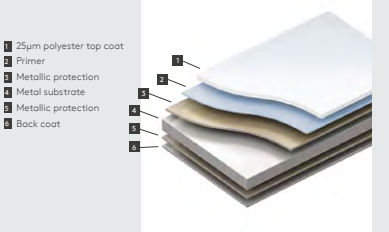
CLEANsafe 120

A chemically inert polyvinyl chloride (PVC) film, laminated to pre-treated metal, suitable for internal for controlled environments. Joints between panels can be either caulked or chemically cold-welded.



CLEANsafe Anti-Static 25

A chemically inert polyester (PE) coating with a surface resistivity of 1 to 300 x 10⁶Ω/square, applied to pre-treated metal, suitable for moderately aggressive internal environments



CLEANsafe Stainless Steel 304 & 316L also available – a chemically inert, gap-free austenitic stainless steel, specifically designed for conditioned environments and environments with a high corrosion factor.



GT SHELL PRO



GT Shell Pro’s insulated panel system features a unique castellated and symmetrical de-ended tongue-and-groove joint which achieves high thermal and structural performance.

GT Shell Pro is an insulated de-ended panel system designed for all internal controlled environments applications including new build and refurbishment projects.

The range offers flexible, high performance, engineered cleanroom solutions that deliver both cost and operational benefits, minimising risk and maximising return on investment.

This revolutionary hy-

brid de-ended system offers a high-performance solution at a more competitive cost base than traditional methods. A factory-engineered based detail to allow it to sit on a recessed floor track to give a fully flush floor to wall detail suitable for both vinyl and resin.

Insertion of an interface profile in the panel joint to allow integration of fully flush windows, doors and service panels.



TECHNICAL FEATURES

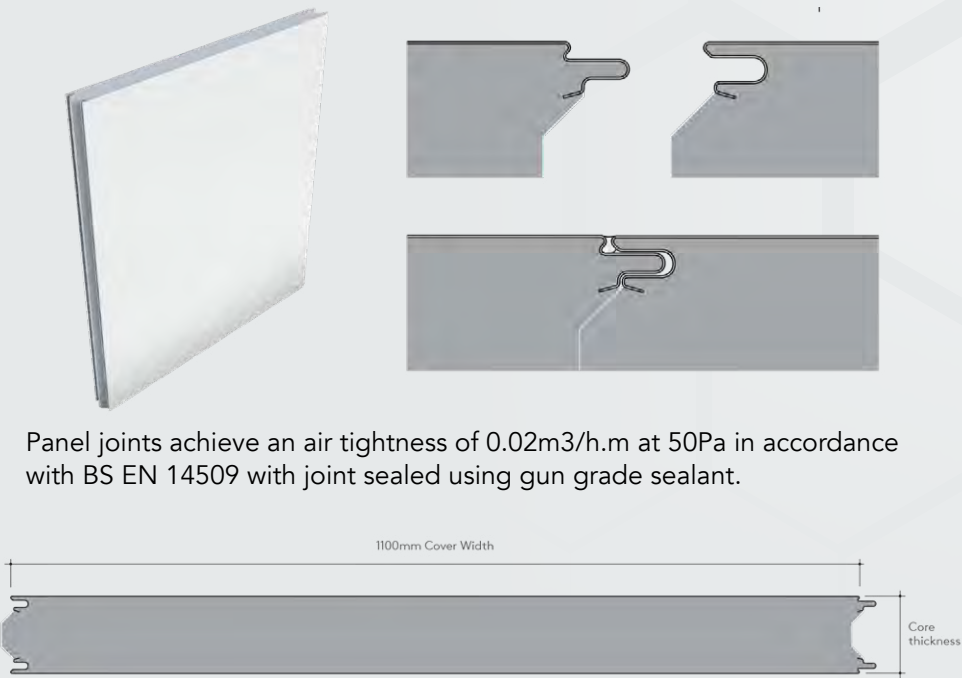
DIMENSIONS, WEIGHT & THERMAL PERFORMANCE									
CORE THICKNESS (MM)	50	60	80	100	125	150	175	200	220
U-Value (W/m2K)	0.38	0.31	0.23	0.18	0.15	0.12	0.10	0.09	0.08
R-Value (m2K/W)	2.63	3.23	4.35	5.560	6.67	8.33	10.00	11.11	12.50
Weight (kg/m2)	10.1	10.5	11.2	12.0	12.9	13.9	14.8	15.8	16.5

These values are in accordance with BS EN 14509, using Finite Element Analysis, and take into account any thermal bridging through the longitudinal joint.
The U-Values have been calculated using an aged thermal conductivity value of 0.018W/mK.

ACOUSTIC (SOUND REDUCTION INDEX)								
FREQUENCY (HZ)	63	125	250	500	1000	2000	4000	8000
SRI (dB)	20	15	17	23	18	25	40	46



TECHNICAL DRAWINGS

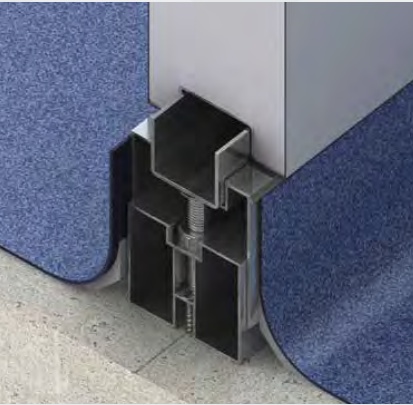


Panel joints achieve an air tightness of 0.02m3/h.m at 50Pa in accordance with BS EN 14509 with joint sealed using gun grade sealant.

AVAILABLE LENGTHS
Standard Lengths 2.0 – 11.9 m
Longer Lengths* 11.9 – 19 m
Shorter Lengths* <2.0 m

* Non-standard lengths. Additional costs and transport restrictions may apply for non-standard lengths.

Below: Insertion of an interface profile in the panel joint to allow integration of fully flush windows, doors and service panels.



BENEFITS

- Unique hybrid system (cGMP compliant)
- Bespoke design flexibility combined with all the advantages of an insulated panel and its beneficial economies of scale
- Consistent high quality, factory engineered system
- Simple and fast construction
- Interlocking tongue-and-groove joint system.
- Integrated solution – doors, windows, corners, floor tracks, air return panels and other components
- Longer panel lengths - cleanroom heights over six metres
- Ultra-airtight system.
- Wide range of CLEANsafe coating systems

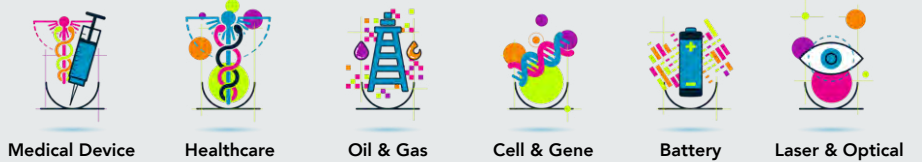
PRODUCT FEATURES

THICKNESS: 60mm or 80mm
PANEL LENGTH: Up to 6.3m
PANEL CORE: QuadCore® (ks1100 ut-f is approved to Fm 4882)
PANEL COATINGS: Cleansafe 25, 55, 120, Anti-static 25 & stainless 304 & 316l

COMPROMISES

- The whole integrated system is not fully flush system and therefore not entirely ledge-free like GT Shell Max
- Not as cost-effective as GT Plus or GT Lite
- Potentially longer lead times than GT Plus or Lite

APPLICATIONS



GT Shell Pro cleanroom wall solution suits a wide variety of applications in a diverse range of sectors. Whilst it may not boast the fully flush appeal of GT Shell Max, this unique tongue-and-groove system does offer many of the same benefits needed by applications with more stringent requirements.



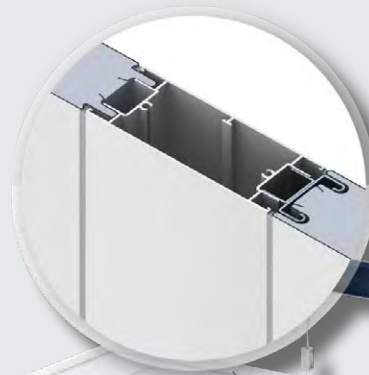
GT SHELL PRO



Factory cut opening
(grille by others)



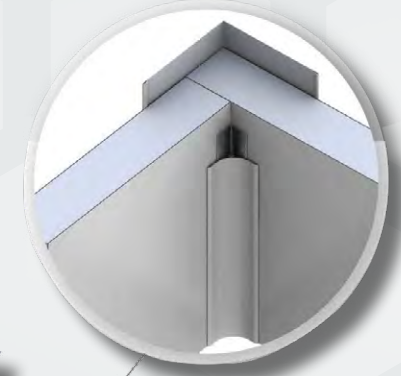
Flush integrated
service conduit



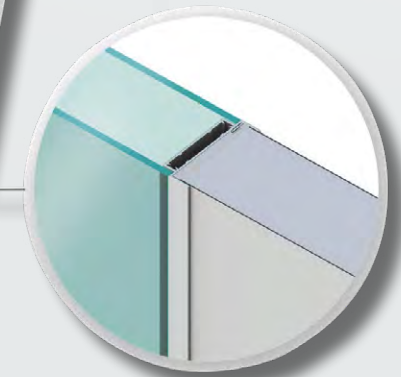
Internal
3-way
junction



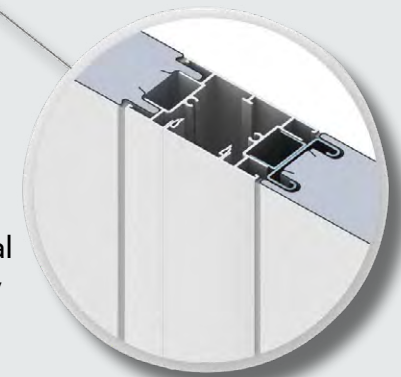
Internal corner



Semi-flush
integrated
window detail



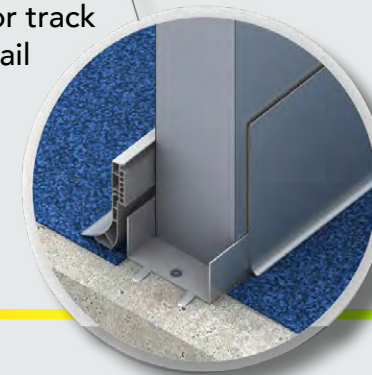
Vertical
electrical
raceway



Recessed
adjustable
floor track detail



U-channel
floor track detail



Interlock



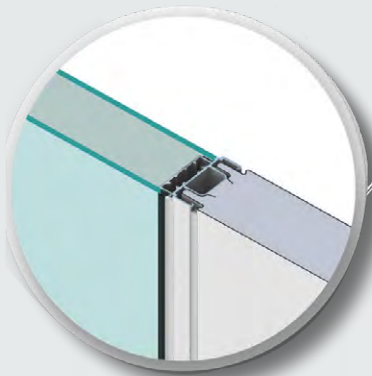
Semi-flush integrated
door detail (viewed
from inside)



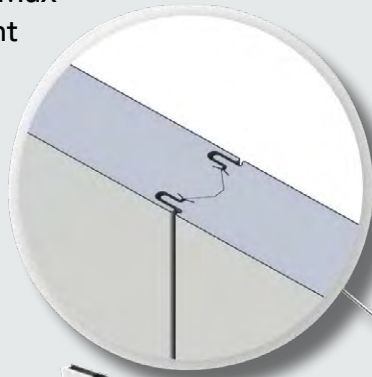
GT Shell Pro to Max
panel connection detail



Flush integrated
window detail



GT Shell Max
panel joint
detail





GT SHELL PRO

QuadCore® GT Shell Pro cleanroom wall panels are designed for all internal cleanroom applications including new build and refurbishment projects.



AIR TIGHTNESS

QuadCore® GT Shell Pro cleanroom wall panel joints achieve an air tightness of 0.02 m3/h.m at 50Pa in accordance with BS EN 14509 with joint sealed using gun grade sealant.

STERIS PRODUCTS

CLEANSafe 55 and CLEANsafe 120 panel coatings have been tested by STERIS Corporation Life Sciences for compatability.

A range of STERIS cleaning agents commonly used in the Pharmaceutical industry were selected and no adverse reactions with the GT Shell Pro panel coating were reported. The range of cleaning agents used in the tests were:

- Environ™ LpHTM Phenolic disinfectant
- Environ™ Vesphene™ se Phenolic disinfectant
- Sepithol® Sterile Alcohol Solution
- Spor-Klenz® RTU cold Sterilant
- Vesta-Syde® SQ Quaternary Ammonium Disinfectant



POWERED BY
QuadCore
TECHNOLOGY

Standard Lengths (mm)	1.8 - 14.5
Longer Lengths (non-standard) (m)	14.5 - 21.0
Shorter Lengths (non-standard) (m)	Below 1.8

Note: Additional costs and transport restrictions may apply for non-standard lengths. All lengths may change for export (outside of the UK & Ireland).

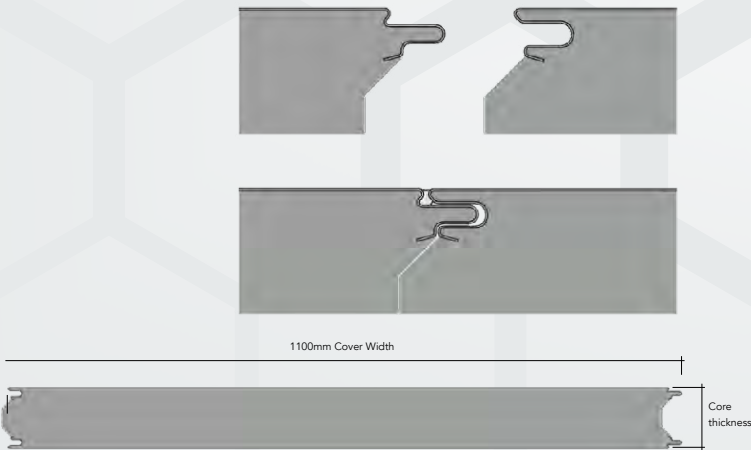
Core Thickness (mm)	50	60	80	100	125	150	175	200	220
U-VALUE (W/M2K)	0.38	0.31	0.23	0.18	0.15	0.12	0.10	0.09	0.08
R-VALUE (M2K/W)	2.63	3.23	4.35	5.560	6.67	8.33	10.00	11.11	12.50
WEIGHT (KG/M2)	10.1	10.5	11.2	12.0	12.9	13.9	14.8	15.8	16.5

TECHNICAL DRAWINGS

PANEL JOINT

QuadCore® GT Shell Pro cleanroom wall panels feature a unique castellated and symmetrical tongue and groove joint which achieves excellent thermal and structural performance.

Colour Range
RAL 9010*, RAL 9002* and RAL 9003 (CLEANSafe 120).
* Nearest match, samples and other colours available on request.



COATINGS

CLEANSafe 15
A chemically inert polyester (PE) coating, applied to pre-treated metal, suitable for nonaggressive internal environments.

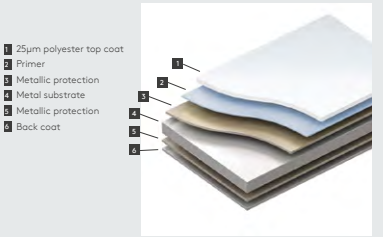
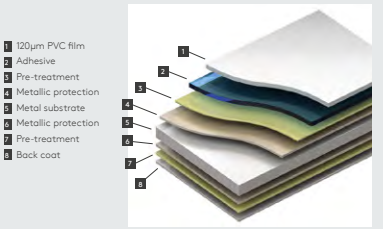
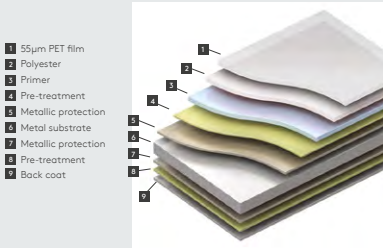
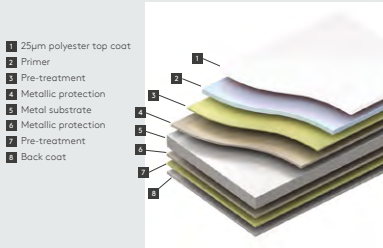
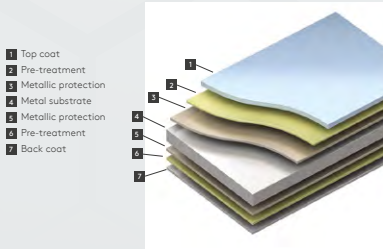
CLEANSafe 25
A chemically inert polyester (PE) coating, applied to pre-treated metal, suitable for moderately aggressive internal environments.

CLEANSafe 55
A chemically inert co-laminated polyethylene terephthalate (PET) film and polyester (PE) paint, applied to pre-treated metal, suitable for humid and chemically aggressive internal environments.

CLEANSafe 120
A chemically inert polyvinyl chloride (PVC) film, laminated to pre-treated metal, suitable for internal for controlled environments. Joints between panels can be either caulked or chemically cold-welded.

CLEANSafe Anti-Static 25
A chemically inert polyester (PE) coating with a surface resistivity of 1 to 300 x 106Ω/square, applied to pre-treated metal, suitable for moderately aggressive internal environments

CLEANSafe Stainless Steel 304 & 316L also available – a chemically inert, gap-free austenitic stainless steel, specifically designed for conditioned environments and environments with a high corrosion factor.





MAX v PRO

Read on to discover the key differences between Guardtech's two elite cleanroom wall panel systems to help inform your component selection.



FLOORING DETAIL

GT Shell Max is a fully flush, modular cleanroom wall system, featuring aluminium-framed panel joints, concealed services and a recessed adjustable floor track for seamless hygienic coving.

GT Shell Pro uses long-span, tongue-and-groove insulated panels installed within a standard surface-mounted channel. It offers faster, more economical construction, while providing a semi-flush finish for controlled environments with less demanding integration requirements.

1

RECESSED ADJUSTABLE TRACK

Panel engages with a concealed recessed track. Vinyl or resin can be coved flush to the wall face.

FULLY FLUSH

2

SURFACE U-CHANNEL

Panel sits in a U-channel fixed above the slab. Capping and coving produce a semi-flush junction.

SEMI-FLUSH

1

GT SHELL MAX

FULLY FLUSH INTEGRATED FRAME

The door frame aligns with the cleanroom wall face, minimising ledges and exposed interfaces.

FULLY FLUSH

2

GT SHELL PRO

SEMI-FLUSH INTEGRATED FRAME

The integrated frame projects slightly from the panel face, providing a simpler and more economical installation.

SEMI-FLUSH

DOOR FRAME

GT Shell Max incorporates fully flush door frames designed to align with the cleanroom wall face, minimising ledges and creating a seamless, easily cleaned finish.

GT Shell Pro uses semi-flush frames that project slightly from the panel surface. This simpler arrangement supports faster installation and lower project costs while retaining durability and airtightness.

WINDOW FRAME

GT Shell Max incorporates fully flush window frames aligned with the cleanroom wall face, creating a seamless, hygienic surface with minimal ledges and improved cleanability.

GT Shell Pro uses semi-flush integrated frames that project slightly from the panel face.

This simpler configuration enables

1

GT SHELL MAX

FULLY FLUSH INTEGRATED FRAME

The glazing frame aligns with the cleanroom wall face, creating a seamless surface with minimal ledges.

FULLY FLUSH

2

GT SHELL PRO

SEMI-FLUSH INTEGRATED FRAME

The integrated glazing frame projects slightly from the panel, supporting faster installation and a lower system cost.

SEMI-FLUSH

faster installation and a more economical build while maintaining

airtightness, durability and clear visibility between controlled areas.

PANEL JOIN & SILICON SEAL

GT Shell Max uses an aluminium keyway between panel edges, creating a fully flush joint with a nominal 2-4mm gap finished using hygienic silicone sealant.

GT Shell Pro employs a castellated tongue-and-groove connection, mechanically interlocking adjacent panels before sealing with gun-grade sealant.

The GT Shell Max system prioritises seamless integration and concealed services, while Pro

1

GT SHELL MAX

ALUMINIUM KEYWAY + SILICONE SEAL

Aluminium keyway: 35 x 40 x 10 mm for 80 mm panel, 35 x 30 x 10 mm for 60 mm panel. Nominal 2-4 mm gap. Gun-grade sealant.

Aluminium perimeter profiles form the joint. Nominal 2-4 mm surface gap accepts hygienic silicone. Joint can conceal services within the panel interface.

FULLY FLUSH JOINT

2

GT SHELL PRO

CASTELLATED TONGUE & GROOVE

Symmetrical panel edges mechanically interlock. Gun-grade sealant completes the airtight joint. Optimised for fast, economical long-span installation.

INTERLOCKING JOINT

delivers rapid installation, airtightness and economical

long-span construction performance.

1

GT SHELL MAX

FLUSH-INTEGRATED SOCKET

Faceplate aligns with the cleanroom wall surface. Optional service cavity conceals cabling and back box. Minimal ledges support enhanced cleanability.

FLUSH MOUNTED

2

GT SHELL PRO

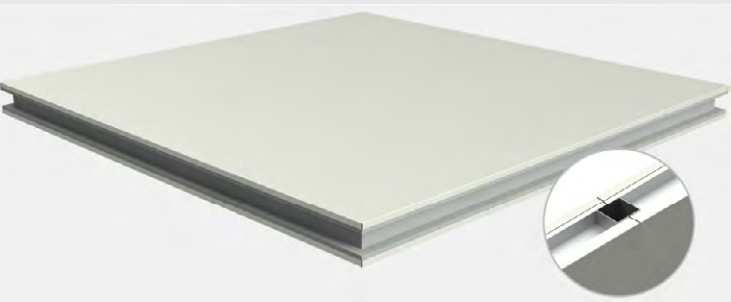
SURFACE-MOUNTED LOW-PROFILE SOCKET

Shallow back box fixes directly to the panel face. Simplifies panel preparation and installation. Accessible for maintenance and future alteration.

SURFACE MOUNTED

ELECTRICAL SOCKETS

GT Shell Max accommodates flush-mounted electrical sockets within its integrated service cavity, keeping faceplates aligned with the cleanroom wall and minimising ledges. GT Shell Pro uses surface-mounted low-profile sockets fixed directly to the panel face. This simpler arrangement reduces panel preparation and supports faster installation while retaining a neat, hygienic appearance and accessible electrical services for maintenance and future alteration.



FLAME PANEL SYSTEM

Upgrade to a Class A reaction-to-flame panel system for enhanced fire performance in demanding cleanroom environments.

This premium specification supports safer facilities, robust compliance and greater assurance in terms of fire safety.

ELECTRICAL RACEWAYS

Integrated electrical raceways provide a neat, accessible route for power, data and control cabling throughout the cleanroom.

GT Shell Max offers vertical and horizontal race-

ways and optional service cavities for flush-mounted accessories, while GT Shell Pro supports vertical raceways and integrated service conduits. Both options simplify installation, maintenance and future equipment changes.





GT SHELL PLUS

GT Shell Plus is Guardtech’s lower mid-level cleanroom wall solutions – a high-performance insulated wall panel that maintains hygiene-safe requirements when exposed to corrosive cleaning agents.



GT Shell Plus is a high-performance insulated wall panel for controlled environments – available in a range of thicknesses from 60mm up to 225mm.

These washable surfaces provide a sealed monolithic structure for maintaining hygiene-safe requirements when exposed to corrosive cleaning agents. The tight fitting-panel joints offer superior airtightness, preventing thermal bridging and condensation.

These enhanced panels are ideal for temperature ranges of between -40 °C to ambient temperatures, and feature an innovative joint system designed to withstand high pressure washing and regular cleaning; preventing water ingress and minimising potential bacteria growth.



TECHNICAL FEATURES

DIMENSIONS, WEIGHT & THERMAL PERFORMANCE							
T - CORE THICKNESS (MM)*	80	100	125	150	175	200	225
U-value (W/m2K)	0.23	0.18	0.12	0.12	0.10	0.09	0.08
R-value (m2K/W)	4.35	5.56	6.67	8.33	10.00	11.00	12.5
Weight (kg/m2) Steel 0.5 / 0.5 mm	11.80	12.60	13.60	14.60	15.60	16.60	17.40

***Also available in 60mm thickness**
U-values are calculated in accordance with EN14509:2013 (Section A.10.3).
R-values in Imperial units (ft²·°F·hr/BTU) available upon request.

FIRE PERFORMANCE
This hybrid insulation core system has passed all the requirements of:

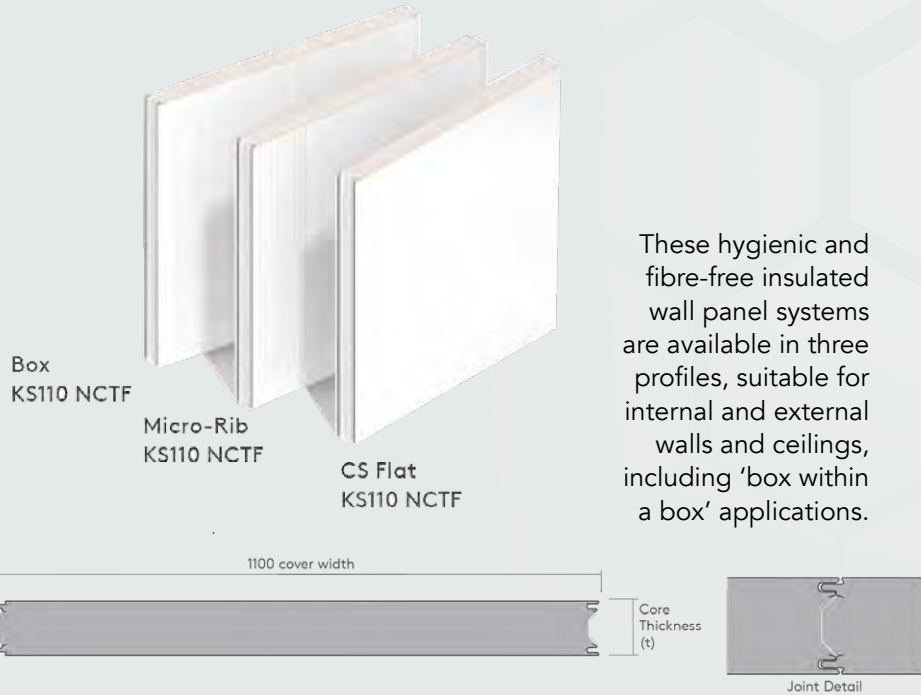
- TS EN 13501-1:2007 + A1:2009: B-s1, d0

- TS EN 13501-2 achieved E120 & EI20 (100 mm panel) – vertically applied wall application
- FM 4880 / FM 4881 / FM 4882 – Class 1

PRODUCT FEATURES	
Core Type:	QuadCore
Metal Type: Steel / Stainless Steel	Steel / Stainless Steel
Colours and Coatings:	A large selection of external colours and coating options are available with a wide variety of finishes including metallic, matte and solid. Please consult a rep to get the best coating and finish recommendation for your project depending on its geographic location, building use / function and warranty requirements
Cover Width:	1100mm
Acoustic Insulation:	Approx. 25 dB across all panel thicknesses
Environmental Rating:	Zero Ozone Depleting Potential (ODP), Low Global Warming Potential (GWP) Free from CFC, HCFC & HFC, free from halogenated flame retardants
Seals:	Site applied



TECHNICAL DRAWINGS



These hygienic and fibre-free insulated wall panel systems are available in three profiles, suitable for internal and external walls and ceilings, including ‘box within a box’ applications.

C-TRACK INSTALLATION

GT Shell Plus cleanroom wall panels are secured to the floor by an intelligent C-track system.



BENEFITS

- Low air leakage
- Wide range of accessories available
- Incorporates a panel joint that achieves excellent thermal performance and can accommodate vapour and hygiene safe seals
- Suitable for temperatures from -40 °C to ambient
- Closed-cell insulation eliminates moisture ingress and performance failure
- Large range of profiles, coatings and insulation core thicknesses to meet project specific demands
- Available in lengths up to 19m (subject to transport limitations)
- More competitive price point than GT Max and Pro

PRECISE THERMAL CONTROL

SUPERIOR COATINGS AND LINERS

SUPERIOR AIRTIGHTNESS

LOW U-VALUE FASTER BUILD SPEED

COMPROMISES

- Doesn’t feature the intelligent interlocking panel arrangements that GT Max and GT Pro include – this includes the hidden service conduits and other key benefits
- Inferior overall performance compared to GT Max and GT Pro solutions
- Inferior

APPLICATIONS



GT Shell Plus is a versatile cleanroom wall solution suitable for a significant number of different industries using controlled environments as part of their process. GT Shell Plus offers a comparatively strong alternative to GT Max and Pro without the same intelligent interlocking panel system.



GT SHELL LITE

GT Shell Lite is Guardtech's entry-level cleanroom wall solution – a PIR insulated powder-coated modular composite panel that can be used for a wide range of cleanroom applications.



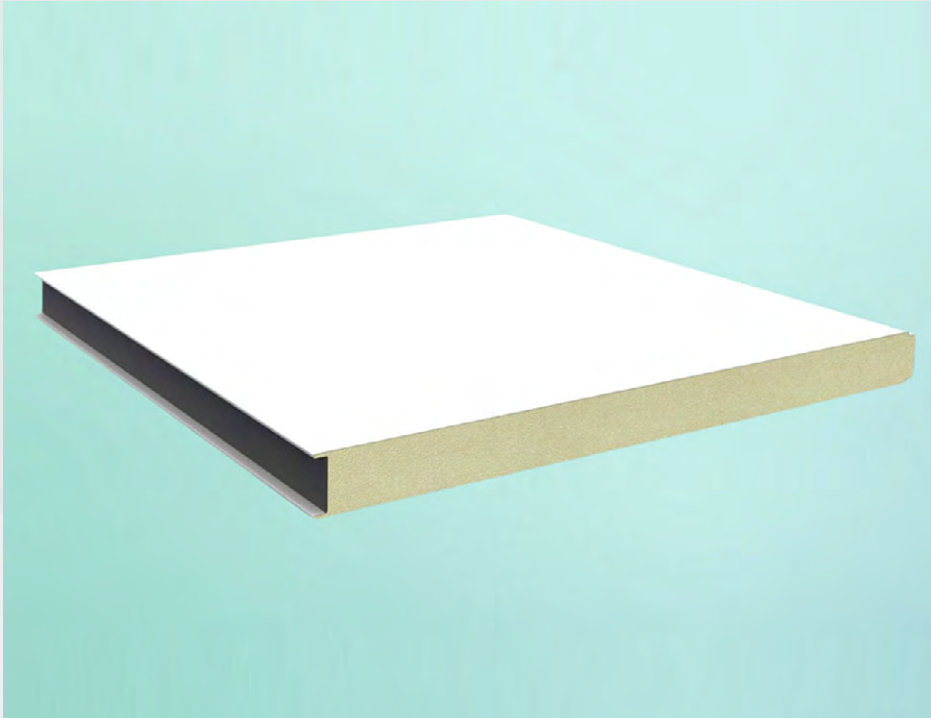
GT Shell Lite is the Guardtech Group's entry-level cleanroom wall solution – a PIR insulated powder-coated modular composite panel available in 50, 80 or 100mm widths.

GT Shell Lite is a far less sophisticated wall panel option compared to the rest of the GT Shell range, but it offers a strong level of reliability and performance at a highly competitive price point, making it an attractive choice for a wide range of applications in the broad spectrum of industries the Guardtech Group serves.



TECHNICAL FEATURES

GT SHELL LITE PANEL PROPERTIES	
Stock Material	According to EN 14509 A.10
Core	PIR
Fire Classification	(EN 13501-1)B-S1,d0
Colour	White RAL 9003 – Polyester 25µm
U-Value	0.45 W/m2 K
Sheet Thickness	0.5mm Internal & External
Profile	Smooth
Panel Weight	19KG
Sizes Available	50mm, 80mm, 100mm



A typical side view of a GT Shell Lite PIR-insulated wall panel. These versatile panels sandwich profile panels offer decent thermal insulation properties.



RAPID CLEANROOMS



GT Shell Lite panels are utilised in the Guardtech Group's range of standard Isopod Rapid Cleanrooms. GT Shell Lite marries high performance and reliability at a competitive price point that allows Guardtech to provide a quick-assembly, 'off-the-shelf', flat-pack cleanroom solution that delivers a level of quality that far outstrips any competitor in the cleanroom pod space.



BENEFITS

- By far the most competitive wall panel solution from a price-point perspective
- Accessible procurement option with short lead times
- Decent thermal insulation
- Good panel for expansion and future relocation purposes
- Cost-effective solution for plenum caps

COMPROMISES

- Significantly heavier than any other panel in the GT Shell range
- Doesn't feature interlocking service channel system that superior GT Shell options have
- No optional extras in terms of additional hygienic protection and panel coating upgrades as per the rest of the GT Shell range
- Not FM approved

APPLICATIONS



- 
Universities
- 
R&D
- 
Packaging
- 
Injection Moulding
- 
Food
- 
Diagnostics

GT Shell Lite is commonly utilised in projects with less demanding regulations and standards – such laboratories and non-classified controlled environments – but this reliable solution is still capable of providing a high enough level of performance for most cleanroom applications.





GT SHELL FIRE

GT Shell Fire is Guardtech’s fire-rated wall solution – a high-quality cleanroom grade panel which provides a tested fire resistance to match the performance required for internal firewalls.

GT Shell Fire offers a total internal cleanroom wall solution that is ideally suited for non-load bearing internal partition walls and ceilings.

These high-quality panels provides a tested fire resistance to match the performance required for internal firewalls, protected zones, ceilings and compartmentation walls.

GT Shell Fire panels are manufactured with a stone wool core that provides built-in passive fire protection, structural strength, robustness and low environmental impact.

GT Shell Fire panels are available in a wide range of finishes including a foodsafe coating, providing a smooth, anti-static internal surface.



TECHNICAL FEATURES

FIRE RESISTANCE PERFORMANCE				
PANEL THICKNESS (MM)	FIRE RESISTANCE (MINS)		MAXIMUM UNSUPPORTED LENGTH (M)	
	Insulation	Integrity	LPS 1208	BS476 Pt22
150	240	240	7.5**	11.5**
170	240	240	7.5**	12.0**
200	240	240	7.5	12.0
240	240	240	7.5	12.0

**Panel joint stitched on both sides at 300mm centres using 3.8mm diameter x 16mm long stainless steel rivets.

Fire resistance is generally a requirement of Building Regulations but can also be used when compartmentation within buildings is required, it is measured in terms of: i) Integrity - the ability of a system to prevent the penetration of hot gases and flames.

ii) Insulation - the ability of the system to reduce the temperature rise on the unexposed side of the fire and therefore prevent fire spread through radiated heat.

TOLERANCES

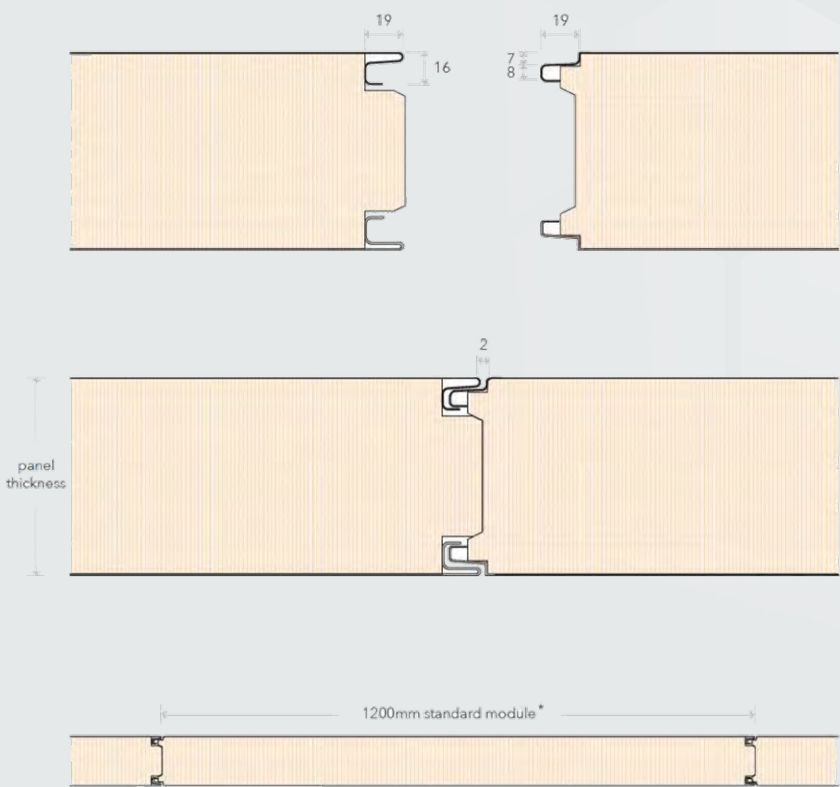
LENGTH	±10mm
WIDTH	±1mm
THICKNESS	±2mm
CORNERS (Leg length)	±3mm
FLATNESS	1.5mm (from the theoretical flat plane over a distance of 700mm)
JOINT GAP	±2mm

WEIGHTS

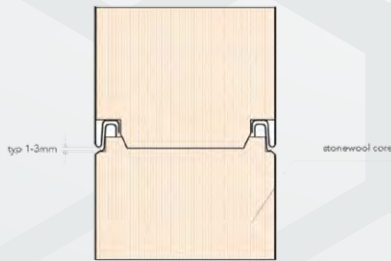
CORE THICKNESS	WEIGHT: LITE (kg/m2)
50	-
75	-
100	-
125	-
150	29.9
170	32.9
200	35.9
240	40.7



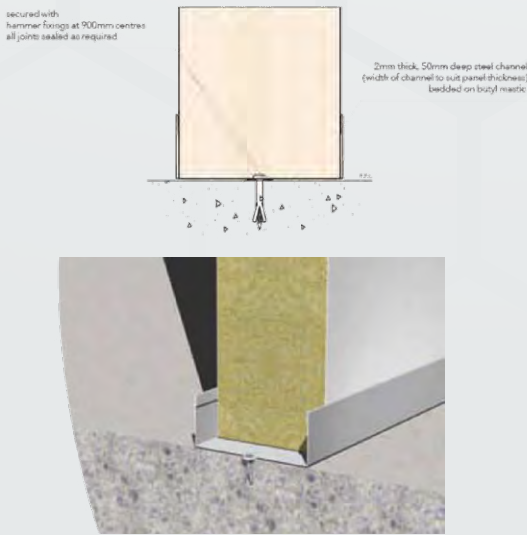
TECHNICAL DRAWINGS



VERTICAL JOINT DETAIL



TYPICAL WALL/FLOOR JUNCTION



BENEFITS

- Tested fire resistance to match the performance required for internal firewalls
- Stone wool core that provides built-in passive fire protection, structural strength, robustness and low environmental impact
- Wide range of finishes including a foodsafe coating, providing a smooth, anti-static internal surface

COMPROMISES

- Doesn't feature the intelligent interlocking panel arrangements that GT Max and GT Pro include – this includes the hidden service conduits and other key benefits
- Inferior overall performance compared to GT Max and GT Pro solutions
- More expensive wall solution than GT Lite and Plus

APPLICATIONS



Medical Device



Healthcare



Oil & Gas



Cell & Gene



Battery



Laser & Optical

GT Shell Fire is a fire-rated cleanroom wall solution that can be adopted throughout a number of different sectors where there is a concerted requirement for fire safety, either from a compliance perspective or as part of a business' wider policy and expectations.

ACCESSORIES

Associated GT Shell coving, bumper rail, glazing, air return, technical panels & raceways



The full range of GT Shell solutions are compatible with various accessories to improve their functionality and ensure optimum operational efficiency for your application.

The passages below outline some of the key features behind the accessories that can support your GT Shell Max, Pro, Plus, Lite or Fire cleanroom wall solutions.



COVING

Coving is material that has been fitted to cover the seam or transition between two surfaces, such as the edge between two walls or between a wall and the ceiling or floor. It can install a radius (when it is curved) or a 45-degree angle instead of the traditional 90-degrees of a room's corner.

In cleanrooms, coving is required to make sure that corner transitions are fully flush and seamless with no sharp corners present. This helps reduce material build-up, minimising the risk of contamination

and simplifying the regular cleaning process. From Pharmaceuticals to Food processing, clinical laboratories through other sterile environments, coving helps make cleanrooms effective and easy to maintain.

Wall-to-wall and wall-to-ceiling coving options are compatible with the GT Shell and GT Deck ranges. For GMP environments, our fully flush GT Shell Max system provides a flush floor connection that is ideal for eliminating the risk of ingress and debris build-up.



BUMPER RAILS

Wall-mounted bumper rails are ideal for use on projects with GT Deck flooring applications that feature coved corners – especially vinyl floor systems when a floor-mounted solution is best avoided.

Wall-mounted bumper rails also give cleaners access to the full floor area as they are not impeded by leg supports. They have tu-

bular wall-mount supports and tend to end with a blanked-off end plate. At doorways or near corners this can be changed for a bollard end which is floor mounted.

The bumper rail is typically surface mounted on circular baseplates with acorn head (dome nut) fixings. As an option, it can feature countersunk fixings.



GLAZING OPTIONS

We tend to offer clients two types of windows – semi-flush (clips) or fully flush. The clips window can work with either GT Shell Plus, Pro or Max, while the flush windows can only be used with GT Shell Max. Both types of windows are double

glazed (6mm laminated glass) and are siliconed on both sides of the frame. The bottom of the frames are also supplied with silica-gel granules which absorb moisture to keep the cavity from having condensation. The

semi-flush window is an aluminium two-part window (frame and counter-frame) that is effectively a wraparound style frame. Windows can't be placed side by side with this type of window. The flush window is also an aluminium frame window

but comes as one unit. These can be placed directly next to each other to have a continuous run of windows. Standard sizes for the flush window are 60mm & 80mm. Fish tank windows are also available for this intelligent system.

AIR RETURN PANELS

GT Shell Air Return Panels allow for air to pass through the body of the panel to maintain the fully flush finish that sets the GT Shell Max system apart from any other cleanroom wall panel systems on the market. Each panel is pre-fabricated and consists of two reinforced facings in 0.63 mm thickness.



TECHNICAL PANELS

GT Shell Technical panels allow for multiple services to be integrated within the body of the panel for a fully flush finish. The panel integrates with all GT Shell systems except for Lite. Available to suit both 60 mm and 80mm systems. each panel is

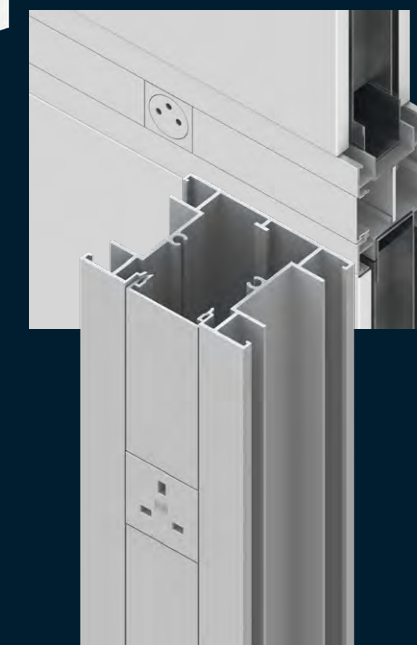


pre-fabricated and consists of two reinforced facings in 0.63mm thickness. Supplied with a factory engineered demountable panel facing held to the panel frame by recessed magnets.

ELECTRICAL RACEWAYS

Electrical raceways are hollow aluminium extrusions that incorporate a variety of sockets or plugs in a flush profile. They come in two parts – the body itself, which is secured to the panels using keyways like a normal panel joint, and

the removable face. The extrusions are secured into the adjustable floor track using small L-Angles. They can be positioned either vertically or horizontally. Should the extrusions be horizontal, then additional support items would be needed.





QUICK-LOOK COMPARISON GUIDE

FEATURES				
Designed for cGMP best practice				
Integrated air return panel				
Flush wall-to-floor connection				
Technical modular system				
FM Global approved insulation type				
Integrated electrical raceway – fully flush sockets				
Technical Services Panel – utilities containment				
Available in a wide range of thicknesses				
Can include conjoined glazing panels				
CleanSafe coating option				
Comparitively lightweight				





Guardtech



www.guardtech.com

Guardian House,
Unit 1A Homefield Road,
Haverhill, Suffolk,
CB9 8QP