CI/SfB | |(21.9)| Rf7 | |
March 2013

GB ORDERLINE
For placing orders, delivery enquiries and local stockists etc.
T 0800 373636
F 01275 377700
E orderline@siniat.co.uk

LITERATURELINE
For Siniat literature.
T 01275 377582
E literatureline@siniat.co.uk

TECHNICAL TRAINING CENTRE
For all drywall training needs from basic introduction to advanced skills and development.
T 01275 377581
F 01275 377402
E training@siniat.co.uk

IRELAND ORDERLINE
For placing orders, delivery enquiries and local stockists etc.
T +353 (0)1 6203114
F +353 (0)1 6203117
E irelandorders@siniat.com

TECHNICAL ENQUIRYLINE
Technical advisory service.
T 01275 377789
F 01275 377456
E enquiryline@siniat.co.uk

GTEC® WASTELINE DIRECT
Plasterboard waste management enquiries.
T 01275 377579
F 01275 774950
E gtecwasteline@siniat.co.uk

siniat
Shaping the way people build

GTEC®
Weather Defence
EXTERNAL SHEATHING BOARD

an etex company

nssPlus

Plasterboard, jointing and associated products made in the United Kingdom by Siniat are manufactured in accordance with management systems certified to BS EN ISO 9001: 2008 (quality) and BS EN ISO 14001: 2004 (environment)

breeam responsible sourcing "VERY GOOD" RATING

Photography and images used in this document are for reference purpose only and may not directly relate to the specific product and applications

Siniat Ltd Marsh Lane, Easton-in-Gordano, Bristol BS20 ONF
Technical Enquiryline T +44 (0)1275 377789 F +44 (0)1275 377456
E enquiryline@siniat.co.uk www.siniat.co.uk

ABERCYNON COMMUNITY PRIMARY SCHOOL

Sector:	Education
Project value:	£11.5 million
Client:	Rhondda Cynon Taff Borough Council
Architect:	Capita Symonds
Contractor:	Willmott Dixon
Sub-contractor:	Manorcraft
Finished:	August 2013

GTEC® Weather Defence
EXTERNAL SHEATHING BOARD

A faster way to a weathertight building.

For a truly reliable building envelope:

- **Dimensionally stable**, ensuring reliable airtightness
- **Quick and easy to cut and install** helping to reduce installation costs and time
- **No need for a breathable membrane** helping to further reduce project costs
- **Water, weather and mould resistant** – it can be left exposed on site for up to three months
- **Hydrophobic gypsum core** for superior moisture, fire and sound resistance

"I would recommend using GTEC Weather Defence as the sheathing board above any cement based materials from now on."

Lee Davis - Site Manager, Manorcraft

KEY BENEFITS

Cut without power tools: no flying fragments, no clogging of blades, no expensive blades required.

Fast, Safe and Cost Effective:

- "Score and snap" no need for separate cutting area, power tools or dust extraction.
- Lightweight boards and textured surface for easier handling, grip and installation
- Easy to cut in situ – perfect for door and window openings
- Easy to fix – no more blunt screws or shattered edges enabling speedier fixing, helping to reduce installation costs

SUSTAINABILITY BENEFITS

The gypsum core in Weather Defence is fully recyclable, the product and site off-cuts are accepted by GTEC Wasteline Direct.

Developed for frame-based construction methods where high thermal efficiency is important:

- Excellent airtightness helping to increase the thermal efficiency of the building
- Local production, made in the UK helping to reduce carbon emissions from transport
- Can be recycled helping to reduce the costs of waste disposal: GTEC Wasteline Direct Service (Tel: 01275 377579)
- A Responsibly Sourced product making you eligible for credits under BREEAM and Code for Sustainable Homes (CSH) helping you achieve the best BREEAM and CSH rating

Easy to seal for complete airtightness: contrasting board colour, enables at a glance job site inspection.

APPLICATIONS

Weather Defence sheathing is ideal for use with steel infill panels, full light steel framing (SFS) and also delivers excellent performance on timber and concrete frame construction.

Outstanding through-wall performances can be achieved in combination with Siniat GTEC Boards for the internal skin of the frame. The gypsum core technology ensures excellent fire performance and high sound insulation, inside-to-out and outside-to-in, to deliver safe, comfortable buildings in compliance with building regulations.

High performance thermal insulation can be installed within the frame, mechanically fixed or adhesively fixed to the Weather Defence board. This flexibility means that U-Values needed to meet carbon emission targets are easily achievable.

GTEC Weather Defence is compatible with numerous cladding systems, e.g. in Exterior Insulation and Finishing Systems (EIFS) where the board is an ideal substrate for insulation and in rainscreen or masonry cladding where it serves as a weathertight barrier.

The speed of Weather Defence installation allows construction timetables to be drastically reduced. With a weathertight building internal work can begin earlier and in parallel with external works.

BOARD PERFORMANCE

Accredited to a wide range of UK and European standards, the boards provide outstanding levels of performance in line with the increasing technical and commercial challenges faced by the construction industry.

	Description	Performance
General	Density	860kg/m^3
Mechanical properties	Flexural strength longitudinal direction according to BS EN 520:2004	6.5N/mm^2
	Flexural strength transverse direction according to BS EN 520:2004	5N/mm^2
	Elastic modulus longitudinal direction according to BS EN 789:2004	3200MPa
	Elastic modulus transverse direction according to BS EN 789:2004	3220MPa
	Impact resistance according to BS EN 15283-1: 2008	GM-I
	Compressive strength	7N/mm^2
Fire	Reaction to fire – Euro class according to BS EN 1350 1-1:2007	A2-s1,d0
Thermal	Thermal conductivity according to BS EN 12664:2001	0.25W/mK
	Thermal resistance (12.5mm board)	0.05m^{2}K/W
Permeability	Water vapour resistance (12.5mm board) according to BS EN 1SO 12572:2001	0.60MNs/g
	Water vapour resistance factor according to BS EN 1SO 12572:2001	10-15
Moisture resistance	Water uptake (2 hrs immersion) according to EN 520:2005	< 3%
	Surface water absorption (2 hrs Cobb test) according to EN 520:2005	< 100g/m^2
	Dimensional change (20°C/30%-65%RH), longitudinal direction dimensional stability according to BS EN 318:2002	0.10mm/m
	Dimensional change (20°C/65%-90%RH), longitudinal direction dimensional stability according to BS EN 318:2002	0.15mm/m
	Dimensional change (20°C/30%-65%RH), transverse direction dimensional stability according to BS EN 318:2002	0.13mm/m
	Dimensional change (20°C/65%-90%RH), transverse direction dimensional stability according to BS EN 318:2002	0.11mm/m
Mould resistance	Resistance to mould growth	Good

TYPICAL CLADDING EXAMPLES

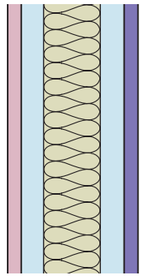
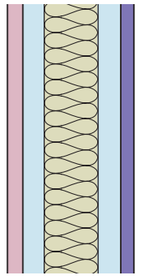
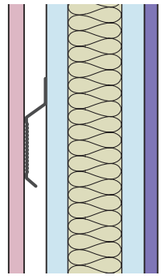
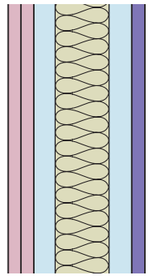
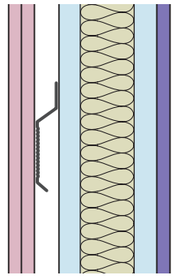
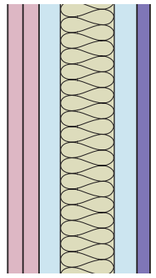
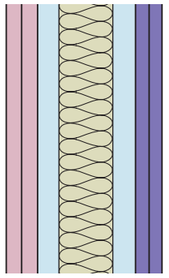
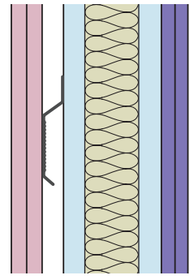
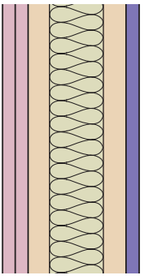
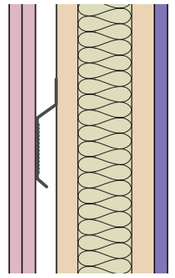
Masonry

Timber

Rainscreen

External Insulated Render

SYSTEM PERFORMANCE

										
Sheathing Board	1 x 12.5mm GTEC Weather Defence	1 x 12.5mm GTEC Weather Defence	1 x 12.5mm GTEC Weather Defence	1 x 12.5mm GTEC Weather Defence	1 x 12.5mm GTEC Weather Defence	1 x 12.5mm GTEC Weather Defence	2 x 12.5mm GTEC Weather Defence	2 x 12.5mm GTEC Weather Defence	1 x 12.5mm GTEC Weather Defence	1 x 12.5mm GTEC Weather Defence
Internal Board	1 x 12.5mm GTEC Megadeco/Fire LaDura/Aqua Board	1 x 15mm GTEC Megadeco/Fire LaDura/Aqua Board	1 x 15mm GTEC Megadeco/Fire LaDura/Aqua Board	2 x 12.5mm GTEC Megadeco/Fire LaDura/Aqua Board	2 x 12.5mm GTEC Megadeco/Fire LaDura/Aqua Board	2 x 15mm GTEC Megadeco/Fire LaDura/Aqua Board	2 x 15mm GTEC Megadeco/Fire LaDura/Aqua Board	2 x 15mm/ GTEC Megadeco/Fire LaDura/Aqua Board	2 x 12.5mm GTEC Megadeco/Fire LaDura/Aqua Board	2 x 12.5mm GTEC Megadeco/Fire LaDura/Aqua Board
Resilient Bar			+ GTEC Resilient Bar		+ GTEC Resilient Bar			+ GTEC Resilient Bar		+ GTEC Resilient Bar
Frame	Steel[1]	Steel[1]	Steel[1]	Steel[1]	Steel[1]	Steel[1]	Steel[1]	Steel[1]	Timber[2]	Timber[2]
Insulation	50mm 45kg/m^3 rock mineral wool	50mm 45kg/m^3 rock mineral wool	50mm 45kg/m^3 rock mineral wool	50mm 45kg/m^3 rock mineral wool	50mm 45kg/m^3 rock mineral wool	50mm 45kg/m^3 rock mineral wool	50mm 45kg/m^3 rock mineral wool	50mm 45kg/m^3 rock mineral wool	50mm 45kg/m^3 rock mineral wool	50mm 45kg/m^3 rock mineral wool
Loadbearing Fire Resistance (BS)	30 mins, both directions	60 mins, both directions	30 mins, both directions	60mins, both directions	30 mins, both directions	60 mins, both directions	90 mins, both directions	–	60 mins, both directions	60 mins, both directions
Loadbearing Fire Resistance (EN)	REI 30, both directions	REI 30, both directions	REI 30, both directions	REI 30, both directions	REI 30, both directions	REI 30, both directions	REI 60, both directions	–	REI 60, both directions	REI 60, both directions
Non-loadbearing Fire Resistance (BS)	60 mins, both directions	60 mins, both directions	60 mins, both directions	90 mins, both directions	90 mins, both directions	120 mins, both directions	120 mins, both directions	120 mins, both directions	–	–
Non-loadbearing Fire Resistance (EN)	EI 60, both directions	EI 60, both directions	EI 60, both directions	EI 90, both directions	EI 90, both directions	EI 90, both directions	EI 120, both directions	EI 120, both directions	–	–
Sound Insulation	42 R_WdB	43 R_WdB	47 R_WdB	48 R_WdB	52 R_WdB	48 R_WdB	53 R_WdB	58 R_WdB	45 R_WdB	56 R_WdB
Thermal Performance	Excellent U-values can be achieved (0.15W/m^{2}K or better)	Excellent U-values can be achieved (0.15W/m^{2}K or better)	Excellent U-values can be achieved (0.15W/m^{2}K or better)	Excellent U-values can be achieved (0.15W/m^{2}K or better)	Excellent U-values can be achieved (0.15W/m^{2}K or better)	Excellent U-values can be achieved (0.15W/m^{2}K or better)	Excellent U-values can be achieved (0.15W/m^{2}K or better)	Excellent U-values can be achieved (0.15W/m^{2}K or better)	Excellent U-values can be achieved (0.15W/m^{2}K or better)	Excellent U-values can be achieved (0.15W/m^{2}K or better)
Structural Strength	To be determined by frame supplier	To be determined by frame supplier	To be determined by frame supplier	To be determined by frame supplier	To be determined by frame supplier	To be determined by frame supplier	To be determined by frame supplier	To be determined by frame supplier	To be determined by frame supplier	To be determined by frame supplier

Notes:
[1] Minimum steel gauge 1.2mm, minimum depth 90mm
[2] Minimum timber C16 38 x 140mm

Cladding and system performances

The system performances quoted in the tables above are independent of external cladding, allowing flexibility of choice in cladding solutions. In most instances the choice of cladding system will not have a negative impact on system performance but advice should always be sought from the cladding supplier to identify any potential issues.

Thermal performance

GTEC Weather Defence is compatible with wall make-ups designed to achieve high levels of thermal efficiency. The minimum insulation to achieve fire and acoustic performances are stated above, additional insulation to achieve required U-values may be installed within frame or external to the frame/board, in most cases without detriment to fire or acoustic performance. GTEC Weather Defence assists with achieving excellent air tightness values by providing a controllable and easy to seal sheathing envelope to the building.

Sound performance

Sound insulation may be enhanced by the choice of cladding, addition of further boards or the separation of internal boards from the structural frame using GTEC Resilient Bar. EIFS systems have been shown to increase through-wall sound insulation by up to 5 R_WdB. Contact Technical Enquiryline for more information.
Joints between GTEC Weather Defence boards to be sealed with GTEC Fire Rated Silicone Sealant.

Vapour Control

A vapour control layer may be required, depending on wall make-up, to control condensation. GTEC interior plasterboards are available with an optional laminated vapour control layer. Contact Technical Enquiryline for calculation of U values and dew point.

Movement Joints

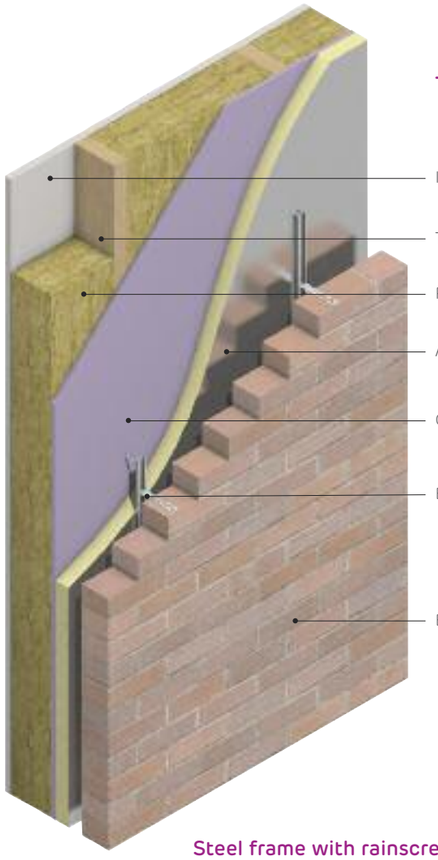
Movement joints to be provided at maximum 10m intervals and at any structural movement joints.

Framing

Structural framing to be provided by others with studs at maximum 600mm centres. Insulation to be retained in position with GTEC Insulation Hold to prevent slump over time or during fire.

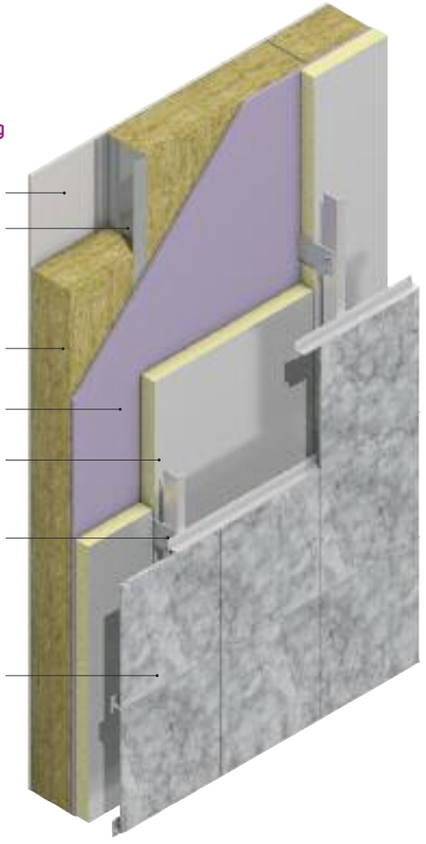
TYPICAL SYSTEM CONSTRUCTION DETAILS

Timber frame with brickwork cladding



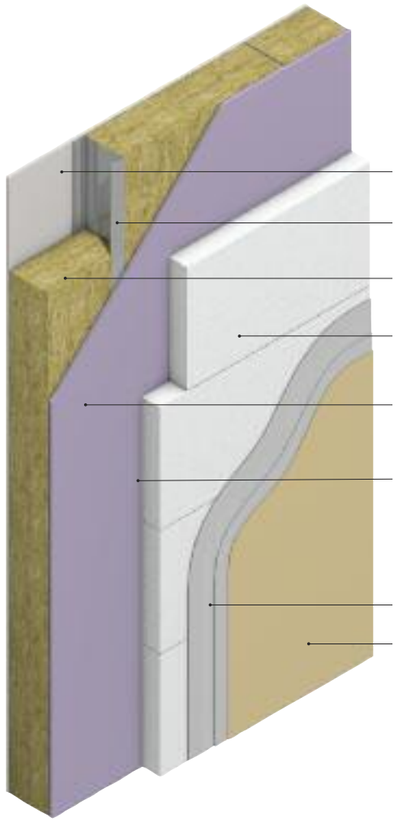
- Internal GTEC Board to suit requirements
- Timber frame to manufacturer's guidelines
- Rock mineral wool insulation as required
- Additional external insulation
- GTEC Weather Defence external sheathing board
- Brick tie system to manufacturer's guidelines
- Brickwork cladding

Steel frame with rainscreen cladding



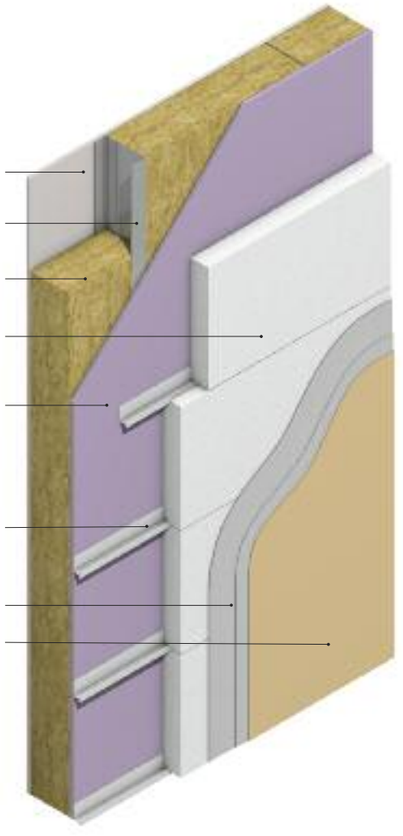
- Internal GTEC Board to suit requirements
- Steel frame to manufacturer's guidelines
- Rock mineral wool insulation as required
- GTEC Weather Defence external sheathing board
- Additional external insulation
- Rainscreen support rail system to manufacturer's guidelines
- Rainscreen cladding to manufacturer's guidelines

Steel frame with EIFS



- Internal GTEC Board to suit requirements
- Steel frame to manufacturer's guidelines
- Rock mineral wool insulation as required
- Insulation for EIFS system
- GTEC Weather Defence external sheathing board
- Insulation fixed to board with adhesive
- Render reinforcement mesh and adhesive
- Render finish

Steel frame with EIFS and rails



- Internal GTEC Board to suit requirements
- Steel frame to manufacturer's guidelines
- Rock mineral wool insulation as required
- Insulation for EIFS system
- GTEC Weather Defence external sheathing board
- Insulation support rail fixed back to frame
- Render reinforcement mesh and adhesive
- Render finish

INSTALLATION

As with any gypsum-based plasterboard GTEC Weather Defence is quick and easy to install.

Board cutting
Board may be cut using 'score and snap' technique and trimmed in-situ using a padsaw.

Board fixing
GTEC Weather Defence should be mechanically fixed to frame at 300mm centres using GTEC Wet Area Self Drilling screws for steel frame up to 1.5mm thick GTEC Wet Area High Thread screws for timber frame.

Reduced screw centres may be required for higher wind loadings. Where horizontal noggins are provided in frame it is recommended that Weather Defence board is also fixed to these elements. Board may be fixed in horizontal or vertical arrangement. Horizontal board joints spanning studs do not require additional reinforcement with straps or channels if vertical centres are reduced to max. 200mm. Normal centres apply where joints coincide with tracks or noggings.

Sealing
Joints between GTEC Weather Defence boards to be sealed with GTEC Fire Rated Silicone Sealant. Recommended procedure is the application of sealant to board edge on one side of joint immediately prior to installation of second board.

Mechanical insulation fixing
All mechanical insulation fixings, either for support rails or direct insulation fixings, should be fixed back to frame with only secondary retention fixings made into the field of the board. Insulation to be installed in brick bond pattern.

Adhesive insulation fixing
Insulation to be fixed directly to board using a suitable construction adhesive with additional mechanical secondary retention fixings made into the frame and board to secure insulation while the adhesive cures. Insulation to be installed in brick bond pattern.

Cladding fixing
All cladding, including brackets, frames and support rails must be fixed back to studs. Further advice should be sought from cladding manufacturer.

For more detailed installation instructions, please contact the Technical Enquiryline on 01275 377789 or visit www.siniat.co.uk.

SYSTEMS AND WARRANTY

GTEC

GTEC represents quality, durability and assured performance across all our products and system solutions. Products include standard, performance and specialist boards, as well as finishing compounds, metal framing and fixings to satisfy the practical and performance needs of all new-build and refurbishment projects.

GTEC Systems are built from four key component groups:

GTEC Board
Standard, performance and specialist boards specifically designed for a wide range of construction applications, giving impact, moisture, vapour, sound and fire resistance.

GTEC Frame
A range of metal framing components for use in combination with GTEC Boards. From basic studwork to suspended ceilings and intricate curves.

GTEC Fix
A comprehensive range of screws, adhesives and other fixing components for attaching boards and connecting components.

GTEC Finish
Taping and jointing systems used for the seamless jointing of plasterboard for creating a high performance system with a perfect finish.

TECHNICAL SUPPORT

Siniat offers specification customers a range of dedicated support services to help you with compliance.

Field Based Specification Manager
Our field based specification managers are able to help with design, system selection, construction details and project specifications. Highly experienced, they can develop solutions to improve speed of installation, fire, sound and thermal performance, as well as guiding you through sector-specific requirements.

Technical Enquiryline
The dedicated Technical Enquiryline offers an immediate response to your technical queries including installation advice, product guidance, and acoustic and U-value calculations.

Technical Training Centre
We also provide a purpose-designed training centre, which has been accredited by the CITB and provides instruction in drywall installation and management for contractors and installers.

WARRANTY

GTEC Weather Defence is offered with a 3 month limited warranty when installed on the frame during the construction phase and up to 10 years product warranty according to installation instructions.

Please contact Technical Enquiryline for full warranty details.

IMPORTANT INFORMATION

Siniat is committed to the highest levels of safety at all times. This commitment extends outside our own operations to all involved in the use of our products on site.

Handling and storage

When manually handling GTEC Weather Defence, consideration of the correct manual handling technique has to be made to limit risk, according to the Manual Handling Operations Regulations 1992.

GTEC Weather Defence is supplied on bearers. Packs should be moved using a fork lift truck or hydraulic trolley. Care should be taken to ensure that the machinery is safely capable of such movements and that the operator is trained and competent.

GTEC Weather Defence should be stored in dry, flat conditions.

Pack sizes

Board thickness (mm)	Width (mm)	Length (mm)	Boards per pallet	Board weight (kg/m²)	Pallet weight (tonnes)	Max.height incl. pallet (mm)	Code
12.5	1200	2400	52	10.8	1.62	750	91552

Composition

Aerated calcium sulphate di-hydrate with fillers and fibres enclosed inside a glass mat with bound edges. Edge glue is PVA.

Physical and chemical properties

Appearance: Purple and white faced flat sheets that are available in a range of thicknesses and lengths, with square edge profiles.

GTEC Weather Defence is not a suitable product to be used as a platform or deck, it will not support body weight and therefore it is important that installers use an independent support mechanism.

Exposure controls/ Personal protection

Occupational Exposure Limits: Workplace Exposure Level (WEL)

Substance	Total inhalable	Total respirable
Gypsum	10mg/m³	4mg/m³
Limestone	10mg/m³	4mg/m³
Quartz	–	0.3mg/m³
Man Made Mineral Fibre	–	5mg/m³

Note: Based on 8 hour TWA period

Personal protection

Respiratory: Adequate localised ventilation or extraction is recommended when creating dust and fibres. Alternatively use appropriate respiratory protection.

Eyes: Eye protection is recommended when dust and/or fibres are likely to be generated as irritation may be caused by contact.

Skin: Exposed skin should be kept to a minimum to avoid contact with fibres. Disposable coveralls would be suitable.

Hands: Hands should be protected when handing this product.

SUSTAINABILITY

- GTEC Weather Defence comes from Siniat, the leading innovator of sustainable solutions for dry construction.
- Manufactured in our low energy plasterboard process with closed loop recycling of water and process wastes and certified to ISO14001.
- With embodied carbon and energy levels significantly lower than cement particle boards, BRE Green Guide ratings of A and A+ are realised in all external wall systems built on steel and timber framing.
- GTEC Weather Defence makes a major contribution to air-tightness of the building external envelope due to its hygrodynamic stability.

MATERIALS & RESOURCE EFFICIENCY

- The manufacture of GTEC Weather Defence is covered by Siniat's 'Very Good' certification to BES6001 for Responsible Sourcing. Not only is this eligible for credits under BREEAM and the Code for Sustainable Homes, it provides piece of mind on social and environmental stewardship in the material supply chain.
- UK manufacture assures low transport emissions, provides local employment and eligibility for credits under the LEED assessment scheme
- The elimination of membranes in certain building systems further reduces fossil fuel depletion in applicable designs.
- Composed of non-hazardous materials, GTEC Weather Defence is quickly fixed without drilling or sawing by 'score and snap' techniques. As well as minimal dust exposure, the content of restricted substances is well below threshold levels.

WASTE AND RECYCLING

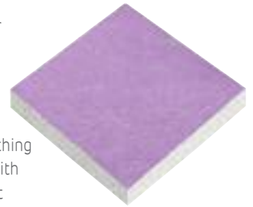
- The gypsum core in Weather Defence is fully recyclable, hence the product and site off-cuts are accepted by the GTEC Wasteline Direct service for recycling into new plasterboard products.
- Gypsum powder from the recycled board fully meets the quality criteria of BSI PAS109* in relation to composition, paper fibre content and purity. This provides for diversion from landfill into recycling markets.
- GTEC Weather Defence is supplied with minimal packaging and the bearers are composed of recyclable material with PEFC certification.

Site waste can be further minimised by the supply of bespoke board lengths suited to project needs.

*Specification for the Production of Recycled Gypsum

SYSTEM OVERVIEW

As with all GTEC plasterboards special lengths are available on request to ensure that you can specify the most efficient board size for your project, reducing waste and maximising cost savings.

Components	Siniat Code	Sizes
GTEC Weather Defence  External sheathing board faced with glass fibre mat Complies with BS EN 15283 TypeGM-H1, GM-I and GM-F	91552	12.5 x 1200 x 2400mm
GTEC Fire Rated Silicone Sealant  Seals air gaps between boards and provides fire resistance Conforms to BS 476: Part 20/EN1366-4 (2006)	4043517	600ml foil pack
GTEC Sealant Foil Mastic Gun  To apply GTEC Fire Rated Silicone Sealant	4041863	
GTEC Wet Area Self Drilling Screws 	4042967 4042968	Length 25mm, Gauge 3.5mm Length 38mm, Gauge 3.5mm
GTEC Wet Area High Thread Screw 	4042971	Length 42mm, Gauge 3.5mm

For through wall performances use GTEC Plasterboard and GTEC Metals. See pages 8 and 9 for details.

OPENING HOURS: MONDAY - THURSDAY 7AM - 5:30PM AND FRIDAY 7AM - 5PM

ORDER PLACEMENT: Call FREE on 0800 373636

TECHNICAL ENQUIRYLINE For all technical advice and project enquiries: Tel 01275 377789