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STEPHEN GEORGE
& PARTNERS LLP

GREENSPEC 'PASS' TECHNICAL ASSESSMENT

Product:	Forticrete Gemini Interlocking Twin Plain Tile
Job Ref.:	14-143-001
Manufacturer:	Forticrete Ltd Boss Avenue, Off Grovebury Road, Leighton Buzzard, Beds LU7 4SD
Represented by:	Paul Joynes Area Sales Manager Forticrete Roofing Mobile 07990 616545 / pjoynes@Forticrete.com
SGP Assessor(s):	Chris Halligan
Date:	Friday 10th October 2014
Sample provided?:	Y
Literature provided?:	Y
Appendices:	Sample Project Appraisal Cost Comparison chart

14-143-001: Forticrete Gemini PASS Technical Assessment

Introduction

The following questions are intended to explore the fitness for purpose of the particular material under review. They cover issues of practicality rather than sustainability and have been arrived at by Stephen George & Partners from previous experience when employing innovative materials. The resultant conclusions are not meant to form part of a formal accreditation or certification but merely provide practical guidance relating to a particular material marketed as being 'sustainable' or 'green.' The eventual summary is intended to contribute to the overall PASS Endorsement. The opinions expressed are given in good faith and therefore open to revision following receipt of further, expanded or contrary information provided by other parties at a later date.

1 DESIGN ISSUES

1.1	**Ease of use:**
1.1.1	How different is the material from a commonly specified one? Does it act as a substitute or as part of an innovative design method?
Answer:	*An interlocking tile unit to replace traditional plain tiles. Fixed in a similar manner to traditional tiles but with approx.. 16.3no. per square metre as opposed to 60 plain tiles. It's concept can be considered innovative but it's application is fairly traditional.*
1.1.2	Can it be used in common forms of construction or does it demand a new approach?
Answer:	*Used as a traditional roofing product.*
1.1.3	Is specialist knowledge of the product necessary in design? How unusual is its' performance in comparison to common methods of construction?
Answer:	*No specialist knowledge required outside of normally accepted roofing skills.*
1.1.4	If appropriate, how easily does it lend itself to creating forms and/or structures.
Answer:	*See item 1.1.2 above*

1.2	**Design process:**
1.2.1	How much information is available on the material and how easy is this to obtain?
Answer:	*Technical, advisory and trade literature is readily available from the manufacturer. Forticrete can provide a bespoke specification as part of a Project Appraisal offered for each individual job.*
1.2.2	Is there support for design team (architect / eng / contractor) in the form of technical advice, representatives or literature?
Answer:	*The Project Appraisal covers all aspects of the proposed roof covering design including fixing, key detail design, ventilation together with all associated products. Forticrete's technical department liaise with the contractor, assess the requirements of the scheme and if necessary visit to advise on particular aspects.*
1.2.3	Will a specialist designer be required or is the materials use within the common capability of the design team?
Answer:	*Traditional roofing knowledge usually within common capabilities*
1.2.4	Are standard details available or even appropriate?
Answer:	*Available as part of Project Appraisal but typical of common construction methods*
1.3	**The material itself:**
1.3.1	How adaptable is it (cutting / bending / taking fixings and being fixed itself.)?
Answer:	*Cannot be curved (like all interlocking tiles), but a range of accessories are available.*
1.3.2	How does the material interface with other materials? Are there any corrosion / chemical interaction issues?
Answer:	*None*
1.3.3	Does it require any ancillary materials and / accessories?
Answer:	*Full system of fixings and ancilliary products are available – E.g. Dryfix and vent accessories*
1.3.4	Is use of the material likely to cause any problems with UK statutory legislation (E.g. Planning, Building Regulations, COSHH?)

Answer:	*No*

1.4	**Commercial:**
1.4.1	Is a warranty available? Does this place limitations on its use?
Answer:	*60 year lifespan expected but 15 year warranty available through use of the Project Appraisal. However, this can depend on individual use of the system*
1.4.2	Is the capital cost comparable to common construction materials – in particular those it may be offered as a substitute for?
Answer:	*See cost comparison chart. Substantially less than plain tiles*
1.4.3	Does it depend on financial benefit over its' life cycle or subsequent causal offsetting to be considered cost effective rather than initial capital cost?
Answer:	*N/a*

2 SITE ISSUES

2.1	**Logistics:**
2.1.1	Is the material marketed and sold by the same company as produce it? Or is supply by a third party?
Answer:	*Sold direct and also through mechants*
2.1.2	How long is a typical delivery period and where does it originate from?
Answer:	*Generally 14 days. Made in Leighton Buzzard, UK.*
2.1.3	How secure is the supply. Might it be subject to disruption by political, global or environmental events?
Answer:	*No*
2.1.4	How is it delivered? Are there any implications for site access?
Answer:	*Shrink wrapped pallets*

2.1.5	How is the material stored?
Answer:	*Can be stored externally without protection.*
2.2	**Workforce skills:**
2.2.1	Is the material capable of being used by the normal site workforce or is a specialist sub-contractor required?
Answer:	*Normally installed by a roofing contractor*
2.2.2	Is specialist training required for site operatives? If so, who provides this and is a cost incurred?
Answer:	*Common roofing skills required*
2.2.3	Is technical support available for the contractor during site operations?
Answer:	*See comments under items 1.2.1 and 1.2.3 above.*
2.3	**Handling:**
2.3.1	Are any specialist tools required?
Answer:	*Common roofing tools*
2.3.2	Is any unique specialist protective wear required during site operations?
Answer:	*Normal personal protection site wear.*
2.3.3	How easily is the material handled / moved / lifted?
Answer:	*Normal within accepted H&S parameters*
2.3.4	What plant may be required over and above that usually available on site?
Answer:	*None*
2.3.5	How is waste usually dealt with?

Answer:	*Material waste should be minimal. To be dealt with as regular building waste. Non-deleterious, non-toxic.*
2.3.6	How does weather affect use of the material? Does rainfall, heat or cold affect or prevent its use?
Answer:	*Rainfall may only affect associated wet trades. Very low temperatures may affect staff and any mortar being used. Otherwise – none.*
2.3.7	Post-installation, after what period can the material be worked with / trafficked on /decorated etc.? Is there a curing, setting or drying period?
Answer:	*Immediate / N/a*

3 SUMMARY & CONCLUSION

3.1	Overall impressions
Answer:	*A simple but effective alternative to traditional plain tiles with a comprehensive technical support framework underpinning it.*
3.2	Key positive & negative aspects

Answer:

Positive:

- *Improved Speed of construction*
- *Reduced capital cost*
- *Reduced weight*
- *Full system – not just a single product*
- *Comprehensive technical support.*

Negative:

- *None immediately apparent.*
- *Possible subjective aesthetic issues in specific or unusually demanding situations*