FIRELAB

TITLE	:	Report on the Large-scale Fire Performance of the **Terraco EIFS Aplha System** (external insulated cladding system)
REQUESTED BY	:	**Technopol (Pty) Ltd** PO Box 2445 **SPRINGS** 1560 **Terraco South Africa** 10 Dean Road **RIETVALLEI PARK** 0157
CONTRACT No	:	FTC 21/033
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SCOPE

This report evaluates the Large-scale Fire Performance of the **Terraco EIFS Aplha System** when tested in accordance with **SANS 8414 – 2:** *Test method for non-loadbearing external cladding systems fixed to and supported by a structural steel frame*.

Section 1: Detailed information on the specimen construction

Section 2: Test protocol and criteria

Section 3: Observations made, temperatures recorded and photographs taken before, during and after the test

Section 4: Post damage inspection

Section 5: Discussion of results

Section 6: Conclusion

Annexures "A": Company information

Annexures "B": Installation procedure

Annexures "C": System information and detailed drawings supplied by **Technopol SA** and **Terraco SA**

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1. SYSTEM DESCRIPTION

Futercon installed the **Terraco EIFS Aplha System** onto **FIRELAB**'s **SANS 8414 Facility**. The system was constructed in accordance with the test specimen requirements as stipulated in **SANS 8414 – 2**.

1.1 GENERAL DESCRIPTION

System Name: **Terraco EIFS Aplha System**

System Type: Fixed and supported by a structural frame/wall system

Wall System: Fire-resistant non-loadbearing wall system inside the building line/edge.

Dimensions

Wall component	SANS 8414 requirement	Test specimen
Thickness	N/A	175 mm
Height	≥ 6 m above the top of the combustion chamber opening	Total height 8.5 m
Width of Main Wall	≥ 2.6 m	3.1 m
Width of Wing/Return Wall	≥ 1.5 m	1.96 m
Combustion Chamber opening	2 m ± 100 mm (w & h)	1 835 mm x 2 010 mm
From the finished face of the Wing Side to the edge of the Combustion Chamber	260 mm ± 100 mm	235 mm

Figure 2.1.1: Test specimen dimensions

1.1.1. WALL SYSTEM

Structural frame;

Type:	Light Steel Frame
Material:	Galvanised
Thickness:	0.8 mm
Fixing description:	Frame is anchored onto slab very 600 mm (bottom and top)

External boards fixed to the frame;

Board Type:	10 mm thickness MgO boards
Fixing type:	8x38 mm Wing Tek screws
Fixing description:	Screws spaced every 200 mm around the board

Cavity insulation (Rock and glass wool);

Mineral wool:	89 mm thick Technopol 130D StoneWool fitted into LSF from floor to soffit level of each floor including a 980 mm upstand
Glass wool:	Cavity batt

Internal boards fixed to the frame;

Board:	Siniat Fire Check Plasterboards
Fixing:	8 x 32 mm self-drilling drywall screw
Sealant on board:	Skimming plaster and 50 mm fibre tape
Fire sealant:	Promat Promaseal®-A White installed between the board and slab floor

1.1.2. EXTERNAL INSULATED CLADDING SYSTEM

Protection and sealing of external board joints (MgO);

Coat:	Weathercoat 412 TDS
Mesh:	Terramesh Fibreglass Reinforcement Mesh

External insulation and fire breaks applied to the boards;

Polystyrene:	Grade FR100, HD, 20DV, 50mm thickness Technopol (SA) LiteCel™ FRCel™ EPS, 1 200 mm x 600 mm EPS boards
Mineral wool:	300 mm wide by 50 mm thick Technopol 130D StoneWool Firebreak (applied onto each slab)
	150 mm wide by 50mm thick Technopol 130D StoneWool around and inside opening of Combustion Chamber
Adhesive:	Styrobond DP
Fixing:	Mechanically fastened with 0.8 mm Class 4 washer and 6 mm x 85 mm Class 4 Tek screw

External mesh reinforcement applied to the external insulation;

Mesh:	Terramesh Fibreglass Reinforcement Mesh
Adhesive:	Styrobond DP

External weather coating;

Coat 1:	Pigment primer
Coat 2:	Terraco Granule Fille 1.5 mm Sil

2. SANS 8414 – PART 2:2017

2.1. TEST PROCEDURE

The ignition source was constructed from dry 50 mm x 50 mm SA Pine sticks stacked in an open-crib configuration to form a 1 500 mm x 1 000 mm x 1 000 mm high crib. The crib was constructed on a 400 mm high solid platform in the Combustion Chamber.

The crib was ignited using 16 fibreboard strips. The strips were soaked in paraffin and inserted into the spaces between the timber sticks in the second layer of the crib.

The maximum test duration is 60 minutes with the ignition source extinguished at 30 minutes.

Note: According to the **SANS 8414 – 2**, the maximum test duration shall be 60 minutes. However, should any events (flaming, debris falling down, etc.) continue after 60 minutes, the test will continue and be monitored.

The thermocouples (TC) were installed as shown in Figure 2.1.1. The external thermocouples were installed that the hot junction is positioned 50 mm in front of the face. The internal thermocouples were positioned in the centre of the polystyrene.

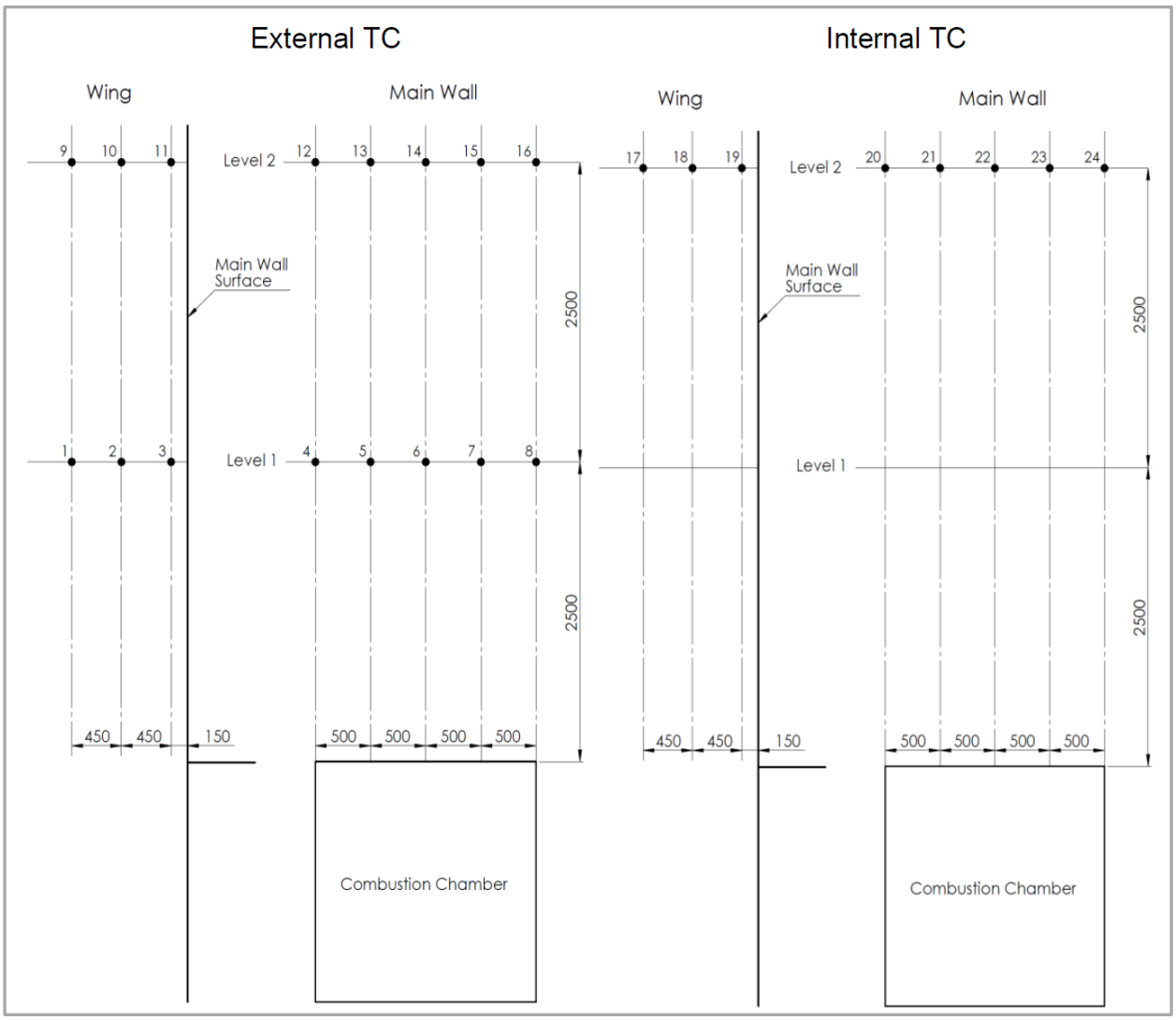

Figure 2.1.1: Thermocouple positions

2.2. TEST CRITERIA

The following three Performance Criteria Standards were used to evaluate the outcome of the test:

- BR 135 (British Standard)
- LPS 1582 (British Standard, LPCB®)
- AS 5113 (Australian Standard)

Sections 2.2.1 to 2.2.3 contain more detail on the criteria for the above Standards. A summary of the criteria for the three Standards can be group into three categories:

- ***Temperature:*** The thermocouples' temperature may not exceed a certain temperature.
- ***Flame Spread:*** No flame spread and burn-through to the inside may occur.
- ***Mechanical:*** Includes the criteria of falling debris, period of flaming on the floor, etc.

The following definitions are used in the three Performance Criteria Standards:

- The *crib collapse zone* is defined as a 2.4 m x 1.2 m positioned centrally on the centre line of the Combustion Chamber (2.4 m length parallel to the face of chamber).
- The *confines of the specimen* are the minimum specimen size specified in the **SANS 8414 – 2** (see **Table 1.1**).
- The start time, t_s, occurs when the temperature recorded by any external thermocouple at Level 1 equals or exceeds 200 °C temperature rise above the start temperature, T_s, and remains above this value for at least 30 seconds.

2.2.1. BR 135:2013 (THIRD EDITION)

Failure of the system is deemed to have occurred if:

- The test is terminated within the duration of the full test period for any safety reason or flame spread reaches above the specimen.
- The temperature rise above T_s of any of the external and internal thermocouples at Level 2 exceeds 600 °C, for a period of at least 30 seconds, within 15 minutes of the start t_s.
- A system burn-through occurs so that the fire reaches the internal surface where the flame's duration exceeds 60 seconds and is observed on the internal surface of the test specimen at or above a height of 0.5 m above the Combustion Chamber opening within 15 min of the start time, t_s (only applicable to the **SANS 8414 – 2** test method).
- No failure criteria are set for mechanical performance. The nature of the mechanical performance should be considered as part of the overall risk assessment when specifying the system.

2.2.2. LPS 1852:2014 (ISSUE 1.1)

Failure of the system is deemed to have occurred if:

- The test is terminated within the duration of the full test period for any safety reason.
- Visible flaming occurred which exceeds the *confines of the specimen* either vertically or laterally during the full 60 minutes test period.
- The temperature rise above T_s of any of the external and internal thermocouples at Level 2 exceeds 600 °C, for a period of at least 30 seconds, within 15 minutes of the start t_s.
- There is collapse of the system or part thereof, flaming or not, onto the floor of the test facility outside the designated *crib collapse zone*.
- Burn through to the inside of the system and continuous flaming (flame with a duration in excess of 60 seconds) are observed anywhere on the internal surface of the test specimen at or above a height of 2 m below Level 1 within the duration of the full 60-minute test period.
- Burning debris or a pool fire develops on the floor of the test facility, outside the designated *crib collapse zone*.
- Where an insulation product exhibits the propensity for glowing combustion, the system design shall restrict the potential spread of self-propagating combustion within the system vertically beyond subsequent floor levels, laterally beyond the line of internal compartment walls and prevent penetration through the internal surface of the system.
- Re-ignition, glowing combustion etc, spreads vertically beyond Level 2 or reaches the outer edge of the wing wall, in the area between Level 1 and Level 2, within 24 hours of the termination of the full 60 minutes test period.
- Penetration throughout the internal surface of the test specimen.

2.2.3. AS 5113:2016

Failure of the system is deemed to have occurred if:

- External thermocouples on Level 2 exceed 600 °C for a continuous period greater than 30 seconds.
- Internal thermocouples on Level 2 exceed 250 °C for a continuous period greater than 30 seconds.
- Flame spread beyond the *confines of the specimen* in any direction occurs.
- Continues flaming on the ground occurred for more than 20 seconds from any debris or molten material from the specimen.
- The total mass of debris falling in front of the specimen exceeds 2 kg.

2.3. TEST EQUIPMENT

- Data logging equipment c/w controller (frequency of measurement is 5 sec)
- Stopwatch
- K-Type thermocouples
- **FIRELAB's SANS 8414 Facility**
- Video camaras

3. TEST RESULTS

Technopol SA & Terraco SA – Terraco EIFS Aplha System

OBSERVATIONS DURING THE **SANS 8414** TEST

TIME (mm:ss)	**DESCRIPTION**
00:00	**– Test Started –**
00:45	Flames starting projecting outside Combustion Chamber
01:32	Continued flaming outside Combustion Chamber
01:50	Flames extending up to Level 1
02:20	Black discoloration forming above Combustion Chamber
03:30	Flames extending between Level 1 and Level 2
04:15	Flames started extending up to Level 2
04:35	Flaming visible on Main Wall
05:00	Burning/flaming just below Level 1
	Black discolouration above Level 1
06:20	Slight discolouration on the Wing Wall
06:25	White discolouration on Main Wall
07:05	Flaming visible on Wing Wall
	White discolouration enlarging on Main Wall
07:30	Flame spread increase (lateral and longitudinal) on Wing Wall
08:15	White discolouration on Wing Wall
08:50	White discolouration enlarging on Wing Wall
10:50	Light flaming spreading lateral on Wing Wall
13:20	Light flaming spread at minimum dimension of Wing Wall
15:00	Light flaming is beyond minimum distance of Wing Wall
15:50	Crib starting to lean forward
17:02	Crib starting to collapse

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18:18	Crib collapse
20:00	Crib decaying
21:50	All flaming out on specimen
30:00	*Fire Source Extinguished*
33:40	Cracks visible
60:00	**– Test Concluded –**

Test conditions:
Test date: 25 June 2021, Ambient temperature: 20.8 °C, Wind speed: 1.0 m/s

Note(s): Smoke was released during the test at the edges, top and bottom back of the system.

Polystyrene was observed to drip down at the bottom of the Wing Wall after the crib collapsed (this does not affect the results of the test).

All the flaming was caused by gas released from the coat. This can be considered as surface flaming.

*Table 3.1: Observations recorded during the **SANS 8414 – 2** test*

Technopol SA & Terraco SA – Temperature Results

	Value	Duration
BR 135 & LPS 1852		
Start Temperature = T_s	20.8 °C	N/A
Start time = t_s	01:50	01:50 – 16:50
Failure Temperature	620.8 °C	Less than 30 seconds (TC 14)
AS 5113		
Failure External Temperature	600.0 °C	Less than 30 seconds (TC 14)
Failure Internal Temperature	250.0 °C	-

Note(s):

Table 3.2: Criteria temperatures duration

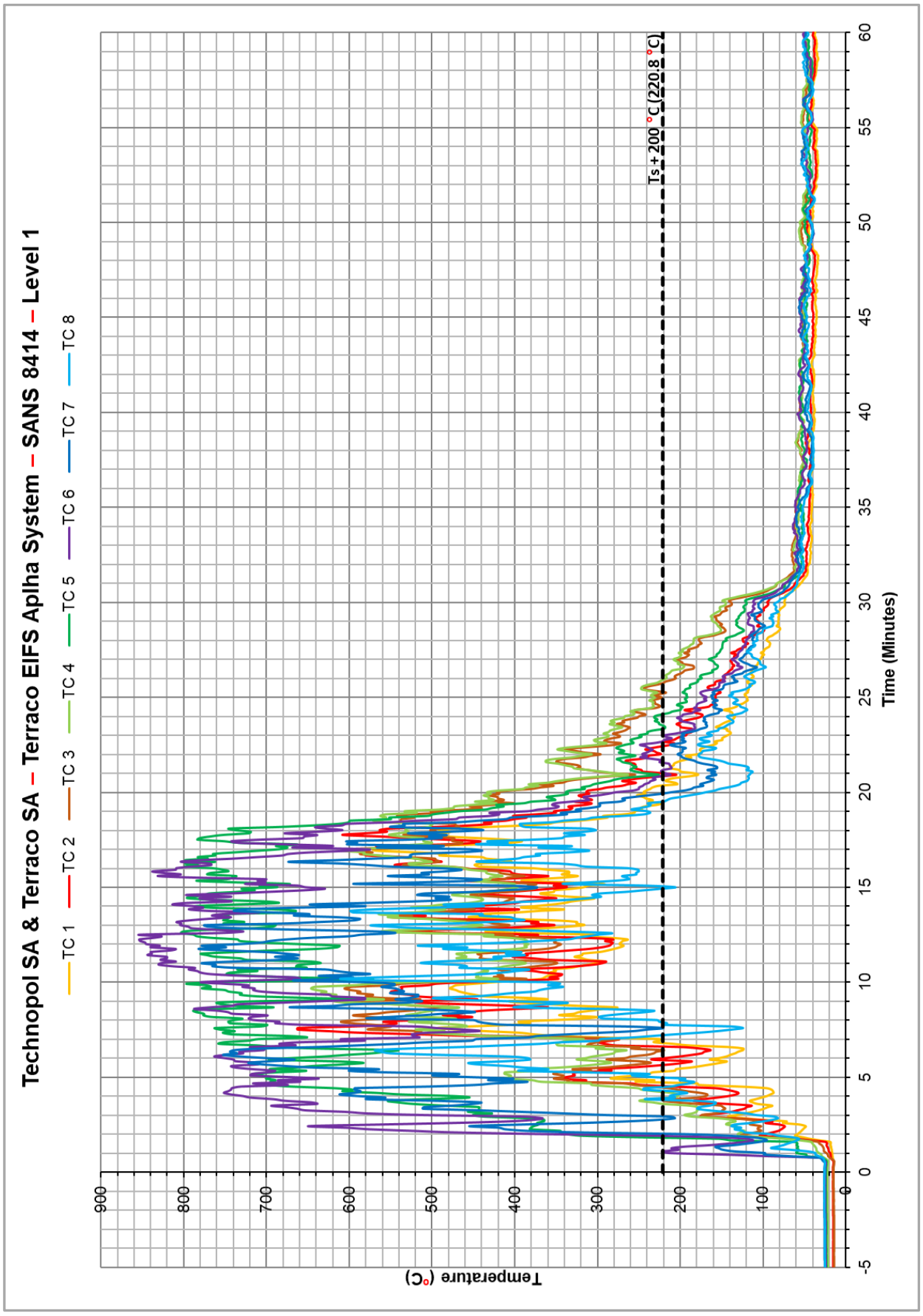

Figure 3.1: External temperatures recorded on Level 1

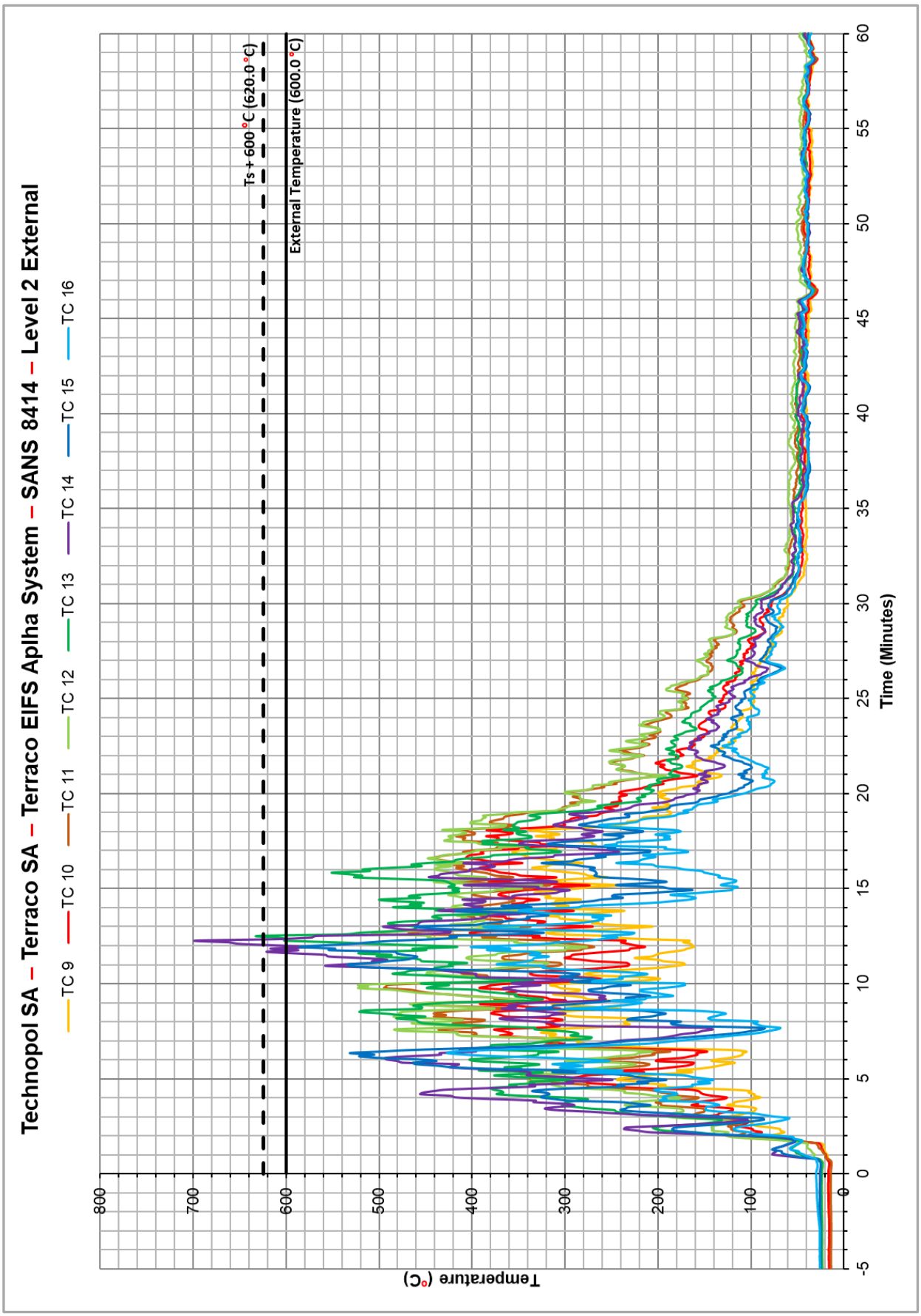

Figure 3.2: External temperatures recorded on Level 2

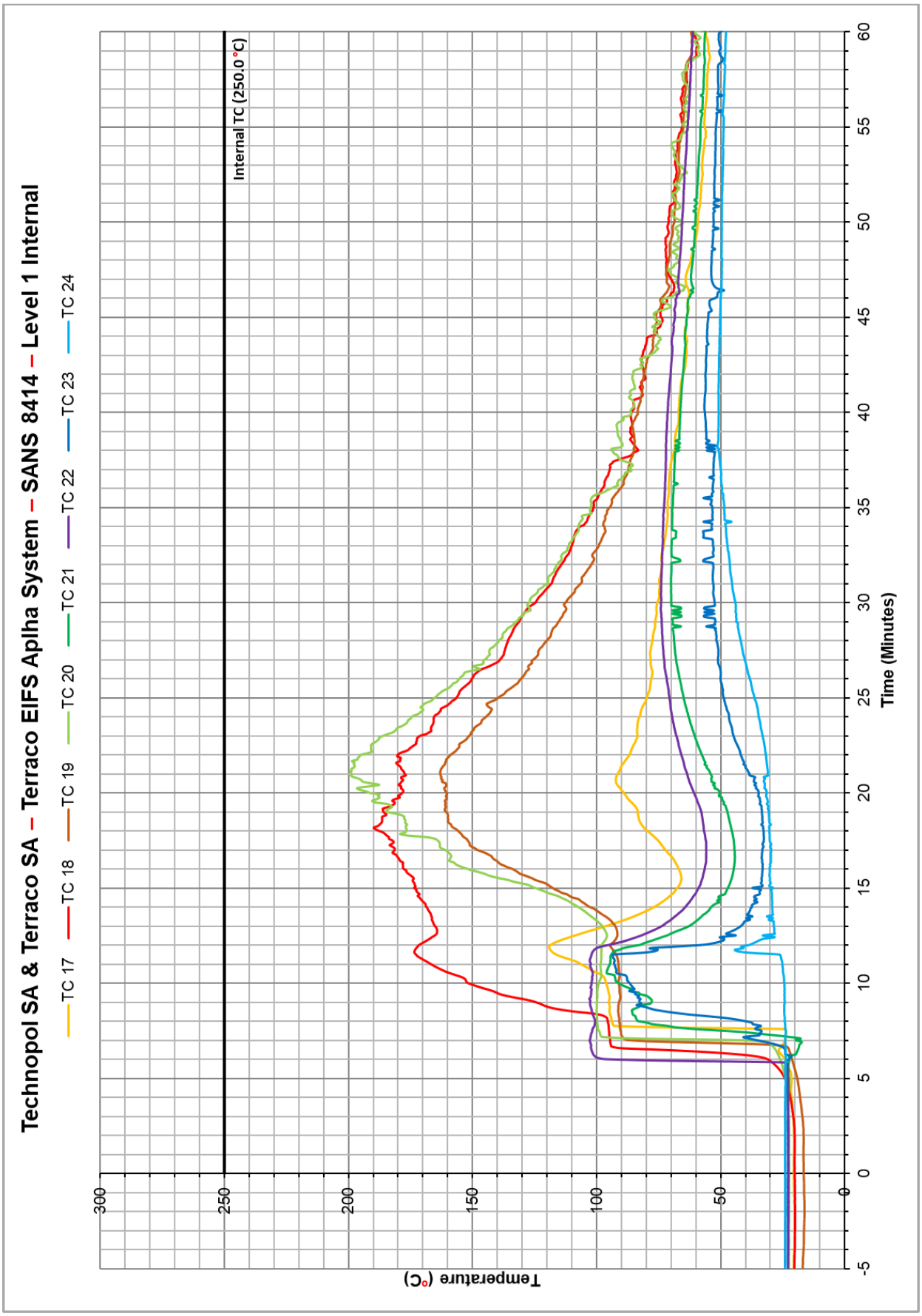

Figure 3.3: Internal temperatures recorded on Level 2 (center of polystyrene)

Figure 3.4: Test specimen prior to the test

Figure 3.5: Ignition of crib (Fire Source)

Figure 3.6: Flames extending up to Level 1

Figure 3.7: Dark discolouration and ignition on Main Wall

Figure 3.8: White discoloration and flames extending to Level 2

Figure 3.9: Flaming and discolouration on Wing Wall

Figure 3.10: Flame spread on Wing Wall

Figure 3.11: Surface flame spread beyond confines dimension (1.5 m)

Figure 3.12: Smoke release from Wing Wall's edges

Figure 3.13: Crib starting to collapse

Figure 3.14: Crib collapsed

Figure 3.15: All flaming out on specimen

Figure 3.16: Crib extinguished (30 minutes)

Figure 3.17: Visible cracks and fasteners in external coat

Figure 3.18: Specimen at conclusion of the test

4. POST DAMAGE INSPECTION (MECHANICAL PERFORMANCE)

Inspection was conducted the day after the test to determine the mechanical performance and heat damage to the system.

No debris dropped down and no signs of additional combustion/flaming were noted. It can therefore be concluded that no events took place after the test was concluded.

External Coat (coat layers and mesh)

The coat was discoloured as seen in Figure 3.18. No signs of any detachment of the coating were noticed.

Polystyrene (EPS)

The outer protective plaster coat was removed to inspect the EPS's condition. There was no sign of any EPS burning other than the normal stages of degradation (coagulation). Figure 4.1 shows the various coagulation patterns of the system. The adhesive used on the polystyrene was still visible and intact.

Fire Breaks (Mineral wool)

The horizontal firebreaks installed were still intact and sustained heat damage as well as limiting the vertical heat spread (coagulation) within the EPS layer.

Wall System (including the coat and mesh on the joints of the MgO boards)

The mesh slightly delaminated from the board. The MgO boards showed no sign of heat damage and most of the fasteners were intact. Figures 4.2 and 4.3 show the condition of the board layer. Based on the condition of the external board the remaining wall elements (frame and core insulation) was not inspected.

Figure 4.1: Specimen after removal of external coat

Figure 4.2: Condition of the board layer on the Wing Wall

Figure 4.3: Condition of the board layer between the fire breaks

5. DISCUSSION OF RESULTS

Results in terms of **BR 135**, **LPS 1852** and **AS 5113**:

- ***Temperature:*** Only one external thermocouple, TC 14, recorded a temperature over 600 °C continuously for less than 30 seconds at around 12 minutes. The internal thermocouples at Level 2 were well below 250 °C.

- ***Flame Spread:*** Surface flaming on the Main Wall was visible between 4 minutes and 5 minutes and was observed up to Level 1.

  Surface flaming on the Wing Wall was visible at approximately 7 minutes and the flaming gradually spread. Between 13 and 15 minutes, the flaming spread beyond the 1.5 m distance measured on the Wing Wall.

  However, these flames were caused by the volatile gas released from the polymer plaster coating or decomposed EPS when exposed to the radiation of the ignition source and cannot be considered as flame spread.

- ***Mechanical:*** No debris dropped down and all of the components of the system were intact (for more detail see **Section 4**).

Although the size (width) of the test specimen was too small to evaluated the effect of vertical fire breaks when compared to an actual building facade, it is recommended to implement such breaks (at least 5 m apart) in all external systems.

The same would also apply to every division, occupancy and tenancy separating elements within a building to avoid lateral spread beyond divisions and large-scale heat damage (coagulation) of the EPS beyond the fire exposure.

The implementation of fire breaks in cavities and insulating cores in wall systems are in line with the requirements contained in the National Building Regulations, **SANS 10400 – T**, Fire Safety.

6. CONCLUSION

The **Terraco EIFS Aplha System** was tested as an external insulation cladding system fixed to an external non-loadbearing fire resistant wall inside the external building line accordance with the **SANS 8414 – Part 2** test protocol.

Performance Standards	Temperature	Flame Spread	Mechanical
BR 135	**Pass**	**Pass**	**Pass***
LPS 1852	**Pass**	**Pass**	**Pass**
AS 5113	**Pass**	**Pass**	**Pass**

Note(s): *Performed well in accordance with **LPS 1852** and **AS 5113**.

Table 6.1: Results in accordance with the three Performance Criteria Standards

Notes:

- The system may only be installed in practice as tested. Should the client wish to install the system on a masonry wall, a **SANS 8414 – Part 1** test must be conducted.
- It is recommended to implement vertical breaks as discussed in **Section 5**
- The results of the fire test may be used to assess the potential fire hazard, but it should be recognized that a single test method will not provide enough information for a full assessment of all the hazards under fire conditions.
- Because of the difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy of the results.
- The test method (**SANS 8414**) does not cover the performance of glazed window openings or the detailing at such openings.
- The test method does not apply to curtain walling systems or systems that include glass panels.
- The vertical and horizontal fire divisions must conform to the requirements stated in the National Building Regulations, **SANS 10400 – T**.
- To be able to satisfy the building requirements (**SANS 10400 – T**), the inner wall of the cladding system must have the appropriate Fire Resistance Rating (**SANS 10177 – Part 2**)

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Compiled by: **E.M. Nel** Approved by: **J.S. Strydom**

ANNEXURE "A"

– Company Information –	FIRELAB
Company Name:	Technopol SA (Pty)Ltd
Company Registration Nr.:	1999/019612/07
Company VAT Nr.:	4320139613
Core Business Activities:	Manufacture & Supply of Expanded Polystyrene Insulation systems
Physical Address:	9 Wright road ext. Nuffield Springs 1560
Postal Address:	P.O. Box 2445 Springs 1560
Contact details	Hardus vd Westhuizen
Telephone number:	0113632780
Facsimile number:	0113632752
Cellphone number:	0745675555
Email address:	hardus@technopol.co.za
Name of Contact Person	Hardus vd Westhuizen
Technical:	
Financial:	Lammie de Beer

– Test information & Sample/Product Description –

Type of Test:	SANS 8414-2
Sample/Product Name:	Terraco EIFS Aplha System
Manufacturing Date:	TBA
Batch/Product Number:	TBA
Sample/Product Description: *(Short description of sample or product submitted for testing)*	Facade External Wall Insulation Cladding system, comprising of: Light Steel Frame (LSF) between slab-ends, cladded with 10mm thick MgO board. Externally fixed 50mm thickness Technopol (SA) LiteCel™ FRCel™ EPS 20kg/m³ density 1200x600mm Boards, stretching over the slab-end edges with 300mm wide Technopol 150D StoneWool firebreaks. Providing for 150mm 150D StoneWool around all openings in the wall, i.e., windows, doors, etc. Metal concrete anchors / dowel washers by Technopol used throughout, finally the façade installation is covered by a Terraco EIFS Aplha system layer of 5-8 mm thick.

– Company Information –	FIRELAB
Company Name:	Terraco South Africa
Company Trading Name:	Terraco South Africa
Company Registration Nr.:	**2015/296668/07**
Company VAT Nr.:	**4900271315**
Core Business Activities:	Suppliers to construction industry
Postal Address:	None
Physical Address:	Registered: 10 Dean Road, Rietvallei park Physical: 6 Naaf street, Randburg
Company contact number:	082 828 2887/ 0861837722
Direct Contact Details	
Technical (name):	Daniel du Plessis
Cell phone number:	0764531148
Email address:	dduplessis@terraco.co.za
Financial (name):	Margaux De Villiers
Cell phone number:	0828282887
Email address:	mdevilliers@terraco.co.za

– Test & Sample Information –	
Test Required:	
Sample/Product name:	
Intended Use:	
Sample/Product Description: *(Short description of sample or product submitted for testing, and type of material to be tested)*	

APRIL 2018

ANNEXURE "B"

Steel frame anchored and MgO boards fixed to the frame

Coat and mesh applied to the joints of boards

EPS and StoneWool applied to the MgO boards

StoneWool applied in the Combustion Chamber

Mesh applied to the EPS and StoneWool

Final coating

StoneWool and CavityBatt inserted in to the frame

Internal boards fixed to the frame and plaster on joints and fixings

NU-ARC® Environmental Technologies

NU-ARC (PTY) LIMITED
P.O. BOX 1776,
SAXONWOLD, 2132
TEL: 00 27 (0) 83 400 1455

SUPERBOARD®

FIRE RATED CONSTRUCTION BOARD - Technical Product Sheet

Superboard® is a high-performance, 100% recyclable, magnesium-based cement board, which can be manufactured to specifications for decorative, fire resistant, prefabricated, and structural applications. Superboard® complies with the JC 688 National Standard for Glass Fiber and Magnesium Cement Board, and far exceeds the specified minimum requirements set out in this Standard.

Superboard® has a non-combustible class A1 rating and has been tested in a variety of wall panel systems in accordance with SANS 10177 Part 2 at Firelab, achieving a fire resistance of 30 – 60 minutes.

Superboard® has attributes that are considered green by outside organisations*. Attributes that have been identified as environmentally friendly are listed below.

green - This product contains no asbestos.
green - This product contains no formaldehyde.
green - VOC conducted to ASTM D5116-10, the results are within the limits set for Green Building specifications.

Third party analyses verify that **Superboard®** does not contain significant quantities of substances that will cause corrosion or have a negative impact on durability**.

Superboard® is produced by mixing raw materials*** at a temperature <50°C, cold pressed and dried in a temperature/humidity-controlled curing chamber. The factories' manufacturing and production processes operate in accordance with the Manufacturer's Quality Management System: GB/T 19001-2016/ISO9001:2015 Certification.

CSU ISO9001 FIRELAB SGS

* Green Building Council South Africa and Ecospecifier Global GreenTag South Africa
** At time of report
*** Magnesium oxide and a concentrated solution of magnesium chloride are mixed to produce magnesium oxychloride (MOC).

NU-ARC® Environmental Technologies

SUPERBOARD®

Technical Data

10 – 12 mm
semi-exposed
single side board:

*A1 is the highest class rating for non-combustibility and is not combined with any additional class.

Reaction to Fire Classification	A1*	EN 13501-1:2007
Incombustibility	Class A	SANS 10177 Part 5:2012
Non-Flammable Temperature	1200˚C	

Water Resistance

Water content	< 6.0%	
Total Water Absorption	< 8.0%	
Softening Coefficient	> 0.85	
Moisture Movement:		
Length	< 0.08%	ASTM 1185-08:2012
Width	< 0.05%	30% - 90% RH
Freeze Thaw Resistance	Passed: no disintegration	After cycling the board range of -20ºC to +20ºC.
	Non-nutrient to mould, fungus, insects	ASTM G-21

Insulation

Average Density	nominal 1200 kg/m³ (or to specification)	
Sound Insulation Panel	42 dB > 45 dB (depending on insulation core)	
Thermal Conductivity at ± 20°C	0.138 W/mK	EN 12664:2001

Contact Nu-Arc® for coefficient of linear thermal expansion values.

PERFORMANCE properties represent typical average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations.

The typical values are given for guidance and can change depending on the test methods used.

Mechanical Strength

Flexural Strength: Longitudinal	11 to 12 N/mm²	EN 310:1993
Impact Strength	> 4 KJ/m²	
Screw Holding Strength	± 73 N/mm	

Dimensional Tolerances

Diagonal Tolerance	< 2 mm
Thickness	± 0.5 mm
Length and Width Tolerance	± 1 mm

- Chemically stable, produced from inorganic raw materials.
- The chemical reaction is irreversible.
- Chemical, surface alkalinity pH value of 9.5.
- Durability when decorated at least 15 years.

Chemical Analysis

SiO_2	10.90%	MnO	0.02%
Al_2O_3	4.38%	Na_2O	0.29%
CaO	1.80%	P_2O_5	0.11%
MgO	40.90%	TiO_2	0.16%
Fe_2O_3	0.80%	Cr_2O_3	<0.01%
K_2O	0.14%	V_2O_5	<0.01%
Cl-	1.70%		
LOI	39.98%		

NU-ARC® Environmental Technologies

SUPERBOARD®

BENEFITS

- The boards are resistant to the effects of moisture in humid or damp conditions and will not degrade, distort or permanently soften. The effects of moisture do not cause efflorescence. **Superboard®** will absorb less than 8 % of water, causing some loss of strength, but this is fully recovered upon drying.
- Biologically resistant to mould, fungus growth, and will not rot. The board is also resistant to rodents, termites and other insect life.
- Chemically resistant to concentrations of alkalis and to normal dilute chemicals and industrial cleaning agents. The board should be protected where the possibility of exposure to high concentrations of the above is likely.
- The board is not classified as a hazardous substance.

ENVIRONMENTAL FEATURES:

- Fireproof, causes no smoke development and does not produce toxic gas
- Chemically stable, produced from inorganic raw materials
- Free of asbestos, formaldehyde and ammonia
- Does not contribute to the 'greenhouse' effect
- Environmentally friendly, non-hazardous to health

No Environmental Problems:

- No special provisions are required for transportation and disposal of product in landfills.
- Boards do not damage the environment during manufacture or waste disposal.

SURFACE PROPERTIES:

Smooth surface on one side and mildly coarse on the other side. The course side is used for plastering, tiling or lamination with PVC sheeting to work with, fix and decorate.

Products are subject to change without prior notification. Nu-Arc® cannot accept responsibility for any (typesetting) errors and incomplete information.

Finished Product Specification:

Board Thickness Range (mm)	10, 12 or to specification
Thickness Tolerance (mm)	± 0.5 or to specification
Thickness (mm)	12 ± 0.5 across the butt ends, or to specification
Lengths (mm)	nominal, 2040, 2440, 2700, 3000, or to specification
Width (mm)	1220 ± 1 or to specification
Appearance	Chamfered, square or rebated edges Smooth and textured surfaces
Free of Cracks	
Nominal Weight (kg/m²)	± 12, 14.40 at 25°C, RH < 90%

Working and Processing Superboard®:

When cutting/abrading, maximum workspace dust levels must be observed. Avoid dust inhalation by using machinery with dust extraction and by wearing appropriate dust masks. Avoid contact with eyes and skin by wearing personal protection gear (goggles, mask and protective clothing). **MSDS available on request.**

APPLICATIONS:

Superboard® is used in a wide range of external and internal elements for the occupancies outlined in SANS 10400-A:2010. This benefits from being fire resistant, water resistant, insect and mould free, and provides superior insulation and

TYPICAL APPLICATIONS ARE

- Decorative wall, ceiling and door substrate
- Fire resistant external and internal walls
- Suspended and nail up ceilings
- Internal partitions and linings
- Backing board in wet areas
- Facers to fire rated doors
- Facers to sandwich panels
- Prefabricated buildings
- Ceramic tile substrate
- Floor covering

Nu-Arc® Environmental Technologies

SUPERBOARD®

SAFE HANDLING:

Boards must be lifted from the pallet by sliding sideways and carried upright on long edge.
Individual boards should be stacked and handled carefully to avoid damage.

Never carry face down.

STORAGE AND TRANSPORT:

If the product is wet, allow to dry before fixing.
Always ensure product is stored on level ground and out of a draught.

Never stack boards on edge or in upright position.

NAILING:

Can be manual or power nailed with a flat headed stainless steel nail.
Diameter should be 2.2 to 3.1 mm and length 3 to 3.5 mm the board thickness.
Power nailing tools should be set to 3 to 4 bars and adjusted to achieve required penetration.

SCREWING:

It is recommended to use TYPE 316 self-drilling countersunk screws for tight holding in Galvalume studs and rails for corrosion resistant fixings. Screw diameters should be from 3.5 to 4.2 and the length should be 2.5 to 3 times the board thickness. Fixings should be at 200 mm nominal centers.
The fixings must not be less than 15 mm from the fixing edge of the board and all edges should coincide with support structures. Thinner boards can be stapled with 16 gauge 6 mm Crown x 25 mm long rust proof staples.

DRILLING:

Use a low–high speed masonry drill to make holes in the board.

Do not use hammer action.

SUPPORT STRUCTURE:

All fasteners in fire rated panels must be spaced and fixed as detailed in the fire test certificate/report. As a guideline, for non-loadbearing fire rated systems, **Superboard®** fixed to timber or steel structures, should have supports spaced at 350-600 mm centres. In loadbearing fire rated systems, fixed to timber or steel framework, the supports should be spaced at 350-400 mm centres.

Nu-Arc® Environmental Technologies

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TERRACO

WEATHERCOAT 412

GENERAL PURPOSE CEMENTITIOUS ACRYLIC WATERPFOOF SLURRY

OVERVIEW

Weathercoat 412 is an economical, 2-component, permanent waterproofing system for concrete and masonry. It is ideal for use in areas which are dimensionally stable such as foundations, water tanks, retaining walls, etc. It is applied by brush or spray in a two to three coat application. Once covered Weathercoat 412 forms a tough durable waterproof coating ideally suited for areas of extreme climatic conditions.

PRODUCT GRADES/CODES

White	68512
Grey	68612

PROPERTIES

Weathercoat 412 is supplied as a two component product with the following properties:

- Easy to mix and apply
- Application by brush or spray
- Long pot life
- Excellent adhesion
- Seamless permanent coating
- Vapour permeable
- Tough durable coating
- No added water required

AREA OF USE

Weathercoat 412 is suitable for waterproofing concrete and masonry substrates in the following areas:

- Foundations
- Retaining walls
- Potable water tanks
- Planter boxes
- Irrigation canals
- Decorative ponds

PREPARATION OF SURFACE

Ensure that all dust, dirt and foreign matter are scraped and brushed away. Also ensure the surfaces are free from salts, oil, grease and ridges, and protect all adjacent surfaces not to be covered.
If repair area is dry at time of repair, moisten substrate before application of Weathercoat 412 .

APPLICATION & CLEANING OF TOOLS

Mix the components in the ratios as shown in the Technical Data and apply in 2 to 3 coats to achieve an overall thickness of 1.5-2.0mm with an overall material consumption of 2.9-3.8kg/m².
Add powder to resin and use a drill mixer to achieve a lump-free homogenous mix. Apply using brush or spray, leaving 3 hours between coats. Mixed Weathercoat 412 should be used within 1 hour.

Tools and equipment should be cleaned with water immediately after use.

HEALTH & SAFETY

Avoid prolonged contact with eyes and skin. For detailed information refer to relevant material safety data sheet.

PACKAGING & STORAGE

Weathercoat 412 is supplied in 5kg and 20kg combi-pack pails.

Store containers in a clean dry area protected from direct sunlight and extreme heat and cold. Unopened containers can be stored for 9 months. Use oldest material first.

For further details visit: www.terraco.com

V. 11.2013 - Issued by Terraco Technical Centre, Ireland

TERRACO

WEATHERCOAT 412

GENERAL PURPOSE CEMENTITIOUS ACRYLIC WATERPFOOF SLURRY

TECHNICAL DATA

Product	General purpose cementitious acrylic waterproof slurry.
Binders	Hydraulic (Weathercoat 412 Powder) and organic (Weathercoat 412 Resin).
Fillers	Crushed, precisely graded filler (Weathercoat 412 Powder).
Colour	Grey and natural white (mixed Weathercoat 412).
Application Conditions	5°C to 30°C
Mixing Ratio	15kg Powder : 5kg Resin
Specific Gravity	1.85-1.95 (mixed Weathercoat 412).
Pot Life	2 to 4 hours
Adhesive Strength	>1.0N/mm²
Material Consumption	2.9-3.8 kg/m²
Drying Time	3 hours per coat in normal conditions.
Packaging	20kg plastic pails (15kg powder/5kg resin) 5kg plastic pails (3.75kg powder/1.25kg resin)
Storage	9 months in original unopened containers.

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V. 11.2013 - Issued by Terraco Technical Centre, Ireland

TECHNICAL DATA SHEET

Terramesh Fibreglass Reinforcement Mesh – Standard

Specification:

Weight (approx.)	160 gms / m2
Mesh Dimension	4 x 4 mm
Roll Size	1 mtr x 50 mtrs
Tensile Strength along the warp	1500 N / 50 mm
Tensile Strength along the weft	1500 N / 50 mm

Application: External Insulation and Finishing System

Terramesh fibreglass reinforcement mesh – standard is an integral part of Terraco EIF System. It is used all over the area for standard impact resistance.

Product Description:

Terramesh – standard mesh is inter woven, open-weave, twisted strands treated for compatibility with Styrofix and Styrobond. It is alkali resistant and weighs approx. 160 gms / m2. The fiberglass mesh maintains tensile strength and flexibility for long term durability.

Important Instructions:

- Mesh joint overlap should be minimum 10cms.
- Mesh must be fixed flat and without folds.
- Mesh can be cut to size at odd shaped surfaces.
- Mesh can be bent to follow curved walls.
- Mesh should be kept clean and oil free at all times. Unwrap just before application.

Country of manufacture: P.R. China

This information is based on TERRACO'S present state of knowledge and is intended to provide general information on TERRACO's products and their method of use. The prospective user is recommended to determine the suitability of TERRACO'S suggestions and products before adopting them on a commercial scale.

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TERRACO

STYROBOND DP

EIFS BASECOAT/ADHESIVE

OVERVIEW

Styrobond DP is a basecoat and adhesive for the TERRACO EIFS Exterior insulating finishing system. It is easy to use by just adding water, improving on-site quality control. It shows excellent adhesion between substrate and expanded polystyrene boards when used as an adhesive. It also provides an excellent basecoat for embedding glass fibre mesh on top of which EIFS finishing coat is applied.

PRODUCT GRADES/CODES

Styrobond DP Grey	75410
Styrobond DP White	75410

PROPERTIES

- Water resistant
- Excellent adhesion
- Good flexural strength
- Good impact resistance
- Easy to use

AREA OF USE

Styrobond DP is used as an adhesive between mineral substrates and expanded polystyrene boards (EPS boards). Styrobond DP is used as an embedding mortar applied over EPS (expanded polystyrene), XPS (extruded polystyrene) and mineral wool panels to embed the glass fibre mesh prior to application of finish coats.

MIXING INSTRUCTIONS

Styrobond DP should be mixed on site with water in the ratio of approximately 4 parts Styrobond DP to 1 part water by weight, mixing with a high speed mixer for 3-5 minutes. Allow the material to stand for 5 minutes, remix and use. Mix only enough material for immediate use.

APPLICATION & CLEANING OF TOOLS

When used as an adhesive, apply to the EPS board and press into place using a level. Do not allow adhesive to skin before fixing in place.
When used as an embedding mortar, apply a coat of Styrobond DP mix to the EPS board and embed the mesh using a trowel. Apply another coat of mix to the surface to ensure full cover of the mesh and an overall thickness of approximately 3mm.

Clean tools and equipment with water after use.

HEALTH & SAFETY

Avoid prolonged contact with eyes and skin. For detailed information refer to relevant material safety data sheet.

PACKAGING & STORAGE

Styrobond DP is supplied in 25kg paper sacks.

Store containers in a clean dry area protected from direct sunlight and extreme heat and cold. Unopened containers can be stored for 6 months. Use oldest material first.

For further details visit: www.terraco.com

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TERRACO

STYROBOND DP

EIFS BASECOAT/ADHESIVE

TECHNICAL DATA

Product	EIFS Basecoat/Adhesive.
Composition	Mixture of cement minerals, organic binders and additives.
Appearance	Fine grey powder.
Mixing Ratio	By weight: 4:1 with water.
Density of Paste	1.7
Pot Life	3 hours at 25°C
Colours	Grey/white
Performance Tests	EOTA 004
Material Consumption	4-5kg/m²
Packaging	25kg paper sacks.
Storage	6 months in original unopened container.

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V. 02.2015 - Issued by Terraco Technical Centre, Ireland

TERRACO

TERRACOAT SIL

SILICONE BASED TEXTURED COATING

OVERVIEW

Terraco Sil is a range of ready-mixed, acrylic/silicone resin bound, textured coatings. It provides the unique combination of a quality architectural finish with outstanding economy through ease of application, a low material consumption rate and surface durability characterised by outstanding water repellence. Terracoat Sil adheres to most exterior and interior surfaces including plywood, chipboard, anti-rust primed steel, gypsum and dry wall. Terracoat Sil has been developed for use in areas of extreme climatic conditions such as the tropics, where high humidity is prevalent. Terracoat Sil has enhanced water vapour permeability, mould resistance and has excellent dirt pick-up resistance.

PRODUCT GRADES/CODES

Excel 1mm	61468
Excel 1.5mm	61437
Excel 2mm	61413
Excel 3mm	61472
Granule 0.8mm	61476
Granule 1mm	61423
Granule 1.5mm	61501
Granule 2mm	61482
Granule Filled 1.5mm	61924
Sahara 1mm	61653
Sahara 1.5mm	61545
Sahara 2mm	61616

PROPERTIES

Terracoat Sil is formulated from crushed and precisely graded fillers, a combination of acrylic and silicone resin binders and additives which gives it elastic properties, outstanding water repellence, water resistance and water vapour permeability, long life and durability against colour fading and pollution. Terracoat Sil is manufactured in a range of 50 colours. Grades are as follows:

Terracoat Sil Excel
Terracoat Sil Excel is a trowel applied texture giving an alpine scratch finish. Terracoat Sil Excel is specifically designed for application in E.I.F.S. systems as well as for use on conventional masonry substrates. Available in 3 grain sizes.

Terracoat Sil Granule
Terracoat Sil Granule is a trowel applied texture giving a granular finish with various grain sizes. Can also be applied by spray. Terracoat Sil Granule is specifically designed for application in EIFS systems as well as for use on conventional masonry substrates. Available in 2 grain sizes.

Terracoat Sil Sahara
Terracoat Sil Sahara is a trowel applied texture giving a filled granular finish. Available in 2 grain sizes.

AREA OF USE

Terracoat Sil is designed for use as the finish in the Terraco EIFS system. The coating performs equally well on interior surfaces of gypsum dry wall and chipboard and is widely used as a decorative ceiling and wall finish.

PREPARATION OF SURFACE

New surfaces: Ensure that all dust, dirt and foreign matter are scraped and brushed away. Also ensure the surfaces are free from salts, oil, grease and ridges. Protect all adjacent surfaces not to be covered. All cracks, chips, voids and damages should be repaired with an appropriate filler

Old surfaces: Before applying Terracoat Textured Coating to old surfaces, ensure the substrate is firm. First wash down the surface with a soda / water solution, rinse and allow to dry before repairing or applying the first coat.

PRIMING

Absorbent surfaces such as uncoated concrete and masonry should be primed with TERRACO Silprime. For previously painted surfaces P Primer should be used.

APPLICATION & CLEANING OF TOOLS

Trowel application is done using a steel trowel to lay on the material and a wetted plastic trowel is used to pattern the surface.

Clean tools and equipment with water after use.

HEALTH & SAFETY

Avoid prolonged contact with eyes and skin. For detailed information refer to relevant material safety data sheet.

PACKAGING & STORAGE

Terraco Sil is supplied in 25kg plastic pails.

Store containers in a clean dry area protected from direct sunlight and extreme heat and cold. Unopened containers can be stored for 12 months. Use oldest material first.

For further details visit: www.terraco.com

V. 10.2015 - Issued by Terraco Technical Centre, Ireland for Terraco UAE Ltd.

TERRACO

TERRACOAT SIL
SILICONE BASED TEXTURED COATING

TECHNICAL DATA

Product	Acrylic/silicone resin based textured coating.
Binder	Acrylic and silicone resins.
Thinning	Water if required.
Drying Time	3 - 4 hours.
Liquid Water Transmission Note (W24-Volume)	<0.15 kg/m^{2}h$^{0.5}$
Water Vapour Permeability (Sd-value)	<0.10m
Adhesion	>2.0 N/mm^2
Flame Spread	Class 0 ASTM E84-81H
Colours	50 standard colours.
Storage	12 months in original unopened containers.

Grade	Specific Gravity	Viscosity ('000 cps.)	Material consumption (Kg / m^2)	Application method	Pack sizes (Kg.)
Excel 1mm	1.70	35-45	1.5-2.0	Trowel	25
Excel 1.5mm	1.70	35-45	2.0-2.5	Trowel	25
Excel 2mm	1.70	35-45	2.5-3.0	Trowel	25
Excel 3mm	1.70	35-45	3.5-4.5	Trowel	25
Granule 0.8mm	1.65	35-45	2.0-2.5	Trowel	25
Granule 1mm	1.65	35-45	2.5-3.0	Trowel	25
Granule 1.5mm	1.65	35-45	3.0-3.5	Trowel	25
Granule 2mm	1.65	35-45	3.5-4.5	Trowel	25
Granule Filled 1.5mm	1.65	35-45	2.5-3.0	Trowel	25
Sahara 1mm	1.65	35-45	2.5-3.0	Trowel	25
Sahara 1.5mm	1.65	35-45	3.0-3.5	Trowel	25
Sahara 2mm	1.65	35-45	3.5-4.5	Trowel	25

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TERRACO

TERRACOAT SIL

SILICONE BASED TEXTURED COATING

TERRACO offers a comprehensive range of products and services for most concrete and finishing needs. Please contact the TERRACO Technical Service Department or your local TERRACO agent for further information, samples, demonstrations and instructor services. The information given in this leaflet is based upon laboratory research, as well as extensive field work and application. All products are sold subject to standard conditions of sale which are available on request. This information is based on TERRACO's present state of knowledge and is intended to provide general information on TERRACO's products and their methods of use. The prospective user is recommended to determine the suitability of TERRACO's suggestions and products before adopting them on a commercial scale.

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ISOVER SAINT-GOBAIN	**Cavitybatt** **Specification**

Cavitybatt Specification

Cavitybatt Insulation: (51mm / 63mm /100mm/102mm) of density 14kg/m³

- Performance criteria:
  K-value: 0.038 W/mK (ASTM C518)
  Combustibility: Non-combustible (SANS 10177 Part 5)
  Fire Spread index rating: Class A1, S1 and D0 (EN 13823)
  EUROCLASS A1-EN 13501-1
- Specification:
  Install non-combustible (51mm / 63mm / 100mm/102mm) Cavitybatt insulation of density 14kg/m³ (progressively as boarding proceeds) between the studs with the glasswool tissue facing the installer. Fit securely with closely butted joints, leaving no gaps.

To be read in conjunction with Glasswool handling Instructions in the Installation methodology.

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Cavitybatt & Cavitylite have been specially developed for use within steel frame structures, timber frame buildings and dry wall systems. These products are manufactured using high quality Glasswool and are glass tissue faced on one side for ease of handling and improved rigidity. Cavittybatt is manufactured in standard sized batts and Cavitylite come in standard sized rolls, manufactured to standard grid system sizes to reduce wastage.

ISOVER SAINT-GOBAIN

Cavitybatt & Cavitylite

DESCRIPTION

Cavitybatt & Cavitylite have been specially developed for use within steel frame structures, timber frame buildings and dry wall systems. These products are manufactured using high quality Glasswool and are glass tissue faced on one side for ease of handling and improved rigidity. Cavittybatt is manufactured in standard sized batts and Cavitylite come in standard sized rolls, manufactured to standard grid system sizes to reduce wastage.

QUALITY MANAGEMENT SYSTEM

Isover products are manufactured according to ISO 9001:2008.

ENVIRONMENTAL SUSTAINABILITY

Isover products are manufactured according to ISO 14001:2004.

Less material, less energy and less emissions

- Zero ozone depleting potential (ODP)
- Zero global warming potential (GWP)

FEATURES & BENEFITS

- Lifelong energy savings
- Exceptional acoustic properties
- Lightweight and easy to handle
- Maintenance free
- Long product life - will not readily age
- Self supporting - will not sag
- Compression packed - to reduce volume and optimise transport and storage
- High tear strength yet readily cut with a sharp blade.

FIRE PROPERTIES

- No Health risk
- Non-combustible – tested to SANS 10177-5
- SANS 428 fire classification – A/A1/1
- EN 13501 fire classification – A1

THERMAL PROPERTIES

Contributes to indoor comfort and lifelong energy savings by reducing heat loss/gain due to the inherent thermal insulation properties. A dry wall system correctly designed and insulated will offer the same or better thermal properties than a conventional brick and mortar construction.

ACOUSTIC PROPERTIES

Offers exceptional acoustic properties and enhances indoor environmental quality by absorption of noise. Isover insulation reduces sound transmission to and from a room or building.

A dry wall system correctly designed and insulated will offer the same or better acoustical properties than a conventional brick and mortar construction.

APPLICATIONS

- Steel frame buildings
- Timber frame structures
- Dry wall systems
- Designed for use in cavity walls but may effectively be used on top of ceilings, along the roofline, or within masonry wall cavities.

Cavitybatt & Cavitylite

DURABILITY

- Odourless, inert and fully compatible with all standard building materials and components
- Will not promote corrosion of steel, copper or aluminium
- Will not sustain vermin
- Will not breed or promote fungi, mould or bacteria
- Non-hygroscopic

HANDLING & STORAGE

Store product under cover and in dry conditions. Store flat. Handle with care, especially on the edges and corners, which can be damaged if subject to sharp or heavy impact. Do not apply excessive pressure, for example by standing or sitting on the product, as permanent damage may be caused.

PHYSICAL PROPERTIES

Rval (m2.K/W)	Thickness (mm)	Length (mm)	Width (mm)	k-value (W/m.K)	Quantity /Pack	Pack Size
Dry Wall Structure Batts						
1.34	51	1200	600	0.038	40	1210 x 610 x 460
1.66	63	1200	600	0.038	30	1210 x 610 x 460
2.68	102	1200	600	0.038	20	1210 x 610 x 460
Dry Wall Structure Cavitylite						
1.34	51	6000	600*	0.038	2	1220 x 339
1.66	63	5400	600*	0.038	2	1220 x 376
2.68	102	5400	600*	0.038	2	1220 x 479

***Rolls supplied 1200mm wide slit into 2 x 600mm sections.**

TOOLS NEEDED FOR INSTALLATION

Batts and rolls are designed around the frame/stud system for ease of installation, therefore minimal tools are required. A sharp knife/blade will come in handy for off-cuts and for slitting batts to fit over piping and conduits.

INSTALLATION INSTRUCTIONS

1. Open packaging allowing space for the initial immediate recovery of compressed product.
2. Push individual batts or rolls firmly into the cavity space with glass tissue facing on the exposed side.
3. Use a sharp knife to slit the product to encapsulate piping/conduits.
4. Use a sharp knife to cut around any plug points.
5. Make sure that there are no gaps, which will cause thermal and noise leakage.

* For more information please reference the Cavitybatt & Cavitylite Installation guides on isover.co.za

ARCHITECTURAL SPECIFICATION

Install (51/63/102)mm thick self-supporting noncombustible lightweight, glass tissue faced Glasswool "Cavitybatt insulation", offering a thermal resistance value of (1.34/1.66/2.68)m^2.K/W for heat and/ or acoustic control. Install strictly in accordance to manufacturer's detail and specification.

SAINT-GOBAIN

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EXAMPLE OF STANDARD SKU NAMING CONVENTION

SKU #	Material description	Facing 1/ Facing 2	Length X Width X Thickness	Density	Detail of facing/ features	Status*
14597	CAVITYBATT		1200X600X51	-14		
21353	CAVITYLITE		6000X1200X51	-14	SLIT 2X600	

*MTO – Make to Order / Blank – Stock item

Material and Safety Data Sheet

siniat

SINIAT FIRE CHECK PLASTERBOARDS

Composition:

General Composition of Siniat Fire Check Plasterboard:

- Calcium sulphate dehydrates encased within paper liners. Additional nominal amounts of additives, including glass fibres to improve fire resistance of the boards.

Hazards Identification:

- These products are defined as non-hazardous. Sawing and sanding of plasterboard will generate gypsum dust, which may irritate skin, eyes and the respiratory system.

First Aid Measures:

Inhalation: Remove person to fresh air.
Skin Contact: Rinse using clean water and then wash using soap and water.
Eye Contact: Wash with clean water and seek medical advice if irritation occurs.
Ingestion: Wash mouth out and drink plenty of water.
Please note:
Should any symptoms persist, seek medical assistance.

Disposal Considerations:

To dispose use an authorized landfill site in accordance with current Waste Management Licensing Regulations.

Fire Fighting Measures:

Siniat Fire Check Plasterboard has limited combustibility, however, paper facings and packaging may burn. All standard fire extinguishers are suitable, using normal firefighting procedures.

Accidental Release Measures:

To control dust formation vacuum or sweep up and transfer to a suitable container. Prevent these products from contaminating drains, watercourses, ground or soil.

MARLEY Building Systems — an etex company

Material and Safety Data Sheet

siniat

Handling and Storage:
When manually handling plasterboards, correct manual handling technique is to be considered to limit risk. Siniat Fire Check Plasterboard is supplied on a bearer support system. Packs should be moved using a forklift 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.

Siniat Fire Check Plasterboards should be stored in flat, dry conditions; the bearers should not exceed 450mm maximum centers.

Siniat Fire Check Plasterboard is not a suitable product to be used as a platform or deck as it will not support body weight and therefore it is important that the installers use an independent support mechanism.

Exposure Controls / Personal Protection:

Occupational Exposure Limits: Total Inhalation Total Respirable

Gypsum	10mg/m^3	5mg/m^3

Respiratory:	Area should have adequate ventilation and dust extraction; recommended dust masks must be worn.
Eyes:	Recommended goggles must be worn.
Skin:	Wear overalls and suitable clothing to avoid repeated skin contact.
Hands:	Wear recommended gloves.

Physical and Chemical Properties:

Appearance:	Paper faced flat sheets that are available in a range of thicknesses, widths and lengths, with edge profiles being either square or taper edged. Paper colour of the Face Liner is pink for Siniat Fire Check Boards.
Stability and Reactivity:	Stable and non reactive when used with other building materials.
Toxicological Effects:	No known toxicological effects.
Ecological Information:	Plasterboard is a stable product with no known adverse effects.

MARLEY Building Systems — an etex company

DATA SHEET

casofour

Handskim Multipurpose Plaster
RED

CASOFOUR HANDSKIM MULTIPURPOSE PLASTER : RED

Casofour Handskim Multipurpose Plaster is locally manufactured to high quality standards to ensure that all interior plaster skim requirements are met. Made from natural gypsum and nominal amounts of additives, this multipurpose plaster creates a smooth and uniform surface with ease of mixing and application.

PHYSICAL PROPERTIES:

Appearance:	Fine white powder with particles, odourless
Packaging:	40Kg Bags
Coverage per 40kg:	Approximately 25m^2 per bag at a 3mm thickness
Water / Plaster Ratio:	5.5 – 6.2lt. clean water to 10kg Handskim Plaster
Workability:	Approximately 40 minutes (**Coastal**: 55 min)
Final setting time:	Approximately 70 minutes (**Coastal**: 90 min)
Composition:	Calcium Sulphate Hemihydrate, silica's, accelerant and retarder
Combustibility:	Non Combustible
Approximate PH:	>11
Application Temperature:	Between 5°C and 40°C
Shelf Life:	3 Months – keep dry and covered

HEALTH AND SAFETY INFORMATION:
Casofour Handskim Plaster is classified as non-hazardous.

Health Effects and First Aid Measures:

- If Swallowed:
  Although unlikely under normal conditions of use, ingestion of this product may be harmful and may lead to abdominal discomfort. Wash mouth out with clean water and drink copious amounts of water, seek medical advice.
- Eye Contact:
  May result in eye irritation, itching, eye watering and inflammation. Flush eyes with plenty of water, seek medical advice if symptoms persist.
- Skin Contact:
  Exposure over a long period may cause skin dryness and irritation. Wash skin with a mild soap and clean water, apply a scent free skin lotion.
- Inhalation:
  Excessive inhalation of this product may result in respiratory irritation including coughing and sneezing. Seek fresh air should inhalation of this product occur. Seek medical attention if symptoms persist.

No long term health effects have been reported.

CASOFOUR (Pty) Ltd
Reg: 2017/265038/07
Vat No: 4400284073

5 Vereening Road, Alrode, Alberton.
Directors: F Nel, H Scheffer

DATA SHEET

casofour

Handskim Multipurpose Plaster
RED

Recommended Precautions:

- Avoid generating dust in poorly ventilated areas
- Use a respirator or dust mask if excessive dust is generated
- Safety goggles are to be worn to protect the eyes from dust irritation
- Should the product cause skin irritation, wear suitable gloves
- Particular precaution should be taken when product is to be sanded

Disposal Considerations:

Use an authorized landfill site in accordance with current Waste Management Licensing Regulations for disposal.

Accidental Release Measures:

Vacuum or sweep up excess compound and transfer to a suitable container to control dust formation and to prevent these products from contaminating drains, watercourses, ground or soil. Do not hose into drains as blockages may occur.

Handling and Storage:

Care should be taken when lifting single bags of jointing plaster by hand to ensure that back injuries do not occur. Pallets of handskim plaster are to be moved by mechanical handling equipment only.

Casofour Handskim Plaster is to be stored in a dry and protected area. Bags of plaster are to be stored off of the ground on suitable supports or pallets. Moisture is to be avoided. Open bags that still contain product are to be sealed tightly to avoid dust spreading and to protect the product.

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HANDSKIM APPLICATION INSTRUCTIONS RED

casofour

CASOFOUR HANDSKIM MULTIPURPOSE PLASTER RED

The following guidelines are to assist plasterers in achieving the most effective application, finish and productivity from CASOFOUR MULTIPURPOSE HANDSKIM RED.

PHYSICAL PROPERTIES:

Appearance:	Fine white powder with particles, odourless
Packaging:	40Kg Bags
Coverage per 40kg:	Approximately 25m^2 per bag at a 3mm thickness
Water / Plaster Ratio:	5.5 – 6.2lt. clean water to 10kg Handskim Plaster
Workability:	Approximately 40 minutes (**Coastal**: 55 min)
Final setting time:	Approximately 70 minutes (**Coastal**: 90 min)
Composition:	Calcium Sulphate Hemihydrate, silica's, accelerant and retarder
Combustibility:	Non Combustible
Approximate PH:	>11
Application Temperature:	Between 5°C and 40°C
Shelf Life:	3 Months – keep dry and covered

APPLICATION INSTRUCTIONS:

1. Use approximately a third of a 20-25 litre bucket of clean water.
2. Slowly add HANDSKIM PLASTER to the water while continuously mixing until a firm consistency is achieved. The ratio should be 5.5 to 6.2 Litres of clean water to 10kg of HANDSKIM PLASTER – DEPENDING ON PREFERED CONSISTENCY.
3. Apply the mixed plaster to the surface at a thickness of ±3mm with a trowel.
4. At approximately 50 minutes after application, use a block brush to splash a small amount of water onto the plastered surface and float with a suitable floating tool. At this point the appearance of the plaster will change from a gloss to a matt finish. Upon touch there may be some residue on fingers compared to a traditional touch dry evaluation.
5. Floating will only agitate the outer 1mm of applied plaster, bringing the fine powder material (referred to as the "fat") to the surface.
6. Polish the surface by smoothing / removing the excess fine material or "fat" from the surface.

Continue finishing / polishing the surface as per standard specification using water to achieve a glass-like superior surface finish.

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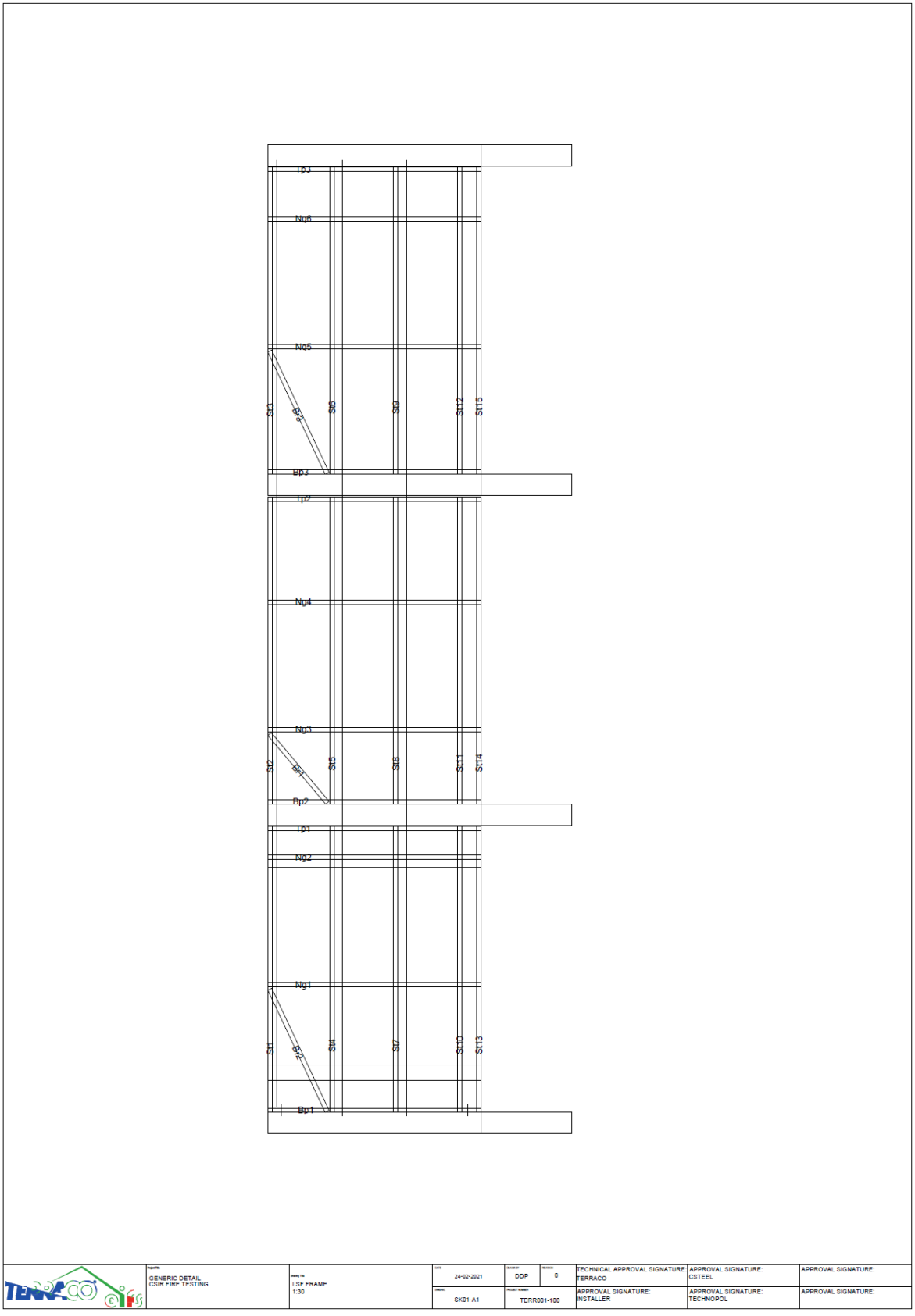
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Ng6
Ng5
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St6
St9
St12
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Bp3
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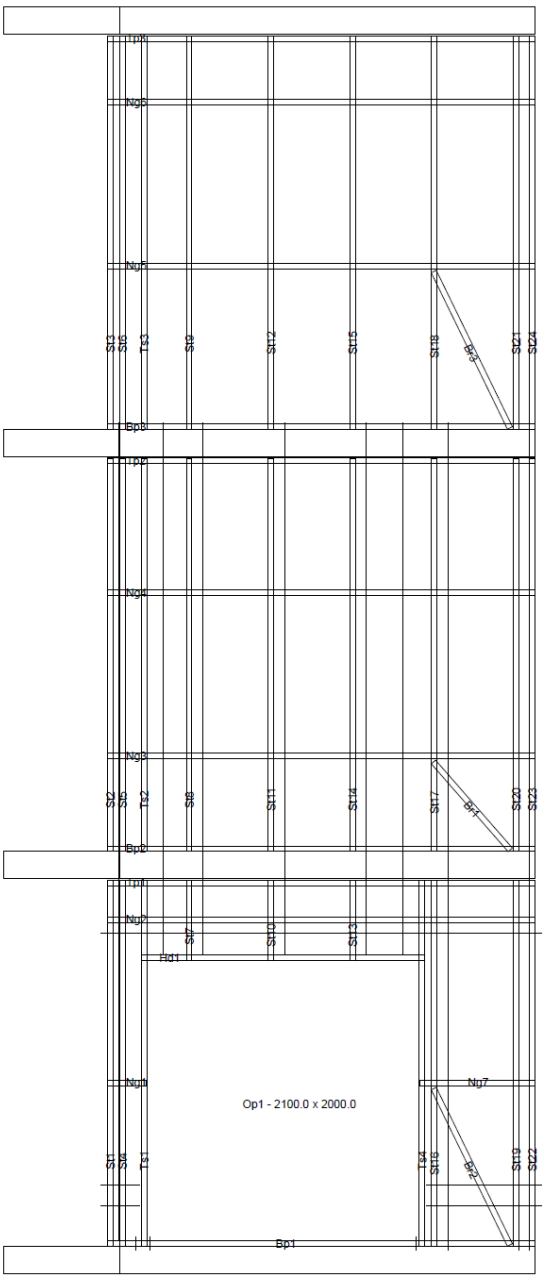
St5
St8
St11
St14
Bp2
Tp1
Ng2
Ng1
St1
St4
St7
St10
St13
Bp1
GENERIC DETAIL
CGIR FIRE TESTING
LSF FRAME
1:30
24-02-2021
DDP
0
SK01-A1
TERR001-100
TECHNICAL APPROVAL SIGNATURE:
TERRACO
APPROVAL SIGNATURE:
CSTEEL
APPROVAL SIGNATURE:
APPROVAL SIGNATURE:
INSTALLER
APPROVAL SIGNATURE:
TECHNOPOL
APPROVAL SIGNATURE:



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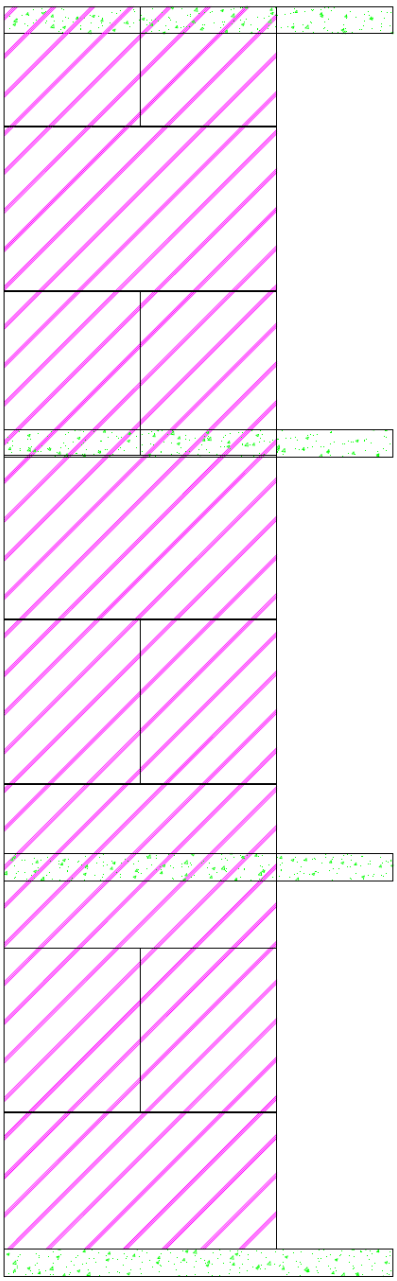

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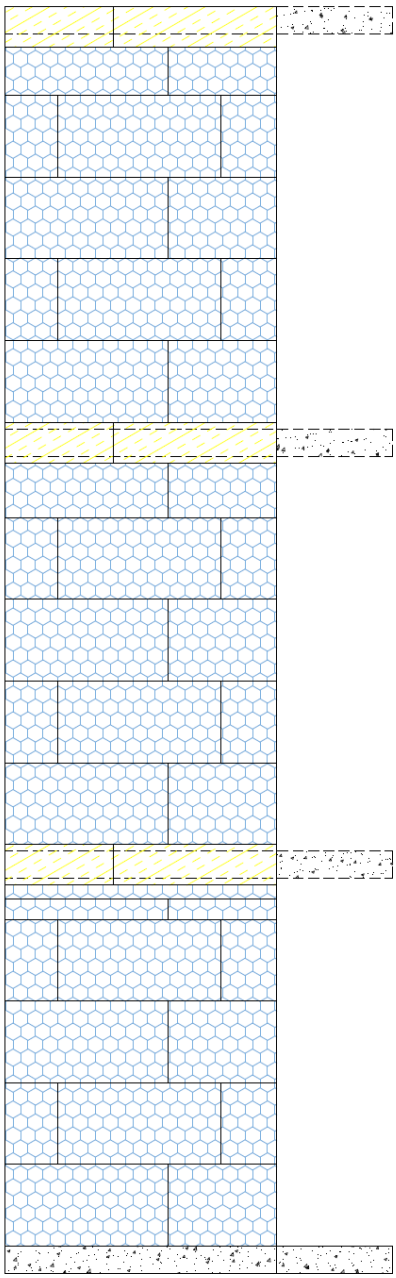

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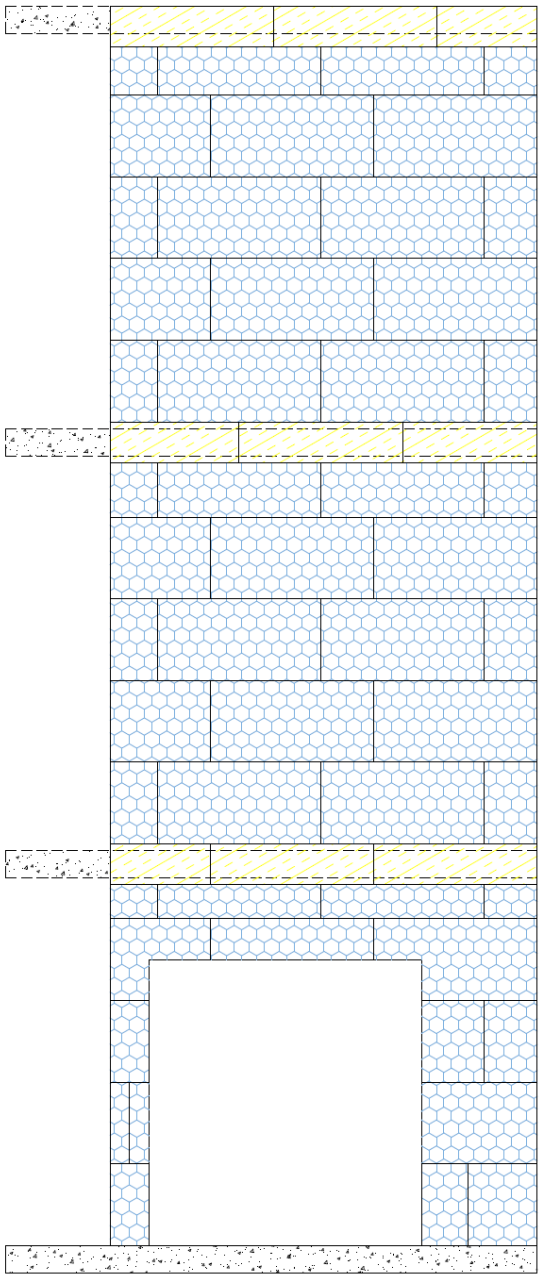

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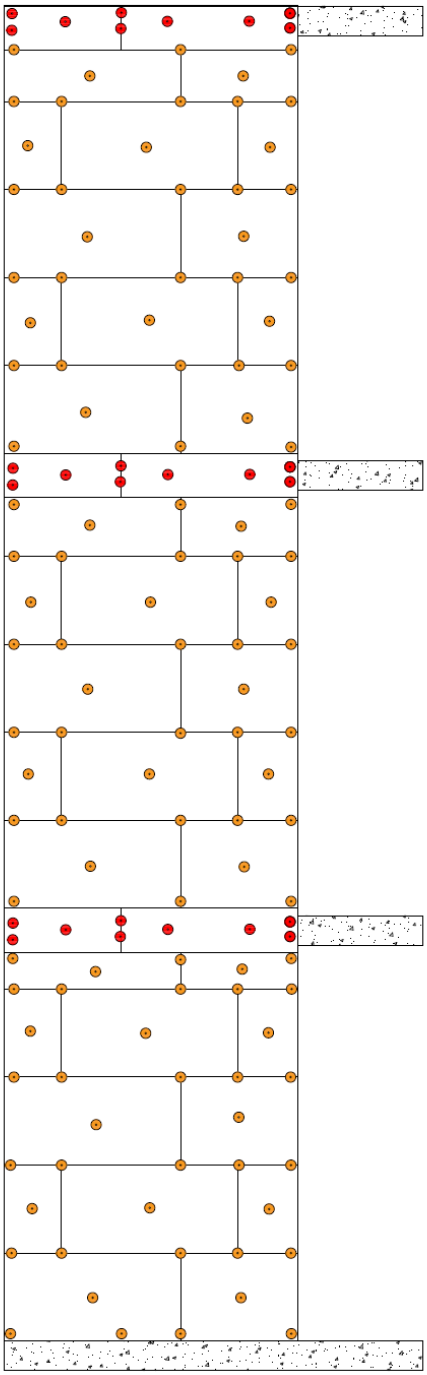

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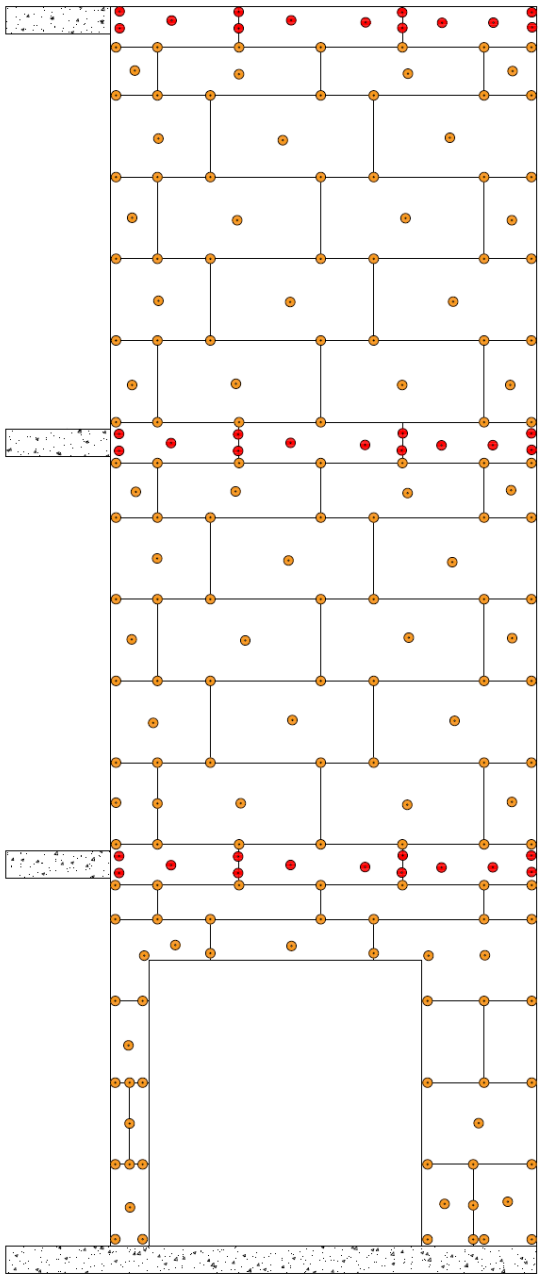

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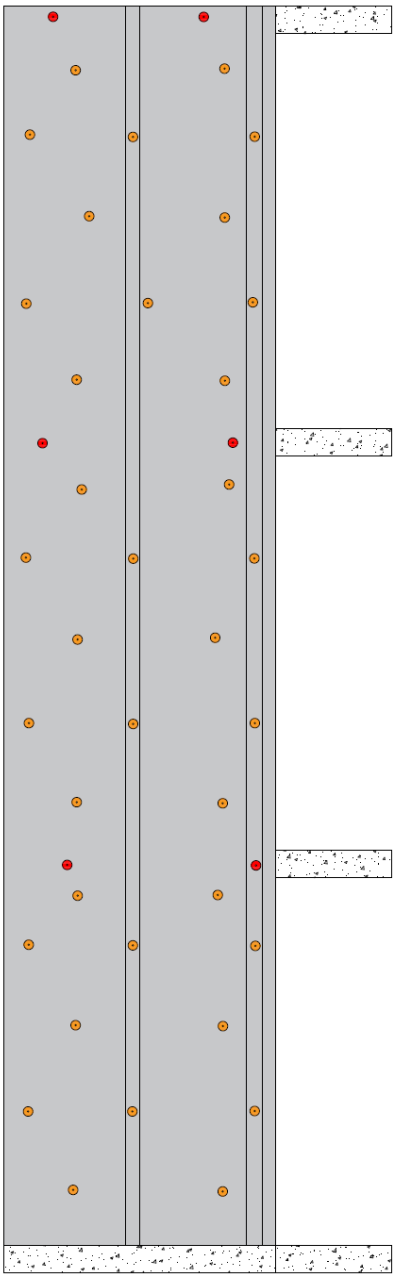

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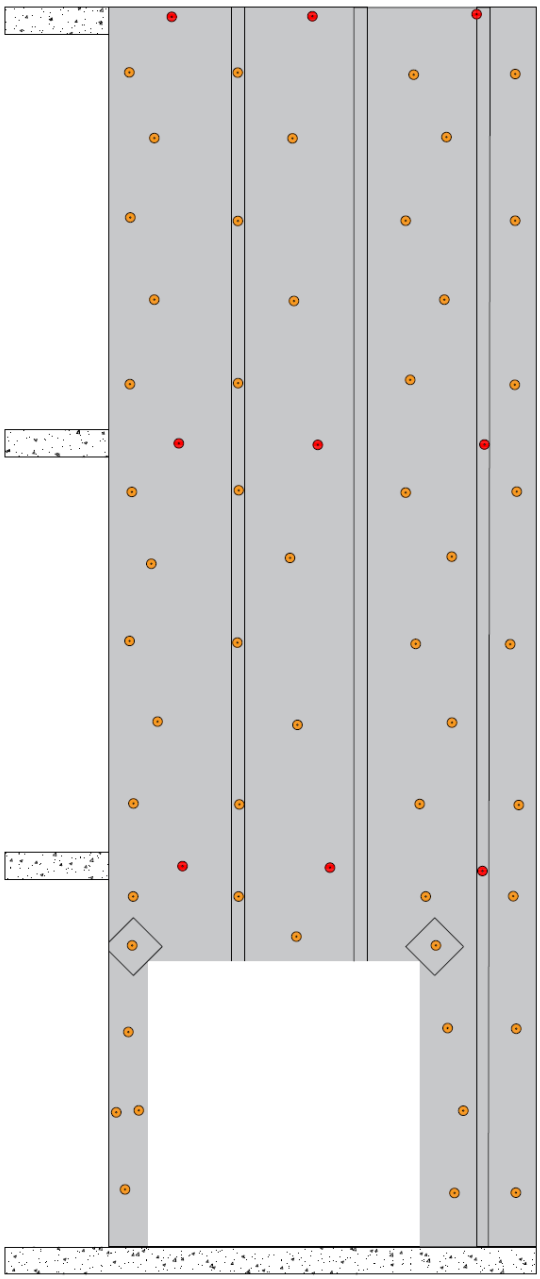

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			SK01-E2	TERR001-100		APPROVAL SIGNATURE: INSTALLER	APPROVAL SIGNATURE: TECHNOPOL	APPROVAL SIGNATURE: