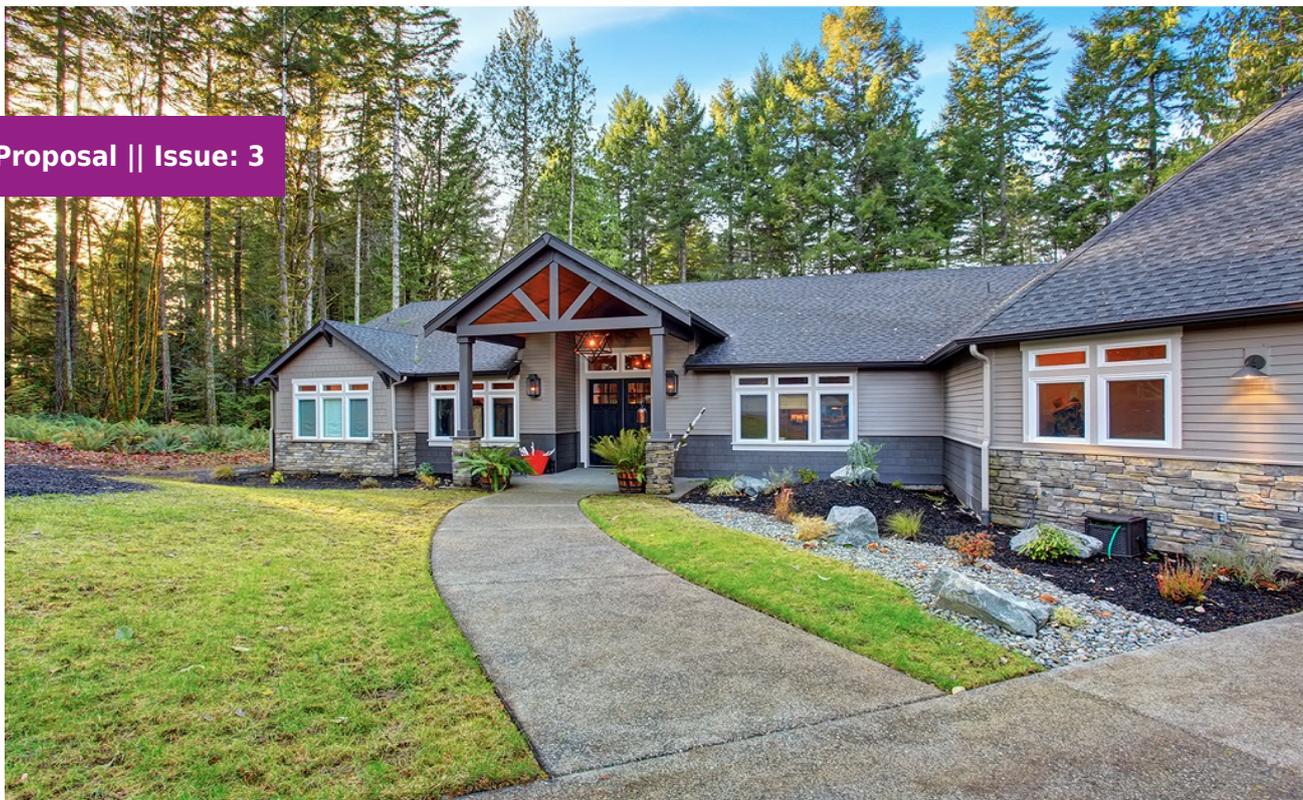


Proposal || Issue: 3



## Siniat Proposal

### NCC Class 9c - Timber Frame Single Storey Aged Care Building

NSW 2036

#### Partition and Ceiling Information

Issued By	Date	Comments
Siniat Technical Services	October 4, 2021	Siniat standard wall and ceiling systems recommended for Class 9c timber frame single storey aged care building to meet the deemed-to-satisfy provisions of the NCC.
Reviewed By		
Approved By		

- This document is a proposal only and is subject to the project/builder's approval.
- It is the responsibility of project certifier to determine if the specified products and performance properties including FRL, RISF, Rw, Rw + Ctr, Lnw and Total R-Value, etc. ratings are suitable for the intended applications.
- For dimensions and performance properties of systems in this proposal that use products not manufactured or supplied by Etex Australia and branded Siniat, refer to the relevant product manufacturer.
- In wet areas, replace Mastashield with Watershield, Soundshield with Trurock, and Fireshield with Trurock or Multishield of same thickness, and replace 10mm Opal or 10mm Soundshield with 13mm Watershield.
- For enhanced impact resistance, replace any plasterboard with Trurock of same thickness.
- For framing design of internal steel walls and ceilings, refer to the framing tables in the Blueprint. For framing design of external steel walls and ceilings, please contact Siniat Engineering Services.

# Contents

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SECTION 2 SYSTEM SUMMARY

SECTION 3 SYSTEM DETAILS

## Warranty

Siniat products are guaranteed by a 10 Year Warranty.

Visit <https://siniat.com.au> for details.

## Disclaimer

Products manufactured and systems designed by Etex Australia Pty Ltd and branded Siniat, are produced in accordance with the Building Code of Australia and relevant Australian Standards. Information in this document is to be used as a guide only and is subject to project approval as many aspects of construction are not comprehensively covered. It is also the responsibility of the project to determine if our products and systems are suitable for the intended application and they meet the relevant building code and project requirements. Etex Australia Pty Ltd will not be held responsible for any claims resulting from the installation of its products or other associated products not in accordance with the recommendations of the manufacturer's technical literature or relevant Australian Standards, or for situations not covered by our certification reports

Siniat technical information is regularly updated. To ensure this document is current with the latest information, visit [siniat.com.au](https://siniat.com.au) or contact Siniat Customer Service Centre on 1300 724 505

## General Notes

Siniat has attempted to match the system properties provided in this document to that published in the latest technical literature. Should there be any discrepancies, please inform Siniat Technical Services.

The total weight of a system provided in this document is an estimate based on available product data, and does not include the weight of the structural members such as columns and beams, floor/roof joists, etc. and finishes such as tiling, roofing, etc.

The Insulation Pathway Total R-Value of a system provided in this document is an estimate based on sum of the thermal resistances (R-Values) of the individual component layers in a composite element including any building material, insulating material, airspace and associated surface resistances. It is calculated along the insulation pathway only without taking into account the thermal bridging effects of framing components and is only valid for summer heat flow (mean temperature of 23°C). Only the NCC Compliant Total R-Value, if provided, complies to the Section J of Building Code of Australia, NCC 2019 Volume One.

# Section 1

## System List



System Reference	System Properties
It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL, Rw, Rw + Ctr, etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.	
<b>External Wall NCC-C9c-LB-F1R1</b> (External timber wall less than 1.5 m from fire-source feature. This wall meets NCC Volume One Section J R1.4 requirement.)	Fire Protection : <b>Rated from outside only</b> ; FRL From Outside Only : <b>90/90/90</b> ; Airborne Rw : <b>50</b> ; Airborne Rw + Ctr : <b>42</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>2.61</b>
<b>External Wall NCC-c9c-LB-F1R2</b> (External timber wall less than 1.5 m from fire-source feature. This wall meets NCC Volume One Section J R2.8 requirement.)	Fire Protection : <b>Rated from outside only</b> ; FRL From Outside Only : <b>90/90/90</b> ; Airborne Rw : <b>50</b> ; Airborne Rw + Ctr : <b>42</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>3.79</b>
<b>External Wall NCC-C9c-LB-F1R3</b> (External timber wall less than 1.5 m from fire-source feature. This wall meets NCC Volume One Section J R3.3 requirement.)	Fire Protection : <b>Rated from outside only</b> ; FRL From Outside Only : <b>90/90/90</b> ; Airborne Rw : <b>50</b> ; Airborne Rw + Ctr : <b>42</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>4.61</b>
<b>External Wall NCC-C9c-LB-F1R4</b> (External timber wall less than 1.5 m from fire-source feature. This wall meets NCC Volume One Section J R3.8 requirement.)	Fire Protection : <b>Rated from outside only</b> ; FRL with contribution of internal wall lining : <b>90/90/90</b> ; FRL without contribution of internal wall lining : <b>60/60/60</b> ; FRL3 : <b>90/90/90</b> ; Airborne Rw : <b>50</b> ; Airborne Rw + Ctr : <b>42</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>5.090</b>
<b>External Wall NCC-C9c-LB-R1</b> (External brick veneer timber stud wall. This wall meets NCC Volume One Section J R1.4 requirement.)	Fire Protection : <b>Rated from outside only</b> ; FRL : <b>Masonry FRL</b> ; Airborne Rw : <b>57</b> ; Airborne Rw + Ctr : <b>53</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>2.5</b>
<b>External Wall NCC-C9c-LB-R2</b> (External brick veneer timber stud wall. This wall meets NCC Volume One Section J R2.8 requirement.)	Fire Protection : <b>Rated from outside only</b> ; FRL : <b>Masonry FRL</b> ; Airborne Rw : <b>57</b> ; Airborne Rw + Ctr : <b>54</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>3.2</b>
<b>External Wall NCC-C9c-LB-R3</b> (External brick veneer timber stud wall. This wall meets NCC Volume One Section J R3.3 requirement.)	Airborne Rw : <b>57</b> ; Airborne Rw + Ctr : <b>54</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>4.5</b>
<b>External Wall NCC-C9c-LB-R4</b> (External brick veneer timber stud wall. This wall meets NCC Volume One Section J R3.8 requirement.)	Fire Protection : <b>Rated from outside only</b> ; FRL : <b>Masonry FRL</b> ; Airborne Rw : <b>57</b> ; Airborne Rw + Ctr : <b>54</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>4.5</b>
<b>Separating Wall NCC-C9c-LB-A1</b> (Separating wall between adjoining SOUs)	Airborne Rw : <b>45</b> ; Airborne Rw + Ctr : <b>38</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>2.34</b>
<b>Separating Wall NCC-C9c-LB-A2</b> (Separating wall between SOU and kitchen or laundry)	Airborne Rw : <b>47</b> ; Airborne Rw + Ctr : <b>36</b> ; Impact Sound Resistant : <b>Yes</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>2.31</b>
<b>Separating Wall NCC-C9c-LB-A1-2</b> (Separating wall between SOU and bathroom or sanitary compartment)	Airborne Rw : <b>45</b> ; Airborne Rw + Ctr : <b>38</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>2.35</b>
<b>Separating Wall NCC-C9c-LB-F1A1</b> (Separating wall between SOU and plant or utilities room)	Fire Protection : <b>Rated from both sides</b> ; Non-Load Bearing FRL : <b>-/120/120</b> ; Load Bearing FRL : <b>120/120/120</b> ; Airborne Rw : <b>48</b> ; Airborne Rw + Ctr : <b>44</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>2.54</b>
<b>Smoke Wall NCC-C9c-LB-S</b> (Smoke proof wall separating SOU from ancillary use area of high potential fire hazard or dividing building into floor areas or not more than 500 square meters)	Airborne Rw : <b>35</b> ; Airborne Rw + Ctr : <b>27</b> ; Impact Sound Resistant : <b>No</b> ; Insulation Pathway Total R-Value (m2.K/W) : <b>0.31</b>
<b>Waste Pipe Ceiling NCC-C9c-A1</b> (Wall or ceiling separating SOU from soil and waste pipes with acoustic lagging in a habitable room other than kitchen)	Airborne Rw : <b>48</b> ; Airborne Rw + Ctr : <b>40</b>

System Reference	System Properties
<p>It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL, Rw, Rw + Ctr, etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.</p>	
<p><b>Waste Pipe Ceiling NCC-C9c-A2</b> (Wall or ceiling separating SOU from soil and waste pipes without acoustic lagging in a non-habitable room or kitchen)</p>	<p>Airborne Rw : <b>29</b>; Airborne Rw + Ctr : <b>25</b></p>



## Section 2

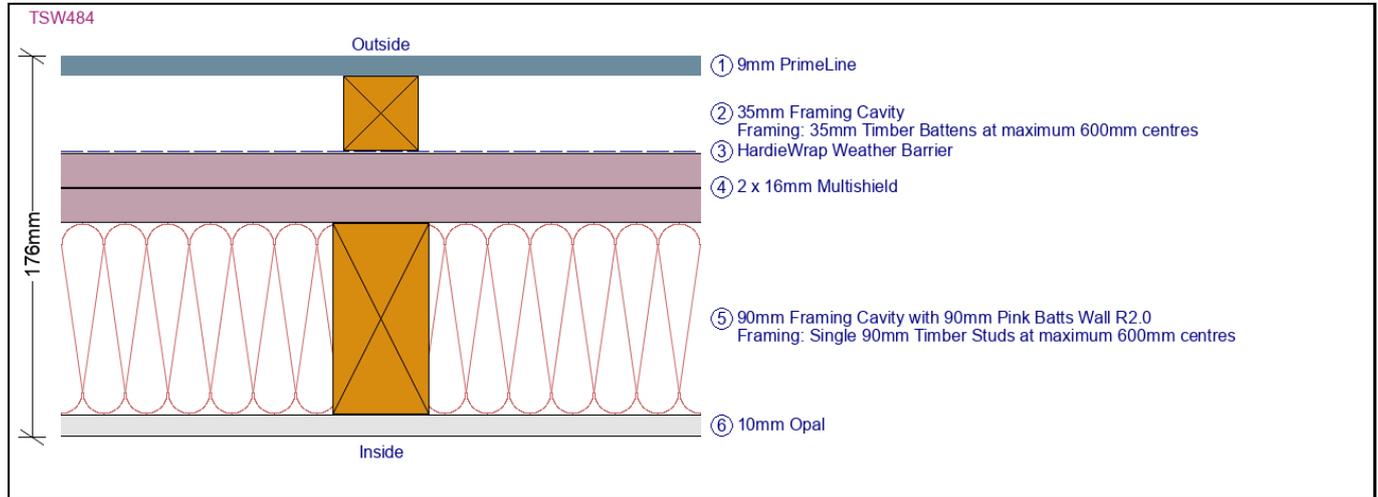
### System Details



<b>System No.</b>	1
<b>System Reference</b>	External Wall NCC-C9c-LB-F1R1
<b>System Code</b>	<b>TSW484</b>
<b>Comments</b>	External timber wall less than 1.5 m from fire-source feature. This wall meets NCC Volume One Section J R1.4 requirement.



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Fire Protection: <b>Rated from outside only</b> FRL From Outside Only: <b>90/90/90</b> Airborne $R_w$ : <b>50</b> Airborne $R_w + C_{tr}$ : <b>42</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>176</b> Insulation Pathway Total R-Value ( $m^2.K/W$ ): <b>2.61</b> Estimated Total Weight ( $kg/m^2$ ): <b>52.94</b>	External Cladding: <b>9mm PrimeLine</b> Cladding Cavity: <b>35mm Framing Cavity</b> Framing : <b>35mm Timber Battens at maximum 600mm centres</b> Sarking: <b>HardieWrap Weather Barrier</b> External Lining: <b>2 x 16mm Multishield</b> Wall Cavity: <b>90mm Framing Cavity</b> Framing : <b>Single 90mm Timber Studs at maximum 600mm centres</b> Insulation : <b>90mm Pink Batts Wall R2.0</b> Internal Lining: <b>10mm Opal</b>

### System Notes

1. Fire Report: FAR3371
2. Use approved fire rated penetration details in the non-fire rated internal lining to maintain FRL
3. Acoustic Report: Day Design 3094-43 (Based on Siniat System TSW484.L6C3)
4. 10mm Opal can be substituted with 10mm Soundshield
5. 10mm Opal or 10mm Soundshield can be substituted with 13mm Watershield in wet areas
6. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
7. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
8. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

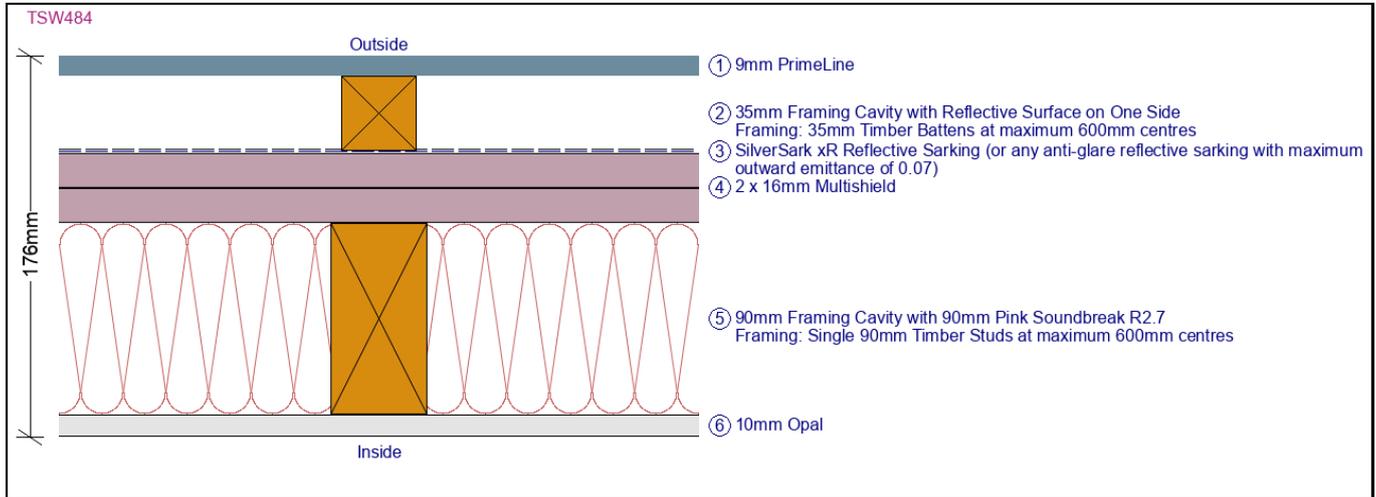
### Framing Details

For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.

<b>System No.</b>	2
<b>System Reference</b>	External Wall NCC-c9c-LB-F1R2
<b>System Code</b>	<b>TSW484</b>
<b>Comments</b>	External timber wall less than 1.5 m from fire-source feature. This wall meets NCC Volume One Section J R2.8 requirement.



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Fire Protection: <b>Rated from outside only</b> FRL From Outside Only: <b>90/90/90</b> Airborne $R_w$ : <b>50</b> Airborne $R_w + C_{tr}$ : <b>42</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>176</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>3.79</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>54.38</b>	External Cladding: <b>9mm PrimeLine</b> Cladding Cavity: <b>35mm Framing Cavity with Reflective Surface on One Side</b> Framing : <b>35mm Timber Battens at maximum 600mm centres</b> Sarking: <b>SilverSark xR Reflective Sarking</b> (or any anti-glare reflective sarking with maximum outward emittance of 0.07) External Lining: <b>2 x 16mm Multishield</b> Wall Cavity: <b>90mm Framing Cavity</b> Framing : <b>Single 90mm Timber Studs at maximum 600mm centres</b> Insulation : <b>90mm Pink Soundbreak R2.7</b> Internal Lining: <b>10mm Opal</b>

### System Notes

1. Fire Report: FAR3371
2. Use approved fire rated penetration details in the non-fire rated internal lining to maintain FRL
3. Acoustic Report: Day Design 3094-43 (Based on Siniat System TSW484.L6C2)
4. 10mm Opal can be substituted with 10mm Soundshield
5. 10mm Opal or 10mm Soundshield can be substituted with 13mm Watershield in wet areas
6. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
7. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
8. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

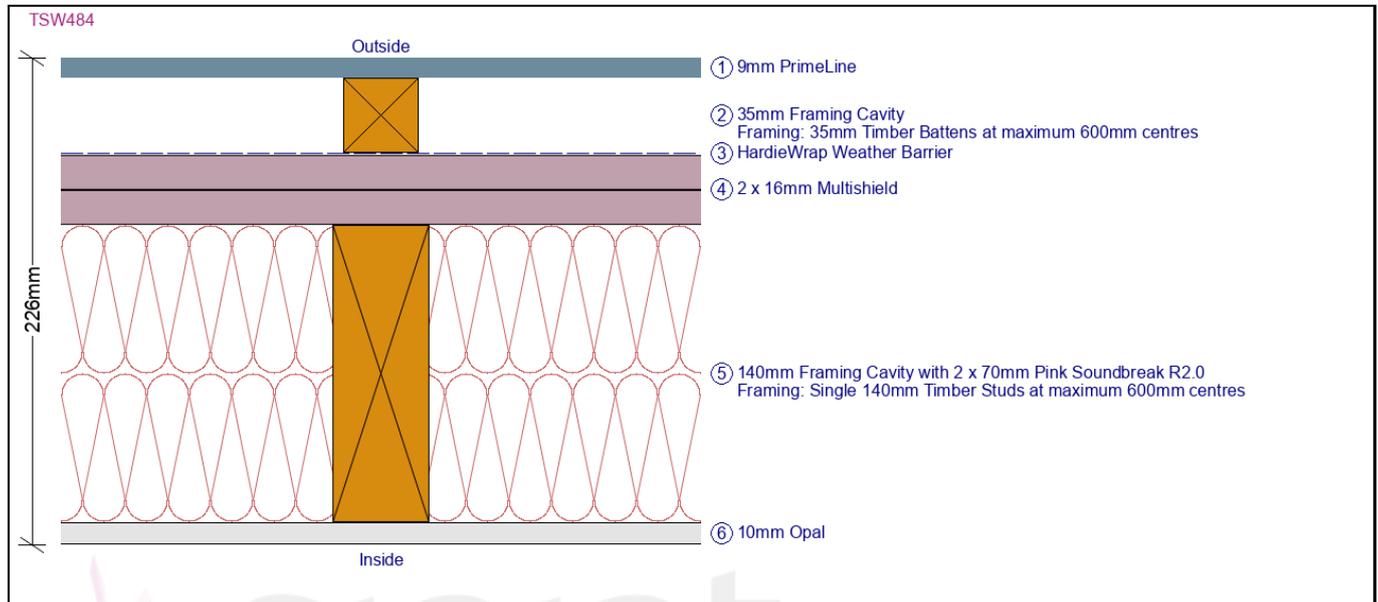
### Framing Details

For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.

<b>System No.</b>	3
<b>System Reference</b>	External Wall NCC-C9c-LB-F1R3
<b>System Code</b>	<b>TSW484</b>
<b>Comments</b>	External timber wall less than 1.5 m from fire-source feature. This wall meets NCC Volume One Section J R3.3 requirement.



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Fire Protection: <b>Rated from outside only</b> FRL From Outside Only: <b>90/90/90</b> Airborne $R_w$ : <b>50</b> Airborne $R_w + C_{tr}$ : <b>42</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>226</b> Insulation Pathway Total R-Value ( $m^2 \cdot K/W$ ): <b>4.61</b> Estimated Total Weight ( $kg/m^2$ ): <b>51</b>	External Cladding: <b>9mm PrimeLine</b> Cladding Cavity: <b>35mm Framing Cavity</b> Framing : <b>35mm Timber Battens at maximum 600mm centres</b> Sarking: <b>HardieWrap Weather Barrier</b> External Lining: <b>2 x 16mm Multishield</b> Wall Cavity: <b>140mm Framing Cavity</b> Framing : <b>Single 140mm Timber Studs at maximum 600mm centres</b> Insulation : <b>2 x 70mm Pink Soundbreak R2.0</b> Internal Lining: <b>10mm Opal</b>

### System Notes

1. Fire Report: FAR3371
2. Use approved fire rated penetration details in the non-fire rated internal lining to maintain FRL
3. Acoustic Report: Day Design 3094-43 (Based on Siniat System TSW484.L6C2)
4. 10mm Opal can be substituted with 10mm Soundshield
5. 10mm Opal or 10mm Soundshield can be substituted with 13mm Watershield in wet areas
6. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
7. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
8. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

## Framing Details

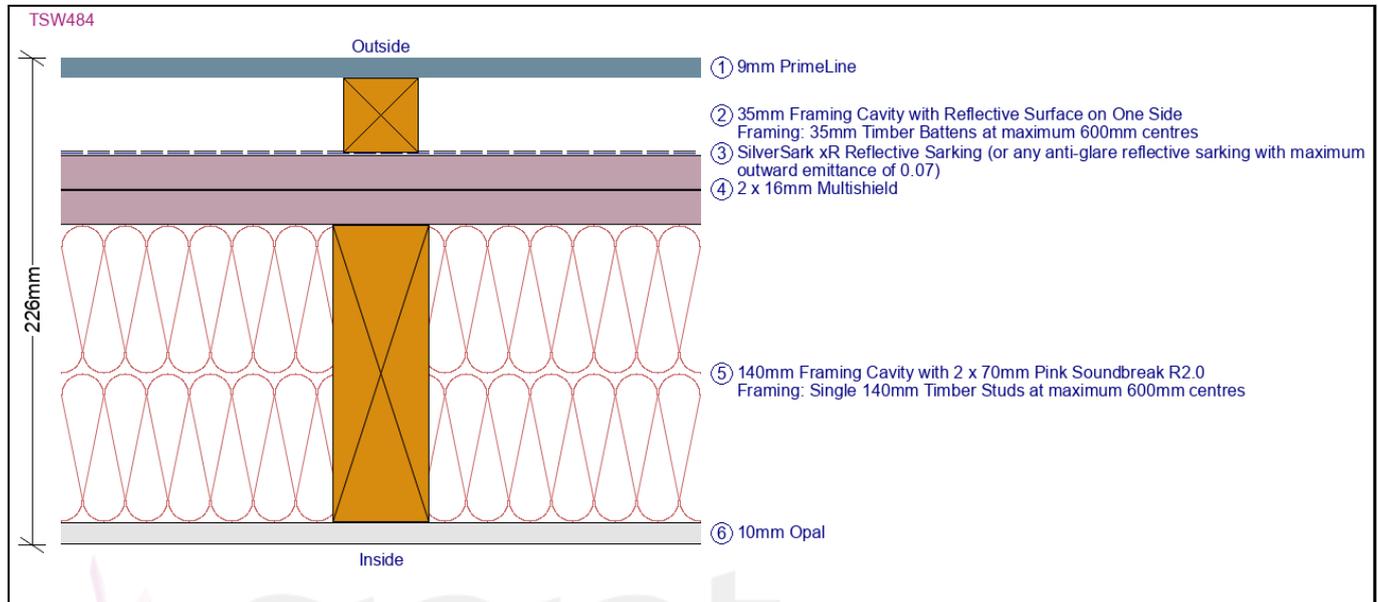
For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.



<b>System No.</b>	4
<b>System Reference</b>	External Wall NCC-C9c-LB-F1R4
<b>Comments</b>	External timber wall less than 1.5 m from fire-source feature. This wall meets NCC Volume One Section J R3.8 requirement.



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Fire Protection: <b>Rated from outside only</b> FRL with contribution of internal wall lining: <b>90/90/90</b> FRL without contribution of internal wall lining: <b>60/60/60</b> FRL3: <b>90/90/90</b> Airborne $R_w$ : <b>50</b> Airborne $R_w + C_{tr}$ : <b>42</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>226.00</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>5.090</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>51.00</b>	External Cladding: <b>9mm PrimeLine</b> Cladding Cavity: <b>35mm Framing Cavity with Reflective Surface on One Side</b> Framing : <b>Timber Battens at maximum 600mm centres</b> Sarking: <b>SilverSark xR Reflective Sarking</b> (or any anti-glare reflective sarking with maximum outward emittance of 0.07) External Lining: <b>2 x 16mm Multishield</b> Wall Cavity: <b>140mm Framing Cavity</b> Framing : <b>Single Timber Studs at maximum 600mm centres</b> Insulation : <b>2 x 70mm Pink Soundbreak R2.0</b> Internal Lining: <b>10mm Opal</b>

### System Notes

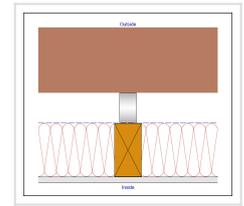
1. Fire Report: FAR3371
2. Use approved fire rated penetration details in the non-fire rated internal lining to maintain FRL
3. Acoustic Report: Day Design 3094-43 (Based on Siniat System TSW484.L6C2)
4. 10mm Opal can be substituted with 10mm Soundshield
5. 10mm Opal or 10mm Soundshield can be substituted with 13mm Watershield in wet areas
6. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
7. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
8. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

**Framing Details**

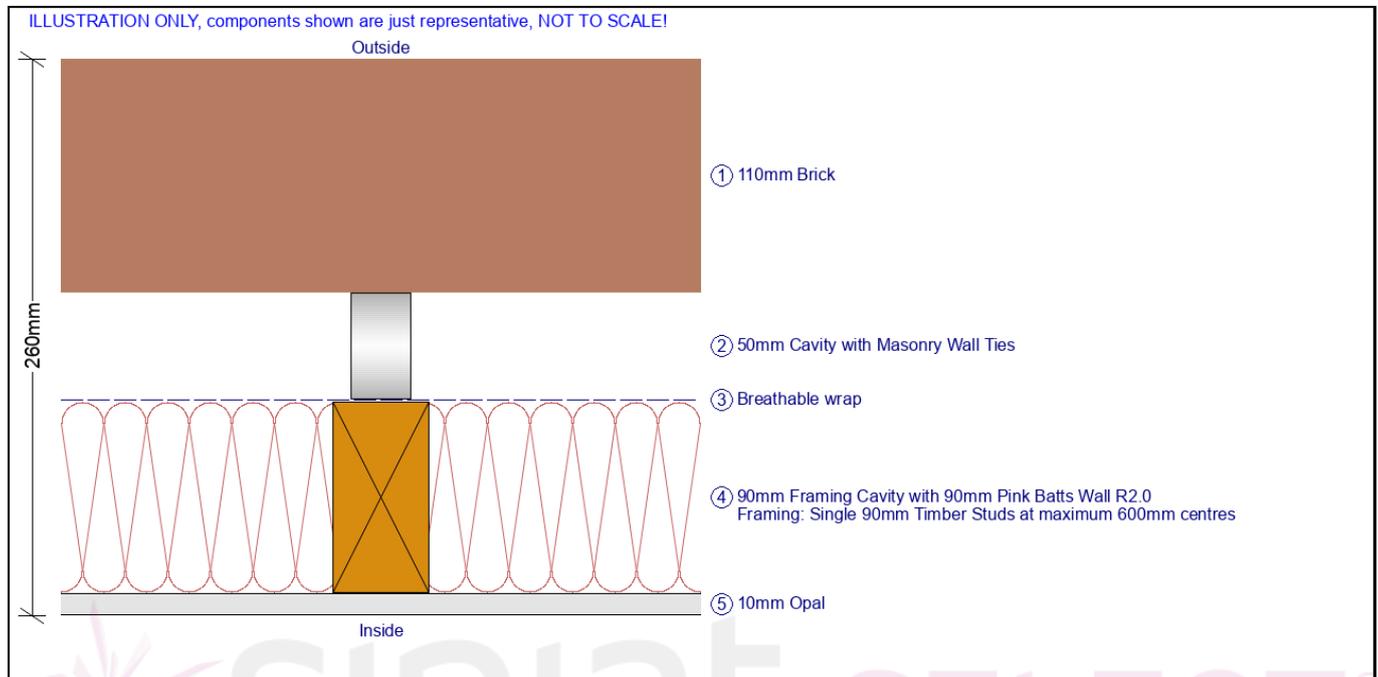
For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.



<b>System No.</b>	5
<b>System Reference</b>	External Wall NCC-C9c-LB-R1
<b>Comments</b>	External brick veneer timber stud wall. This wall meets NCC Volume One Section J R1.4 requirement.



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Fire Protection: <b>Rated from outside only</b> FRL: <b>Masonry FRL</b> Airborne $R_w$ : <b>57</b> Airborne $R_w + C_{tr}$ : <b>53</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>260</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>2.5</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>173.2</b>	External Veneer: <b>110mm Brick</b> Wall Tie Cavity: <b>50mm Cavity with Masonry Wall Ties</b> Sarking: <b>Any Breathable wrap</b> Stud Cavity: <b>90mm Framing Cavity</b> Framing : <b>Single 90mm Timber Studs at maximum 600mm centres</b> Insulation : <b>90mm Pink Batts Wall R2.0</b> Internal Lining: <b>10mm Opal</b>

### System Notes

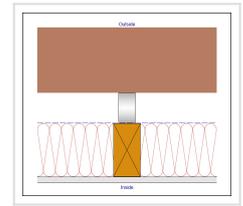
1. Fire Report: Refer to masonry manufacturer
2. Acoustic Report: Insul v9 prediction
3. 10mm Opal can be substituted with 10mm Soundshield
4. 10mm Opal or 10mm Soundshield can be substituted with 13mm Watershield in wet areas
5. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
6. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
7. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

## Framing Details

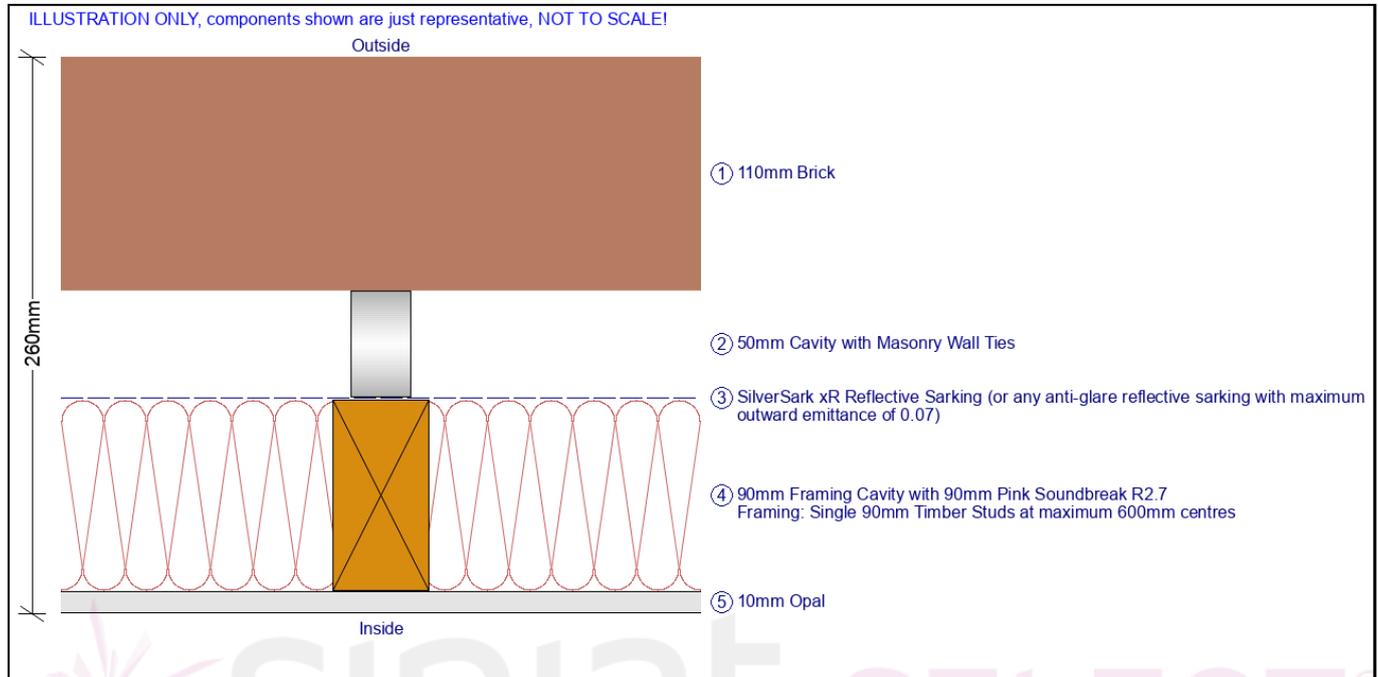
For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.



<b>System No.</b>	6
<b>System Reference</b>	External Wall NCC-C9c-LB-R2
<b>Comments</b>	External brick veneer timber stud wall. This wall meets NCC Volume One Section J R2.8 requirement.



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Fire Protection: <b>Rated from outside only</b> FRL: <b>Masonry FRL</b> Airborne $R_w$ : <b>57</b> Airborne $R_w + C_{tr}$ : <b>54</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>260</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>3.2</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>174.64</b>	External Veneer: <b>110mm Brick</b> Wall Tie Cavity: <b>50mm Cavity with Masonry Wall Ties</b> Sarking: <b>SilverSark xR Reflective Sarking</b> (or any anti-glare reflective sarking with maximum outward emittance of 0.07) Stud Cavity: <b>90mm Framing Cavity</b> Framing : <b>Single 90mm Timber Studs at maximum 600mm centres</b> Insulation : <b>90mm Pink Soundbreak R2.7</b> Internal Lining: <b>10mm Opal</b>

### System Notes

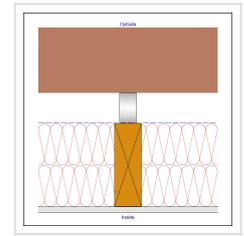
1. Fire Report: Refer to masonry manufacturer
2. Acoustic Report: Insul v9 prediction
3. 10mm Opal can be substituted with 10mm Soundshield
4. 10mm Opal or 10mm Soundshield can be substituted with 13mm Watershield in wet areas
5. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
6. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
7. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

## Framing Details

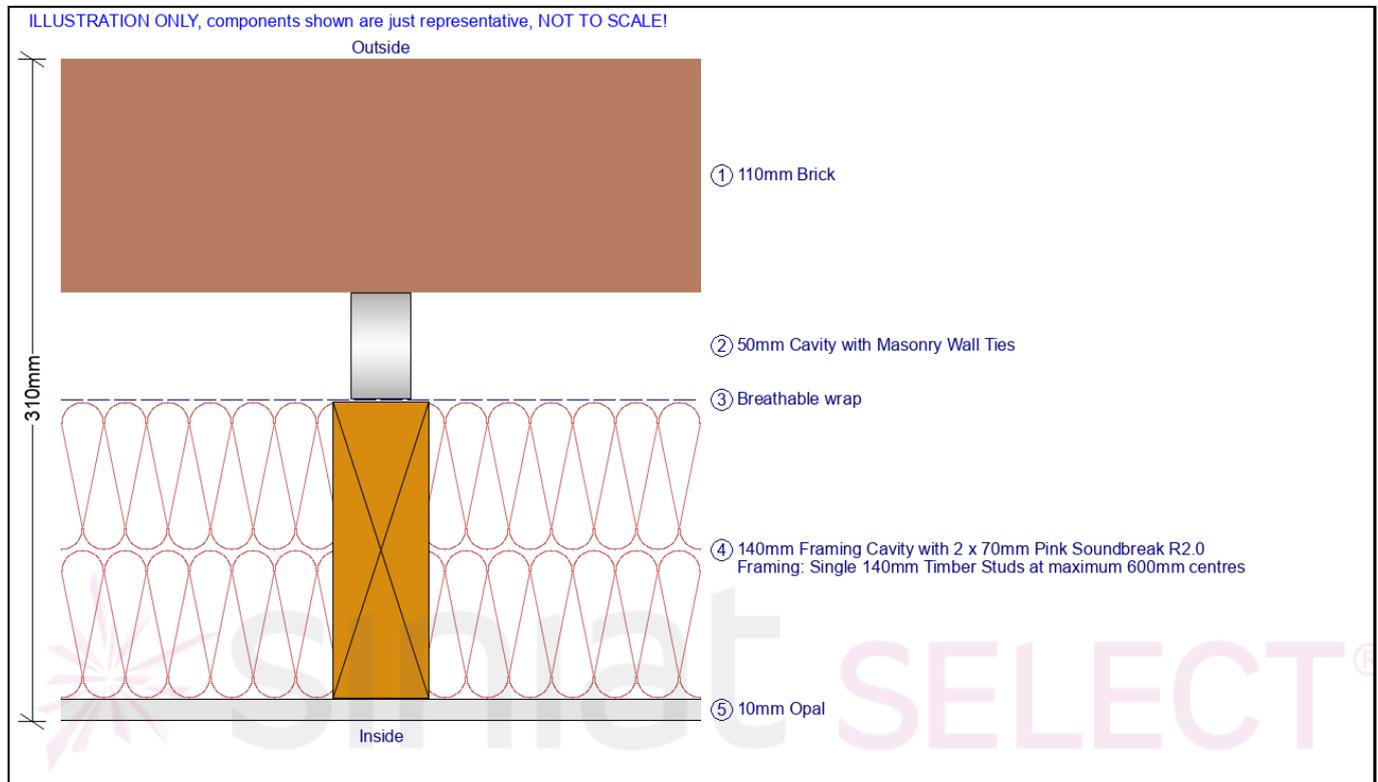
For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.



<b>System No.</b>	7
<b>System Reference</b>	External Wall NCC-C9c-LB-R3
<b>Comments</b>	External brick veneer timber stud wall. This wall meets NCC Volume One Section J R3.3 requirement.



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Airborne $R_w$ : <b>57</b> Airborne $R_w + C_{tr}$ : <b>54</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>310</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>4.5</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>171.26</b>	External Veneer: <b>110mm Brick</b> Wall Tie Cavity: <b>50mm Cavity with Masonry Wall Ties</b> Sarking: <b>Any Breathable wrap</b> Stud Cavity: <b>140mm Framing Cavity</b> Framing : <b>Single 140mm Timber Studs at maximum 600mm centres</b> Insulation : <b>2 x 70mm Pink Soundbreak R2.0</b> Internal Lining: <b>10mm Opal</b>

### System Notes

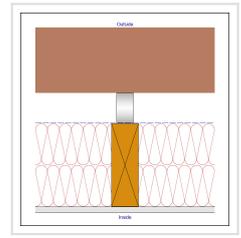
1. Fire Report: Refer to masonry manufacturer
2. Acoustic Report: Insul v9 prediction
3. 10mm Opal can be substituted with 10mm Soundshield
4. 10mm Opal or 10mm Soundshield can be substituted with 13mm Watershield in wet areas
5. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
6. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
7. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

**Framing Details**

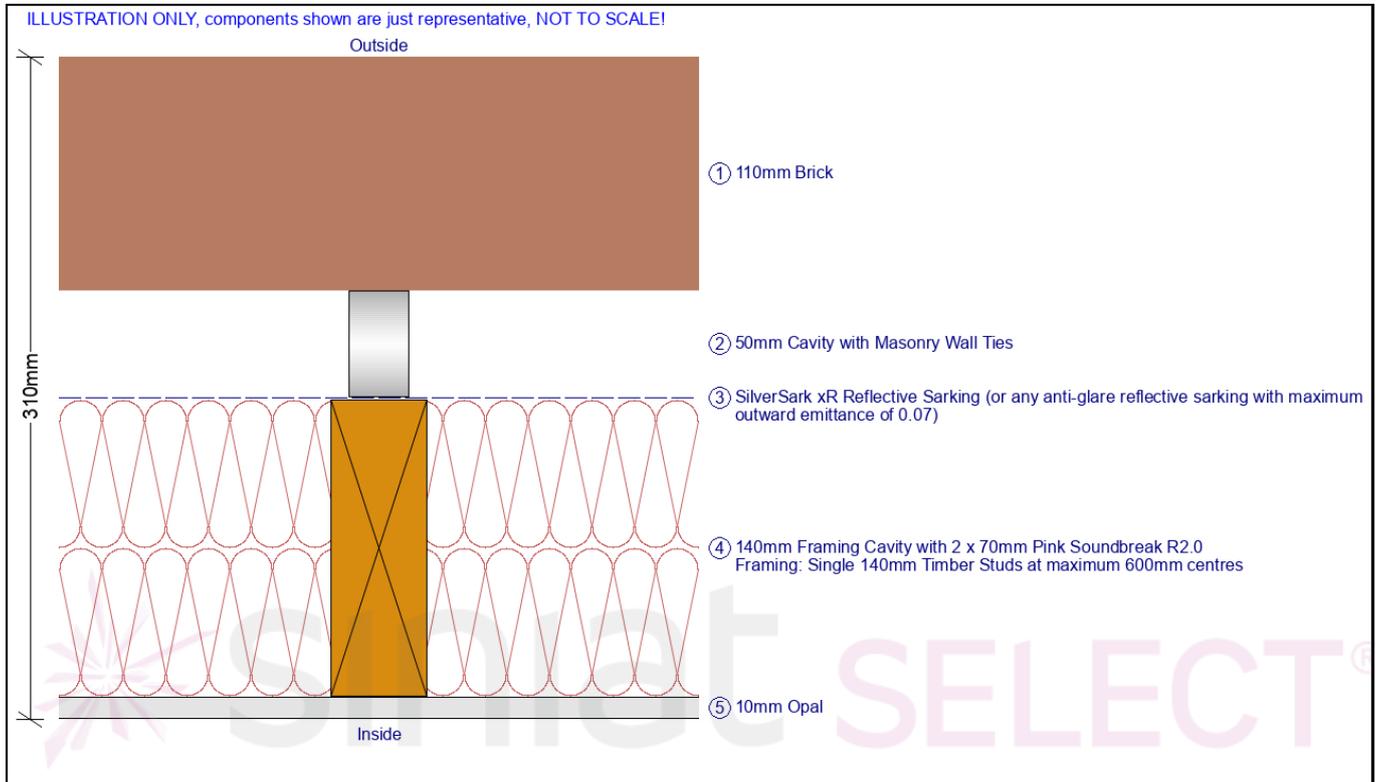
For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.



<b>System No.</b>	8
<b>System Reference</b>	External Wall NCC-C9c-LB-R4
<b>Comments</b>	External brick veneer timber stud wall. This wall meets NCC Volume One Section J R3.8 requirement.



**System Illustration**



**System Details**

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL, Rw, Rw + Ctr, etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Fire Protection: <b>Rated from outside only</b> FRL: <b>Masonry FRL</b> Airborne Rw: <b>57</b> Airborne Rw + Ctr: <b>54</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>310</b> Insulation Pathway Total R-Value (m2.K/W): <b>4.5</b> Estimated Total Weight (kg/m2): <b>171.26</b>	External Veneer: <b>110mm Brick</b> Wall Tie Cavity: <b>50mm Cavity with Masonry Wall Ties</b> Sarking: <b>SilverSark xR Reflective Sarking</b> (or any anti-glare reflective sarking with maximum outward emittance of 0.07) Stud Cavity: <b>140mm Framing Cavity</b> Framing : <b>Single 140mm Timber Studs at maximum 600mm centres</b> Insulation : <b>2 x 70mm Pink Soundbreak R2.0</b> Internal Lining: <b>10mm Opal</b>

## System Notes

1. Fire Report: Refer to masonry manufacturer
2. Acoustic Report: Insul v9 prediction
3. 10mm Opal can be substituted with 10mm Soundshield
4. 10mm Opal or 10mm Soundshield can be substituted with 13mm Watershield in wet areas
5. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
6. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
7. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

## Framing Details

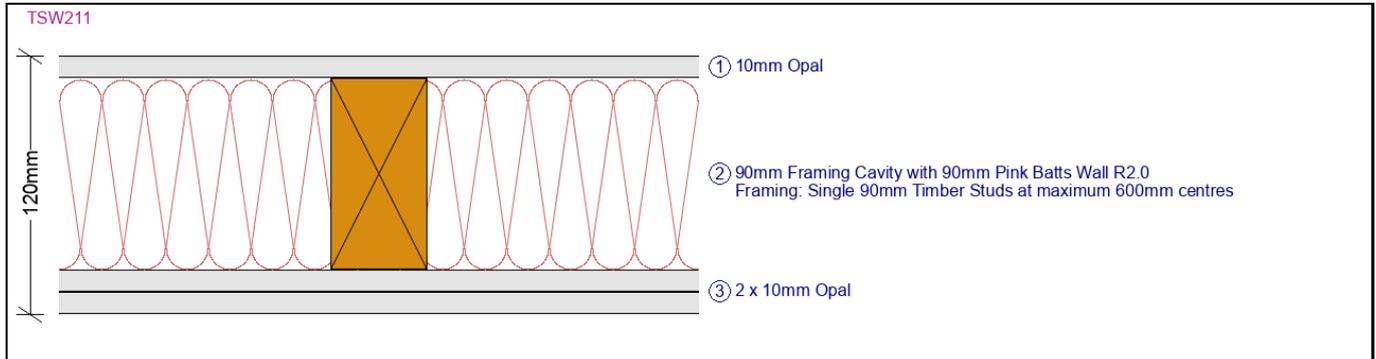
For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.



<b>System No.</b>	9
<b>System Reference</b>	Separating Wall NCC-C9c-LB-A1
<b>System Code</b>	<b>TSW211</b>
<b>Comments</b>	Separating wall between adjoining SOUs



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Airborne $R_w$ : <b>45</b> Airborne $R_w + C_{tr}$ : <b>38</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>120</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>2.34</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>30.5</b>	Side 1 Lining: <b>10mm Opal</b> Cavity: <b>90mm Framing Cavity</b> Framing : <b>Single 90mm Timber Studs at maximum 600mm centres</b> Insulation : <b>90mm Pink Batts Wall R2.0</b> Side 2 Lining: <b>2 x 10mm Opal</b>

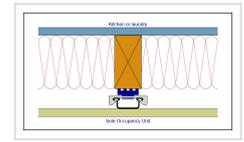
### System Notes

1. Acoustic Report: Day Design 3094-45 (Based on Siniat System TSW211.L1C6)
2. Acoustic ratings valid for studs at 600mm centres
3. 10mm Opal can be substituted with 10mm Soundshield
4. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
5. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
6. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

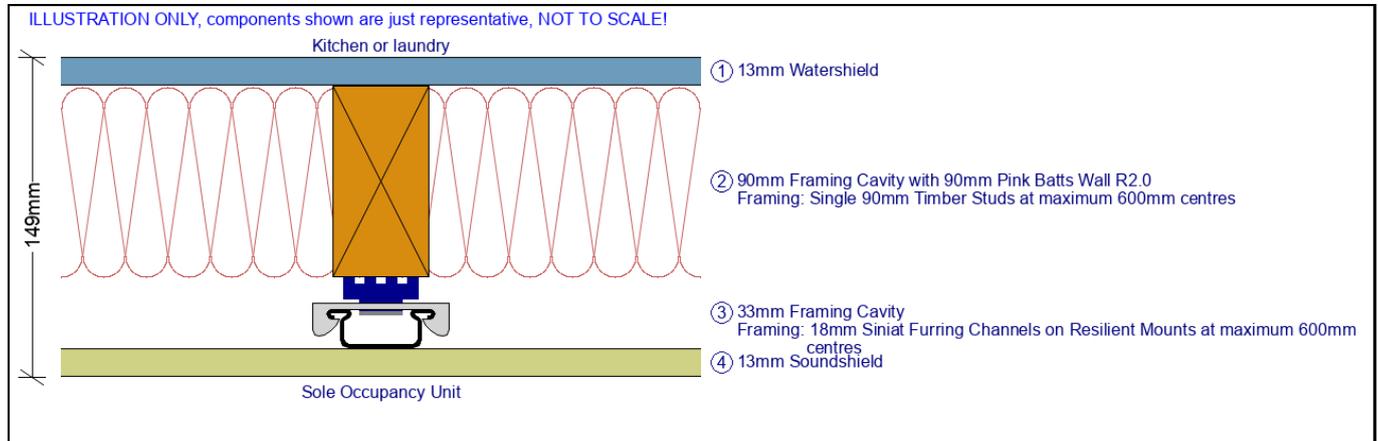
### Framing Details

For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.

<b>System No.</b>	10
<b>System Reference</b>	Separating Wall NCC-C9c-LB-A2
<b>Comments</b>	Separating wall between SOU and kitchen or laundry



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Airborne $R_w$ : <b>47</b> Airborne $R_w + C_{tr}$ : <b>36</b> Impact Sound Resistant: <b>Yes</b> Total Thickness (mm): <b>149</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>2.31</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>27.72</b>	Side 1: <b>13mm Watershield</b> Cavity 1: <b>90mm Framing Cavity</b> Framing : <b>Single 90mm Timber Studs at maximum 600mm centres</b> Insulation : <b>90mm Pink Batts Wall R2.0</b> Cavity 2: <b>33mm Framing Cavity</b> Framing : <b>18mm Siniat Furring Channels on Resilient Mounts at maximum 600mm centres</b> Side 2: <b>13mm Soundshield</b>

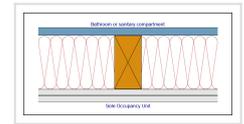
### System Notes

1. Acoustic Report: Estimate only, based on Siniat System TSW250
2. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
3. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
4. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

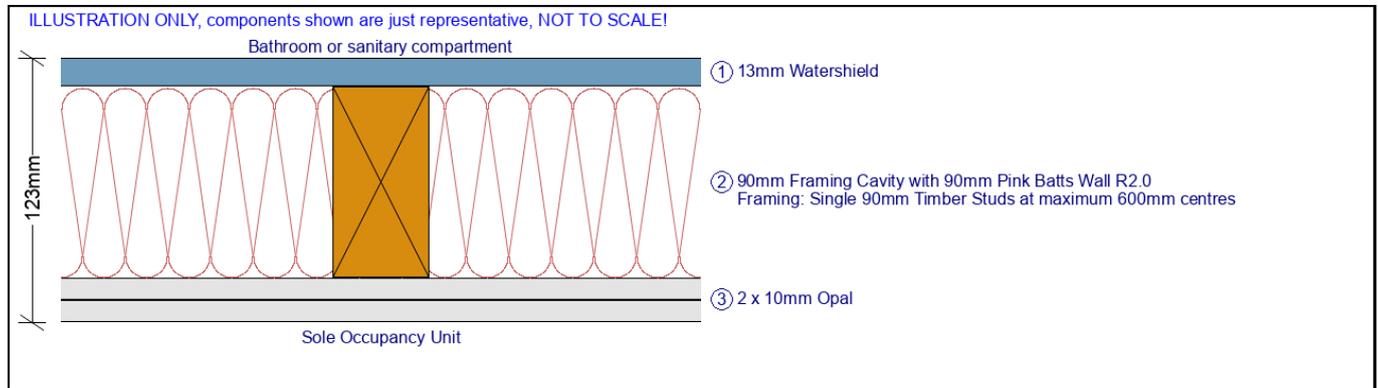
### Framing Details

For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.

<b>System No.</b>	11
<b>System Reference</b>	Separating Wall NCC-C9c-LB-A1-2
<b>Comments</b>	Separating wall between SOU and bathroom or sanitary compartment



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Airborne $R_w$ : <b>45</b> Airborne $R_w + C_{tr}$ : <b>38</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>123</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>2.35</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>31.5</b>	Side 1: <b>13mm Watershield</b> Cavity 1: <b>90mm Framing Cavity</b> Framing : <b>Single 90mm Timber Studs at maximum 600mm centres</b> Insulation : <b>90mm Pink Batts Wall R2.0</b> Side 2: <b>2 x 10mm Opal</b>

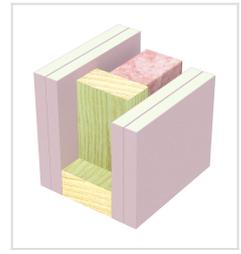
### System Notes

1. Acoustic Report: ESTIMATE ONLY, based on Siniat System TSW211.L1C6
2. Acoustic ratings valid for studs at 600mm centres
3. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
4. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
5. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

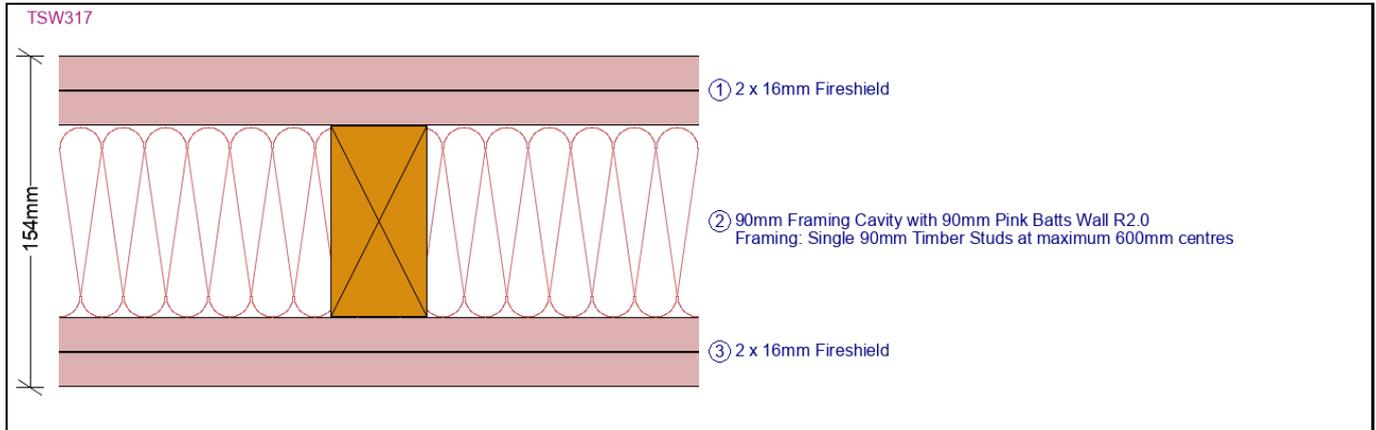
### Framing Details

For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.

<b>System No.</b>	12
<b>System Reference</b>	Separating Wall NCC-C9c-LB-F1A1
<b>System Code</b>	<b>TSW317</b>
<b>Comments</b>	Separating wall between SOU and plant or utilities room



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

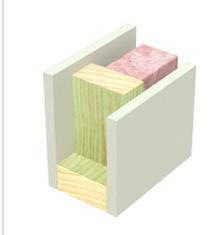
Properties	Composition
Fire Protection: <b>Rated from both sides</b> Non-Load Bearing FRL: <b>-/120/120</b> Load Bearing FRL: <b>120/120/120</b> Airborne $R_w$ : <b>48</b> Airborne $R_w + C_{tr}$ : <b>44</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>154</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>2.54</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>57.3</b>	Side 1 Lining: <b>2 x 16mm Fireshield</b> Cavity: <b>90mm Framing Cavity</b> Framing : <b>Single 90mm Timber Studs at maximum 600mm centres</b> Insulation : <b>90mm Pink Batts Wall R2.0</b> Side 2 Lining: <b>2 x 16mm Fireshield</b>

### System Notes

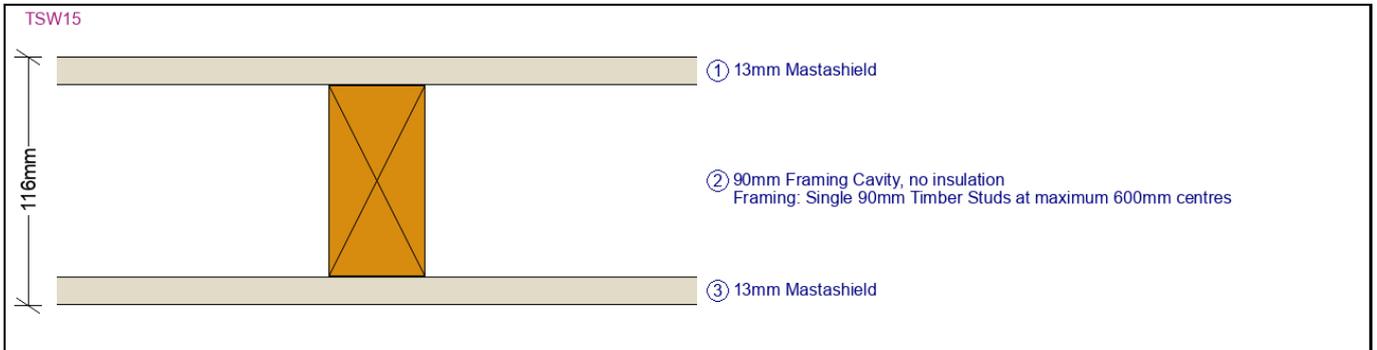
1. Fire Report: FAR3348
2. Acoustic Report: Day Design 3094-45 (Based on Siniat System TSW317.L1C6)
3. Acoustic ratings valid for studs at 600mm centres
4. 16mm Fireshield can be substituted with 16mm Multishield or 16mm Trurock in wet areas
5. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
6. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
7. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

### Framing Details

For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.

<b>System No.</b>	13	
<b>System Reference</b>	Smoke Wall NCC-C9c-LB-S	
<b>System Code</b>	<b>TSW15</b>	
<b>Comments</b>	Smoke proof wall separating SOU from ancillary use area of high potential fire hazard or dividing building into floor areas or not more than 500 square meters	

### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL,  $R_w$ ,  $R_w + C_{tr}$ , etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Airborne $R_w$ : <b>35</b> Airborne $R_w + C_{tr}$ : <b>27</b> Impact Sound Resistant: <b>No</b> Total Thickness (mm): <b>116</b> Insulation Pathway Total R-Value (m <sup>2</sup> .K/W): <b>0.31</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>20.6</b>	Side 1 Lining: <b>13mm Mastashield</b> Cavity: <b>90mm Framing Cavity</b> Framing : <b>Single 90mm Timber Studs at maximum 600mm centres</b> Insulation : <b>No insulation</b> Side 2 Lining: <b>13mm Mastashield</b>

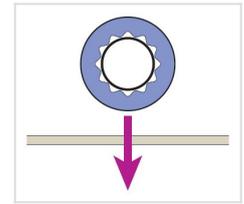
### System Notes

1. Acoustic Report: Day Design 3094-45 (Based on Siniat System TSW15.L1C4)
2. Acoustic ratings valid for studs at 600mm centres
3. 13mm Mastashield can be substituted with 13mm Watershield in wet areas
4. The Insulation Pathway Total R-Value is an estimate only, valid for summer heat flow (mean temperature of 23°C), and calculated without taking into account the thermal bridging effects of framing components.
5. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
6. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

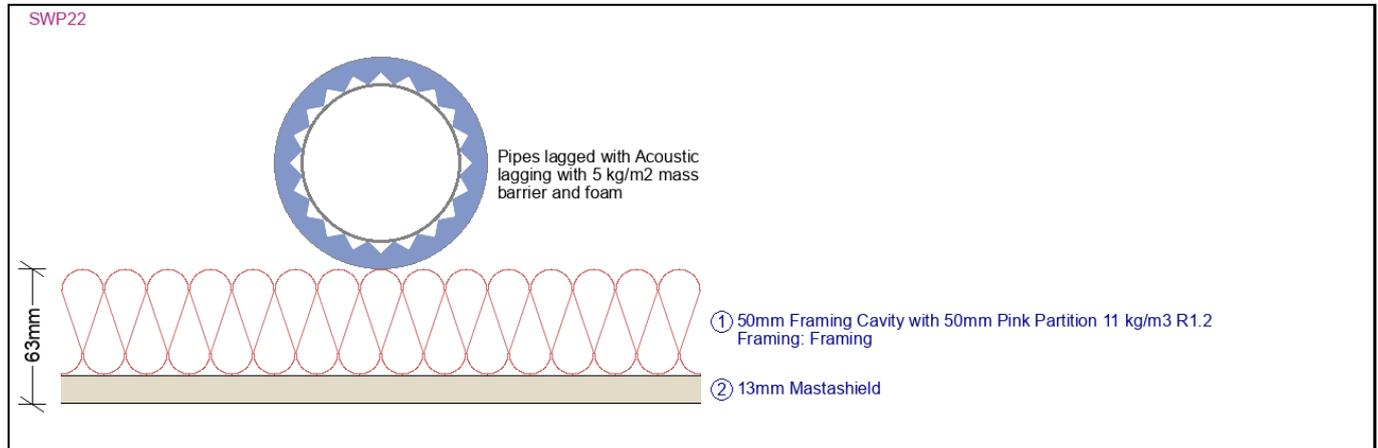
### Framing Details

For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.

<b>System No.</b>	14
<b>System Reference</b>	Waste Pipe Ceiling NCC-C9c-A1
<b>System Code</b>	<b>SWP22</b>
<b>Comments</b>	Wall or ceiling separating SOU from soil and waste pipes with acoustic lagging in a habitable room other than kitchen



### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL, R<sub>w</sub>, R<sub>w</sub> + C<sub>tr</sub>, etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

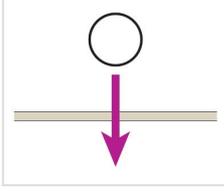
Properties	Composition
Airborne R <sub>w</sub> : <b>48</b> Airborne R <sub>w</sub> + C <sub>tr</sub> : <b>40</b> Total Thickness (mm): <b>63</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>8.65</b>	Pipes: <b>Pipes lagged with Acoustic lagging with 5 kg/m<sup>2</sup> mass barrier and foam</b> Wall or Ceiling Cavity: <b>50mm Framing Cavity</b> Framing: <b>Framing</b> Insulation: <b>50mm Pink Partition 11 kg/m<sup>3</sup> R1.2</b> Wall or Ceiling Lining: <b>13mm Mastashield</b>

### System Notes

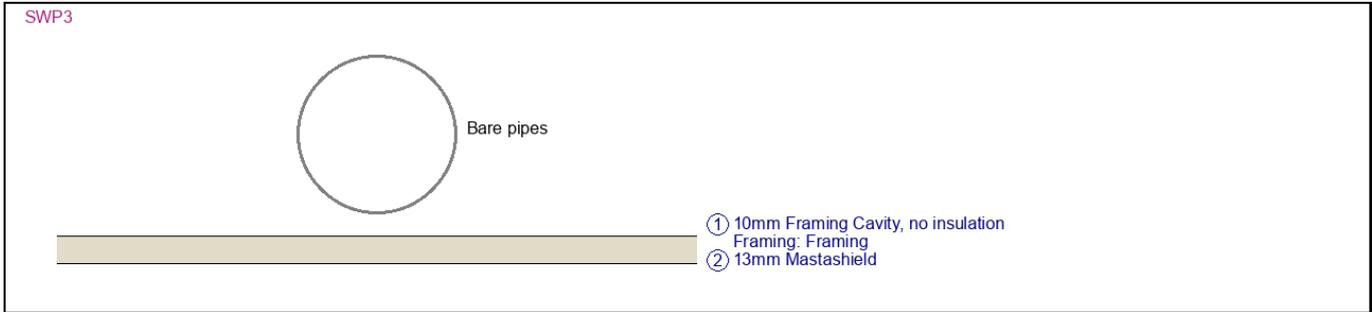
1. Acoustic Report: Day Design 3094-35 (Based on Siniat System SWP22.L1C2)
2. Pipes must not be in contact with framing member, insulation or plasterboard
3. Soil and waste pipe systems can be a ceiling, wall, bulkhead or duct
4. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
5. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

### Framing Details

For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.

<b>System No.</b>	15	
<b>System Reference</b>	Waste Pipe Ceiling NCC-C9c-A2	
<b>System Code</b>	<b>SWP3</b>	
<b>Comments</b>	Wall or ceiling separating SOU from soil and waste pipes without acoustic lagging in a non-habitable room or kitchen	

### System Illustration



### System Details

It is the responsibility of project certifier to determine if below specified products and performances are suitable for the intended application. System properties like FRL, R<sub>w</sub>, R<sub>w</sub> + C<sub>tr</sub>, etc. printed anywhere other than inside the 'Properties' column are not verified by Siniat.

Properties	Composition
Airborne R <sub>w</sub> : <b>29</b> Airborne R <sub>w</sub> + C <sub>tr</sub> : <b>25</b> Total Thickness (mm): <b>23</b> Estimated Total Weight (kg/m <sup>2</sup> ): <b>8.1</b>	Pipes: <b>Bare pipes</b> Wall or Ceiling Cavity: <b>10mm Framing Cavity</b> Framing : <b>Framing</b> Insulation : <b>No insulation</b> Wall or Ceiling Lining: <b>13mm Mastashield</b>

### System Notes

1. Acoustic Report: Day Design 3094-35 (Based on Siniat System SWP3.L1C1)
2. Pipes must not be in contact with framing member, insulation or plasterboard
3. Soil and waste pipe systems can be a ceiling, wall, bulkhead or duct
4. The total weight is an estimate only, valid for the components drawn in the illustration, and does not take into account the weight of the structural (load-bearing) framing components.
5. Refer to latest published Siniat Technical Manual for installation instructions and construction details.

### Framing Details

For internal steel walls and ceilings, refer to the framing tables in the Blueprint. For external steel walls and ceilings, please contact Siniat Engineering Services.

 Siniat SELECT®  
End of Proposal