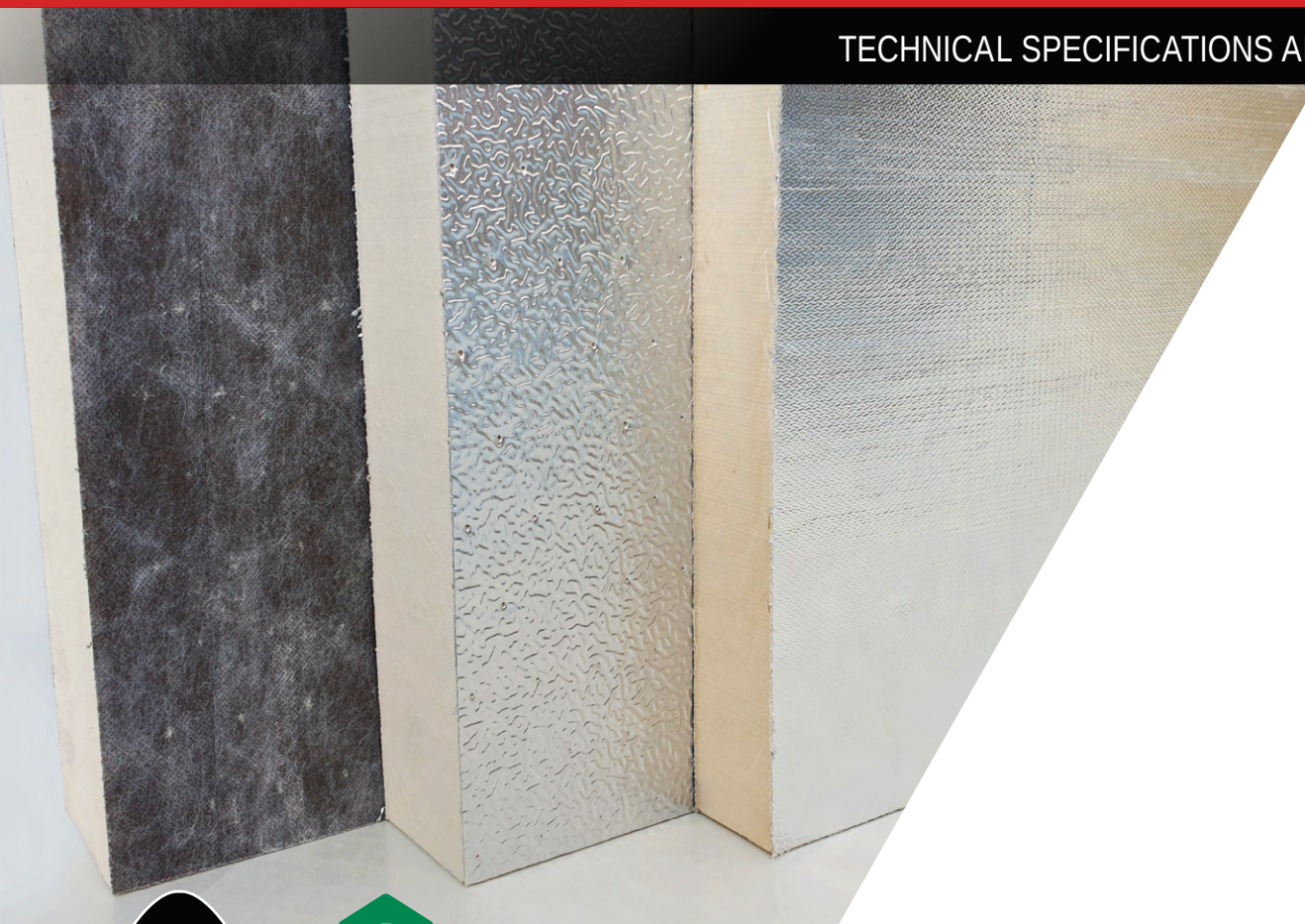


CNZ INSULATION BOARD

TECHNICAL SPECIFICATIONS AND PROFILES



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INSULATION

Welcome to CNZ Insulation.

We are a supplier of New Zealand manufactured PIR foam core insulation, and other insulation products.

From the state-of-the art manufacturing plant in Christchurch we can supply a diverse range of insulation. Having the unique ability to supply panels in lengths of up to 6m, enables significantly more flexibility in building design.

Capability to custom cut and laminate board enables us to provide unique solutions. We continue to build our product portfolio looking to the future of insulation and the needs of our customers.

Quality and Durability

Our products are made from high quality raw materials and are manufactured to the highest standards. We have a proven track record of supplying insulation products for a wide range of applications. Our products are designed to last and provide excellent thermal performance.

Warranty

We offer a 10 year warranty on our PIR foam core insulation products. This warranty covers the material and workmanship. We are confident in the quality of our products and the durability of our manufacturing process.

Packaging and Delivery

Our products are packaged in a way that ensures they are protected during transport and storage. We offer a range of packaging options to suit your needs. Delivery is available throughout New Zealand.



PROPOSED SIX CLIMATE ZONES FOR NEW ZEALAND

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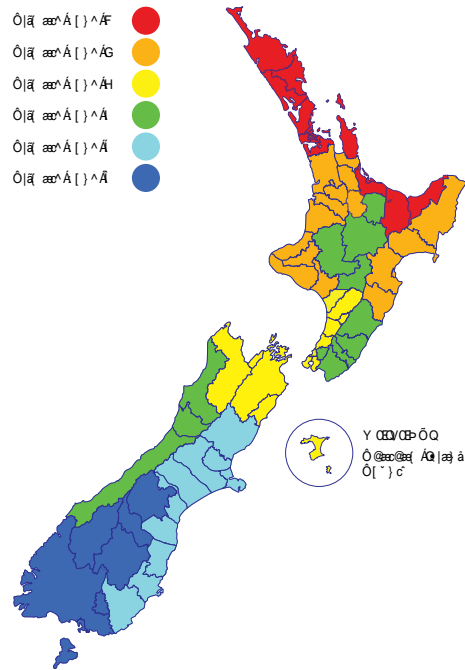


Figure 1. The climate zone map

Table 1.3. Increase in minimum R-values for residential and small buildings

Building element	Climate zone					
	1	2	3	4	5	6
Roof	R6.6↑					
Windows	R0.37↑		R0.46↑		R0.50↑	
Wall	R2.0↑			R2.0		
Slab-on-ground floors	R1.5↑			R1.5↑	R1.6↑	R1.7↑
Other floors	R2.5↑			R2.8↑	R3.0↑	

Table 2.3. Increases in minimum R-values for commercial and large buildings

Options	Climate zone					
	1	2	3	4	5	6
Roof	R3.5↑	R4.0↑	R5.0↑	R5.4↑	R6.0↑	R7.0↑
Window	R0.33↑	R0.33↑	R0.37↑	R0.37↑	R0.40↑	R0.42↑
Wall	R2.2↑	R2.4↑	R2.7↑	R3.0↑	R3.0↑	R3.2↑
Underfloor	R2.2↑	R2.2↑	R2.2↑	R2.4↑	R2.5↑	R2.6↑

1. DIRECT FIXING (continued)

1.2 DIRECT FIXING OF THE BOARDS TO MASONRY AND / CONCRETE WALL

1.2.1 WITH CONSTRUCTION ADHESIVE BONDING

1.2.1.1 WITH CONSTRUCTION ADHESIVE BONDING

1.2.1.2 WITH MECHANICAL FIXING

1.2.1.3 WITH MECHANICAL FIXING

1.2.1.4 WITH MECHANICAL FIXING

1.2.1.5 WITH MECHANICAL FIXING

1.2.1.6 WITH MECHANICAL FIXING



Figure 1.5. Concrete wall

1.2.1.7 WITH MECHANICAL FIXING

1.2.1.8 WITH MECHANICAL FIXING

1.2.2 WITH MECHANICAL FIXING

1.2.2.1 WITH MECHANICAL FIXING

1.2.2.2 WITH MECHANICAL FIXING

1.2.2.3 WITH MECHANICAL FIXING

1.2.2.4 WITH MECHANICAL FIXING

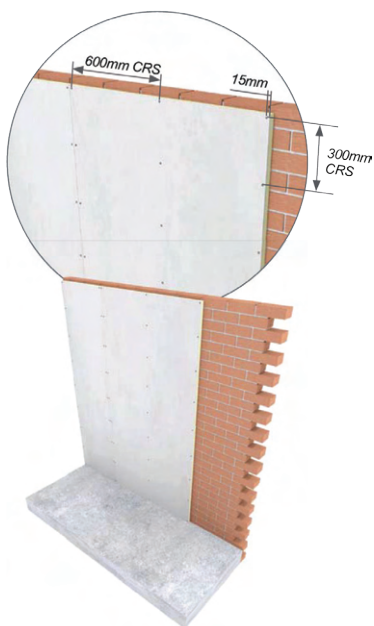
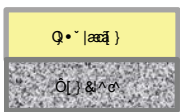


Figure 1.6. Masonry brick or block wall

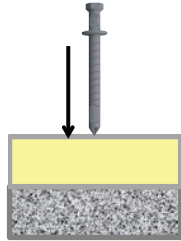
6. INSULATED PRECAST SYSTEM

6.1 NON-COMPOSITE

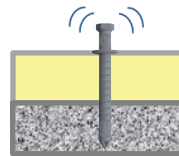
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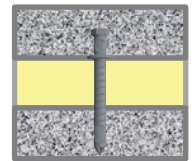
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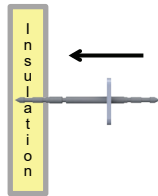
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6.2 VERTICAL POUR

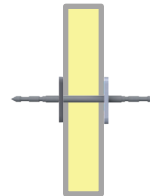
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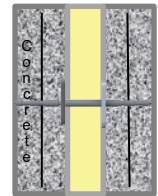
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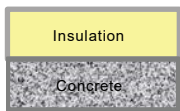
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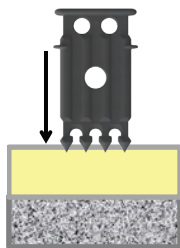
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6.3 COMPOSITE-ACTION

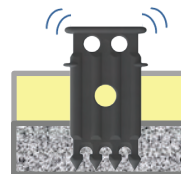
HOW IT WORKS



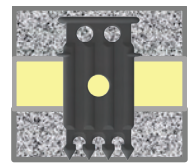
Place PIR insulation board on freshly poured concrete immediately after leveling (within 15-30 minutes).



Push the pointed end through the insulation into fresh concrete until the embedment stop is even with the top surface of the insulation.



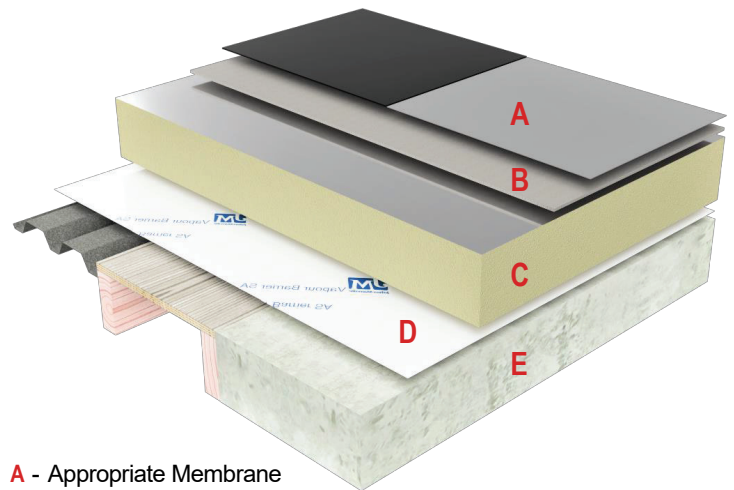
Apply repetitive foot pressure on the insulation board near each tie, or otherwise vibrate the tie or the area around the tie.



Place specified reinforcement and cast second layer of concrete either immediately or after the bottom layer has cured.

7. INSULATED ROOF SYSTEM

- Insulated roof systems or warm roofs as they are more commonly known, are a very good option for flat roof designs and are able to be utilised for new roof and re-roof construction.
- The inclusion of a dedicated vapour barrier in the overall design is essential for controlling moisture that can permeate from the substrate.
- Insulated roof systems are able to be fully adhered with approved adhesives or mechanically fixed with appropriate type tube washers and fixings.
- The CNZ insulated boards are produced in the standard size of 2400mm x 1200mm. The thickness of the CNZ insulation board will determine the correct R-Value that has been nominated for the project.
- The inclusion of a high density coverboard placed over the CNZ insulation board is essential and must be included in the overall design of the insulated roof system.
- The choice of an appropriate membrane type must be considered in the overall insulated roof system.



- A - Appropriate Membrane
- B - High Density Coverboard
- C - CNZ Insulation Board
- D - Vapour Barrier
- E - Existing Roof Construction

Figure 7.1. Insulated Roof System

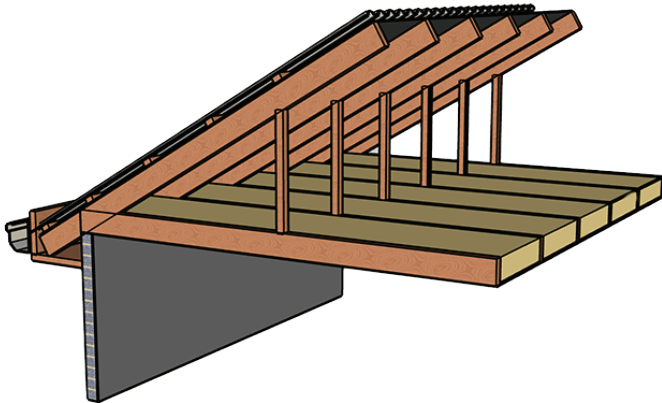
7.1 FULLY ADHERED METHOD

- Ensure the chosen substrate material has been installed to manufacture's specification.
- Install the vapour barrier directly to the chosen substrate to the manufacturer's requirements.
- Adhere the CNZ insulation boards to the fully adhered vapour barrier using a brick bond pattern.
- Adhere the approved HD cover board at right angles to the adhered CNZ insulation board using a brick bond pattern.
- Install the chosen membrane type to the manufacturer's requirements to the fully adhered insulated roof system components.

7.2 MECHANICALLY FIXED METHOD

- Ensure the chosen substrate material has been installed to manufacture's specification.
- Install the vapour barrier directly to the chosen substrate to the manufacturer's requirements.
- Place the CNZ insulation board to the fully adhered vapour barrier using a brick bond pattern.
- Place the approved cover board at right angles to the CNZ insulation board using a brick bond pattern.
- Mechanically fix the cover board and CNZ insulation board through to the substrate using an approved tube washer and appropriately sized fixing.
- The amount of required fixings will be determined by the specified wind zone requirement for the project.
- Consult the manufacturer of the supplied fixings for the correct required amount of fixings and position in relation to the insulated roof system components.
- Install the chosen membrane type to the manufacturer's requirements to the fully adhered insulated roof system components.

8. SKILLION ROOF SYSTEM

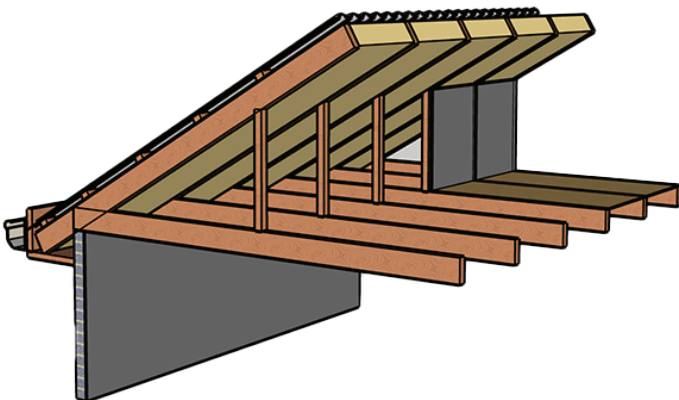
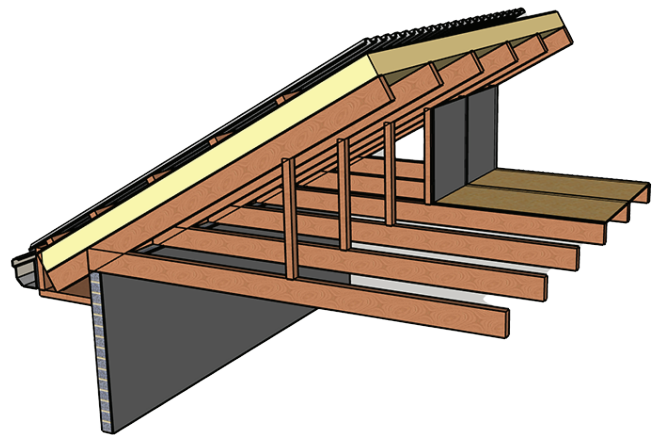


Ceiling Insulation

This detail depicts PIR insulation installed between the joists at ceiling level. This can be explained as a typical 'cold roof' application.

New Roof

This detail depicts PIR Insulation board above the rafters as a continuous insulation layer forming a 'warm roof' construction that does not require ventilation, and maintains the roof structure at (or close to) the internal temperature. A non-permeable vapour barrier is placed on top of the PIR. In this application the dew point is to the outside.



Retrofit

This detail depicts PIR insulation between the rafters at the roof level. This is considered a 'warm roof' application, maintaining the roof space at a similar temperature to the room below. However, in this application the rafters act as thermal bridge. Therefore, this is less efficient compared to 'new roof' where PIR insulation is installed above the rafters.

9. GALLERY

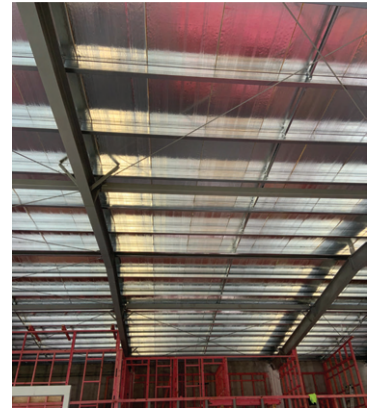
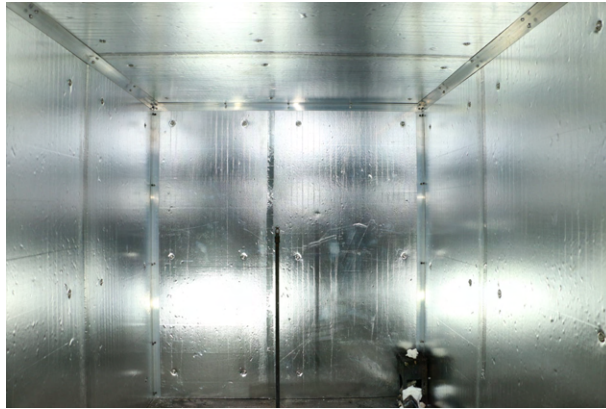


Figure 9.1. Fibreglass Aluminium

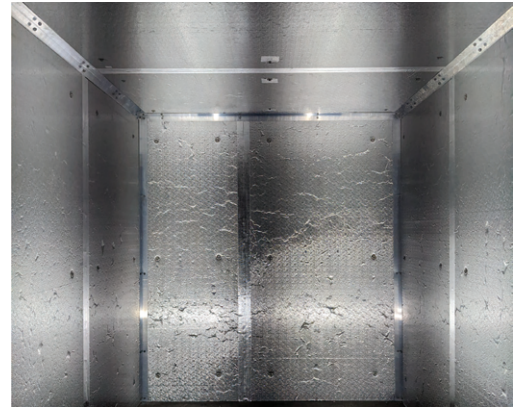
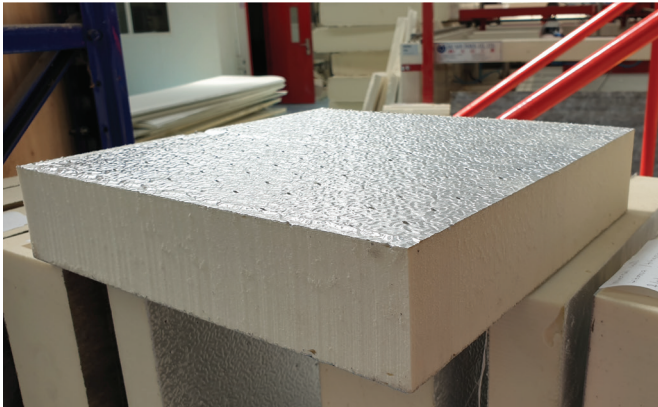
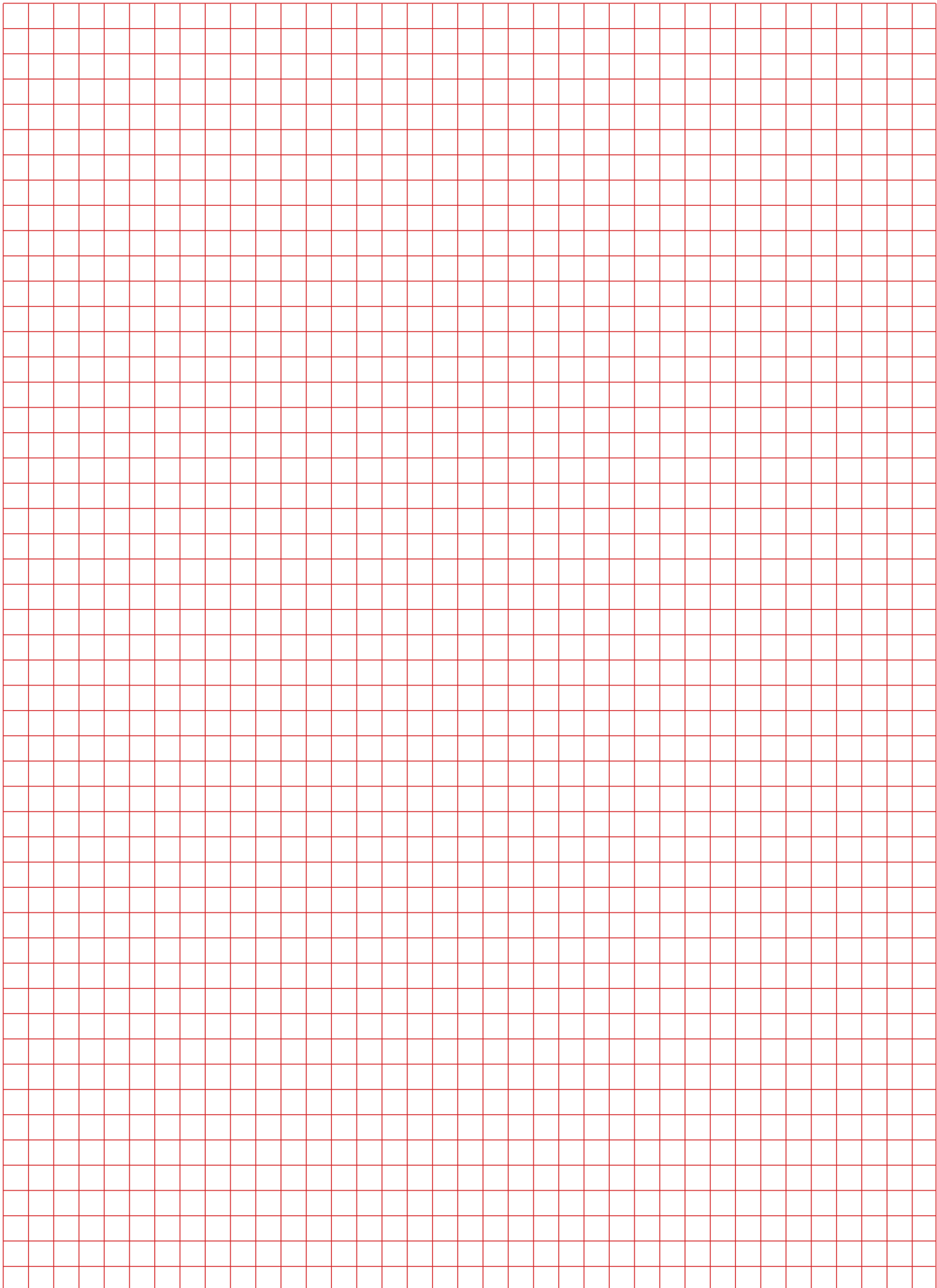


Figure 9.2. Embossed Foil



Figure 9.3. Glass Fabric



CNZ INSULATION



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