

# RAPID BLOC

SYSTEM  
INNOVATIVE OF  
STRUCTURAL WALL  
ENERGY-EFFICIENT CONCRETE

## INSTALLATION MANUAL

DURABLE  
FAST  
SOLID  
ENERGY-EFFICIENT NON-  
COMBUSTIBLE

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## 1.1 Purpose of the Handbook

The purpose of this manual is to train and certify installers in the implementation of Rapid Bloc products, providing them with the technical knowledge, best practices and safety instructions essential for a compliant, efficient and sustainable installation.

It aims to ensure a uniform quality standard on all sites by equipping installers with the necessary skills to:

- Understand the principles of the Rapid Bloc system;
- Master each step of the installation according to the rules of the art;
- Respect technical and structural recommendations;
- Guarantee safety on the construction site;
- Represent the Rapid Bloc brand in a professional manner.

At the end of the training, the participant must be able to carry out a complete, safe installation that complies with the requirements of Rapid Bloc certification.

## 1.2 Rapid Bloc System Overview

Rapid Bloc is an innovative system of prefabricated structural walls, combining the robustness of reinforced concrete and the insulating properties of expanded polystyrene. Designed to meet modern requirements for speed, durability and energy performance, this process greatly simplifies the construction process while ensuring superior quality.

The Rapid Blocs, prefabricated in the factory, are easily assembled by stacking, then reinforced on site by a central reinforced concrete pour. This smart method eliminates several complex steps of traditional techniques, allowing for fast, clean and efficient execution on the jobsite. In addition to its technical performance, Rapid Bloc offers a customizable finish, both inside and out, adapting to all architectural styles, from the most classic to the most contemporary.

The Rapid Bloc system is a successful combination of speed of execution, energy efficiency, robustness and durability. Thanks to its high insulating factor, the absence of thermal bridges and its resistance to bad weather, it ensures superior interior comfort and a significant reduction in the building's operating costs.

Versatile and adaptable, it is suitable for a wide range of applications: single-family homes, multi-unit dwellings, commercial, industrial, institutional, agricultural buildings, as well as retaining walls and embankments. Its simple and quick implementation makes it a particularly advantageous solution in contexts of labour shortages or construction sites with tight deadlines. Not to mention the ESG (Environmental, Social and Governance) benefits

In short, Rapid Bloc is a modern, cost-effective and high-performance construction solution that allows you to build better, faster and smarter, while ensuring safety, comfort and long-term sustainability.



## 2.0 OVERVIEW

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## 2.1 Company Goals

The designers of Rapid Bloc products have made it their mission to meet the industry's growing demand for fast, energy-efficient building solutions. In addition, the Rapid Bloc system is an effective response to the labour shortage in the sector: even a large building can be erected by a small team of only four workers.

## 2.2 Competitive Advantages of the Rapid Bloc System

- QUICK AND EASY INSTALLATION
- NEAR-ZERO WASTE CONSTRUCTION
- 35 MPA CONCRETE PANEL FINISHING
- 
- MORE ECONOMICAL THAN CONCRETE OR STEEL
- THERMALLY BRIDGE-FREE WALL SYSTEM
- 
- FAST AND ON-TIME DELIVERY
- 
- R-EFFECTIVE FROM 15 TO 33
- 
- SOUNDPROOF WALL
- ANTI-MOLD (NO MATERIAL ORGANCA)
- NON-COMBUSTIBLE WALLS RESISTANCE OF + 3 HRS
- SUPERIOR SOUNDPROOFING (NISR 64) CERTIFIED
- RESISTANT TO HEAVY MACHINERY IMPACTSCLACIUM/ACID RESISTANT
- ANTI-VERMIN / RODENTS
- REDUCTION OF CONTINGENCIES AND EASIER MANAGEMENT

Whatever the project, meeting deadlines remains a priority. The Rapid Bloc system speeds up construction by integrating structure, insulation and finishes in a single step.

### 2.3 Mission, Vision et Valeurs

At Rapid Bloc, we are committed to revolutionizing construction through energy-efficient, efficient and innovative solutions. With a rich heritage of experience spanning four generations, we simplify the construction process, support contractors and champion sustainability for a resilient future.

Our goal is to reduce resource use by 25% by offering a hyper-sustainable product and ensuring that each project not only meets immediate needs but also protects our planet for future generations. Transforming construction, protecting our environment – that is our mission.

We will provide innovative and energy-efficient building solutions by establishing ourselves as the benchmark for innovative, energy-efficient and architectural precast concrete structural wall systems. Our commitment to efficiency and sustainability will transform the construction landscape.

Our team will be proud of their accomplishments, fostering a strong sense of belonging and accomplishment by optimizing construction and significantly reducing resource and energy consumption for heating and cooling. Imagine a future where fast and responsible construction is the norm – this is the impact we aspire to create while taking inspiration from initiatives across industries and paving the way for a greener future.

We are **true**: To be true is to act with integrity, by aligning actions and principles. This means treating others with respect, fostering trust and transparency. Basically, we keep authentic interactions for a positive culture.

We are **generous**: Being generous means sharing your knowledge and offering help without expecting anything in return. This creates an environment where everyone feels valued and listened to.

We are **professional**: To be professional is to do the job correctly and efficiently. In short, it's better not to do something if you can't do it well.

We are **rigorous**: Rigor means keeping our commitments and showing consistency and reliability.

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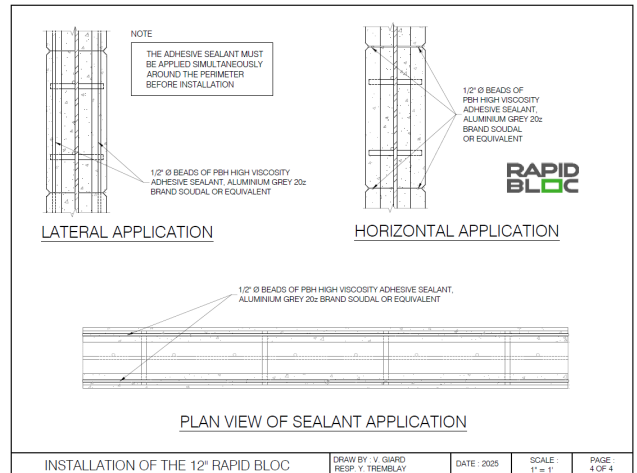
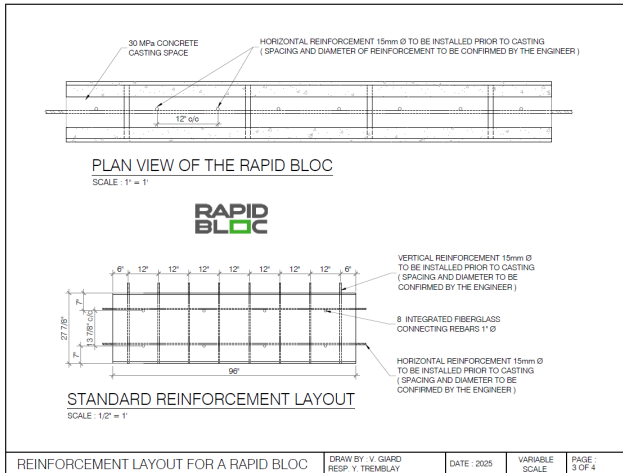
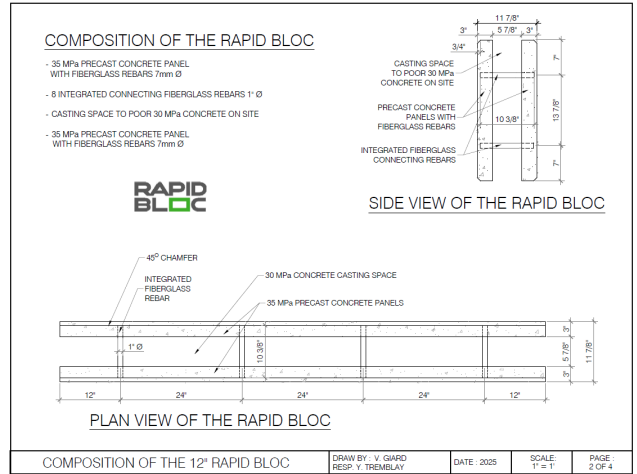
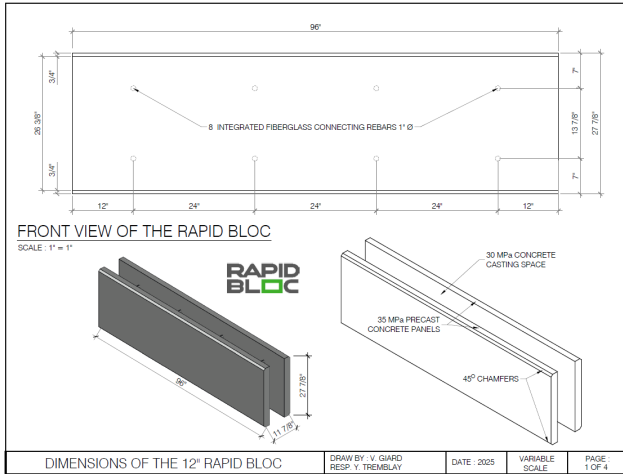
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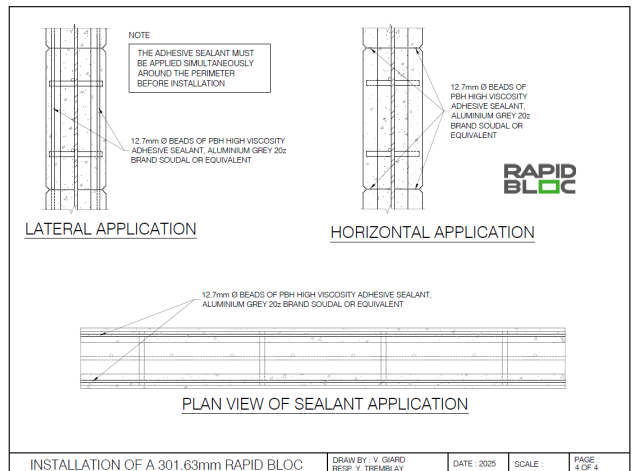
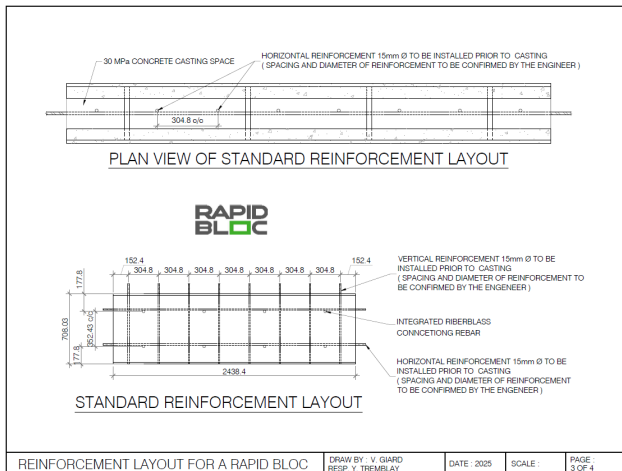
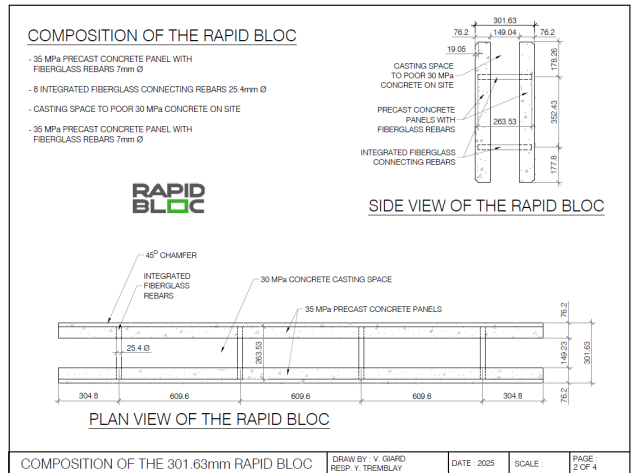
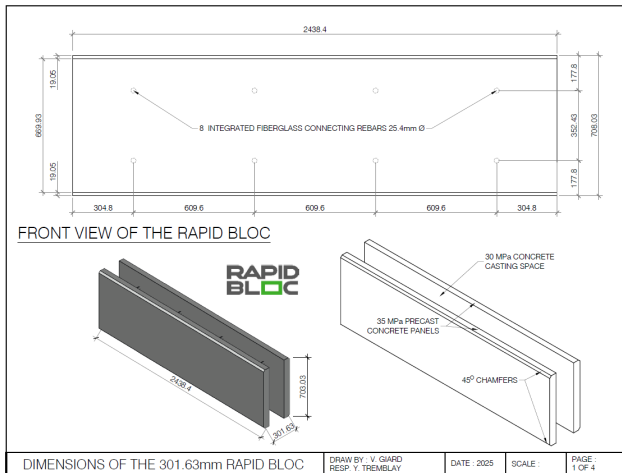
# 3.0 RAPID BLOC TECHNICAL SPECIFICATIONS

## 3.1 Technical sheet of the standard 301.36 mm (12") non-insulated Rapid Block. (Imperial)



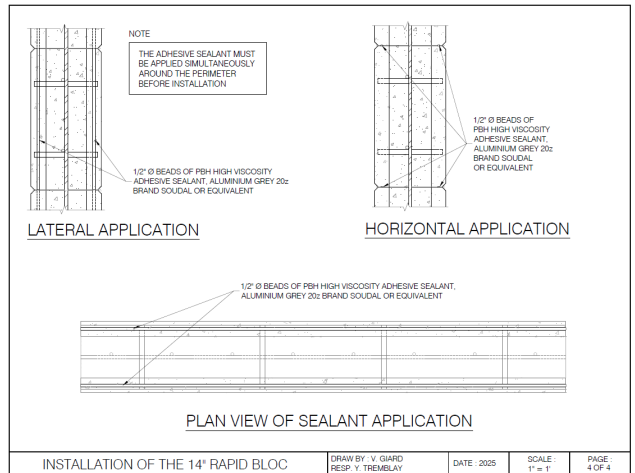
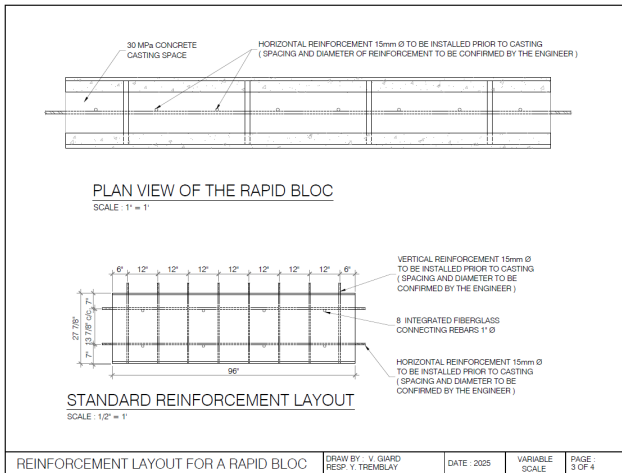
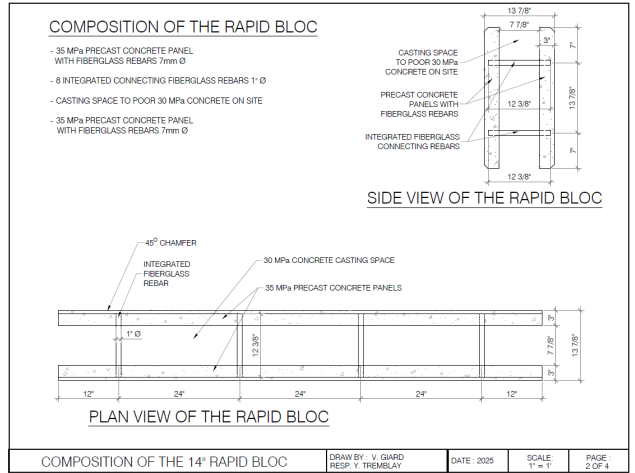
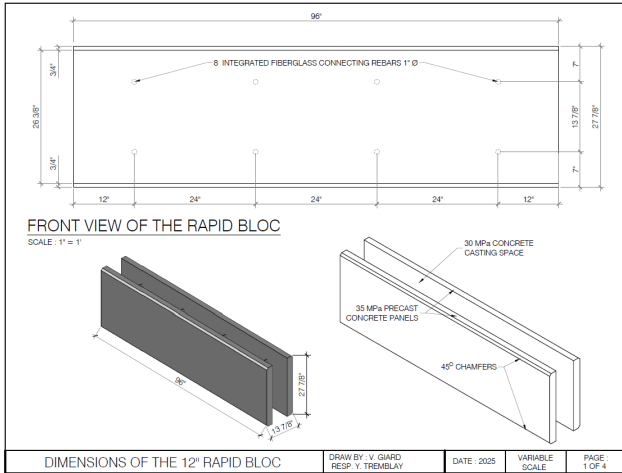
# 3.0 RAPID BLOC TECHNICAL SPECIFICATIONS

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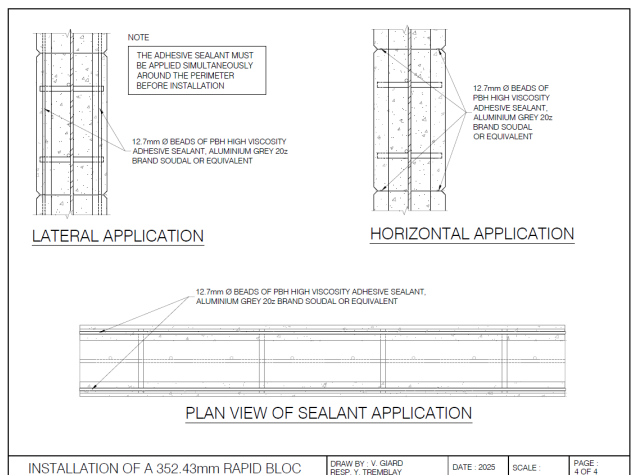
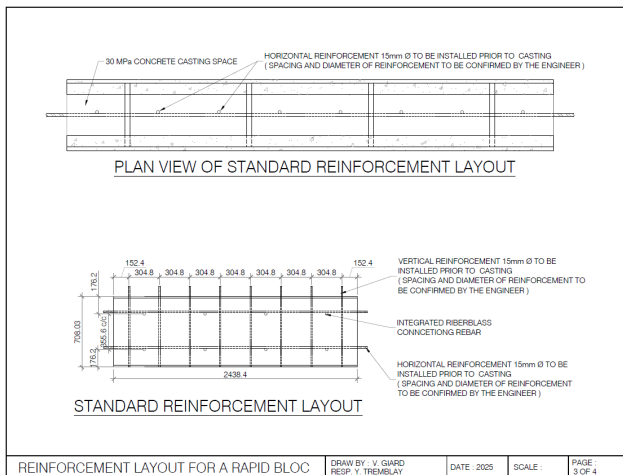
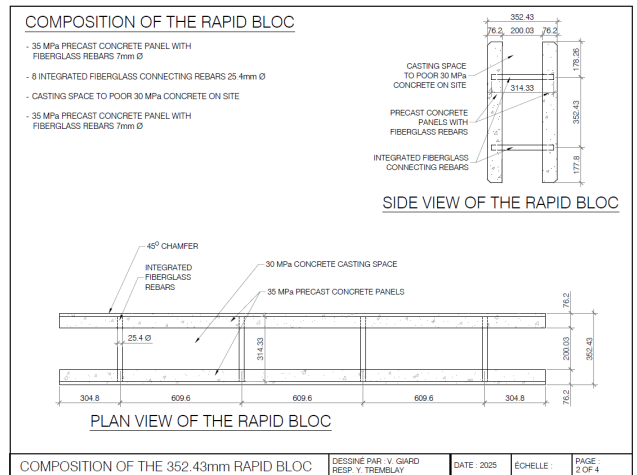
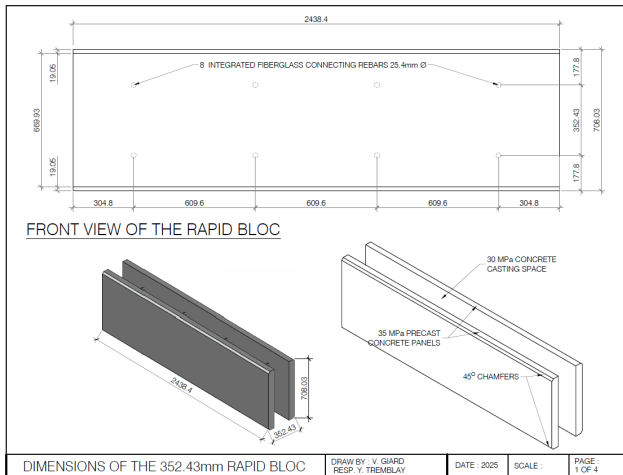
# 3.0 RAPID BLOC TECHNICAL SPECIFICATIONS (continued)

## 3.2 Rapid Standard 352.43 mm (14") Non-Insulated Block (Imperial) Data Sheet



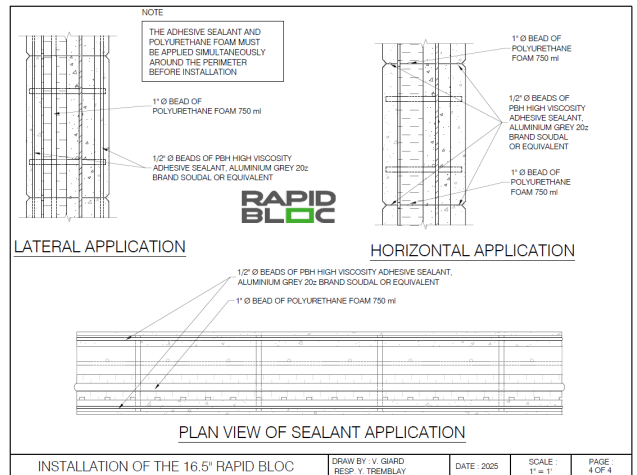
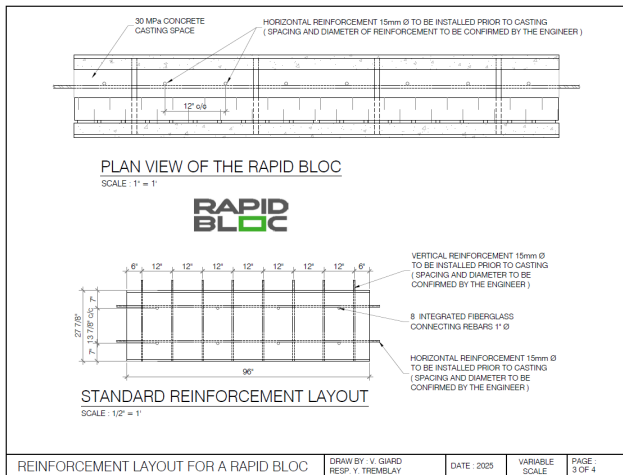
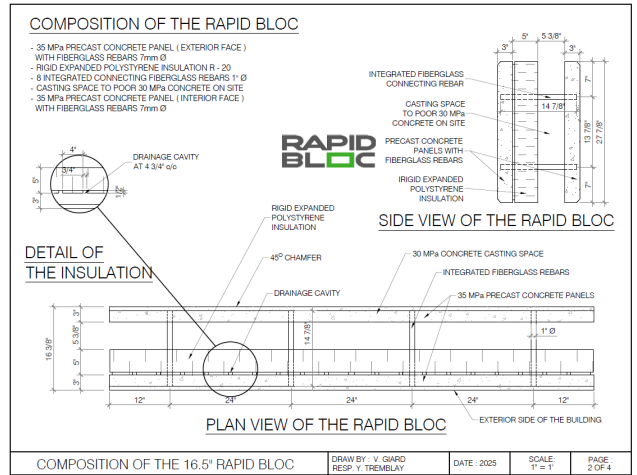
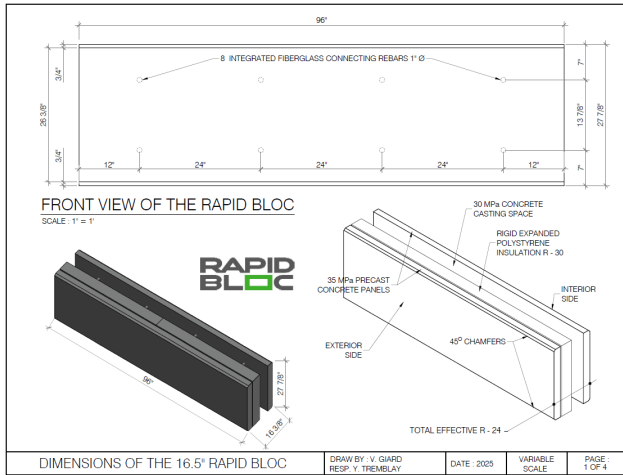
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## 3.2.1 Rapid Standard 352.43 mm (14") Non-Insulated Block (Metric) Data Sheet



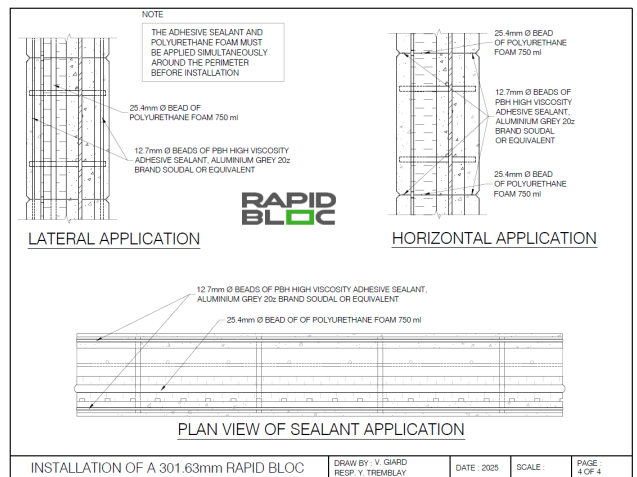
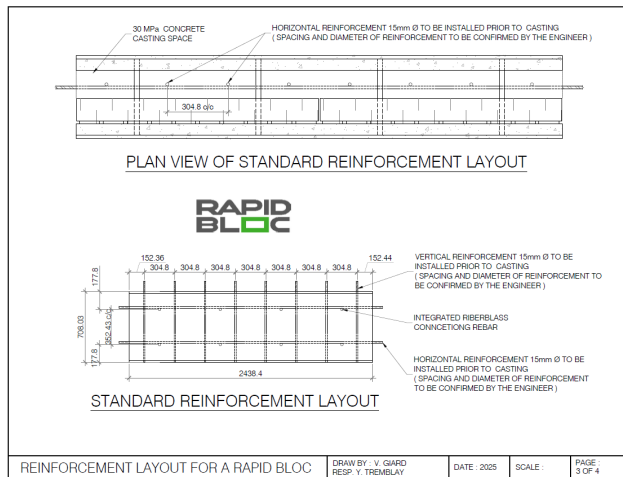
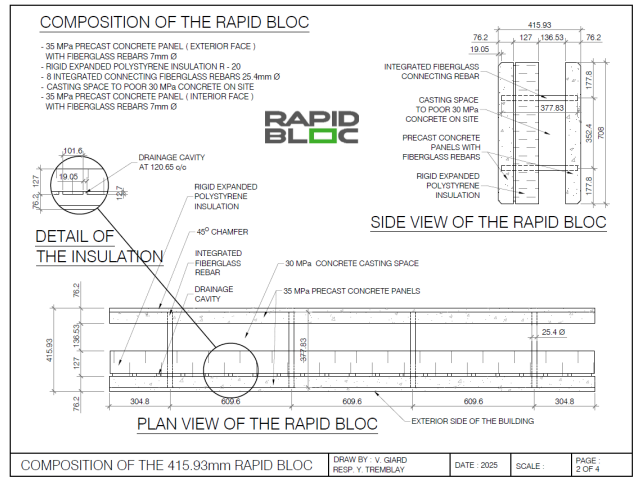
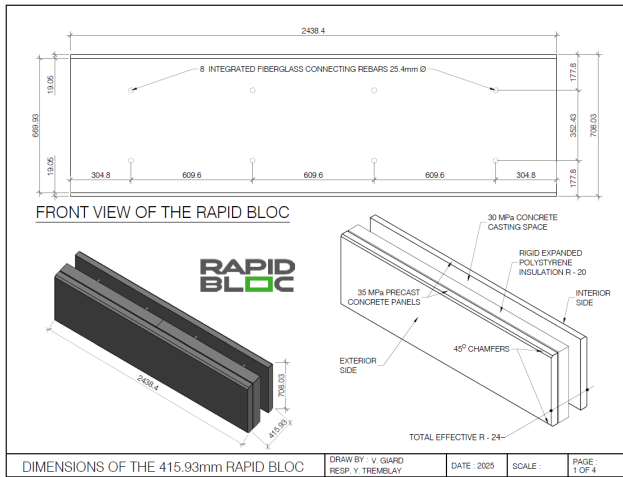
# 3.0 RAPID BLOC TECHNICAL SPECIFICATIONS (continued)

## 3.3 Rapid Bloc 415.9 mm (16 1/2") R24 Effective (Imperial) Datasheet



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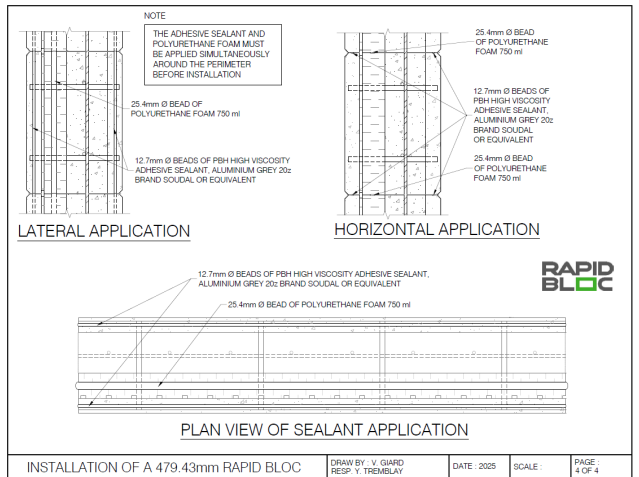
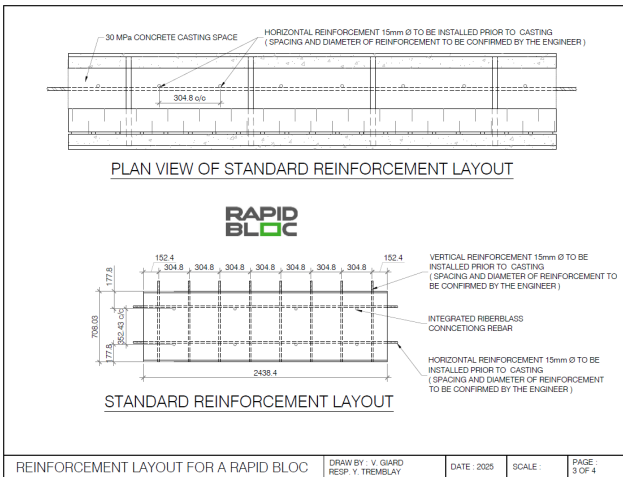
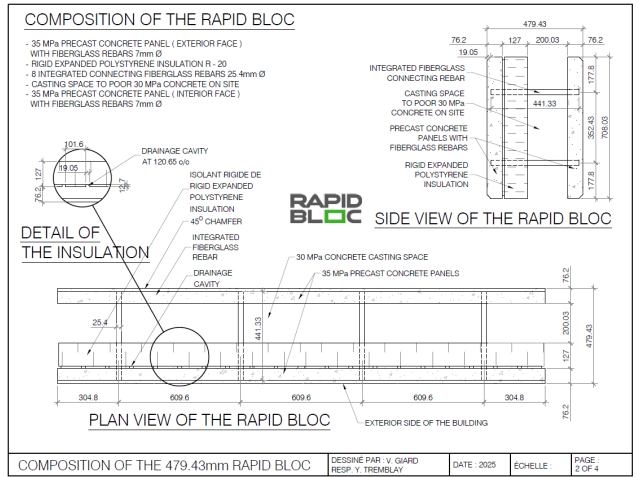
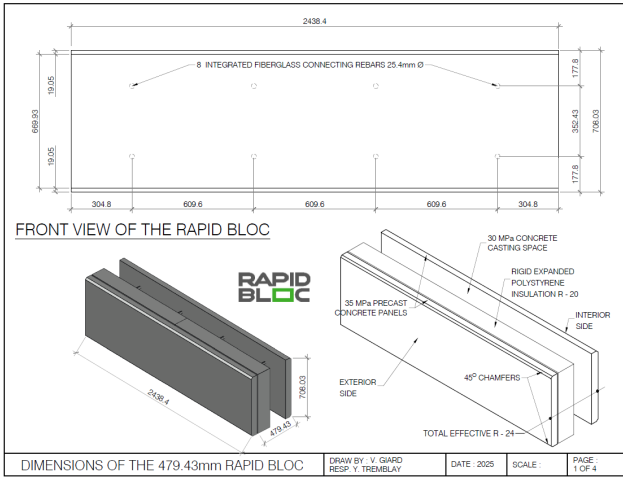
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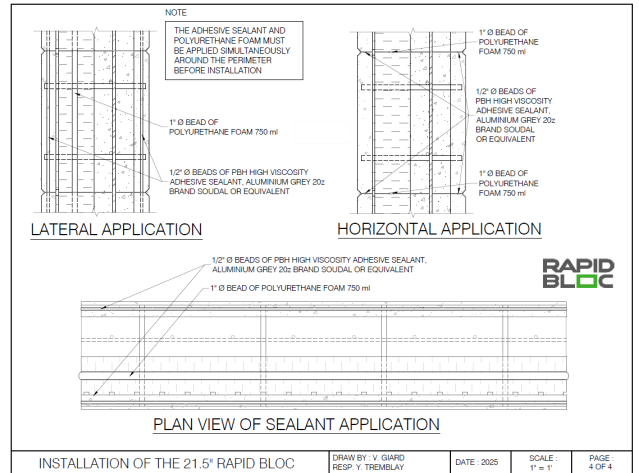
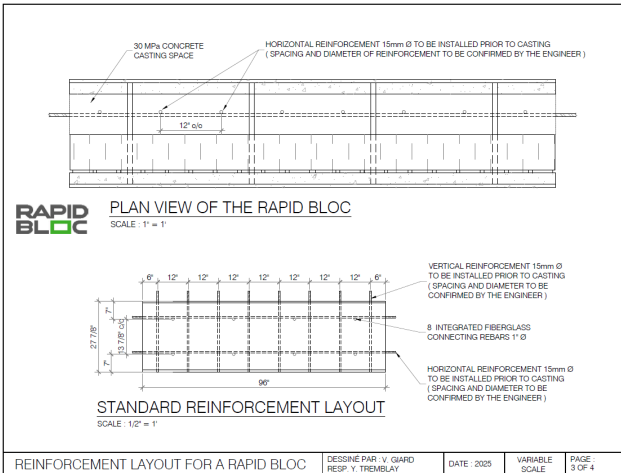
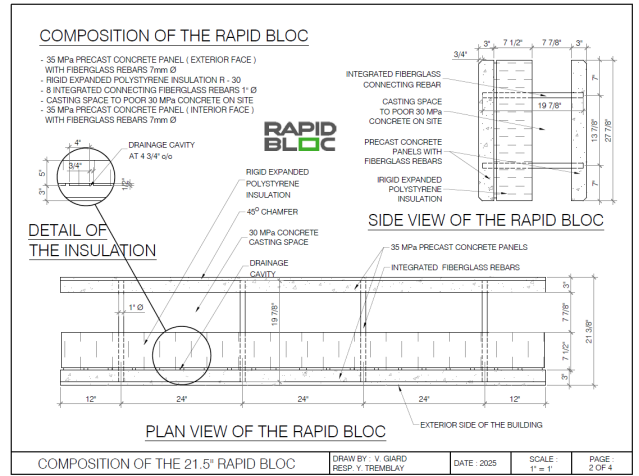
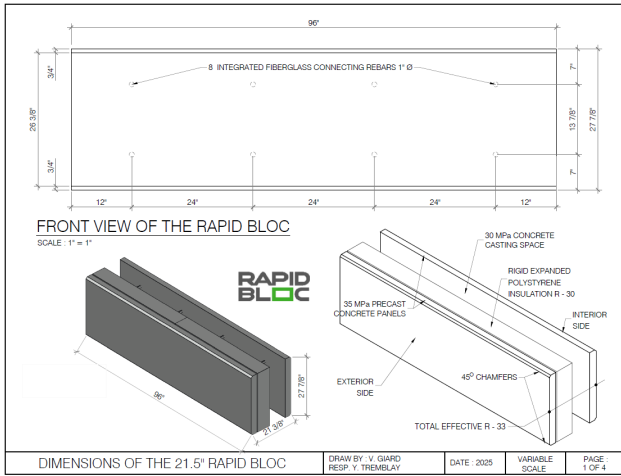
# 3.0 RAPID BLOC TECHNICAL SPECIFICATIONS (continued)

## 3.4.1 Rapid Bloc 479.4 mm (19") Data Sheet (Metric)



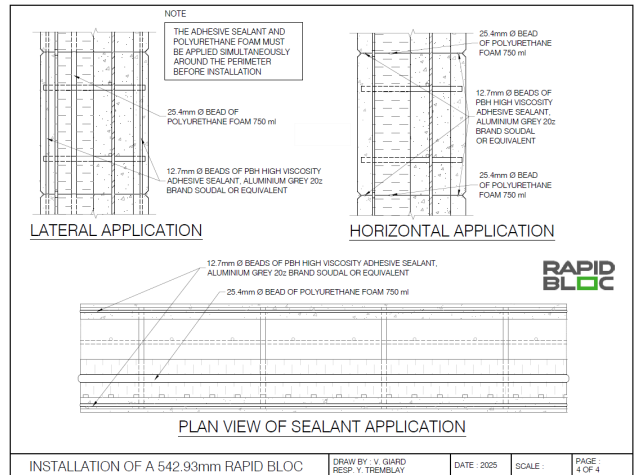
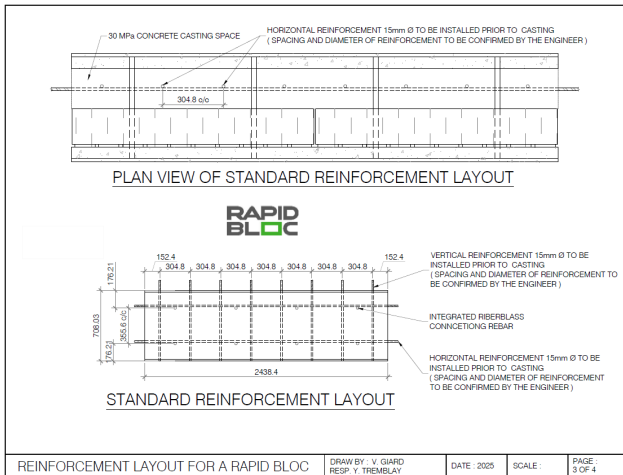
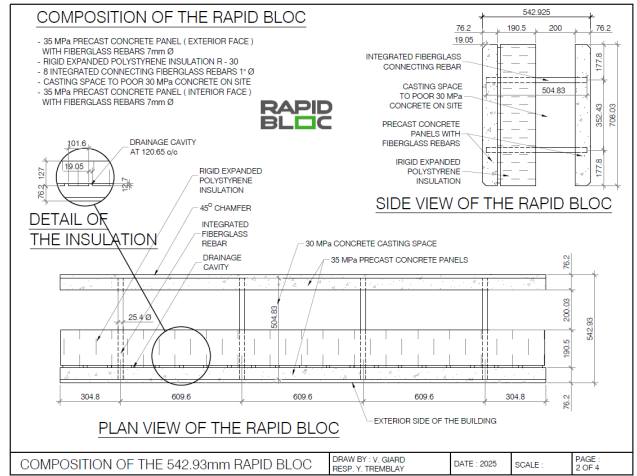
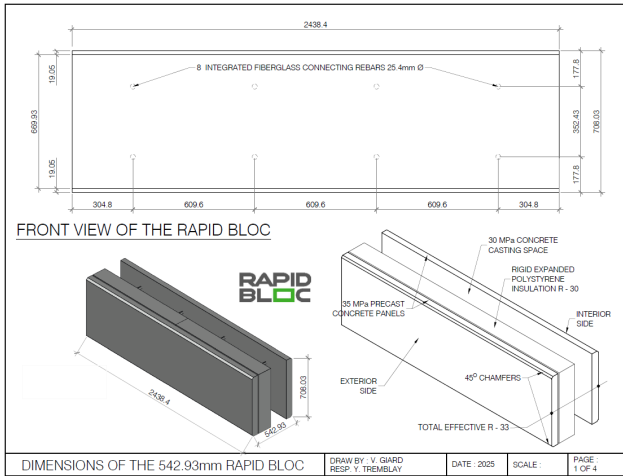
# 3.0 RAPID BLOC TECHNICAL SPECIFICATIONS (continued)

## 3.5 Super Rapid Bloc 542.93 mm (21 1/2") R33 Effective (Imperial) Datasheet



# 3.0 RAPID BLOC TECHNICAL SPECIFICATIONS (continued)

## 3.5.1 Super Rapid Block 542.93 mm (21 1/2") R33 Effective Data Sheet (Metric)



## 3.2 Rapid Bloc Product Components

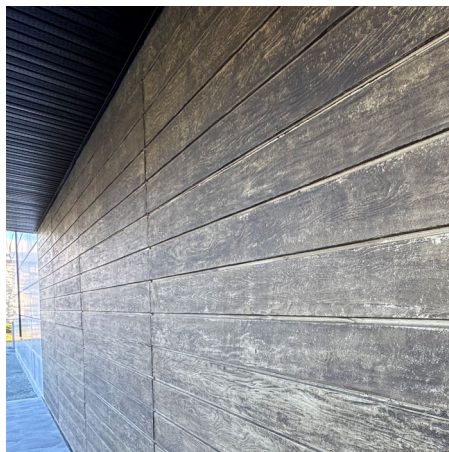
Rapid Bloc blocks are **prefabricated in the factory** according to rigorous quality standards. Each block is made up of three main elements:

- **Two high-performance concrete panels** of at least 35 MPa, forming the external structure of the block.
- **Eight composite reinforcements**, distributed throughout the block, provide the connection between the two panels, guaranteeing an anti-corrosion solution without thermal bridges.
- **Expanded polystyrene board insulation** that provides continuous thermal insulation.



## 3.3 Style signature and standardization of structuring elements

Adapting the design of the building to Rapid Bloc standards allows for a unique architectural signature. In addition to their smooth finish, the blocks can be painted, stained, or molded with imitation wood, stone, masonry textures, etc. Although the Rapid Bloc arrives directly from the concrete-colored factory, it is very easy to integrate a harmonious finish, moreover the application is carried out directly on site.



## 3.4 Application Finish

All Rapid Bloc blocks are delivered in their natural state to the construction site. Once installed, it is possible to apply a stain, paint, sealant. In addition, we have anti-graffiti and/or waterproof sealants.

However, it is essential that each block is thoroughly cleaned before any application.

In the case of uniform application on a large number of blocks, it is also possible to carry out this treatment directly in the factory.



## FINISH TYPE



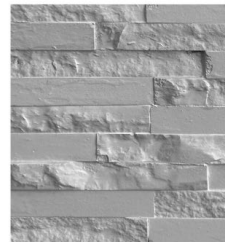
SMOOTH FINISH



WOOD FINISH



STONE FINISH



BRICK FINISH

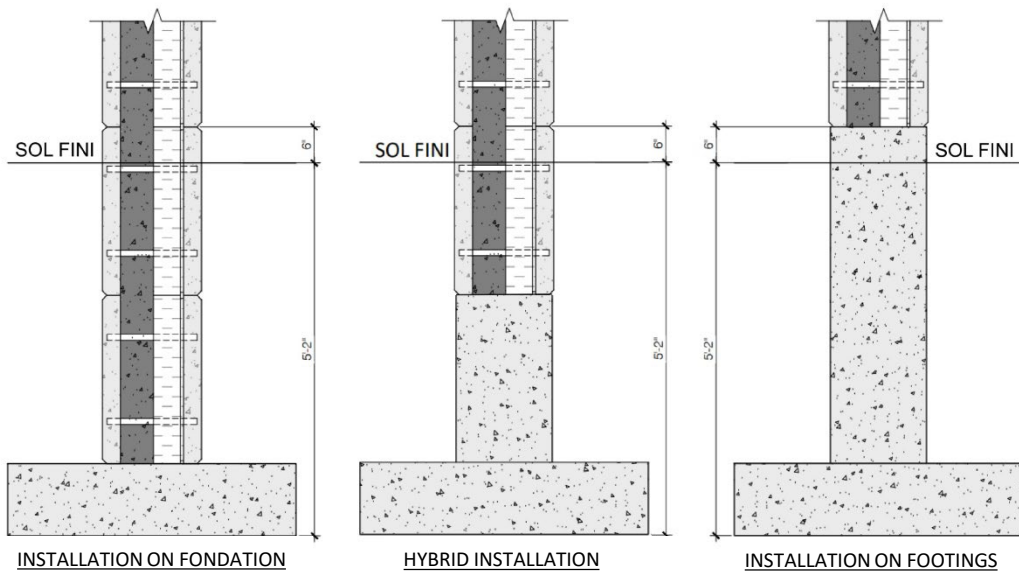
## AN INFINITE CHOICE OF COLORS



## 3.0 RAPID BLOC TECHNICAL SPECIFICATIONS (continued)

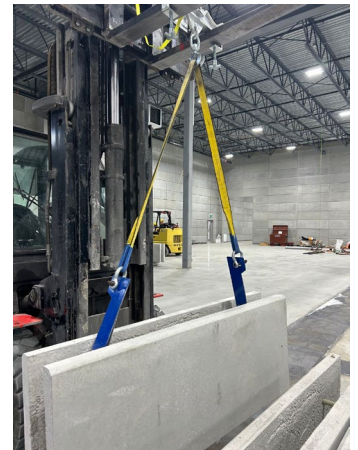
### 3.5 Foundation Options for a Rapid Bloc Building

A Rapid Bloc building can be erected on a conventional poured concrete foundation, directly on the footing or in a hybrid way (poured concrete section and Rapid Bloc), with the first rows of blocks then acting as already insulated foundation walls.



### 3.6 Lifting Hitch

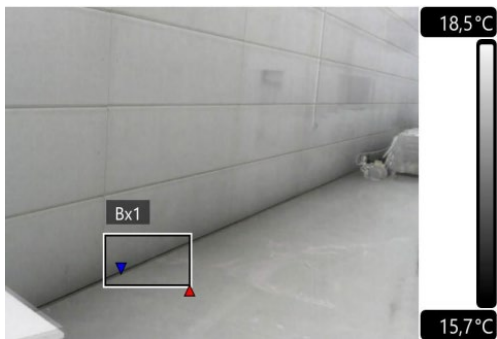
Each of the blocks weighs approximately 1350 lbs. The 25.4 mm (1") diameter fiberglass link frames, inlaid in 8 places during manufacture, allow the fasteners to lift the block. It is important to use the certified lifting attachments available for sale at Rapid Bloc.



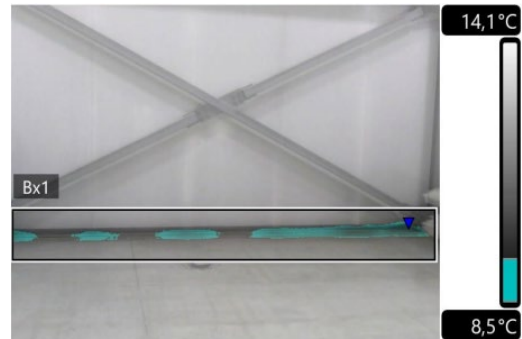
## 3.7 Thermal resistance

The Rapid Bloc offers remarkable energy efficiency thanks to a rigid insulation from 88.9 mm (3.5") to 190.5 mm (7.5") thick (R15 to R33 effective), all without thermal bridging. The exceptional sealing of the system is ensured by caulking during the installation of the Rapid Bloc on site, which prevents any infiltration of air, humidity, water, pests or unwanted particles. In addition, the exterior surface of the insulation is carefully grooved to promote effective ventilation and allow the evacuation of water and humidity related to climatic variations.

Rapid Bloc



Modular Insulation Panels and Steel Structures



\*The wall-foundation junction is often conducive to air infiltration and energy loss. The Rapid Bloc system used in the foundation wall reduces heat loss by 65% compared to conventional steel structures and modular insulating panel walls placed on a standard poured concrete foundation, with an average temperature of 16.5°C VS 10.7°C as shown in the photos above.

\*Thermographic study carried out on March 3, 2025 by Le Thermographe, thermal analysis service (independent company)

# 3.0 RAPID BLOC TECHNICAL SPECIFICATIONS (continued)

## 3.8 Wall systems suitable for all environments

- FOUNDATION WALL
- DIVIDING WALL FOR STORAGE OF GRAINS / GRANULAR MATERIALS / MANURE
- MUR POUR BASE DE DÔME
- RETAINING WALL
- NOISE WALL
- BUILDING WALL
- EXTERIOR OR INTERIOR WALL
- WALL FOR REFRIGERATED BUILDING
- WALL FOR BUILDING FREEZER
- BASIN
- PRE-PIT



## 4.0 PREPARATION

4.1 Materials needed	29
4.2 Necessary equipment	30-31

---

Opting for a Rapid Bloc construction method allows a reduced number of workers to be mobilized on the site and requires a minimum of equipment. In addition to a reserve of blocks, the quantity of which is estimated as soon as the plan book is drawn up, the installation requires auxiliary equipment to ensure that the work runs smoothly.

## 4.1 Materials needed

- **Marking paint**  
Red, orange or white, according to preference or code color established on the site.
- **Shims**  
Shims made from a material corrosion resistant such as Aluminum
- **Adhesive sealant**  
Tube of structural adhesive sealant  
Grey colour.  
(provided by Rapid Bloc)
- **Insulating doam**  
Polyurethane foam can, installed on a caulking gun adapted.
- **Fixtures**  
Variable according to the guidelines of the engineer.  
**Horizontal:** Calculated with a  
Approximately 609.6 mm overlap (24") (according to the engineer).  
**Vertical:** Calculated with a  
Approximately 609.6 mm overlap (24") (according to the engineer).
- **Fixing pin**  
Used to attach horizontal reinforcement to each other and to the fiberglass reinforcement of the Rapid Bloc.
- **Guide rings**  
Rings used to hold the vertical reinforcement added just before casting.
- **Fixing brackets/ Corner brackets**  
For the joining of the blocks forming the corners (provided by Rapid Bloc).
- **Concrete**  
Mix calibrated according to resistance (MPa) specified by the engineer.

### 4.2 Necessary equipment

- **Personal protective equipment**  
Goggles, shoe/boot  
safety, hearing protection,  
security
- **Essentiel worker tools**  
Tape measure  
Construction pencils  
Spirit Level  
Utility knife  
Hammer  
Carpenter's square  
Screwdriver / multi-tool  
Tool belt
- **Telescopic forklift**  
Used for handling Rapid Blocks and steel frames.
- **Lifting platform**  
Used as mobile scaffolding for installation, casting, and other work at height.
- **Extendable stick mounted laser level**  
(Metric or Imperial)  
Used to measure and verify Heights or Reference Levels on the building site. It allows precise control of the heights and alignment of the Rapid Bloc.
- **Chalk line (with red or blue chalk powder)**  
Used to mark straight lines on surfaces, making it easier to align Rapid Blocs.
- **Alignment square**  
tool designed and adapted to Rapid Bloc to ensure optimal alignment during of the installation
- **Adhesive sealant gun**  
Used to apply the sealant between the Rapid Blocks to ensure a perfect seal and good attachment of the blocks.
- **Polyurethane foam gun**  
Used for the application of polyurethane to ensure a continuous isolation between each Rapid Block.
- **Steel Pipe**  
Allows you to reposition the reinforcement of the to avoid interference with fiberglass reinforcement during the installing Rapid Blocs.
- **Lifting Attachments**  
Enable safe handling and Rapid Bloc during their installation. Enable the safe handling and Rapid Bloc during their installation.
- **Spit Turner**  
Inserted into the pin loop, it is used to close fastening pins metal.
- **Concrete mixer**  
Allows you to mix the components of the concrete. Once prepared, the concrete is transferred to the concrete pump, then cast directly into the walls Rapid Block.

### 4.2 Necessary equipment

- **Concrete Pump**  
Used to transfer prepared concrete to Rapid Bloc walls, facilitating fast and accurate pouring.
- **Cement vibrator**  
Used for better placement,  
Full fill and adhesion  
Optimal between concrete and reinforcement  
in the Rapid Bloc
- **Trowel / Spatula**  
Tool used for finishing and equalization  
concrete poured during pouring.
- **Sponge**  
Used to clean blocks after casting

## 5.0 RESPONSIBILITIES OF THE INSTALLER

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### 5.1 Site preparation

The installation site must be ready for the construction of the building to begin in the best possible conditions. Traffic areas must be clear. It is ideal to have a free installation area of approximately 10 m (32') at the outer perimeter of the building and 4 m (13') at the inner perimeter of the building or vice-versa. Ensure that the floor is stable enough to allow the free movement of telehandlers and hydraulic platforms.



### 5.2 Respect for the precepts of Rapid Bloc

Several advantages of using the innovative Rapid Bloc construction method are based on the quality of the application of adhesive sealant and polyurethane foam insulation between the blocks. A certified installer must be vigilant to ensure that each joint is uniform and without any gaps. It must also use the recommended materials and maintain adequate conditions of use. All to maintain the benefits of the product.



### 5.3 Maintaining Rapid Bloc Certification

Review this document and annotate it, if necessary. The success of the use of Rapid Blocks for your projects requires careful review and constant vigilance in order to maintain the installation standards for which this certification has been issued to you. In addition, an annual visit to the manufacturer's website allows you to deepen your knowledge of the peculiarities of construction with these blocks and informs you of the latest Rapid Bloc innovations. Other information about standard framing formats, new innovations and available finishes can also be displayed here.



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## 6.0 PRE-SITE PREPARATION

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### 6.1 Inspect the Rapid Blocks at the reception

The installer must be present when the transporter arrives at the site. It is the one that unloads and verifies the number of blocks received.

Products must be inspected on site so that any defects and/or deficiencies are reported or corrected directly on site. If so, the carrier must take note of this and inform the person in charge of Rapid Bloc.

On average, a Rapid Bloc block transport contains 64 blocks, each weighing approximately 1,350 lbs (612 kg), for a total weight of 64,800 lbs (29,484 kg).

Once the trailer has left, the delivered blocks will be considered compliant.



### 6.2 Structural Preparation (Footing)

When the foundation consists of rows of Rapid Bloc blocks, square ("L") reinforcement must be installed during the second concrete pour of the footing, in accordance with the engineer's specifications. These reinforcements must protrude from the footing in order to end up in the center of the cavity of the Rapid Bloc blocks used for the foundation.

They will then be embedded in the concrete pouring of the first rows of the foundation wall. This step will also make it possible to extend the reinforcement necessary for anchoring the above-ground walls.

Reinforcement is typically spaced at 304.8 mm (12") on center, but it is essential to always refer to the engineer's plans to meet the structural requirements of the project.



### 6.3 Reinforcement installation (conventional foundation)

The necessary reinforcement must be installed in the foundations to accommodate the first row of Rapid Bloc blocks. It is unnecessary to place them at the threshold of openings, but their presence is mandatory in the interior walls.

These reinforcements, whose alloy, dimensions, spacing and gauge are specified by the engineer, are inserted at a specified depth during concrete pouring.

Be careful to position these rods correctly, taking into account that the rigid insulation of the blocks is not centered, but shifted towards the inside of the building.





### 6.7 Chalk line layout of wall lines

As specified in the prerequisites for the installation of the Rapid Bloc, a surveyor has already placed markers in the form of nails fixed in the foundation to indicate the exact quadrangle of the future building. From these points, the outer contours are drawn with a chalk line. Another line is drawn with an offset equivalent to the thickness of the blocks and delimits the inner face of the wall. These straight lines guide the alignment of the blocks along the length.



### 6.8 Block Marking

Mark the location of each of the upcoming blocks with lines on the surface. Since the blocks are sold standardized at 2438 mm (96") in length or 1219 mm (48"), the non-standard length blocks must be clearly marked in order to respect the design and structure of the building. A check is necessary to ensure that the routes are exactly in accordance with the plan. At the location of the openings of doors with an excess size of 2438 mm (8"), a reference line must be made to indicate the positioning of the blocks above the lintel. The same goes for any change in the vertical alignment of the Rapid Bloc without any staggered layout.



### 6.9 Marking of control points

Since each Rapid Block must be perfectly leveled, mark four control points located approximately 304.8 mm (12") from the ends of the block. These orange circles placed in the places where the future block will rest are marked with spray paint. It should always be remembered that a slight imperfection grows from layer to layer if it is not corrected between rows. This is where the wedges will rest, if necessary.



### 6.10 Marking of openings

It is important to mark all openings with red spray paint to clearly identify the areas where the rolling stock will have to pass.



### 6.11 Marking the compensation block

The adhesive sealant beads join the blocks together. It is therefore necessary to consider that each juxtaposition of the block adds more or less 3.17 mm (1/8") to the length of the row. One of the RAPID BLOCS in the middle will have a slightly shorter length than on the planes to absorb the successive shifts. This is why the installation is always started at the ends and continues the work towards the centre. This adjustment block must be clearly identified by a special mention painted on the ground. It will be cut and placed last.

### 6.12 Determination of the foundation reference level

Although the surveyor has placed his markers, it is prudent to check the level in several places, including the corners and other corners of the perimeter. If an anomaly is detected at this stage, it can always be corrected by referring to the highest corner as the baseline. A calibration of the tool allows to correspond to the reference level by plus or minus 30m (100') to simplify the understanding of the level bubbles of the plane.



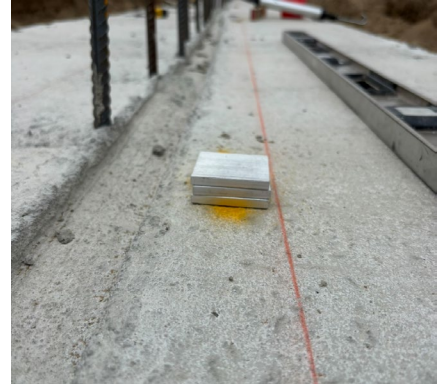
### 6.13 Checking the level of the control points

At this stage, it is essential to check whether the seating surface of the block is level. The maneuver requires that the surface be clean and free of detritus that could create a reading error. A laser level mounted on a height ruler is then placed on each paint point. We check if there is a discrepancy between the expected measurement and the measurement obtained by noting the thickness that will be necessary to find the exact measurement of the wedge to be placed under the block to level it.



### 6.14 Installing the shims (if necessary)

If necessary, adjust the level of the foundation by adding wedges of different thicknesses according to the laser level indications. The measurements taken above the hold should from the outset be the same as those indicated by the level bubbles of the plan. Be careful when choosing the material for making these blowing devices, it must not deteriorate over time and lose its effectiveness. Always level to a minimum, a block that is too high leads to a general elevation.



### 6.15 Securing the shims

Using a bead of structural neutral silicone adhesive sealant on the paint dot will glue the shim, it will crush under the weight of the block and maintain the fit at the desired level.



#### 6.15.1 Applying cement without shrinkage (if necessary)

When the installation of the shims exceeds 12.7 mm (1/2"), the addition of a cement grout without shrinkage between the footing and the underside of the blocks raised from the footing will be necessary.



### 6.16 Organization of the supply and handling of structuring components

The frames, battens, wall finishing plates or those installed above the openings were ordered and manufactured according to the dimensions of the Rapid Bloc. The blocks and other components should have been inspected at delivery and placed as a priority according to the construction phases. Exit doors and garage doors are often installed just before the first pour, but some projects may need to be installed as soon as the first row is installed, so they are approached.

The company Rapid Bloc has developed calibrated lifting fasteners to stabilize the blocks as they move over the site (manufacturing drawings available on request). (available for sale at Rapid Bloc)

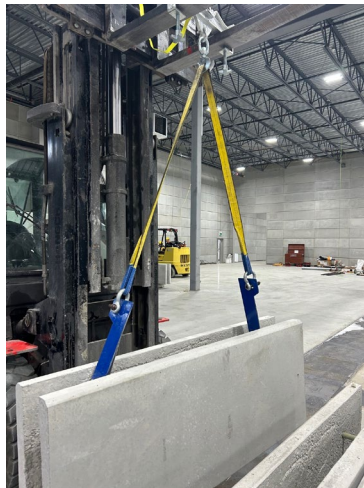


[Home](#) > [Material Handling & Storage](#) > [Fork Lift Accessories & Att](#)

#### VESTIL

Double Swivel Hoisting Hook, 7-1/4" x 2-1/2" Fork Pocket

Model: **MP500** Mfr. Model No.: D-FORK-4-SL  
[See Product Details](#)



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# 7.0 RAPID BLOC INSTALLATION STEPS (continued)

## 7.1 Installing the Lifting Hitch

Start by choosing the right Rapid Bloc from the inventory delivered previously.

Use the lifting attachment to ensure better precision in movements.

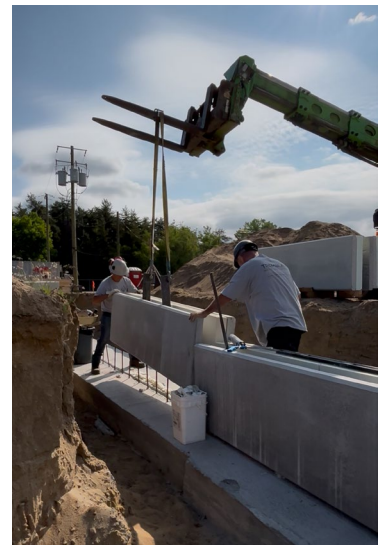
The eight composite reinforcements were also designed to allow the lifting device to be attached, while securely holding the two concrete panels together.

First, install the lift hitch on the forks of the telehandler. Then install the hooks on the internal composite reinforcement of the Rapid Bloc.

Lift the assembly slightly with the help of the machinery: gravity will ensure its stability. The installation can then begin safely.

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**VESTIL**  
Double Swivel Hoisting Hook, 7-1/4" x 2-1/2" Fork Pocket  
Model: MP500 Mfr. Model No.: D-FORK-4-SL  
[See Product Details](#)



## 7.2 Applying adhesive sealant

During the installation of the block lift tether, two other workers prepare the footing/foundation for the first Rapid Bloc (usually a corner block).

One of them applies the silicone adhesive sealant continuously to the location where the inner panel of the block will be installed, as well as in a dotted manner to the location where the outer panel of the Rapid Bloc will be installed.



## 7.0 RAPID BLOC INSTALLATION STEPS (continued)

### 7.2 Applying adhesive sealant (continued)

It is important to apply the adhesive sealant in a dotted manner, and only when installing the first row of blocks, to allow water to drain away in the event of condensation.

Be careful, take into account the 19 mm (3/4") chamfer when evaluating the contours.

The application of the adhesive sealant will be the same for each new placement of a Rapid Bloc, except that it must be done continuously, not in a dotted line.

### 7.3 Application of polyurethane insulation

The second applies polyurethane to the rigid insulation as well as to the foundation/footing. It is always necessary to ensure that there is a sufficient quantity to guarantee waterproofing, an essential characteristic of this construction method.

Once compressed, the foam flange reaches an estimated thickness of plus or minus 1.6 mm (1/16"). The application of polyurethane will be the same for each Rapid Bloc installed.



### 7.4 Installing the first Rapid Bloc

In general, there is no loss of time, at the exact moment when the application of silicone and polyurethane is finished, the Rapid Bloc is then advanced and gently lowered above the reinforcement of the foundation or the concrete foundation wall, while it is precisely guided by the workers.

Instructions are exchanged throughout the manoeuvre, which allows for precise stowage in less than two minutes.



## 7.0 RAPID BLOC INSTALLATION STEPS (continued)

### 7.4 Installation of the first Rapid Bloc (continued)

The lifting attachment is then removed. The installation then continues block by block, repeating the same steps until the last element is installed. For corner blocks, the installation is similar, but two anchor brackets must be added to hold the two blocks together.



### 7.5 Installation of white rings around vertical reinforcement

Prior to the installation of horizontal reinforcement, it is essential to install the white O-rings around the vertical reinforcement already anchored in the poured concrete foundation, foundation or footing.

These rings are important because they will help to hold in place the vertical reinforcement added just before casting, ensuring their stability.



### 7.6 Arrangement of steel reinforcement (horizontally)

To ensure that the blocks form a solid row, reinforcement is installed horizontally according to the engineer's instructions.

Their gauges ( $\varnothing$ ) and center-to-center (c/c) spacing are determined by structural calculations that ensure the strength and stability of the building.

These reinforcements are generally arranged to overlap at least 609.6 mm (24") between each segment.



### 7.6 Arrangement of steel reinforcement (horizontally) (continued)

When the required spacing is plus or minus 355.6 mm (14"), they can simply be placed on the Pultrall rods of the Rapid Bloc.

The installation of these reinforcements is carried out as the Rapid Bloc blocks are installed, and is carried out by the fourth man on the site.

### 7.7 Arrangement of steel reinforcement (L-shaped)

For building corners, reinforcement is also necessary. That's why Rapid Bloc offers "L" frames, designed to be positioned in every corner.

The "L" frames are essential in the walls at each corner of the building. The same applies when an interior wall made of Rapid Bloc meets an exterior wall perpendicularly. Any offset, the number of reinforcements to be installed and their size are identical to those of horizontal reinforcements. All specifications depend on the engineer's specifications. In the case of an existing building extension, the installation of the reinforcement may be more complex, but all the information will be clearly indicated on the construction plan.



### 7.8 Arrangement of steel reinforcement (vertical)

Vertical reinforcement ensures the solidity of the structure. Often juxtaposed with Pultrall poles, their quantity varies according to the engineer's instructions as well as the time planned for their installation.

However, many teams choose to place them between the 2nd, 3rd or 4th row of blocks, in order to facilitate their attachment using metal fasteners.

It is also possible that the plans provide for variations in levels or special arrangements, particularly above openings.

All these indications must be checked carefully before pouring the concrete.



### 7.9 Fixing the reinforcement

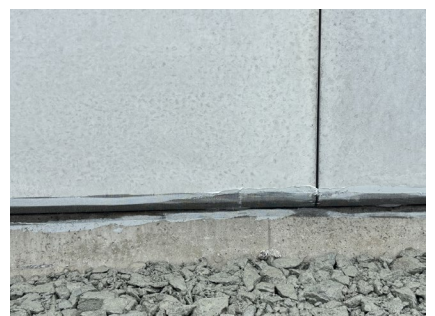
Attach the horizontal reinforcement to the fiberglass reinforcement of the Rapid Bloc, as well as to the vertical reinforcement protruding from the foundation, using the fastening pins and the spindle.



### 7.10 Installation of a ventilation screen (Rapid Bloc foundation)

After installing the first row of Rapid Bloc blocks, it is important to install a ventilation screen between the Rapid Blocks and the footing (or foundation).

This screen prevents any intrusion of debris or insects and allows condensation water to drain properly. The installation of the screen must be carried out before backfilling and with clean 3/4 stone.



## 7.0 RAPID BLOC INSTALLATION STEPS (continued)

### 7.10.1 Installation of a ventilation screen (poured concrete foundation)

The simple hole covered with a mosquito net has the same purpose as the strip. The only difference is that the hole is smaller in order to be less visible, since it remains visible and will not be backfilled, unlike the screen strip.



### 7.11 Installation of openings on the foundation

At this stage, it may be necessary to install the exit door frames and garage door frames on the concrete foundation wall. Some full-height windows may also need to be fixed before a new tiering is erected.

Once again, it is up to the manufacturer's discretion to judge the best strategy to adopt; place them at the beginning and set the Rapid Bloc between the frames or the opposite, place the frames just before the first pour after 3 or 4 rows.



### 7.12 Installation of temporary beams and support columns

To allow the free and safe movement of machinery and to support the weight at the top of openings during work, install temporary support beams and columns in garage door openings.



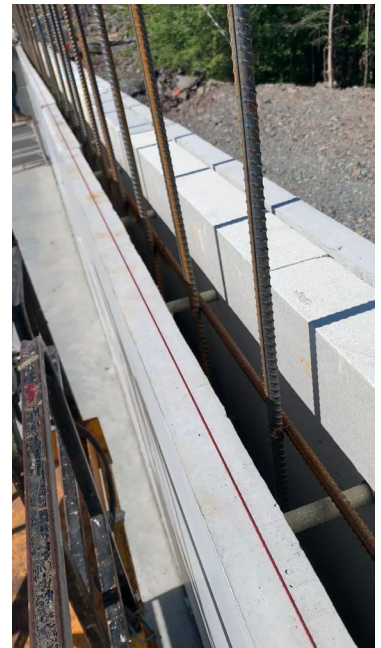
### 7.13 Checking for Row Uniformity

You can never take too many readings with the laser level: it is essential that the height of the entire row remains uniform. Some markings may disappear under the blocks; it will therefore be necessary to trace some of them.

Once the first row of Rapid Bloc is completed, you get a good overview of the scale of the building. It's the perfect time to pick up the chalk line and mark the beginning of this wall.

By drawing a pencil line in the center of the panel's thickness, it becomes easier to align the blocks correctly, row by row.

In the event of a slight deviation or the beginning of a curve in the path of the wall, it is possible to correct the situation by improving the alignment of the blocks in the next row. This check should be done at the end of each installed row to correct any errors before proceeding.



### 7.14 Application of urethane and adhesive sealant

The application of the adhesive sealant and foam insulation is done in accordance with steps 7.2 and 7.3, but this time with better placement marks, since the Rapid Blocks are placed on top of each other.

Simply apply sealant beads to the top of the 76.2 mm (3") concrete panels on the exterior wall and interior wall sides, then spread the foam sock over the rigid insulation.



## 7.0 RAPID BLOC INSTALLATION STEPS (continued)

### 7.15 Installing Rapid Bloc on an existing row

Using the telehandler, repeat the same action as when installing the first row.

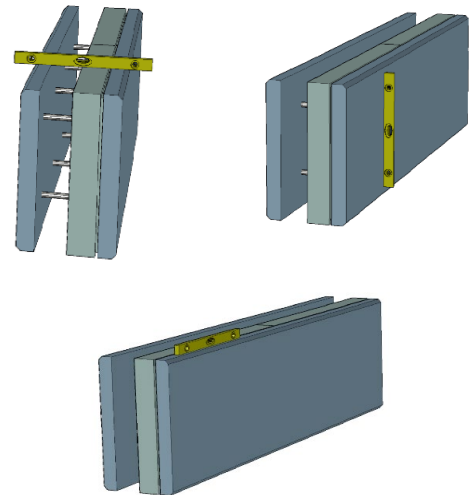
Always stay careful and precise for a perfect and level installation.



### 7.16 Checking the level of the 3 axes

Readings are performed on three axes to ensure that the new Rapid Bloc is up to standard. We start by placing an ordinary level vertically against the inner or outer surface of the block, then on the free side, and finally across the thickness of the block.

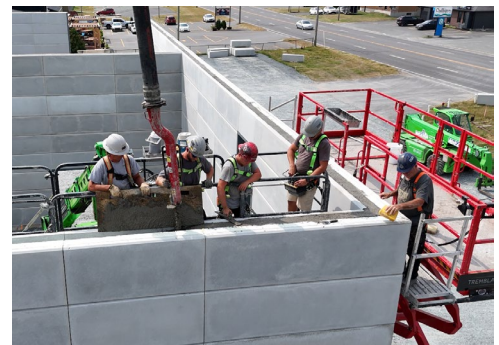
Don't forget to check the height as well, so that this new row conforms to the elevations indicated on the plans.



### 7.17 Concrete pouring

At this point, the reinforcement should already be installed in accordance with the requirements of the plan. Properly placed framing delineates certain sections of the wall, and plates can be inserted inside the blocks to circumscribe the concrete to a specific section of the wall. Some elements, such as anchors, steel structures or other parts, will need to be integrated into the concrete at the time of pouring. It is therefore essential to have them on hand before the concrete mixer arrives.

The filling is first carried out over the entire height of the wall, then the worker slides the chute slowly along the section to be filled. A concrete vibrator is used to eliminate as many air bubbles as possible and ensure good compaction.



## 7.0 RAPID BLOC INSTALLATION STEPS (continued)

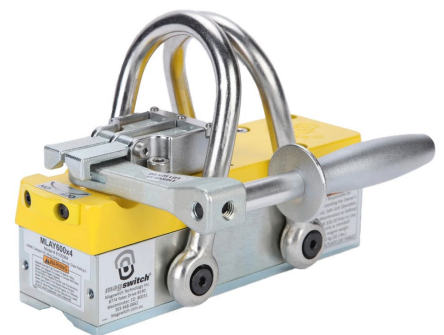
### 7.17 Pouring of Concrete (continued)

During the pouring, one worker holds the concrete pump, another takes care of the vibrator, a third guides the chute, and a third cleans the excess concrete while ensuring that it is clean and that no slides form.

In accordance with the engineer's recommendations, it is important to allow for an offset of + or - 4 inches under the joint of the blocks, so that each concrete pour does not directly coincide with a joint.

### 7.18 Installation of the seating beams

Once the concrete from the last pour is in place, the installation of the sills can begin and be embedded in the fresh concrete. It is important to handle all seat rails and other steel plates using a lifting magnet such as Magswitch MLAY 600X4 Lifting Magnet – 8100364 or equivalent (see image) to ensure a safe installation.



Aimant de levage

## 7.0 RAPID BLOC INSTALLATION STEPS (continued)

### 7.19 Installation of the seat rails (wooden rafters)

When the roof rafters are made of wood, it is recommended to install a 2x6 treated wood seat rail mechanically fixed with 3/8 inch diameter steel bolts at 24" c/c. (to be confirmed by the engineer)



### 7.20 Removal of excess urethane

To ensure an even finish, remove excess urethane with a sharpened blade scraper. Scrape off between 24 and 48 hours after application, when the urethane is dry but still easy to remove. After this time, it hardens and can leave a permanent imprint on the block.



### 7.21 Removing excess adhesive sealant

Using the utility knife, remove the excess adhesive sealant present between the joints of the blocks. This excess may accumulate due to slight overflow during application.



### 7.22 Standardisation of blocks

Using a sanding sponge, even out the surface of the blocks in case of concrete overflow or any visible marks. Sand lightly until you have an even surface.



## 8.0 CONCRETE VIBRATION STANDARDS

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### 8.1 Vibration of CSA A23.1 Concretes

The vibration of the concrete is mandatory and makes it possible to obtain concretes with good mechanical and physical characteristics and, in particular, maximum compactness thanks to the evacuation of a large part of the air contained in the concrete of the order (1.5%) of the volume of the concrete, thus improving its compactness.

The time recommended by the standard (20 seconds) for plasticizing or superplasticizing concrete must be followed because the vibration duration is important:

If it is too short, the concrete is insufficiently tight (we will get: a nest of pebbles, porous concrete and a bad coating).

If it is too long, it can lead to segregation of its constituents, a heterogeneous surface colour and the migration of coarse aggregates to the bottom with the risk of segregation, milk leakage and penetrant testing.

### 8.2 The three processes of vibration

We recommend an internal vibration transmitted directly to the mass of the concrete

by a vibrating needle.

The drive mode of vibrating needles can be electric, pneumatic or thermal.

### 8.3 Main vibration parameters

A frequency between 10,000 and 20,000 vibrations/min and of usual diameter

vibrating needles are 30 mm for concrete with a grain size of less than 20 mm (3/4")

and cavity thickness less than or equal to 200 mm (8").

### 8.4 Concrete vibration rules

The vibration must be stopped when:

- Air bubbles no longer rise to the surface,
- The concrete stops compacting,
- The surface is covered with a thin layer of milt and begins - to glow,
- The noise emitted by the vibrator stabilizes.

### 8.5 Rules to be respected

1. Determining the right vibrating needle: diameter, length and frequency
2. Vibrate the concrete before curing begins
3. Choose successive vibration points according to the diameter of the needle and its surface of action (distance between successive points 8 times the diameter of the needle, i.e. 240 mm for Rapide Bloc panels)
4. Apply vibration to the entire concrete volume in a uniform manner
5. Maintain a concreting speed as constant as possible and limit the height of the concrete fall
6. Vibrate layers of the order of 40 to 50 cm thick
7. Maintain a concreting speed as constant as possible and limit the height of the concrete fall
8. Immerse the needle quickly in the heart of the concrete mass vertically or at a low angle
9. Transplant the bottom layer 10 to 15 cm to ensure a good bond between the layers
10. Raise the needle slowly and steadily (all the more slowly as the concrete is firm), to a height not exceeding 60 cm. (the hole left by the needle in the fresh concrete must close when the needle is removed)

### 8.6 Points to avoid

1. Never put the needle in direct contact with the reinforcement (risk of segregation) or with the walls (risk of damaging the Rapide Bloc panel)
2. Do not vibrate too close to the walls and do not vibrate the concrete directly
3. Never use the needle to move concrete (risk of segregation)
4. Do not vibrate a layer that has already been vibrated or concrete that has started to set
5. Avoid leaving the kerb running if it is not in the concrete
6. Avoid the placement and vibration of the concrete in heavy rain, which can lead to a "washing" of the aggregates, excess water from the surface concrete
7. Don't vibrate for too long

\* Vibration around a window reservation: vibrate on one side only until concrete appears on the other side of the reservation, in order to avoid a risk of air pockets under the reservation. Vibration around a door fill and vibrate simultaneously on both sides.

## 8.7 Prevention sheet: concrete vibration

		<b>RISK</b>	<b>PRECAUTIONS</b>
<b>Over-vibration</b>		Segregation, leakage of laitance	Control the vibration duration (10 to 30 seconds)
<b>Under-vibration</b>		Stone pockets, significant porosity	Vibrate sufficiently
<b>Re-vibration of concrete</b>		Air bubbles, blemishes	Do not re-vibrate concrete that has already been vibrated
<b>Vibration of reinforcement bars</b>		Appearance of "reinforcement ghosting"	Do not vibrate the reinforcement bars Properly secure the reinforcement bars
		Poor bond between reinforcement and concrete	
<b>Displacement of concrete with the vibrator head</b>		Segregation	Must be strictly avoided
<b>Vibrators too small</b>		Stone pockets	Match the diameter of the vibrator head to the volume to be vibrated
<b>Vibrators too large</b>		Bleeding	Match the diameter of the vibrator head to the volume to be vibrated

## 9.0 RAPID BLOC INSTALLATION IN WINTER CONDITIONS

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## 9.0 RAPID BLOC INSTALLATION IN WINTER CONDITIONS

Always refer to the structural engineer for installation procedures in winter conditions. Here are some general recommendations in the event that it is not possible to store the Rapid Blocs in a weather-protected place before they are used.

### 9.1 Snow Clearing

Remove snow from the Rapid Bloc, either manually or with a blower.

### 9.2 Concrete panel drying

Be sure to dry the concrete panel thoroughly with a torch, directly on the surface where the sealant will be applied, to remove any traces of ice, snow or moisture.

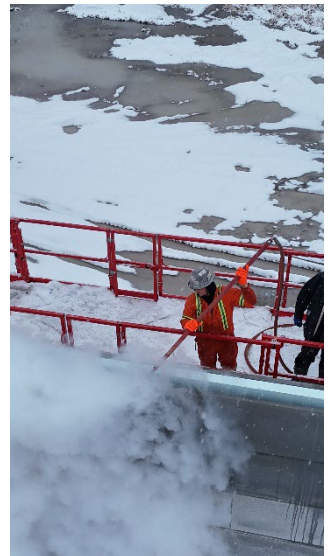


### 9.3 Installing Rapid Blocks

Proceed in the same manner as in step 7.4 for the installation of the blocks to form a wall. Make sure that each Rapid Bloc is correctly aligned, then check the level regularly to ensure the stability and straightness of the structure. Adjust as needed before continuing assembling subsequent rows.

### 9.4 Deglazing

In the event that snowfall occurs after the installation of the Rapid Bloc, ensure that it is completely removed with a steam sprayer before placing the concrete in the walls.



### 9.5 Water drainage in the walls Rapid Bloc

Drill small 3/16" holes in the lower joints in different locations to remove all excess water inside the Rapid Bloc wall before placing the concrete.



### 9.6 Concrete Temperature

It is advisable to take the temperature of the concrete at the outlet of the concrete mixer and at the outlet of the concrete pump to ensure that it is at least at a temperature of 18 degrees Celsius.

### 9.7 Temporary insulation with insulating fabrics

Protect the uninsulated sides with insulating cloths to maintain the temperature of poured concrete at 10°C or higher for 72 hours after installation.

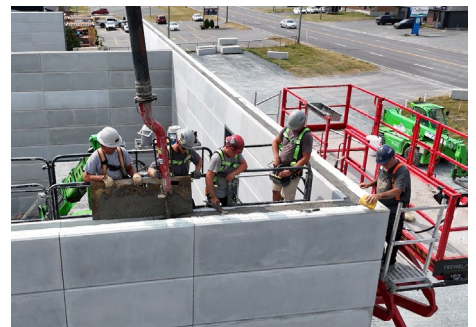
(The installation of probes in the walls is recommended in this case to measure the interior temperature of the concrete.)



### 9.8 Concrete pouring

Proceed with the concrete pour in the same manner as in step 7.15.

Make sure to fill the space completely, to avoid the formation of air bubbles by using a vibrator. It is also important to respect the appropriate curing time according to the ambient temperature to ensure the optimal strength of the concrete.



# 10.0 RAPID BLOC MANUFACTURER'S RECOMMENDATIONS

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10.2 Initial Marking Must Be Followed During Installation	67

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## 10.1 Respect for block alignment

Avoid staggered arrangement or any misalignment of the blocks. To optimize the accuracy and speed of assembly, Rapid Bloc blocks must be installed in perfect vertical alignment, from the bottom to the top.

The system has been designed specifically to promote simple, fast and efficient construction.

## 10.2 Compliance with the initial marking during installation

The most important step is the installation of the first row of blocks, forming a low wall about 28 inches high, since it precisely delimits the footprint of the building. It is recommended to complete this first level completely before continuing with the upper rows.

This concrete visualization of the space facilitates a better understanding of the progress of the project and allows you to approach the rest of the work with confidence. It also offers the possibility of estimating the duration of the work and adjusting the schedule as needed.

## 11.0 STEPS FOR CUTTING A RAPID BLOCK

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# 11.0 STEPS FOR CUTTING A RAPID BLOCK

**\*\* Ensure compliance with CNESST standards for protection and protection\*\***

## 11.1 Protective equipment required

- Waterproof construction site safety pants
- Safety helmet with ear covers



## 11.2 Equipment Required Rapid Bloc

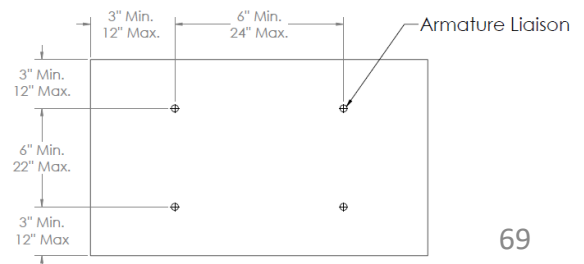
- Tape measure
- Frame square
- Carpenter's pencil
- Portable concrete saw
- Sponge
- Reciprocating Saw



## 11.3 Authorized cutting area

Before each cut, it is essential to refer to the sheet below indicating the minimum and maximum distances to be respected from the connecting reinforcement when cutting Rapid Bloc.

The cut must be made at a minimum of 75 mm (3") and a maximum of 304.8 mm (12") from the connecting reinforcement, in order to avoid any contact with them during the operation.



## 11.0 STEPS FOR CUTTING A RAPID BLOCK (continued)

### 11.4 Marking the cutting area

Using a tape measure and a carpenter's pencil, trace the desired length from top to bottom on the Rapid Bloc in order to get an accurate measurement.

**CAUTION:** Cut or drill at a minimum distance of 76.2 mm (3") and a maximum of 304.8 mm (12") from the connecting reinforcement.



### 11.5 Cutting step

Using the handheld concrete saw, connect the garden hose to minimize dust.

Make sure that the block is well stabilized, then proceed to cut the Rapid Bloc in accordance with all safety instructions



### 11.6 Cleaning the Block

Using a damp sponge, clean the cut surface to remove excess dust, to prevent it from setting or hardening over time



### 11.7 Cutting the rigid insulation

Using a reciprocating saw, trim off the excess stiff foam to obtain a straight and neat finish.



## 12.0 CERTIFICATION AND CONTINUING EDUCATION

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# 12.0 CERTIFICATION AND CONTINUING EDUCATION

## 12.1 Reading and following installation instructions

A careful reading of the installation steps is not enough on its own; It is essential to have a clear understanding of the principles and rationale behind each of the recommendations. Strict compliance with procedures is fundamental to guarantee the quality, safety and durability of the structure.

By signing this document, you certify that you have assimilated the Rapid Bloc installation method and accept full responsibility for complying with the requirements of your certification.



## 12.2 Certificate of Training – Rapid Bloc Installation

I, \_\_\_\_\_ the \_\_\_\_\_ undersigned,  
\_\_\_\_\_, representative of  
the \_\_\_\_\_  
company, acknowledge that I have completed the training  
in the installation of RAPID BLOC products, dated  
\_\_\_\_\_, in accordance with the content  
of the training manual provided.

I certify that I have read all the instructions, including the explanatory videos, and understood the steps necessary for a compliant installation.

I am committed to rigorously respecting the safety instructions as well as the rules of the art in force to guarantee a compliant implementation of Rapid Bloc products.

Date : \_\_\_\_\_

Participant's signature: \_\_\_\_\_

## 12.3 On-site training

See Rapid Bloc for terms and availability.





**RAPID BLOC** certifies that



**TREMBLAY MAITRE CONSTRUCTEUR INC.**

has successfully completed our certification program and meets our standards for installing our products.

A blue ink signature of Yann Tremblay.

Yann Tremblay  
President

A blue ink signature of Luc Williams.

Luc Williams  
Vice President