Approved Bbl-Connection Document

K92884-3

Attestation

Issued	2026-04-05	Replaces	K92884/02
Valid until	2031-04-05	Dated	2022-03-28
Page	1 of 12		

Wall structures constructed from concrete stacking-blocks

N.V. Betonagglomeraten Gubbels

STATEMENT BY KIWA

This Bbl-connection document has been issued on the basis of Connection Guideline Bbl 7516 “Wall constructions made of concrete stacking-blocks” dated 31-12-2024, in accordance with the Kiwa Certification Regulations.

The performance of wall structures constructed from concrete stacking-blocks has been assessed in relation to the “Besluit bouwwerken leefomgeving” and the principles for the assessment are periodically reviewed.

Based on this, Kiwa declares that the wall structures constructed from concrete stacking blocks comply with the requirements of the Buildings and Living Environment Decree included in this Bbl-connection document, provided that:

- the application conditions laid down in this Bbl-connection document are met;
- the concrete stacking-blocks comply with the product characteristics stated in 1.2;
- The manufacture of the wall structures shall be carried out in accordance with the regulations and/or processing methods laid down in this Bbl-connection document.

Kiwa declares that, within the framework of this Bbl-connection document, no inspection takes place regarding the production of the concrete stacking-blocks, nor the manufacture of the wall structures.

This Bbl-connection document is an approved quality declaration as referred to in Article 2.15 of the Buildings and Living Environment Decree. The Bbl-connection document is included in the Register of Quality Declarations on the website of the Accreditation Organisation for Quality Assurance in Construction (TloKB): www.tlokb.nl.

Wim van Loon
Managing Director Netherlands

Disclosure of the certificate is permitted.
Advice: consult www.kiwa.com to check if this certificate is valid.

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www.masterbloc.be

Besluit bouwwerken leefomgeving (Bbl)

Product is:
assessed once for performance in the application
Reassessment at least every 5 years

Wall structures constructed from concrete stacking-blocks

TECHNICAL SPECIFICATION

SUBJECT
Wall structures constructed from dry-stacked concrete stacking-blocks on a flat foundation. The wall structures do not form part of a building, but of, for example, retaining walls, trench silos, and loading and unloading docks.

The foundation for the wall construction and any anchoring thereto are not part of this Bbl-connection document.

Product characteristics
The statements in this Bbl-Connection Document for Wall Structures constructed from concrete stacking-blocks are valid if the concrete stacking-blocks meet the following conditions:

Shape and dimensions
The shape and dimensions of the blocks are shown below.

BLOCK	Length	Width	Height
	150cm 120cm	75cm 60cm	40cm 40cm
	75cm 60cm	75cm 60cm	40cm 40cm
	112,5cm 90cm	75cm 60cm	40cm 40cm
	37,5cm 30cm	75cm 60cm	40cm 40cm

The Masterbloc® is shown on the drawing sheets accompanying this certificate.

Tolerances main dimensions
Length: +1 / -3 mm
Width: +1 / -3 mm
Height: +3 / -3 mm

The dimensional deviation in flatness is a maximum of 2 mm/m for all surfaces.

Tolerances dimensions of studs and counter-studs
Location on block: +2 / -2 mm;
Height: +2 / -2 mm;
Depth: +2 / -2 mm;
Width and length top and bottom: +2 / -2 mm;
Cutout width and length: +2 / -2 mm.

The design clearance between the stud and counter-stud on both sides of the stud is a minimum of 6 mm.

Concrete
The concrete stacking-blocks are manufactured of concrete in accordance with NEN-EN 206, NEN 8005, and NEN-EN 13670. Strength class C30/37. Upon delivery, the concrete compressive strength is at least 2/3 of the characteristic cube compressive strength.

The concrete stacking-blocks consist of (un)reinforced concrete.

CHARACTERISTICS OF THE WALL CONSTRUCTION
The statements in this Bbl-Connection Document for Wall Structures constructed from concrete stacking-blocks are valid if the wall construction meets the conditions below.

Stacking method
Stacking method in accordance with Annex C of RaB 7516.

Wall structures constructed from concrete stacking-blocks

Characteristic values of wall structures built from stacked concrete blocks

Characteristic	Determination method	Attested value
Characteristic shear strength between the blocks (f_{vk0})	NEN-EN 1052-3 infra	0.11 N/mm^2
Characteristic shear strength between the blocks and the foundation ($f_{vk0,fund}$)	NEN-EN 1052-3 infra	0,0026 N/mm^2
Characteristic internal friction angle between the blocks ($\alpha_{k,fund}$)	NEN-EN 1052-3 infra	0,042
Characteristic internal friction angle between the blocks and the foundation ($\alpha_{k,fund}$)	NEN-EN 1052-3 infra	0,0018
Characteristic flexural tensile strength perpendicular to the lintel joints (f_{xk2})	NEN-EN 1052-2 or Annex II of RaB 7516	0,36 N/mm^2

PERFORMANCE UNDER THE "BESLUIT BOUWWERKEN LEEFOMGEVING" (BBL)

Section "Besluit bouwwerken leefomgeving" No. and title	Limit value/ determination method	Performance according to Bbl-Connection Document	Remarks regarding application
Section 4.2 – Safety			
4.2.1 Structural safety	Not exceeding an ultimate limit state defined in accordance with NEN-EN 1990.		To be determined per project. For the design of the wall construction, use may be made of the characteristic values as included in the Bbl-Connection Document.
4.2.2 Structural safety in case of fire	Duration of fire resistance regarding failure determined according to NEN-EN 1992-1-2.		To be determined per project.
4.2.7 Limitation of the development of fire and smoke	(Non)combustibility determined according to NEN-EN 13501-1	Wall constructions are non-combustible or comply with fire class A1 according to NEN-EN 13501-1.	

PERFORMANCE

Structural safety (Bbl 4.2.1)
For each project, a calculation of the wall structure must be prepared by or on behalf of the certificate holder to demonstrate that, during the design service life referred to in NEN-EN 1990, the ultimate limit state is not exceeded under the fundamental and extraordinary load combinations as referred to in NEN-EN 1990.

Explanation
The fundamental load combinations are based on the nominal values of the wall constructed from stacking-blocks. Load cases: self-weight, wind load, whether or not combined with load of stored material.
In addition, the wall must be checked for possible load from (commercial) vehicles when the storage area is empty.

For the extraordinary load combinations, the assumption is made of a wall constructed from stacking-blocks with the largest possible dimensional tolerances of the stacking-blocks (= maximum wall inclination).
Load cases: dead weight, wind load, whether or not combined with the load from stored material. Additionally, extra loading caused by a shovel or other commercial vehicles (if used during filling) must be taken into consideration.

Non-exceedance of an ultimate limit state shall be determined in accordance with NEN-EN 1992-1-1, NEN-EN 1996-1-1 and/or NEN-EN 1990, Annex D.
When applying NEN-EN 1990, Article 5.48 of the Environmental Regulations applies.

Wall structures constructed from concrete stacking-blocks

When determining the ultimate limit states, the characteristic values in the table on page 2 of this Bbl-Connection Document must be used.
In the serviceability limit state, only the friction resistance of the block is taken into account, based on the assumption that there is clearance between the studs and counter-studs and that no displacement occurs in this state.

The characteristic flexural tensile strength (bending with cracking in the lintel joints or tipping moment (fxk1) according to NEN-EN 1996-1-1, Article 3.6.3) is equal to '0'.

The tipping point in the ultimate limit state is determined using the centre if gravity of the concrete compression diagram.

Structural safety in case of fire (Bbl 4.2.2)
If applicable, the duration of the fire resistance of the wall construction must be determined at project level in accordance with NEN-EN 1992-1-2.

Limitation of the development of fire and smoke (Bbl 4.2.7)
Wall constructions comply with fire class A1 according to NEN-EN 13501-1.

APPLICATION CONDITIONS
The foundation must comply with NEN-EN 1992-1-1 and NEN-EN 1997-1, whereby the additional deflection of the foundation may not exceed 0.002 x l_{rep} or 15 mm, where l_{rep} is the length of the span and, in the case of cantilevers, twice the length of the cantilever.

The blocks must be stacked in accordance with the stacking methods in Appendix C of RaB 7516. The wall structure is subsequently considered a solid wall structure for the design.

PROCESSING
The producer ensures that all documentation relevant to the customer, such as processing and usage guidelines, product certificates, warnings, and the like, is available to the customer at the time of delivery.

The producer has committed himself to ensure the accuracy of the content of this documentation.

USER TIPS
Upon delivery of the products listed under "technical specification", check whether:
- what was agreed has been delivered;
- the products comply with the requirements stated under "Technical specification", in accordance with the mentioned determination methods;
- the products show no visible defects as a result of transport and such.

Inspect upon delivery to determine whether the products listed under "processing" meet the specifications mentioned.
If you proceed to rejection based on the foregoing, please contact:

- N.V. Betonagglomeraten Gubbels

and if necessary with:

- Kiwa Netherlands B.V.

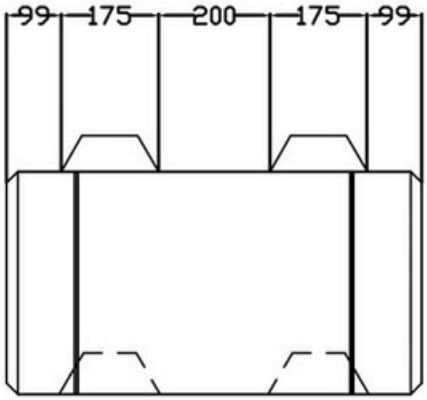
For storage, transport and processing in accordance with the provisions referred to under "processing".

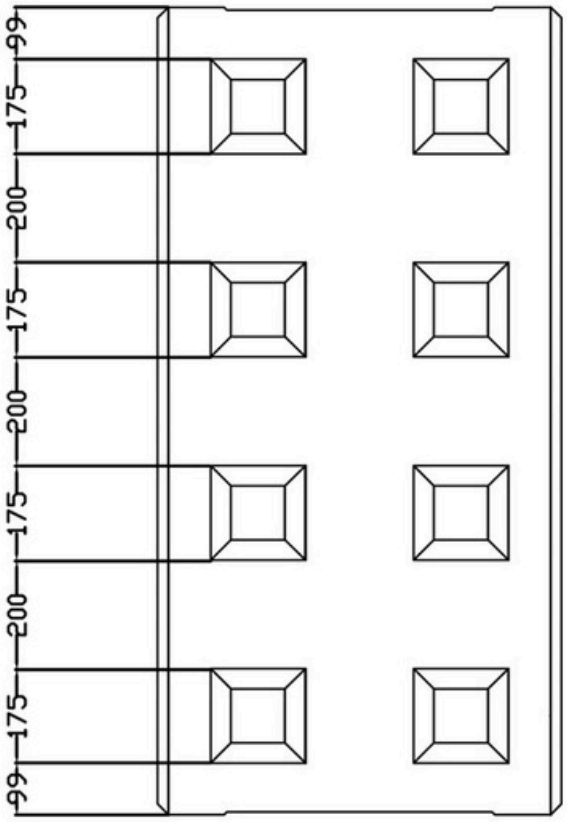
Observe the conditions of application.

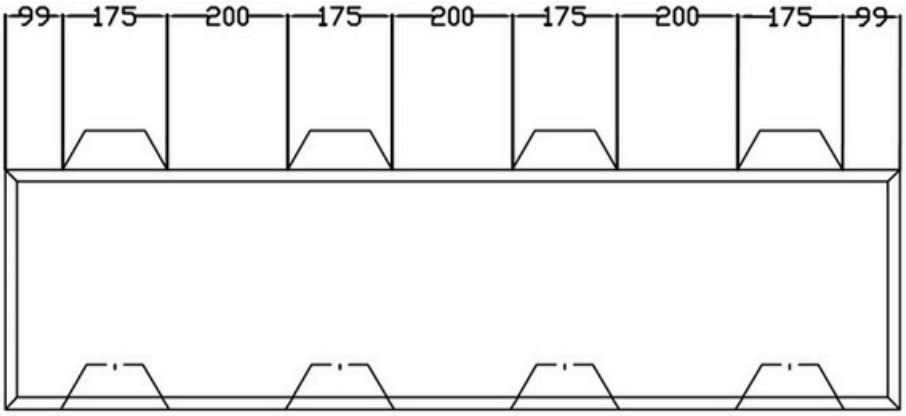
Wall structures constructed from concrete stacking-blocks

DRAWING SHEETS

Masterbloc® 1500x750x400







Wall structures constructed from concrete stacking-blocks

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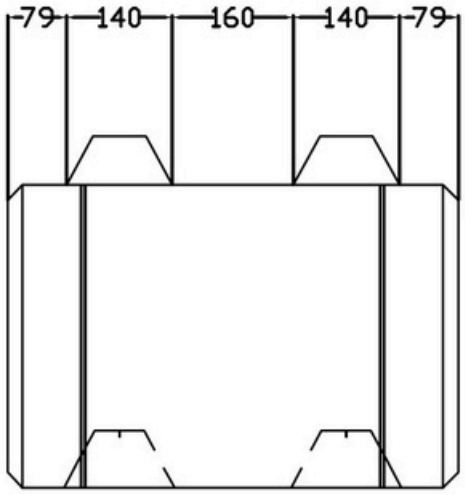

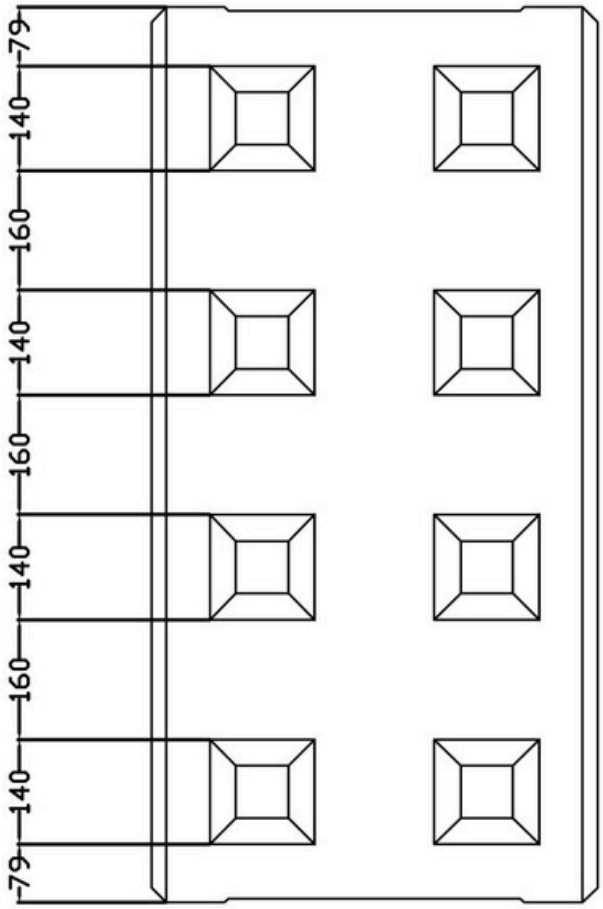

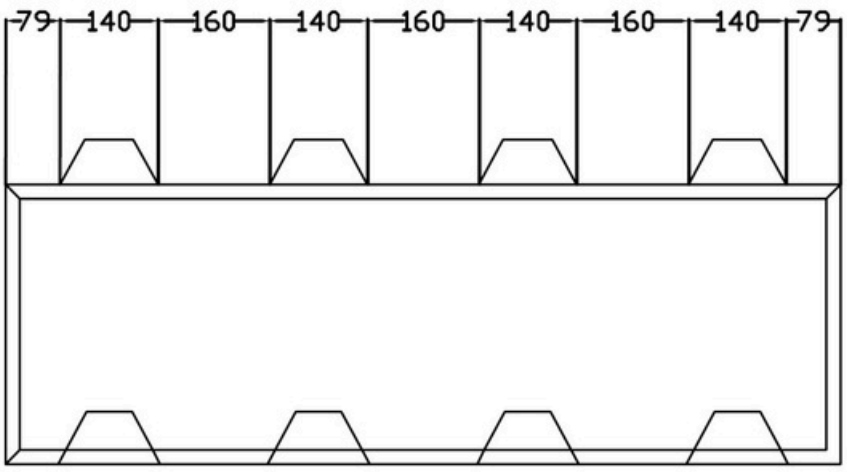

Wall structures constructed from concrete stacking-blocks

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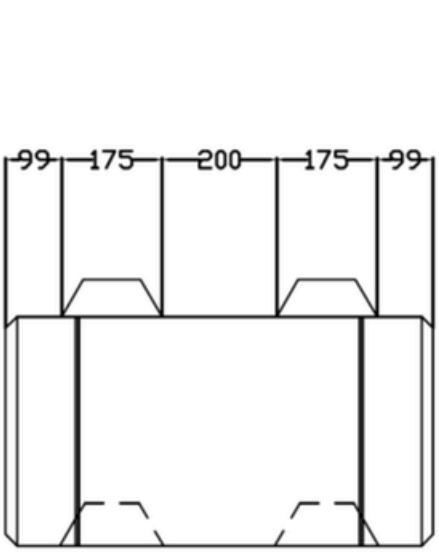
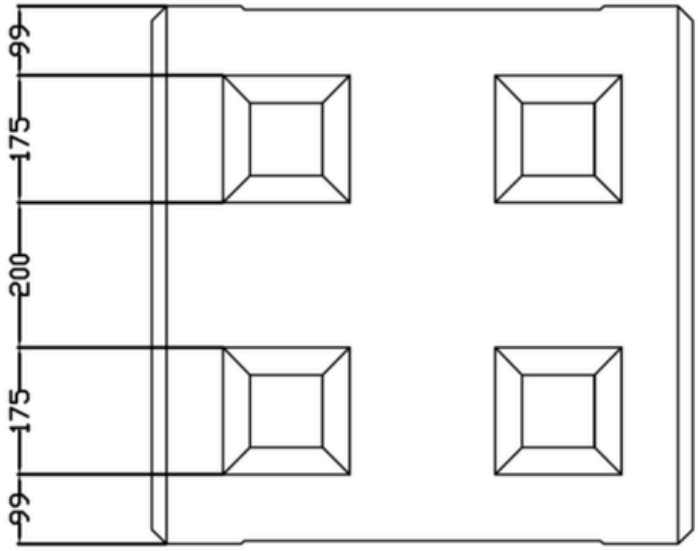
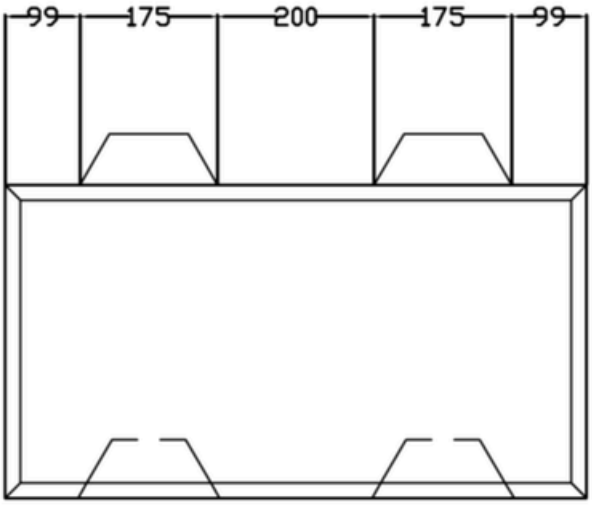
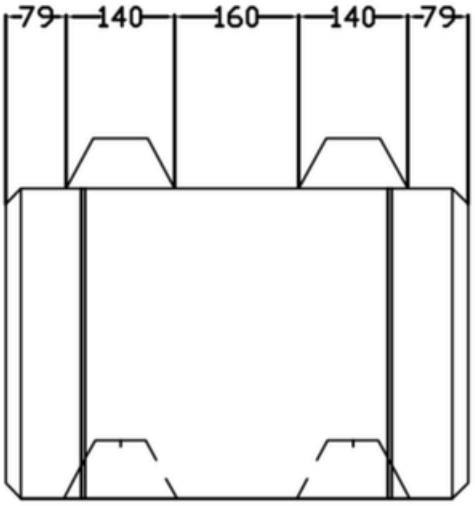


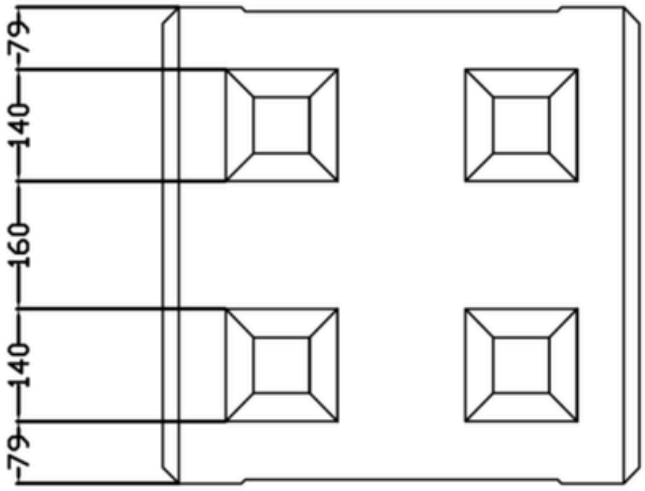


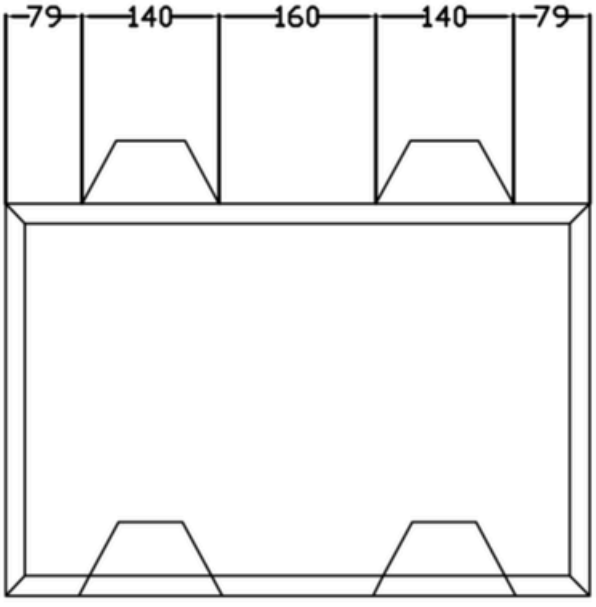


Wall structures constructed from concrete stacking-blocks

Masterbloc® 600x600x400

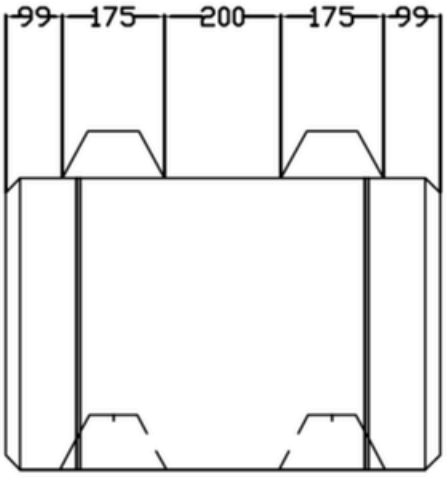


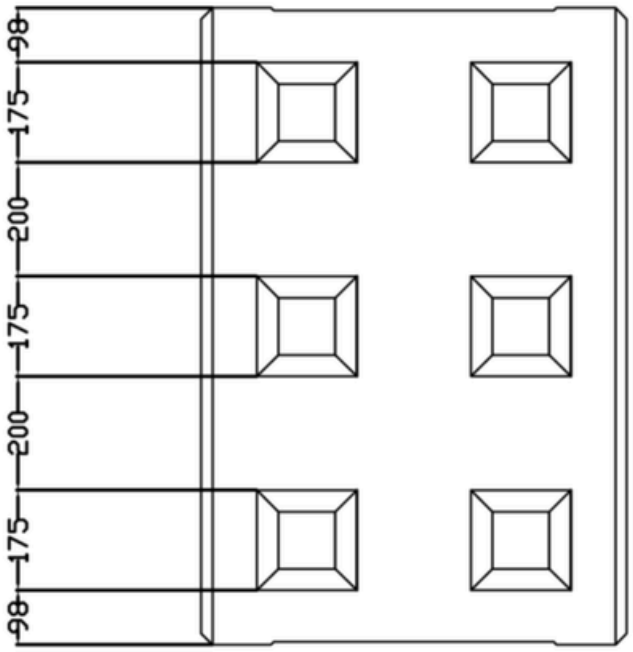


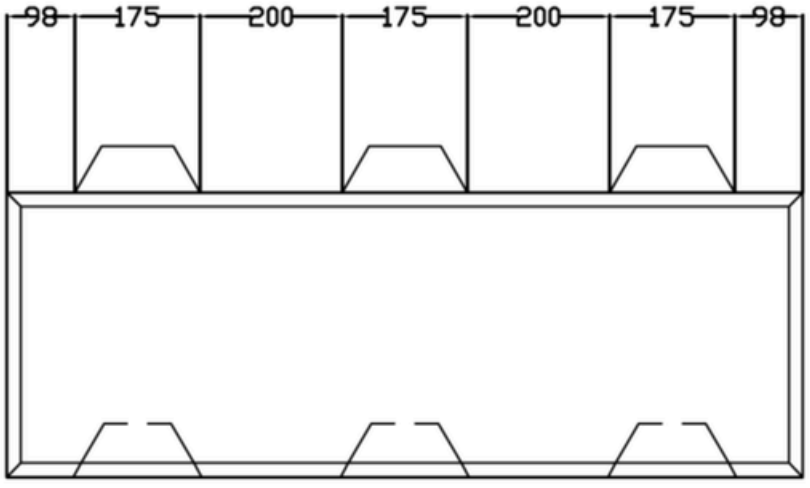


Wall structures constructed from concrete stacking-blocks

Masterbloc® 1125x750x400

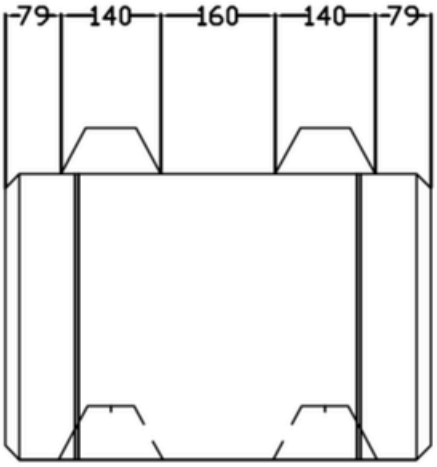


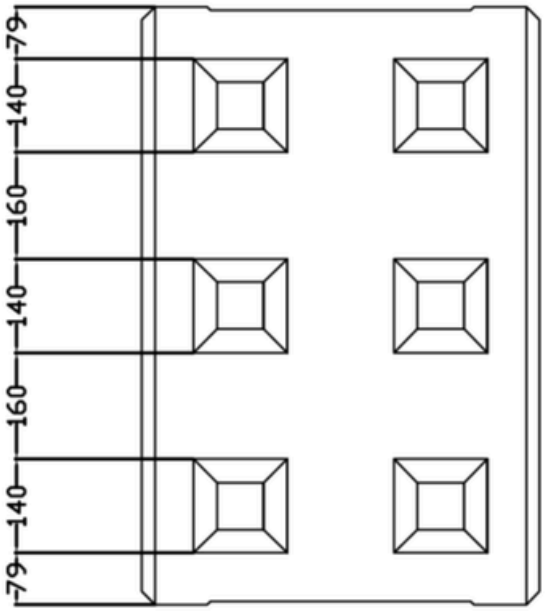


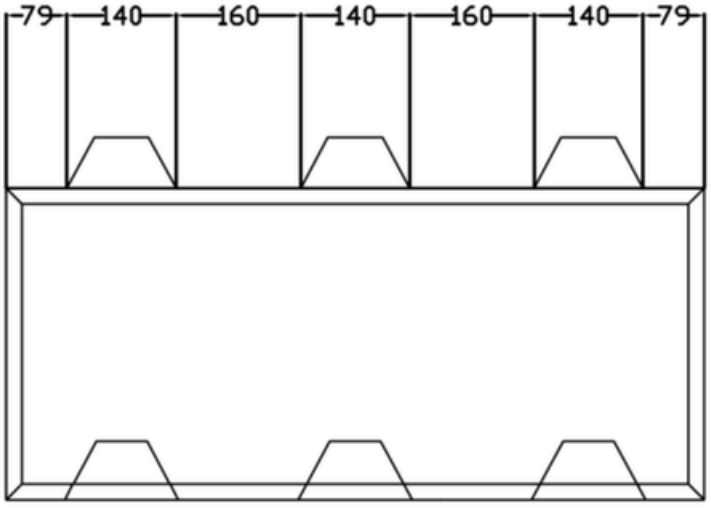


Wall structures constructed from concrete stacking-blocks

Masterbloc® 900x600x400

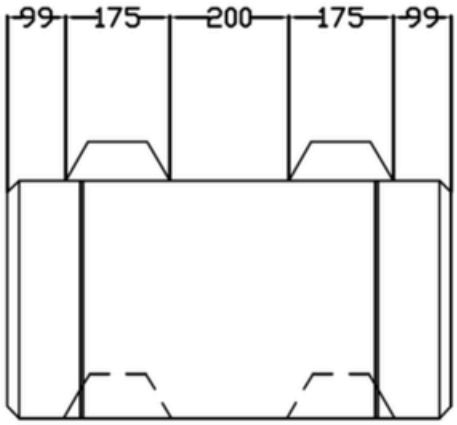


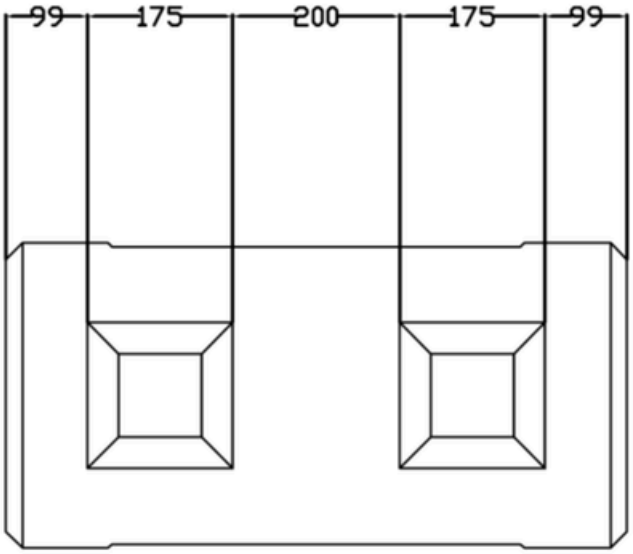


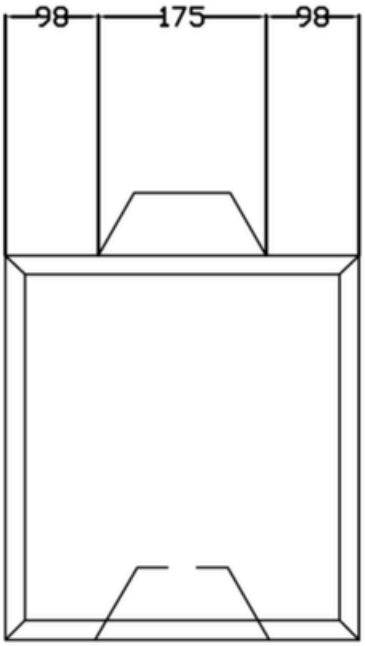


Wall structures constructed from concrete stacking-blocks

Masterbloc® 375x750x400







Wall structures constructed from concrete stacking-blocks

Masterbloc® 300x600x400