

## *NBT ThermoPlan® System*

Thin Bed Insulating  
Solid Wall System



# Specifications

“The Science of Nature - The Future of Construction”

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## **NBT ThermoPlan® System ZT09 Range (Un-Meshed Mortar Bed) - Specification**

### **NBT ThermoPlan BRICK/BLOCK WALLING**

To be read with Preliminaries/General conditions. NOTE: All blockwork to be rendered / plastered (ThermoPlan® blocks are not suitable for fairfaced work.)

#### **TYPE(S) OF WALLING**

#### **351 NBT ThermoPlan® Clay COMMON BLOCKWORK: 365mm & 425mm Wide Un-Meshed Bed**

- Blocks: to DIBT Z 17.1-946  
Manufacturer and reference:  
Natural Building Technologies (NBT)

ZT09300F     300mm Wide  
ZT09365F     365mm Wide  
ZT09425F     425mm Wide

Work size(s):

250mm x 250mm x 300mm (Block size 247mm x 249mm x 300mm)  
250mm x 250mm x 365mm (Block size 247mm x 249mm x 365mm)  
250mm x 250mm x 425mm (Block size 247mm x 249mm x 425mm)

Thermal Value K = 0.09 W/mK

Special shapes:

- |  |                                   |
|--|-----------------------------------|
| - Ref: ZT00300C, ZT00365C, ZT00425C    | Full length Corner blocks         |
| - Ref: ZT00300E, ZT00365E, ZT00425E    | Half length End blocks            |
| - Ref: ZT00300R, ZT00365R              | Full length Checked Reveal Blocks |
| - Ref: ZT00300HR, ZT00365HR            | Half length Checked Reveal Blocks |
| - Ref: ZT00300A, ZT00365A              | 45° Angle Blocks                  |
| - Ref: ZT00300U, ZT00365U, ZT00425U    | U Blocks                          |
| - Ref: ZT00300WU, ZT00365WU            | Insulated WU Blocks               |
| - Ref: ZT00300R*, ZT00365R*, ZT00425R* | Pre-Cast Lintol Sections          |
| - Ref: ZT00300M, ZT00365M              | Make Up Block                     |

- Mortar: Thin-joint mortar.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZXM617 Baumit ZP99 Thin Bed Mortar
- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)  
Special requirements:  
VD system mortar roller. (available in widths to suit block)

NBT Baumit LM21 Insulating Mortar for Cut Joints (No interlocking profile), damaged block faces and abutments, as DIN18557 & EN998-1.

Mix: Dry powder, factory prepared. Add water - 11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)

- Bond: Not less than 95mm
- Joints: 1mm bed joints with reinforcing mesh, mortar-free perp. joints (Unless cut)

**352 NBT CLAY COMMON BLOCKWORK: RING BEAMS AND SITE CAST LINTELS**

- Blocks: to DIBT Z 17.1-628.

Manufacturer and reference:  
Natural Building Technologies (NBT)

ZT00300WU, ZT00300U      300MM Wide  
ZT00365WU, ZT00365U      365mm Wide  
ZT00425U                      425mm Wide

Work size(s):

240mm x 300mm w x 240mm h

240mm x 365mm w x 240mm h

240mm x 425mm w x 240mm h

Mortar: to Group 3 as Clause 460

- *Bearing: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460
- *Section to be filled with reinforcing / concrete as per engineers specifications.*

**353 NBT CLAY COMMON BLOCKWORK: PRECAST LINTELS**

- Blocks: to DIBT Z 17.1-628.

Manufacturer and reference:  
Natural Building Technologies (NBT)

ZT00300R\*      300mm Wide Lintel Section  
ZT00365R\*      365mm Wide Lintel Section  
ZT00425R\*      425mm Wide Lintel Section  
ZT00300M      300mm Wide Make Up Block for over  
ZT00365M      365mm Wide Make Up Block for over

Work size(s):

Lintel 113h x 300mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l

Lintel 113h x 365mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l

Lintel 113h x 425mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l

Make Up Block 247mm l x 300mm w x 113mm h

Make Up Block 247mm l x 365mm w x 113mm h

Mortar: to Group 3 as Clause 460

- *Bearing: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460 .

**WORKMANSHIP GENERALLY**

**410** RELATED WORK is specified in the following sections:

**420** SITE STORAGE: Store bricks/blocks in stable stacks clear of the ground and clearly identified by type, strength, grade, etc. Protect from adverse weather and keep clean and dry.

**460 MORTAR GROUPS:** Where mortar is specified by group number, select any mortar in that group as set out below. Mix proportions are by volume. Use the same mortar throughout any one type of facing work.

Mortar group	1	2	3	4
Cement:lime:sand	1:0-1/4:3	1:1/2:4-4 1/2	1:1:5-6	1:2:8-9
Cement:premixed lime & sand (Proportion of lime to sand given in brackets)	1:3 (1:12)	1:4-4 1/2 (1:9)	1:5-6 (1:6)	1:8-9 (1:4 1/2)
Cement:sand & air entrainer	–	1:3-4	1:5-6	1:7-8
Masonry cement:sand	–	1:2 1/2-3 1/2	1:4-5	1:5 1/2-6 1/2

## LAYING GENERALLY

### First course

- Lay the first course of ThermoPlan® onto a full bed of mortar containing a horizontal DPC, ( Group 3, clause 460), ensuring that the course is absolutely plumb and in line.
- **Subsequent courses**
- Bonding – Half-bonding is desirable, but a minimum of 95mm is permitted
- 300, 365 & 425mm blocks. - VD system. The thin joint mortar should be applied to the following courses using the mortar roller or by dipping block base into mortar to a depth of 3mm to ensure adequate cover.

### Lintols

- Precast lintols – the bearings (min.125mm ) and perp joints must be fully mortared in using mortar ( Group 3, Clause 460 ). The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).
- U, WU shells in-situ cast lintols - The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).

### Wall Junctions

## NBT ThermoPlan Brick/Block walling (continued)

- Where internal walls are to meet external walls, use butt jointing and build in wall ties (Article ZXTIE). 1 tie every other course for 115mm wide abutting walls 2 every other course for all other widths. Note – File a 1mm deep channel in top face of block prior to fitting tie to prevent subsequent blocks rocking on tie. Bend these ties down flat against the wall surface to prevent possible injury. Bend them back straight shortly before commencing with the adjoining walls. Ensure that the vertical butt joint of the adjoining wall is 15 -20mm thick and fully mortared. (Group 3, clause 460).

### Chasing

- NBT ThermoPlan® BLOCKS must always be chased using a suitable electric twin – wheeled diamond wall chaser – once cut use a wide faced bolster as a lever to remove core - Hammer and bolster or Impact hammer cutting is not permitted as this can shatter the blocks.
- Dust hazard - Suitable eye and respiratory protection should be used.

### Cutting

- NBT ThermoPlan® BLOCKS must always be cut using a suitable electric saw (DeWalt DW390 (L) or similar or via large capacity wet-diamond block saw. Hammers and bolsters cutting is not permitted as this can shatter the blocks.
- Dust hazard - Suitable eye and respiratory protection should be used.

### Drilling and Fixing

- All fixings must be drilled and plugged. Use an electric drill without the hammer action. A range of suitable fixings are available from Fischer Fixings or EJOT range. (Contact NBT for Details)
- Dust hazard - Suitable eye and respiratory protection should be used.

### BAUMIT Render System

- **Pre-start preparatory work**
- Any loose or hollow areas are to be removed back to the brickwork. Algae and dirt is to be removed by powerwashing the whole surface. The surface is to be clean, sound, dry and able to receive the system.
- All windows, doors copings and flashings to be in place before installation of the system.
- **Masking work**
- Materials or objects which can be discoloured by dirt, such as natural wood, glass, aluminium, natural stone, ceramic surfaces, surface coverings or nearby plants to be covered or masked with waterproof materials.
- Covering or masking to be removed on completion of work.
- **Beading**
- All beading to be set in Baumit FL68 mortar. Beads are to be set plumb and in line.
- **Sealing profiles to doors and windows**
- APU rails 9mm
- Install APU sealing profiles to door and window frames to create a wind and waterproof expansion joint.
- **Reinforcing mesh**

## NBT ThermoPlan Brick/Block walling (continued)

- WEMICO R131
- On all corners of openings or recesses reinforcing mesh is to be placed diagonally in the top third of the fresh basecoat render. This applies to straight joints and where changes in the substrate fabric occur.
  
- **Render Basecoat**
- BAUMIT FL68
- Spray or hand apply onto the prepared substrate Baunit FL68 basecoat render to a thickness of 15mm. Apply reinforcing mesh into the surface of the wet mortar making sure there are no creases. Using a grid float, remove burrs and roughen up the render surface on hardening, leaving a flat even surface. Leave to dry for 7 days before applying topcoat render. NB; IN COOL WEATHER APPLY A 5MM COAT OF FL68 TO THE WHOLE SURFACE AREA AND LEAVE FOR BETWEEN 1 AND 2 HOURS BEFORE APPLYING A SECOND COAT 10MM THICK. THIS WILL EVEN OUT THE SUCTION OF THE BLOCKWORK.
  
- **Render Décor Finish Primer**
- BAUMIT DG27
- Apply by hand by brush or roller application an even coat to the surface of the FL68 basecoat render.
- Allow to fully dry for 24 hours.
  
- **Render Décor Finish**
- BAUMIT SEP01,02,03,04
- Apply SEP to the thickness of the grain and texture with a plastic or dense sponge float.
  
- **Surface Equaliser Paint**
- BAUMIT Silikonfarbe
- Apply 1 coat Baunit Silikonfarbe equalising paint, diluted with 10% water, with a roller or airless sprayer.
- Apply final coat Baunit Silikonfrabe equalising paint with a roller or airless sprayer. as finish coat.

### General Conditions

- **ADVERSE WEATHER:**
- Do not use frozen materials and do not lay on frozen surfaces.
- Do not lay bricks/blocks:
  - In cement gauged mortars when the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of 4°C when laid and walling is thoroughly protected).
  - In hydraulic lime:sand mortars when the air temperature is at or below 5°C and falling or below 3°C and rising.
  - In thin joint mortar glue when climatic conditions are outside the limits set by the mortar manufacturer.
- Maintain temperature of the work above freezing until mortar has fully hardened.
- Protect newly erected walling from:
  - Rain and snow by covering when precipitation occurs, and at all times when the work is not proceeding.
  - Drying out too rapidly in hot conditions and in drying winds.
- Rake out and replace cement gauged or hydraulic lime mortar damaged by frost. When instructed, rebuild damaged work.
- When instructed rebuild frost damaged thin joint masonry walling.

NBT ThermoPlan Brick/Block walling (continued)

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## **NBT ThermoPlan® System ZV09 Range (Meshed Mortar Bed) - Specification**

### **NBT ThermoPlan BRICK/BLOCK WALLING**

To be read with Preliminaries/General conditions. NOTE: All blockwork to be rendered / plastered (ThermoPlan® blocks are not suitable for fairfaced work.)

#### **TYPE(S) OF WALLING**

#### **351 NBT ThermoPlan® Clay COMMON BLOCKWORK: 365mm & 425mm Wide Meshed Bed**

- Blocks: to DIBT Z 17.1-946  
Manufacturer and reference:  
Natural Building Technologies (NBT)

ZV9365F      365mm Wide

ZV9425F      425mm Wide

Work size(s):

250mm x 250mm x 365mm (Block size 247mm x 249mm x 365mm)

250mm x 250mm x 425mm (Block size 247mm x 249mm x 425mm)

Thermal Value K = 0.09 W/mK

Special shapes:

- |                             |                                   |
|-----------------------------|-----------------------------------|
| - Ref: ZT00365C, ZT00425C   | Full length Corner blocks         |
| - Ref: ZT00365E, ZT00425E   | Half length End blocks            |
| - Ref: ZT00365R             | Full length Checked Reveal Blocks |
| - Ref: ZT00365HR            | Half length Checked Reveal Blocks |
| - Ref: ZT00365A             | 45° Angle Blocks                  |
| - Ref: ZT00365U, ZT00425U   | U Blocks                          |
| - Ref: ZT00365WU            | Insulated WU Blocks               |
| - Ref: ZT00365WL            | Insulated WL Block                |
| - Ref: ZT00365R*, ZT00425R* | Pre-Cast Lintol Sections          |
| - Ref: ZT00365M             | Make Up Block                     |

- Mortar: Thin-joint mortar.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZXM618 Baunit ZiegelPlanmörtel V-Plus System Typ III
- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)  
Special requirements:  
Reinforcing Mesh: Glasgitter Weiss Mesh to width of block  
V-Plus system mortar roller. (available in widths to suit block)

NBT Baunit LM21 Insulating Mortar for Cut Joints (No interlocking profile), damaged block faces and abutments, as DIN18557 & EN998-1.

Mix: Dry powder, factory prepared. Add water - 11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)

- Bond: Not less than 95mm
- Joints: 1mm bed joints with reinforcing mesh, mortar-free perp. joints (Unless cut)

**352 NBT CLAY COMMON BLOCKWORK: RING BEAMS AND SITE CAST LINTELS**

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)
  
- ZT00365WU 365mm Wide  
ZT00425WU 425mm Wide  
Work size(s):
  
- 240mm x 365mm w x 240mm h  
240mm x 425mm w x 240mm h  
Mortar: to Group 3 as Clause 460
- *Bearing: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460
- *Section to be filled with reinforcing / concrete as per engineers specifications.*

**353 NBT CLAY COMMON BLOCKWORK: PRECAST LINTELS**

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)
  
- ZT00365R\* 365mm Wide Lintel Section  
ZT00425R\* 425mm Wide Lintel Section  
ZT00365M 365mm Wide Make Up Block for over  
Work size(s):
- Lintel 113h x 365mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l  
Lintel 113h x 425mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l
  
- Make Up Block 247mm l x 365mm w x 113mm h  
Mortar: to Group 3 as Clause 460
- *Bearing: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460 .

**WORKMANSHIP GENERALLY**

- 410** RELATED WORK is specified in the following sections:
  
- 420** SITE STORAGE: Store bricks/blocks in stable stacks clear of the ground and clearly identified by type, strength, grade, etc. Protect from adverse weather and keep clean and dry.
  
- 460** MORTAR GROUPS: Where mortar is specified by group number, select any mortar in that group as set out below. Mix proportions are by volume. Use the same mortar throughout any one type of facing work.

Mortar group	1	2	3	4
Cement:lime:sand	1:0-1/4:3	1:1/2:4-4 1/2	1:1:5-6	1:2:8-9

## NBT ThermoPlan Brick/Block walling (continued)

Cement:premixed lime & sand (Proportion of lime to sand given in brackets)	1:3 (1:12)	1:4-4 <sup>1</sup> / <sub>2</sub> 1:9	1:5-6 (1:6)	1:8-9 (1:4 <sup>1</sup> / <sub>2</sub> )
Cement:sand & air entrainer	–	1:3-4	1:5-6	1:7-8
Masonry cement:sand	–	1:2 <sup>1</sup> / <sub>2</sub> -3 <sup>1</sup> / <sub>2</sub>	1:4-5	1:5 <sup>1</sup> / <sub>2</sub> -6 <sup>1</sup> / <sub>2</sub>

### LAYING GENERALLY

#### First course

- Lay the first course of ThermoPlan® onto a full bed of mortar containing a horizontal DPC, ( Group 3, clause 460), ensuring that the course is absolutely plumb and in line.
- **Subsequent courses**
- Bonding – Half-bonding is desirable, but a minimum of 95mm is permitted
- 365 & 425mm blocks. - Vplus system. The thin joint mortar with combined bed joint reinforcement should be applied to the following courses using the mortar roller.

#### Lintols

- Precast lintols – the bearings (min.125mm ) and perp joints must be fully mortared in using mortar ( Group 3, Clause 460 ). The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).
- U, WU & WL shells in-situ cast lintols - The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).

#### Wall Junctions

- Where internal walls are to meet external walls, use butt jointing and build in wall ties (Article ZXTIE). 1 tie every other course for 115mm wide abutting walls 2 every other course for all other widths. Note – File a 1mm deep channel in top face of block prior to fitting tie to prevent subsequent blocks rocking on tie. Bend these ties down flat against the wall surface to prevent possible injury. Bend them back straight shortly before commencing with the adjoining walls. Ensure that the vertical butt joint of the adjoining wall is 15 -20mm thick and fully mortared. (Group 3, clause 460).

### **Chasing**

- NBT ThermoPlan® BLOCKS must always be chased using a suitable electric twin – wheeled diamond wall chaser – once cut use a wide faced bolster as a lever to remove core - Hammer and bolster or Impact hammer cutting is not permitted as this can shatter the blocks.
- Dust hazard - Suitable eye and respiratory protection should be used.

### **Cutting**

- NBT ThermoPlan® BLOCKS must always be cut using a suitable electric saw (DeWalt DW390 (L) or similar or via large capacity wet-diamond block saw. Hammers and bolsters cutting is not permitted as this can shatter the blocks.
- Dust hazard - Suitable eye and respiratory protection should be used.

### **Drilling and Fixing**

- All fixings must be drilled and plugged. Use an electric drill without the hammer action. A range of suitable fixings are available from Fischer Fixings or EJOT range. (Contact NBT for Details)
- Dust hazard - Suitable eye and respiratory protection should be used.

### **BAUMIT Render System**

- **Pre-start preparatory work**
- Any loose or hollow areas are to be removed back to the brickwork. Algae and dirt is to be removed by powerwashing the whole surface. The surface is to be clean, sound, dry and able to receive the system.
- All windows, doors copings and flashings to be in place before installation of the system.
- **Masking work**
- Materials or objects which can be discoloured by dirt, such as natural wood, glass, aluminium, natural stone, ceramic surfaces, surface coverings or nearby plants to be covered or masked with waterproof materials.
- Covering or masking to be removed on completion of work.
- **Beading**
- All beading to be set in Baumit FL68 mortar. Beads are to be set plumb and in line.
- **Sealing profiles to doors and windows**
- APU rails 9mm
- Install APU sealing profiles to door and window frames to create a wind and waterproof expansion joint.
- **Reinforcing mesh**
- WEMICO R131
- On all corners of openings or recesses reinforcing mesh is to be placed diagonally in the top third of the fresh basecoat render. This applies to straight joints and where changes in the substrate fabric occur.
- **Render Basecoat**
- BAUMIT FL68
- Spray or hand apply onto the prepared substrate Baumit FL68 basecoat render to a thickness of 15mm. Apply reinforcing mesh into the surface of the wet mortar

## NBT ThermoPlan Brick/Block walling (continued)

making sure there are no creases. Using a grid float, remove burrs and roughen up the render surface on hardening, leaving a flat even surface. Leave to dry for 7 days before applying topcoat render. NB; IN COOL WEATHER APPLY A 5MM COAT OF FL68 TO THE WHOLE SURFACE AREA AND LEAVE FOR BETWEEN 1 AND 2 HOURS BEFORE APPLYING A SECOND COAT 10MM THICK. THIS WILL EVEN OUT THE SUCTION OF THE BLOCKWORK.

### **Render Décor Finish Primer**

- BAUMIT DG27
- Apply by hand by brush or roller application an even coat to the surface of the FL68 basecoat render.
- Allow to fully dry for 24 hours.

### **Render Décor Finish**

- BAUMIT SEP01,02,03,04
- Apply SEP to the thickness of the grain and texture with a plastic or dense sponge float.

### **Surface Equaliser Paint**

- BAUMIT Silikonfarbe
- Apply 1 coat Baunit Silikonfarbe equalising paint, diluted with 10% water, with a roller or airless sprayer.
- Apply final coat Baunit Silikonfrabe equalising paint with a roller or airless sprayer. as finish coat.

## **General Conditions**

- **ADVERSE WEATHER:**
- Do not use frozen materials and do not lay on frozen surfaces.
- Do not lay bricks/blocks:
  - In cement gauged mortars when the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of 4°C when laid and walling is thoroughly protected).
  - In hydraulic lime:sand mortars when the air temperature is at or below 5°C and falling or below 3°C and rising.
  - In thin joint mortar glue when climatic conditions are outside the limits set by the mortar manufacturer.
- Maintain temperature of the work above freezing until mortar has fully hardened.
- Protect newly erected walling from:
  - Rain and snow by covering when precipitation occurs, and at all times when the work is not proceeding.
  - Drying out too rapidly in hot conditions and in drying winds.
- Rake out and replace cement gauged or hydraulic lime mortar damaged by frost. When instructed, rebuild damaged work.
- When instructed rebuild frost damaged thin joint masonry walling.

## **Natural Building Technologies Ltd**

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## NBT ThermoPlan® System ZT11 Range (Un- Meshed Mortar Bed) - Specification

### NBT ThermoPlan BRICK/BLOCK WALLING

To be read with Preliminaries/General conditions. NOTE: All blockwork to be rendered / plastered (ThermoPlan® blocks are not suitable for fairfaced work.)

#### TYPE(S) OF WALLING

#### 351 NBT ThermoPlan® Clay COMMON BLOCKWORK: 240mm, 300mm, 365mm 425mm & 490mm Wide Meshed Bed

- Blocks: to DIBT Z 17.1-840
- Manufacturer and reference:  
Natural Building Technologies (NBT)

ZT11240F	240mm Wide
ZT11300F	300mm Wide
ZT11365F	365mm Wide
ZT11425F	425mm Wide
ZT11490F	490mm Wide

Work size(s):

250mm x 250mm x 240mm (Block size 247mm x 249mm x 240mm)  
 250mm x 250mm x 300mm (Block size 247mm x 249mm x 300mm)  
 250mm x 250mm x 365mm (Block size 247mm x 249mm x 365mm)  
 250mm x 250mm x 425mm (Block size 247mm x 249mm x 425mm)  
 250mm x 250mm x 490mm (Block size 247mm x 249mm x 490mm)

Thermal Value K = 0.11 W/mK

Special shapes:

- |                             |                                   |
|-----------------------------|-----------------------------------|
| - Ref: ZT00300C, ZT00365C   | Full length Corner blocks         |
| - Ref: ZT00425C             | Full length Corner blocks         |
| - Ref: ZT00300E, ZT00365E   | Half length End blocks            |
| - Ref: ZT00425E             | Half length End blocks            |
| - Ref: ZT00300R, ZT00365R   | Full length Checked Reveal Blocks |
| - Ref: ZT00425R             | Full length Checked Reveal Blocks |
| - Ref: ZT00300HR, ZT00365HR | Half length Checked Reveal Blocks |
| - Ref: ZT00425HR            | Half length Checked Reveal Blocks |
| - Ref: ZT00300A, ZT00365A   | 45° Angle Blocks                  |
| - Ref: ZA99240U, ZT00300U,  | U Blocks                          |
| - Ref: ZT00365U, ZT00425U   | U Blocks                          |
| - Ref: ZT00300WU, ZT00365WU | Insulated WU Blocks               |
| - Ref: ZT00425WU            | Insulated WU Blocks               |
| - Ref: ZT00365WL            | Insulated WL Block                |
| - Ref: ZT00300R*, ZT00365R* | Pre-Cast Lintol Sections          |
| - Ref: ZT00425R*            | Pre-Cast Lintol Sections          |
| - Ref: ZT00300M, ZT00365M   | Make Up Block                     |
- Mortar: Thin-joint mortar.
  - Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZXM617 Baumit ZP99 Thin Bed Mortar

- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)  
Special requirements:  
VD system mortar roller. (available in widths to suit block)

NBT Baunit LM21 Insulating Mortar for Cut Joints (No interlocking profile),  
damaged block faces and abutments, as DIN18557 & EN998-1.

Mix: Dry powder, factory prepared. Add water - 11 Ltrs Per Bag – Mixed with a  
Power Stirrer - (not suitable for mixing with a cement mixer.)

- Bond: Not less than 95mm
- Joints: 1mm bed joints with reinforcing mesh, mortar-free perp. joints (Unless cut)

### 352 NBT CLAY COMMON BLOCKWORK: RING BEAMS AND SITE CAST LINTELS

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
U block (uninsulated)  
ZA99240U 240mm Wide  
ZT00300U 300mm Wide  
ZT00365U 365mm Wide  
ZT00425U 425mm Wide

Work size(s):

240mm x 240mm w x 240mm h

240mm x 300mm w x 240mm h

240mm x 365mm w x 240mm h

240mm x 425mm w x 240mm h

WU block (insulated)

ZT00300WU 300mm Wide

ZT00365WU 365mm Wide

ZT00425WU 425mm Wide

Work size(s):

240mm x 300mm w x 240mm h

240mm x 365mm w x 240mm h

240mm x 425mm w x 240mm h

Mortar: to Group 3 as Clause 460

- *Bearing: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460
- *Section to be filled with reinforcing / concrete as per engineers specifications.*

### 353 NBT CLAY COMMON BLOCKWORK: PRECAST LINTELS

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
ZT00300R\* 300mm Wide Lintel Section  
ZT00365R\* 365mm Wide Lintel Section  
ZT00425R\* 425mm Wide Lintel Section  
ZT00300M 300mm Wide Make Up Block for over  
ZT00365M 365mm Wide Make Up Block for over

Work size(s):

Lintel 113h x 300mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l

Lintel 113h x 365mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l

Lintel 113h x 425mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l

Make Up Block 247mm l x 300mm w x 113mm h

Make Up Block 247mm l x 365mm w x 113mm h

Mortar: to Group 3 as Clause 460

- *Bearing: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460 .

## WORKMANSHIP GENERALLY

**410** RELATED WORK is specified in the following sections:

**420** SITE STORAGE: Store bricks/blocks in stable stacks clear of the ground and clearly identified by type, strength, grade, etc. Protect from adverse weather and keep clean and dry.

**460** MORTAR GROUPS: Where mortar is specified by group number, select any mortar in that group as set out below. Mix proportions are by volume. Use the same mortar throughout any one type of facing work.

Mortar group	1	2	3	4
Cement:lime:sand	1:0-1/4:3	1:1/2:4-4 1/2	1:1:5-6	1:2:8-9
Cement:premixed lime & sand (Proportion of lime to sand given in brackets)	1:3 (1:12)	1:4-4 1/2 (1:9)	1:5-6 (1:6)	1:8-9 (1:4 1/2)
Cement:sand & air entrainer	–	1:3-4	1:5-6	1:7-8
Masonry cement:sand	–	1:2 1/2-3 1/2	1:4-5	1:5 1/2-6 1/2

## LAYING GENERALLY

### First course

- Lay the first course of ThermoPlan® onto a full bed of mortar containing a horizontal DPC, ( Group 3, clause 460), ensuring that the course is absolutely plumb and in line.

### - Subsequent courses

- Bonding – Half-bonding is desirable, but a minimum of 95mm is permitted
- **240, 300, 365, 425 & 490mm blocks.** - VD system. The thin joint mortar should be applied to the following courses using the mortar roller or by dipping block base into mortar to a depth of 3mm to ensure adequate cover.

### **Lintols**

- Precast lintols – the bearings (min.125mm ) and perp joints must be fully mortared in using mortar ( Group 3, Clause 460 ). The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).
- U, WU & WL shells in-situ cast lintols - The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).

### **Wall Junctions**

- Where internal walls are to meet external walls, use butt jointing and build in wall ties (Article ZXTIE). 1 tie per course for 115mm wide abutting walls 2 per course for all other widths. Note – File a 1mm deep channel in top face of block prior to fitting tie to prevent subsequent blocks rocking on tie. Bend these ties down flat against the wall surface to prevent possible injury. Bend them back straight shortly before commencing with the adjoining walls. Ensure that the vertical butt joint of the adjoining wall is 20mm thick and fully mortared. (Group 3, clause 460).

### **Chasing**

- NBT ThermoPlan® BLOCKS must always be chased using a suitable electric twin – wheeled diamond wall chaser – once cut use a wide faced bolster as a lever to remove core - Hammer and bolster or Impact hammer cutting is not permitted as this can shatter the blocks.
- Dust hazard - Suitable eye and respiratory protection should be used.

### **Cutting**

- NBT ThermoPlan® BLOCKS must always be cut using a suitable electric saw (DeWalt DW390 (L)) or similar or via large capacity wet-diamond block saw. Hammers and bolsters cutting is not permitted as this can shatter the blocks.
- Dust hazard - Suitable eye and respiratory protection should be used.

### **Drilling and Fixing**

- All fixings must be drilled and plugged. Use an electric drill without the hammer action. A range of suitable fixings are available from Fischer Fixings or EJOT range. (Contact NBT for Details)
- Dust hazard - Suitable eye and respiratory protection should be used.

**BAUMIT Render System**

- **Pre-start preparatory work**
- Any loose or hollow areas are to be removed back to the brickwork. Algae and dirt is to be removed by powerwashing the whole surface. The surface is to be clean, sound, dry and able to receive the system.
- All windows, doors copings and flashings to be in place before installation of the system.
- **Masking work**
- Materials or objects which can be discoloured by dirt, such as natural wood, glass, aluminium, natural stone, ceramic surfaces, surface coverings or nearby plants to be covered or masked with waterproof materials.
- Covering or masking to be removed on completion of work.
  
- **Beading**
- All beading to be set in Baunit MP69 mortar. Beads are to be set plumb and in line.
  
- **Sealing profiles to doors and windows**
- APU rails 9mm
- Install APU sealing profiles to door and window frames to create a wind and waterproof expansion joint.
  
- **Reinforcing mesh**
- WEMICO R131
- On all corners of openings or recesses reinforcing mesh is to be placed diagonally in the top third of the fresh basecoat render. This applies to straight joints and where changes in the substrate fabric occur.
  
- **Render Basecoat**
- BAUMIT MP69
- Spray or hand apply onto the prepared substrate Baunit MP69 basecoat render to a thickness of 15mm. Apply reinforcing mesh into the surface of the wet mortar making sure there are no creases. Using a grid float, remove burrs and roughen up the render surface on hardening, leaving a flat even surface. Leave to dry for 7 days before applying topcoat render. NB; IN COOL WEATHER APPLY A 5MM COAT OF MP69 TO THE WHOLE SURFACE AREA AND LEAVE FOR BETWEEN 1 AND 2 HOURS BEFORE APPLYING A SECOND COAT 10MM THICK. THIS WILL EVEN OUT THE SUCTION OF THE BLOCKWORK.
  
- **Render Décor Finish Primer**
- BAUMIT DG27
- Apply by hand by brush or roller application an even coat to the surface of the MP69 basecoat render.
- Allow to fully dry for 24 hours.
  
- **Render Décor Finish**
- BAUMIT SEP01,02,03,04
- Apply SEP to the thickness of the grain and texture with a plastic or dense sponge float.
  
  
- **Surface Equaliser Paint**

- BAUMIT Silikonfarbe
- Apply 1 coat Baunit Silikonfarbe equalising paint, diluted with 10% water, with a roller or airless sprayer.
- Apply final coat Baunit Silikonfrabe equalising paint with a roller or airless sprayer. as finish coat.

### **General Conditions**

- **ADVERSE WEATHER:**
- Do not use frozen materials and do not lay on frozen surfaces.
- Do not lay bricks/blocks:
  - In cement gauged mortars when the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of 4°C when laid and walling is thoroughly protected).
  - In hydraulic lime:sand mortars when the air temperature is at or below 5°C and falling or below 3°C and rising.
  - In thin joint mortar glue when climatic conditions are outside the limits set by the mortar manufacturer.
- Maintain temperature of the work above freezing until mortar has fully hardened.
- Protect newly erected walling from:
  - Rain and snow by covering when precipitation occurs, and at all times when the work is not proceeding.
  - Drying out too rapidly in hot conditions and in drying winds.
- Rake out and replace cement gauged or hydraulic lime mortar damaged by frost. When instructed, rebuild damaged work.
- When instructed rebuild frost damaged thin joint masonry walling.

### **Natural Building Technologies Ltd**

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## NBT ThermoPlan® System ZV11 Range (Meshed Mortar Bed) - Specification

### NBT ThermoPlan BRICK/BLOCK WALLING

To be read with Preliminaries/General conditions. NOTE: All blockwork to be rendered / plastered (ThermoPlan® blocks are not suitable for fairfaced work.)

#### TYPE(S) OF WALLING

#### 351 NBT ThermoPlan® Clay COMMON BLOCKWORK: 240mm, 300mm, 365mm 425mm & 490mm Wide Meshed Bed

- Blocks: to DIBT Z 17.1-840  
Manufacturer and reference:  
Natural Building Technologies (NBT)

ZV11240F	240mm Wide
ZV11300F	300mm Wide
ZV11365F	365mm Wide
ZV11425F	425mm Wide
ZV11490F	490mm Wide

Work size(s):

250mm x 250mm x 240mm	(Block size 247mm x 249mm x 240mm)
250mm x 250mm x 300mm	(Block size 247mm x 249mm x 300mm)
250mm x 250mm x 365mm	(Block size 247mm x 249mm x 365mm)
250mm x 250mm x 425mm	(Block size 247mm x 249mm x 425mm)
250mm x 250mm x 490mm	(Block size 247mm x 249mm x 490mm)

Thermal Value K = 0.11 W/mK

Special shapes:

- |                             |                                   |
|-----------------------------|-----------------------------------|
| - Ref: ZT00300C, ZT00365C   | Full length Corner blocks         |
| - Ref: ZT00425C             | Full length Corner blocks         |
| - Ref: ZT00300E, ZT00365E   | Half length End blocks            |
| - Ref: ZT00425E             | Half length End blocks            |
| - Ref: ZT00300R, ZT00365R   | Full length Checked Reveal Blocks |
| - Ref: ZT00425R             | Full length Checked Reveal Blocks |
| - Ref: ZT00300HR, ZT00365HR | Half length Checked Reveal Blocks |
| - Ref: ZT00425HR            | Half length Checked Reveal Blocks |
| - Ref: ZT00300A, ZT00365A   | 45° Angle Blocks                  |
| - Ref: ZA99240U, ZT00300U,  | U Blocks                          |
| - Ref: ZT00365U, ZT00425U   | U Blocks                          |
| - Ref: ZT00300WU, ZT00365WU | Insulated WU Blocks               |
| - Ref: ZT00425WU            | Insulated WU Blocks               |
| - Ref: ZT00365WL            | Insulated WL Block                |
| - Ref: ZT00300R*, ZT00365R* | Pre-Cast Lintol Sections          |
| - Ref: ZT00425R*            | Pre-Cast Lintol Sections          |
| - Ref: ZT00300M, ZT00365M   | Make Up Block                     |
- Mortar: Thin-joint mortar.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZX618 Baumit ZiegelPlanmörtel V-Plus System Typ III

- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)  
Special requirements:  
Reinforcing Mesh: Glasgitter Weiss Mesh to width of block  
V-Plus system mortar roller. (available in widths to suit block)

NBT Baunit LM21 Insulating Mortar for Cut Joints (No interlocking profile),  
damaged block faces and abutments, as DIN18557 & EN998-1.

Mix: Dry powder, factory prepared. Add water - 11 Ltrs Per Bag – Mixed with a  
Power Stirrer - (not suitable for mixing with a cement mixer.)

- Bond: Not less than 95mm
- Joints: 1mm bed joints with reinforcing mesh, mortar-free perp. joints (Unless cut)

### 352 NBT CLAY COMMON BLOCKWORK: RING BEAMS AND SITE CAST LINTELS

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
U block (uninsulated)  
ZA99240U 240mm Wide  
ZT00300U 300mm Wide  
ZT00365U 365mm Wide  
ZT00425U 425mm Wide

Work size(s):

240mm x 240mm w x 240mm h

240mm x 300mm w x 240mm h

240mm x 365mm w x 240mm h

240mm x 425mm w x 240mm h

WU block (insulated)

ZT00300WU 300mm Wide

ZT00365WU 365mm Wide

ZT00425WU 425mm Wide

Work size(s):

240mm x 300mm w x 240mm h

240mm x 365mm w x 240mm h

240mm x 425mm w x 240mm h

Mortar: to Group 3 as Clause 460

- *Bearing: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460
- *Section to be filled with reinforcing / concrete as per engineers specifications.*

### 353 NBT CLAY COMMON BLOCKWORK: PRECAST LINTELS

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
ZT00300R\* 300mm Wide Lintel Section  
ZT00365R\* 365mm Wide Lintel Section  
ZT00425R\* 425mm Wide Lintel Section  
ZT00300M 300mm Wide Make Up Block for over  
ZT00365M 365mm Wide Make Up Block for over

Work size(s):

Lintel 113h x 300mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l

Lintel 113h x 365mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l

Lintel 113h x 425mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l

Make Up Block 247mm l x 300mm w x 113mm h

Make Up Block 247mm l x 365mm w x 113mm h

Mortar: to Group 3 as Clause 460

- *Bearing: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460 .

## WORKMANSHIP GENERALLY

**410** RELATED WORK is specified in the following sections:

**420** SITE STORAGE: Store bricks/blocks in stable stacks clear of the ground and clearly identified by type, strength, grade, etc. Protect from adverse weather and keep clean and dry.

**460** MORTAR GROUPS: Where mortar is specified by group number, select any mortar in that group as set out below. Mix proportions are by volume. Use the same mortar throughout any one type of facing work.

Mortar group	1	2	3	4
Cement:lime:sand	1:0-1/4:3	1:1/2:4-4 1/2	1:1:5-6	1:2:8-9
Cement:premixed lime & sand (Proportion of lime to sand given in brackets)	1:3 (1:12)	1:4-4 1/2 (1:9)	1:5-6 (1:6)	1:8-9 (1:4 1/2)
Cement:sand & air entrainer	–	1:3-4	1:5-6	1:7-8
Masonry cement:sand	–	1:2 1/2-3 1/2	1:4-5	1:5 1/2-6 1/2

## LAYING GENERALLY

### First course

- Lay the first course of ThermoPlan® onto a full bed of mortar containing a horizontal DPC, ( Group 3, clause 460), ensuring that the course is absolutely plumb and in line.

### - Subsequent courses

- Bonding – Half-bonding is desirable, but a minimum of 95mm is permitted
- 240, 300, 365, 425 & 490mm blocks. - Vplus system. The thin joint mortar with combined bed joint reinforcement should be applied to the following courses using the mortar roller.

### **Lintols**

- Precast lintols – the bearings (min.125mm ) and perp joints must be fully mortared in using mortar ( Group 3, Clause 460 ). The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).
- U, WU & WL shells in-situ cast lintols - The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).

### **Wall Junctions**

- Where internal walls are to meet external walls, use butt jointing and build in wall ties (Article ZXTIE). 1 tie per course for 115mm wide abutting walls 2 per course for all other widths. Note – File a 1mm deep channel in top face of block prior to fitting tie to prevent subsequent blocks rocking on tie. Bend these ties down flat against the wall surface to prevent possible injury. Bend them back straight shortly before commencing with the adjoining walls. Ensure that the vertical butt joint of the adjoining wall is 20mm thick and fully mortared. (Group 3, clause 460).

### **Chasing**

- NBT ThermoPlan® BLOCKS must always be chased using a suitable electric twin – wheeled diamond wall chaser – once cut use a wide faced bolster as a lever to remove core - Hammer and bolster or Impact hammer cutting is not permitted as this can shatter the blocks.
- Dust hazard - Suitable eye and respiratory protection should be used.

### **Cutting**

- NBT ThermoPlan® BLOCKS must always be cut using a suitable electric saw (DeWalt DW390 (L) or similar or via large capacity wet-diamond block saw. Hammers and bolsters cutting is not permitted as this can shatter the blocks.
- Dust hazard - Suitable eye and respiratory protection should be used.

### **Drilling and Fixing**

- All fixings must be drilled and plugged. Use an electric drill without the hammer action. A range of suitable fixings are available from Fischer Fixings or EJOT range. (Contact NBT for Details)
- Dust hazard - Suitable eye and respiratory protection should be used.

### **BAUMIT Render System**

- **Pre-start preparatory work**
- Any loose or hollow areas are to be removed back to the brickwork. Algae and dirt is to be removed by powerwashing the whole surface. The surface is to be clean, sound, dry and able to receive the system.
- All windows, doors copings and flashings to be in place before installation of the system.
- **Masking work**
- Materials or objects which can be discoloured by dirt, such as natural wood, glass, aluminium, natural stone, ceramic surfaces, surface coverings or nearby plants to be covered or masked with waterproof materials.
- Covering or masking to be removed on completion of work.
  
- **Beading**
- All beading to be set in Baunit MP69 mortar. Beads are to be set plumb and in line.
  
- **Sealing profiles to doors and windows**
- APU rails 9mm
- Install APU sealing profiles to door and window frames to create a wind and waterproof expansion joint.
  
- **Reinforcing mesh**
- WEMICO R131
- On all corners of openings or recesses reinforcing mesh is to be placed diagonally in the top third of the fresh basecoat render. This applies to straight joints and where changes in the substrate fabric occur.
  
- **Render Basecoat**
- BAUNIT MP69
- Spray or hand apply onto the prepared substrate Baunit MP69 basecoat render to a thickness of 15mm. Apply reinforcing mesh into the surface of the wet mortar making sure there are no creases. Using a grid float, remove burrs and roughen up the render surface on hardening, leaving a flat even surface. Leave to dry for 7 days before applying topcoat render.NB; IN COOL WEATHER APPLY A 5MM COAT OF MP69 TO THE WHOLE SURFACE AREA AND LEAVE FOR BETWEEN 1 AND 2 HOURS BEFORE APPLYING A SECOND COAT 10MM THICK. THIS WILL EVEN OUT THE SUCTION OF THE BLOCKWORK.
  
- **Render Décor Finish Primer**
- BAUNIT DG27
- Apply by hand by brush or roller application an even coat to the surface of the MP69 basecoat render.
- Allow to fully dry for 24 hours.
  
- **Render Décor Finish**
- BAUNIT SEP01,02,03,04
- Apply SEP to the thickness of the grain and texture with a plastic or dense sponge float.
  
  
- **Surface Equaliser Paint**
- BAUNIT Silikonfarbe

- Apply 1 coat Baunit Silikonfarbe equalising paint, diluted with 10% water, with a roller or airless sprayer.
- Apply final coat Baunit Silikonfarbe equalising paint with a roller or airless sprayer. as finish coat.

### General Conditions

- **ADVERSE WEATHER:**
- Do not use frozen materials and do not lay on frozen surfaces.
- Do not lay bricks/blocks:
  - In cement gauged mortars when the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of 4°C when laid and walling is thoroughly protected).
  - In hydraulic lime:sand mortars when the air temperature is at or below 5°C and falling or below 3°C and rising.
  - In thin joint mortar glue when climatic conditions are outside the limits set by the mortar manufacturer.
- Maintain temperature of the work above freezing until mortar has fully hardened.
- Protect newly erected walling from:
  - Rain and snow by covering when precipitation occurs, and at all times when the work is not proceeding.
  - Drying out too rapidly in hot conditions and in drying winds.
- Rake out and replace cement gauged or hydraulic lime mortar damaged by frost. When instructed, rebuild damaged work.
- When instructed rebuild frost damaged thin joint masonry walling.

### Natural Building Technologies Ltd

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## NBT ThermoPlan® System ZA08 Internal Range - Specification

### F10 BRICK/BLOCK WALLING

To be read with Preliminaries/General conditions. NOTE: All blockwork to be rendered / plastered (ThermoPlan® blocks are not suitable for fairfaced work.)

#### TYPE(S) OF WALLING

#### 351 NBT ThermoPlan® Clay COMMON BLOCKWORK: 115mm 175mm 240mm

- Blocks: to DIBT Z 17.1-522
- Manufacturer and reference:  
Natural Building Technologies (NBT)
- ZA08115F 115mm Wide
- ZA08175F 175mm Wide
- ZA08240F 240mm Wide

Minimum average compressive strength: 10 N/mm<sup>2</sup>

Work size(s):

Block size 372mm x 249mm x 115mm

Block size 372mm x 249mm x 175mm

Block size 372mm x 249mm x 240mm

Acoustic Performance R' w,R

115mm – 38 dB

175mm – 42 dB

240mm – 45 dB

Special shapes:

- |                             |                           |
|-----------------------------|---------------------------|
| - Ref: ZA08240C, ZA12240C   | Full length Corner blocks |
| - Ref: ZA99240A             | 45° Angle Blocks          |
| - Ref: ZA99175U, ZT99240U,  | U Blocks                  |
| - Ref: ZA99115R*, ZA99175R* | Pre-Cast Lintol Sections  |

- Mortar: Thin-joint mortar.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZXM617 Baumit ZP99 Thin Bed Mortar
- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)  
Special requirements:  
VD system mortar roller. (available in widths to suit block)

Or

- Mortar: Thin-joint mortar.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZXM618 Baumit ZiegelPlanmörtel V-Plus System Typ III

- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)  
Special requirements:  
Reinforcing Mesh: Glasgitter Weiss Mesh to width of block  
V-Plus system mortar roller. (available in widths to suit block)
- NBT Baunit LM21 Insulating Mortar for Cut Joints (No interlocking profile), damaged block faces and abutments, as DIN18557 & EN998-1.  
Mix: Dry powder, factory prepared. Add water - 11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)
- Bond: Not less than 95mm
- Joints: 1mm bed joints with reinforcing mesh, mortar-free perp. joints (Unless cut)

**352 NBT CLAY COMMON BLOCKWORK: RING BEAMS AND SITE CAST LINTELS**

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
ZA99175U 175mm Wide  
ZA99240U 240mm Wide  
Work size(s):  
240mm x 175mm w x 240mm h  
240mm x 240mm w x 240mm h  
Mortar: to Group 3 as Clause 460
- *Bond: Not less than 100mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460
- *Section to be filled with reinforcing / concrete as per engineers specifications.*

**353 NBT CLAY COMMON BLOCKWORK: PRECAST LINTELS**

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
ZA99115R\* 115mm Wide Lintel Section  
ZA99175R\* 175mm Wide Lintel Section
- Work size(s):  
Lintel 71h x 115mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l  
Lintel 71h x 175mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l
- Mortar: to Group 3 as Clause 460
- *Bond: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460 .

**WORKMANSHIP GENERALLY**

- 410** RELATED WORK is specified in the following sections:
- 

- 420** SITE STORAGE: Store bricks/blocks in stable stacks clear of the ground and clearly identified by type, strength, grade, etc. Protect from adverse weather and keep clean and dry.

- 460** MORTAR GROUPS: Where mortar is specified by group number, select any mortar in that group as set out below. Mix proportions are by volume. Use the same mortar throughout any one type of facing work.

Mortar group	1	2	3	4
Cement:lime:sand	1:0- <sup>1</sup> / <sub>4</sub> :3	1:1/2:4-4 <sup>1</sup> / <sub>2</sub>	1:1:5-6	1:2:8-9
Cement:premixed lime & sand (Proportion of lime to sand given in brackets)	1:3 (1:12)	1:4-4 <sup>1</sup> / <sub>2</sub> (1:9)	1:5-6 (1:6)	1:8-9 (1:4 <sup>1</sup> / <sub>2</sub> )
Cement:sand & air entrainer	–	1:3-4	1:5-6	1:7-8
Masonry cement:sand	–	1:2 <sup>1</sup> / <sub>2</sub> -3 <sup>1</sup> / <sub>2</sub>	1:4-5	1:5 <sup>1</sup> / <sub>2</sub> -6 <sup>1</sup> / <sub>2</sub>

## LAYING GENERALLY

### First course

- Lay the first course of ThermoPlan® onto a full bed of mortar containing a horizontal DPC if required, ( Group 3, clause 460), ensuring that the course is absolutely plumb and in line.
- **Subsequent courses**
- Bonding – Half-bonding is desirable, but a minimum of 100mm is permitted
- 115, 175 and 240 blocks. - VD or VPlus system. The thin joint should be applied to the following courses using the mortar roller – or via dipping of block (3mm depth max)

### Lintols

- Precast lintols – the bearings (min.125mm ) and perp joints must be fully mortared in using mortar ( Group 3, Clause 460 ). The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).
- U Block & in-situ cast lintols - The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).

### **Wall Junctions**

- Where internal walls are to meet external walls, use butt jointing and build in wall ties (Article ZXTIE). 1 tie per course for 115mm wide abutting walls 2 per course for all other widths. **Note** – File a 1mm deep channel in top face of block prior to fitting tie to prevent subsequent blocks rocking on tie. Bend these ties down flat against the wall surface to prevent possible injury. Bend them back straight shortly before commencing with the adjoining walls. Ensure that the vertical butt joint of the adjoining wall is 20mm thick and fully mortared. (Group 3, clause 460).

### **Chasing**

- NBT ThermoPlan® BLOCKS must always be chased using a suitable electric twin – wheeled diamond wall chaser – once cut use a wide faced bolster as a lever to remove core - Hammer and bolster or Impact hammer cutting is not permitted as this can shatter the blocks.

### **Cutting**

- NBT ThermoPlan® BLOCKS must always be cut using a suitable electric saw ( Article 850) or similar or via large capacity wet-diamond block saw. Hammers and bolsters cutting is not permitted as this can shatter the blocks.

### **Drilling and Fixing**

- All fixings must be drilled and plugged. Use an electric drill without the hammer action. A range of suitable fixings are available from Fischer Fixings or EJOT range. (Contact NBT for Details)

**610** SUPPORT OF EXISTING WORK: Where new lintels or walling are to support existing structure, completely fill top joint with semi-dry mortar, hard packed and well rammed to ensure full load transfer after removal of temporary supports.

**680** HOLES, RECESSES AND CHASES IN BRICK/BLOCK WALLING: Comply with the relevant clause in section P31.

**690** ADVERSE WEATHER:

- Do not use frozen materials and do not lay on frozen surfaces.
- Do not lay bricks/blocks:
  - In cement gauged mortars when the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of 4°C when laid and walling is thoroughly protected).
  - In hydraulic lime:sand mortars when the air temperature is at or below 5°C and falling or below 3°C and rising.
  - In thin joint mortar glue when climatic conditions are outside the limits set by the mortar manufacturer.
- Maintain temperature of the work above freezing until mortar has fully hardened.
- Protect newly erected walling from:
  - Rain and snow by covering when precipitation occurs, and at all times when the work is not proceeding.
  - Drying out too rapidly in hot conditions and in drying winds.
- Rake out and replace cement gauged or hydraulic lime mortar damaged by frost. When instructed, rebuild damaged work.

- When instructed rebuild frost damaged thin joint masonry walling.

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## NBT ThermoPlan® System ZA12 Internal Range - Specification

### F10 BRICK/BLOCK WALLING

To be read with Preliminaries/General conditions. NOTE: All blockwork to be rendered / plastered (ThermoPlan® blocks are not suitable for fairfaced work.)

#### TYPE(S) OF WALLING

#### 351 NBT ThermoPlan® Clay COMMON BLOCKWORK: 115mm 175mm 240mm

- Blocks: to DIBT Z 17.1-407
- Manufacturer and reference:  
Natural Building Technologies (NBT)
- ZA12115F 115mm Wide
- ZA12175F 175mm Wide
- ZA12240F 240mm Wide

Minimum average compressive strength: 15 N/mm<sup>2</sup>

Work size(s):

Block size 372mm x 249mm x 115mm

Block size 372mm x 249mm x 175mm

Block size 372mm x 249mm x 240mm

Acoustic Performance R' w,R

115mm – 41 dB

175mm – 45 dB

240mm – 49 dB

Special shapes:

- Ref: ZA08240C, ZA12240C Full length Corner blocks
- Ref: ZA99240A 45° Angle Blocks
- Ref: ZA99175U, ZT99240U, U Blocks
- Ref: ZA99115R\*, ZA99175R\* Pre-Cast Lintol Sections

- Mortar: Thin-joint mortar.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZXM617 Baumit ZP99 Thin Bed Mortar
- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)  
Special requirements:  
VD system mortar roller. (available in widths to suit block)

Or

- Mortar: Thin-joint mortar.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZXM618 Baumit ZiegelPlanmörtel V-Plus System Typ III
- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)

Special requirements:

Reinforcing Mesh: Glasgitter Weiss Mesh to width of block  
V-Plus system mortar roller. (available in widths to suit block)

NBT Baunit LM21 Insulating Mortar for Cut Joints (No interlocking profile),  
damaged block faces and abutments, as DIN18557 & EN998-1.

Mix: Dry powder, factory prepared. Add water - 11 Ltrs Per Bag – Mixed with a  
Power Stirrer - (not suitable for mixing with a cement mixer.)

- Bond: Not less than 95mm
- Joints: 1mm bed joints with reinforcing mesh, mortar-free perp. joints (Unless cut)

### 352 NBT CLAY COMMON BLOCKWORK: RING BEAMS AND SITE CAST LINTELS

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
ZA99175U 175mm Wide  
ZA99240U 240mm Wide  
Work size(s):  
240mm x 175mm w x 240mm h  
240mm x 240mm w x 240mm h  
Mortar: to Group 3 as Clause 460
- *Bond: Not less than 100mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460
- *Section to be filled with reinforcing / concrete as per engineers specifications.*

### 353 NBT CLAY COMMON BLOCKWORK: PRECAST LINTELS

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
ZA99115R\* 115mm Wide Lintel Section  
ZA99175R\* 175mm Wide Lintel Section  
  
Work size(s):  
Lintel 71h x 115mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l  
Lintel 71h x 175mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l  
  
Mortar: to Group 3 as Clause 460
- *Bond: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460 .

## WORKMANSHIP GENERALLY

410 RELATED WORK is specified in the following sections:

---

420 SITE STORAGE: Store bricks/blocks in stable stacks clear of the ground and clearly identified by type, strength, grade, etc. Protect from adverse weather and keep clean and dry.

- 460 MORTAR GROUPS:** Where mortar is specified by group number, select any mortar in that group as set out below. Mix proportions are by volume. Use the same mortar throughout any one type of facing work.

Mortar group	1	2	3	4
Cement:lime:sand	1:0- <sup>1</sup> / <sub>4</sub> :3	1:1/2:4-4 <sup>1</sup> / <sub>2</sub>	1:1:5-6	1:2:8-9
Cement:premixed lime & sand (Proportion of lime to sand given in brackets)	1:3 (1:12)	1:4-4 <sup>1</sup> / <sub>2</sub> (1:9)	1:5-6 (1:6)	1:8-9 (1:4 <sup>1</sup> / <sub>2</sub> )
Cement:sand & air entrainer	–	1:3-4	1:5-6	1:7-8
Masonry cement:sand	–	1:2 <sup>1</sup> / <sub>2</sub> -3 <sup>1</sup> / <sub>2</sub>	1:4-5	1:5 <sup>1</sup> / <sub>2</sub> -6 <sup>1</sup> / <sub>2</sub>

## LAYING GENERALLY

### First course

- Lay the first course of ThermoPlan® onto a full bed of mortar containing a horizontal DPC if required, ( Group 3, clause 460), ensuring that the course is absolutely plumb and in line.
- **Subsequent courses**
- Bonding – Half-bonding is desirable, but a minimum of 100mm is permitted
- 115, 175 and 240 blocks. - VD or VPlus system. The thin joint should be applied to the following courses using the mortar roller – or via dipping of block (3mm depth max)

### Lintols

- Precast lintols – the bearings (min.125mm ) and perp joints must be fully mortared in using mortar ( Group 3, Clause 460 ). The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).
- U Block & in-situ cast lintols - The lintols must have supports, placed at a maximum of 1m between supports, until the compression zone above it has reached sufficient strength. Blocks and “make up bricks” in the compression zone must be fully mortared in (Group 3, clause 460).

### **Wall Junctions**

- Where internal walls are to meet external walls, use butt jointing and build in wall ties (Article ZXTIE). 1 tie per course for 115mm wide abutting walls 2 per course for all other widths. **Note** – File a 1mm deep channel in top face of block prior to fitting tie to prevent subsequent blocks rocking on tie. Bend these ties down flat against the wall surface to prevent possible injury. Bend them back straight shortly before commencing with the adjoining walls. Ensure that the vertical butt joint of the adjoining wall is 20mm thick and fully mortared. (Group 3, clause 460).

### **Chasing**

- NBT ThermoPlan® BLOCKS must always be chased using a suitable electric twin – wheeled diamond wall chaser – once cut use a wide faced bolster as a lever to remove core - Hammer and bolster or Impact hammer cutting is not permitted as this can shatter the blocks.

### **Cutting**

- NBT ThermoPlan® BLOCKS must always be cut using a suitable electric saw ( Article 850) or similar or via large capacity wet-diamond block saw. Hammers and bolsters cutting is not permitted as this can shatter the blocks.

### **Drilling and Fixing**

- All fixings must be drilled and plugged. Use an electric drill without the hammer action. A range of suitable fixings are available from Fischer Fixings or EJOT range. (Contact NBT for Details)

**610** SUPPORT OF EXISTING WORK: Where new lintels or walling are to support existing structure, completely fill top joint with semi-dry mortar, hard packed and well rammed to ensure full load transfer after removal of temporary supports.

**680** HOLES, RECESSES AND CHASES IN BRICK/BLOCK WALLING: Comply with the relevant clause in section P31.

**690** ADVERSE WEATHER:

- Do not use frozen materials and do not lay on frozen surfaces.
- Do not lay bricks/blocks:
  - In cement gauged mortars when the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of 4°C when laid and walling is thoroughly protected).
  - In hydraulic lime:sand mortars when the air temperature is at or below 5°C and falling or below 3°C and rising.
  - In thin joint mortar glue when climatic conditions are outside the limits set by the mortar manufacturer.
- Maintain temperature of the work above freezing until mortar has fully hardened.
- Protect newly erected walling from:
  - Rain and snow by covering when precipitation occurs, and at all times when the work is not proceeding.
  - Drying out too rapidly in hot conditions and in drying winds.
- Rake out and replace cement gauged or hydraulic lime mortar damaged by frost. When instructed, rebuild damaged work.

- When instructed rebuild frost damaged thin joint masonry walling.

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## NBT ThermoPlan® System ZA14 Internal Range - Specification

### F10 BRICK/BLOCK WALLING

To be read with Preliminaries/General conditions. NOTE: All blockwork to be rendered / plastered (ThermoPlan® blocks are not suitable for fairfaced work.)

#### TYPE(S) OF WALLING

#### 351 NBT ThermoPlan® Clay COMMON BLOCKWORK: 115mm 175mm 240mm

- Blocks: to DIBT Z 17.1-407
- Manufacturer and reference:  
Natural Building Technologies (NBT)
- ZA14115F 115mm Wide
- ZA14175F 175mm Wide
- ZA14240F 240mm Wide

Minimum average compressive strength: 15 N/mm<sup>2</sup>

Work size(s):

Block size 373mm x 249mm x 115mm

Block size 373mm x 249mm x 175mm

Block size 308mm x 249mm x 240mm

Acoustic Performance R' w,R

115mm – 45 dB

175mm – 47 dB

240mm – 50 dB

Special shapes:

- |                             |                           |
|-----------------------------|---------------------------|
| - Ref: ZA12240C             | Full length Corner blocks |
| - Ref: ZA99240A             | 45° Angle Blocks          |
| - Ref: ZA99175U, ZT99240U,  | U Blocks                  |
| - Ref: ZA99115R*, ZA99175R* | Pre-Cast Lintol Sections  |

- Mortar: Thin-joint mortar.
- Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZXM617 Baumit ZP99 Thin Bed Mortar
- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)
- Special requirements:  
VD system mortar roller. (available in widths to suit block)

Or

- Mortar: Thin-joint mortar.
- Manufacturer and reference:  
Natural Building Technologies (NBT)  
Ref: ZXM618 Baumit ZiegelPlanmörtel V-Plus System Typ III
- Mix: Dry powder, factory prepared. Add water - 9-11 Ltrs Per Bag – Mixed with a Power Stirrer - (not suitable for mixing with a cement mixer.)

Special requirements:

Reinforcing Mesh: Glasgitter Weiss Mesh to width of block  
V-Plus system mortar roller. (available in widths to suit block)

NBT Baunit LM21 Insulating Mortar for Cut Joints (No interlocking profile),  
damaged block faces and abutments, as DIN18557 & EN998-1.

Mix: Dry powder, factory prepared. Add water - 11 Ltrs Per Bag – Mixed with a  
Power Stirrer - (not suitable for mixing with a cement mixer.)

- Bond: Not less than 95mm
- Joints: 1mm bed joints with reinforcing mesh, mortar-free perp. joints (Unless cut)

### 352 NBT CLAY COMMON BLOCKWORK: RING BEAMS AND SITE CAST LINTELS

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
ZA99175U 175mm Wide  
ZA99240U 240mm Wide  
Work size(s):  
240mm x 175mm w x 240mm h  
240mm x 240mm w x 240mm h  
Mortar: to Group 3 as Clause 460
- *Bond: Not less than 100mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460
- *Section to be filled with reinforcing / concrete as per engineers specifications.*

### 353 NBT CLAY COMMON BLOCKWORK: PRECAST LINTELS

- Blocks: to DIBT Z 17.1-628.  
Manufacturer and reference:  
Natural Building Technologies (NBT)  
ZA99115R\* 115mm Wide Lintel Section  
ZA99175R\* 175mm Wide Lintel Section  
  
Work size(s):  
Lintel 71h x 115mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l  
Lintel 71h x 175mm w x \* 1000, 1250, 1500, 1750, 2000, 2250, 2500 & 2750 l  
  
Mortar: to Group 3 as Clause 460
- *Bond: Not less than 125mm*
- Joints: 10 mm bed joints, Mortar Group 3 as Clause 460 .

## WORKMANSHIP GENERALLY

410 RELATED WORK is specified in the following sections:

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420 SITE STORAGE: Store bricks/blocks in stable stacks clear of the ground and clearly identified by type, strength, grade, etc. Protect from adverse weather and keep clean and dry.

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Cement:lime:sand	1:0- <sup>1</sup> / <sub>4</sub> :3	1:1/2:4-4 <sup>1</sup> / <sub>2</sub>	1:1:5-6	1:2:8-9
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Cement:sand & air entrainer	–	1:3-4	1:5-6	1:7-8
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## LAYING GENERALLY

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### **Wall Junctions**

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### **Chasing**

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  - In hydraulic lime:sand mortars when the air temperature is at or below 5°C and falling or below 3°C and rising.
  - In thin joint mortar glue when climatic conditions are outside the limits set by the mortar manufacturer.
- Maintain temperature of the work above freezing until mortar has fully hardened.
- Protect newly erected walling from:
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  - Drying out too rapidly in hot conditions and in drying winds.
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- When instructed rebuild frost damaged thin joint masonry walling.

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