NBT
Natural Building Technologies

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 ZT10 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: 300mm 365mm 400mm & 425mm

- Blocks: to DIBT Z 17.1-857
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  ZT10300F 300mm Wide
  ZT10365F 365mm Wide
  ZT10400F 400mm Wide
  ZT10425F 425mm Wide
  Minimum average compressive strength: 7.5 N/mm²
  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 400mm (Block size 247mm x 249mm x 400mm)
  250mm x 250mm x 425mm (Block size 247mm x 249mm x 425mm)

  Thermal Value K = 0.10 W/mK

  Special shapes:
  - Ref: ZT00300C, ZT00365C Full length Corner blocks
  - Ref: ZT00400C, 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: ZT00300HR, ZT00365HR Half length Checked Reveal Blocks
  - Ref: ZT00300A, ZT00365A 45° Angle Blocks
  - Ref: ZT00300U, ZT00365U, U Blocks
  - Ref: ZT00400U, ZT00425U U Blocks
  - Ref: ZT00300WU, ZT00365WU Insulated WU Blocks
  - Ref: ZT00365WL Insulated WL Block
  - Ref: ZT00300R*, ZT00365R* Pre-Cast Lintol Sections
  - Ref: ZT00300M, ZT00365M Make Up Block

- Mortar: Thin-joint mortar, as DIN 1053-1, Z 17.1-628, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM617 Dünnbettmörtel VD System
- 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:
  Mortar roller. (available in widths to suit block)

  NBT BaumitBayosan LTM81 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 100mm
- 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 300mm Wide
  ZT00365WU 365mm Wide
  Work size(s):
  240mm x 300mm w x 240mm h
  240mm x 365mm 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)
  ZT00300R* 300mm Wide Lintel Section
  ZT00365R* 365mm 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
  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
- *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	1:0-1/4:3	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 100mm is permitted

- 300, 365, 400 & 425mm blocks. - VD 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, 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.

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.

NBT ThermoPlan® System ZT11 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: 300mm & 365mm**

Blocks: to DIBT Z 17.1-857
Manufacturer and reference:
Natural Building Technologies (NBT)
ZT11300F 300mm Wide
ZT11365F 365mm Wide
Minimum average compressive strength: 7.5 N/mm²
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)

Thermal Value K = 0.11 W/mK

Special shapes:

- Ref: ZT00300C, ZT00365C	Full length Corner blocks
- Ref: ZT00300E, ZT00365E	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,	U Blocks
- Ref: ZT00300WU, ZT00365WU	Insulated WU Blocks
- Ref: ZT00365WL	Insulated WL Block
- Ref: ZT00300R*, ZT00365R*	Pre-Cast Lintol Sections
- Ref: ZT00300M, ZT00365M	Make Up Block

- Mortar: Thin-joint mortar, as DIN 1053-1, Z 17.1-628, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM617 Dünnbettmörtel VD System
- 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:
  Mortar roller. (available in widths to suit block)

  NBT BaumitBayosan LTM81 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 100mm
- 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 300mm Wide
ZT00365WU 365mm Wide
Work size(s):
240mm x 300mm w x 240mm h
240mm x 365mm 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)
ZT00300R* 300mm Wide Lintel Section
ZT00365R* 365mm 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
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
- *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.

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	1:3 (1:12)	1:4-4 1/2 1:9)	1:5-6 (1:6)	1:8-9 (1:4 1/2)

in brackets)

Cement:sand & air entrainer	–	1:3-4	1:5-6	1:7-8
Masonry cement: sand	–	1:2½-3½	1:4-5	1:5½-6½

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 100mm is permitted

- 300 & 365mm blocks. - VD 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, 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.

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.

NBT ThermoPlan® System ZV10 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: 300mm 365mm 400mm & 425mm Wide Meshed Bed

- Blocks: to DIBT Z 17.1-860
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  ZV10300F 300mm Wide
  ZV10365F 365mm Wide
  ZV10400F 400mm Wide
  ZV10425F 425mm Wide
  Minimum average compressive strength: 7.5 N/mm²
  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 400mm (Block size 247mm x 249mm x 400mm)
  250mm x 250mm x 425mm (Block size 247mm x 249mm x 425mm)

  Thermal Value K = 0.10 W/mK

  Special shapes:
  - Ref: ZT00300C, ZT00365C Full length Corner blocks
  - Ref: ZT00400C, 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: ZT00300HR, ZT00365HR Half length Checked Reveal Blocks
  - Ref: ZT00300A, ZT00365A 45° Angle Blocks
  - Ref: ZT00300U, ZT00365U, U Blocks
  - Ref: ZT00400U, ZT00425U U Blocks
  - Ref: ZT00300WU, ZT00365WU Insulated WU Blocks
  - Ref: ZT00365WL Insulated WL Block
  - Ref: ZT00300R*, ZT00365R* Pre-Cast Lintol Sections
  - Ref: ZT00300M, ZT00365M Make Up Block

- Mortar: Thin-joint mortar, as DIN 1053-1, Z 17.1-537, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM618 Dünnbettmörtel V-Plus System
- 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:
  V-Plus system mortar roller. (available in widths to suit block)

  NBT BaumitBayosan LTM81 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 100mm
- 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 300mm Wide
  ZT00365WU 365mm Wide
  Work size(s):
  240mm x 300mm w x 240mm h
  240mm x 365mm 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)
  ZT00300R* 300mm Wide Lintel Section
  ZT00365R* 365mm 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
  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
- *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.

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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 100mm is permitted

- 300, 365, 400 & 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 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.

NBT ThermoPlan® System ZV11 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: 300mm & 365mm

- Blocks: to DIBT Z 17.1-860
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  ZV11300F 300mm Wide
  ZV11365F 365mm Wide
  Minimum average compressive strength: 7.5 N/mm²
  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)

  Thermal Value K = 0.11 W/mK

  Special shapes:
  - Ref: ZT00300C, ZT00365C Full length Corner blocks
  - Ref: ZT00300E, ZT00365E 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, U Blocks
  - Ref: ZT00300WU, ZT00365WU Insulated WU Blocks
  - Ref: ZT00365WL Insulated WL Block
  - Ref: ZT00300R*, ZT00365R* Pre-Cast Lintol Sections
  - Ref: ZT00300M, ZT00365M Make Up Block

- Mortar: Thin-joint mortar, as DIN 1053-1, Z 17.1-537, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM618 Dünnbettmörtel V-Plus System
- 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:
  V-Plus system mortar roller. (available in widths to suit block)

  NBT BaumitBayosan LTM81 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 100mm
- 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 300mm Wide
ZT00365WU 365mm Wide
Work size(s):
240mm x 300mm w x 240mm h
240mm x 365mm 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)
ZT00300R* 300mm Wide Lintel Section
ZT00365R* 365mm 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
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
- *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	1:0-1/4:3	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	1:3 (1:12)	1:4-4 1/2 1:9)	1:5-6 (1:6)	1:8-9 (1:4 1/2)

in brackets)

Cement:sand & air entrainer	–	1:3-4	1:5-6	1:7-8
Masonry cement: sand	–	1:2½-3½	1:4-5	1:5½-6½

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 100mm is permitted

- 300 & 365mm 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.

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.

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/mm²

  Work size(s):
  Block size 372mm x 249mm x 115mm
  Block size 372mm x 249mm x 175mm
  Block size 372mm x 249mm x 240mm

  Accoustic 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, as DIN 1053-1, Z 17.1-628, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM617 Dünnbettmörtel VD System
- 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:
  Mortar roller.

  Or

- Mortar: Thin-joint mortar, as DIN 1053-1, Z 17.1-537, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM618 Dünnbettmörtel V-Plus System
- 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:
Moratr Roller.

NBT BaumitBayosan LTM81 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 100mm
- 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	1:0-1/4:3	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 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/mm²

  Work size(s):
  Block size 372mm x 249mm x 115mm
  Block size 372mm x 249mm x 175mm
  Block size 372mm x 249mm x 240mm

  Accoustic 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, as DIN 1053-1, Z 17.1-628, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM617 Dünnbettmörtel VD System
- 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:
  Mortar roller.

  Or

- Mortar: Thin-joint mortar, as DIN 1053-1, Z 17.1-537, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM618 Dünnbettmörtel V-Plus System
- 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:
Mortar roller.

NBT BaumitBayosan LTM81 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 100mm
- 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	1:0-1/4:3	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 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/mm²

  Work size(s):
  Block size 373mm x 249mm x 115mm
  Block size 373mm x 249mm x 175mm
  Block size 308mm x 249mm x 240mm

  Accoustic 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, as DIN 1053-1, Z 17.1-628, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM617 Dünnbettmörtel VD System
- 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:
  Mortar roller.

  Or

- Mortar: Thin-joint mortar, as DIN 1053-1, Z 17.1-537, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM618 Dünnbettmörtel V-Plus System
- 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:
Moratr Roller.

NBT BaumitBayosan LTM81 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 100mm
- 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	1:0-1/4:3	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 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® Fill System ZF08 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® Fill Back Filled Clay COMMON BLOCKWORK: 145mm 175mm 200mm 240mm & 300mm

- Blocks: to DIBT Z 17.1-559/583
Manufacturer and reference:
Natural Building Technologies (NBT)
ZF08145F 145mm Wide
ZF08175F 175mm Wide
ZF08200F 200mm Wide
ZF08240F 240mm Wide
ZF08300F 300mm Wide

- *Section to be filled with concrete as per engineers specifications.*

Work size(s):
Block size 372mm x 249mm x 145mm
Block size 372mm x 249mm x 175mm
Block size 372mm x 249mm x 200mm
Block size 372mm x 249mm x 240mm
Block size 372mm x 249mm x 300mm

Accoustic Performance R' w,R (Back Filled with B 15 (0-16) with BV)
145mm – 48 dB
175mm – 51 dB
200mm – 53 dB
240mm – 55 dB
300mm – 58 dB

Special shapes:

- Ref: ZF08240C	Full length Corner blocks
- Ref: ZA99240A	45° Angle Blocks
- Ref: ZA99175U, ZT99240U,	U Blocks
- Ref: ZT00300U	U Blocks
- Ref: ZA99115R*, ZA99175R*	Pre-Cast Lintol Sections
- Ref: ZT00300R*	Pre-Cast Lintol Sections

- Mortar: Thin-joint mortar, as DIN 1053-1, Z 17.1-628, EN998-2
Manufacturer and reference:
Natural Building Technologies (NBT)
Ref: ZXM617 Dünnbettmörtel VD System
- 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:

Mortar roller.

Or

- Mortar: Thin-joint mortar, as DIN 1053-1, Z 17.1-537, EN998-2
  Manufacturer and reference:
  Natural Building Technologies (NBT)
  Ref: ZXM618 Dünnbettmörtel V-Plus System
- 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:
  Moratr Roller.

NBT BaumitBayosan LTM81 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 100mm
- 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
  240mm x 300mm 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
  ZT00300R* 300mm 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
  Lintel 113h x 300mm 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	1:0-1/4:3	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 if required, (Group 3, clause 460), ensuring that the course is absolutely plumb and in line.

- **Subsequent courses**

- Bonding – Half-bonding (Straight path of voids for back filling purposes.)

- 145, 175, 200, 240 and 300mm 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) Blocks

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).
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Wall Junctions

- Where internal walls are to meet external walls, use butt jointing and build in wall ties (Article ZXTIE). Ties should be positioned so as they are into the void area of the block (2 ties per block at each course). 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).

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