KZN Housing

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ISIFUNDAZWE SAKWAZULU-NATALI

GUIDELINES FOR SITE & HOUSE INSPECTION

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TABLE OF CONTENTS

Introduction:

The present Manual is the result of a compilation of various “Minimum Norms and Standards” in respect of permanent residential structures to comply with during the process of construction of low cost housing.
Part I summarizes the regulations most commonly applied at the stages of “Floor Slab” and “Top Structure” in the housing projects.
Part II shows the main points where the inspection must be conducted, indicating in every activity what to check and how to check, in order to detect the possible error quickly and amend it immediately.
Annexure A an Inspection Form based on the regulations of this manual is attached.
It must be mentioned that not all the activities required in the construction of a house are considered, but the most important of such activities can be easily checked by using this manual, delivering houses of an acceptable standard.
Last, this Manual is directed to the Inspectors and Monitors from the Department of Housing, in order to achieve higher quality standard in the process of housing delivering as a part of a new policy from the NDoH, and complying with the expectations of the Cuba-South Africa Program of Technical Support and skills transfer to the workers of the abovementioned Department of Housing.

Compiled by: Mr Blas R. Cadalso Medinilla

GUIDELINES FOR SITE & HOUSE INSPECTION

NB: All materials and workmanship must be in terms of the South African Bureau of Standards (SABS) approval. A detailed schedule of materials used must be provided before construction.

PART 1: Regulations

1.1 Preparation of Site

1.1.1 Before any foundation is laid the area to be covered by any building shall be properly cleared of vegetable matter, tree stumps, timber and other cellulose material, debris or refuse and any material contaminated with faecal matter. Site pegs must be clearly exposed and be protected.

1.1.2 Where any site upon which any building is to be erected is waterlogged or saturated, or where any building is to be so situated that water will drain naturally towards it, drainage shall be provided to direct such water away from such site or building to a stormwater drain or to dispose of it in some other safe approved manner.

1.1.3 The positioning of concrete slabs should allow for further extensions in future.

1.2 Excavation for Foundations

1.2.1 Any excavation for any foundation shall be taken down to firm natural/solid ground provided that it shall be permissible to cast any foundation in filled ground if approved measures are taken to ensure the stability and the serviceability of the building.

1.2.2 The bottom of any excavation in ground other than rock shall be horizontal: provide that where such a bottom is in the form of steps, such steps shall have horizontal and vertical surfaces.

1.2.3 Where any foundation is placed on solid rock, the bearing area shall be cleaned and where necessary, so stepped or dowelled as to prevent lateral movement of such foundation.

1.2.4 Except where the foundation for any external masonry wall is placed on solid rock, the bottom of the excavation for such a foundation shall not be less than 300 mm below the level of the adjoining finished ground.

1.3 Foundations

General Requirement:
The foundation of any building shall be designed to safely transmit all the loads from such building to the ground. In favorable soil conditions, the foundations must

be designed to reduce as far as practically possible the depth of excavation, the height of the foundation walls and the cost of unnecessary large footings.

Empirical Rules for Foundations

1.3.1 Any such foundation shall be constructed in concrete having a compressive strength of not less than 15 MPa at 28 days, or be mixed in proportions by volume of **1 part of cement , 4 parts of sand and 5 parts of coarse aggregate**.

1.3.2 Any Continuous Strip Foundation shall have a thickness of not less than 200 mm: provided than where the foundation is laid on solid rock such thickness shall not apply.

1.3.3 The width of any Continuous Strip Foundation shall be not less than:

a) 600 mm in the case of a foundation of a load-bearing or free standing masonry wall or to a timber-framed wall supporting a roof with Class B covering (clay tiles or concrete tiles).
b) 400 mm in the case of a foundation to a non-load-bearing internal masonry wall or to a timber framed wall supporting a roof with Class A or Class C covering (metal and fibre-cement sheets or metal roof tiles)

1.3.4 Where any strip foundation is laid at more than one level the higher portion of the foundation shall extend over the lower portion for a distance of at least equal to the thickness of the foundation.

1.3.4.1 Any void between the top of the lower portion of such foundation and the underside of the higher portion shall be completely filled with concrete of the same strength as that required for such foundation.

1.3.5 Where any Concrete Floor Slab is thickened to form a foundation:

a) the thickness, including that of such floor slab, shall be not less than that required for a continuous-strip foundation; and
b) the width of the thickened portion below such floor slab shall be not less than that required for a continuous-strip foundation: provided that such thickening shall not be required under non-load-bearing timber-framed walls.

1.3.6 Where any pier is built into or forms part of any wall the thickness of the foundation to such pier shall be the same as that required for such wall.

1.3.6.1 The length and width of the foundation to such pier shall be such as to project by 200 mm at any point on the perimeter of such pier.

1.3.7 The thickness of the foundation to any sleeper pier or sleeper wall shall be not less than 150 mm.

1.3.7.1 The length or width of the foundation to such sleeper pier shall be not less than 450 mm.

1.3.7.2 The width of the foundation to such sleeper wall shall be not less than 300 mm.

Any foundation constructed in accordance with the abovementioned sub rules inclusive shall not be used to support any wall forming part of the structural system of any building except where:

a) such wall is placed centrally on such foundation;

b) the soil supporting such foundation is not a heaving soil or shrinkable clay or a soil with a collapsible fabric.

1.4 Floors

General Requirements:

Any floor of any building shall:

- be strong enough to safely support its own weight and any loads to which it is likely to be subjected; and
- have a fire resistance appropriate to its use, and when required, be non-combustible.

The floor of any laundry, kitchen, shower-room, bathroom, shall be water resistant.

Where any concrete floor slab is supported on ground or filling, such floor shall be so constructed that any moisture present in such ground or filling is prevented from penetrating such concrete floor slab. A suitable damp-proof membrane shall cover the entire area within the foundation walls of any building.

Floor construction

1.4.1 Any floor supported on ground or filling shall be constructed of a concrete slab which shall be a compressive strength of not less than 10 MPa at 28 days, or be mixed in the proportions by volume of 1 part cement, 4 parts sand and 5 parts coarse aggregate, and the thickness of such slab be not less than 75 mm.

1.4.2 Filling Material:

Such filling material shall:

- consist of suitable material (clean soil with no clay, stick, stone, plastic, paper, sharp objects, or other matter); and
- be applied in well compacted layers not more than 150 mm in thickness.

1.4.3 Underfloor Membranes:

Any under-floor membrane shall be not less than 0.25 mm thick and shall be laid on a surface, which shall not contain any sharp object that may perforate such membrane.

1.4.3.1 Such membrane shall be turned up around the perimeter of and at least for the full thickness of the slab.

1.4.3.2 Any joint in such membrane shall overlap by not less than 200 mm and shall be effectively sealed.

1.4.3.3 Polyolefin membranes must be placed beneath all slab-on-the-ground foundations, irrespective of site and ground conditions.

1.5 Walls

1.5.1 Regulations:

1.5.1.1 Structural Strength: Any wall shall be capable of safely sustaining any loads to which it is likely to be subjected and in the case of any structural wall, such wall shall be capable of safely transferring such loads to the foundations supporting such wall.

1.5.1. 2 Water Penetration: There should be 100% waterproofing however, the issue of cost must be taken into account. Any wall shall be so constructed that it will resist the penetration of water into any part of the building where it would be detrimental to the health of occupants or to the durability of such building.

1.5.1.3 Where any roof truss, rafter or beam is supported by any wall provision shall be made to fix such truss, rafter or beam to such wall in a secure manner that will ensure that any forces to which the roof may normally be subjected will be transmitted to such wall.

1.5.2 Empirical rules for Walls

1.5.2.1 Materials:
Masonry units and Mortar used in the erection of walling shall comply with the requirements for compressive strength contained in **Table 1.**

Table 1

Wall type	Position	Min average Compressive Strength (MPa) Solid units	hollow units	Class of Mortar required
Structural other than Foundation and retain-Ing walls	Single storey building (ext. or internal)	7.0	3.5	II
Non-structural other than Parapet, balustrade and Free-standing walls	External	7.0	3.5	II
	Internal	7.0	3.5	III
Free-Standing	Ext. or internal	10.5	7.0	II
Foundation	Supporting Single Storey	7.0	3.5	II
Retaining	--	10.5	7.0	II

Table 2

*Mix proportions for the Classes of **Mortar**:*

Mortar Class	Portland cement (Kg)	Lime* (l)	Sand (l, max)
II	50 (1 bag)	0.40	200 (3 standards 65 litres barrows)
III	50 (1 bag)	0.80	300 (4.5 standards 65 litres barrows)

*The addition of lime to the mix is optional. A maximum of 40 litres is permitted.

Table 3

*Mix proportions for **Cement Plasters** made from:*

Common Cement:

External Plaster:		
50 Kg Cement (1 bag)	0~40 litres Lime	150 litres Sand (2 standards barrows)
Internal Plaster:		
50 Kg Cement (1 bag)	0~40 litres Lime	150 litres Sand (2 standards barrows)

Masonry Cement:

External Plaster:		
50 Kg Cement (1 bag)	0~40 litres Lime	120 litres Sand (2 standards barrows)
Internal Plaster:		
50 Kg Cement (1 bag)	0~40 litres Lime	150 litres Sand (2 standards barrows)

1.5.2.2 Permissible dimension of Masonry Walls.

Table 4

Nominal Thickness	Use of wall in a building	Max storey height (m)	Max height, ground floor to top of external gable (m)	Maximum unsupported length (m)	Min. nominal unit strength (MPa) solid	hollow	Min. class of mortar
110	Non-struct. Internal wall	3.3	NA	7.0	7.0	3.5	III
140	Non-struct. Internal wall	3.0	NA	7.0	7.0	3.5	III
	Structural (single storey)	3.3	5.0	6.0	7.0	3.5	II

1.5.2.3 Brickforce shall comprise hard drawn wires comprising two main diameters wires of diameter not less than 2.8 mm spaced a constant distance apart and 2.5 mm diameter cross wires spaced at longitudinal intervals of 300mm in ladder type brickforce and at twice the distance between the longitudinal wires in truss type reinforcement.

1.5.3 Foundation Walls

1.5.3.1 The height of any foundation wall not acting as a retaining wall shall be not more than 1.5 m.

1.5.3.2 No foundation wall shall have a thickness less than the relevant value given in the following table, provided that such thickness shall not be less than the thickness of the wall carried by such foundation wall.

Table 5

Minimum thickness of foundation walls

Type of foundation wall		Minimum thickness of wall (mm)						
		Acting as a retaining wall *Difference in ground level, (mm)			Not acting as a retaining wall Height, (mm)			
		> 500	500~750	750~1000	>300	300~500	500~1000	1000~1500
Single leaf brick	External	140	190	230	140	140	140	190
	Internal	-	190	230	90	140	140	190
Single leaf hollow Block (cavities filled with concrete)	External	140	190	230	140	140	140	190
	Internal	140	190	230	90	140	140	190

1.5.4 Free-standing Walls

1.5.4.1 A damp-proof course shall not be installed in any free-standing wall.

1.5.4.2 Where moisture is likely to be encountered from ground water, high density bricks with a water absorption of not more than of not more than 7% shall be used in any free-standing wall up to 150 mm above ground level.

1.5.5 Roof Anchoring

1.5.5.1 In the case of a wall erected of masonry units or of concrete, a galvanized steel strap or wires shall be embedded in the wall at positions suitable for anchoring any timber roof truss, rafter or beam to such wall.

1.5.5.2 Such strap or wire shall extend into the wall to a depth of at least 300 mm in a case of heavy roof (clay tiles) or at least 600 mm in the case of sheeted roof.

1.5.5.3 Galvanized steel trap anchors shall be taken up over the top of the rafter or tie beam, bent down on the other side and nailed down from both sides, or galvanized roof ties shall be made up of two strands of wire, which shall be taken up on either side of the rafter or tie beam, twisted together so as to have no slack, but not so as to overstrain the wire, and the free ends then nailed down to prevent untwisting.

1.5.6 Damp-proof course

Damp-proof courses shall be provided in all external walls and:

1.5.6.1 In any masonry wall a damp-proof course shall be installed at the level of top of a concrete floor slab resting on the ground.

1.5.6.2 No horizontal damp proof course shall be installed less than 150 mm above the level of the adjacent finished ground.

1.5.6.3 Transverse joints in the damp-proof course shall be overlapped to a minimum distance equal to the full thickness of the wall or the leaf, as the case may be.

1.5.6.4 Damp-proof courses shall be laid to the full thickness of the wall and lapped at least 150 mm at all joints in the running length.

1.5.6.5 Damp-proof courses shall be placed under windowsills.

1.6 Roofs

General Requirement:

The roof of any building shall be so constructed that it will:

- resist any forces to which it is likely to be subjected;
- be durable and waterproof;
- not allow the accumulation of any rainwater upon its surface;
- have a PVC underlay ; and
- have storm clips.

The minimum height of all habitable rooms shall be 2,4 m.

Regulations

1.6.1 Slope of the roof:

- not less than 15 degrees not more than 30 degrees for metal and fibre-cement sheets
- not less than 17 degrees not more than 35 degrees for clay tiles.

1.6.2 The centre-to-centre spacing of trusses relevant to the roof covering to be applied shall not exceed:

- Sheets (either metal or fibre-cement)……1400 mm
- Concrete or clay tiles…… 760 mm

1.6.3 Any purlin shall have a minimum nominal width and depth of 50 mm and 76 mm respectively and the maximum centre-to-centre spacing between purlins shall be 1.2 m.

1.6.4 All joints in adjacent purlins shall be staggered.

PART 2: What to Control

2.1 Site Preparation and Excavation for Foundations

2.1.1 Area cleared of vegetable matter, tree stumps, timber and other cellulose material, debris or refuse and any material contaminated with faecal matter.

2.1.2 Stormwater drainage provided. The finished ground levels must direct water away from the building.

2.1.3 Excavation deep enough as per design or taken down to firm natural/solid ground.

2.1.4 The bottom of any excavation in ground other than rock shall be horizontal.

2.1.5 The bottom of the excavation 300 mm or more below the level of the adjoining finished ground.

2.1.6 Compaction and leveling of the filling under the floor slab or raft foundation.

2.1.7 Sites to receive Slab-on-the-ground foundations shall be leveled. The bases of edge beams shall be sloped not more than 1:10.

2.1.8 The accuracy of the setting out shall be achieved by positive control measures; their relative location to site boundaries and adjacent structures shall be verified. Regular checks on the trench widths, trench lengths and diagonals across external corners shall be made. Diagonal checks and the 3.4.5 method are to be used to check for accuracy of setting out and measurements.

2.2 Foundations

2.2.1 Before the pouring of the concrete, the inspector shall check:

- Level of the formwork.
- Thickness of the concrete in floor slab/raft foundation.
- Measurements of the foundation/floor slab.
- Check that the steel mesh is the specified and has been placed correctly as per project, separated from the soil.
- Polyolefin under-slab membranes where site ground conditions necessitate (as per project).
- Concrete shall be placed as soon as possible after the excavation has been completed and inspected.

2.2.2 While pouring the concrete:

2.2.2.1 Compressive strength of not less than 15 MPa at 28 days.

How to Check

In the case of ready mix, the compressive strength of the concrete will be checked by means of test cubes at the laboratory. It is applicable also when the concrete is produced manually “in situ”, and both, **the monitor and the inspector, will be responsible to request the contractor to take such test cubes while the concrete is being poured.**

Table 6

The mix in proportions by **volume** shall be:

Compressive Strength at 28 days (MPa)	Cement	Sand	Stone
15 (low strength)	1	4	4
25 (medium strength)	1	3	3

2.2.2.2 Concrete: Concreting shall be carried out as far as is practicable in one continuous operation.

2.2.2.3 Compaction of the concrete: concrete shall be compacted by mechanical vibrations or by means of tamping, spading, rodding or forking in such a manner that the concrete is thoroughly worked against the formwork and around the reinforcement and other embedded items without displacing them, so as to ensure that the concrete is free from honeycombing and planes of weakness. **Inadequate compaction can seriously affect the quality of the concrete.** The concrete may be assumed to be fully compacted when air bubbles cease to rise to the surface of the concrete in the vicinity of the vibrator. Contact between the vibrator and formwork can damage the surface of “off shutter” concrete.

2.2.3 After pouring the concrete, the inspector shall check:

- The finishing of the surface of the floor slab.
- exposed surfaces of concrete shall be brought up to plane, uniform surface with suitable screed boards.
- finished concrete shall have a neat, smooth, even and uniform finish free from any honeycombing.
- a minimum, wooden float finish is required.

Curing and protection: After initial set, all concrete shall be protected from contamination and loss of moisture for at least 3 days, extended to 5 in cold weather, in order to achieve the required compressive strength.

Methods for curing:

- Covering the concrete with mats made of moisture-retaining material, and keeping the covering continuously wet.
- Continuously spraying the exposed surfaces with water.
- Covering the concrete with waterproofing sheeting.

2.3 Strip Footing foundation

It is a rectangular unreinforced or lightly reinforced concrete foundation, which supports masonry walls.

2.3.1 Minimum width of strip foundations:

Table 7:

	Tiled or sheeting roof	
Type of founding material	Internal wall (mm)	External wall (mm)
Rock	400	400
Soil	400	500

2.3.2 Minimum thickness: 200 mm (except the case of bearing onto solid rock where the thickness shall be sufficient to achieve a level surface).

2.3.3 Concrete shall be of the following grades or better in Strip Footing Foundations:

Unreinforced---------- grade 10
Reinforced---------- grade 25

2.3.4 Reinforcement shall be placed centrally within the thickness of the footings with a minimum cover side of 50 mm.

2.4 Slab-on-the-Ground Foundations

It is a concrete floor supported on the ground incorporating lightly reinforced integral edge and internal beams.

2.4.1 All measurements shall be checked before concreting the foundation (trench width, trench lengths and the length of diagonals across external corners, as well as the depth of the foundation). Also, check the thickness of the floor slab and the level of the prepared site before laying the mesh.

2.4.2 Ensure the placement of the underfloor membrane in accordance with the relevant requirements of I.4.3. **Polyolefin Membranes must be placed beneath all slab-on-the-ground foundations irrespective of site and ground condition**. The sheeting shall be placed beneath the slab and the beam thickenings so that the bottom surface is entirely underlaid.

2.4.3 Lapping of membranes at joints shall not be less than 200 mm.

2.4.4 Check that the right steel mesh is being used and the reinforcement of the central and edge beams has been positioned as shown on the drawings and maintained in position. It shall be secured against displacement.

2.4.5 Fabric reinforcement shall be centrally placed in slabs and shall be lapped by one full grid width so that the two outermost transverse wires of one sheet overlap with the two outermost transverse wires of one sheet overlap with the two outermost transverse wires of one sheet being lapped (200 mm minimum).

2.4.6 Check the adequate cover to reinforcement in all the elements as indicated in the project details. Reinforcement in internal thickened footings and edge beams shall be placed at the bottom of such elements with a minimum side and bottom cover of 50 mm. Cover is measured from the face to the concrete to the outside of the reinforcement nearest the face of the concrete.

2.4.7 Check the splicing and lapping of the reinforcement as per project specifications.

2.4.8 Concrete shall be of grade 25 or better in Slab-on-the-ground Foundations.

Concreting of both, Strip Footing Foundations and Slab-on-the-ground foundations, shall comply with the requirements of II.2 above.

2.5 Floor Slab

2.5.1 The underfloor membrane shall be turned up around the perimeter of the floor slab by at least the thickness of the slab.

2.5.2 Concrete:
Concrete shall be of the following grades or better:

- Unreinforced surface bed …….Grade 15 (15 MPa)
- Concrete apron (optional)……..Grade 10 (10 MPa)

2.5.3 The upper surface of the floor slab shall be a minimum of 150 mm above finished ground level.

2.5.4 Specifications abovementioned in II.1, II.2, II.4.3 and II.4.4 (where applicable) shall be complied in floor slabs construction.

2.6 Masonry Walls

2.6.1 Placement of the Damp-Proof Course (DPC), as per section I.5.6 above.

2.6.2 Check the vertical plumb of the wall using a level.

2.6.3 Check the angle in the corners (90 degrees).

2.6.4 Masonry walls shall be laid at the centre of strip footings.

2.6.5 Completed face masonry should be free of stains, efflorescence, mortar, grout droppings and debris.

2.6.6 Wall thickness:

- For external walls----------140 minimum.
- For internal walls----------100 minimum.

2.6.7 Placement of brickforce in compliance with the project specifications.

2.6.8 Over all openings, reinforced concrete lintels must be constructed; or precast prestressed concrete or precast concrete lintels shall be placed.

2.6.9 Bagging: All external walls must be bagged by applying cement slurry (1 part of cement to 3 parts of sand) and rubbing the wall surface with wet rough sacking or brush until all joins and crevices are filled up.

2.6.10 Materials shall comply with the requirements of 1.5.2.1 above.

2.6 11 Ensure the right positioning of roof anchors and the extend depth of anchor embedment must not be less than 600 mm. Roof anchors must be positioned at evenly spaced centres wherever roof structure members are to be located.

2.6.12 Door and window frames shall be set in position, securely braced and strutted and built in as the work proceeds. Inspectors shall verify the square in the corners of the frames and the vertical plumb in both of the directions at the moment of the setting, as well as the right fixing of such frames to the wall and the correct placement taking into account the direction towards the door will be opened.

- The thresholds brace at the base of the door frames should only be cut once the doorframe has been fully installed to prevent wheelbarrows and pedestrian traffic damaging the doorframe.

2.7 Roofing

2.7.1 Truss, rafter and purling/batten spacing for different roof coverings shall be in accordance with the manufacturer’s instructions/certificate or as directed by a Competent Person. Common roof covering profiles may be in accordance with the following table:

Table 8: Truss (or rafter) and purling/batten spacing for commonly used roof covering profiles.

Roof cover	Approximate Mass (kg/m2)	Truss Spacing (mm; max)	Purlin / batten Spacing (mm; max)		Size of purlin or batten (mm)	
Concrete and	65	650	250	Batten	38 x 38	Batten
Clay tiles	55	760	345	Batten	38 x 38	Batten
	55	900	345	Batten	38 x 50 on flat	Batten
	55	1000	345	Batten	38 x 50 on edge	Batten
Profiled metal sheets	11	1500	1200	Purlin	50 x 76 on edge	Purlin
Profiled Fibre-Cement sheets	15	1200	1200	Purlin	50 x 76 on edge	Purlin

2. 7.2 Trusses, rafters and purlin beams shall be supported on wall plates of minimum size 38 x 76 mm or similar flat bearing surfaces, which are leveled and positioned so as to ensure that the ends of such members are vertically aligned.

2.7.3 A minimum end bearing of 70 mm shall be provided where monopitched or truncated trusses.

2.7.4 All rafters and roof trusses shall be tied down to the supporting walls by means of a galvanized steel strap or galvanized steel wires, which are built into the walls.

2.7.5 All trusses shall be erected straight and vertically plumb. Trusses shall not be allowed to lean over sideways as this weakens the truss.

2.7.6 Rafters and purlin rafter/beams shall be erected straight and plumb and the required pitch.

2.7.7 Erection of roof trusses:

- Prior to the erection of trusses, the area to receive trusses shall be checked to ensure that the wall plates are level and that the holding down wires or hoop-iron have built into supported structure at the correct centres.
- The erected trusses shall be lined up, leveled, plumbed and straightened prior to the installation of the permanent rafter bracing.

2.7.8 Battens and purling shall be continuous over at least three rafters (i.e. two rafter spacing) and shall be fixed to every rafter that they cross.

2.8 Fixing of roof tiles and Sheeting

2.8.1 Check the specifications of the materials.

- Clay and concrete roof tiles may be of the plain or interlocking type and shall be true to pattern and uniform in shape.

- Each tile shall be provided with either a continuous batten lug or two batten lugs each of 20 mm in length. The thickness of such lugs shall not be less than 13 mm.
- Roof tiles and sheeting shall be free of cracks, lumps, distortions and other defects.

2.8.2 Before commencing with the fixing of roofing materials, must be ensured that:

- Roof trusses are to a true line and braced.
- Roof structure is to an acceptable squareness and the pitch is the specified in project.
- Battens or purlins are of the correct size and have been correctly spaced and fixed to rafters.
- Masonry has been trimmed to receive the roofing material.

2.8.3 Installation of clay and concrete tiles:

- All starters, finishers and full tiles at the end of each course at a gable end shall be mechanically fixed (by means of clips, nails, screws)

2.8.4 Fibre cement sheets when fixed shall have full bearing on purlins and their ends shall extend not less than 75 mm beyond the point of fixing.

3. Conclusion:

This Manual intends to be a Provincial document to achieve uniform criteria for inspecting subsidized housing. The Inspection Form attached as Annexure A, summarizes into a checklist the main regulations of the Manual. We recommend the use of such Form linked to the content of this Manual as a good tool for site inspections. Progressive inspection from the site preparation to the end product is required to complete the Inspection Form, which guarantees the quality control in the whole construction process in “P5”.

ANNEXURE A: INSPECTION FORM

DEPARTMENT OF HOUSING: KWAZULU-NATAL
Inspection Form for Construction: P5

Project Name:_____ **Site No:** _____
Project Number:_____

Milestone	Date	Checklist	Quality		Comments
			Passed	Failed	
Site Preparation and		Area cleared of veg. matter, debris or refuse, etc.			
Excavation for foundations		Stormwater drainage.			
		Excavation. Measurements.			
		Compaction and leveling of the filling.			
		Setting out accuracy.Checking of measurements.			
Foundations/Floor Slab		Level and measurements of the formwork.			
		DPC			
		Steel Mesh/Reinforcements. Splicing and lappings,			
		Cover to steel reinforcement			
		Concrete grade			
		Compaction of the concrete.			
		Finishing of the surface			
		Curing of the concrete.			
Masonry Walls		Placement of the DPC			
		Vertical plumb.			
		Angle in the corners.			
		Wall thickness (external and internal).			
		Brickforce			
		Bagging/face finishing.			
		Roof anchors. Depht of embedment and positioning.			
		Door and Widows frames. Vertical plumb, square, right fixing.			
		Quality of the materials (SABS requeriments).			
Roofing		Correct size and spacing of the trusses, rafters and purlings/battents.			
		Tie down to the wall.			
		Trusses, rafters and purlings line up/straigtness/level/vertical plumb/pitch.			
		Roof tiles/sheets mecanically and correctly fixed(i.e. clips, nails, screws).			

General Comments: _____

Date of final inspection:_____

Inspected by:_____ Signature: _____