



KWAZULU-NATAL PROVINCE
HUMAN SETTLEMENTS
REPUBLIC OF SOUTH AFRICA



**A NATION
THAT WORKS FOR ALL**

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GUIDELINES FOR THE DESIGN STANDARDS OF 40M² AND 45M² HOUSING TYPOLOGIES IN KWAZULU-NATAL



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ABBREVIATIONS

BNG
BOQ
COC
NHBRC
SABS
SANS

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PART A: GUIDELINES

1. INTRODUCTION

The KwaZulu-Natal Department of Human Settlements currently delivers top structures as prescribed by the National norms and standards. The house is constructed as per the relevant National Housing Programme and the housing typology. Over time, the top structure finishes through the various parts of the province began to differ due to the interpretation of the different implementing agents and professionals used. This resulted in inconsistencies in the products delivered in each project. These included aspects such as the exclusion of aprons, the varying types of roof sheeting used, etc.

This resulted in a need for uniformity to be introduced to bring about consistency in the housing product delivered throughout KwaZulu-Natal. The standard designs and finishes would assist project monitors to enforce compliance by the different implementing agents.

The delivery of free-standing low-income BNG houses required guiding principles regarding both rural and urban house layouts. The design typologies presented in this guideline are to inform the standard of stand-alone residential units built in KwaZulu-Natal.

2. OBJECTIVES

- 2.1 To establish a uniformity of house and layout forms that are applicable to low-income housing projects in the province.
- 2.2 To inform the optimisation of quality and sustainability in the design and ongoing delivery of subsidy housing.
- 2.3 Design housing typologies that are uniform and consider aspects of town planning and rural / urban design.
- 2.4 To design typologies that has a time dimension and therefore must consider flexibility, adaptability and transformation over time

3. LEGISLATIVE FRAMEWORK

- 3.1 The Constitution of the Republic of South Africa, Act No. 108 of 1996 recognizes the right to access adequate housing and that the state must take reasonable legislative and other measures within its available resources to achieve the progressive realization of this right. The Department makes every effort to address this need of households through various means.
- 3.2 The Housing Act 107 of 1997 states that all spheres of government must give priority to the needs of the poor and consult meaningfully with individuals and communities affected by housing development.
- 3.3 The National Housing Code 2009, Technical and General guidelines prescribe the applicable norms and standards for the delivery of subsidized housing.

The minimum size of permanent residential structures to be provided by means of the housing subsidy, is 40 square metres of gross floor area. Each house as a minimum must be designed on the basis of:

- a) Two bedrooms;
- b) A separate bathroom with a toilet, a shower and hand basin;
- c) A combined living area and kitchen with wash basin; and
- d) A ready board electrical installation where electricity supply in the township is available.

- 3.4 In addition, the typology of a 45m² dwelling designed to cater for the needs of disabled persons who are

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wheelchair dependant, and a 50m² dwelling for Military Veterans are applicable as required.

3.5 The Housing Consumers Protection Measures Act, 1998 (Act No. 95 of 1998) which established the National Home Builders Registration Council (NHBRC). All home builders must be registered with the NHBRC, and a home builder may not commence with the construction of a house unless the home is enrolled with the NHBRC.

3.6 All housing typologies must comply with the following Regulations:

- SABS 0400 NBR
- SABS 1200AB
- SANS 952-1985
- SANS 10400

4. KEY CONSIDERATIONS

4.1 Municipalities / NHBRC are the custodian of the approved designs.

4.2 Foundations must be in terms of the engineer's design and applicable geotechnical conditions.

5. APPLICATION OF THE GUIDELINES

5.1 The guidelines including the designs and bill of quantities (BOQ) are applicable as the prescribed standard for all subsidized 40m² and 45m² urban and rural stand-alone residential units built in KwaZulu-Natal.

5.2 The following specifications will apply to the typologies delivered:

- a) Roofs may be corrugated sheeting or concrete tiles (optional & dependent on weather conditions in the area)
- b) Beneficiaries must be given the opportunity to choose paint colour (6 colour options)
- c) Where there is no electricity in the area, provision must be made for a ready board, and electrical testing must be done using a generator.
- d) An electrical Certificate of Compliance (COC) must be issued by a registered electrician where electricity is provided
- e) A concrete apron must be paved around the house and around the ventilated improved latrine (VIP)
- f) The VIP must be a minimum of 2.9 cubes
- g) The VIP must have a 3m (minimum) to 10m (maximum) walkway for a wheelchair bound person (applicable to 45m²)
- h) A utility room (1.8 x 1.8) with a door fitted and a 2-lever lockset must be provided for rural areas
- i) The water tank is to be placed on a 2500mm x 2500mm x 450mm high block tank-stand which includes a 20 Mpa foundation and 20 Mpa concrete stand
- j) Burglars Bars must be installed for persons with disabilities (not to exceed the amount of the prevailing subsidy quantum)
- k) Home solar system (500 W) (not to exceed the amount of the prevailing subsidy quantum)

5.3 Any deviations from the guidelines must be accompanied by the required technical motivation from the relevant professionals.

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6. ROLES AND RESPONSIBILITIES

6.1 SUSTAINABLE HUMAN SETTLEMENTS

The Chief Directorate Sustainable Human Settlements will administer the implementation of this guideline. This will entail the following:

- (a) Facilitate overall implementation of the guideline.
- (b) Notify the Policy, Research and Product Development Directorate of any shortfalls or risks identified during the implementation process to influence the guideline adjustment.

6.2 POLICY, RESEARCH AND PRODUCT DEVELOPMENT

The Policy, Research and Product Development Directorate will undertake a review of the Guideline after three years or when the need arises.

6.3 DEPARTMENT INSPECTORS

Departmental inspectors will be responsible for the monitoring of compliance with the prescribed specifications of the designs and materials used in the construction of the houses.

6.4 MONITORING & EVALUATION CHIEF DIRECTORATE

The Chief Directorate Monitoring and Evaluation will undertake the monitoring and evaluation of the implementation.

7. EFFECTIVE DATE

The effective date for the implementation of the Guidelines for the Design Standards of 40m² and 45m² Housing Typologies in Kwazulu-Natal will be the date of signature of the MEC.

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PART B: BILL OF QUANTITIES

SECTION 1					
PRELIMINARY & GENERAL					
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	Preliminary & General				
1,1	Fixed Charge items				
1.1.1	Contractual requirements	Sum	1		
1.1.2 a.	Special Risk Insurance	Sum	1		
	Establish facilities on site				
	a) Facilities for Engineer				
1.1.2 b.	Contract Administration and facilitation	Sum	1		
1.1.3	Offices: 1 furnished room	Sum	1		
1.1.4	1 name board (SABS 1200AB)	Sum	1		
1.1.5	Survey equipment and assistants	Sum	1		
	b) Facilities for contractor	Sum	1		
1.1.6	Offices and storage sheds	Sum	1		
1.1.7	Workshops	Sum	1		
1.1.8	Living accommodation	Sum	1		
1.1.9	Ablution and Latrines facilities	Sum	1		
1.1.10	Tools and equipment	Sum	1		
1.1.11	Water Supplies, electrical power and communication	Sum	1		
1.1.12	Dealing with water (subclause 5.5)	Sum	1		
1.1.13	Access (subclause 5.8)	Sum	1		
1.1.14	Plant	Sum	1		
1.1.15	Other fixed charge obligations	Sum	1		
1.1.16	Removal of site establishment	Sum	1		
1.1.17	Security for site camp and site staff	Sum	1		
1.1.18	Professional fees: Certification of Slabs & Monitoring by Structural Engineer, Land Surveyor (inclusive of all disbursements).	P. Sum	1		
1.1.19	Geotechnical classification by Geotechnical Engineer stage 1 & 2	P. Sum	1		
1.1.20	Community Liaison Officer / Social Facilitation	P. Sum	1		
1.1.21	Health & Safety Officer	P. Sum	1		
1.1.22	Contractor's mark-up & profit on items from 1.1.18 to 1.1.21	%			
1.1.23	Adherence to OH&SA Act	Sum	1		
1.1.25	Management, Control & Method Statements. Protective equipment & medicals	Sum	1		
	SUBTOTAL FOR 125 CARRIED TO FINAL SUMMARY				

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SECTION 2					
EARTHWORKS AND SLAB CONSTRUCTION					
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2.	Supply and construct new 40 m2 raft foundations to Prepared Platforms, per attached drawings				
2.1	Clear, grub, and prepare existing platform to accommodate new structure and carting away excess material. This may require additional levelling.	m²	155		
2.2	Earthworks excavation and compaction to 93% MOD AASHTO density in raft foundations 150mm layer thickness.	m²	15		
2.3	Soil poisoning: Under floors etc. including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming	m²	45		
2.4	One layer 250-micron polyethylene waterproof sheeting (SANS 952-1985 type C) sealed at laps with under surface beds, ground slabs, etc.	m²	45		
2.5	Supply and install shuttering around the surface bed for concrete (150mm)				
2.6	Y12 Reinforcement bars in all beams to be tied and positioned as per drawing and bending schedule as per SANS 10400, allow for 10 No Y12's to exterior door frames as per NHBRC.	kg	120		
2.7	Mesh wire Ref 193 reinforcing to be tied, lapped and with sufficient concrete cover. Concrete spacers are to be used	m²	40		
2.8	Concrete for Raft foundation beams and slab to be 25 MPa. Finished floor slab level to be a minimum of 150mm from NGL on completion (Power floated) & (concrete to be vibrated)	m³	10		
2.9	A smooth, level steel powerfloat finish is required.	Sum	1		
	Sub - Total per unit				
	No. of Units				Sub - Total x No. of Units
	TOTAL CARRIED FORWARD TO FINAL SUMMARY PAGE				

SECTION 3					
SUPER STRUCTURE					

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Guidelines for the Design Standards of 40m² & 45m² Housing Typologies in KZN

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3.1	3.5 Mpa M140 concrete Blocks	No	1100		
3.2	Dpc under external walls SABS Approved	m	30		
3.3	Dpc under internal walls SABS Approved	m	15		
3.4	Dpc under windowsills SABS Approved	m	6		
3.5	Brickforce to external walls (m140) at every course for the first three (3) courses from the slab thereafter at every second course up to wall plate level & every course on the gable ends	m	250		
3.6	2.8 mm dia x 110mm Galvanized Brickforce to internal walls every second course up to wall plate level and every course above openings	m	100		
3.7	Galvanised flat iron wall ties at butt joints as per SANS 10400	m	10		
3.8	Galvanized hoop iron for roof ties and partition as per SANS 10400	m	50		
3.9	Galvanised 900mm x 2032mm high paint finish Steel Door frame (specialized door frame) 1mm thick (m140) complete with lugs, 100mm butt hinges and pre-cut strike plate - Right hand -Cliscoe as per Engineer's design.	No.	2		
3.10	Hang Hard wood or similar approved door size 813 x 2032mm for external doors (pretreated with wood for painting or weather sealed)	No.	3		
3.11	Galvanised Windows – NC 2 complete with lugs, 3mm float glass and fittings – Cliscoe- factory painted, sills and clear silicone	No.	4		
3.12	Galvanised Windows- NE 1 complete with lugs, frosted glass and fittings - Galv. Cliscoe -factory painted, sills and clear silicone	No.	1		
3.13	Doors - Hang Hard wood or similar approve door size 813 x 2032 for external doors (pretreated with wood primed for painting, or weather sealed)	No.	2		
3.14	Doors – Hang masonite hollow doors size 813 x 2032 for internal doors (pretreated with enamel for painting or weather sealed.	No.	3		
3.15	2 door fitted 3 lever lockset SABS CP approved for external doors Heavy duty indicator locksets with special handles to the external doors (disabled)	No.	2		
3.16	2 door fitted 2 lever lockset SABS CP approved for internal doors Medium duty lockset with special handles to the internal doors (disabled)	No.	3		
3.17	38 x 114 wall plates secured with hoop irons – SAP SABS approved	m	20		
3.18	Lintels in Lengths not exceeding 3m - 1200 & 1500mm over external doors and ND2 windows openings, 1200mm for internal door openings or according to engineer's specification	m	10		
3.19	Stainless steel grab rails to both entrances (disabled)				
	Sub - Total per unit				
	No. of Units				Sub - Total X No. of Units
	TOTAL CARRIED FORWARD TO FINAL SUMMARY PAGE				

SECTION 4					
	ROOFS				

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Guidelines for the Design Standards of 40m² & 45m² Housing Typologies in KZN

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4.1	Pre-manufactured roof trusses as per attached drawing/detail. (Incl. bracing and runners) COMPLETE	Sum	1		
	ROOF TILES AND ACCESSORIES				
4.2	0.47mm thick Cromadek crank roof sheeting or similar approved. Color – optional SABS Concrete Double Roman Tiles Roof, tiles Standard through coloured, Concrete roof tiles with underlay (optional) Under tile roof membrane	m2	48		
4.3	"V" Ridge to Match Roof Corrugated Tiles (optional) IBR	m	8		
4.4	Stormclips to eaves and gable overhang	No.	60		
	ROOF STRUCTURE CONSTRUCTION				
4.5	Pre -manufactured roof trusses as per details SAP SABS approved (including bracing & runners) Battens 38 x 38mm SABS at 320cc	m	160		
4.6	Wall plate 38x 76mm S.A. Pine wall plates, SABS approved	No.	20		
4.7	6.4mm skimmed gypsum/ rhino ceiling	m2	45		
4.8	76x76 Coved gypsum cornices joints plastered with smooth rhinolite finish	m	52		
	EAVES, VERGES, ETC				
4.9	80 x 200mm Fibre Cement Barge boards inclusive of joiner strips	m	16		
4.10	10 x 225mm Fibre Cement Fascia Boards inclusive of joiner strips	m	15		
4.11	60mm long rake verge/ tile fixing screws	No.	30		
4.12	Gusset plates to truss heel joint 134mm x 200mm	No.	30		
4.13	PVC corrugated (tile) clip	No.	30		
	Sub - Total per unit				
	No. of Units				Sub - Total X No. of Units
	TOTAL CARRIED FORWARD TO FINAL SUMMARY PAGE				

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SECTION 5					
ITEM NO.	FINISHES	UNIT	QTY	RATE	AMOUNT
	FINISHES				
5.1	One coat of cement plaster on brickwork both internal and external according to the sand/cement ratio as per Part 3 of NHBRC.	m²	75		
5.2	Plascon/Dulux or other equally approved paint external walls. One color coat paint thick backwash inside. Beneficiaries must be given an opportunity to choose colour (6 options of colour paints)	m²	75		
5.3	Aerosol for numbering houses	No	4		
5.4	Air vents on gable ends of external walls	No	6		
5.5	223 x 175 mm Foam plasti air vent	No	6		
	ELECTRICAL				
5.6	Supply and install standard light fittings to each room /external walls to be wired from Readybox (Local Municipality to provide electricity)	No.	7		
5.7	Supply and install standard plug points to living area and bedrooms, inclusive of all wiring. Supply and install standard plug points to living area and bedrooms, inclusive of all wiring	No.	6		
	Where there is no electricity in the area, provision must be made, and electrical testing must be done using a generator. NB: Electrical Compliance must be issued by Registered Electrician (COC)				
	FITTINGS				
5.8	800mm single bowl sink complete with brackets (Atlas Plastics or equivalent)	No	1		
	CEILING AND INSULATION				
5.9	130mm Mineral fibreglass blanket, supplied & installed or equal approved	m²	40		
5.10	Supply and install of Gypsum board, ceiling & cornices including all nails and Rhino bedding for cornices or equal approved.	m²	40		
	CONCRETE APRONS:				
5.11	Excavate for 1m x 0.1m thick concrete aprons	m³	3		
5.12	Supply & install ref 100 mesh	m²	26		
5.13	Supply, install & vibrate 20MPa concrete	m³	3		
5.14	Supply & install softboard for concrete apron. Joints. Expansion Joint must not exceed 2m (Max)	m	10		
	SUNDRIES TOP STRUCTURE				
5.15	TLB hire cut Platform	Sum	1		
5.16	Small compaction plant and vibration of concrete	Sum	1		
5.17	Labour for raft foundation construction	Sum	1		
5.18	Consumables (Conduits, PVC weld tape, adhesive, screws, tools, equipment etc.)	Sum	1		
5.19	Wages of superstructure construction	Sum	1		
5.20	Suppliers site administration cost, if any.	Sum	1		
5.21	Suppliers mark up on labour payment per site if any	%			
5.22	Supply of 6 sets of Steel Shutters (min) for Raft Slab Construction	No.	6		

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5.23	UTILITY ROOM 1.8X1.8 Utility Room with a door fitted, 2 lever lockset SABS CP approved for internal doors URBAN Shower Wash hand basin Water closet DISABLED Concrete corner bench Wash hand basin (ceramic) Stainless steel grab rails (2 No) Floor drain (optional)				
	VENTILATED IMPROVED PIT (VIP) LATRINE.				
5.24	Apron				
5.25	2.9 Cubes (Minimum)				
5.26	3m (min) -10m (max) walkway for a wheel chairbound person (Applicable to 45m²)				
	RAINWATER HARVESTING				
	RAINWATER GOODS				
5.27	2.5L vertical plastic water tank full filled gutters and apron 110 Diameter PVC half round or square Gutter fixed by brackets laid to fall on Rainwater Harvesting Water Tanks connected to 110 PVC Diameter Downpipes. First flush diverter, concrete base, pipework/fittings, signage (drinking warning) The water tank to be placed on a 2500mm x 2500mm x 450mm high block tank stand which includes 20 Mpa foundation and the 20 Mpa concrete stand				
	BURGLAR BARS				
5.28	Burglar Bars only for persons with disability Not to exceed the amount of the prevailing Subsidy Quantum.				
5.29	Home Solar System (500 W)				
		Sub - Total per unit			
		No. of Units			Sub - Total X No. of Units
	TOTAL CARRIED FORWARD TO FINAL SUMMARY PAGE				
SECTION 6					
	OTHER FACTORS TO BE CONSIDERED				
	- Municipalities / NHBRC are the custodian of the approved designs - Foundations must be in terms of engineers' designs and applicable geotechnical conditions. - Any deviations to the guidelines must be accompanied by required technical motivation from the relevant professionals - The BOQ is applicable to both Urban and Rural				
SECTION 7					
	SUMMARY				
ITEM NO.	DESCRIPTION				AMOUNT
1	Preliminary & General /P &G's				
2	Slab Construction				
3	Super Structure				
4	Roofs				
5	Finishes				
	SUB-TOTAL (1)				
	ADD 15% VAT				
	TO TOTAL INCLUDING VAT (this value to be transferred to the Form of Offer)				

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SECTION 8					
	VIP TOILET STRUCTURES:				
ITEM NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	VIP TOP STRUCTURES				
6.1	Supply of all materials and labour to construct Precast Concrete Panel Section' VIP complete with black vent pipe, fly screen, toilet roll holder, galvanized mild steel pivot door with locking mechanism, 450mmØ black plastic pedestal with seat and cover, galv IBR profile roof sheeting and pit slab (as per drawing no: XXXXX)	No	300		
	VIP PIT SUB STRUCTURE				
6.2	Geo Engineer classification of VIP Pit	No	300		
6.3	Clear and grub by removing vegetation and trees up to 4m² over VIP pit footprint area.	No	300		
6.4	Excavate in all materials for VIP pit, trim and dispose of all surplus material	No	300		
6.5	Construct 20/19MPa cast insitu concrete pit collar for all type F pits noted in item no.6.4 above (as per drawing no. XXXXX)	No	300		
	Extra-over item for pit lining: (Provisional)				
6.6	Partially line (Type F2) pits.	No			
6.7	Fully lined (Type F3) pits.	No			Rate Only
6.8	"Waterproof" (Type F4) pits.	No			Rate Only
6.9	Partially lined (Type B1) pits.	No			Rate Only
6.10	Fully lined (Type B2) pits.	No			Rate Only
6.11	"Waterproof" (Type B3) pits.	No			Rate Only
6.12	Fully lined (Type B4) above ground pits.	No			Rate Only
	FINISHING				
6.13	Finish off all VIP construction work to Engineers approval, and clear site of all building rubble around VIP, including the acquisition of a signed beneficiary acceptance certificate 'Happy Letter'.	No	300		
	TOTAL CARRIED FORWARD TO SUMMARY				

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PART C: HOUSING TYPOLOGY DESIGNS

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