ANNEXURE A

NHBRC Technical Requirements 2014

(Draft 26th January 2014)

Contents

NHBRC Technical Requirements

Part 1: Definitions and standards

1.1 Terms and definitions

Unless the context indicates otherwise, a word or expression to which a meaning has been assigned in the Housing Consumer Protection Measures Act of 1998 (Act No. 95 of 1998) has the same meaning; and

"action" means:

a) an assembly of concentrated or distributed mechanical forces acting on a structure (direct actions); or
b) the cause of deformations imposed on a structure or constrained in it (indirect actions)

"agent" means whatever acts on the home or parts of a home

"Agrément certificate" means a certificate that confirms fitness-for-purpose of a non-standardised system, element or component and the conditions pertaining thereto (or both) issued by the Board of Agrément South Africa

"attribute" means characteristic assessed in terms of whether it does or does not meet a given performance

"Board of Agrément South Africa" means a body operating under the delegation of authority of the Minister of Public Works;

"building" means construction works that have the provision of shelter for its occupants or contents as one of its main purposes, usually partially or totally enclosed and designed to stand permanently in one place

"category 1 home" means a home which has no basements, has a maximum length between intersecting walls or members providing lateral support of 6.0 m, and has a floor area that does not exceed 80 m^2

"certification body" means a member of a Council approved certification scheme who provides certification services through certifiers in their employ

"**certificate of compliance**" means a certificate with a unique number obtainable from an approved scheme issued by a certifier in terms of such scheme

"certifier" means a member of a Council approved certification scheme who is in good standing and who is employed by the certification body appointed by the home builder to issue certificates or certificates of compliance with the NHBRC Technical Requirements

"characteristic" means a property that distinguishes the totality of specific items under consideration

"**compliance method**" means the application of design and construction rules or compliance with referenced standards in order to achieve performance requirements

"**component**" means a product manufactured as a distinct unit to serve a specific function or functions

"design life" means the period of time for which the structural system, element or component performs above the specified level of structural safety and serviceability performance

"design working life" assumed period for which a home or a part thereof is to be used for its intended purpose without major repair being necessary

"deflection" means movement under actions of a defined point in a structure, in a defined direction

"dolomite land" means land underlain by dolomites or limestone residuum or bedrock (or both), within the Malmani Subgroup and Campbell Rand Subgroup, typically at depths of no more than:

a) 60 m in areas where no de-watering has taken place and the local authority has jurisdiction, is monitoring and has control over groundwater levels in the areas under consideration; or
b) 100 m in areas where de-watering has taken place or where the local authority has no jurisdiction or control over ground water levels

"drainage installation" means an assembly of pipes, fittings and apparatus such as septic tanks, conservancy tanks and french drains, which are used to collect, convey, store or treat the discharge from receptacles associated with a home to which water is supplied and from which waste water or foul water is discharged

"dwelling unit" means a single unit providing complete, independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation which may be separated from or linked horizontally or vertically to other units

"**element**" means a major functional part of a building

"fire resistance" means the shortest period for which an element or component complies with requirements for stability, integrity and insulation when tested in accordance with SANS 10177-2, *Fire testing of materials, components and elements used in buildings – Part 2: Fire resistance tests for building elements*

"geotechnical site investigation" means the process of evaluating the geotechnical character of a site in the context of existing or proposed works or land usage, which may include one or more of the following:

a) evaluation of the geology and hydrogeology of the site;
b) examination of existing geotechnical information pertaining to the site;
c) excavating or boring in soil or rock and the systematic description of the soil and rock profiles;
d) determining the depth of any fill that might be present;
e) in-situ assessment of geotechnical properties of materials;
f) recovery of samples of soil or rock for examination, identification, recording, testing or display;

g) testing of soil or rock samples to quantify properties relevant to the purpose of the investigation;
h) evaluation of geotechnical properties of tested soils;
i) reporting the results; and
j) solutions (where relevant) and conclusions.

"geotechnical solutions" means a solution designed to reduce total ground movements to levels which can be tolerated by the surface beds, if any, and structural system

"greenfield site" means an undeveloped site earmarked for a housing development project

"ground movement" means displacement of the founding stratum in any direction by influences not solely dependent on the actions applied by the structure of a home

"hazard rating" means the number of sinkhole and subsidence occurrences per hectare over a 200 year period

"home" has the meaning assigned in the Housing Consumer Protection Measures Act of 1998 (Act No. 95 of 1998):

a) excluding:
    1) any building which is constructed with less than two thirds of the floor area designed for residential purposes;
    2) homes that are co-owned in terms of the Share Blocks Control Act of 1980 (Act No. 59 of 1980) or Property Time-Sharing Control Act of 1983 (Act No. 75 of 1983);
    3) any home forming part of an informal settlement;
    4) any temporary building as contemplated in the National Building Regulations issued in terms of the National Building Regulations and Building Standards Act of 1977 (Act No. 103 of 1977); and
    5) a shack or caravan;

b) including:
    1) a unit to be occupied for residential purposes as contemplated in the definition of "social housing" in section 1 of the Social Housing Act of 2008 (Act No 16 of 2008);
    2) a residential section registered in terms of the Sectional Titles Act of 1986 (Act No. 95 of 1986) and any common building;
    3) a unit as contemplated in the Housing Development Schemes for Retired Persons Act of 1988 (Act No. 65 of 1988);
    4) a unit forming part of a housing programme contemplated in the National Housing Code issued in terms of the Housing Act of 1997 (Act No. 107 of 1997);
    5) the private drainage system from the home up to the municipal connection or up to and including a conservancy or septic tank;
    6) water services from the point of supply to the point of discharge at fixtures and appliances;
    7) any ancillary buildings such as storerooms, covered walkways, garages and common facilities;
    8) any retaining wall necessary to ensure the structural integrity of the home; and
    9) any adjacent building or wall on common property that has the potential to damage the home should it for any reason collapse.

“inherent hazard” means the potential for an event (sinkhole or subsidence) to develop in a particular ground profile on dolomite land

“interconnected complex” means a complex of multiple homes where management of common property usually resides with, (but is not limited to) a management body

“listed competent person” means a competent person whose credentials are accepted by the Council and is admitted to the Council’s list of competent persons

“load” means the value of a force corresponding to an action

“major stormwater system” means a stormwater system which caters for severe, infrequent storm events

“maintenance schedule” means a series of actions and time intervals between these actions to maintain the levels of structural safety and serviceability performance of the whole house over the design working life

“masonry” means assemblage of masonry units joined together with mortar to form a structure

“masonry unit” means a rectangular unit that is intended for use in the construction of bonded masonry walling

“**material**” means a substance that can be used to form products or everything that is constructed or results from construction operations

“minor stormwater system” means a stormwater system which caters for frequent storms of a minor nature

“municipality” means a municipality as described in section 2 of the Municipal System Act of 2000 (Act No. 32 of 2000);

“opinion” means conclusions or recommendations derived from consideration of factual and interpretative data and from the exercise of judgment

“performance” means the ability of a whole home or a part thereof to fulfill required functions under intended use conditions or behaviour when in use

“performance based method” a method other than a compliance method which demonstrates compliance with performance requirements

“performance description” means performance demanded or expected to be fulfilled by an attribute

“performance parameters” means a group of variables used to quantitatively describe performance of attributes

“reliability” means the ability of a structure or a structural element to fulfil the specified requirements, including the design working life, for which it has been designed

“retaining wall” means a wall intended to resist the lateral displacement of materials

“return period” means an estimate of the interval of time between events

“resistance” means the capacity of an element or component, or a cross section of an element or component of a home to withstand actions without mechanical failure

“**roofing assembly**” means the roof covering and its supporting structure including any ceiling attached to the structure

“separating element” means a wall or floor, which has a specific fire resistance, used between divisions, occupancies and tenancies in a building

“sinkhole” means a dolomite karst feature that manifests as a hole in the ground

“structural system” means the system of constructional elements and components of a home which is provided to resist the loads acting upon it and to transfer such load to the ground upon which the home is founded

“subsidence” means a dolomite karst feature that manifests as a shallow, enclosed depression

“suitable” means capable of fulfilling or having fulfilled the intended function or fit for its intended purpose

“**surface water**” means all naturally occurring water, other than sub-surface water, which results from rainfall on or around the site or water flowing onto the site, including that flowing from a drain, stream, river, lake or sea

“water installation” means an assembly of pipes, fittings and apparatus which are used to convey or store water for consumption or use by the occupant of the home including irrigation and fire-fighting

1.2 Standards

Where reference is made to a SANS number, such reference shall relate to the national standard having the number and the stated title. For dated references, only the edition cited applies. For undated references, the latest edition of the standard including any amendments applies.

Part 2: Performance requirements

2.1 Structural strength and serviceability

2.1.1 Performance description

2.1.1.1 The whole home and its parts shall, with an appropriate degree of reliability, maintain strength and stability under all actions likely to occur during the home's design working life.

2.1.1.2 The whole home and its parts shall, with an appropriate degree of reliability, perform within established parameters under all expected actions for normal use in terms of:

a) local damage, including cracking,

b) deformation; and

c) vibration.

2.1.1.3 The whole home and its parts shall, with an appropriate degree of reliability, fulfil its intended safety and serviceability performance in the environment in which it is located over the specified design working life when subject to its intended use taking into account the:

a) external and internal environmental agents (including those associated with microclimates that can arise in homes);

b) maintenance schedule and specified component design life; and

c) changes in form or properties.

2.1.2 Performance parameters

2.1.2.1 The design working life of a home shall be not less than:

a) 30 years in respect of the structural system.

b) 15 years for repairable or replaceable components and materials, such as claddings, roofing materials, exterior trims, and integrated components, such as windows and doors.

2.1.2.2 The representative free stream velocity pressure on homes shall be determined and converted into a wind load in accordance with the relevant provisions of SANS 10160-3, *Basis of structural design and actions for buildings and industrial structures - Part 3: Wind actions*, provided that

a) the free stream velocity pressure applied to the structural system as a whole and to structural elements of dwelling houses is not less than 0,450 kPa and 0,370 kPa, respectively, and the minimum wind load applied to structural elements is not less than that given in Table 2; and

b) the minimum service wind load applied to free-standing walls is at least:

1) 0,58 kPa within a distance equal to four times the height of the wall from a free end or an end with return adjacent to an opening or discontinuity in the wall, and

2) 0,41 kPa elsewhere.

Table 2 — Minimum service wind loads for roofing assemblies and wall elements and components in homes

Wind action	Minimum service wind load to be applied kPa
Roofing assembly elements	
Wind uplift on roofing assembly	0,59
Local effects on eaves overhangs	0,78
External wall elements	
Outward pressure on doors and windows	0,51
Inward pressure on doors and windows	0,45
Outward pressure on walls	0,52
Inward pressure on all walls	0,37
Horizontal pressure on the side of a home[a]	0,37
Internal wall elements	
Pressure on either face	0,20

2.1.2.3 Homes shall suffer no more than insignificant damage when subjected to winds associated with a 25-year mean return period. Damage from winds associated with a 50-year mean return period shall not prevent homes from fulfilling their intended purpose, except for the possible loss of roof covering material and cladding, nor shall such damage pose a threat to the occupants. Homes shall not collapse if subjected to wind speeds substantially greater than the design values (e.g. in an intense thunderstorm).

2.1.2.4 The sum of the effects of the destabilizing design loads combined with 0,7 times the effects of the stabilizing component of the self-weight load shall not exceed the design resistance of the relevant parts of the home and its foundations. Alternatively the ultimate limit state of static equilibrium of the home and its foundations shall be in accordance with the provisions of SANS 10160-1, *Basis of structural design and actions for buildings and industrial structures - Part 1: Basis of structural design*.

2.1.2.5 The safety index as defined in SANS / ISO 2394 shall not be less than the following values:

a) Ductile, gradual modes of failure: 3,0

b) Brittle, sudden modes of failure : 4,0

c) Connection details between components: 4,5

2.1.2.6 The response of the structure and structural elements to the representative actions and impacts identified in Table 3 shall, where appropriate, be within the limits established in Table 4.

2.1.2.7 The maintenance required to maintain, with an appropriate degree of reliability, the structural safety and serviceability performance of the structural system in the environment in which it is located, when subjected to normal use, shall not be excessive. The normal preventative maintenance cycle in respect of homes other than category 1 homes shall not be more frequent than five years.

Table 3 — Representative actions and impacts applied to a home

<table>
<tr><th>Agent</th><th>Performance parameter</th></tr>
<tr><td>Wind actions</td><td>In accordance with the relevant provisions of SANS 10160-3 subject to the provisions of 2.1.2.2</td></tr>
<tr><td>Seismic actions</td><td>In accordance with the relevant provisions of SANS 10160-4, Basis of structural design and actions for buildings and industrial structures - Part 4: Seismic actions</td></tr>
<tr><td>Ground conditions and movements</td><td>In accordance with the expected range of ground movements associated with the site</td></tr>
<tr><td colspan="2">Structural element: roofing assembly</td></tr>
<tr><td>Permanent actions</td><td>Self-weight of covering, ceilings, structure, solar water heaters and geysers, if any (see SANS 10160-2, Basis of structural design and actions for buildings and industrial structures - Part 2: Self weight and imposed loads, and specialist literature)</td></tr>
<tr><td>Imposed actions</td><td>In accordance with the relevant provisions of SANS 10160-2</td></tr>
<tr><td>Wind actions</td><td>In accordance with the relevant provisions of SANS 10160-3 subject to the provisions of 2.1.2.2</td></tr>
<tr><td>Snow actions</td><td>A uniformly distributed load corresponding to the expected depth of snow where a snow depth exceeding 250 mm can be expected to accumulate</td></tr>
<tr><td>Hail impact</td><td>Impacts of up to 10 J or, where the home is located in areas where severe hail storms are known to occur, 20 J</td></tr>
<tr><td colspan="2">Structural element: walls</td></tr>
<tr><td>Wind actions</td><td>In accordance with the relevant provisions of SANS 10160-3 and 2.1.2.2</td></tr>
<tr><td>Permanent actions</td><td>Self weight of wall (see SANS 10160-2 and specialist literature)</td></tr>
<tr><td>Imposed actions</td><td>In accordance with the relevant provisions of SANS 10160-2</td></tr>
<tr><td>Soft body impact</td><td>Two soft body impacts each generating an impact of:
Category 1 homes
<table>
<tr><th rowspan="2">Type of wall</th><th colspan="2">Internal walls and external walls (impact from the inside)</th><th colspan="2">External walls (impact from the outside)</th></tr>
<tr><th>Service</th><th>Collapse</th><th>Service</th><th>Collapse</th></tr>
<tr><td>Heavyweight construction</td><td>130J</td><td>265 J</td><td>265 J</td><td>410 J</td></tr>
<tr><td>Lightweight construction</td><td>130J (framing)
88 J (cladding)</td><td>265 J</td><td>265 J</td><td>410 J</td></tr>
</table></td></tr>
</table>

Table 3 (continued)

<table>
<tr><th>Agent</th><th>Performance parameter</th></tr>
<tr><td>Soft body impact (continued)</td><td>Homes other than category 1 homes
<table>
<tr><th rowspan="2">Type of wall</th><th colspan="2">Internal walls, external walls at ground floor (impact from the inside) and external walls at first floor and higher (impact from the outside)</th><th colspan="2">Internal walls around staircases, external walls at first floor and higher (impact from the inside) and external walls at ground level (impact from the outside)</th></tr>
<tr><th>Service</th><th>Collapse</th><th>Service</th><th>Collapse</th></tr>
<tr><td>Lightweight construction</td><td>130J (framing)
88 J (cladding)</td><td>265 J</td><td>265 J</td><td>410 J</td></tr>
</table></td></tr>
<tr><td>Sharp body impacts</td><td>Category 1 homes

Two blows generating an impact of 4,2 J

Homes other than category 1 homes

Two blows generating an impact of:
<table>
<tr><th colspan="2">External walls</th><th colspan="2">Internal walls</th></tr>
<tr><td>At ground floor (impact from the inside)</td><td>5,3 J</td><td rowspan="2">Non-load-bearing walls</td><td rowspan="2">5,3 J</td></tr>
<tr><td>At ground floor (impact from the outside)</td><td>7,9 J</td></tr>
<tr><td>At first floor and higher (impact from the inside)</td><td>5,3 J</td><td>Load-bearing walls</td><td>7,9 J</td></tr>
<tr><td>At first floor and higher (impact from the outside)</td><td>7,9 J</td><td>Around stairwells</td><td>7,9 J</td></tr>
</table></td></tr>
<tr><td>Hail impacts</td><td>Impacts of 10 J on components other than glazing</td></tr>
<tr><td>Door slamming</td><td>25 kg door slammed ten times from a position of 60º open, with a force of 150 N applied at the handle position in the direction of closure, such force being applied until the door makes contact with the frame</td></tr>
<tr><td>Fittings</td><td>Lightweight fittings (e.g. coat hooks, towel rails and medicine cabinets) that have a mass of 8 kg suspended 45 mm away from the wall at any location

Medium-weight fittings (e.g. hand basins, cisterns, medium-sized cupboards and 9 kg fire extinguishers) that have a mass of 25 kg suspended 45 mm away from the wall, at designated locations on the wall

Heavyweight fittings (required where there is a high probability that people will stand upon the fittings, e.g. wash troughs, sanitary ware basins, geysers and fire hose reels) that have a mass of 135 kg suspended 345 mm away from the wall for a period of 5 min

Shelving: safe load nominated by the housing consumer</td></tr>
<tr><td>Fire</td><td>Any fire in terms of the probability of:
a) ignition occurring, either from internal or external causes, and
b) a fully developed fire occurring,</td></tr>
</table>

Table 3 (concluded)

Agent	Performance parameter
Structural element: floor	
Permanent actions	Self-weight of flooring system Finishes
Imposed actions	In accordance with the relevant provisions of SANS 10160-2
Vibrations	Where relevant, in accordance with the relevant provisions of SANS 10160 -1
Fire	Any fire in terms of the probability of: a) ignition occurring, either from internal or external causes, and b) a fully developed fire occurring,

Table 4 — Structural response of homes to representative actions and impacts

Agent	Performance parameter
Structure as a whole	
Ground conditions and movements	**Tilt** Rotation of any part of the structure or the structure as a whole from its intended line or level as a result of settlement or ground movement shall not be more severe than – Homes other than category 1 homes: 1:200 – Category 1 homes: 1:120 **Total settlement** Homes other than category 1 homes: 10 mm after homes have been completed. Category 1 homes: 20 mm after the home has been completed, unless special precautions have been taken to adequately accommodate movements in excess of this value.
Structural element: roofing assembly	
Direct and indirect actions	**Deflection** Deflection ratio (ratio of maximum deflection from the horizontal to the span of the roof) arising from permanent, imposed and wind actions at the ceiling level shall not be more severe than – Homes other than category 1 homes: 1:250 – Category 1 homes: 1:175 **Cracking** Irreversible damage in the load deflection curve, even if cracks or other damage is not visible. Cracks in roofing substrates (decking) that might impair the normal function of the roof or coverings.
Hail impact	After being tested in accordance with the relevant provisions of the hail resistance test contained in SANS 10400-B, *The application of the National Building Regulations – Part B: Structural design*, the test specimen shall be acceptably free from visible defects when viewed from a distance of 2,0 m.

Table 4 (continued)

Agent	Performance parameter
Structural element: walls	
Direct actions	Deflection ratio (ratio of maximum deflection from the vertical to the length or the height of the wall panel) arising from permanent, imposed and wind actions shall not be more severe than – Homes other than category 1 homes: 1:250 – Category 1 homes: 1:175 Deflection ratio in glazing arising from permanent, imposed and wind actions shall not be more severe than 1/175th of their span
Indirect actions	Minor damage that is not more severe than that of category 1 expected damage (see Table 5), or the equivalent thereof.
Ground movements	Minor damage that is not more severe than category 2 expected damage (see Table4), or the equivalent thereof unless a home builder has agreed in writing with a housing consumer that a category 0 or 1 expected damage shall apply, in which case the damage shall be not more severe than the category of expected damage that is agreed to
Soft body impacts	**Collapse impacts** Walls shall not collapse or be permanently deformed when subjected to the sandbag impact test (soft body impact test) contained in SANS 10400-B when supported under conditions similar to those that are encountered in practice.. **Service impacts** Walls when struck shall not be displaced by more than 1/600th of their height or have cracks, which cannot be readily repaired, of aggregate length exceeding 300 mm and width exceeding 0,5 mm when subjected to the sandbag impact test (soft body impact test) contained in SANS 10400-B.
Sharp body impacts	Walls when tested with the steel tool test (hard body impact test) contained in SANS 10400-B, shall not be punctured nor, in the case of materials of a non-fibrous nature, be indented or locally displaced by more than 3 mm. In addition, there shall be no readily visible cracks (i.e. wider than 0,25 mm) and the aggregate length of such cracks shall not exceed 300 mm.
Door slamming	The slamming of the test door when subjected to resistance to door slamming test contained in SANS 10400-B shall not cause damage to a wall or cause the frame to detach from the wall.
Fittings	The loosening and withdrawal of the fixing devices shall not cause more than minor, readily repairable damage to the wall when subjected to the test for lightweight and medium-weight fittings contained in SANS 10400-B.
Fire	The fire resistance of walls shall not be less than: 1) 30 minutes in single and double storey homes ; 2) 60 minutes in 3 to 10 storey homes; and 3) 120 minutes in basements which are not naturally ventilated and in homes having 11 storeys or more 4) 30 or 60 minutes in basements which are naturally ventilated which support one storey and two storeys or more respectively. provided that the separating elements having a fire resistance of not less than 60 minutes, any element or component of a wall which directly supports a separating element having a fire resistance of not be less than 60 minutes and unprotected steel being permitted in the structural system in single storey homes which have no basements.

Table 4 (concluded)

Structural element: floor	
Direct actions	Deflection ratio (ratio of maximum deflection from the horizontal to the span of the floor) arising from permanent, imposed and wind actions shall not be more severe than: – homes other than category 1 homes: 1: 250 – Category 1 homes: 1:175
Indirect actions (slab-on-the-ground foundations)	**Floors covered with carpets and flexible floor coverings** Minor damage that is not more severe than category 2 expected damage (see Tables 6 and 7), or the equivalent thereof, unless a home builder has agreed with a housing consumer that a more category 0 or 1 expected damage shall apply, in which case the damage shall be not more severe than the category of expected damage that is agreed to **Floors covered with semi-flexible or rigid tiles** Minor damage that is not more severe than category 1 expected damage (see Table 5), or the equivalent thereof
Ground movement and conditions	Minor damage that is not more severe than category 2 expected damage (see Tables 6 and 7), or the equivalent thereof unless a home builder has agreed with a housing consumer that a more category 0 or 1 expected damage shall apply, in which case the damage shall be not more severe than the category of expected damage that is agreed to
Fire	The fire resistance of walls shall not be less than: 1) 30 minutes in single and double storey homes ; 2) 60 minutes in 3 to 10 storey homes; and 3) 120 minutes in basements which are not naturally ventilated and in homes having 11 storeys or more 4) 30 or 60 minutes in basements which are naturally ventilated which support one storey and tow storeys or more respectively provided that the separating elements having a fire resistance of not less than 60 minutes, any element or component of a wall which directly supports a separating element having a fire resistance of not be less than 60 minutes and unprotected steel being permitted in the structural system in single storey homes which have no basements..

Table 5 — Classification of expected damage in masonry walls

Description of damage in terms of ease of repair and typical effects	**Approximate maximum crack width in walls** mm	**Category of expected damage**
Minor damage – Categories 0 to 2		
Hairline cracks less than 0,25 mm wide, classed as negligible.	< 0,25	0 Negligible
Fine internal cracks which can easily be treated during normal decoration. Cracks rarely visible in external masonry.	< 1 (isolated; localized)	1 Very slight
Internal cracks that are easily filled. Redecoration probably required. Recurrent cracks can be masked by suitable linings. Cracks not necessarily visible externally. Doors and windows might stick slightly.	< 5	2 Slight

Table 5 (concluded)

Description of damage in terms of ease of repair and typical effects	Approximate maximum crack width in walls mm	Category of expected damage
Significant damage – Categories 3 to 5		
Cracks can be repaired and possibly a small amount of masonry may have to be replaced. Articulation joints may have to be cut into some of the walls. Doors and windows sticking. Rigid service pipes may fracture. Weather tightness often impaired. Up to 10 mm gap between ceiling cornices and walls.	5 to 15 (or a number of cracks (3 to 5) in one group)	3 Moderate
Extensive repair work which includes breaking out and replacing sections of walls, especially over doors and windows, cutting of articulation joints in walls and the construction of moisture trenches and apron slabs around the home, or the jacking of foundations depending on the type of soil movement. Window and door frames distorted, floor sloping noticeably. Walls leaning or bulging noticeably, some loss of bearing in beams. Service pipes probably disrupted. Up to 20 mm gap between ceiling cornices and walls.	15 to 25 (depending also on number of cracks in a group)	4 Severe
Major repair work required, involving partial rebuilding and the above mentioned repair techniques. Beams loose bearing, walls tilt badly and require shoring. Windows broken and distorted. Danger of instability.	Usually greater than 25 (depending also on number of cracks in a group)	5 Very severe

Table 6 — Classification of damage with reference to concrete surface beds

Description of typical damage	Approximate maximum crack width in floor mm	Maximum deviation of any point from a 3 m straight edge mm	Category of expected damage
Minor damage – Categories 0 to 2			
Hairline cracks Insignificant tilt of floor or change in level	< 0,3	< 5	0 Negligible
Fine but noticeable cracks Floor reasonably level	< 1,0	< 8	1 Very slight
Distinct cracks Floor noticeably curved or changed in level	< 2,0	< 10	2 Slight
Significant damage – Categories 3 to 5			
Wide cracks. Obvious curvature or change in level – local deviation of slope from the horizontal may exceed 1:100	2 to 4	10 to 20	3 Moderate
Gaps in floor. Disturbing curvature or change in level.		> 20	4 to 5 Severe to very severe

Table 7 — Classification of damage caused by ground floor slab settlement and ground movements

Description of typical damage	Approximate crack width in floor mm	Approximate gap mm	Category of expected damage
Minor damage – Categories 0 to 2			
Hairline cracks between the floor and skirting.	–	< 1	0 Negligible
Settlement of the floor slab, either at a corner or along a short wall, or possibly uniformly, such that a gap opens up below the skirting boards, where provided, but which can be masked by resetting the skirting boards. No cracks in floor slabs, although there may be negligible cracks in the floor screed and finish. Slab reasonably level.	–	< 5	1 Very slight
Larger gaps below skirting boards; some obvious, but limited local settlement leading to slight slope of the floor slab. Gaps can be masked by resetting skirting boards and some local re-screeding might be necessary. Fine cracks appear in internal walls which might require some redecoration; slight distortion in door frames which might result in sticking of the doors. No cracks in the floor slab although there may be very slight cracks in the floor screed and finish. Slab reasonably level.	< 1	< 15	2 Slight
Significant damage – Categories 3 to 5			
Significant gaps below skirting boards with some areas of floor, especially at corners or ends, where local settlements may have caused slight cracking of floor slab. Sloping of floor in these areas is clearly visible. (Slope approximately 1 in 150). Some disruption to drain, plumbing or heating pipes may occur. Damage to internal walls is more widespread with some crack filling or re-plastering of partitions being necessary. Doors may have to be refitted. Inspection reveals some voids below slab with poor or voids below slab with voids below slab with poor or loosely compacted fill.	Up to 5	Up to 20	3 Moderate
Large, localized gaps below skirting boards; possibly some cracks in floor slab with sharp fall to edge of slab; (slope approximately 1 in 100 or more). Inspection reveals voids exceeding 50 mm below slab and/or poor or loose fill likely to settle further. Local breaking-out, part refilling and relaying of floor slab or grouting of fill may be necessary; damage to internal partitions may require replacement of some portions of masonry walling.	5 to 15	Up to 25	4 Severe
Either very large, overall floor settlement with large movement of walls and damage at junctions extending up into 1st floor area, with possible damage to exterior walls, or large differential settlements across floor slab. Voids exceeding 75 mm below slab; and/or very poor or very loose fill likely to settle further. Risk of instability. Most or all of floor slab requires breaking out and relaying or grouting of fill; internal partitions need replacement.	Usually greater than 15 but depends on the number of cracks	Greater than 25	5 Very severe
NOTE Gap refers to the space, usually between the skirting and finished floor, caused by settlement after making appropriate allowance for discrepancy in home construction, shrinkage, normal bedding down and the like.			

2.2 Dampness and weatherproofing

2.2.1 Performance descriptions

2.2.1.1 The home shall be designed and constructed to:

a) provide resistance to moisture penetrating from the outside including rising from the ground over its design working life; and

b) avoid condensation on the internal surfaces of external walls and roof spaces for extended periods of time during the cold winter months in the Southern Cape Condensation Problem Area identified in SANS 10400-K, *The application of the National Building Regulations – Part K: Walls*

which can cause deterioration of the structural system.

2.2.1.2 Roofs shall be designed and constructed to resist rain penetration and to avoid the accumulation of rainwater thereon.

2.2.2 Performance parameters

2.2.2.1 The resistance of roofs to rain penetration shall be in accordance with the provisions of Table 8.

Table 8: Rain penetration acceptance criteria for roof covering materials

Category	Tiled and thatched roofs	Roofs other than tiled and thatched roofs
other than category 1 home	Raindrops do not form on the underside of the roof	No leakage through the roof
category 1 home	No flow of water down the inside of the roof	No water drips onto the ceilings, if any, or floors

2.2.2.2 Ridges, valleys and flashings shall:

a) not leak;

b) cause water to drip onto ceilings or floors or run down walls.

2.2.2.3 Valleys and gutters shall not overflow in a manner which causes water to penetrate into the interior of a home.

2.3 Water and drainage installations

2.3.1 Performance description

2.3.1.1 Water and drainage installations shall be designed, constructed and installed to avoid during the design working life of the home the likelihood of:

a) the ingress of water into the soil horizon underneath the home or in close proximity to the home;

b) root penetration;

c) impairing the structural integrity of the home; and

d) impairing the weather tightness of walls and roofs.

2.3.2 Performance parameters

2.3.2.1 All water pipes shall withstand the greater of working pressure in the supply mains or 600 kPa without any leakage.

2.3.2.2 All drainage pipes immediately after installation shall satisfy the air pressure test for drains provided in SANS 10400-P, *The application of the National Building Regulations – Part P: Drainage.*

2.3.2.2 All tanks associated with water and drainage installations shall be watertight.

2.4 Materials and components

2.4.1 Suitable materials and components shall be used in the roof, walls, floor, foundation, drainage installation and water installation of a home to satisfy the requirements of 2.1 to 2.3.

2.4.2 Materials used in the roof, walls, floor, foundation, drainage installation and water installation shall, as relevant, be resistant to, or made resistant to:

a) insect and rodent attack,

b) abrasion owing to wind-blown sand,

c) corrosive attack by groundwater, condensation, surface water, rainwater, atmospheric pollutants and any subsurface or atmospheric gases to which such materials might reasonably be exposed,

d) solar radiation, and

e) condensation,

2.4.3 The manufacture of components and the construction or erection of structural elements (or both) shall be such that the structural safety and structural serviceability performance requirements, appropriate to the type of home, throughout the design working life are not reduced by variations and inconsistencies in quality.

2.4.4 Where materials fall within the scope of a South African national standard issued in terms of the Standards Act of 2008 (Act No. 8 of 2000), such materials, and components shall comply with the provisions of such standards.

2.5 Surface water management

2.5.1 Surface water resulting from a storm having a mean return period of 20 years which is collected or concentrated by the home or site work shall not cause damage to the home interior, structure, or structural elements, structural components or accumulate in close proximity to the home.

2.5.2 Surface water disposal arrangements for a storm having a mean return period of 20 years in interconnected complexes shall:

a) not result in the undercutting of foundations due to erosion or flooding,

b) drain away from homes, as far as possible, under the action of gravity and not accumulate against or in close proximity to external walls of homes,

c) be capable of being readily cleaned and maintained.

2.5.3 Surface water resulting from a storm having a mean return period of 100 year shall not enter the home.

2.5.4 Surface water disposal arrangements shall make provision for the drainage of sites that are waterlogged or seasonally waterlogged.

2.6 Dolomite land

2.6.1 Performance description

The land usage of dolomite land shall present a tolerable hazard rating with respect to sinkhole and subsidence formation

2.6.2 Performance parameters

The annual probability of sinkhole or subsidence events per hectare shall not exceed 0,005, which is equivalent to a mean return period of 200 years.

Part 3: Evaluation

3.1 Demonstrating compliance with performance requirements

3.1.1 A home builder shall:

a) implement solutions in the design and construction of homes which meet or exceed the performance requirements established in Part 2; and

b) demonstrate compliance with the performance requirements by means of one or a combination of the following:

1) compliance methods precirbed by the Council subject to the solution being within the scope of such rules; or

2) performance based methods involving either:

- Agrément certification; or
- certification by a certification body or a listed competent person whose name appears on the Council's list in the required category

.

3.1.2 A home builder shall, prior to the enrolment of a home, confirm on a form prescribed by the Council the means by which compliance with the performance requirements will be achieved.

3.1.3 A home builder shall promptly notify the Council on a form prescribed by the Council of any change in the means by which compliance with the performance requirements will be achieved.

3.2 Agrément certification

3.2.1 The performance requirements of Part 2 may be satisfied where a system, element or component is the subject of an Agrément certificate, provided that

a) such system, element or component is used within the scope, conditions and limitations prescribed in the certificate,

b) the element or component is compatible with other elements or components of the home; and

c) such system or element is erected by the Agrément certificate holder or a licensee of the holder.

3.2.2 The Council may require a home builder to demonstrate that workmanship and materials complies with the provisions of an Agrément certificate.

3.2.3 The following information shall be included on all plans associated with a home where compliance with the provisions of Part 2 are satisfied by means of an Agrément certificate:

a) the systems, elements and components which are the subject of an Agrément

certificate and the numbers of such certificates;

b) the names and Agrément South Africa registration numbers of the accredited contractors who will manufacture, install and erect the certificated construction;

3.2.4 The home builder shall keep a copy of the relevant Agrément certificate on site which shall be available for inspection by Council or Agrément South Africa inspectors at all reasonable times.

3.3 Certification by a certification body or a listed competent person

3.3.1 A certification body or a listed competent person shall:

a) design systems, elements and components as required by the home builder in such a manner that the performance requirements of Part 2 are satisfied;

b) provide the home builder with sufficient information to enable the home builder to construct or install the system, element or component directly from the information prepared and, if relevant, to produce manufacturing and installation information for construction;

c) ensure that design intent is met during construction by confirming that the design is being correctly interpreted and the work is being executed generally in accordance with the designs, appropriate construction techniques and good practice;

d) provide the home builder with record information on completion of the work;

e) affix their name, registration number and signature on all information provided to the home builder in a prominent position; and

f) indicate, in the case of a home which has masonry walls, the category of expected damage identified from Table 5 on plan drawings immediately above the title block.

3.3.2 A certification body or a listed competent person shall, as relevant, certify on forms prescribed by the Council that:

a) the design and construction of the systems, elements and components for which they are responsible for complies with the requirements of Part 2; or

b) the construction or installation complies with the requirements of Part 2.

3.3.3 A certification body or a listed competent person shall base its decisions that a design complies with the requirements of Part 2 on one or a combination of the following:

a) the application of well-established engineering principles, relevant international or national standards or suitable authoritative publications;

b) test results from a SANAS accredited laboratory which confirm in a test report that an element or components satisfies the performance requirements

established in Part 2 and are interpreted in accordance with the relevant provisions of SANS / ISO 2394, *General principles on reliability of structure*; and

c) experimental models which test the structural system or elements or components thereof in accordance with the provisions of SANS / ISO 2394.

3.3.4 A certification body or a listed competent person shall only certify work which is based on assumptions, levels of reliabilities, data, practices, procedures and the like which if subjected to a peer review, such a review will arrive at substantially similar conclusions.

3.3.5 A certification body or listed competent person who certifies a design of a system, element or component for compliance with the performance requirements of Part 2 shall:

a) retain copies of documents setting out their reasoning for making a determination including as necessary key assumptions made, calculations, loads applied, analyses, tests conducted, studies undertaken and the like for a period of at least 5 years; and

b) make such information available to consumers, home builders, Council inspectors and inspecting authority when called upon to do so.

3.3.6 Failure to provide the information required in terms of 3.3.5 when called upon to do so shall be interpreted that the design does not satisfy the performance requirements set out in Part 2 and the certification was made fraudulently.

3.4 Test report issued by an accredited SANAS laboratory

A SANAS accredited laboratory report shall clearly identify the system, element or component which is the subject of the test, state the performance requirements which are being tested, the test method used to confirm performance requirements and the results that were obtained.

3.5 Compliance in respect of materials

3.5.1 The Council may require a home builder to demonstrate that materials comply with the performance requirements established in Part 2.

3.5.2 The Council may require a home builder, on demand, to make samples of materials and components available for testing by a SANAS accredited laboratory. .

3.6 Drawings

3.6.1 Plans and drawings for homes shall in addition to containing the information required in terms of National Building Regulations issued in terms of the National Building Regulations and Building Standards Act 103 of 1977 include as relevant:

a) section(s) through the homes showing details of the proposed foundation and reinforcement;

b) working drawings of the housing unit and foundations showing all pertinent dimensions;

c) the location and details of all movement joints in the home;

d) the size and location of all masonry reinforcement;

e) particulars relating to specific construction procedures and precautionary measures, as appropriate; and

f) additional particulars that the Council may require.

3.6.2 Where plans are repeated on a number of sites the home specific variables including erf and township numbers may be provided in a tabulation on the generic plans and drawings.

Part 4: Geotechnical investigations to determine foundation parameters

4.1 A home builder shall appoint a certification body or a listed competent person in the relevant category to conduct suitable geotechnical investigations on precribed forms to:

a) classify the site in accordance with the site class designations contained in Table 9 where homes are located in buildings which are not higher than two storeys including a basement and advise on the necessity of installing subsurface drains on sites that are located in marshy areas, have shallow water tables Including seasonal shallow water or ground water levels and are to be terraced to the extent that the depth of cut below original ground level exceeds 0,75 m; and

b) formulate an opinion regarding the parameters upon which the design of the foundations is to be based where homes are located in buildings which are:

1) not higher than two storeys including a basement and either have walls not of masonry construction or have walls of masonry construction which are supported by steel, concrete or reinforced masonry columns;

2) not higher than two storeys including a basement and are located on a site having a P site class designation; and

3) higher than two storeys including a basement.

.

Table 9: Residential site class designations

Typical founding material / site descriptor	Nature of founding material	Expected range of total soil movements (mm)	Assumed differential movement (% of total)	Site class designation
Rock (excluding mud rocks which may exhibit swelling to some depth)	Stable	Negligible	-	R
Fine grained soils with moderate to very high plasticity (clays, silty clays, clayey silts and sandy clays)	Expansive soils	< 7,5 7,5 – 15 15 – 30 > 30	50% 50% 50% 50%	H H1 H2 H3
Silty sands, sands, sandy and gravely soils	Compressible and potentially collapsible soils	<5 5-10 >10	75% 75% 75%	C C1 C2
Fine grained soils (clayey silts and clayey sands of low plasticity), sands, sandy and gravely soils	Compressible soils	<10 10-20 >20	50% 50% 50%	S S1 S2
Contaminated soils, controlled fill, dolomitic areas, landslip, landfill, marshy areas mine waste fill, mining subsidence reclaimed areas, uncontrolled fill, very soft silts / silty clays	Variable	Variable		P

4.2 Site class designations shall be derived from an estimation of the expected range of total soil movements experienced by single-storey and double-storey homes having masonry walls that are not supported by steel, concrete or reinforced masonry columns under the following assumptions:

a) the foundation has a width that does not exceed 0,6 m and 0,8 m in respect of single-storey and double-storey buildings, respectively;

b) the soil bearing pressure is not to exceed 50 kPa; and

c) the total soil movements are such that the resultant differential movement implied by Table 9 is equal to that which is to be expected in the field.

4.3 Where it is not possible to provide a single site designation and a composite description is inappropriate, sites may be given multiple descriptions to indicate the range of possible conditions.

4.4 The reasons for classifying sites as class P shall be provided in brackets after the suffix for the site class designation using the typical founding material or site descriptor provided in Table 9 or any other suitable descriptor. In the case of dolomite land, the dolomite area designation determined in 5 shall be provided after the descriptor.

4.5 The site class designation determined by a person in terms of 4.1.1a) shall be stated immediately above the title block of the plan layout of the home together with the name, registration number and signature of such person.

4.6 Certification bodies and listed competent persons may elect to make use of existing investigation reports in order to reduce the amount of additional investigations required provided that they satisfy themselves of the adequacy and validity of such information.

4.7 If during the course of development, it emerges that a site class designation requires revision in the light of new geotechnical information, the certification body or a listed competent person shall immediatley notify the Coucil on a precibed form.

4.8 A certification body or listed competent person may be called upon to justify in writing their classifications or opinions to consumers, home builders and Council inspectors when called upon to do so. Failure to provide such a justification when called upon to do so shall be interpreted that the service does not satisfy requirements and the certification was made fraudulently.

Part 5: Development of dolomite land

5.1 A home builder shall appoint a certification body or a listed competent person in the relevant category on prescribed forms to:

a) conduct suitable geotechnical investigations to determine and certify on a prescribed form the inherent hazard class of a site on dolomite land in accordance with the relevant provisions of SANS 1936-2, *Development of dolomite land – Part 2: Geotechnical investigations and determinations*, and any modification or additional requirements as may be prescribed by the Council;

b) establish in the case of land underlain by Black Reef Formation whether or not such land presents a susceptibility of sinkhole formation in accordance with the relevant provisions of SANS 1936-2 and any modification or additional requirements as may be prescribed by the Council and, if not, classify the such sites as having a D1 dolomitic area designation; and

c) where required in terms of Table 10, undertake footprint investigations in accordance with the relevant provisions of SANS 1936-2 and any modification or additional requirements as may be prescribed by the Council.

5.2 The Council shall accept a home for enrolment if underlain by dolomite land provided that the home builder furnishes the Council with:

a) a letter from the relevant municipality and, in the case of an interconnected connected complex, the body corporate established in terms of the Sectional Titles Schemes Management Act of 2011 (Act No. 8 of 2011) or, if not established, the owner of such complex, confirming that such person undertakes to establish, implement and maintain a dolomite risk management strategy in accordance with the relevant provisions of SANS 1936-4, *Development of dolomite land – Part 4: Risk management,* and any modification or additional requirements as may be prescribed by the Council; and

b) a certification by a certification body or a listed competent person on a prescribed form that homes on sites and surrounding infrastructure including wet and dry engineering services having a dolomite area designation of D2 or D3 in terms of Tables 10 or 12 have been or will be designed and constructed in accordance with the relevant provisions of SANS 1936-3, *Development of dolomite land – Part 3: Design and construction of building structures and infrastructure*, and any modification or additional requirements as may be prescribed by the Council.

5.3 The Council may accept a home for enrolment if underlain by dolomite land on sites having a dolomite area designation of D4 provided that the home builder furnishes the Council with:

a) a certification by a certification body or a listed competent person in the relevant category on a prescribed form that the precautionary measures that will be adopted in addition to the relevant provisions of SANS 1936-3 and any modification or additional requirements as may be prescribed by the Council will ensure that the performance requirements of 2.6 are satisfied; and

b) a favourable independent review of the proposed approach to mitigate the hazards associated with the development of the site to satisfy the performance requirements of 2.6 by two certification bodies or listed competent persons in the relevant category who are free of conflicts of interest appointed on a prescribed form.

Table 10: Permitted development of dolomite land for homes

Development characteristics		**Dolomite area designations (see Table 11) and requirements for foot print investigations (FPI) for an inherent hazard class**							
Category	**Description**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Attached homes in buildings exceeding 3 storeys									
1A	More than 300 attached homes per hectare in buildings exceeding 3 storeys	D4						Not permitted	
1B	Up to 300 attached homes per hectare in buildings exceeding 3 storeys	D2 with FPI	D4					Not permitted	
1C	Up to 160 attached homes per hectare in buildings exceeding 3 storeys	D2 with FPI	D3+ FPI				D4	Not permitted	
2 Attached homes in buildings not exceeding 3 storeys									
2A	More than 120 attached homes per hectare in buildings not exceeding 3 storeys	D3 with FPI		D4				Not permitted	
2B	Up to 120 attached homes per hectare in buildings not exceeding 3 storeys	D2 with FPI		D4				Not permitted	
2C	Up to 80 attached homes per hectare in buildings not exceeding 3 storeys	D2 with FPI		D3 + FPI			D4	Not permitted	
3 Detached homes									
3A	Detached home on own site or an effective site having an area not less 150 m^2	D2	D3	D4				Not permitted	
3B	Detached home on own site or an effective site having an area not less 300 m^2	D2	D3			D4		Not permitted	
3C	Detached home on own site or an effective site having an area not less than 1 000 m^2	D2	D3			D3 with FPI	D4	Not permitted	

Table 11 Dolomite area designations

Dolomite area designation	Description
D1	No precautionary measures are required to support development.
D2	General precautionary measures that are intended to prevent the concentrated ingress of water into the ground are required to support development.
D3	Precautionary measures in addition to those pertaining to the prevention of concentrated ingress of water into the ground are required.
D4	Precautionary measures described for dolomite area designation D3 are either • unlikely to reduce the hazard rating to tolerable levels so as to support development: or • considered to be uneconomic or impractical to reduce the hazard rating to tolerable levels so as to support development.

Table 12 Permissible infrastructure type based on inherent hazard class and dolomite area designations

Infrastructure type		Dolomite area designations (see Table 11) for an inherent hazard class							
Designations	**Description**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Class 1	Trunk roads (national and regional roads which facilitate intercity travel) and primary distributor roads (major arterial roads forming the primary network for an urban area as a whole), railway lines, power lines, runways, bulk services, including water, sewer, fuel and gas lines and pump stations.	D2	D3					D4	
Class 2	Reservoirs and public swimming pools, water care works, attenuation and retention ponds for stormwater management and artificial lakes	D2	D3				D4		
Class 3	Cemeteries	D3				D4			
Class 4	Dams and slimes dams	D3	D4						
Class 5	Waste disposal facilities	D3						D4	

5.4 Certification bodies and listed competent persons shall affix their name, registration number and signature on all information provided to the home builder in a prominent position.

5.5 Certification bodies and listed competent persons who certify compliance with the provisions of SANS 1936-3 and any modification or additional requirements as may be prescribed by the Council or 5.3a) shall ensure that home builder is provided with all the information that is necessary for the precautions to be taken and that accurate record information is produced which documents the works as constructed or competed.

5.6 Certification bodies and listed competent persons may elect to make use of existing investigation reports in order to reduce the amount of additional investigations required provided that they satisfy themselves of the adequacy and validity of such information.

5.7 If during the course of development, it emerges that a dolomite area designation requires revision in the light of new geotechnical information, the certification body or a listed competent person shall immediatley notify the Coucil on a precibed form.

5.8 A certification body or a listed competent person in the relevant category shall certify on sites having a site class designation of D2 and higher on a prescribed form that the water and drainage installations between a municipal connection or a borehole and a home satisfy the performance requirements of Part 2 and the relevant requirements of the SANS 1936-3 and any modification or additional requirements as may be prescribed by the Council and, where relevant, the requirements of additional measures specified on sites having a site class designation of D4 have been complied with.

Part 6: Greenfield site developments

6.1 A home builder shall complete a prescribed form and submit to the Council a copy of the first phase of a geotechnical investigation of the greenfield site development prepared by a certification body or a listed competent person in the relevant category which is conducted in accordance with the relevant provisions of SANS 634, *Geotechnical investigations for township development*, and any modification or additional requirements as may be prescribed by the Council comprising as a minimum:

a) a stability investigation if the site is underlain by dolomites or undermined ground or is located in undulating terrain or where there is a potential for slope instability; and

b) an investigation into near surface foundation characteristics of the near surface horizons.

6.2 The Council may grant in principal acceptance with or without conditions based on the first phase geotechnical report if it is satisfied that the submissions meets prescribed requirements.

6.3 A home builder shall complete a prescribed form and submit to the Council a copy of the second phase of a geo-technical investigation of the greenfield site development prepared by a certification body or a listed competent person in the relevant category which is conducted in accordance with the relevant provisions of SANS 634 and any modification or additional requirements as may be prescribed by the Council which confirms or amends the findings of the phase 1 investigations after the township has been pegged. Such a report shall provide the site class designations and parameters for the design of foundations, as relevant, in respect of each specific erf.

6.4 The Council may grant final acceptance with or without conditions based on the second phase geotechnical report if it is satisfied that the submissions meets prescribed requirements.

6.5. Reports prepared in accordance with 6.1 and 6.3 for a home forming part of a housing programme contemplated in the National Housing Code issued in terms of the Housing Act of 1997 (Act No. 107 of 1997) shall provide the necessary geotechnical and topographical parameters to enable adjustments in the housing subsidy to be made for extraordinary development conditions provided for in the National Housing Code.

Part 7: Approved certification schemes

7.1 General

7.1.1 The Council may approve certification schemes which are deemed to be viable and are likely to fulfil all scheme requirements established in 7.2 for:

a) the structural system;

b) prefabricated timber truss roofing system;

c) steel frame homes;

d) timber frame homes;

e) water and drainage installations on sites underlain by dolomites;

f) roof glazing installations;

g) fills, terraces and subsurface drains;

h) certification of sites in terms of site class designations

i) certification of sites in terms of inherent hazard classes; and

j) certification of township services on sites underlain by dolomites.

7.1.2 The Council:

a) may approve more than one scheme covering an area of certification.

b) shall audit a scheme for compliance with the approved scheme requirements either on an annual or targeted basis; and

c) may withdraw approval for a scheme following an unsatisfactory audit after notifying the approved scheme provider in writing of the reasons for such withdrawal.

7.2 Scheme requirements

7.2.1 A certification scheme:

a) shall have a specific scope and relate to one or more areas which requires engineering certification, site certification or installation certification;

b) shall register certification bodies who employ certifiers and provide certification services;

c) shall have in place codes of conduct regulating certification bodies and certifiers and operate a mechanism for the reporting and investigating of certifiers who are alleged to have contravened the code

d) may only register a certification body to provide certification services in an area requiring certification identified in 7.1 if such a body:

1) is a company established in terms of the Companies Act of 2008, (Act No. 71 of 2008) or an organ of state as defined in section 239 of the Constitution of the Republic of South Africa of 1996 (Act No. 108 of 1996);

2) employs at least one suitably qualified certifier in a full-time capacity in the areas in which it offers certification services and undertakes to abide by the rules of the scheme;

3) has, except where it only certifies installations, suitable professional indemnity cover unless such body is an owner of homes and only undertakes to certify its own homes;

4) undertakes to provide certifiers in their employ with the necessary information to enable them to perform their duties;

5) undertakes to abide by a code of conduct and requirements established by the scheme;

6) undertake to make temporary arrangements to obtain the services of a suitable certifier to complete any outstanding certifications in the event that it no longer has in their employ a suitably qualified certifier; and

7) ceases to offer certification services if it no longer has a suitably qualified certifier in its full time employ.

e) shall register certifiers as engineering, site and installation certifiers only if they:

1) possess the necessary qualifications, training, experience, contextual knowledge to provide the required service and have demonstrated their abilities to do so;

2) are professionally registered in terms of the Engineering Profession Act of 2000 (Act No 46 of 2000) or the Natural Scientific Professions Act of 1993 (Act No. 27 of 2003) or possess a relevant professional designation granted in terms of the National Qualifications Framework Act of 2008 (Act No. 67 of 2008)

3) undertake to maintain their competence to perform activities in terms of the scheme;

4) undertake to abide by a code of conduct and requirements established by the scheme and to function only within any limitations imposed by the scheme;

f) may incorporate requirements on how certifiers may certify parts of the work which they are required to certify which are outside of their professional experience;

g) shall not exclude any individual or organisation from membership of a scheme based on membership of a trade association, professional institution or the like; and

h) have suitable governance structures which supports the effective operation of the scheme;

i) may award identifying designations in addition to engineering certifier, site certifier or installation certifier with or without restrictions on what may or may not be certified;

j) require certifiers to assign a unique number to each certificate and to issue a certificate in the format and wording specified by the scheme

k) maintain a website which as a minimum contains:

1) publically accessible information relating to the names, registration numbers, contact particulars and certification services offered by all certification bodies who are in good standing within the scheme:

2) publically accessible information relating to the names, registration numbers, employing certification body and details of the areas in which the certifier is authorised to function and any limitations imposed by the scheme;

3) certificates issued in terms of the scheme which are accessible to the Council, home builders and housing consumers; and

4) publish clear guidance on the operation and membership of the scheme.

7.2.2 A legally constituted entity may apply to the Council to deliver a scheme. Such application shall clearly demonstrate how the scheme will operate and satisfy the scheme requirements.

7.2.3 A certifier may take over the work of another certifier provided that they satisfy themselves of the compliance of any relevant work already undertaken so that they can certify the completed work.

7.2.4 A certifier may not subcontract assessments to other person. Where appropriate they may obtain evidence from individuals or bodies that it considers competent as a means to establish compliance.

7.2.5 A certifier other than an installation certifier shall retain a portfolio of evidence for a period of 10 years post certification to substantiate the issuing of a certificate in terms of the scheme.

Part 8: Council list of competent persons

8.1 Admission to and removal from the Council's list

8.1.1 A competent persons shall apply to the Council for admission to the Council's list of competent persons on a prescribed form in one or more of the following categories and provide all the accompanying information as may be prescribed:

a) the structural system;

b) prefabricated timber truss roofing system;

c) steel frame homes;

d) timber frame homes;

e) water and drainage installations on sites underlain by dolomites;

f) roof glazing installations;

g) fills, terraces and subsurface drains;

h) certification of sites in terms of site class designations

i) certification of sites in terms of inherent hazard classes; and

j) certification of township services on sites underlain by dolomites.

8.1.2 The Council may decline to admit a competent person to the list in a category specified in 8.1.1 if:

a) the applicant is not registered in terms of either Engineering Profession Act of 2000 (Act No 46 of 2000) or Natural Scientific Professions Act of 1993 (Act No. 27 of 2003) in an appropriate category in relation to the category applied for;

b) the Council is of the opinion that the applicant's education, training, experience and contextual knowledge is insufficient to provide services in the category applied for;

c) the application is incomplete, incorrect or insufficient information is provided for the Council to make a determination which in the opinion of the Council material to the making of a determination regarding admission to the list of competent persons;

d) the applicant has in the past been found to have failed to meet the standard of service specified in 8.2 to the extent that the council has been obliged to settle a claim involving an amount in excess of R 100 000 or has fraudulently certified compliance with the NHBRC Technical Requirements and the admission of such an applicant to the list presents an unacceptable risk to the Council;

e) the applicant is under investigation by a disciplinary tribunal of the Engineering Council of South Africa or the South African Council for Natural Scientific Professions and their admission presents an unacceptable risk to the Council;

f) cannot provide proof of the indemnity insurance prescribed by the Council.

8.1.3 The Council may remove the names of competent persons from the list should they have fail to meet the standard of service specified in 8.2 to the extent that the council has been obliged to settle a claim, fraudulently certify compliance with the NHBRC Technical Requirements or certify work in category in which they are not listed. The Council shall in writing notify a person whose name is on the list of their removal from the list two weeks prior to such removal.

8.1.4 The Council shall lodge a complaint with the Engineering Council of South Africa or the South African Council for Natural Scientific Professions against any persons whose name is removed from the list in terms of 8.1.3.

8.1.5 A person who is removed from the list in terms of 8.1.3 may reapply for admission to the list.

8.1.6 Admission to the list shall be valid for a period of three years. Listed competent persons may reapply for listing not more than three months prior to the expiry of the listing status.

8.2 Submission of designs and reports for approval

8.2.1 The Council may prescribe requirements and procedures for a listed competent person to obtain prior Council approval for specific types of designs and reports before such designs or reports may be certified for compliance with requirements.

8.3 Scope of services of a listed competent person

A listed competent person shall not provide services outside of the category or categories identified in 8.1 within which such person is listed.