Module 4: Role of the NHBRC

Module Objectives:

By the end of this session, participants will understand:
1. How to use the NHBRC manuals
2. How the NHBRC classifies “defects” as regards their warranty scheme
3. The limited number of components of a house that are of interest to the NHBRC
4. How the NHBRC views wall and slab cracks

Module at a glance:

<table>
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<th>Topic</th>
<th>You will learn</th>
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<tr>
<td>The NHBRC Manuals</td>
<td>- What the manuals contain and where</td>
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<td>The NHBRC Warranties</td>
<td>- Understanding what is covered and what is not covered by the NHBRC warranties</td>
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<td>The NHBRC classification of “cracks”</td>
<td>- That the NHBRC will often disagree with the home owner regarding the severity of cracks in walls and slabs</td>
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The National Homebuilders Registration Council (NHBRC) is a statutory body which was established in terms of the Housing Consumers Protection Measures Act 95 of 1998. This law compels all home builders in South Africa to register with the NHBRC and requires that all new homes are enrolled prior to the commencement of building. Banks will not grant a mortgage bond over a new property if the house has not been enrolled with the NHBRC.

Did you know...

*Included in the NHBRC enrolment is protection for the housing consumer in the form of a five-year warranty against structural defects in the new home.*
NHBRC Manuals

The National Home Builders Registration Council (NHBRC) manuals contain a wealth of information for the South African home builder. However, it is important to remember that the building methods are not prescriptive regulations but rather a practical interpretation of the best way to implement the “Deemed to Satisfy” of the National Building Regulations (NBR).

NHBRC registered home builders are required to build enrolled houses to the minimum performance standards that has been set out in the NHBRC’s Home Building Manuals – Parts 1, 2 & 3.

*The SAHITA course modules contain many references to the NHBRC modules along the style: “NHBRC 2.5.1”. This indicates a cross reference to the NHBRC manual Part 2, Section 5 and paragraph 1.*

- The NHBRC manuals apply only to those sections of construction which are covered by the NHBRC warranty, i.e. roof structure, walls, foundations and private drainage installations.

- The NHBRC enrolment and manual applies only to structures up to four floors high (inclusive of basements). Structures more than four floors high need to be approved by the NHBRC prior to enrolment.

The technical information in this SAHITA course draws heavily on the NHBRC Manuals (and also on the SABS 0400 functional regulations and deemed-to-satisfy rules).

**Part 1 – NHBRC Manual**

This section of the NHBRC manuals deals with the NHBRC design requirements

**Part 2 – NHBRC Manual**

This section of the NHBRC manuals documents the rules required to comply with Part 1 requirements either by:
1. Adopting the rules contained in 2.2-9, or
2. Preparing a rational design based on engineering principles (2.10), or
3. Obtaining Agreement certification (2.11)

Part 3 – NHBRC Manual

This section of the NHBRC manuals contains the construction standards necessary to comply with the design requirements (Part 1) and rules (Part 2).

NHBRC warranty and defects classification

Definition of a defect...
The NHBRC defines a “defect” as: “A defect which adversely affects the strength, stability, durability and serviceability of the housing unit” – NHBRC Manual Part 1; Section 1.1.

(This information is contained in the NHBRC Manual Part 1; Section 1.2-3.). There are four different aspects to the NHBRC warranty.

1. Construction Phase

The NHBRC registered home builder is required to provide the home owner with a written contract stating that the builder will rectify, at his own expense, all latent as well as patent defects manifesting during the construction phase, timeously upon identification.

2. First three months following occupation

The NHBRC registered home builder will also be required to contract to rectify, at his own expense, any deficiency relating to workmanship or materials during a 90 day period measured from the occupation date.

3. One-year roof leak warranty

The NHBRC registered home builder is required to contract to repair, at his own expense, any roof leaks that occur within a one-year period measured from the occupation date.
4. Five-year major structural defects warranty

The NHBRC registered home builder and the home owner will be required by the NHBRC to conclude the Standard Home Builders Warranty documentation. This obliges the builder to rectify any defect of a patent or latent nature in respect of the substructure, the superstructure and the roof structure for a period of five years after occupation.

The NHBRC warranty provides that at any stage during the five year period (but excluding the first three months of occupation), if the builder is unable or unwilling to rectify a valid defect, then the NHBRC may at its sole discretion rectify such defects.

It is important to note that the NHBRC warranty does not cover defects occasioned by abnormal events which cannot be foreseen; failure to effect timeous maintenance and repairs; the effects of vegetation or the permitting of surface water to pond in the vicinity of housing units.

The buyer of a new home, which has been enrolled with the NHBRC (all new homes are required to be enrolled), should do the following to protect themselves:

- Ask to see the home builder’s current NHBRC registration certificate and then telephone the NHBRC to confirm whether the home builder is still registered. The home builder’s NHBRC registration needs to be renewed annually.

- Obtain proof that the new home has been enrolled with the NHBRC and that the enrollment fees have been paid by the builder to the NHBRC.

- Ensure that the home builder provides a written contract for the building of the new home. (To assist housing consumers the NHBRC provides suggested standard forms of contracts that are generally acceptable in the building industry.)

- Variations to the contract as regards extras, specifications or finishes very often become the subject of later disputes. All variation orders (VO’s) should be reduced to writing so as to constitute a formal agreement regarding the scope of the VO and the agreed cost.

- Owners of new homes should keep a copy of the original contract and all VO’s and other documents.
• Owners of new homes should draw up a list of all problems and defects (snag list) before moving into the new home. (The snag list should be handed over to the home builder no later than 90 days of date of occupation.)

**NHBRC: Minimum norms for acceptability**

These are the six minimum norms for the acceptability of housing (NHBRC Manual Part 1, page 5):

1. Structural strength and stability
2. Behaviour in fire
3. Thermal performance and condensation
4. Weather tightness
5. Protection against harmful substances
6. Provision for ventilation and natural lighting

**Note...**

*The NHBRC excludes minimum acceptable norms for these items: privacy, aesthetic satisfaction, marketability, comfort (including heating and cooling), value for money, security and status.*

**Design Requirements**

NHBRC Part 1 Section 2

According to the NHBRC, the two major areas of claims and complaint by owners of new homes are a failure of the house structure in the areas of serviceability and structural strength. In other words houses with serious settlement and cracking issues.

However, the home inspector should always keep in mind that damage viewed by the home owner as “serious” may be dismissed as “slight” or “moderate” damage by the NHBRC investigating a potential claim under the NHBRC warranty cover. (See NHBRC classification of cracks and settlement damage to walls and slabs - below).
The NHBRC design requirements for structural strength and serviceability are:

**Structural strength**

The NHBRC requires that structural strength and stability must be adequate for the lifetime of the structure

- **Foundations (Sub-structure):** Designed and constructed to transmit loads from superstructures to the ground safely and without excessive movement or distress of the elements they support.

- **Floors & stairways:** Designed and constructed to carry their own dead loads plus additional loads to which they are likely to be subjected.

- **Walls (Superstructure):** Designed and constructed to withstand any load to which they are likely to be subjected without impairing weather tightness and without undue deformation or distress.

- **Roofs:** Designed and constructed to safely resist any forces to which they are likely to be subjected to.

**Structural serviceability**

The NHBRC requires that all housing elements (these are the components of the structure – such as walls, floors and roofs) must be durable, resist water penetration and condensation, retain fitness of purpose and withstand any loads to which they are likely to be subjected without undue deflection, distortion or cracking, over the lifetime of the structure

- **Foundations and floor slabs:** Must be designed and constructed to resist ground movement and prevent the passage of moisture to the interior of the structure.

- **Walls:** Must be designed and constructed to resist the penetration of water to the interior of the structure

- **Roofs:** Must be designed and constructed to resist rain penetration and to avoid the accumulation of rain water on the roof.
With regard to the above three requirements for serviceability the NHBRC manuals require different exterior wall designs (cavity walls with weep holes and ventilation) in the Southern Coastal Condensation Problem Area. See map above.

**Behaviour in fire**

The combustibility and fire resistant characteristics of all floors, walls, roofs and ceiling assemblies must be appropriate to the location and use of these elements.

**Materials**

All materials used in the construction process must be sufficiently durable and of suitable quality for the purposes for which they are to be used.

**Drainage**

Properly designed drainage systems – to carry the load and minimise maintenance.

**Stormwater disposal**

Note...

Exterior cavity walls are required in the wet Cape coastal areas.
Adequate measures for the control and disposal of storm water, in a manner which does not result in soil erosion or flooding which may affect the structural performance of the unit.

**NHBRC classification of cracks in walls and slabs**

Because of the widespread distribution of “problem” soils in South Africa – both “expansive” and “collapsible” - the NHBRC allows fairly generous classification of damage (cracks) in walls and slabs – see tables in the NHBRC Manual Part 1; Section 2; Tables 2-4.

![Map showing unstable soils in South Africa](image)

This map shows the unstable soils in many parts of South Africa (distribution of expansive and collapsible soils).

The NHBRC measures damage to walls in terms of the width of cracks, and damage to slabs in terms of the width of cracks and the degree of settlement. The NHBRC uses the following classification to determine whether the damage (in the view of the NHBRC) is cosmetic, alternatively whether it affects serviceability or stability.
“Slight damage” (Category 1 to 2)

For walls a crack width of less than 1mm is reckoned to be “very slight” and a crack width of less than 5mm is termed "slight". Such cracks, says the NHBRC can be easily filled and redecorated and if these cracks reoccur they can be masked by suitable linings. “However doors and windows may stick slightly”.

Easy-to-repair cracks
Wall cracks in Categories 1 and 2 are classed as cosmetic ("aesthetic") damage – easy to repair and redecorate.

“Moderate damage” (Category 3)

Wall cracks of between 5-15 mm wide are termed “moderate” damage. Such cracks can be repaired by replacing damaged masonry and, if needed, cutting in articulation joints. The NHBRC acknowledges that “moderate” cracks of this nature may cause rigid service pipes to fracture and weather tightness of the wall may be impaired. Gaps of up to 10 mm may appear between ceiling cornices and walls.

“Severe damage” (Category 4)

Wall cracks of between 15-25 mm wide which require extensive repair work – including breaking out and replacing sections of walls (especially over doors and windows) and cutting in of movement joints. The construction of drainage and apron slabs around the building and the jacking up of foundations may also be necessary, depending on the type of soil movement. With "severe" wall cracks (15-25 mm wide) window and door frames may be distorted, floors slope noticeably; walls lean or bulge; some loss of bearing in beams; service pipes probably disrupted; and a gap of up to 20 mm between ceiling cornices and walls may appear.
“Very severe damage” (Category 5)

Wall cracks greater than 25 mm – resulting in unable conditions and requiring major rebuilding.

In determining the severity of wall cracks, the NHBRC also takes into account the grouping of the cracks. The descriptions and categorization of wall cracks above relates to single story construction. In multi-story construction the descriptions require modification.

NHBRC classification of slab damage

Similar damage gauges are applied to ground floor concrete slabs:

Minor damage (Categories 1-2)

Slab cracks less than 1 mm wide and with a maximum settlement gap of 15mm (often measured between the skirting and finished floor). Fine cracks may appear in walls which need redecoration and there may be slight distortion of door frames which result in sticking doors. Skirting boards can be reinstalled to mask damage.

Moderate damage (Category 3)

Slab cracks between 1- 5 mm wide with a maximum settlement gap of 20 mm (often measured between the skirting and finished floor). There may be significant gaps below the skirting boards in some areas of the floor (especially in corners). Sloping of the floor in these areas (1 in 150) is clearly visible. Damage to internal walls can be widespread and some

More serious cracks...

Categories 3 and 4 are classed as “serviceability” damage and may be covered by the NHBRC warranty

Massive cracking...

Category 5 is termed “stability” damage and may be covered by the NHBRC warranty
crack filling and re-plastering will probably be necessary. Doors may need to be refitted and there may be voids beneath the slab with poorly compacted fill.

**Severe damage (Category 4)**

Slab cracks of 5-15 mm and gaps of up to 25 mm below skirting boards. Local breaking out, part refilling and relaying of floor slab may be necessary. Damage to internal walls may require the replacement of some masonry walling.

**Very severe damage (Category 5)**

This is slab damage consisting of a number of cracks wider than 15 mm and gaps of more than 25 mm below the skirting boards. Overall floor settlement with large movement of walls. Possible damage to exterior walls and large differentials in floor levels. Voids exceeding 75 mm below the slab. Most or all of floor slab requires breaking out and relaying and internal walls need replacement.

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