

# Verification Method B2/VM1

## 1.0 Durability Evaluation

**1.0.1** Verification that the durability of a *building element* complies with the NZBC B2.3.1 and B2.3.2 will be by proof of performance and shall take into account the expected in-service exposure conditions by one or more of the following:

- a) In-service history,
- b) Laboratory testing,
- c) Comparable performance of similar *building elements*.

### 1.1 In-service history

**1.1.1** Verification of durability based on in-service history of a *building element*, including materials, components and systems shall take into account but not be limited to:

- a) Length of service,
- b) Environment of use,
- c) Intensity of use,
- d) Any reaction with adjacent materials,
- e) Limitations in performance,
- f) Degree of degradation, and
- g) Changes in formulation.

### 1.2 Laboratory testing

**1.2.1** Verification of durability based on successful performance in a laboratory test shall be accompanied by an assessment of the tests performed, their relevance to field and service conditions, and in particular:

- a) Types of degradation mechanisms likely to be induced by testing,
- b) The degradation mechanisms likely in service,
- c) Details of methods of assessment,
- d) Variability of results, and
- e) The relevance of the test to the *building element* under study.

## 1.3 Similar materials

**1.3.1** For the purposes of evaluation, a *building element* may be considered as similar to another *building element* with proven performance, if both are subject to the same controls for composition and overall performance. Examples of such controls are Approved Documents or Standards. Where such a direct comparison is not possible, the *building element* shall be independently assessed to determine the degree of similarity.

**1.3.2** Assessment shall take into account but not be limited to:

- a) Product composition,
- b) Method and quality assurance of manufacture,
- c) Degradation mechanisms,
- d) Local environment,
- e) Conditions of use,
- f) Required maintenance, and
- g) Performance in use.

#### COMMENT:

Environment

1. To be acceptable, any opinion in support of the assessed durability for a *building element* shall clearly identify the conditions of use and the environment under which that durability will be achieved. If the *building element* can be reasonably expected to be used in circumstances which will reduce the durability, any limitations in use shall be clearly identified and evaluated.
2. Circumstances which need to be considered include, but are not limited to:
  - a) Maintenance required to achieve the required durability (e.g. painting, cleaning, replacing high wear items such as washers),
  - b) Installation details of the total system (e.g. fixings, flashings, jointing materials),
  - c) Compatibility with other materials (e.g. galvanic corrosion, plasticiser migration),

- d) Locality or macroclimatic effects (e.g. coastal or thermal areas, wet or damp ground conditions),
- e) Microclimatic effects (e.g. sheltered areas on *buildings* such as eaves),
- f) External environment influences (e.g. local industrial operations such as fertiliser works), and
- g) Internal environment (e.g. swimming pools, chemical processing areas, sauna rooms).