Durability verification database

A decade ago, BRANZ scientists developed a database of building products and techniques used to verify durability performance. This valuable resource informs BRANZ's durability assessment of new products and systems.

BY NICK MARSTON, BRANZ MATERIALS TEAM LEADER

BUILDING MATERIALS and construction methods continue to evolve, and their durability in New Zealand conditions needs to be assessed. Knowledge gained from traditional building practices is often insufficient for predicting durability problems with emerging materials and construction techniques.

BRANZ is continuing to develop its capability for robust durability assessment of new products and techniques – an essential platform for supporting an innovative, dynamic building industry.

Robust durability assessment of new building products and techniques is crucial.

Need for better guidance

The New Zealand Building Code is primarily performance-based. Only a few classes of materials, such as timber and concrete, have prescriptive 'deemed-to-satisfy' solutions.

For other situations, the Verification Method for Building Code clause B2 *Durability* only offers the advice that suitable durability performance may be demonstrated by:

- laboratory testing
- a documented history of use
- analogy with the behaviour of similar building components.

Little further guidance is provided on how these criteria might be satisfied in practice.

Durability database established

Over a decade ago, BRANZ researchers conceived a way to put together an overarching durability verification framework for assessing building materials, components and systems under the Building Code. That project examined the durability knowledge and verification methods available at the time.

It drew on researchers' experience of using local and international standards to examine material properties and predict long-term performance. It integrated testing criteria and learning from assessments of durability ➤

as part of the BRANZ Appraisal process, and it identified critical knowledge gaps.

The information collected was assembled in what we internally call the durability verification database. It's an important resource that we're proud of.

This database comprises entries for all key building materials categorised using the co-ordinated building information system. It effectively contains information on the state of the nation for what was known about predicting durability within BRANZ and around the world at the time.

The database has been a valuable asset since then, providing a central place:

- for our material scientists to learn from those who have worked in the same areas before them
- for them to record what they have learned during the work they have done
- to preserve durability understanding to ensure consistency and corporate memory.

Ensures consistency in product assessment

Access to the database information and durability criteria has ensured consistency in the assessment of products.

This is important as over 350 durability opinions, assessing product durability for compliance with the Building Code, have been produced as part of the BRANZ Appraisal process since the database was first developed.

Hence, we have a track record of applying the knowledge from the database and insights into the adequacy of the criteria from the use of the Appraised products in the field.

For the future, the database will continue to be used to capture new information and understanding on material durability prediction as it is developed. It will assist to ensure ongoing consistency of assessments across a broad range of products, systems and materials.

It will also help those who join the team to learn from those who have worked in the area before them to ensure BRANZ retains its unique capability in this area.