

→ Tanks on trial for home defence

A Bushfire CRC project has assessed the performance of rainwater tanks in bushfire conditions

▶ Different types of rainwater tanks can play an important role in defending the home against a bushfire attack.

A Bushfire CRC and CSIRO research project examining the performance of rainwater tanks was conducted at the only bushfire simulator of this type in the world; at the New South Wales Rural Fire Service experimental research facility at Mogo on the south coast of New South Wales.

The research investigated the effects of typical Australian bushfire exposures on both residential and commercial water tanks of steel and plastic construction.

OUTCOMES

Anecdotal evidence already exists to suggest that steel water tanks offer greater protection to both residential and commercial property in the event of a bushfire than alternative materials because of its non-combustibility.

The full results from this research will be used by the Bushfire CRC and the CSIRO to:

- a) Influence how building codes and planning guides are developed, particularly around bushfire risk areas
- b) Help provide advice to property owners on the level of risk to their homes and businesses
- c) Help develop education programs for local communities



▲ ABOVE AND TOP RIGHT: RAINWATER TANKS WERE TESTED UNDER SIMULATED BUSH-FIRE CONDITIONS AT THE RFS TEST FACILITY AT MOGO.



RESEARCH RESULTS

1. Steel Construction

Of the different materials tested, spiral wound, steel tanks performed best under all exposure conditions. All steel manufactured tanks maintained structural integrity when faced with a 30 minute flame immersion test, simulating an adjacent structural fire.

2. Steel Construction With Bladder Bag Style Liner

Steel construction bladder tanks maintained structural integrity during all tests. The bladder construction proved able to retain water during and after the fire-front, which is critical for the protection of property and assets in the event of a bushfire.

3. Polyethylene (Plastic) Construction

Polyethylene tanks demonstrated structural deformation during the 30 minute flame exposure, resulting in the tank splitting itself and melting down. Polyethylene tanks were at risk of total failure when adjacent combustible items are present, such as forest litter, fences or other polyethylene tanks.

ABOUT THE PROJECT

The Bushfire CRC and its researchers involved in this project acknowledge the financial support of BlueScope Steel for this project and the valuable collaboration of the NSW Rural Fire Service, a core partner in the CRC.

The research was conducted as part of Bushfire CRC project D1 Protecting People and Property.