

## Case Study

# Kaiapoi - Rangiora Transmission Main

**Durable and Economical with proven Seismic Resilience**

**Pipeline Material** - PVC-U, DN525, PN9, Series 2 with rubber ring joints, conforming to AS / NZS 1477

Constructed in 2010, the Kaiapoi to Rangiora transmission watermain was built in DN525 PN9 rubber ring joint PVC-U pipe and was in service during the September 2010 Darfield earthquake that caused extensive damage to Kaiapoi and neighboring Christchurch.

The 8,500 metre main pipeline was undamaged during this event and the subsequent earthquakes and aftershocks that totaled over 11, 000 magnitude 2.0 or greater by August 2012.

Originally designed in Concrete Lined Mild Steel pipe, the decision to use PVC-U pipe was made due to concerns over stray current corrosion as part of the pipeline route ran parallel to 33kV power lines.

Pipeline construction was undertaken by C & A Cox Ltd and Shayne Higgs Drainage Contractor Ltd. Pipe was supplied in a mix of 4 meter and 6 meter effective lengths, the shorter lengths used where trench shields were required due to installation depth.

**Council;**

Waimakariri District Council.

**Design Consultant;**

Opus International Consultants,  
Christchurch.

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*DN525 PN9 Series 2 PVC-U pressure pipe installation.*



*Pipeline route adjacent to railway embankment and high voltage power lines*

