

# PRODUCT SHEET

## TONERPAVE™

### A new generation of sustainable asphalt

Downer and Close the Loop® (CtL) are pleased to introduce TONERPAVE™, the first asphalt product of its kind in Australia. Made from the waste of recycled printer and toner cartridges, TONERPAVE™ is the next generation in sustainable asphalt products.



TONERPAVE™ is an innovative solution that allows waste products – otherwise headed for landfill – to be blended with asphalt.

Developed by Downer and Melbourne-based Close the Loop, TONERPAVE™ is the result of a shared culture of innovation and genuine desire to reduce our carbon footprint.

#### How does it work?

Toner powder predominantly consists of small particles of very high grade engineering plastics, the same type as those used to modify bituminous binders for asphalt roads. CtL collects and recycles large volumes of toner cartridges and bottles for most of the large printer and copier companies. The cartridges are shredded to separate raw materials for reuse and the toner powder is separated and further refined to make an additive called Modified Toner Polymer (MTP).

TONERPAVE™ uses MTP as an additional ingredient to enhance the performance of conventional asphalt mixes.

TONERPAVE™ also contains waste recycled oil to further reduce waste and increase energy savings.

TONERPAVE™ can be used in any asphalt mix.

#### Benefits

Some key benefits of TONERPAVE™ include:

- The manufacture of MTP is 40% more energy efficient than the manufacture of bitumen
- Carbon emission are reduced
- Future carbon credits will be applicable as MTP is made with 100% Post-Consumer Recycled materials
- Currently in the process of GreenRate® certification by Ecospecifier.

#### Performance

Laboratory performance testing of TONERPAVE™ demonstrated a greater than 30% improvement in fatigue life compared to the same 10mm mix with class 320 bitumen.

Laboratory testing has also confirmed TONERPAVE™ has an

indirect modulus strength in excess of 4,300 MPa in a standard 10mm mix.

**All asphalt mixes incorporating MTP meet VicRoads 407 specification.**

#### Where has TONERPAVE™ been used?

TONERPAVE™ has been successfully trialled by the City of Boroondara. The Council recently resurfaced a residential street in Kew using TONERPAVE™. The result was a quality finish and excellence performance.

Shortly, TONERPAVE™ will be used in asphalt to surface a new road in a residential estate in the City of Hume.

#### Where does the toner come from?

MTP is a trademark of Close the Loop® an award winning resource recovery company based in Somerton Victoria. CtL has collected and recycled almost 20,000 tonnes of cartridge waste over 12 years, through a network of more than 40,000 collection sites nationally.