

PROTECTING & INNOVATING OUR INDUSTRY

MR BURAK DINCEL

WHO AM I?

- Structural & Civil Engineer with 40 years experience
- Licensed Builder
- Developer
- Chairman of Dincel Group of Companies
 - Dincel & Associates Consulting Engineers
 - Dincel Installation Pty Ltd
 - Dincel Construction System Pty Ltd

A TIME OF CHANGE

- Human kind has reached Mars, invented artificial intelligence, performed open heart/brain surgeries in the 21st century ... yet in the year 2000 the construction industry was still using 5000 year old “brick” technology in multi-level construction. Clearly the construction industry was at least a millennium behind other industries
- Taking into account; growing population, rapidly reducing skilled labour, construction accidents, productivity and profit margins – there was a necessity for a **more efficient building wall system**
- The changing acoustic and earthquake engineering requirements for an engineer, convinced me that masonry wall use would significantly reduce – 15 years later my prediction was right! Currently Australian brick use halved in comparison to year 2000
- After four years of R&D the first Dincel product was sold in Sydney in October 2006, with only one production line. Currently reaching ten production lines.



PVC WALL SYSTEM

A Dincel like PVC Wall System provides the following advantages:

- Up to 50% faster construction
- Minimum 20% cost reduction in apartment type buildings
- Reduced skilled labour, increased site safety, greater strength, lower maintenance, minimum 100 years life and 100% recyclable
- Lower environmental impact including lower embodied energy, lower Co2 production and improved fire resistancy – Dincel embodied energy study endorsed by Swinburne University of Technology demonstrates embodied energy savings at 214 times more effective than having insulation in buildings.

TNS SUSTAINABILITY STUDY

Executive Summary from the 2012 TNS Sustainability Study for Dincel:

*The conclusion of this study by The Natural Step is that the **Dincel Construction System (DCS)** offers **significant and compelling sustainability advantages for the construction industry**. It has benefits over traditional building technologies, and is proven to work in practice. It represents a clear step forward in applying a more sustainable method for one aspect of construction – the building of load-bearing walls - which is found wherever there is a new development.*

David Cook
Executive Ambassador
The Natural Step International

Richard Blume
Senior Advisor
The Natural Step International

 The Natural Step

Full report available at dincel.com.au

IT'S IN ALL OUR BEST INTEREST ...

- Prior to Dincel, the use of plastic within the construction industry was only 3%
- Now the use of PVC in building walls represents a minimum 60%
- This equates to a 20 fold increase in PVC material use.
- The size of the Australian wall market is 100million m²/per annum.
- Gold or high-quality market relevant to Permanent PVC wall market is no less than 12million m²/per annum
- Currently Australian manufacturers produce no more than 1.5million m²/per annum

This makes PVCs future in Australia very bright

PROTECTING OUR INDUSTRY

- Our objective is to ensure the use of Australian-made PVC material in buildings as permanent formwork to meet the BCA requirements
- Any issues associated with the use of non-compliant PVC formwork could seriously damage the industry that we have invested significant time and money in, as well as the reputation of PVC
- We have provided conclusive evidence on non-compliant, imported products to the Building Code Board, Fair Trading New South Wales and the ACC
 - President of BCA Board responded “we are authorised to write to the BCA, but we are not authorised to police the BCA”
 - Assistant Building Commissioner responded to our outcry for regulatory assistance, however he stated that unfortunately **Australia does not have a building product law to take legal action**
 - I note that consumer product law does not cover building products and unfortunately this is still the case

BCA TESTING

- Following the devastating disasters at Grenfell Tower (London) and Lacrosse Apartments (Melbourne), the testing requirements in the BCA significantly changed
- New facade requirements, apart from the spread of flame, will also assess how much debris occurs within 30 minutes of fire:
 - This particularly represent challenges for cladding or fibre cement glued sheets to a permanent formwork frame
 - The delamination of these claddings or glued sheets under facade fire will present danger to firefighters and by passers
 - The use of PVC based permanent formwork skin, like Dincel, can only char in the event of a fire so does not result in the above delamination and safety problems
- If new BCA testing regimes, including random on-site sample collection is legislated, then this will prevent the use of “golden samples” and real protection will be provided
- Strongly believe real protection can only occur if building product law is introduced

BCA YET TO COVER SMOKE TOXICITY

- Any fire expert will state that the real killer in a fire event is the smoke toxicity
- BCA only checks the smoke quantity. The smoke quantity can be reduced by using toxic additives. Even currently revised BCA does not have a testing requirement for measuring toxicity of smoke
- Australia and Singapore have signed a Strategic Alliance agreement. Singapore Building Authorities require random on-site sample collection, and the measurement of smoke toxicity
- Sadly, most of the casualties from the Grenfell Tower fire resulted from the toxicity of the smoke



TOXIC SMOKE IS THE REAL KILLER
THE GRENELL TOWER FIRE 14 JUNE 2017.
Image credit: Wikimedia Commons

DINCEL'S "BEST PRACTICE PVC"



Dincel is happy to see more Australian manufacturers serving this extremely large market, provided that **Dincel's "Best Practice PVC"** use is adopted

FOR PERMANENT FORMWORK FOR CONCRETE WALLS, THE REAL "BEST PRACTICE PVC" CAN ONLY EXIST IF THE FOLLOWING IS ACHIEVED:

- ✓ **VCM** use is less than 1ppm
- ✓ **98% WASTE FREE** manufacturing technology
- ✓ **HEAVY METAL FREE** stabiliser use
- ✓ **VOC** is below detection level
- ✓ **QUANTITY OF SMOKE** is less than the BCA threshold
- ✓ **TOXICITY OF SMOKE** is 300% less than international threshold
- ✓ **"NON COMBUSTIBLE EQUIVALENT"** - NO limitation for its use in all building fire conditions, including building facades and worst bushfire conditions
- ✓ **PHTHALATES FREE**
- ✓ Suitable for **POTABLE WATER USE**

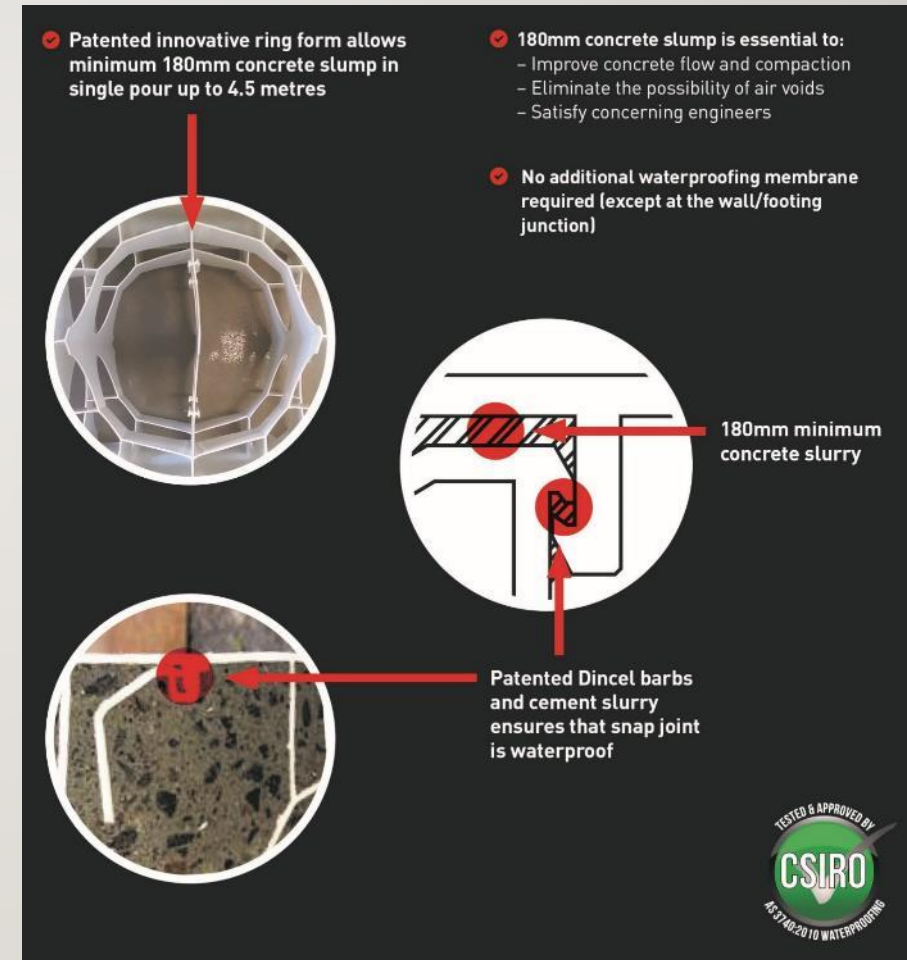
A NEED FOR INNOVATION

- The most troublesome issues for the construction industry, in particular, conditions subject to earth/water contact, is WATERPROOFING. Inadequate waterproofing results with concrete cancer
- Concrete cancer leads to → Reduced building life
- Australia spends 32 billion dollars every year from corrosion problems, with the majority due to concrete cancer
- NEW innovation Dincel 275 avoids problems caused by waterproofing failures and offers a **design, supply & install solution** backed by an **industry first waterproofing warranty**. This does not exist in any part of the world.



INTRODUCING 275 DINCEL

- Internal ring formation is capable of handling 200mm slump concrete in a single pour, up to 4.5m – THIS IS A FIRST IN THE PERMANENT FORMWORK BUSINESS
- Engineers must be satisfied that no air voids can possibly occur within the permanent formwork
- 275 Dincel WATERPROOF WALL delivers increased safety with no additional waterproof membrane needed, along with faster construction and a minimum 100 years structural life



SAFETY IN BASEMENT CONSTRUCTION



IN SUMMARY

- Cost effective, corrosion free, long-life, strong, durable, safe and fast walling use is essential for the construction industry
- The construction industry can increase the PVC industry by 20 fold
- Building Product Law must be introduced
- Smoke toxicity testing needs to be introduced in BCA

**DINCEL'S "BEST PRACTICE PVC" USE
PROVIDES THE BENCHMARK FOR
OTHER BUILDING MATERIALS TO MATCH**

