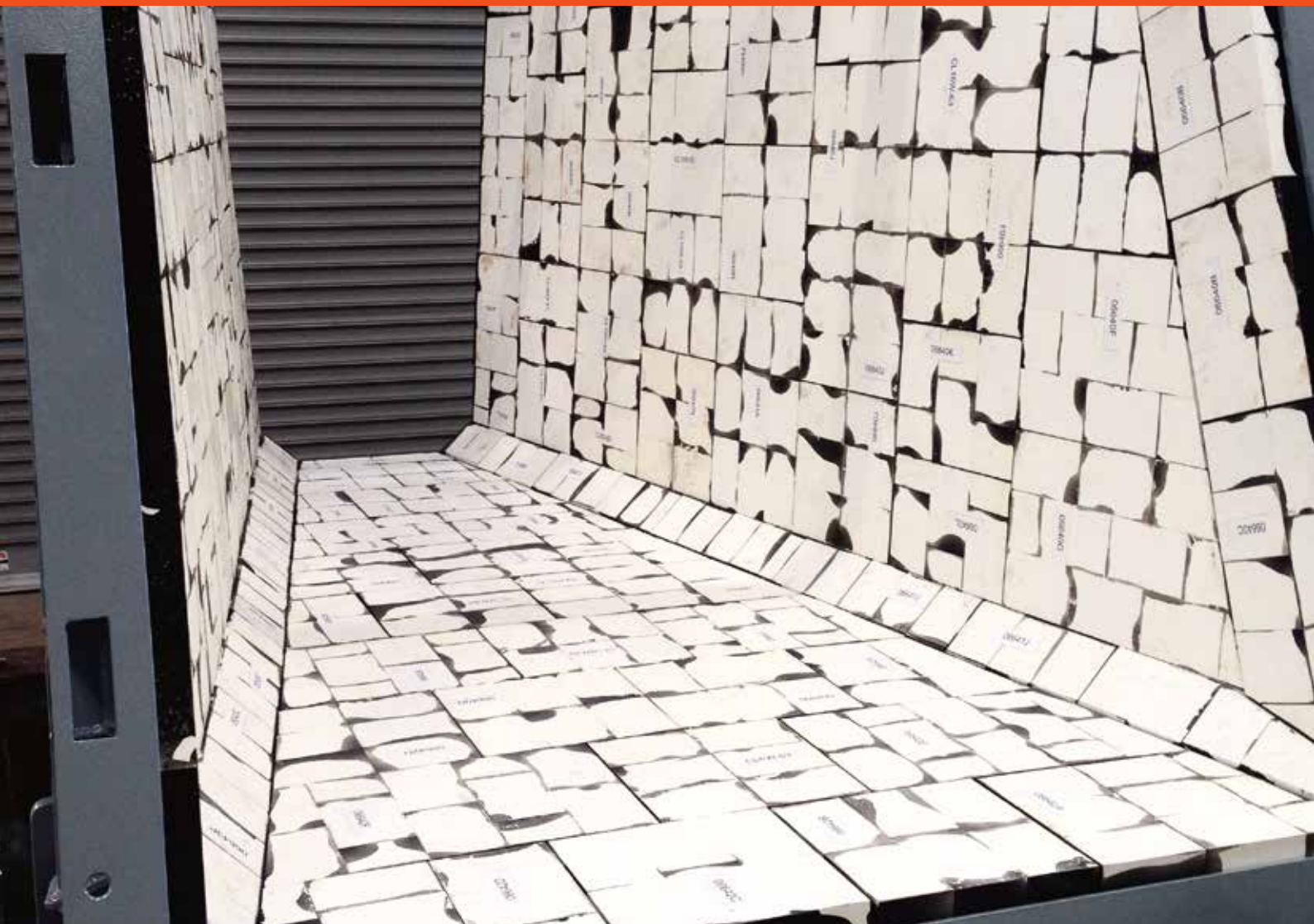




Ceramic Wear Liners



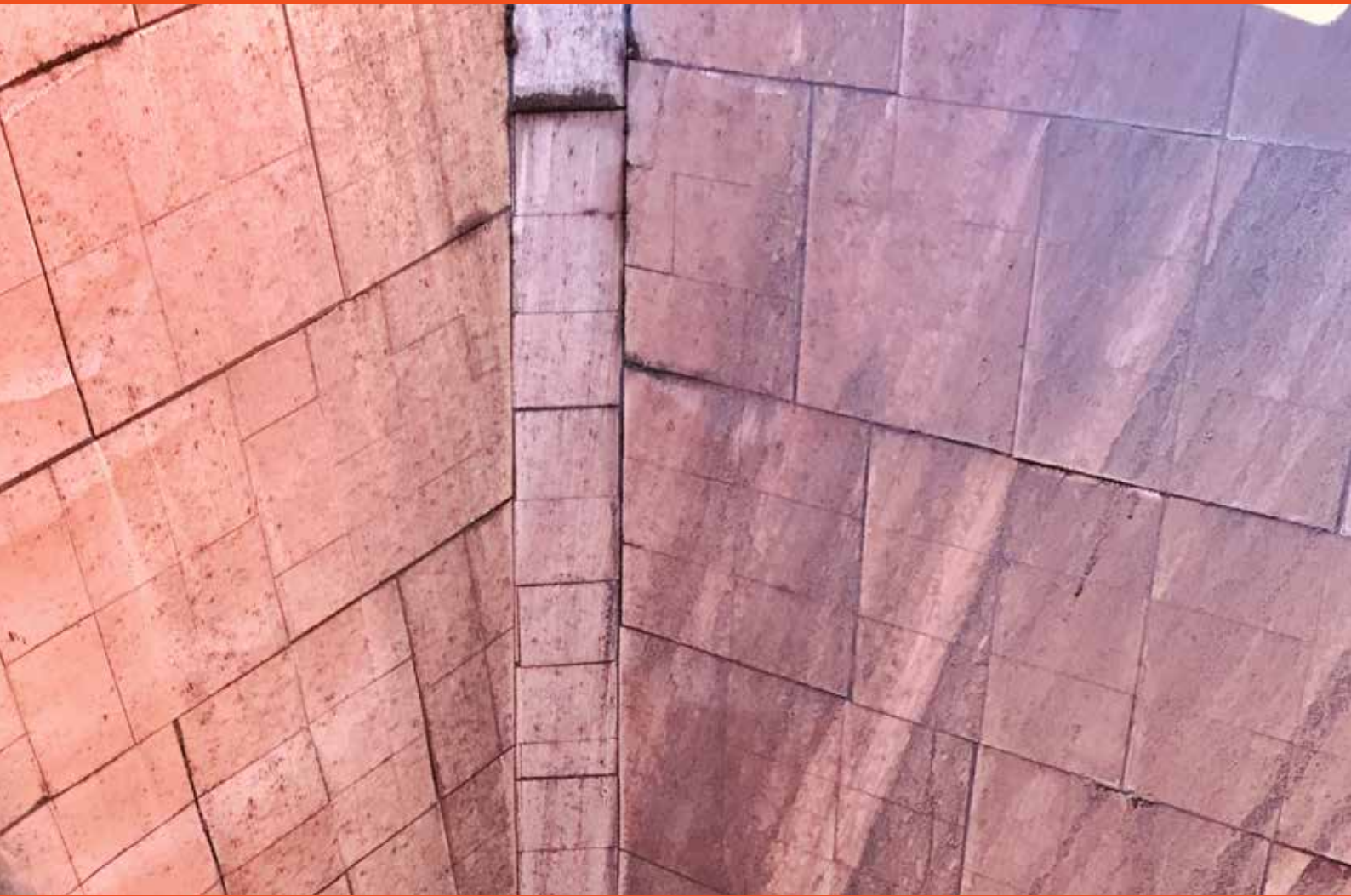
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Solutions through Innovation



Drawing from our background in blast and ballistic protection for the Defence industry, CoBond Material Solutions has developed an innovative solution to significantly improve wear and impact capabilities of ceramic wear liners for the bulk handling and mining industries.

Ceramic wear plate liner solutions are becoming more common in material handling applications because they have been proven to provide maximum resistance to impact and abrasion in bulk material handling applications.

CoBond's new ceramic wear liners are bonded using our proprietary bonding process and high tensile strength polymer to enable an engineering grade bond between the ceramic and the steel plate to be achieved. Additionally, the proprietary bonding process produces a smooth ceramic wear face. This in turn improves the flow efficiency and produces less material hang-up.

The use of CoBond's high tensile strength polymer has specifically been developed to increase resistance to impact and load. As a result the bonded ceramics provide superior impact resistance and improved wear life. Additionally, the use of CoBond's polymer has shock and sound dampening properties.

CoBond's Range of Ceramic Liners

Our wear liners comprise advanced ceramic tiles (either Alumina Oxide or Silicon Carbide) bonded in a high tensile strength polymer matrix to a studded steel backing plate.

CoBond White - High Impact Liner

These wear liners have been specifically developed for increased resistance to impact and sliding abrasion. This alumina oxide ceramic (92%) liner would be ideally suited for coal, iron ore or other hard rock mining applications. They are available in a range of sizes and ceramic thickness (6mm / 12mm / 25mm / 50mm) depending on the area of application.

CoBond Red - High Impact and High Abrasion Resistant Wear Liner

These wear liners have been specifically developed for increased resistance to impact and abrasion. This alumina oxide ceramic (92% - 98%) liner would be ideally suited for iron ore or other hard rock mining applications. They are available in a range of sizes and ceramic thickness (25mm / 50mm / 100mm) depending on the area of application.

CoBond Silver - Exceptional Abrasion Resistant Wear Liner

These wear liners have been specifically developed where there is minimal impact, while requiring exceptional abrasion resistance from a constant even flow of material. This silicon carbide ceramic (SiC) liner would be ideally suited for coal, iron ore or other hard rock mining applications. They are available in a range of sizes and ceramic thickness (12mm / 25mm) depending on the area of application.

CoBond Steel - Extreme Impact

These wear liners have been specifically developed for maximum impact protection. This alumina oxide ceramic (92% - 98%) liner features a steel tile edge protection system which would be ideally suited for iron ore or other hard rock mining applications. They are available in a range of sizes and ceramic thickness (25mm / 50mm / 100mm / 150mm) depending on the area of application.

All our ceramic wear liners are made in Australia and can be used in transfer chutes, deflectors, impact chutes, bins, hoppers, skirt liners, stackers and reclaimers.

Many factors need to be considered when selecting the correct ceramic liner for each application, such as angle of impact, particle size, particle density, velocity and general construction of the application that the ceramics will be applied to.

About our Ceramics

We use high quality Saint Gobain ceramic tiles when manufacturing our ceramic wear liners.

Alumina Oxide (92%) – excellent impact and wear performance

Saint Gobain Alumina Oxide ceramics use an ultra fine-grain, high-grade alumina which is made from exceptionally pure, uniformly controlled alpha aluminum oxide and is engineered to be one of the best wear materials available for fine particle abrasion.

These ceramics provide superior impact and wear resistant performance.

Properties:

Density ≥ 3.58 g/cm³

Hardness (HRA) ≥ 76

Porosity < 0.1

Fracture Toughness (20 degrees Celsius) 3.5 MPa

Silicon Carbide (SiC) – outstanding wear performance

Saint Gobain Silicon Carbide is produced by pressure less sintering submicron silicon carbide powder. The sintering process results in a self-bonded, fine grain (less than 10µm) SiC product which is extremely hard, lightweight and low in porosity.

These ceramics are highly resistant to corrosion, erosion, sliding wear, high temperature and thermal shock.

CASE STUDIES

REPAIR: Ceramic White Wear Liner Solution – Deflector Chute

CERAMICS: 50mm Alumina Oxide (92%)

LOCATION: Western Australia

MATERIAL: Iron Ore

RESULT: CoBond's wear plate liners are showing no sign of any significant wear. The ceramic tiles have no cracking or chipping.



Competitors Solution -
7 months after install and
9.5M tonnes of Iron Ore



CoBond's Solution -
6 months after install and
8M tonnes of Iron Ore

Repair: Ceramic White Wear Liner Solution – Transfer Chute

Ceramics: 50mm Alumina Oxide (92%)

Location: Western Australia

Material: Iron Ore

Result: CoBond's wear plate liners are showing some signs of wear after 3 years, however there is no evidence of cracking or chipping on the tiles. This is a 300% improvement on previous solutions.



Ceramic Liner Install



3 years after install

Repair: Ceramic White Wear Liner Solution – Centrifuge Chute

Ceramics: 50mm Alumina Oxide (92%)

Location: Hunter Valley

Material: Coal

Result: CoBond's wear plate liners have been in operation for over a year and have shown no sign of wear and are likely to now last 6 times longer than previous solutions.



Ceramic Liner Install



6 months after install