Focus product: Polibrid 705E  
Year of project: 2004  
Year of inspection: 2010  
Location: Australia  
Type of project: CIL Tank Internals  
Products/system used: Polibrid 705E  
Project owner: KCGM (Kalgoorlie Consolidated Gold Mine)  
Applicator: KCGM  
ISO12944 environment: Immersion  
Project size: 4,000 litres (1,000 gallons)
Boddington Gold Mine

Track record 2009

Location of project
Perth, Western Australia

Product/system used
Intercur® 200, Intergard® 345
Interseal® 670HS, Interzone® 954
Interfine® 629, Polibrind® 705E

Project owner
Newmont

Applicator
Cape Industrial Services PLC

ISO12944 environment
Ranging from Immersion to C5 - I

Project size
7,589 tons

Project volume
565,000 L (124,300 gals)
UAN 32-0-0 Tank Lining
Track record 2010

Location of project
USA

Products/system used
Area 1 - Walls
Envirolines 376F-30LT @ 500-750μm (20-30 mils)

Area 2 - Floor
Enviroline 376F-30LT @ 750-1,000μm (30-40 mils)

Applicator
Johnson Contracting

ISO12944 environment
Immersion

Total area
1,394m² (15,000ft²)
Coal Reclaimer

Track record 2009

Location of project
Port Warratah, Australia

Products/system used
Interzinc® 52HS, Intergard® 475HS, Interfine® 878

Project owner
Port Warratah Coal Services (PWCS)

ISO12944 environment
C5-M

Project size
Approx. 1,000 tons

Project volume
99,000 L (1,980 gals)

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# Lake Lindsay, Bowen Basin

## Track record 2009

<table>
<thead>
<tr>
<th>Location of project</th>
<th>Project owner</th>
<th>Project size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Anglo Coal Australia</td>
<td>7,000 tonnes</td>
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<table>
<thead>
<tr>
<th>Products/system used</th>
<th>Applicator</th>
<th>Project volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area 1 - External</td>
<td>Transcote</td>
<td>External 8,000 L (1,759 gals)</td>
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<tr>
<td>Interprime® 198, Interthane® 990</td>
<td></td>
<td>Internal 1,600 L (352 gals)</td>
</tr>
<tr>
<td>Area 2 - Internal</td>
<td>ISO12944 environment</td>
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</tr>
<tr>
<td>Interprime® 198, Interlac® 649</td>
<td>C2 (Non industrial high durability)</td>
<td></td>
</tr>
</tbody>
</table>

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Lihir Gold Mine

Track record 2007

Location of project
Lihir Island, Papua New Guinea

Products/system used
Interseal® 670HS, Interzone® 954, Interzone® 485, Intertherm® 751CSA

Project owner
Lihir Gold Limited

Applicator
Placement Solbow Joint Venture & Sun Engineering

ISO12944 environment
C3-C4

Project size
8,000m² (86,111ft²)

Project volume
17,000 L (4,490 gals)
San Rafael Las Flores
El Escobal Silver Mine

Track record 2013

Location of project
Guatemala

Products/system used
Area 1 - Intergard® 345, Interthane® 990
Area 2 - Interzone® 954

Project owner
Tahoe Resources Inc.

Applicator
TIPIC-DEMESA

Fabricator
International®

ISO12944 environment
C4

Project size
30,000m² (322,917ft²)

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BMA Hay Point Stacker/Reclaimer

Track record 2013

Location of project
Australia

Products/system used
Interplus® 356 @ 75μm (3 mils)
Interzone® 278 @ 300μm (12 mils)

Project owner
BMA

Applicator
McElligotts - Mackay

Project type
Maintenance project

ISO12944 environment
C5

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Meta Nickel & Cobalt Mining - Ore Processing Plant

Track record 2013

**Location of project**
Turkey

**Products/system used**
Area 1 - Tank Interior
- Interline® 925 - 400μm
- or Interzone® 954 - 400μm

Area 2 - Tank Exterior
- Interseal® 1052 - 125μm
- Interthane® 990SG - 125μm

**Project owner**
Meta Nickel & Cobalt Mining

**Applicator**
Orkay Muhendislik

**ISO12944 environment**
C4 Semi industrial (Medium durability)

**Project size**
3 tanks: 3,271m² (35,209ft²)

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**CSA Cobar Nitric Acid Bunded Area**

**Case study 2012**

**Background**
Nitric acid is used to wash the copper concentrate filters. It is stored in a stainless steel tank which is housed inside a concrete bund, installed in 2001. Over time, the acid spills and leaks had corroded the concrete inside the bund quite severely. DJW Contracting and AkzoNobel were contracted to supply and install a sealing system that would ensure the integrity of the bund for the life of the mine.

**The solution**
Ceilcote was chosen due to its chemical resistant properties and durability. The system was suitable for nitric acid (up to 35%) chemical exposure with occasional splash and spill, and a maximum temperature of -40°C (-40°F).

Firstly 50-60μm (2 - 2.4 mils) of Ceilcote 380 Primer was applied. Then Ceilcote S-1 Powder sand and resin mix to cover the holes created by the acid. This was followed by troweling Ceilcote 6640 @ 1000μm (40 mils), then a layer of fibreglass matt was placed on the wet coating. The final step was to spray Ceilcote 242 Flakeline @ 500μm (20 mils).

“The interior surface of the nitric acid bund has not only been repaired, it is now ready to handle the rigors of operation for the life of the mine. Thanks to AkzoNobel for their skills, expertise and knowledge in seeing this job completed.”

Jarrod Marsden - Surface Maintenance Superintendent CSA Mine Cobar

**Focus products:** Ceilcote® 380, Ceilcote 6640, Ceilcote 242 Flakeline

**Location:** Australia

**Project owner:** Glencore

**Applicator:** DJW Contracting

**Surface preparation:** Concrete surface preparation

**ISO12944 environment:** C3

**Project size:** 22m² (237ft²)
Dalrymple Bay Coal Terminal 7X Project

Track record 2009

Location of project
Australia

Products/system used
Ship Loader - Interzinc® 52, Intergard® 475Au
All Steelwork above deck - Interzinc® 52, Intergard® 475Au

Project owner
DBCT Coal management

Applicator/Fabricator
John Holland

ISO12944 environment
C5M

Project size
20,000m² (215,278ft²)
Mount Arthur coal facility

Case history 2010

Area inspected: Internals

In 2004, Interzone 954 was selected to coat the internal wall of a coal thickener tank at BHP Billiton’s Mount Arthur coal facility. Interzone 954 was selected for its well documented performance in immersed conditions and the product’s ability to withstand highly abrasive conditions.

The tank was inspected in 2010 and these pictures show the coating was still performing very well after six years in service and there was no evidence of corrosion. This practically demonstrates the abrasion resistance of Interzone 954 in a coal processing environment.

Focus product: Interzone® 954 @ 500μm (20 mils)
Year of initial application: 2004
Country of project: Australia
Type of project: Coal thickener tank
Project owner: BHP Billiton
ISO12944 environment: Immersion (Wet coal slurry abrasion)
Black Otter Coal Preparation Facility

Track record 2009

Location of project
Montana, United States

Products/system used
Intercure® 200, Interthane® 990

Fabricator
Taggart

ISO12944 environment
C4 Semi industrial

Project size
1000 tons

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Buckeye Coal Preparation Facility
Track record 2008

Location of project
Ohio, United States

Products/system used
Intergard® 345

Project owner
Cline Resources

Fabricator
Taggart

ISO12944 environment
C4 Semi industrial

Project size
580 tons

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Burr Oak Preparation Facility

Track record 2009

Location of project
Ohio, United States

Products/system used
Intercur® 200, Interthane® 990

Project owner
Buckingham Coal

Fabricator
Taggart

ISO12944 environment
C4 Semi industrial

Project size
200 tons

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Hidden Valley Gold

Track record 2008

Location of project
Papua New Guinea

Project owner
Morobe Mining Joint Ventures

Products/system used
Area 1
Intergard® 251, Interthane® 990
Area 2
Intergard® 251, Intergard® 475HS

Applicator/Fabricator
LILAMA 69-3 (Vietnam)
ISO12944 environment
C5-l

Project size
60,000m² (645,835ft²)

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Licking River Preparation Plant

Track record 2008

**Location of project**
Kentucky, United States

**Products/system used**
Intergard® 345

**Project owner**
Licking River Resources

**Fabricator**
Taggart

**ISO12944 environment**
C4 Semi industrial

**Project size**
300 tons

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Location of project
Wisconsin, USA

Products/system used
Devguard® 4180, Interlac® 665

Applicator
WI Contractor

ISO12944 environment
C3

Surface preparation
SSPC-SP1

Total volume
27,482 L (7,260 gals)

Total area
185,806 m² (2,000,000 ft²)

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Mosaic Potash Colonsay Mine
Track record 2009

Location of project
Saskatchewan, Canada

Products/system used
Enviroline® 376F-30
Enviroline® 58HS
Biflex® 9400SP

Project owner
Mosaic Company

Applicator
Danger Sandblasting & Painting

Project type
Maintenance and repair

Environment
Potassium chloride/sodium chloride tank with clay in immersion

Total volume
1,900 L (415 gals)
Nui Phao Tungsten

Track record 2007

Location of project
Vietnam

Products/system used
Area 1 - Intergard® 269, Interzone® 954
Area 2 - Intercure® 200, Interzone® 954

Project owner
Tiberon Mineral Ltd Thai Nguyen
Mineral Company

Applicator/Fabricator
COMA Corporation

ISO 12944 environment
C5-I

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Tusky Preparation Plant
Track record 2008

Location of project
Ohio, United States

Products/system used
Intergard® 345

Project owner
Rosebud Mining Company

Fabricator
Taggart

ISO12944 environment
C4 Semi industrial

Project size
300 tons
BMA Goonyella/Riverside Dragline

Location of project
Moranbah, Australia

Products/system used
- Interprime® 198 @ 75μm (3 mils)
- Interfine® 629 @ 75μm (3 mils)

Project owner/specifier
BMA

Applicator
Ausblast Protective Coatings

ISO12944 environment
C2 Non industrial (high durability)

Surface preparation
Spot blast 2.5

Total volume
2,300 litres (600 gals)

Total area
4,500m² (48,400ft²)
BHP Billiton
Stacker Reclaimer
Track record 2006

Location of project
Dalian, China

Products/system used
Area 1 - Steel structure surface exposed
Interzinc® 52 @ 75μm (3 mils)
Interthane® 990 @ 75μm (3 mils)

Area 2 - Steel structure surface exposed
Interzinc® 52 @ 75μm (3 mils)
Interzone® 954 @ 250μm (10 mils)

Area 3 - Sealed internal steel structure surface
Interzinc® 52 @ 75μm (3 mils)

Area 4 - Galvanised steel structure
Intergard® 269 @ 40μm (2 mils)
Interthane® 990 @ 50μm (2 mils)

Project owner
Dalian Huarui Heavy Industrial Int’l Co., Ltd

Applicator
DHI.DCW Group Co., Ltd. 2nd manufacture department

ISO12944 environment
C5-I Heavy industrial (high durability)

Total volume
19,900 litres (5,200 gals)

Total area
46,600m² (501,500ft²)

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AkzoNobel
BHP Billiton Yabulu Quench Liquor Tank
Track record 2007

Location of project
Yabulu, Australia

Products/system used
Intergard® 269 @ 40μm (2 mils)
Interzone® 954 @ 500μm (20 mils)

Project owner
BHP Billiton

Applicator
QNI Yabulu Refinery

ISO12944 environment
Immersed conditions e.g. tank lining

Surface preparation
Clean/SA2.5

Total volume
81 litres (21 gals)

Total area
100m² (1,200ft²)

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## Carborough Downs

**Track record 2008**

<table>
<thead>
<tr>
<th>Location of project</th>
<th>Via Moranbah, Australia</th>
</tr>
</thead>
</table>
| **Products/system used** | Interzinc® 52 @ 75μm (3 mils)  
Intergard® 475 @ 200μm (8 mils) |
| **Specifier** | Roche Mining |
| **Applicator** | Ausblast Protective Coatings |
| **ISO12944 environment** | C3 Light industrial (high durability) |
| **Total volume** | 1,100 litres (200 gals) |
| **Total area** | 3,000m² (32,200ft²) |

[Image of Carborough Downs location]
Dawson Coal Mine
Stacker/Reclaimers

Track record 2007

Location of project
Moura, Australia

Products/system used
Interzinc® 52 - Spot prime
Intergard® 475 @ 175μm (7 mils)
Interthane® 990 @ 75μm (3 mils)

Specifier
Sedgman Ltd

Applicator
Transcote Pty Ltd

ISO12944 environment
C2 Non industrial (high durability)

Surface preparation
Spot blast 2.5

Total volume
2,100 litres (500 gals)

Total area
4,500m² (48,400ft²)

Track record 2007

Dawson Coal Mine
Stacker/Reclaimers
Ore Carriages, Bobos
Track record 2007

Location of project
Broken Hill, Australia

Products/system used
Interprime® 484 @ 40μm (2 mils)
Interlac® 649 @ 50μm (2 mils)

Project owner/applicator
Bobos Engineering

Surface preparation
Abrasive blast Sa2.5 or SP10

Total volume
500 litres (100 gals)

Total area
1,000m² (10,700ft²)
Rio Tinto Dust Collectors
Track record 2008

Location of project
Yarwun, Australia

Products/system used
Intertherm® 228 @ 100μm (4 mils)
Intertherm® 228 @ 100μm (4 mils)

Project owner
Rio Tinto Aluminium, Yarwun

Applicator
S & L Steel Pty Ltd

ISO12944 environment
High heat areas

Surface preparation
Abrasive blast Sa2.5 or SP10

Total volume
700 litres (100 gals)

Total area
2,500m² (26,900ft²)
Taseko Mines Process Tanks

Track record 2007

Location of project
Saskatoon, Canada

Products/system used
Tank exteriors
Interzinc® 52 @ 76μm (3 mils)
Intergard® 345 @ 152μm (6 mils)

Tank internals
Interzone® 954 @ 406μm (16 mils)

Project owner/applicator
Thermo Plus Coatings Ltd.

ISO12944 environment
C3 Light industrial (high durability)

Surface preparation
Abrasive blast Sa2.5 or SP10

Total volume
200 litres (56 gals)

Total area
400m² (5,000ft²)

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Thyssenkrupp Stacker Reclaimer

Track record 2007

Location of project
Dalian, China

Products/system used
Area 1 - Steel structure surface exposed
Interzinc® 52 @ 75μm (3 mils)
Interseal® 670HS @ 125μm (5 mils)

Area 2 - Galvanised steel structure
Intergard® 269 @ 40μm (2 mils)
Interseal® 670HS @ 125μm (5 mils)

Area 3 - Front part of boom
Interzone® 485 @ 1,500μm (59 mils)
Interthane® 990 @ 50μm (2 mils)

ISO12944 environment
C5-I Heavy industrial (high durability)

Total volume
11,800 litres (3,100 gals)

Total area
26,700m² (287,300ft²)

Project owner/applicator
Dalian Huarui Heavy Industrial Int’l Co., Ltd

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Bozshakol Copper Project

Track record 2014

Location of project
Kazakhstan

Products/system used
Interseal® 670HS @ 125μm (5 mils)
Interthane® 990 @ 50μm (2 mils)

Manufacturer
HeNan Changcheng Aluminium Engineering Co., Ltd

Total volume
40,000 litres (8,799 gals)
CITIC SINO
Iron Ore Phase 2
Track record 2014

Location of project
Australia

Products/system used
Intergard® 251@ 75μm (3 mils)
Intergard® 475HS @ 150μm (6 mils)
Interthane® 990 @ 75μm (3 mils)

Manufacturer
Jiangsu Huning Steel Mechanism Co., Ltd

Total volume
200,000 litres (43,994 gals)
Formosa Vietnam Steel Mills
Track record 2014

Location of project
Vietnam

Products/system used
Interseal® 670HS @ 190μm (8 mils)
Interthane® 990 @ 50μm (2 mils)

Manufacturer
MCC No. 5 & Jiangsu ChangHong steel structures Co., Ltd

Total volume
200,000 litres (43,994 gals)
Indonesia SB1 Cement Plant

Track record 2014

Location of project
Indonesia

Products/system used
- Intergard® 251® 100μm (4 mils)
- Interthane® 990 @ 60μm (2 mils)

Manufacturer
Sinoma (Suzhou) steel structures Co., Ltd

Total volume
60,000 litres (13,198 gals)

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Kitimat Modernization Project

Track record 2014

Location of project
Canada

Products/system used
Interzinc® 52 @ 75μm (3 mils)
Intershield® 300 @ 150μm (6 mils)
Interthane® 990 @ 60μm (2 mils)

Manufacturer
Dalian Bihai Environmental Protection Equipment Co., Ltd

Total volume
150,000 litres (32,995 gals)

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Roy Hill Iron Ore Mine
Track record 2014

Location of project
Queensland, Australia

Products/system used
Interzone® 954 @ 500μm (20 mils)

Manufacturer
Shanghai SCK/Shanghai MHI

Total volume
250,000 litres (54,992 gals)
Vale S11D
Track record 2014

Location of project
Brazil

Products/system used
Intergard® 5600 @ 120μm (5 mils)
Interthane® 990 @ 50μm (2 mils)

Manufacturer
RHM & TZME

Total volume
150,000 litres (32,995 gals)
Aggregate Plant Project
Track record 2015

Location of project
Turkmenistan

Products/system used
System for structural steel
Interseal® 670HS @ 230µm (9 mils)
Interthane® 990SG @ 70µm (3 mils)

Project owner
Polimeks Holding

Distributor
Kempaz Endustri Tic. San. ve A.S.

Applicator
Optima Muhendislik Ltd. Sti.

ISO12944 environment
C5

Project size
5,600m² (60,278ft²)

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Sulphuric Acid Pool Lining
Track record 2015

Location of project
Turkey

Products/system used
System for structural steel - Internal system
Intercrete™ 4802, Intercrete 4820, Ceilcote® 2000MR

Project owner
Meta Nickel Processing Plant

Applicator
Bakım Mühendislik

ISO12944 environment
Immersion

Project size
250m² (2,691ft²)
Crushing and Screening Plant
Track record 2015

Location of project
Turkey

Products/system used
System for steel structure -
Primer; Intergard® 251 Red @ 1x60μm
Intermediate; Intergard 251 Grey @ 1x60μm
Top coat; Interthane® 990SG Dark grey @ 1x60μm

Project owner
ThyssenKrupp
Industrial Solutions AG

Applicator
Kemipaz A.Ş.

ISO12944 environment
C5-I

Project size
2,200 ton
Ravensdown Fertiliser Plant
Acid Tank and Stairs

Track record 2012

Location of project
Christchurch, New Zealand

Products/system used
Interzone® 954 @ 400µm (16 mils), Interfine® 870 @ 75µm (3 mils)

Applicator
H W Hendriks Ltd.

Project Size
2,000m²
Gold Mine Caustic Tank Lining

Track record 2015

Location of project
Turkey

Products/system used
Internal system - Ceilcote® 282HB 1x750μm

Applicator
Atilla Makina A.Ş.

ISO12944 environment
Immersion

Total volume
225 litres (59 gals)

Total area
200m² (2,153ft²)
Baturaja Cement Plant

Track record 2016

Location of project
Indonesia

Products/system used
Interseal® 1052 @ 150µm (6 mils), Interthane® 990 @ 50µm (2 mils)

Project owner
Baturaja cement plant/ Tianjin cement Industry Design & Research Institute Co., Ltd.

Fabricator
Sinoma Tangshan HaiGang Technology & Equipment Co., Ltd.

Project size
50,000L (13,209 gals)
Kazakhstan Aktogay Copper factory

Track record 2016

Location of project
Kazakhstan

Products/system used
Interzone® 485 @ 2 x 1,000µm (40 mils)

Project owner
Kazakhmys PLC

Applicator
The Sixth Construction Company Ltd. of China National Chemical Engineering (SCCCNCE)

Project size
5,000L (1,320 gals)