Putrajaya Mosque- A Case Study
Malaysia
Petronis Towers
Client: Public Works Department
Consultant: DPI Konsult Sdn. Bdh
Formulator: PolyVers International
Applicator:
Structural Repairs

Pure Polyurea:
PV 350 Aromatic
PV 42 Aliphatic
SL 45 Joint sealant
Primer: PV 30

Duration: 2008-2009
Hollow core slab

Umbrella roofs

Dedicated 1999

Construction Firm-
Bin Laden Construction
Umbrella Roof Leaks

Leaks 5 levels below
Initial Hurdles

- Adhere to religious customs
- Observe religious holidays and prayer days
- Work with general contractors schedule
- Qualify more costly and newer solution - Polyurea
- Assure use of Pure Polyurea per PDA guidelines
- Adhere to PDA guidelines for surface preparation and application
- Assure applicator qualifications and training
Torch on Membrane
SSPC-SP 13 Concrete Prep

EN 1504-2  High pressure water cleaning
Per ICRI guidelines No 310.2-1997

CSP 2-4
CSP 3-4 Profile Abrasive Blast
SL 45 pure polyurea joint sealer
Note: cracks routed prior to filling-
Per PDA Joint Sealant Guidelines
Resurface of damaged concrete
Per PDA “Polyurea Elastomeric Coating/Lining Guidelines”
Metazeal expansion joint system
Moisture Testing ASTM F 710

Less than 5% surface moisture
Dew Point and Substrate Temperature

pH ASTM 4262

Dew Point-
ASTM E 337
Primer Application
2mm Pure Polyurea
1 mm Pure Aliphatic Polyurea
Over 2 mm Pure Aromatic Polyurea
Water testing

“Common Sense Specifications”
Adhesion Testing
ASTM D 7234
ISO 4624
Note: Concrete adhered to Polyurea - Can’t get much better than that!
Thickness Testing: ASTM D 1005
Of Aromatic base coat
Field Quality Control Report

- Field application report log

Quality Control Daily Report Log

Date: ____________________  Qualified Applicant: ____________________

Project Description: ________________________________________________________________

I. Environmental Conditions:

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Description of general weather conditions: ____________________________________________

II. Substrate Preparation:

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<tr>
<th>Substrate:</th>
<th>Square Footage:</th>
<th>Equipment:</th>
<th>Air Pressure:</th>
<th>Surface Preparation Standard:</th>
<th>General Comments:</th>
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III. Primer Application:

Primer System: ________________________________________________________________
Lot / Batch number: ____________________  Application Technique: ____________________
Amount Used: ____________________  General Comments: ____________________

IV. Polyurea System Application:

System Used: ________________________________________________________________
Lot / Batch Number: ____________________  Application Equipment Used: ____________________
Spray Gun Mixing Chamber: ____________________  Spray Tip: ____________________
Processing Temperature: Primary: ISO: ____________________  Resin: ____________________  Hose: ____________________
Processing Pressure: Static: ____________________  Spray: ____________________

Application Thickness: ____________________  Method Used: ____________________

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<th>Value (mls / mm)</th>
<th>Approximate Location</th>
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Adhesion Testing:

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<th>Method Used:</th>
<th>Adhesive:</th>
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<table>
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<tr>
<th>Value (psi / Mpa)</th>
<th>Failure Mode / Comments</th>
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Offices of Prime Minister and Department of Religion
PDA Europe 2010 Annual Conference – It’s Time to... Polyurea - Sitges, 15-17 November