That Was Polyurea Loves Sports then, This Is Polyurea Loves Olympic Games Now!

Vienna, Austria, 21/11-2008
Polyurea Great Wall --- Weibo Huang

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Bruhl, Germany, 17/11-2009
The Largest Polyurea Application in The World

- 1318 Km with 12,000,000 Sq meters
- Running Speed 350Km/h
- Trial Speed 486Km/h
- 100 Years Durability
- Polyurea 25,000 tons
- Application Period from Nov. 2009 to Nov. 2010
Temporary Technological Guideline for Spraying Polyurea As the Waterproofing Layer on the Bridge Beams of Beijing-Shanghai High Speed Railway
32.6m in Long and 9.8m in Wide for One Concrete Beam Section in Red
<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength</td>
<td>16.0 MPa</td>
</tr>
<tr>
<td>Elongation</td>
<td>450 %</td>
</tr>
<tr>
<td>Tear Strength</td>
<td>60 KN/m</td>
</tr>
<tr>
<td>Shore A Hardness</td>
<td>85 ± 5</td>
</tr>
<tr>
<td>Gel Time</td>
<td>12 Seconds</td>
</tr>
<tr>
<td>Adhesion</td>
<td>2.5 MPa</td>
</tr>
<tr>
<td>Thickness</td>
<td>2.0 mm</td>
</tr>
<tr>
<td>QUV</td>
<td>1500 hrs</td>
</tr>
<tr>
<td>Exposed Area</td>
<td>Top Coated</td>
</tr>
</tbody>
</table>
12,000,000 Sq. Meters Polyurea Finished
Challenges

According to “Polyurea Great Wall”, the biggest problems that the polyurea industry is facing include surface preparation after short blasted concrete beams, coating delamination and failure, especially in cold and dry season in the north and hot and moist season in the south.

So the first step to explore its difficulty is very important!
Step 1
June 10, to July 10, 2009

Qtech’s Explore in Summer with 40°C
Shot Blast
Full of Pinhole, Bughole and Defect
PU Primer & EP Putty
EP Putty is Low Efficiency to Concrete Defect
Qtech Training Group in Jobsite

Technical Support
Qtech Training
Instruction
Trouble Shooting
Qtech Training Group in Jobsite
Summer Version at 40°C

Step 2   QTG
Professional Training
Teaching Technical Theory
Demo & Instruction of PU Primer & Putty
Demo & Instruction of Polyurea
Adhesion & Thickness Test
Qtech Training Group in Jobsite Winter Version at -20°C

Step 3  QTG
Key Instruction
Patrol & Investigation at Different Segment Between Beijing-Shanghai
Patrol & Investigation at Different Segment Between Beijing-Shanghai
Instruction, Consulting & Supervision
Promote to Build up Warm Tent
Step 4  PDA-CHINA 2009

Working Conference, Dec. 18, Qingdao
How to Prevent Delamination & Crack in Winter Jobsite at -20 ℃
Adhesion vs Primers and Temperature

![Graph depicting adhesion vs test time with different primers and temperatures.](image-url)
PDA-CHINA Working Conference pointed out the ideas & solutions to overcome much trouble in this giant polyurea protective project.
Step 5 Auto-Spray Explore
The First Polyurea Monograph Was Published in Chinese in 2005
Polyurea Project Patrol in CHINA

National Theater Water Pond
60,000 Sq meters, 2006
Polyurea Project Patrol in CHINA
Beijing-Tianjin Intercity Railway
1,000,000 Sq meters, 2007
Polyurea Project Patrol in CHINA

29th Beijing Olympic Games’ Stadiums
300,000 Sq meters, 2008
Polyurea Project Patrol in CHINA

Water Reservoir Dam
10,000 Sq meters, 2010

-25 °C
Polyurea Project Patrol in CHINA

Qingdao Bay Bridge, 2,500 Sq meters, 2011
Qualification Process
Why Polyurea over Polyurethane?

Polyurethane (PU)
Sensitive to temperature
Sensitive to moisture
Sensitive to humidity

Polyurea
Is NOT Sensitive to temperature
Is NOT Sensitive to moisture
Is NOT Sensitive to Humidity

ANY QUESTION?
Thank You for Your Attention