



# Module 4<sub>v3.0</sub>

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## Surface and Humidity Tolerant Epoxy Technology

This advanced technology provides a cost-effective solution with outstanding durability and long-term performance.

Find out how this technology performs over hydro-blasted surfaces, in damp environmental conditions and still delivers edge retention and excellent adhesion.



# Dura-Plate 301

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An innovative solvent-free anti corrosive epoxy, formulated for application over marginally prepared surfaces.

Dura-Plate 301 has the world's only IMO PSPC specific approval for use over UHP water jetting.



# The Dura-Plate 301 Vision

## New Needs

**Environment**

**Performance**

**Safety**

**Cost**



## New Trends

- **Surface preparation flexibility** (dry & wet)
- **Solvent-free coatings**
- **Surface & humidity tolerance**
- **Edge retention**



# Key features

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- ✦ Moisture tolerant solvent free epoxy
- ✦ 97±3% v.s.
- ✦ Low VOC (<150)
- ✦ No relative humidity restrictions
- ✦ No dew point restrictions
- ✦ Compatible with UHP water jetting
- ✦ Edge retentive (>70%)



# Application features

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- ✦ No surface profile requirements
- ✦ Wet surface tolerance
- ✦ Flash rust tolerance
- ✦ Atmospheric & Immersion service
- ✦ Up to three hour pot life
- ✦ Standard airless spray application
- ✦ Brush and roller application



# Performance features

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- ✦ Very high adhesion (up to 25 MPa)
- ✦ Compatible with Cathodic Protection
- ✦ For atmospheric (120°C) and immersion service (60°C)
- ✦ Sea water, fresh water, crude and common refined products
- ✦ 20 years service life immersion (ballast tanks)





# Performance Evidence

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- ✦ IMO PSP Type Approval  
ABS, Germanischer Lloyds, Lloyds Register, DNV
- ✦ MIL-PRF23236C Qualified, Type VII  
Class 7 (seawater ballast tanks)  
Class 15b (applicable over wet surfaces)  
Class 17 (bilges)
- ✦ PETROBRAS I-ET-3010.00-1300-140-PPC-002  
Surface Tolerant Solvent Free Epoxy Paint for Wet Surfaces
- ✦ ACQPA
- ✦ SNCF



# Surface Tolerance

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Humidity & Flash Rust Tolerance



**US Steel Tank Institute  
Product of The Year 2009**





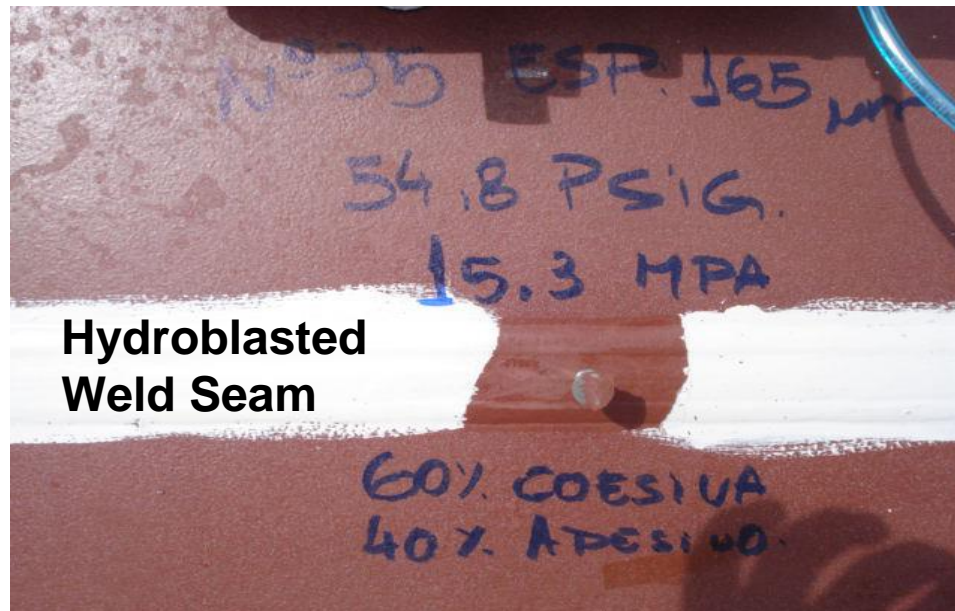
# High Adhesion

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# Profile Tolerance

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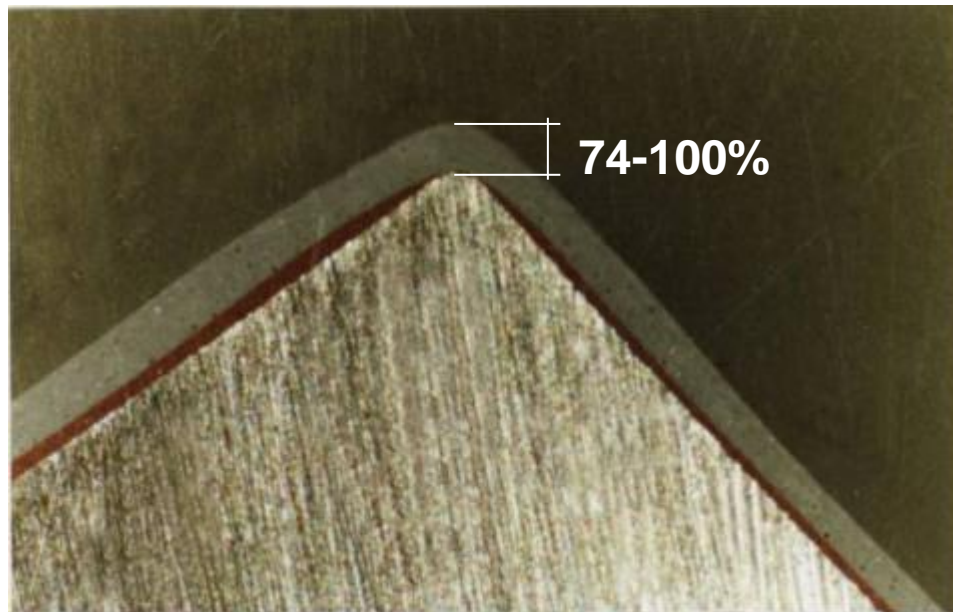


**Hydroblasted  
Weld Seam**

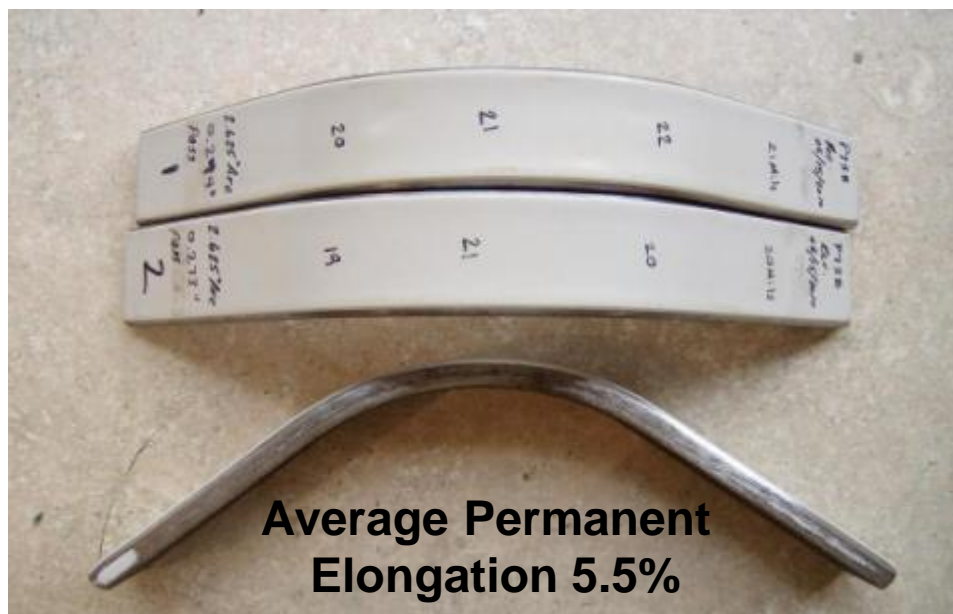


# Edge Retentive

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# Flexibility

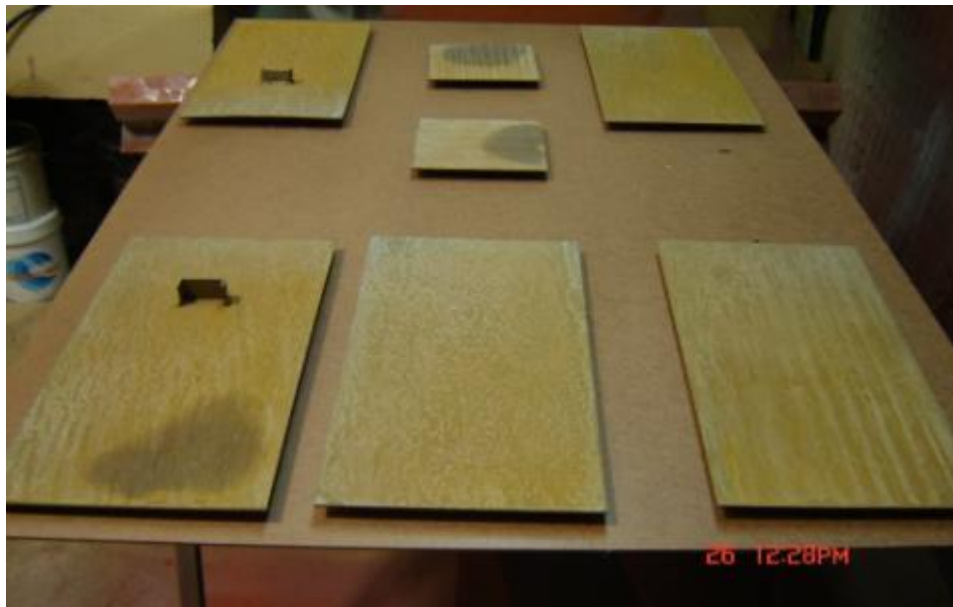


NACE RP0394-2002, @ 475-550 microns



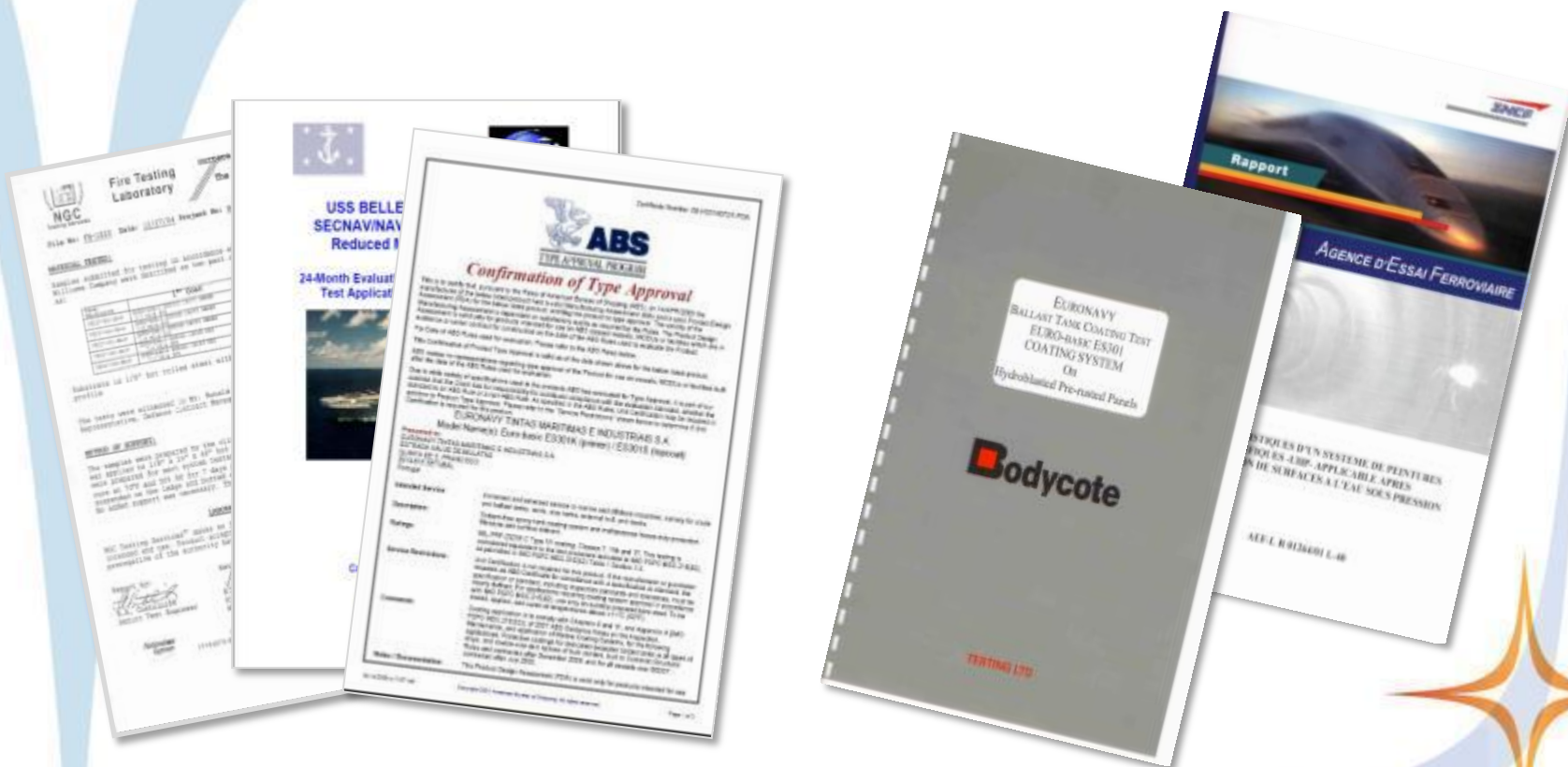
# IMO PSPC Testing

over UHP water jetted steel plates



Photos from independent lab test report

## Supporting Data





# Field Evidence

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Crude Oil Tank after 5 years service



# Field Evidence

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FPSO external hull after 4 years service



# Field Evidence

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FPSO ballast tank after 4 years service

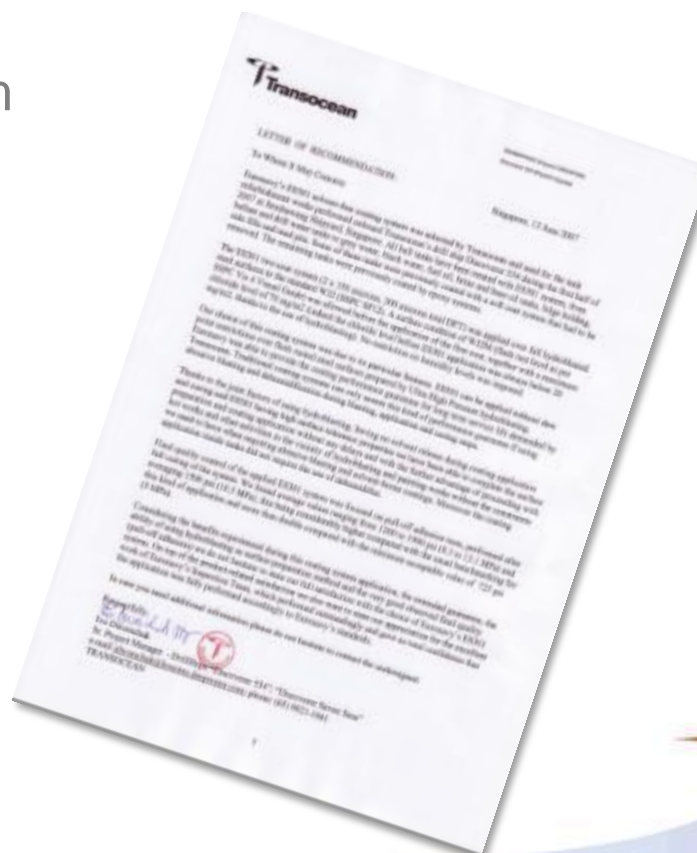






# Field Evidence

## Letter of Recommendation from Transocean D534





# Field Evidence

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## Aker Smart 1

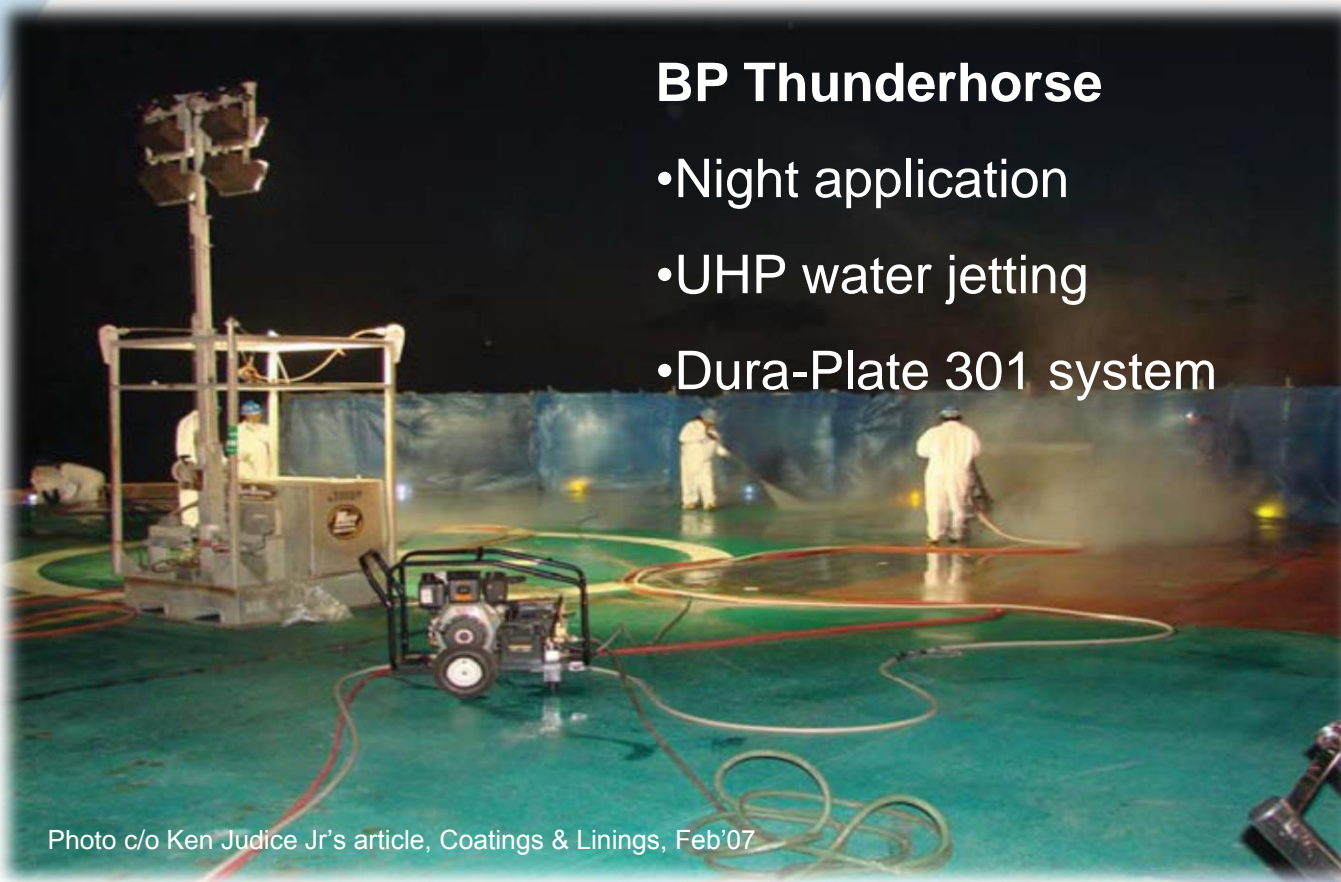
- UHP water jetting
- Dura-Plate 301 system
- Pull off adhesion 2850psi





# Field Evidence

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## **BP Thunderhorse**

- Night application
- UHP water jetting
- Dura-Plate 301 system

Photo c/o Ken Judice Jr's article, Coatings & Linings, Feb'07



# Field Evidence

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## FPSO Conversion

- 3 days continuous blasting
- Wash & paint in one go
- Dura-Plate 301 system

# Field Evidence



## External Hull

- Night application
- Over flash rust
- Dura-Plate 301 system



# The Solution

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## **Dura-Plate 301**

- ✦ Save time
- ✦ Improve performance
- ✦ Lower environmental impact
- ✦ Safer application
- ✦ Reduced Costs



# The Series

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## Dura-Plate 301K

- ✦ Ultra high Surface & Humidity Tolerant primer
- ✦ Applies from 15°C

## **NEW** Dura-Plate 301W

- ✦ Ultra high Surface & Humidity Tolerant primer
- ✦ Winter grade version
- ✦ Low temperature curing down to -5°C



# Application

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- ✦ Can be applied without dew point restrictions over wet steel surfaces
- ✦ Can be applied over steel prepared by hydro-blasting, grit blasting or mechanical tooling

| Surface Prep         | Standard                              |
|----------------------|---------------------------------------|
| Abrasive Blasting    | Sa2 ISO 8501-1:2007 (SSPC-SP6/NACE 3) |
| Hydroblasting        | WJ-2M (SSPC SP12 – VIS4(I) / NACE     |
| Mechanically Treated | ST3 ISO 8501-1:2007 (SSPC-SP3)        |





# Value Proposition

**Better  
Performance**

**Cleaner  
Environment**

**Saves  
Costs & Time**

**Improves  
Safety**

| Features                                 | Benefits   |  |  |  |
|--|--|--|--|--|
| <b>Humidity Tolerant</b>                 | <ul style="list-style-type: none"> <li>Reduced risk of failure associated with humidity levels</li> </ul>                              | <ul style="list-style-type: none"> <li>Enables the use of UHP, thus reducing the environmental impact of abrasive use and disposal.</li> </ul> | <ul style="list-style-type: none"> <li>No wet blast primer needed</li> <li>No dehumidification needed</li> <li>Extended painting window</li> </ul> | <ul style="list-style-type: none"> <li>Enables the use of UHP, thus reducing the health and safety hazards associated with abrasive blasting.</li> </ul> |
| <b>Surface Tolerant</b>                  | <ul style="list-style-type: none"> <li>Excellent adhesion over flash rust, aged existing coatings and power tooled surfaces</li> </ul> |  |  |  |
| <b>Very high adhesion</b>                | <ul style="list-style-type: none"> <li>Extended durability.</li> <li>Compatible with low roughness profile.</li> </ul>                 |  | <ul style="list-style-type: none"> <li>Reduces coating failure &amp; need for rework on areas with low profile roughness</li> </ul>                |  |
| <b>Compatible with UHP water jetting</b> | <ul style="list-style-type: none"> <li>Reduced risk of chloride contamination.</li> </ul>  |  | <ul style="list-style-type: none"> <li>Saves the need for abrasive blasting</li> </ul>   |  |
| <b>Cold curing</b>                       | <ul style="list-style-type: none"> <li>Low temp application down to -5°C (301W)</li> </ul>   |  | <ul style="list-style-type: none"> <li>Extend coating season</li> </ul>  |  |





# Any Questions?

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# S-W Portfolio

**DURA-PLATE 301W** sits along existing Epigrip technology to complete our “good, better, best” offer with a market leading low temperature curing, surface & humidity tolerant coating.

|                          | DURA-PLATE 301W | Epigrip M922        | Epigrip M922M       | Epigrip M902/5      |
|--------------------------|-----------------|---------------------|---------------------|---------------------|
| <b>VS %</b>              | 97% (±3%)       | 83% (±4%)           | 83% (±4%)           | 75% (±4%)           |
| <b>Application Temp</b>  | -5°C – 20°C     | >5°C                | >5°C                | >0°C                |
| <b>Performance</b>       | ★★★★            | ★★★★                | ★★                  | ★                   |
| <b>Surface Tolerant</b>  | ★★★★            | ★                   | ★★★★                | ★★                  |
| <b>Humidity Tolerant</b> | ★★★★            | ★                   | ★<br>(brush only)   | ★★<br>(brush only)  |
| <b>Dew Point Limit</b>   | No limit        | 3°C above substrate | 3°C above substrate | 3°C above substrate |
| <b>Film Build</b>        | 100µm-300µm     | 200µm-1000µm        | 200µm-1000µm        | 75µm-150µm          |