Protective & Marine Coatings

DURA-PLATE® UHS
CLEAR LAMINATE

PART A	B62C210	CLEAR
PART B	B62V210	HARDENER
PART B	B62V211 LOW TEMPERATURE HARDENER	

Revised: October 29, 2018

PRODUCT INFORMATION

TRM.36

PRODUCT DESCRIPTION

DURA-PLATE UHS is an ultra high solids epoxy amine engineered specifically for use as a laminating system in immersion service in ballast tanks, oil tanks, and refined fuel storage tanks. The high build properties of Dura-Plate UHS Clear provide superior protection compared to conventional epoxies.

- Airless Spray and backroll
- High flash point, >200°F (93°C)
- Low odor
- Use with 1½ oz. fiberglass mat
- Low Temperature Hardener available for applications from 40°F to 77°F (4.5°C to 25°C)

PRODUCT CHARACTERISTICS

Finish:	Gloss
Color (based on Hardener):	Clear
Volume Solids:	98% ± 2%, mixed
Weight Solids:	98% ± 2%, mixed
VOC (EPA Method 24):	
with B62V210 Hardener	<150 g/L; 1.25 lb/gal, mixed
with B62V211 Hardener	<100 g/L; 0.83 lb/gal, mixed
Mix Ratio:	3.36:1 by volume

Recommended Spreading Rate per coat:

For each 100 sq ft of surface area, the approximate requirements for Laminate work is:

2.5 to 3.2 gallons (9.45 to 12.10L) mixed material (40-50 mils / 1000-1250 microns dft with glass mat)

10.5 lbs of glass mat

Recommended approximate DFT - total system:

50-60 mils (1250-1500 microns) - single laminate

95-110 mils (2375-2750 microns) - double laminate

Drying Schedule:

With B62V210	@ 40°F/4.5°C	@ 55°F/13°C	@ 77°F/25°C *50% RH*
To touch:	N/R	12 hours	5 hours
To handle:	N/R	48 hours	16 hours
To recoat:			
minimum:	N/R	48 hours	16 hours
maximum:	N/R	21 days	14 days
Cure to service:	N/R	10 days	4 days
Pot Life*:	N/R	30-45 minutes	20-30 minutes
*Dependent upon temperature and mass			
Sweat-in-time:	N/R	15 minutes	None

With B62V211	@ 40°F/4.5°C	@ 55°F/13°C	@ 77°F/25°C *50% RH*
To touch:	24 hours	5 hours	3 hours
To handle:	48 hours	24 hours	8 hours
To recoat:			
minimum:	48 hours	24 hours	8 hours
maximum:	30 days	21 days	14 days
Cure to service:	7 days	5 days	3 days

Material should be at least 50°F (10°C) for optimal performance.

If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.

Pot Life*:	20 minutes	20 minutes	10 minutes
*Dependent upon temperature and mass			
Sweat-in-Time:	5 minutes	None	None

PRODUCT CHARACTERISTICS (CONT'D)

Shelf Life:	36 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	>200°F (93°C), PMCC, mixed
Reduction:	Not recommended
Clean Up:	MEK, R6K10

RECOMMENDED USES

- As a tank bottom renewal system for ballast tanks, crude oil tanks, diesel fuel tanks and other refined petroleum products.
- Ideal for use over heavily pitted internal tank bottoms.
- Provides an economical alternative to new steel tank bottoms.
- As a secondary containment system for refined petroleum products and select chemicals.
- Ballast tank interiors
- Oil storage tank interiors
- Refined fuel storage tank interiors
- Pulp and paper mills
- Water and waste treatment plants
- Where high film build properties are required
- Suitable for use with cathodic protection systems
- Designed to comply with API RP652

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

Primer: 1 ct. Dura-Plate UHS Primer @ 4.0-8.0 mils (100-200 microns) dft

Intermediate: 1 ct. Dura-Plate UHS Clear Laminate @ 40.0-50.0 mils (1000-1250 microns) dft (with glass mat)

Finish: 1 ct. Dura-Plate UHS Finish @ 12.0 mils (300 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Adhesion (without Glass Mat)	ASTM D4541	1000 psi, minimum
Direct Impact Resistance	ASTM D2794	35 in. lb.
Dry Heat Resistance	ASTM D2485	250°F (121°C)
Flexibility (without Glass Mat)	ASTM D522, 180° bend, 1" mandrel	Passes, 9.7% elongation
Flexural Strength	ASTM D790	11,800 psi
Pencil Hardness	ASTM D3363	3H
Tensile Strength	ASTM D638	10,600 psi

IMMERSION (Ambient temperature):

When top-coated with the appropriate amine or novolac epoxy gel coat, Dura-Plate UHS Clear Laminate is recommended for a wide range of petrochemical cargos. For specific chemical resistance of the installed system, please review product data sheets and/or the chemical resistance guide for the specified finish coat.

continued on back

Protective & Marine Coatings

DURA-PLATE® UHS
CLEAR LAMINATE

PART A	B62C210	CLEAR
PART B	B62V210	HARDENER
PART B	B62V211 LOW TEMPERATURE HARDENER	

Revised: October 29, 2018

PRODUCT INFORMATION

TRM.36

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Steel, Laminate System:			
1 ct.	Dura-Plate UHS Primer	4.0-8.0	(100-200)
1 ct.	Dura-Plate UHS Clear Laminate with glass mat	40.0-50.0	(1000-1250)
1 ct.	Dura-Plate UHS Finish	10.0-12.0	(250-300)
Steel, Laminate System:			
1 ct.	Dura-Plate UHS Clear Laminate with glass mat (for use with DH equipment)	40.0-50.0	(1000-1250)
1 ct.	Dura-Plate UHS Finish	10.0-12.0	(250-300)
Steel, Laminate System:			
1 ct.	Copoxy Shop Primer (as required for blast hold primer)	1.0-1.5	(25-40)
1 ct.	Steel-Seam FT910 as required for filling pits		
1 ct.	Dura-Plate UHS Clear Laminate with glass mat	40.0-50.0	(1000-1250)
1 ct.	Dura-Plate UHS Finish	10.0-12.0	(250-300)
Steel, Laminate System:			
1 ct.	Dura-Plate UHS Primer	4.0-8.0	(100-200)
1 ct.	Dura-Plate UHS Clear Laminate with glass mat	40.0-50.0	(1000-1250)
1-2 cts.	Phenicon HS	5.0-6.0	(125-150)
Steel, Laminate System (heavily pitted areas):			
1 ct.	Dura-Plate UHS Primer	4.0-8.0	(100-200)
1 ct.	Steel-Seam FT910 as required for filling pits, transitioning sharp edges and weld seams		
1 ct.	Dura-Plate UHS Clear Laminate with glass mat	40.0-50.0	(1000-1250)
1-2 cts.	Shelcote II	5.0-6.0	(125-150)

Refer to Application Bulletin for treatment of pitted tank bottoms.

Concrete/Masonry:

1 ct.	Corobond 100 Epoxy Primer/Sealer apply primer to achieve uniform hiding, appearance, and complete wetting of the concrete surface. Coating will be partially absorbed into the concrete. Roll out any puddles.	4.0-6.0	(100-150)
1 ct.	Dura-Plate UHS Clear Laminate with glass mat	40.0-50.0	(1000-1250)
1-2 cts.	Phenicon HS	5.0-6.0	(125-150)

The systems listed above are representative of the product's use, other systems may be appropriate.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

Iron & Steel:

Atmospheric:	SSPC-SP6/NACE 3, 2-3 mil (50-75 micron) profile optimal
Immersion:	SSPC-SP10/NACE 2, 2-3 mil (50-75 micron) profile optimal

Concrete & Masonry:

Atmospheric:	SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 4-6
Immersion:	SSPC-SP13/NACE 6-4.3.1 or 4.3.2

Surface Preparation Standards

Condition of Surface		ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal		Sa 3	Sa 3	SP 5	1
Near White Metal		Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast		Sa 2	Sa 2	SP 6	3
Brush-Off Blast		Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	C St 2	SP 2	-
	Pitted & Rusted	D St 2	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature (air, surface):

B62V210 Hardener	50°F (10°C) minimum, 110°F (43°C) maximum
B62V211 Hardener	40°F (4.5°C) minimum, 77°F (25°C) maximum
	At least 5°F (2.8°C) above dew point

Material should be 70°F (21°C) to 85°F (29°C) for optimal performance.

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:

Part A:	3.36 gallons (12.7L) in a 5 gallon (18.9L) container
Part B:	1 gallon (3.78L) container

Weight: 9.42 ± 0.2 lb/gal ; 1.13 Kg/L, mixed

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Protective & Marine Coatings

DURA-PLATE® UHS
CLEAR LAMINATE

PART A	B62C210	CLEAR
PART B	B62V210	HARDENER
PART B	B62V211 LOW TEMPERATURE HARDENER	

Revised: October 29, 2018

APPLICATION BULLETIN

TRM.36

SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel, Atmospheric Service:
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-3 mils / 50-75 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Iron & Steel, Immersion Service:
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-3 mils / 50-75 microns). Remove all weld spatter. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Concrete and Masonry
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 4-6. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910. Primer required.

Follow the standard methods listed below when applicable:
ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

Concrete, Immersion Service:
For surface preparation, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 1.3.2 or ICRI No. 310.2R, CSP 4-6.

Surface Preparation Standards

	Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal		Sa 3	Sa 3	SP 5	1
Near White Metal		Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast		Sa 2	Sa 2	SP 6	3
Brush-Off Blast		Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	C St 2	SP 2	-
	Pitted & Rusted	D St 2	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature (air, surface):

B62V210 Hardener	50°F (10°C) minimum, 110°F (43°C) maximum
B62V211 Hardener	40°F (4.5°C) minimum, 77°F (25°C) maximum
	At least 5°F (2.8°C) above dew point

Material should be 70°F (21°C) to 85°F (29°C) for optimal performance.

Relative humidity: 85% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Reduction .....Not recommended

Clean Up .....MEK, R6K10

Airless Spray
Unit.....74:1 Pump, minimum
Pressure.....6000 psi minimum
Hose.....3/8" ID
Tip .....019" - .021"
Filter.....30 mesh

In order to avoid blockage of spray equipment and hose, flush equipment with MEK, R6K10 at least once every 30 minutes when using B62V210 Hardener and after each kit when using the Low Temperature Hardener, and before periods of extended downtime.

Plural Component Equipment .....Acceptable

Brush .....For stripe coating and repair only
Brush.....Nylon/Polyester or Natural Bristle

Roller .....For stripe coating and repair only
Cover .....3/8" woven with solvent resistant core

If specific application equipment is not listed above, equivalent equipment may be substituted.

continued on back

Protective & Marine Coatings

DURA-PLATE® UHS
CLEAR LAMINATE

PART A	B62C210	CLEAR
PART B	B62V210	HARDENER
PART B	B62V211 LOW TEMPERATURE HARDENER	

Revised: October 29, 2018

APPLICATION BULLETIN

TRM.36

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Mix contents of each component thoroughly using low speed power agitation. Make certain no pigment remains on the bottom or the sides of the can. Then combine 3.36 parts by volume of Part A with one part by volume of Part B. Components are premeasured. Thoroughly agitate the mixture with power agitation.

For vertical applications, add 1/2 to 1-1/2 lbs of fumed silica (e. g.: Cabot's Cab-O-Sil M5 or Degussa's Aerosil 200), to 3.36 gallons (12.7L) of Part A while mixing with power agitation. Mix thoroughly, then add 1 gallon (3.78L) of Part B.

To ensure that no unmixed material remains on the sides or bottom of the cans after mixing, visually observe the container by pouring the material into a separate container.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

For each 100 sq ft of surface area, the approximate requirements for Laminate work is:

2.5 to 3.2 gallons (9.45 to 12.10L) mixed material (40-50 mils / 1000-1250 microns dft with glass mat)

10.5 lbs of glass mat

Recommended approximate DFT - total system:

50-60 mils (1250-1500 microns) - single laminate

95-110 mils (2375-2750 microns) - double laminate

Drying Schedule:

With B62V210	@ 40°F/4.5°C	@ 55°F/13°C	@ 77°F/25°C *50% RH*
To touch:	N/R	12 hours	5 hours
To handle:	N/R	48 hours	16 hours
To recoat:			
minimum:	N/R	48 hours	16 hours
maximum:	N/R	21 days	14 days
Cure to service:	N/R	10 days	4 days
Pot Life*:	N/R	30-45 minutes	20-30 minutes
*Dependent upon temperature and mass			
Sweat-in-time:	N/R	15 minutes	None

With B62V211	@ 40°F/4.5°C	@ 55°F/13°C	@ 77°F/25°C *50% RH*
To touch:	24 hours	5 hours	3 hours
To handle:	48 hours	24 hours	8 hours
To recoat:			
minimum:	48 hours	24 hours	8 hours
maximum:	30 days	21 days	14 days
Cure to service:	7 days	5 days	3 days

Material should be at least 50°F (10°C) for optimal performance.

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Pot Life*:	20 minutes	20 minutes	10 minutes
*Dependent upon temperature and mass			
Sweat-in-Time:	5 minutes	None	None

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with MEK, R6K10. Clean tools immediately after use with MEK, R6K10. Follow manufacturer's safety recommendations when using any solvent.

PERFORMANCE TIPS

Repair of Pitted Tank Bottoms
Extensive, deep pitting:
Options:
Option 1 ....Apply a full wet coat, by spray application, of Dura-Plate UHS Primer. Follow with rubber squeegee to work material into and fill the pitted areas. After recommended drying time, apply a full coat of Dura-Plate UHS Clear Laminate with glass mat at recommended film thickness.
Option 3 ....Weld new steel plates, or use puddle welds, as required to repair pitted areas. Coat areas as recommended.
Shallow pitting, isolated areas:
Options:
Option 1 ....Same as number 1 above.
Option 2 ....Apply Steel-Seam FT910 Patch as required to fill the pitted areas. Coat areas as recommended.

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.
When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross-coat spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.
No reduction of material is recommended as this can affect film build, appearance, and adhesion.

Additional coats of material may be required on vertical surfaces to achieve adequate film build.
Do not mix previously catalyzed material with new.
Do not apply the material beyond recommended pot life.

In order to avoid blockage of spray equipment and hose, flush equipment with MEK, R6K10 at least once every 30 minutes when using the B62V210 Hardener and after each kit when using the Low Temperature Hardener, and before periods of extended downtime.

For Immersion Service: (if required) Holiday test in accordance with ASTM D5162 for steel, or ASTM D4787 for concrete.

Recommended for chopped glass application. Refer to Dura-Plate UHS Chop Glass Installation Procedures.

Refer to Product Information sheet for additional performance characteristics and properties.

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.