**NAVSEA REVIEWED ASTM F-718**

# The Sherwin-Williams Company

# Sherwin-Williams Fast Clad ER

## PRODUCT DESIGNATIONS

**Part A: B62L230 OAP Blue, B62W230 White, B62RW230 Red Oxide, B62AW230 Haze Gray**

**Part B: B62V230 Clear, B62GV230 Light Green, B62AV230 Light Gray**

MIL-PRF-23236

If this product is to be applied as part of a coating system, all components of the system must be as listed on the QPL.

This NAVSEA-REVIEWED ASTM F-718 data sheet is the only data sheet approved for use when utilizing this coating for U.S. Navy preservation projects. NAVSEA's review covers only the application process for the material. The review does not denote the material as a qualified product, nor does it constitute an approval for purchase/procurement of the material. For products on the Qualified Products List (QPL) for this MILSPEC, please refer to https://qpldocs.dla.mil/search/default.aspx.

Questions regarding modifications or updates of this ASTM F-718 shall be directed toward:

NSWCPD

NSWCPD_ASTM_F718.fct@navy.mil

SHIPBUILDERS AND MARINE PAINTS AND COATINGS PRODUCT/PROCEDURE DATA SHEET

CONTINUATION SHEET USED: ■ YES ☐ NO

Date: Sept 14, 2018 Rev.

I. GENERIC TYPE AND DESCRIPTION: Sherwin-Williams Fast Clad ER

Specification Number: MIL-PRF-23236
NOTE: For Type/Grade/Class/Application information see QPL-23236

II. MANUFACTURERS DATA:

(a) MANUFACTURER: The Sherwin-Williams Company

(b) PRODUCT DESIGNATION: Part A: B62L230 OAP Blue, B62W230 White, B62RW230 Red Oxide, B62AW230 Haze Gray
Part B: B62V230 Clear, B62GV230 Light Green, B62AV230 Light Gray

(c) COLOR(S): OAP Blue, White, Light Green, Light Gray, Red Oxide (20109), Haze Gray (26270)

(d) USES: Ballast tanks, fuel tanks, CHT, compensated fuel tanks, bilges, single coat, rapid return to service, freeboard and topside anti-corrosive

(e) TECHNICAL SERVICE REPRESENTATIVE: 1-877-877-7115 or your local Sherwin-Williams Representative

(f) NOT INTENDED FOR USE ON: Potable water tanks, well deck overheads

III. PROPERTIES:

(a) PERCENT VOLUME SOLIDS (ASTM D2697): 98% $\pm$ 2%

(b) PERCENT WEIGHT SOLIDS (ASTM D2369): 98% $\pm$ 2%

(c) FLASH POINT (ASTM D93): 230ºF

(d) WEIGHT PER VOLUME (ASTM D1475): 11.7 $\pm$ 0.3 lbs per mixed gallon

(e) PERCENT EDGE RETENTION (MIL-PRF-23236 Appendix A): Greater than 70%

(f) SHELF LIFE: 24 months

(g) VISCOSITY (ASTM D562): COMPONENT A: 85-135 KU's (paste paddle)

COMPONENT B: 110-140 KU's (regular paddle)

MIXED: N/A due to short pot-life and thus continual viscosity change

(h) PACKAGING: 10 gallon kit. Component A and Component B each packaged in 5 gallon pails

(i) NUMBER OF COMPONENTS: 2

(j) GLOSS (ASTM D523): High gloss (>80)

(k) STORAGE REQUIREMENTS: TEMPERATURE: MIN. 40ºF MAX. 100ºF

ADDITIONAL PAINT STORAGE REQUIREMENTS: Protected indoor storage out of sun, rain, etc….

(l) VOLATILE ORGANIC COMPOUNDS (EPA TEST METHOD 24): < 85 g/L

(m) WEIGHT PER AREA OF DRY FILM AT 1 MIL THICKNESS: 0.0073 lbs per square foot per mil

(n) SPECIAL PROPERTIES: Rapid cure, high build, edge retentive, single coat epoxy.

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IV. SURFACE PREPARATION MINIMUM REQUIREMENTS:

(a) INITIAL: SSPC-SP10 (Near White Metal Abrasive Blast) or SSPC-SP WJ-2 M /NACE WJ-2/M (UHPWJ Very Thorough Cleaning, Moderate Flash Rust) or SSPC-SP 10 (WAB) M/NACE WAB-2/M, (Near-White Metal Wet Abrasive Blast Cleaning, Moderate Flash Rust).

(b) TOUCH-UP: SSPC-SP11 Power Tool Clean to Bare Metal areas requiring touch-up. Clean and abrade 1" to 2" of coating surface adjacent to touch-up areas with 80 grit sandpaper (or equivalent) to create tie-in and promote adhesion prior to recoating.

(c) PROFILE (ASTM D4417, Methods B or C): MIN. 2 mils MAX. 4 mils

(d) SPECIAL INSTRUCTIONS: 2 - 4 mil profile recommended, up to 5 mil profile acceptable.

(e) PRIMER REQUIREMENTS: Prime either with itself or with Fast Clad Primer.

(f) MAXIMUM ALLOWABLE CONDUCTIVITY (Conductivity samples shall be collected using a product that meets the requirements of NACE SP0508-2010, "Methods of Validating Equivalence to ISO 8502-9 on Measurement of the Levels of Soluble Salts."):

For immersed areas maximum conductivity is 30 micro-siemens/cm. For non-immersed areas maximum conductivity is 70 micro-siemens/cm.

(g) MAXIMUM DEGREE OF FLASH RUSTING ALLOWED: Moderate as defined in SSPC-SP WJ-2 M /NACE WJ-2/M (UHPWJ Very Thorough Cleaning, Moderate Flash Rust) or SSPC-SP 10 (WAB) M/NACE WAB-2/M, (Near-White Metal Wet Abrasive Blast Cleaning, Moderate Flash Rust).

SPECIAL SAFETY PRECAUTIONS:

See Material Safety Data Sheet or Globally Harmonized System Safety Data Sheet

V. MIXING PROCEDURES:

(a) MIXING RATIOS BY WEIGHT: N/A
BY VOLUME: 1:1

(b) INDUCTION TIME: None

(c) RECOMMENDED CLEANING SOLVENT (NO THINNING ALLOWED): MAK, R6K10, or R7K104

(d) POT LIFE:

20 minutes @ 40°F
7 minutes @ 77°F
<4 minutes @ 110°F

(e) SPECIAL INSTRUCTIONS: Pot-life is 7 minutes at 77ºF. Mix contents of individual components thoroughly using power agitation. Make certain no pigments remain on the bottom or sides of the cans. When applied via plural component pump, final mixing will be performed in the static mixer. When using kits, mix thoroughly using power agitation and then use coating immediately ensuring the pot-life is not exceeded.

SHIPBUILDERS AND MARINE PAINTS AND COATINGS PRODUCT/PROCEDURE DATA SHEET

CONTINUATION SHEET USED: ■ YES ☐ NO

Date: Sept 14, 2018 Rev.

VI. APPLICATION:

(a) ENVIRONMENTAL LIMITATIONS:

SUBSTRATE TEMPERATURE: MIN. 35°F MAX. 110°F
AMBIENT TEMPERATURE: MIN. 35°F MAX. 110°F
MINIMUM SUBSTRATE TEMPERATURE DIFFERENCE ABOVE THE DEW POINT: 5°F
MAXIMUM PERCENT RELATIVE HUMIDITY: 85%

(b) FILM THICKNESS (SSPC PA2-73T):

PER COAT (tanks, voids, and freeboard/topside at 20-30 mils):
WET MIN. 20 mils WET MAX. 30 mils
DRY MIN. 20 mils DRY MAX. 30 mils

TOTAL SYSTEM:
DRY MIN. 20 mils DRY MAX. 30 mils

PER COAT (freeboard and topside at 10-12 mils):
WET MIN. 10 mils WET MAX. 12 mils
DRY MIN. 10 mils DRY MAX. 12 mils

TOTAL SYSTEM:
DRY MIN. 10 mils DRY MAX. 12 mils

(c) DRY TIMES (ASTM D1640): See attached Figures 1 - 4 for Fast Clad ER used in tanks and voids (topcoating or touch-up with itself). See attached Figures 5-6 for use of Fast Clad ER as freeboard and topside anti-corrosive to be overcoated with PXLE-80 HAPS Free polysiloxane.

(d) EQUIPMENT REQUIREMENTS: Heated plural component pump required for airless spray applications, not for touch-up. Heated lines are not required.

(e) SPECIAL INSTRUCTIONS:

Material recommended to be 95°F to 105°F at the gun for optimal application with a range of 85°F to 120° F acceptable based on tip size and pump pressure. Start at lower temperatures and raise temperature as necessary to achieve proper atomization. Do not exceed material temperatures of 130°F either at the gun or in the material hoppers. Excessive material temperatures will likely result in the coating setting and seizing the line/gun. Also, excessive material temperatures can potentially compromise adhesion of the coating to the substrate.

To ensure proper mixing of the two components, it recommended that material temperatures in the hoppers be maintained within 20°F relative to one another. For example, Part A material hopper temperature is 95°F. Part B material hopper temperature recommended to be between 75°F and 115°F.

Brush coat touch up and stripe coating may be accomplished using DuraPlate UHS (primer or topcoat), NovaPlate UHS (primer or topcoat), or EuroNavy ES301K where allowed by class approval.

IF OVERCOAT WINDOW HAS BEEN EXCEEDED FOR CRITICAL APPLICATIONS:

Clean surface of coating per SSPC-SP1 and allow surface to dry. Using 80 grit sandpaper or equivalent, aggressively abrade surface to promote adhesion. Clean surface of coating per SSPC-SP1 and allow to dry completely prior to applying next coat.

IF OVERCOAT WINDOW HAS BEEN EXCEEDED FOR NON-CRITICAL APPLICATIONS:

Clean surface of coating per SSPC-SP1 and allow surface to dry. Using 80 grit sandpaper or equivalent, aggressively abrade surface to promote adhesion. Clean surface of coating per SSPC-SP1 and allow to dry completely prior to applying next coat.

SHIPBUILDERS AND MARINE PAINTS AND COATINGS PRODUCT/PROCEDURE DATA SHEET

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ADDITIONAL DATA/INSTRUCTIONS:
I. GENERIC TYPE AND DESCRIPTION:

II. MANUFACTURERS DATA:

III. PROPERTIES:

Note that viscosity is dependent upon temperature, type of measuring equipment, type of paddle or spindle, sample history, and test container size. Detailed test criteria available upon request.

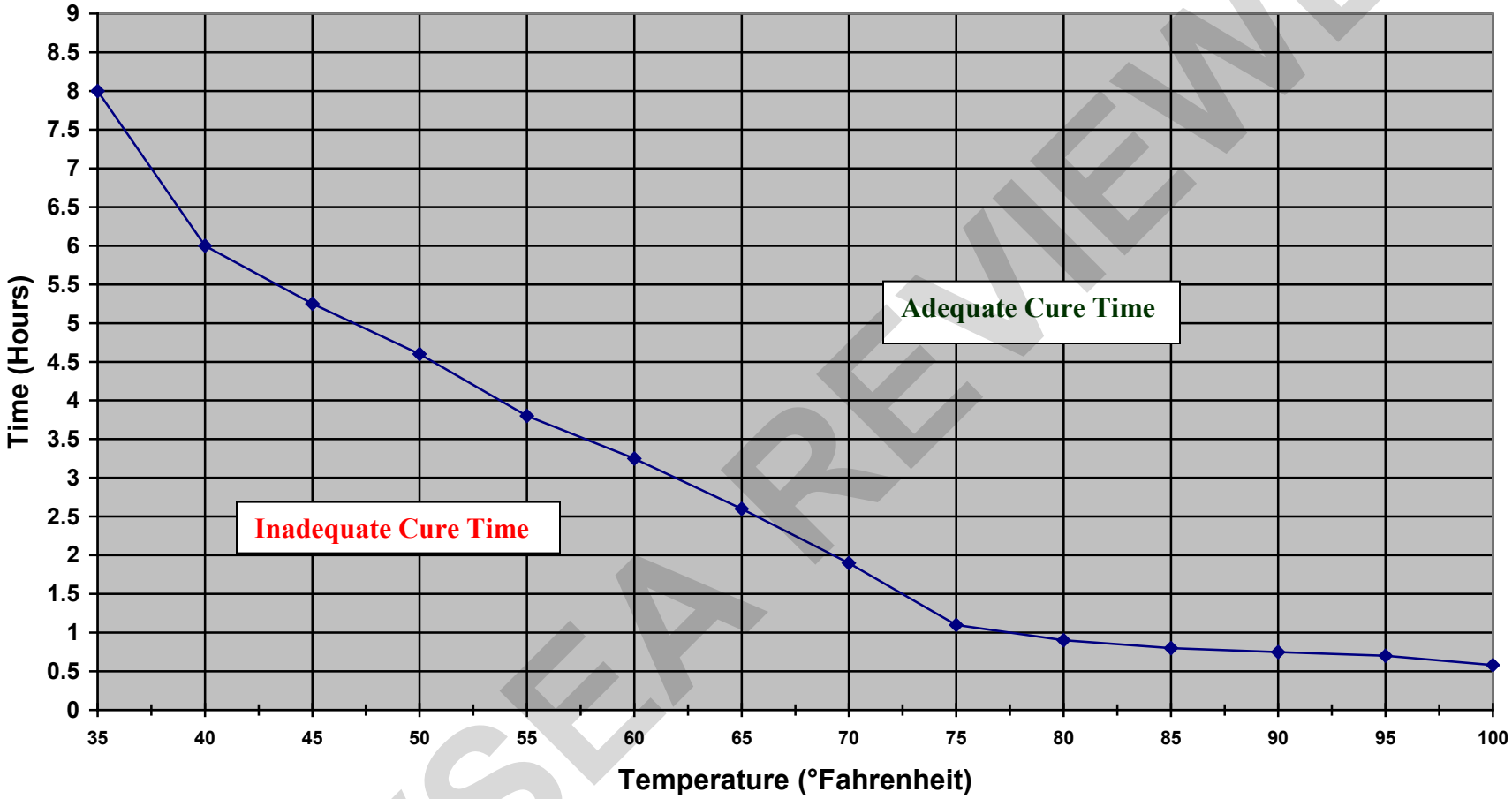
IV. SURFACE PREPARATION MINIMUM REQUIREMENTS:

V. MIXING PROCEDURES:

VI. APPLICATION:

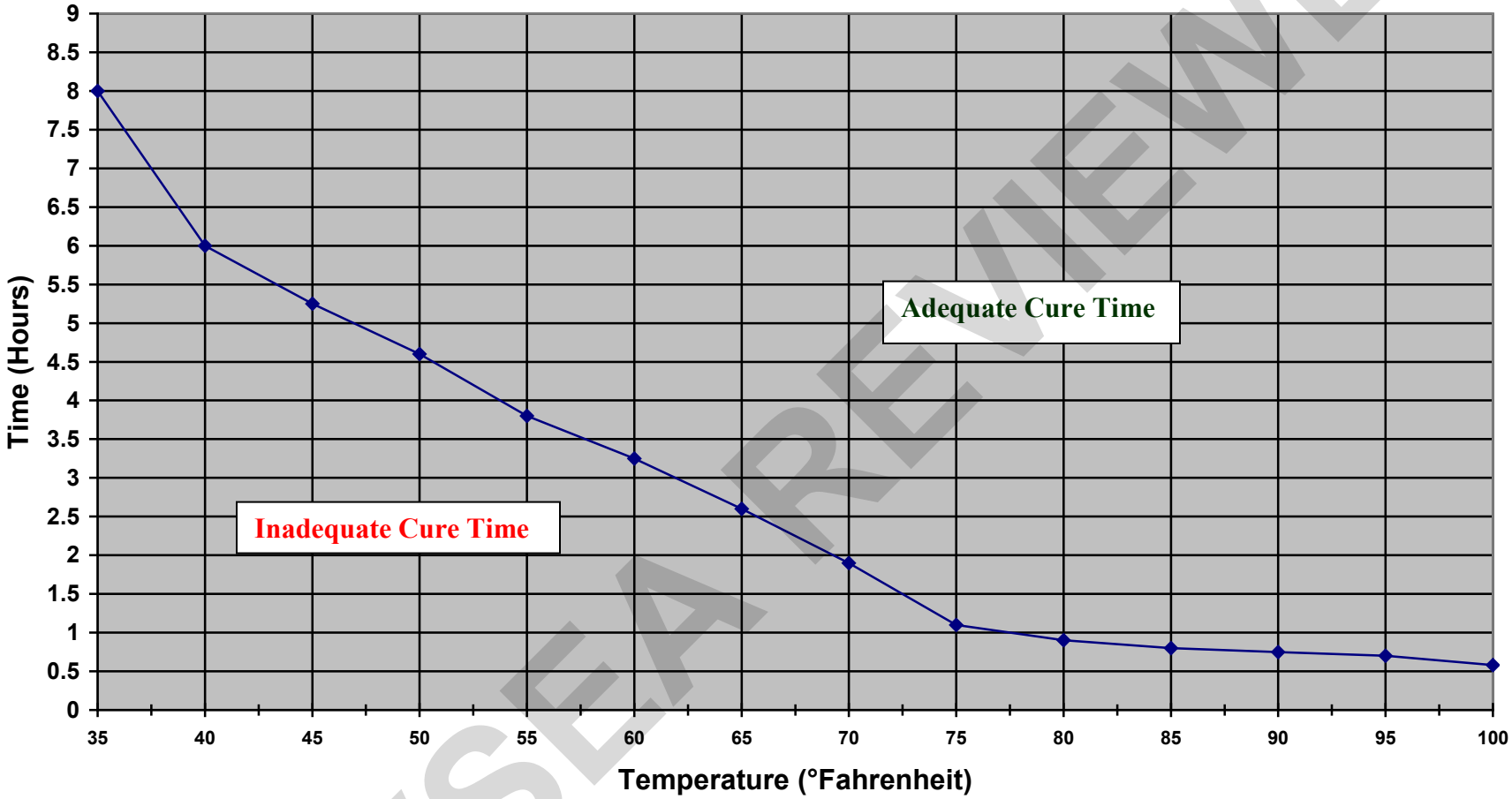
Note that Fast Clad ER is also qualified for tanks and voids as a multiple coat system comprised of 9-11 mils primer, 9-11 mils stripe coat, and 9-11 mils topcoat.

## Figure 1. Fast Clad ER Minimum Cure to Touch Time



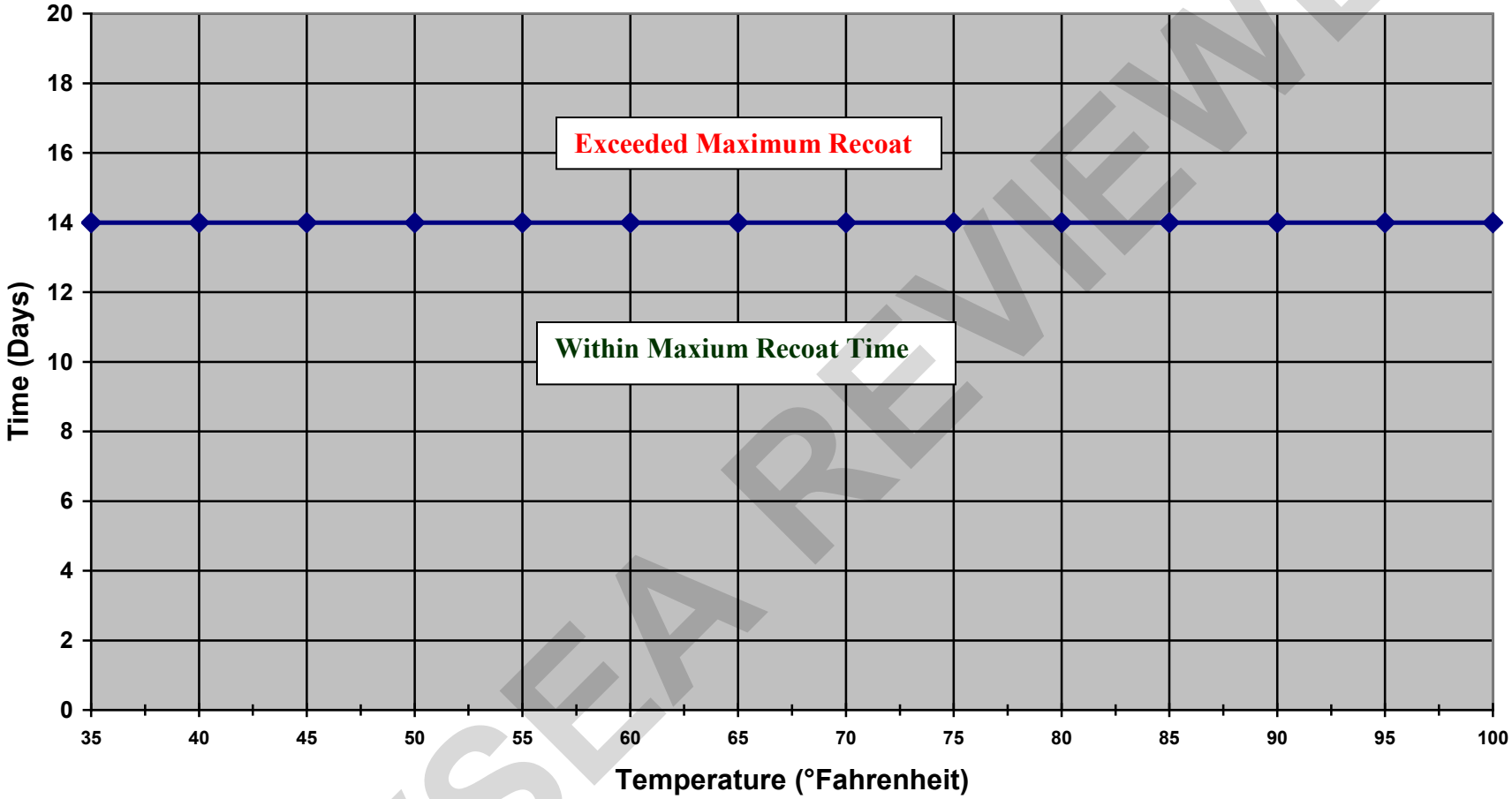

*The above curing schedule is at 20.0 mils and 50% relative humidity.*
*Drying time is temperature, humidity, and film thickness dependent.*
*The above information is provided for guideline use only.*

## Figure 2. Fast Clad ER Minimum Cure to Recoat Time



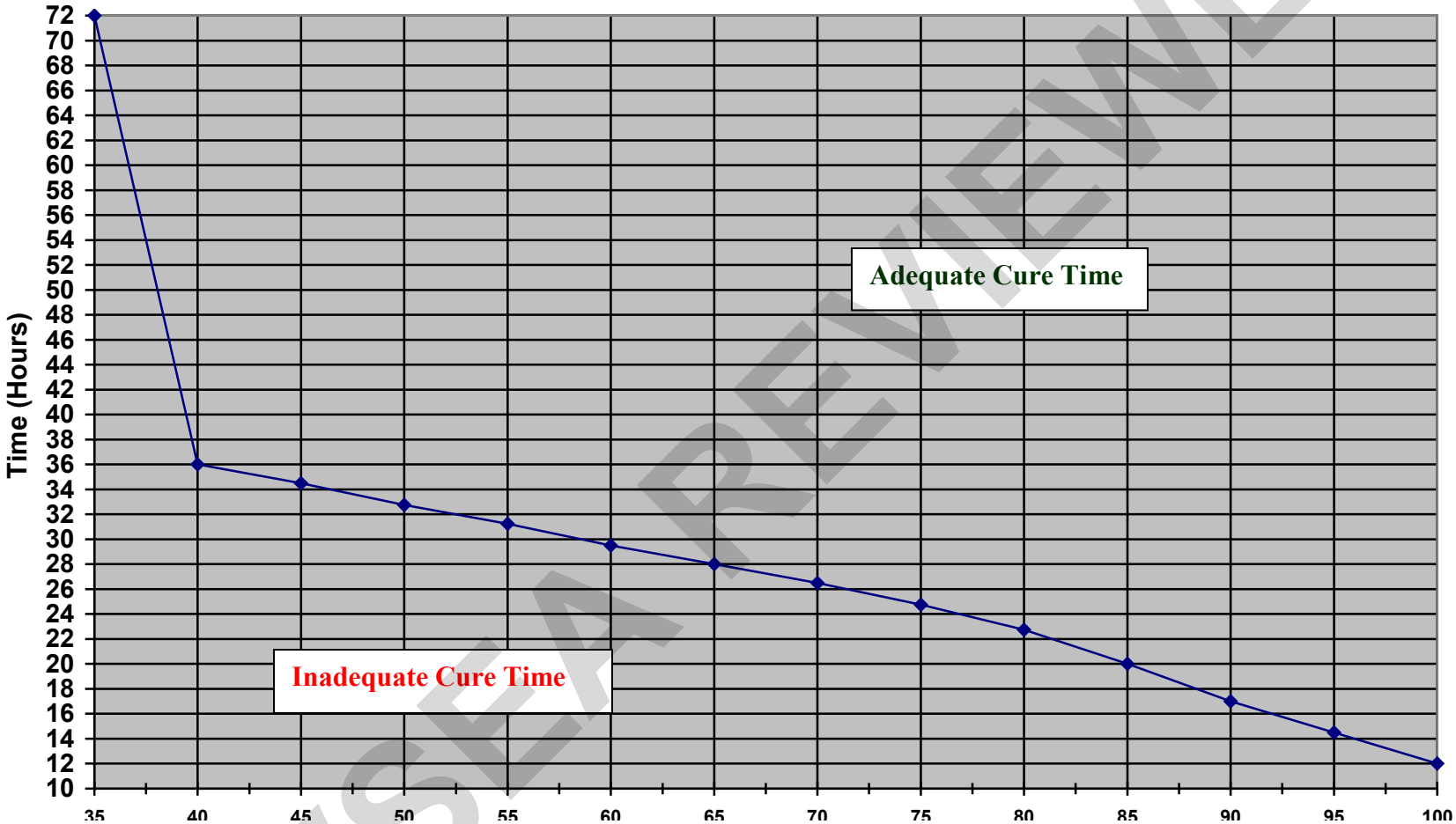

*The above curing schedule is at 20.0 mils and 50% relative humidity.*
*Drying time is temperature, humidity, and film thickness dependent.*
*The above information is provided for guideline use only.*

## Figure 3. Fast Clad ER Maximum Cure to Recoat Time



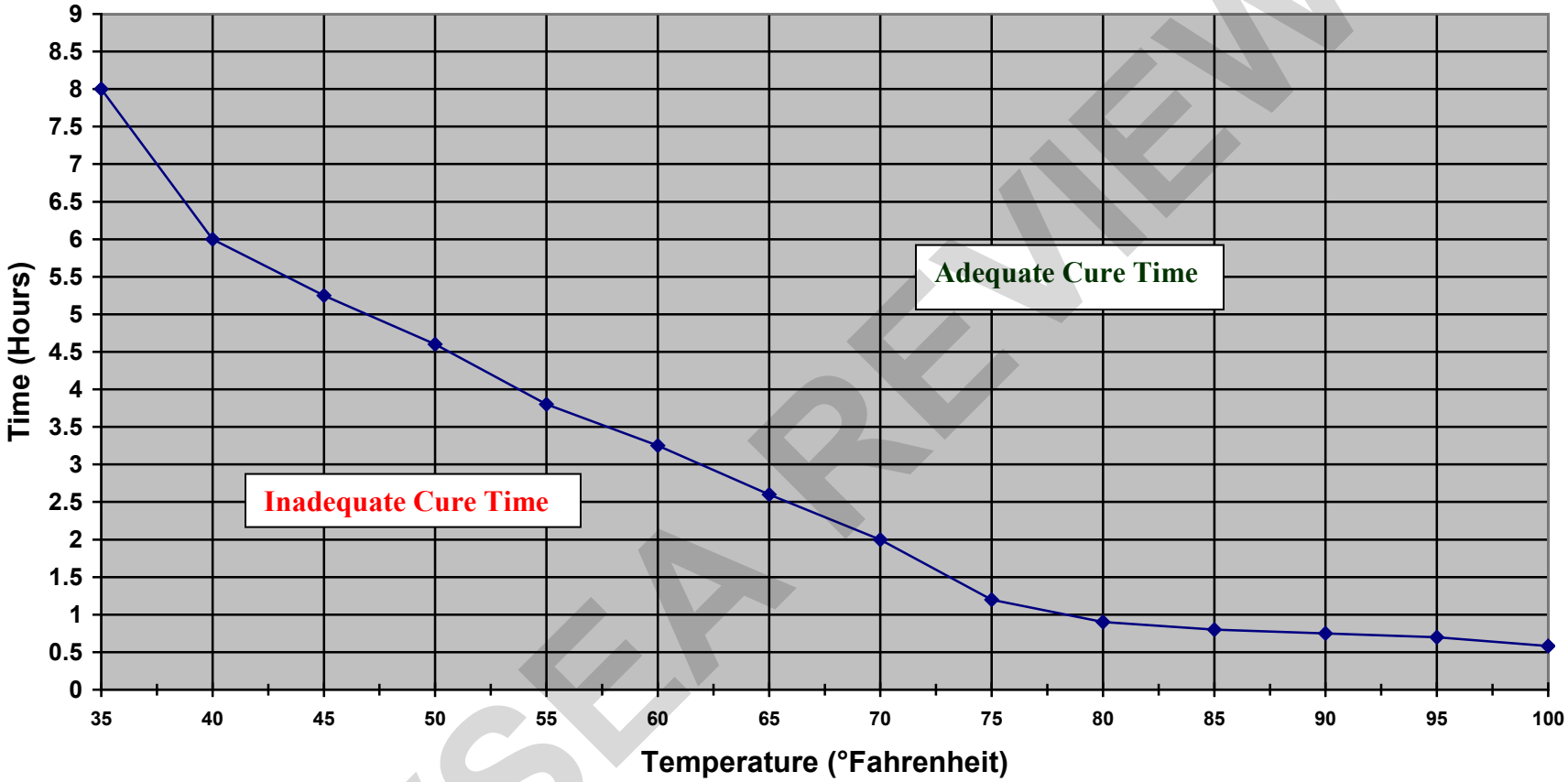

***The above curing schedule is at 20.0 mils and 50% relative humidity.***
***Drying time is temperature, humidity, and film thickness dependent.***
***The above information is provided for guideline use only.***

## Figure 4. Fast Clad ER Minimum Cure to Service Time



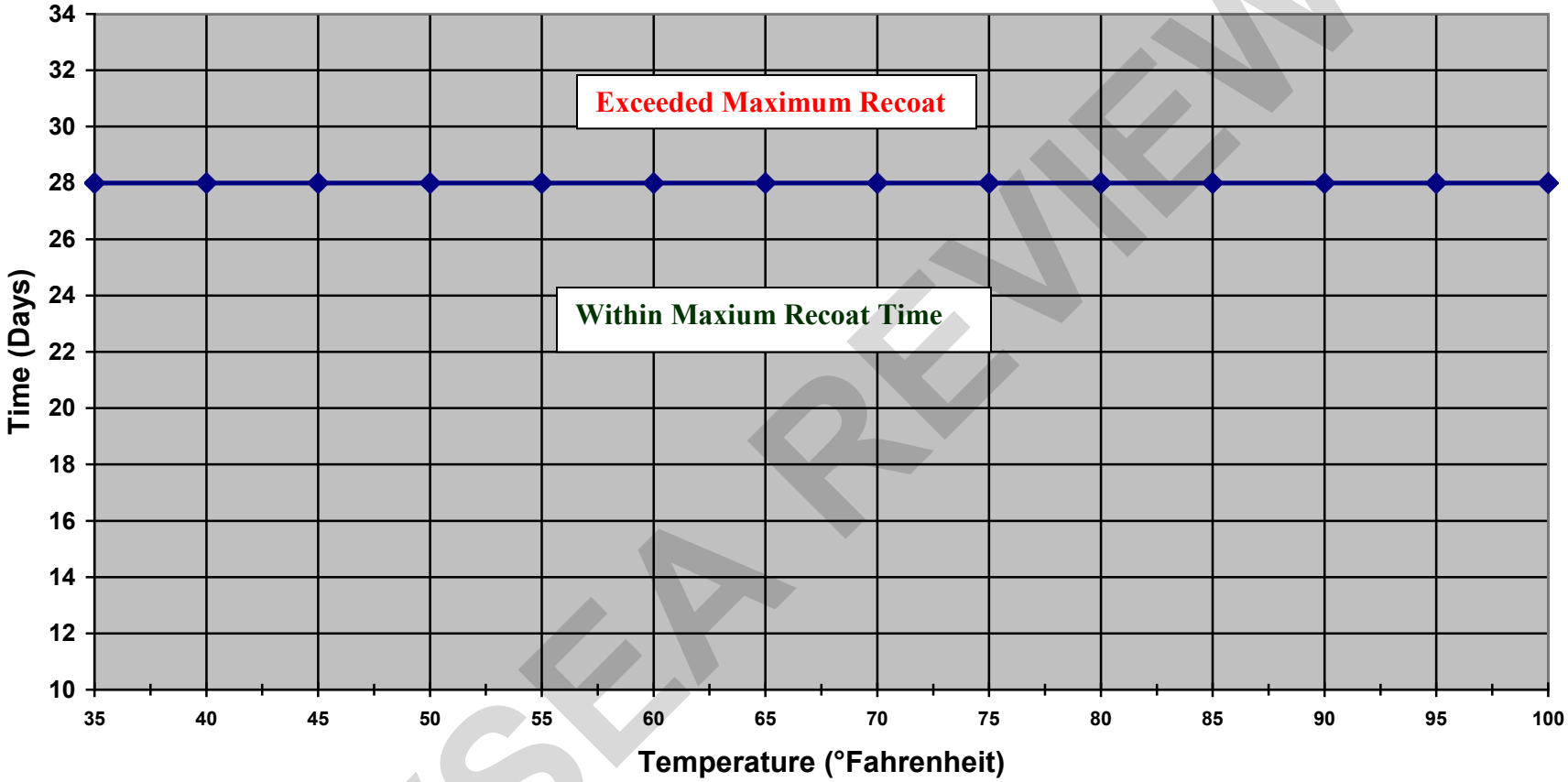

***The above curing schedule is at 20.0 mils and 50% relative humidity.***
***Drying time is temperature, humidity, and film thickness dependent.***
***The above information is provided for guideline use only.***

## Figure 5. Fast Clad ER Minimum Cure to Recoat Time with PXLE-80 HAPS Free Polysiloxane




*The above curing schedule is at 20.0 mils and 50% relative humidity.*
*Drying time is temperature, humidity, and film thickness dependent.*
*The above information is provided for guideline use only.*

## Figure 6. Fast Clad ER Maximum Cure to Recoat Time with PXLE-80 HAPS Free Polysiloxane




*The above curing schedule is at 20.0 mils and 50% relative humidity.*
*Drying time is temperature, humidity, and film thickness dependent.*
*The above information is provided for guideline use only.*