



W-POLI ERD 45

PRODUCT DESCRIPTION: Polyurea-based direct to metal. It has high solids, low content of volatile organic compound (Low VOC). It offers good color and gloss retention in comparison to conventional polyurethanes, super fast drying and excellent adhesion to carbon steel. It can be applied in a high-build single coat directly to the substrate, simplifying the painting of machinery and equipment.

RECOMMENDED USES: Painting of metal structures, exterior of tanks, pipes, various equipment in the pulp and paper, sugar & alcohol, chemical and petrochemical industries, bridges and machines in general. For environments with greater aggressiveness, such as C4 and C5 (ISO 12944-2), it is recommended to apply it over a specific primer.

CERTIFICATIONS AND APPROVAL: This product, when supplied to comply with the RoHs Directive (Restriction of Certain Hazardous Substances) has the letter R in its description.

PACKAGING:	Component	Content	Package	Unit of measurement
	Component A	2,4 13,3	3,6 20	L
	Component B	1,2 3,35	1,5 4	L

CHARACTERISTICS:

Color: Ral, Munsell or as per customer standard.

Gloss: Gloss >80 UB ERD 451
Semigloss 60 – 80 UB ERD 452

VOC content: 103 g/l

Volume solid: 88 ± 2% (ISO 3233).

Shelf-Life: 24 months at 25°C.

Thickness per coat (dry): 150 µm –250 µm

Theoretical coverage: 4,4 m²/l without dilution in the thickness of 200 µm dry. Without considering loss factors in application.

Resistance to dry heat: Maximum temperature 120 °C . The product retains its physical and chemical properties up to the temperature of 120 °C however, variations in the coating color and gloss may occur from 60 °C.

Drying:

	10°C	25°C	35°C
Touch:	2 hours	70 minutes	50 minutes
Handling:	10 hours	7 hours	6 hours
Final:	240 hours	168 hours	168 hours

Overcoating Drying:

	25°C
Min	90 minutes
Max	10 days

SURFACE PREPARATION The performance of this product depends on the degree of surface preparation.

The surface must be clean, dry and free of any contaminants. Completely remove oils, greases and fats, as described in the SSPC-SP 1 standard.

The accumulated dirt must be removed using a dry brush, clean and dry cloth, compressed air blow, vacuum cleaner and/or with the combination of such items, and the soluble salts must be removed through wash with a great quantity of fresh water, preferably with low pressure (up to 5,000 psi) according to SSPC-SP 12/NACE No. 5.

Surface treatment through Abrasive Blasting process

Execute the abrasive blasting to near white metal, Sa 2 ½ grade of the ISO 8501-1 visual standard (A Sa 2 ½, B Sa 2 ½, C Sa 2 ½ and D Sa 2 ½) or according to SSPC-SP 10/NACE No. 2, SSPC-VIS 1 visual standard (A SP 10, B SP 10, C SP 10, D SP 10, G1 SP 10, G2 SP 10, G3 SP 10).

It is recommended a roughness profile between 40 and 85 µm.

Inspect the newly blasted surface observing the presence of surface flaws that could become apparent after this stage, adopting appropriate actions to mitigate such defects through grinding, weld filling and/or epoxy putty.

In case of oxidation on the substrate from the end of the abrasive blasting to the beginning of the coating application, the surface must be blasted again until reaching the specified visual standard.

For areas close to sea air, it is necessary to wash the surface with fresh water at low pressure (minimum 3,000 psi) before the abrasive blasting. And in some cases it is necessary to repeat the washing procedure after the abrasive blasting to remove possible soluble contaminants settled on the surface proceeding with a new abrasive blasting.

Application over primer

The product can be directly applied to a specific primer in order to form a suitable coating system.

NOTE: Observe the product overcoating interval to apply the next coat. In case the maximum overcoating interval has been exceeded, it is necessary to manually/mechanically sand the surface to break the gloss of the previous coat and clean the sanding residues so as to provide better adhesion between the coats.

Treatment of Steel Carbon Surfaces

Hard superficial layers (for example, layers resulting from flame cut) must be removed by grinding it before beginning the abrasive blasting.

All the welds must be inspected e, if necessary, be repaired before the ending of the abrasive blasting. Porosity, cavities, weld splashes, etc. must be repaired by means of proper mechanical treatment or weld repair; in the other areas, round the sharp edges ($r \geq 2$ mm, ISO 8501-3).

For further information, consult WEG Technical Department.

PREPARATION FOR APPLICATION

Mixture

Homogenize the contents of each component with mechanical or pneumatic stirring (A and B). Check there are no sediment settled at the bottom of the package. Add component B to component A, at the recommended proportion (volume), under stirring, until complete homogenization, observing the mixing ratio.

Mixing ratio (Volume)

2 A X 1 B.

Diluent

Pu diluent 5000

Dilution

Depending on the application method, dilute at most. 15%

Do not dilute with solvents that are not allowed by local legislation and do not exceed the recommended dilution percentage.

Only add the diluent after complete mixing of components A + B.

The quantity of diluent may vary depending on the type of equipment used and the ambient conditions during the application.

Excessive dilution of the coating may affect the formation and aspect of the film and not allow to reach the specified thickness.

Pot life of the mixture (25°C)

1 h 30 min

The pot life is reduced with a higher room temperature.

The pot-life test is performed according to the Brazilian standard ABNT NBR 15742; however, different volumes of coating prepared at once combined with different ambient and coating temperatures will influence the pot life, and different results than those mentioned in this data sheet may be found.

Induction time (25°C)

No induction time required.

In hot areas, we recommend consulting WEG Technical Department.

APPLICATION FORMS

The data below is a guide, and similar equipment may be used.

In the spray application, make a 50% overlap in each gun pass, concluding with a cross pass. This technique is used to avoid uncovered and unprotected areas and to obtain a suitable aesthetic finish.

Recoat all sharp edges, cracks and weld beads with a brush to prevent premature failures in these areas.

Changes in nozzle sizes and pressures may be necessary to improve spraying characteristics. Before application, check if the equipment and its components are clean and in best condition. Purge the compressed air line to prevent contamination of the coating.

After mixing two-component products, if there are stops in the application, and pot life is exceeded (the coating shows variation in fluidity) it can no longer be diluted for further application.

The data below is a guide, and similar equipment may be used.

Conventional gun:

Gun:	JGA 502/3 Devilbiss or equivalent
Fluid nozzle:	EX
Air cap:	704
Atomization pressure:	50 - 70 psi
Pressure in the tank:	10 - 20 psi
Dilution:	15%

Airless Gun:

Use Airless:	Use at least pump 60: 1
Fluid pressure:	2000 – 3000 psi
Hose:	¼" internal diameter
Nozzle:	0,015" - 0,021"
Dilution:	Max. 10%

Brush:

Only recommended for touch up small areas or stripe coat (screws, nuts, weld and sharp edges). Use a brush 75 to 100 mm wide for larger surfaces and 25 to 38 mm for touch up.

Roller:

Only recommended for small areas or retouching. Use a thin nap, seamless sheepskin or microfiber roller for epoxy coatings.

For application with brush and/or roller, two or more passes may be necessary to obtain a uniform layer according to the recommended film thickness per coat.

Cleaning the equipment:

Pu diluent 5000

Clean all equipment immediately after use.

NOTE:

Do not leave catalyzed product in contact with the equipment used in the application, because the coating will vary in fluidity at temperatures above specified in the pot life and will cure faster, making the cleaning difficult.

Furthermore, it is a good working practice to periodically wash the spray equipment along the day. The cleaning frequency will depend on the amount sprayed, temperature and elapsed time, including all delays.

PERFORMANCE IN THE APPLICATION

For a good performance of the product, we recommend following the directions below:

Variations in color, aspect and gloss (more noticeable in dark colors) may occur, as well as delay in curing and low coating performance, when applied during periods of high air relative humidity, rainy days, low temperatures or drying the coating outdoor.

In paintings carried out in front of the sea, if exposed to sea air, we recommend to wash with fresh water between coats eliminating settled impurities.

The application should only be made with equipment that has mechanical stirring throughout the process.

The application of the product in situations where the air relative humidity is above 50% may accelerate drying, and the pot life of the mixture may be reduced.

A uniform thickness in a single coat will be easier to achieve if the product is applied with an airless spray gun. If another application method is used, more passes and/or crossed passes may be required.

Environmental and substrate conditions also interfere with the performance of the product application.

Light colors may require more than one coat for an even coverage.

It should not be applied in adverse conditions, such as air relative humidity above 85% or on condensed surfaces. Small variations in color, appearance and gloss of the coated parts may occur in periods of high air relative humidity, rainy days, at low temperatures or in situations where the coated parts are placed to dry outdoors.

Component B must be protected from ambient humidity. We recommend that, once opened, the product is completely used or as soon as possible.

Product not intended for immersion and continuous contact with water.

We recommend coating only if the surface temperature is at least 3 °C above the dew point temperature.

Do not apply the product after the pot life has expired.

In coatings with variation in application method in the same job, the final aspect and gloss of the painted surfaces may show differences.

The temperature of the substrate, the weather and environmental conditions during the application and during the curing of the product, and the thickness of the coat may interfere in the product drying time.

For further information, consult WEG Technical Department.

COMPATIBILITY OF SYSTEMS AND MAINTENANCE REFINISHING

The primer overcoating interval should be respected before applying the topcoat. If the maximum recommended overcoating interval is exceeded, manual/mechanical sanding is necessary to break the gloss. The primer surface must be dry and free of any contaminants.

W-POLI ERD 451 can be applied directly to steel, but in environments with higher aggressiveness, classified according to ISO 12944, we recommend applying the product over LACKPOXI N 2630 for environments C4 and Lackpoxi N 1277 for environments C5.

In situations where the nature of the primer is unknown, it is recommended to test the compatibility of the product in a small area. Check the original material is well adhered. All loose coating must be removed. Points with corrosion or application over aged coatings should be treated according to technical guidance.

The direct application of this product on zinc-rich ethyl silicate-based primers, alkyd primers, coal tar-based coatings and other single-component primers is not recommended. When necessary to apply the topcoat over one of the primers mentioned above, we recommend the application of an appropriate intermediate coating.

For further information, consult WEG Technical Department.

SAFETY PRECAUTIONS

Product developed for industrial use intended for handling by qualified professionals.

Please read carefully all the information contained in the MSDS of this product, available at: www.weg.net.

Store in a covered, well-ventilated area. Keep the container tightly closed and away from sources of heat or ignition.

Use only in well-ventilated areas avoiding the accumulation of flammable vapors. Keep the product away from heat and sources of ignition.

Do not inhale mists / vapors / aerosols generated during handling and / or application.

Wear protective gloves / protective clothing / eye protection / face protection.

Avoid release this product and its packaging, as well as materials used during handling and application in the environment.

NOTE:

The information contained in this technical datasheet is based upon the experience and knowledge acquired in the field by the technical team of WEG.

If using the product without previous inquiry to WEG Coating concerning its suitability for the customer's intended purpose, the customer is aware that the use shall be its exclusive responsibility, WEG not being responsible for behavior, safety, suitability or durability of the product.

Some information contained in this datasheet are estimated, and can undergo variances arising from factors outside the manufacturer's control. Thus, WEG does not guarantee and does not assume any responsibility regarding the yield, performance or any other material or personal damage resulting from the incorrect use of the products concerned or the information contained in this Technical datasheet.



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