

CITY OF STAUNTON
DEPARTMENT OF FINANCE-
PURCHASING

P.O. BOX 58
STAUNTON, VA 24402

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WWW.STAUNTON.VA.US



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ASSISTANT DIRECTOR OF FINANCE
540-332-3948

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PURCHASING & RISK MANAGER
540-332-3819

INVITATION TO BID
November 30, 2017

BID TITLE: WATER TREATMENT PLANT EPOXY COATING

BID #: L00117

MANDATORY PRE-BID MEETING: On-Site (WTP) Thursday, December 7, 2017, 9:00 A.M.

BID OPENING DATE: Tuesday, December 19, 2017, 2:00 P.M.

BID BOND REQUIRED: No

The City of Staunton is seeking bids from qualified and properly licensed contractors to supply all material, equipment, labor, surface preparations, insurance and supervision to epoxy coat ceilings, beams and columns in filter bays at the Water Treatment Plant (WTP), located at 1907 Craigmont Road, Staunton, VA. This building contains lead-based paint. Any contractor submitting a bid for this project must provide proof that they are EPA-certified to conduct lead-based paint renovation, repair and painting activities pursuant to 40 CFR Part 745.89. Any questions regarding the specifications should be directed to Tim Powell, Facility Services/Refuse Superintendent, at powelltc@ci.staunton.va.us, 540-332-3882.

Please quote lowest price and best delivery on items listed. Advise what discount, if any will be allowed for payment within a specified time. Terms and delivery date must be specified.

Right is reserved to accept or reject bids on each item separately or as a whole, to reject any or all bids, to waive informalities or irregularities, to negotiate contract terms and options with the successful low bidder, and to contract for the bid to other than the lowest bidder in the best interest of the City of Staunton to the extent allowable by law.

The City of Staunton does not discriminate against faith-based organizations in accordance with the Code of Virginia, § 2.2-4343.1 or against a Bidder or Offeror because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment.

All bids must be submitted in a sealed envelope plainly marked, "**BID NO. L00117 – WTP EPOXY COATING**", with the name and address of the bidder in the upper left hand corner and accompanied by complete specifications for the items offered. **E-Mail and facsimile responses are not acceptable.** No responsibility will attach the Owner or any official or employee thereof for the pre-opening of, post-opening of, or the failure to open a proposal not properly addressed and identified.

BIDS RECEIVED AFTER THE DATE AND TIME SPECIFIED WILL BE REJECTED

BIDS MUST BE SEALED, MARKED, AND DELIVERED TO:

Mail To:
City of Staunton
Bonnie S. Stephenson
Purchasing & Risk Manager
P.O. Box 58
Staunton, VA 24402-0058

Overnight To:
City of Staunton
Bonnie S. Stephenson
Purchasing & Risk Manager
116 W Beverley St., 3rd Floor
Staunton, VA 24401

Phone: (540) 332-3819

CITY OF STAUNTON
PURCHASING DEPARTMENT
GENERAL TERMS, CONDITIONS, AND INSTRUCTIONS

1. SUBMISSION AND RECEIPT OF BIDS:
 - (A) Bids, to receive consideration, must be received prior to the specified time and date of opening as designated in the invitation. E-mail and facsimile submittals are not acceptable.
 - (B) Unless otherwise specified, bidders must use the bid form furnished by the City. Failure to do so may cause bid to be rejected. Removal of any part of the bid form may invalidate the bid.
 - (C) Bids having any erasures, corrections, or typewriter opaquing fluid are not acceptable and will result in rejection of the bid. Prior to submission or opening, errors may be crossed out, corrections entered in ink and initialed in ink by the person signing the bid. No bid shall be altered or amended after the specified time for opening.
 - (D) All bids shall be either typewritten or filled in with ink in order to be considered. Also, all bids must be signed in ink in order to be considered.
 - (E) Bids concerning separate bid invitations must not be combined on the same form or placed in the same envelope. Bids submitted in violation of this provision may not be considered.
 - (F) When specified, each bid shall be accompanied by a bid bond with surety satisfactory to the City or a cashier's or certified check, made payable to the Treasurer, City of Staunton, in an amount equal to 5 percent of the total bid price. In the event of default by the bidder the 5 per cent deposit shall be and represent liquidated damages to the City.
2. ANNUAL CONTRACT USAGE REQUIREMENTS: Whenever a bid is sought seeking a source of supply for an annual contract for products or services, the quantities or usage shown are estimates only. No guarantee or warranty is given or implied by the City of Staunton as to the total amount that may or may not be purchased from any resulting contracts.
3. PRICING:
 - (A) Bidder warrants by virtue of bidding that prices, terms, and conditions quoted in his bid will be firm for acceptance for a period of sixty (60) days from the date of bid opening unless otherwise stated by the City or bidder.
 - (B) Prices should be stated in units of quantity as specified in the bid form. In case of error in extension of prices in the bid, the unit price shall govern.
 - (C) Bids based on a firm price or those including a "Downward Escalator" clause for an annual contract period may be given preference over lower ones bearing an "Escalator" clause for an annual contract period.
 - (D) When an annual contract is not requested by the City, and the bid is for products or services to be delivered on a one time only or staggered basis, only firm pricing shall be given consideration. General terms such as "Price in effect at time of delivery" shall be cause for rejection of bid.
4. PERFORMANCE BOND: When requested in the bid, the City shall require the successful bidder to furnish a performance bond and labor and material payment bond with surety satisfactory to the City in the amount of contract price at the time of or prior to execution of the contract. If no bond is furnished by the successful bidder, the City reserves the right to award the contract to the next lowest responsible bidder with the next lowest responsive bid.
5. DELIVERY POINT: All items shall be delivered F.O.B. destination, and delivery costs and charges included in the bid price. Failure to do so may be cause for rejection of bid. The bidder shall assume all liability and responsibility for the delivery of merchandise in good condition to the specified delivery location(s).
6. CASH DISCOUNTS: Cash discounts will be considered in determining the award.
7. BRAND NAMES: Unless otherwise provided in the invitation for bid, the name of a certain brand, make, or manufacturer does not restrict bidders to the specific brand, make, or manufacture mentioned; it conveys the general style, type, character, and quality of the equipment desired. The City shall determine in its sole discretion equipment bid to be equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted.
8. SPECIFICATIONS: The bidders must also indicate any variances from our specification and/or conditions, NO MATTER HOW SLIGHT. If variations are not stated in the bid, it will be assumed that the product or service fully complies with our specifications. The Purchasing Department is not responsible for locating or securing any information which is not included in the bid. Accordingly, to insure that sufficient information is available, the bidder must furnish as part of his bid all descriptive material, (i.e., Catalog Cuts, illustrations, drawings, specifications, or other information) necessary for the Purchasing Department to determine whether the goods or services offered meet the salient characteristic requirements of the bid.
9. LATEST MODEL/QUALITY: Bidder shall bid on the latest model, design, etc. of this type of equipment by the manufacturer of which he represents. Equipment shall be new and unused.
10. NOTICE OF AWARD: Notice of award will be posted at <https://www.ci.staunton.va.us/departments/finance/procurement>.

CITY OF STAUNTON – BID FORM

DESCRIPTION**TOTAL COST**

Provide all material, equipment, labor, insurance and supervision to perform surface preparations, prime, and paint ceiling, beams and columns at Staunton WTP in old section (West Side):

\$ _____

Provide all material, equipment, labor, insurance and supervision to perform surface preparations, prime, and paint ceiling, beams and columns at Staunton WTP in new section (East Side):

\$ _____

TOTAL: \$ _____

*NOTE: For bid to be considered complete, all required documentation must be included in the bid package. See requirements listed in items I.1 and I.3.

PER ATTACHED SPECIFICATIONS

BID

To Purchasing Department:

In compliance with the bid information, the undersigned offers and agrees, if this offer is accepted within _____ calendar days (30 calendar days unless a different period is inserted by the purchaser) from the bid open date specified above, to furnish any or all items upon which prices are offered, at the price set opposite each item, delivered at the designated point(s), within the time specified.

FOB: Staunton

TERMS: _____

COMPANY NAME _____

BY: _____

PRINTED NAME

SIGNATURE

STREET ADDRESS _____

CITY AND STATE _____

STATE CONTRACTOR LICENSE NO/TYPE _____

SCC NUMBER. _____

E-MAIL. _____

PHONE: _____ FAX: _____

EPOXY COATING WATER TREATMENT PLANT SPECIFICATIONS

The City of Staunton is requesting sealed bids from qualified and properly licensed contractors to supply all material, equipment, labor, surface preparations, insurance and supervision to epoxy coat ceilings, beams and columns in filter bays at the Water Treatment Plant (WTP), located at 1907 Craigmont Road, Staunton, Virginia. Epoxy coating project shall be performed in eight separate phases (one filter bay at a time).

All interested contractors are required to visit the job site prior to submitting bids. At the time bids are received, each contractor will be presumed to have inspected the specified areas and to have satisfied himself/herself as to the nature and location of the work, the character of the equipment and facilities needed preliminary to and during the execution of the work, general conditions and all other matters which in any way affect work under this contract.

No verbal agreement or conversation with any officer, agent, or employee of the City either before or after the execution of this contract shall affect or modify any of the terms or obligations herein contained.

PLEASE NOTE There will be a **MANDATORY** Pre-Bid Meeting on-site at the WTP, 1907 Craigmont Road, Staunton, Virginia, on Thursday, December 7, 2017, at 9:00 A.M.

I. GENERAL SPECIFICATIONS

1. This building currently contains lead-based paint. Any contractor submitting a bid for this project must provide proof that they are EPA-certified to conduct lead-based paint renovation, repair, and painting activities pursuant to 40 CFR Part 745.89. All work must be performed in accordance with EPA guidelines for conducting lead-based paint renovation, repair, and painting activities, pursuant to 40 CFR Part 745.89.
2. All work shall be performed during normal working hours, Monday through Friday 7:30 A.M. to 4:00 P.M. Any work scheduled over weekends or holidays must be approved three (3) days in advance by Danial Campbell, Water Treatment Plant Supervisor, at 540-332-3961.
3. Contractor shall provide a listing of previous clients that may be contacted as a reference. The contractor must have a minimum experience of three (3) projects of similar size and complexity that have been completed within the last two (2) years using Sherwin-Williams MACROPOXY or similar epoxy coatings. All references submitted must include customer name, project description, telephone number and email address (if applicable).
4. Contractor shall provide all material, equipment, labor, insurance, tools, masking/drop cloths, ladders and scaffolding etc., and services required for lead abatement/containment, surface preparations and application of the Sherwin Williams, Marine Coating, MACROPOXY

646, Fast Cure Epoxy, in accordance with the manufacturer's specifications. Contractor shall take all precautions necessary to prevent any over-spray/splashing on all surfaces not requiring coating such as lights, doors, windows, hardware, catwalks and concrete substrates etc., and shall be liable for all damages to public and private property.

NOTE The Water Treatment Plant must continue to operate at 100% capacity at all times. Only one (1) filter basin at a time shall be shut down and drained to facilitate work. Minimum completion time for each basin shall not exceed ten (10) calendar days. All work shall be coordinated with Danial Campbell, Water Treatment Plant Supervisor, at 540-332-3961, within forty-eight (48) hours of commencing work.

5. Contractor shall examine all surfaces to be epoxy coated and report any/all unsatisfactory conditions in writing to the City. Said report shall include recommendations for surface preparations and priming as required by the product manufacturer to ensure proper bonding and/or to prevent discoloration caused by stains. Contractor shall list all proposed equipment/products to be used and a timeframe for installation.

6. Contractor shall be responsible for containing the work area. Before beginning surface preparations, Contractor must isolate each basin so that no dust or debris leaves the work area while the work is being performed. In addition, Contractor shall maintain the integrity of the containment by ensuring that any plastic or other impermeable materials are not torn or displaced and shall take all necessary steps to ensure that no dust or debris leaves the work area while paint removal is being performed. Contractor must also ensure that all containment material is installed in such a manner that it does not interfere with the building occupants and that at no time will egress from the building be blocked.

NOTE All necessary steps must be taken to protect the filter media materials from damage by overlaying the area with minimum ½" plywood. Said plywood must be installed under plastic containment materials.

7. Minimum surface preparations shall include hand tool cleaning to remove any loose or scaling paint, dirt, oils, grease and any other foreign materials as per product manufacturer's recommendations. After surface preparations and prior to application of primer coat, authorized City personnel and an authorized Sherwin Williams Product Representative must inspect all areas.

NOTE For warranty purposes, it is the Contractor's responsibility to coordinate all inspections such as surface preparations, primer and finish coat applications with Tim Powell, Facility Services/Refuse Superintendent, at powelltc@ci.staunton.va.us, 540-332-3882, and an authorized Sherwin Williams Product Representative.

8. Primer coat shall be one (1) coat of Sherwin Williams, Loxon, Concrete & Masonry Primer/Sealer A24W8300 and shall be installed in accordance with Sherwin Williams recommendations and specifications. After primer coat and prior to application of finish coat, authorized City personnel and an authorized Sherwin Williams Product Representative must inspect all areas. (See appendix A for Product Information and Application Bulletins.) Spray

application will not be allowed. Minimum dry time before finish coat application shall be twenty four (24) hours.

9. Finish coat shall be one (1) coat of MACROPOXY 646 Fast Cure Epoxy, Mill White, colored to Medici Ivory SW7558, and installed in accordance with Sherwin Williams recommendations and specifications. (See appendix B for Product Information and Application Bulletins.) Spray application will not be allowed.

10. Contractor shall provide specific environmental requirements, if any, which the City will need to meet prior to starting the work, e.g., power or space needs, that Contractor will require the City to provide.

11. Contractor shall provide all warranties, including Sherwin-Williams Products, against material defects, appearance, workmanship and performance. Warranties must be of industry standards. Final payment will not be made nor will warranty period commence for the finished product until the product manufacturer and City personnel has given the successful Contractor written acceptance of the product and its application.

12. If applicable, following application of the approved marine epoxy coating products and at no additional cost to the City, Contractor shall provide on-site training for City staff in the care, cleaning and maintenance of the finished product.

13. All paperwork, including but not limited to, brochures, samples and marine epoxy coating specifications, shall be provided to the City upon completion of project and before final payment is made.

14. Contractor shall broom clean work site daily as required to prevent contamination of the other filter basins still in operation and all other areas of the WTP.

15. Contractor shall clean up and haul away all debris created by this project before final payment is made.

16. Building permit is not required; however, Contractor shall obtain the required business license from the City of Staunton Commissioners of Revenue's Office located at 116 West Beverley Street, Staunton, prior to beginning work.

17. Appropriate City personnel will make payment for all work only after final approval of the completed work.

18. A tax-exempt certificate will be provided to successful Contractor.

II. GENERAL CONDITIONS

1. Insurance - Contractor agrees to provide the City of Staunton a copy of their General Liability, Vehicle Liability, and Worker's Compensation Insurance prior to beginning work. Insurance shall be in amounts not less than \$1,000,000, \$500,000, and \$500,000 respectively or such other insurance as is satisfactory and may be approved by the City. Insurance shall be written by companies licensed to do business in the Commonwealth of Virginia and shall list the City of Staunton as an additional insured.
2. Hold Harmless: The Contractor shall indemnify, defend and hold harmless the City, its members of Council, officers, directors, agent and employees, against any and all claims, liabilities, losses, damages, costs and expenses (including reasonable attorney fees) arising out of, or resulting from any and all injuries to persons or damage to property arising out of services performed hereunder or by reason of the intentional or negligence acts or omissions of the Contractor, its employees, agents or sub-consultants, including any independent contractors.
3. Drug Free Workplace: During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000.00, so that the provisions will be binding upon each subcontractor or vendor.
4. Non-Discrimination
 1. During the performance of this contract, the contractor agrees as follows:
 - a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and the applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
 2. The contractor will include the provisions of the foregoing paragraphs a, b and c in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

5. Immigration Reform and Control Act Of 1986 – During the performance of this contract, contractor agrees that they will not, and shall not knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986. (per 2.2-4311.1)
6. Forum Selection: Any action, proceeding, or claim in any way related to this agreement or the relationship between the parties shall be filed and maintained solely in the General District Court or the Circuit Court of the City of Staunton, Virginia.
7. Prompt Payment Act: Any contract awarded as a result of this Request for Proposal shall incorporate the terms and conditions of Article 4 of the Virginia Public Procurement Act with respect to Prompt Payment.
8. Negotiation with Successful Bidder: The City reserves the right to negotiate contract terms with the successful bidder for items/services other than those specifically stated in this Invitation to Bid in the best interest of the City and agreed to by the contractor in accordance with section 2.2-4318 of the Code of Virginia. Additional work of reasonable scale shall be priced consistent with proposal to allow for additions and future expansions.
9. Cooperative Procurement: This procurement is being conducted on behalf of other public bodies, in accordance with § 2.2-4304 (A) of the Code of Virginia. If authorized by the bidder, the resultant contract may be extended to any public body in the Commonwealth of Virginia in accordance with contract terms.
10. Pursuant to Code of Virginia, §2.2-4311.2 subsection B, a bidder or offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 is required to include in its bid or proposal the identification number issued to it by the State Corporation Commission (SCC). Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law is required to include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.



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LOXON®

**Concrete & Masonry Primer/Sealer
Interior/Exterior Latex
A24W8300**

As of 12/22/2014, complies with:			
OTC	Yes	LEED® 09 CI	Yes
SCAQM	Yes	LEED® 09 NC	Yes
CARB	Yes	LEED® 09 CS	Yes
CARB SCM2007	Yes	LEED® H	Yes
MPI	Yes	NGBS	Yes

DESCRIPTION	CHARACTERISTICS	SURFACE PREPARATION
Loxon Concrete & Masonry Primer/Sealer is an acrylic coating specifically engineered for interior and exterior, above-grade, masonry surfaces requiring a high performance primer. It is highly alkali and efflorescence resistant and can be applied to surfaces with a pH of 6 to 13. - Seals and adheres to concrete, brick, stucco and plaster - Conditions porous masonry surfaces - Use on above grade masonry surfaces for a long-lasting finish - Apply to masonry and concrete surfaces that are at least 7 days old. - Prevents harm to subsequent coatings by alkalis in the substrate For use on these surfaces: - Concrete - Concrete Block - Brick - Stucco - Fiber Cement Siding - Plaster - Mortar - EIFS Exterior Wall Cladding PHYSICAL PROPERTIES FlexibilityPasses ASTM D522 - Method B, 180° bend, 1/8" mandrel Alkali ResistancePasses Based on ASTM D1308 Mildew ResistancePasses ASTM D3273/D3274	Color: White Coverage: 200-300 sq ft/gal 5.3 - 8.0 mils wet 2.1 - 3.2 mils dry Coverage on porous & rough stucco 80 square feet per gallon Drying Time, @ 77°F, 50% RH: Touch: 4 hours Recoat: 24 hours Drying and recoat times are temperature, humidity and film thickness dependent. Finish: 0-10 units @ 85° Flash Point: N/A Vehicle Type: Acrylic A24W08300 VOC (less exempt solvents): <50 g/L; 0.42 lb/gal As per 40 CFR 59.406 and SOR/2009-264, s.12 Volume Solids: 41 ± 2% Weight Solids: 55 ± 2% Weight per Gallon: 10.92 lb WVP Perms (US) 22.3 grains/(hr ft² in Hg) Tinting - For best topcoat color development, use the recommended "P"-shade primer. If desired, up to 4 oz per gallon of ColorCast Ecotones can be used to approximate the topcoat color. Check color before use. When spot priming on some surfaces, a non-uniform appearance of the final coat may result, due to differences in holdout between primed and unprimed areas. To avoid this, prime the entire surface rather than spot priming. For optimal performance, this primer/sealer must be topcoated with a latex, alkyd/oil, water based epoxy, or solvent based epoxy coating on architectural applications. For exterior use, this primer/sealer must be topcoated within 14 days to prevent degradation due to weathering.	WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority. Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Scrape and sand peeled or checked paint to a sound surface. Sand glossy surfaces dull. Masonry/Concrete/Stucco All new surfaces must cure for at least 7 days. Remove all form release and curing agents. Pressure clean to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, peeling and defective coatings, chalks, etc. Allow the surface to dry before proceeding. Repair cracks, voids, and other holes with an appropriate patching compound or sealant.



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LOXON®

Concrete & Masonry Primer/Sealer Interior/Exterior Latex A24W8300

<u>SURFACE PREPARATION</u>	<u>APPLICATION</u>	<u>CAUTIONS</u>
Mildew Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution. Caulking Fill gaps between windows, doors, trim, and other through-wall openings with the appropriate caulk after priming the surface.	Apply at temperatures above 50°F. No reduction necessary. Do not paint in direct sun or on a hot surface. May be applied to damp but not to wet surfaces. Brush Use a nylon/polyester brush Roller Use a 1/2" to 1-1/2" nap synthetic cover Airless Spray Pressure..... 2000-2700 psi Tip..... .019" Spray and backroll on porous & rough stucco to achieve required film build and a pin-hole free surface. <u>CLEANUP INFORMATION</u> Clean spills, spatters, hands and tools with soap and warm water. After cleaning, flush spray equipment with compliant cleanup solvent to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using solvents.	Protect from freezing. Non-photochemically reactive. LABEL CAUTIONS CAUTION contains CRYSTALLINE SILICA and ZINC. Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH approved). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN. HOTW 12/22/2014 A24W08300 33 44 KOR, SP, FR, Viet 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 or visit www.paintdocs.com to obtain the most current version of the PDS and/or an MSDS.



Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A B58-600
PART B B58V600

SERIES
HARDENER

Revised: July 11, 2017

PRODUCT INFORMATION

4.53

PRODUCT DESCRIPTION

MACROPOXY 646 FAST CURE EPOXY is a high solids, high build, fast drying, polyamide epoxy designed to protect steel and concrete in industrial exposures. Ideal for maintenance painting and fabrication shop applications. The high solids content ensures adequate protection of sharp edges, corners, and welds. This product can be applied directly to marginally prepared steel surfaces.

- Low VOC
- Low odor
- Outstanding application properties
- Meets Class A requirements for Slip Coefficient, 0.36 @ 6 mils / 150 microns dft (Mill White only)
- Chemical resistant
- Abrasion resistant

PRODUCT CHARACTERISTICS

Finish:	Semi-Gloss
Color:	Mill White, Black and a wide range of colors available through tinting
Volume Solids:	72% ± 2%, mixed, Mill White
Weight Solids:	85% ± 2%, mixed, Mill White
VOC (EPA Method 24): mixed	Unreduced: <250 g/L; 2.08 lb/gal Reduced 10%: <300 g/L; 2.50 lb/gal
Mix Ratio:	1:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	7.0 (175)	13.5 (338)
Dry mils (microns)	5.0* (125)	10.0* (250)
~Coverage sq ft/gal (m²/L)	116 (2.8)	232 (5.7)
Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft	1152 (28.2)	

*May be applied at 3.0-10.0 mils (75-250 microns) dft in a multi-coat system. Refer to Recommended Systems and Performance Tips Sections.

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 7.0 mils wet (175 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 100°F/38°C
To touch:	4-5 hours	2 hours	1.5 hours
To handle:	48 hours	8 hours	4.5 hours
To recoat:			
minimum:	48 hours	8 hours	4.5 hours
maximum:	1 year	1 year	1 year
To cure:			
Service:	10 days	7 days	4 days
Immersion:	14 days	7 days	4 days
If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent. Paint temperature must be at least 40°F (4.5°C) minimum.			
Pot Life:	10 hours	4 hours	2 hours
Sweat-in-time:	30 minutes	30 minutes	15 minutes

When used as an intermediate coat as part of a multi-coat system:

Drying Schedule @ 5.0 mils wet (125 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 100°F/38°C
To touch:	3 hours	1 hour	1 hour
To handle:	48 hours	4 hours	2 hours
To recoat:			
minimum:	16 hours	4 hours	2 hours
maximum:	1 year	1 year	1 year

PRODUCT CHARACTERISTICS (Cont'd)

Shelf Life:	36 months, unopened Store indoors at 40°F (4.5°C) to 110°F (43°C).
Flash Point:	91°F (33°C), TCC, mixed
Reducer/Clean Up:	Reducer, R7K15
In California:	Reducer R7K111 or Oxsol 100

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

1 ct. Macropoxy 646 Fast Cure @ 6.0 mils (150 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	84 mg loss
Accelerated Weathering-QUV¹	ASTM D4587, QUV-A, 12,000 hours	Passes
Adhesion	ASTM D4541	1,037 psi
Corrosion Weathering¹	ASTM D5894, 36 cycles, 12,000 hours	Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 per rusting
Nuclear Decontamination	ASTM D4256/ANSI N 5.12	99% Water Wash; 95% Overall
Direct Impact Resistance²	ASTM D2794 Modified	**120 in. lb.
Dry Heat Resistance	ASTM D2485	250°F (121°C)
Exterior Durability	1 year at 45° South	Excellent, chalks
Flexibility	ASTM D522, 180° bend, 3/4" mandrel	Passes
Fuel Contribution	NFPA 259	5764 btu/lb
Humidity Resistance	ASTM D4585, 6000 hours	No blistering, cracking, or rusting
Immersion	1 year fresh and salt water	Passes, no rusting, blistering, or loss of adhesion
Radiation Tolerance	ASTM D4082 / ANSI 5.12	Pass at 21 mils (525 microns)
Pencil Hardness	ASTM D3363	3H
Salt Fog Resistance¹	ASTM B117, 6,500 hours	Rating 10 per ASTM D610 for rusting; Rating 9 per ASTM D1654 for corrosion
Slip Coefficient, Mill White*	AISC Specification for Structural Joints Using ASTM A325 or ASTM A490 Bolts	Class A, 0.36
Surface Burning	ASTM E84/NFPA 255	Flame Spread Index 20; Smoke Development Index 35 (at 18 mils or 450 microns)
Water Vapor Permeance	ASTM D1653, Method B	1.16 US perms

Epoxy coatings may darken or discolor following application and curing.

*Refer to Slip Certification document

** Performed on 1/16 inch blasted steel

¹Footnotes:

¹ Zinc Clad II Plus Primer

² Two coats of Macropoxy 646 Fast Cure Epoxy

DISCLAIMER

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Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A
PART B

B58-600
B58V600

SERIES
HARDENER

Revised: July 11, 2017

PRODUCT INFORMATION

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RECOMMENDED USES

- Marine applications
- Fabrication shops
- Pulp and paper mills
- Power plants
- Offshore platforms
- Nuclear Power Plants
- Nuclear fabrication shops
- Mill White and Black are acceptable for immersion use for salt water and fresh water, not acceptable for potable water
- Suitable for use in USDA inspected facilities
- Acceptable for use in Canadian Food Processing facilities, categories: D1, D2, D3 (Confirm acceptance of specific part numbers/boxes with your SV Sales Representative)
- Conforms to AWWA D102 OCS #5
- Conforms to MPI # 108
- This product meets specific design requirements for non-safety related nuclear plant applications in Level II, III and Balance of Plant, and DOE nuclear facilities*.
- Nuclear qualifications are NRC license specific to the facility.
- Suitable for use in the Mining & Minerals Industry
- Acceptable for use over and/or under Loxon S1 and Loxon H1 Caulking
- Refineries
- Chemical plants
- Tank exteriors
- Water treatment plants
- DOE Nuclear Fuel Facilities
- DOE Nuclear Weapons Facilities

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Immersion and atmospheric:			
Steel:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
Concrete/Masonry, smooth:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
Concrete Block:			
1 ct.	Kem Cati-Coat HS Epoxy Filler/Sealer as needed to fill voids and provide a continuous substrate.	10.0-20.0	(250-500)
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
Atmospheric:			
Steel: (Shop applied system, new construction, AWWA D102, can also be used at 3 mils / 75 microns minimum dft when used as an intermediate coat as part of a multi-coat system)			
1 ct.	Macropoxy 646 Fast Cure Epoxy	3.0-6.0	(75-150)
1-2 cts.	of recommended topcoat		
Steel:			
1 ct.	Recoat Epoxy Primer	4.0-6.0	(100-150)
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
Steel:			
1 ct.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
1-2 cts.	Acrolon 218 Polyurethane	3.0-6.0	(75-150)
or	Hi-Solids Polyurethane	3.0-5.0	(75-125)
or	SherThane 2K Urethane	2.0-4.0	(50-100)
or	Hydrogloss	2.0-4.0	(50-100)
Steel:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	5.0-10.0	(125-250)
1-2 cts.	Tile-Clad HS Epoxy	2.5-4.0	(63-100)
Steel:			
1 ct.	Zinc Clad II Plus	2.0-4.0	(50-100)
1 ct.	Macropoxy 646 Fast Cure Epoxy	3.0-10.0	(75-250)
1-2 cts.	Acrolon 218 Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Zinc Clad III HS	3.0-5.0	(75-125)
or	Zinc Clad IV	3.0-5.0	(75-125)
1 ct.	Macropoxy 646 Fast Cure Epoxy	3.0-10.0	(75-250)
1-2 cts.	Acrolon 218 Polyurethane	3.0-6.0	(75-150)
Aluminum:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	2.0-4.0	(50-100)
Galvanizing:			
2 cts.	Macropoxy 646 Fast Cure Epoxy	2.0-4.0	(50-100)
FIRETEX M89/02, M90, M90/02, and M93/02:			
Steel & Galvanized Substrates being primed for FIRETEX only:			
1 ct.	Macropoxy 646 Fast Cure Epoxy	2.0-5.0	(50-125)

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

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-SP2/3 or SSPC-SP WJ-3/NACE WJ-3L	
Immersion:	SSPC-SP10/NACE 2, 2-3 mil (50-75 micron) profile or SSPC-SP WJ-2/NACE WJ-2L	
Aluminum:		SSPC-SP1
Galvanizing:	SSPC-SP1; See Surface Preparations section on page 3 for application of FIRETEX intumescent coating systems	
Concrete & Masonry		
Atmospheric:	SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3	
Immersion:	SSPC-SP13/NACE 6-4.3.1 or 4.3.2, or ICRI No. 310.2R, CSP 2-4	

Surface Preparation Standards

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

TINTING

Tint Part A with Maxitones at 150% strength. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

Tinting is not recommended for immersion service.

APPLICATION CONDITIONS

Temperature:	35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface) 40°F (4.5°C) minimum, 120°F (49°C) maximum (material) At least 5°F (2.8°C) above dew point 85% maximum
Relative humidity:	

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:	
Part A:	1 gallon (3.78L) and 5 gallon (18.9L) containers
Part B:	1 gallon (3.78L) and 5 gallon (18.9L) containers

Weight:	12.9 ± 0.2 lb/gal ; 1.55 Kg/L mixed, may vary by color
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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

MACROPOXY® 646 FAST CURE EPOXY

PART A
PART B

B58-600
B58V600

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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:

Minimum surface preparation is Hand Tool Clean per SSPC-SP2. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. For better performance, use Commercial Blast Cleaning per SSPC-SP6/NACE 3, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Prime any bare steel within 8 hours 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 and round all sharp edges by grinding. Prime any bare steel the same day as it is cleaned.

Aluminum

Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1.

Galvanized Steel

Allow to weather a minimum of six months prior to coating. Solvent Clean per SSPC-SP1 (recommended solvent is VM&P Naphtha). When weathering is not possible, or the surface has been treated with chromates or silicates, first Solvent Clean per SSPC-SP1 and apply a test patch. Allow paint to dry at least one week before testing adhesion. If adhesion is poor, brush blasting per SSPC-SP7 is necessary to remove these treatments. Rusty galvanizing requires a minimum of Hand Tool Cleaning per SSPC-SP2, prime the area the same day as cleaned. In preparing galvanized steel substrates for the application of FIRE-TEX intumescent coating systems, Surface Preparation Specification SSPC-SP 16 must be followed obtaining a surface profile of minimum 1.5 mils (38 microns). Optimum surface profile will not exceed 2.0 mils (50 microns).

Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3. 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.

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 2-4.

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.

Previously Painted Surfaces

If in sound condition, clean the surface of all foreign material. Smooth, hard or glossy coatings and surfaces should be dulled by abrading the surface. Apply a test area, allowing paint to dry one week before testing adhesion. If adhesion is poor, or if this product attacks the previous finish, removal of the previous coating may be necessary. If paint is peeling or badly weathered, clean surface to sound substrate and treat as a new surface as above.

Surface Preparation Standards

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

APPLICATION CONDITIONS

Temperature:	35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface) 40°F (4.5°C) minimum, 120°F (49°C) maximum (material) At least 5°F (2.8°C) above dew point
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.

Reducer/Clean Up Reducer R7K15
In California..... Reducer R7K111

Airless Spray

Pump.....	30:1
Pressure.....	2800 - 3000 psi
Hose.....	1/4" ID
Tip.....	.017" - .023"
Filter.....	60 mesh
Reduction.....	As needed up to 10% by volume

Conventional Spray

Gun.....	DeVilbiss MBC-510
Fluid Tip.....	E
Air Nozzle.....	704
Atomization Pressure.....	60-65 psi
Fluid Pressure.....	10-20 psi
Reduction.....	As needed up to 10% by volume
Requires oil and moisture separators	

Brush

Brush.....	Nylon/Polyester or Natural Bristle
Reduction.....	As needed up to 10% by volume

Roller

Cover.....	3/8" woven with solvent resistant core
Reduction.....	As needed up to 10% by volume

Plural Component Spray...Acceptable

Refer to April 2010 Technical Bulletin - "Application Guidelines for Macropoxy 646 Fast Cure Epoxy & Recoatable Epoxy Primer Utilizing Plural Component Equipment"
If specific application equipment is not listed above, equivalent equipment may be substituted.



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PART A B58-600
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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine one part by volume of Part A with one part by volume of Part B. Thoroughly agitate the mixture with power agitation. Allow the material to sweat-in as indicated prior to application. Re-stir before using.

If reducer solvent is used, add only after both components have been thoroughly mixed, after sweat-in.

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

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	7.0 (175)	13.5 (338)
Dry mils (microns)	5.0* (125)	10.0* (250)
~Coverage sq ft/gal (m ² /L)	116 (2.8)	232 (5.7)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1152 (28.2)	

*May be applied at 3.0-10.0 mils (75-250 microns) dft in a multi-coat system. Refer to Recommended Systems and Performance Tips Sections.

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 7.0 mils wet (175 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 100°F/38°C
To touch:	4-5 hours	2 hours	1.5 hours
To handle:	48 hours	8 hours	4.5 hours
To recoat:			
minimum:	48 hours	8 hours	4.5 hours
maximum:	1 year	1 year	1 year
To cure:			
Service:	10 days	7 days	4 days
Immersion:	14 days	7 days	4 days

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

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

Paint temperature must be at least 40°F (4.5°C) minimum.

Pot Life:	10 hours	4 hours	2 hours
Sweat-in-time:	30 minutes	30 minutes	15 minutes

When used as an intermediate coat as part of a multi-coat system:

Drying Schedule @ 5.0 mils wet (125 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 100°F/38°C
To touch:	3 hours	1 hour	1 hour
To handle:	48 hours	4 hours	2 hours
To recoat:			
minimum:	16 hours	4 hours	2 hours
maximum:	1 year	1 year	1 year

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 Reducer R7K15. Clean tools immediately after use with Reducer R7K15. In California use Reducer R7K111. Follow manufacturer's safety recommendations when using any solvent.

PERFORMANCE TIPS

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 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.

Excessive reduction of material can affect film build, appearance, and adhesion.

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, clean equipment before use or before periods of extended downtime with Reducer R7K15. In California use Reducer R7K111.

Tinting is not recommended for immersion service.

Use only Mill White and Black for immersion service.

Insufficient ventilation, incomplete mixing, miscatalyzation, and external heaters may cause premature yellowing.

Excessive film build, poor ventilation, and cool temperatures may cause solvent entrapment and premature coating failure.

Quik-Kick Epoxy Accelerator is acceptable for use. See data page 4.99 for details.

When coating over aluminum and galvanizing, recommended dft is 2-4 mils (50-100 microns).

Acceptable for Concrete Floors.

Can be used as a metalizing sealer. Consult Technical Bulletin - Sealers for Thermal Spray Metalizing, or your local Sherwin-Williams representative.

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

SAFETY PRECAUTIONS

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