



## MEMO

TO: ALL BIDDERS

FROM: Jacqueline Simonis & Mark Ballew, ET Environmental

DATE: 1/28/2012

SUBJECT: Responses to Bidder Questions

---

1. Toilet #29 No accessories schedule or elevation for sink  
Please see Rev 011620 of A-10 for cabinet elevation of the second floor toilet and the accessories.
2. Conference Room: No elevation for South wall casework if this is new  
The elevation of the cabinets for the conference room is 7/ A-10, it was just marked Training Room.
3. Solid Surface material is called out on the finish plan but none shown on the plans or elevations. Is there a specified laminate  
Use "Formica" standard grade laminate.
4. Is there a spec for the benches?  
Use floor anchored, pedestal type benches by "Republic" 17 1/2" high, 9 1/2" wide x 48" long in quantity shown in the drawings
5. Is there a hardware material spec?  
No priority hardware is called for but Schlage or Best series heavy duty locksets or equal should be the minimum standard for bid purposes.
6. Is there a specified finish for the stainless steel counter in the cafeteria?  
Provide satin finish for stainless steel top. This took the place of solid surface tops.
7. Are the dock levelers to be included with specialties or elsewhere?  
Please add a line item for the overhead doors so we can separate that cost out. ET will price the dock levelers out separately.
8. The Form of Proposal, bid breakdown, under Phase 1 Mechanical, Supply and Install Pneumatic Tube Delivery System to New Scale. I don't see where this work is referenced on any of the mechanical or plumbing drawings. Where do I find this work on the drawing or in the specifications?  
Please disregard any reference to scale pit, scale and pneumatic tube. We will be priced at a later date.
9. Form of Proposal, Breakdown Phase 2 Mechanical, Relocate Existing Air Compressor and Associated Equipment and Hook Up to New Air Lines. I don't see where we are relocating any air compressors for this work. Are we to relocate air compressors? If so, which air compressor gets relocated?  
The air compressor is existing. Bidder will relocate from Owner's storage area and re-install at the time of commissioning.

10. Form of Proposal, Breakdown Phase 2 Mechanical, Supply and Install Process Area Exhaust Fans and Ceiling Fans. I don't see any ceiling fans scheduled or shown on drawings. Are there any ceiling fans for this project?

There are Big Ass Fans in building 4. The schedule is on M-5.

11. Is the electrical contractor responsible for wiring of mechanical controls on all HVAC equipment, radiant heaters and associated blowers and pumps for these heaters on this project?

Control wiring will be by mechanical contractor.

12. Drawing M-1, Note #21, is the electrical contractor responsible for the interlock wiring between exhaust fans and motorized dampers?

It will be by the mechanical contractor.

13. Drawing M-2, Note #13, is the electrical contractor responsible for installation of mechanical furnished smoke detector? Electrical required to install, supplied by mechanical.

15. Please confirm: Drawing M-1, Note #15, underground gas piping and new gas meter would be furnished and installed by local gas company. Mechanical contractor would start piping at new meter furnished and installed by others.

This is true.

14. On the CMU at the 2-story office, what is the finished elevation at the second level (roof area)? Is the 12" CMU going to the deck or is it stopping at a certain elevation and drywall above to separate the shop from the office area finished off with the PEMB roof?

The 2nd floor elevation is 15'-0" above the main floor area. The block is to extend to the u/side of the roof insulation at the deck. There will be 4 to 5 joists on the 20' wall perpendicular to the joists that the wall will have to cut around and filled with safig insulation.

15. Can you provide a detail/specification for the Devoe High Performance Coating?  
Please see the attached coating specification.

16. Is there a specification for the floor sealer?

Yes, see attached spec.

17. Is painting of columns or column protection required?

Paint column protection but not columns.

18. What are the specifications for the EEW-1 Emergency Eye Wash Stations?

See the revised plumbing schedule.

19. Are the Emergency Eyewash stations supplied by water?

It's a stand along washer. No piping is required

20. What are the specifications for the above grade domestic water piping?  
See the revised drawings.
21. What are the specification for the below grade domestic water piping?  
See revised drawings.
22. Will insulation be required on the above-grade domestic water piping? If yes, what type and thickness?  
See revised drawings.
23. Will SCH 40 PVC be acceptable for the underground sanitary waste and vent system?  
See revised drawings.
24. Will SCH 40 PVC be acceptable for the above grade sanitary waste and vent system?  
See revised drawings.
25. Do any of the vending machines require water and/or waste?  
No piping is required.
26. Will a waste connection be required for the ice machine?  
Add a floor drain to received waste on P2 and P3. See drawings issued in Addendum 2.
27. Where is the NEW location for the existing water meters and valves? Are drains and/or sumps required in the pits? This will be coordinated with civil drawings.
28. Are trench drains and/or related piping required? If yes, where?  
Only trench drains are located at the new truck docks.
29. Are floor drains and associated piping required at the push walls?  
None at this time.
30. Interlock of the wall louvers/dampers with the exhaust fans on opposite wall will require starters, as the fans themselves are 480 volt. Electrical drawing shows manual switch for these only, no starters. Starters will be added to the drawings.
31. Electrical drawings show EC supplying switches for Big ASS fans, and the control bank for these on the upper level office entrance to the Machinex equipment platform. The supply fan controllers (switches) show locations on the mechanical drawings, but it appears to me that this will fall under the EC scope of work to interlock the switches to the control bank per note 4 and 7 of revised E1 drawing, and not under the HVAC controls.  
Power to the fans by electrical contractor. Control wire between fan controller and fan by mechanical contractor.

32. Room Finish Schedule indicates FRP on the walls in the men's and women's toilet and the men's shower, but the elevations show ceramic tile, which is correct?  
Please provide RRP, Ceramic will be deleted.

33. Room Finish Schedule calls for Vinyl base in Locker rooms, elevations show ceramic tile base, which is correct?  
Vinyl.

34. Room Finish Schedule indicates CT-1 on the east wall of Café/ Training but not on elevations, which is correct?  
No ceramic, use RFP.

35. Do the showers, men's and women's receive wall tile?  
No, prefab shower stalls will be used.

36. Please clarify what the specifications are for the compressed air piping materials.  
Type "L" copper piping.

37. Keyed notes #11 & #20 reference the Reelcraft Hose Reel model #5450 OLP as having a 70' hose length. This model comes with a 50' hose length. Please clarify if the hose length or the model # is desired.  
Provide hose reel with 70' hose length.

38. Who will supply the "Big Ass Fans"?  
The mechanical contractor will supply.

39. Who is responsible for the install of the "Big Ass Fans"?  
Mechanical contractor to install, electrical contractor to power.

**DEVOE**  
HIGH PERFORMANCE  
COATINGS

# DEVTRAN® 224HS

High Solids Epoxy Coating

Cat. # 224FNXXX/224GN0908

## PRODUCT DESCRIPTION

**Generic:** Catalyzed Polyamide Epoxy

**General Description:** A high performance, multi-purpose, surface tolerant, two-component chemically-cured epoxy semi-gloss coating for industrial or high performance architectural coating (HIPAC) applications. For use on properly prepared steel or masonry surfaces.

**Typical Uses:** Ideal for structural steel, piping, tanks, and equipment in chemical, fertilizer, power plants, petroleum refineries, pulp and paper mills, water and sewage treatment plants and mining operations.

Can also be used in the hard service areas of correctional facilities, schools, commercial and restaurant kitchens where a high performance architectural coating (HIPAC) is required.

**Special Qualifications:** Performance alternate for Federal Specifications TT-C-550, TT-C-535B, MIL-C-22750F, and MIL-P-23377F Type I.

## SPECIFICATION DATA

**Color:** Off White, ready-mixed & custom colors

**Finish:** Semi-Gloss

**Weight/Gallon:** 12.5 lbs./gal. (1.5 kg/L) – varies with color.

**VOC (EPA24):** 1.8 lbs./gal. (212 g/L) – varies with color.

When thinned 5% with T-10 thinner, VOC < 250 g/L (2.08 lbs./gal)

When thinned 10% with T-10 thinner, VOC < 275 g/L (2.29 lbs./gal)

224FN3501 VOC (EPA 24) (TBAC Exempt): < 100 g/L (0.83 lbs./gal.)

224FN3501 VOC (TBAC Non-Exempt): < 250 g/L (2.08 lbs./gal.)

**Solids By Volume (ASTM D 2697-7days):** 75%±2% – varies with color.

**Theoretical Coverage at 1.0 Mil (25 microns) Dry:** 1203 sq. ft./gal. (29.5 m<sup>2</sup>/L).

**Recommended Film Thickness:** 4.0-8.0 mils (100-200 microns) dry – 5.3-10.7 mils (155-267 microns) wet.

**Systems:** Please consult the appropriate system guide, the particular job specification or your ICI Paints Representative for proper systems using this product. Systems must be selected considering the particular environment involved.

**Minimum Dry Time (ASTM D 1640):** At 6 mils (150 microns) DFT (Use of cold weather additive will decrease times noted. See cold weather applications on back page.)

Substrate Temperature	40°F (4°C)	60°F (16°C)	70°F (21°C)	80°F (27°C)
Minimum Recoat	20 Hours	8 Hours	6 Hours	3 Hours
Dry Hard	42 Hours	16 Hours	9 Hours	5 Hours
Maximum Recoat				
Self	30 Days	30 Days	30 Days	30 Days
359, 389	15 Days	10 Days	7 Days	7 Days
378, 379	10 Days	7 Days	5 Days	3 Days

Ventilation, film thickness, humidity, thinning and other factors can influence the rate of dry.

**Warning:** The above table provides general guidelines only. Always consult your ICI Paints Representative for appropriate recoat windows since the maximum aged recoat time of this product may be significantly shortened or lengthened by a variety of conditions, including, but not limited to humidity, surface temperature, and the use of additives or thinners. The use of accelerators or force curing may shorten the aged recoat of individual coatings. The above recoat windows may not apply if recoating with a product other than those listed above. If the maximum aged recoat window is exceeded, please consult your ICI Paints Representative for appropriate recommendations to enhance adhesion. Failure to observe these precautions may result in intercoat delamination.

**Shelf Life:** Over 24 months at 77°F (25°C) – unopened

**Mix Ratio By Volume:** 1 (base): 1 (converter) – see mixing instructions.

**Induction:** 15 minutes at 60-80°F (16-27°C) – see mixing instructions.

**Pot Life:** 6 hours @ 77°F (25°C) & 50% R.H

## FEATURES

### Advantages:

- Excellent corrosion protection
- Resists splash and spillage of solvents, alkalis, salts, moisture, oils, greases, foodstuffs and detergents
- Cold weather cure – Use cold weather additive for application down to 25°F (-4°C)
- Surface tolerant
- Low VOC
- Self-priming on steel or masonry
- Abrasion resistant
- High build/high solids coating

**Limitations of Use:** Exterior exposure will cause a color change, early dulling, and loss of gloss, but this does not affect protective properties. Epoxy coatings may yellow during application and cure if exposed to the combustion by-products of improperly vented fossil fuel burning heaters. Commonly finished with DEVTHANE® Urethane Enamel for maximum exterior color & gloss retention. Use only products that are in compliance with local VOC regulations.

## PERFORMANCE DATA

**Adhesion:** (ASTM D 4541) – Excellent

**Salt Spray Resistance:** (ASTM B 117) – Excellent

**Direct Impact Resistance:** (ASTM D 2794) – Very Good

**Abrasion Resistance:** (ASTM D 4060) – Excellent

**Humidity Resistance:** (ASTM D 4585) – Excellent

**Exterior Exposure:** (45° South – Lt. Industrial) – Very Good

(Normal, expected loss of gloss for epoxy coatings)

**Service Temperature Limits:** 250°F (121°C) dry

**Hardness:** (ASTM D 3363), 7 day cure @ 77°F (25°C) – 3H

**Chemical Resistance:** (ASTM D 1308 – 24 hr. contact) – Excellent. Resists splash and spillage of alkalis, salts, moisture, oils, greases, food stuffs, and detergents, 50% 3, 25% citric acid, 25% lactic acid, 10% sulfuric acid, crude oil, 10% hydrochloric acid, 20% tannic acid, 5% sodium chloride, 10% ammonium hydroxide, sewage, 50% ethanol, gasoline, methanol, kerosene, naphtha, xylol. All results based on testing of system comprised of two coats of DEVTRAN 224HS coating at 4 mils (100 microns) DFT per coat.

**DANGER! COMBUSTIBLE. HARMFUL OR FATAL IF SWALLOWED.** Read label and Material Safety Data Sheet Prior to Use. See other cautions on last page.

DSF2-0790

09800

FINISHES  
SPECIAL COATINGS (9800)

DEVOE COATINGS

DEVOE  
HIGH PERFORMANCE  
COATINGS

DEVOE  
HIGH PERFORMANCE  
COATINGS

DEVOE COATINGS

FINISHES  
SPECIAL COATINGS (9800)

## GENERAL SURFACE PREPARATION

Surfaces must be dry, clean, free of oil, grease, form release agents, curing compounds, laitance, other foreign matter and be structurally sound. Remove all loose paint, mortar spatter, mill scale, and rust. All direct to metal coatings provide maximum performance over blasted surfaces. There are situations and cost limitations which preclude blasting. DEVTRAN® 224HS was designed to provide excellent protection over less than ideal surface preparation. The minimum standard for non-immersion service is SSPC-SP2 (ISO-SI2); for immersion service the minimum standard is SSPC-SP10 (ISO-Sa2 1/2). These minimum surface preparation standards apply to steel that has been previously abrasive blasted, coated and deteriorated. Where very rusty surfaces still remain after cleaning use PRE-PRIME™ 167 Sealer before application of DEVTRAN 224HS coating. All direct to metal coatings provide maximum performance over near-white blasted surfaces.

**New Surfaces:** Steel –New steel surfaces should be initially blasted to near-white metal surface cleanliness in accordance with SSPC-SP10 or ISO-Sa2 1/2 for immersion service or commercial blast cleanliness in accordance with SSPC-SP6 or ISO-Sa2 for non-immersion service. Blast profile on steel should be 1.2 to 2.5 mils (38-63 microns) in depth and be of a sharp, jagged nature as opposed to a "peen" pattern (from shot blasting). Surfaces must be free of grit dust. **Concrete Block** –Remove loose aggregate and repair voids. Fill with this product or TRU-GLAZE-WB™ 4015 filler. **Concrete Floors, Poured Concrete** – Cure at least 30 days. Acid etch or abrasive blast slick,

glazed concrete or concrete with laitance. Prime with PRE-PRIME 167 sealer or this coating. **Galvanized Steel** –Remove dirt and oils by solvent cleaning or with DEVPREP® 88 cleaner or other suitable cleaner followed by a thorough water rinsing. For non-immersion service, prime with DEVTRAN 205 or DEVTRAN 203 epoxy primers. For immersion or severe moisture condition, abrasive blasting is recommended before priming with this product or DEVTRAN 201. Choice of primer depends on local VOC and air quality regulations.

**Previously Painted Surfaces:** Old coatings should be tested for lifting. If lifting occurs, remove the lifted coating. Otherwise scuff sand glossy areas and aged epoxy coatings. Clean aged epoxy or urethane coatings with DEVPREP 88 cleaner. Remove cracked and peeling paint. Prime bare areas with primer specified under **New Surfaces**.

**WARNING!** If you scrape, sand, or remove old paint, you may release lead dust. **LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424-LEAD or log on to [www.epa.gov/lead](http://www.epa.gov/lead).**

## DIRECTIONS FOR USE

**Tinting:** Tint the appropriate base with CHROMA-CHEM® 844 colorants. (Do not use water based colorants). Add colorants to only the base portion. Mix thoroughly before adding the Converter portion.

**Thinning:** For compliance to VOC regulations, thin as follows: South Coast Air Quality Management District (SCAQMD) available in DC224FN3501 only: Thinning is not required, however, if thinning is desired, add acetone or T-0 thinner at no more than 5% by volume. Read and follow all hazard and precautionary information found on labels, data sheets and MSDS's. **California outside of SCAQMD:** Thinning is not required, however, if thinning is desired, add T10 Thinner at no more than 5% by volume. **All other areas:** Thinning is not required, however, if thinning is desired, 10% or less by volume of T-10 Thinner can be added depending on local VOC and air quality regulations. Any solvent addition should be made after the two components are thoroughly mixed.

**Mixing:** DEVTRAN 224HS Coating is a two component product supplied in 10 gallon and 2 gallon kits which contain the proper ratio of ingredients. The entire contents of each container must be mixed together. Power mix both portions first to obtain a smooth, homogeneous condition. Then add the converter slowly with continued agitation. After the converter add is complete, continue to mix slowly. Allow the mixed material to stand 15 minutes at 60-80°F (16-27°C) before use. Always restir before use. Avoid storing or placing containers in direct sunlight.

**Application:** Spray is preferred for appearance and film build control. For air spray application, use a fluid tip of .070" or larger, a professional grade conventional gun and an air cap with good break-up. The fluid pressure should be kept low, with just enough air pressure to get good break-up of the coating. Excessive air pressure can cause over-spray problems. Where airless equipment is used, an airless spray pump capable of 3,000 psi (207 bars) and .019" to .025" tip size will provide a good spray pattern. Ideally, fluid hoses should not be less than 3/8" ID and not longer than 50 feet to obtain optimum results. Longer hose length may require an increase in pump capacity, pressure, and/or thinning. DEVTRAN 224HS epoxy may also be applied by brush or roller.

Care should be taken that proper and uniform thicknesses are obtained. For roller work use a clean synthetic roller with 1/4"-1/2" nap. New rollers should be thoroughly wet with the specified thinner and spun vigorously to remove loose fibers. Brushing and rolling may require multiple coats to achieve correct film thickness and/or hiding.

**Cold Weather Applications:** For substrate temperatures between 25°F (-4°C) and 40°F (5°C) cold weather additive 060A000 may be added. Two pint containers of 060A0000 may be added to the converter portion of a 10 gallon kit of DEVTRAN 224HS coating. Thoroughly mix the 060A0000 additive in the converter with a power mixer prior to adding the converter to the base portion

**Dry Time (ASTM D 1640):** At 6 Mils (150 microns) DFT with Cold Weather Additive (060A0000)

Substrate Temperature	25°F(-4°C)	30°F(-1°C)	40°F(4°C)
To Recoat	25 hours	16 hours	11 hours <sup>2</sup>
Dry Hard	>32 hours	24 hours	16 hours

**Spreading Rate:** Apply at 150-300 sq. ft. per gallon (4-7m<sup>2</sup>/L) depending on surface texture and porosity. Make allowance for any losses due to overspray or surface irregularities.

**Dry Time (ASTM D 1640):** At 77°F (25°C) & 50% R.H., dries to recoat with epoxy or urethane in 6 hours and dry hard in 9 hours.

**Clean-up:** Use T-10 Thinner, except in the South Coast Air Quality Management District use acetone, T-0 thinner or other solvent in compliance with local VOC and air quality regulations.

## PRECAUTIONS

**DANGER! COMBUSTIBLE LIQUID AND VAPOR. CORROSIVE. CAUSES EYE AND SKIN BURNS. HARMFUL OR FATAL IF SWALLOWED. ASPIRATION HAZARD - CAN ENTER LUNGS AND CAUSE DAMAGE. HARMFUL IF INHALED. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DIZZINESS, HEADACHE OR NAUSEA. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION. OVEREXPOSURE MAY CAUSE BLOOD, LIVER, KIDNEY DAMAGE. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE LUNG CANCER AND OTHER LUNG DAMAGE IF INHALED. USE ONLY WITH ADEQUATE VENTILATION. KEEP OUT OF THE REACH OF CHILDREN. NOTICE: Products in this series contain solvents.** Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. For emergency information call (800) 545-2643. **Note: These warnings encompass the product series. Prior to use, read and follow product-specific MSDS and label information.** For emergency information call (800) 545-2643. For additional safety information, refer to the Material Safety Data Sheet for this product. Keep away from heat, sparks and flame. **Do not smoke.** Vapors may ignite. Extinguish all flames, burners, stoves, heaters and pilot lights and disconnect all electrical motors and appliances before use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. If sanding, wear a dust mask to avoid breathing of sanding dust. Do not breathe vapors or spray mist. Ensure fresh air entry during application and drying. Avoid contact with eyes and skin. If you experience eye watering, headaches, or dizziness, leave the area. If properly used, a respirator may offer additional protection. Obtain professional advice before using. Close container after each use. **FIRST AID:** For skin contact, wash thoroughly with soap and water. If any product remains, gently rub with petroleum jelly, vegetable or mineral/baby oil then wash again with soap and water. Repeat as needed. Remove contaminated clothing. For eye contact, flush immediately with plenty of water for at least 15 minutes. **Get medical attention.** If swallowed, **get medical attention immediately.** If inhalation causes discomfort, remove to fresh air. If discomfort persists or breathing difficulty occurs, get medical attention. **KEEP FROM FREEZING.**

## SHIPPING

DS177-0306

Flash Point:	100°F (38°C)	
Packaging:	2 gallon kit (7.570L)	10 gallon kit (37.850L)
	1.00 gallon base	5.00 gallon base
	1.00 gallon converter	5.00 gallon converter

Shipping Weight:: 4 gallon case (base or converter) - 53 lbs. (24.0 kg)  
10 gallon kit - 133 lbs. (60.3 kg)

224HS (05/07)  
Add Stock #68634E

\*CHROMA-CHEM is a Registered Trademark of Degussa GmbH.



Strongsville, Ohio U.S.A.  
800-654-2616  
[www.devcoecoatings.com](http://www.devcoecoatings.com)

**LIMITATION OF LIABILITY:** To the best of our knowledge, the technical data contained herein are true and accurate at the date of issuance but are subject to change without prior notice. We guarantee our product to conform to the specifications contained therein. **WE MAKE NO OTHER WARRANTY OR GUARANTEE OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE.** Liability, if any, is limited to replacement of the product or refund of the purchase price. **LABOR OR COST OF LABOR AND OTHER CONSEQUENTIAL DAMAGES ARE HEREBY EXCLUDED.**