

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1630-AR-10 AFIN: 16-00275

1. PERMITTING AUTHORITY:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

ABB Installation Products, Inc.
5601 E. Highland Drive
Jonesboro, Arkansas 72401

3. PERMIT WRITER:

Bart Patton

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Noncurrent-Carrying Wiring Device Manufacturing
NAICS Code: 335932

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
9/20/2021	De Minimis	Replace sulfuric acid with hydrochloric acid at SN-09B; Remove SN-51 and 55

6. REVIEWER'S NOTES:

In this revision, the following changes were made:

- Removed SN-51 Bosch Water Tank (Chromate)
- Removed SN-55 Plasma Cutting (Cable Tray Process Line)
- Replaced SN-09B Sulfuric Acid Dip with SN-09B Hydrochloric Acid Dip

Annual emissions increased as follows: HCl, 0.01.

Annual emissions decreased as follows: PM/PM₁₀, 8.4; NO_x, 4.5; Chromium Trioxide, 0.01.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

The facility was last inspected on July 23, 2020. No areas of concern were identified.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N/A

b) Is the facility categorized as a major source for PSD? N

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
None		

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
None				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Not applicable.

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

Not applicable.

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = $0.11 \times \text{TLV}$	Proposed lb/hr	Pass?
HCl	2.984	0.3282	0.0015	Yes

c) No other modeling is required at this time.

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
01	Material balance and gassing factors	4.291 tpy PM loss at 2600 op hr/yr Factor of safety = 1.3; Scaled up to 8,760 op hr/yr	Acid scrubber S-01A, Alkali scrubber S-01B	97%	With Factor of Safety =1.3, and scaled up to 8760 op hr/yr from 2600, 18.793 max tpy PM loss, uncontrolled. Recalculated at R6 for new control equipment. At the facility's request, limits were not lowered from previous levels.
03, 04, 17A/B, 21, 22, 26, 28, 35, 50	AP-42 Tables 1.4-1,2,3	NO _x = 100 lb/MMft ³ , etc.	None	N/A	Combustion
09, 10	NYSDEC - Estimated Emissions Table A12-C	Gassing Factor = 3% to 5%	Scrubair Scrubbers 1, 2	90%	All HAPs below 1 tpy. For SN-09C, usage is 2.18 lb/hr Ammonium Chloride, 1.08 lb/hr Zinc Chloride. 2.18 x 5% gassing factor x (100%-90%) = 0.109 lb/hr Ammonium Chloride. 8,760 op hr/yr.

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
09B	Texas CEQ Calc Guidance Package, Hot Dip Galvanizing	E (lb/hr-ft ²) 2.605E-4 uncontrolled Total emissions = ER4 + Fugitives	Fume suppressant; building capture efficiency (no abatement device)	95%; 50% per TCEQ Guidance	Tank surf area 4.83 x 15.83 = 76.46 sq ft. ER4 = E x Area x (1-fume suppr eff) x (1-hood eff) x (1-abate device eff) = 2.605E-4 x 76.46 x 0.05 x 1 x 1 = 9.96E-4 lb/hr. Fugitives = E x Area x (1-95%) x (1-50%) x (1-abate device eff) = 4.98E-4 lb/hr. Total hrly = 4.98E-4 + 9.96E-4 = 1.494E-3 lb HCl/hr. 8760 op hr/yr.
15	AP-42, tables 1.4-1, 2, and 3	<u>lb/MMscf</u> 7.6 PM/PM ₁₀ 0.6 SO ₂ 5.5 VOC 84 CO 100 NO _x	Baghouse	98%	2 x 1.1942 MMbtu/hr burners. 8,760 op hr/yr.
16			None	N/A	2 x 1.1942 MMbtu/hr burners. 8,760 op hr/yr.
23, 24, 25, 26, 27, 30, 35, 36, 38	Material Balances and MSDS	100% Evaporation 10% overspray	Donaldson Torit Cartridge for SN-27	90%	

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
28	Material Balances and MSDS	<p><u>For PM/PM₁₀</u> 85% coating transfer efficiency (for PM/PM₁₀) 88.39% solids</p> <p><u>For volatiles</u> 100% evaporation, with 50% evaporated at coating and 50 % evaporated at curing 11.6% VOC 0.023% phenol 0.37% diethylene glycol monobutyl ether</p>	Smog Hog	99.06% double-pass efficiency (PM/PM ₁₀ only)	265.58 lb/hr, max hourly PVC coating usage. 8760 op hr/yr.
29	Material Balances	<p>100% Evaporation</p> <p>4.8% Ethylbenzene 6.6% Xylene 28.81% Mineral Spirits 5.04% Diethylene Glycol Monomethyl Ether 5.04% Propylene Glycol Monomethyl Ether 15% Methyl Ethyl Ketoxime 11.06% Aliphatic Petroleum Distillate 56% VOC 14% PM₁₀</p>	None	N/A	Max paint usage = 0.3 lb/hr. 8,760 op hr/yr.
30	Vendor info	<p>Exhaust air flow: 10,900 dscfm</p> <p>Inlet Particulate Loading: 0.2 gr/dscf</p>	Baghouse	95%	The source vents to a baghouse which vents indoors. 8,760 op hr/yr.
36	Material Balances and MSDS	<p><u>For volatiles</u> 100% evaporation, with 50% evaporated at coating and 50 % evaporated at curing 11.6% VOC 0.023% phenol 0.37% diethylene glycol monobutyl ether</p>	None	N/A	39.35 lb/hr, max hourly PVC coating usage. 8760 op hr/yr.

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
36, 37	AP-42 Tables 1.4-1,2,3	NO _x = 50 lb/MMft ³	None	N/A	8760 op hr/yr. Low NO _x burners.
42	Engineering Estimate	0.2 gr/dscfm @6,700 dscfm	Baghouse	90%	
43	Engineering Estimate	2.43 lb/hr VOC			
45	AP-42, tables 1.4-1, 2, and 3	<u>lb/MMscf</u> 7.6 PM/PM ₁₀ 0.6 SO ₂ 5.5 VOC 84 CO 100 NO _x	None	N/A	0.66553 MMbtu/hr; 1000 MMbtu/MMscf; 8760 op hr/yr
47			Baghouse (PM/PM ₁₀ only)	98%	2 burners x 1.1942 MMbtu/hr; 1000 MMbtu/MMscf; 8760 op hr/yr
47	11/18/09 test data at Jonesboro site, concentration of Zinc Oxide in fumes in ambient air above kettle before entering collection hood	0.9466 mg ZnO / m ³ air	Baghouse	98%	15,290 cfm, max inlet gas flow to baghouse; included in limits as PM/PM ₁₀
47	AP-42, Table 12.14-2 for Galvanizing, SCC 3-04-008-05	5 lb PM/ton Zinc used	Baghouse	98%	Max input 400 lb zinc/hr; Max input 750 tons zinc/yr; zinc ingots contain 0.03% lead, 0.02% cadmium

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
48	$SA_{\text{exterior of pipe}} = 34.689 \text{ ft}^2$	4 mil (0.004") exterior coating of zinc / pipe; assumed 0.5 mil of coating emitted as PM / pipe	Baghouse	98%	$SA_{\text{exterior}} = 2 \times \text{Pi} \times \text{Outer Radius} \times \text{Length}$; $SA_{\text{exterior}} = (6.625'' \text{ OD}) \times (1'/12'') \times (1/2, \text{ convert OD to Outer Radius}) \times 20' \text{ pipe length}$; 445.74 lb/ft^3 , density of zinc slab per MSDS; 400 pipes/hr, 8760 hr/yr
48	11/18/09 test data at Jonesboro site, concentration of Zinc Oxide in fumes in ambient air above kettle before entering collection hood	50% of SN-47's $0.9466 \text{ mg ZnO} / \text{m}^3 \text{ air}$	Baghouse (SN-52)	98%	15,290 cfm, max inlet gas flow to baghouse; SN-48 process is some distance away from SN-47's zinc kettle, so 50% of SN-47's tested ZnO is assumed; included in limits as PM/PM ₁₀
49	$SA_{\text{interior of pipe}} = 31.903 \text{ ft}^2$	4 mil (0.004") interior coating of zinc / pipe; assumed 0.5 mil of coating emitted as PM / pipe	Baghouse	98%	$SA_{\text{interior}} = 2 \times \text{Pi} \times \text{Inner Radius} \times \text{Length}$; $SA_{\text{interior}} = (\text{Inner Diameter} = 6.625'' \text{ OD} - (2 \times 0.266'' \text{ wall thk})) \times (1'/12'') \times (1/2, \text{ convert ID to Inner Radius}) \times 20' \text{ pipe length}$; 445.74 lb/ft^3 , density of zinc slab per MSDS; 400 pipes/hr, 8760 hr/yr

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
52	Material Balances and MSDS	<u>Paint A</u> 0.833 gal/hr used 11.57 lb/gal 71.08 wt% solids 27.31 wt% VOC	Filter Panel	99.83%	For volatiles, 10% evap at mixing (SN-53) and 90% evap at painting (SN-52). For solids, 100% loss of PM/PM ₁₀ at painting (SN-52), 0% (SN-53), with transfer efficiency 85%.
53		<u>Paint B</u> 0.417 gal/hr used 8.56 lb/gal 74.94 wt% solids 25.03 wt% VOC <u>MEK</u> 1.56 gal/hr used 6.71 lb/gal No solids 100 wt% VOC	None	N/A	
54	Eqpt/worker capacity	75% transfer efficiency 50% loss of airborne particulate	Filter Panel	95%	13.15 lb zinc wire max usage / hour.
02	Removed at R1				
06, 07	Removed at R2				
11, 12	Added to SN-13 at R3				
18, 19, 20, 39, 40	Removed at R3				
05, 08, 31, 32, 33, 34, 41, 44	Removed at R4				
13	Replaced by SN-45 at R5				
14	Replaced by baghouse at R5				
10, 35, 42, 46	Removed at R6				
51, 55	Removed at R10				

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
None				

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
None				

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Limit (as established in permit)	Frequency	Report (Y/N)
Plantwide	Coatings and Solvent usage; VOC and HAP contribution from natural gas combustion	99.0 tpy VOC	Monthly	N
		9.9 tpy Single HAP 24.9 tpy Combination HAP	Monthly	N
15, 16, 47	Zinc throughput	750 tons throughput per year	Monthly	N

19. OPACITY:

SN	Opacity %	Justification (NSPS limit, Dept. Guidance, etc)	Compliance Mechanism (daily observation, weekly, control equipment operation, etc)
09, 10, 23, 24	20%	§18.501. These are uncontrolled sources, or low efficiency controls, such as paint filters.	Inspector's Observation
All other sources	5%	§18.501	Inspector's Observation

20. DELETED CONDITIONS:

Former SC	Justification for removal
16-17	SN-51 Bosch Water Tank was removed

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)							
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	Acetone	HAPs	
								Single	Total
24 natural gas-fired infrared heaters, 0.1 MMBtu/hr each	A-1	0.080	0.0063	0.058	0.883	1.052		0.0190	0.0198
Coupling Oven (Mold line of the Fittings process; 0.1 MMBtu/hr)	A-1	0.004	0.0003	0.003	0.037	0.044		0.0008	0.0009
Cure Oven (Mold line of the Fittings process; 0.1 MMBtu/hr)	A-1	0.004	0.0003	0.003	0.037	0.044		0.0008	0.0009
Pre-heat Oven (Powder line of the Fittings process; 0.1 MMBtu/hr)	A-1	0.004	0.0003	0.003	0.037	0.044		0.0008	0.0009

Source Name	Group A Category	Emissions (tpy)							
		PM/PM ₁₀	SO ₂	VOC	CO	NO _x	Acetone	HAPs	
								Single	Total
Cure Oven (Powder line of the Fittings process; 0.1 MMBtu/hr)	A-1	0.004	0.0003	0.003	0.037	0.044		0.0008	0.0009
Total A-1		0.094	0.0074	0.068	1.031	1.227		0.0221	0.0231
Parts Washer/Degreaser	A-9			0.033				0.0	0.0
Total A-9				0.033				0.0	0.0
Injection Molding	A-13	Negligible emissions per R3 application							
Chemical Recovery Room Centrifuge Exhaust	A-13	Negligible emissions per R3 application							
Chemical Mix Process Exhaust	A-13	0.71							
Pipe Primer Pre-Heat Burners (two, 0.15 MMBtu/hr each)	A-13	0.01	0.0008	0.008	0.111	0.132		0.0024	0.0025
Inside Pipe Blow-Out Booth No. 1 and No. 2	A-13	1.16							
Acetone Strip Tanks (2)	A-13						15.4		
Total A-13		1.88	0.0008	0.008	0.111	0.132	15.4	0.0024	0.0025

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22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
1630-AR-9

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Minor Source

Revised 03-11-16

Facility Name: ABB Installation
Products, Inc.
Permit Number: 1630-AR-10
AFIN: 16-00275

			Old Permit	New Permit
\$/ton factor	25.13	Permit Predominant Air Contaminant	196.94	196.94
Minimum Fee \$	400	Net Predominant Air Contaminant Increase	0	
Minimum Initial Fee \$	500			
		Permit Fee \$	400	
Check if Administrative Amendment	<input type="checkbox"/>	Annual Chargeable Emissions (tpy)	196.94	

Pollutant (tpy)	Old Permit	New Permit	Change
PM	90.9	82.5	-8.4
PM ₁₀	90.9	82.5	-8.4
PM _{2.5}	0	0	0
SO ₂	2.3	2.3	0
VOC	99	99	0
CO	19.9	19.9	0
NO _x	27.1	22.6	-4.5
Chromium Trioxide	0.01	0	-0.01
Total HAP	24.9	24.9	0
Acetone	196.94	196.94	0