September 5, 2018

Ms. Michelle Owenby Division of Air Pollution Control Tennessee Department of Environment & Conservation William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15th Floor Nashville, TN 37243

Subject: Hormann LLC True Minor Permit Application New Facility in Sparta, TN

Dear Ms. Owenby,

With this letter, Hormann LLC (Hormann) submits a construction permit application for a True Minor facility for the manufacturing of garage doors. The facility will consist of five (5) emission sources for the production of insulated garage doors with custom options for dimensions, style, and color. The emission sources are listed below and described in detail in the attached APC 100 form and visually in the attached process flow diagram. Application pages and emission calculations for each individual source are also attached.

The following emission sources are included in the application:

Source 001	Forming Door Hardware
Source 002	EPS Foam Panel Imprinting and Gluing
Source 003	Polyurethane Foam Injection, Heat Tunnel and Sawing
Source 004	Custom Paint Application
Source 005	12,000 gallon Pentane (blowing agent) Tank Recirculation Loop Component Fugitives

Sources 002 and 003 will require a permit for installation and operation. However, Sources 001, 004, and 005 meet the definition of insignificant activity in TAPCR 1200-03-09-.04(2)(a)3 and 1200-03-09-.04(4)(a) which states that activities that emit less than 5 tons per year of regulated pollutants and less than 1,000 pounds per year of a hazardous pollutant are insignificant and are, therefore, exempt from permitting. Based on this information, Hormann requests that TDEC make a determination of insignificant status and exemption from permitting for Sources 001, 004, and 005. Application pages and calculations for each of these sources are attached.

I hereby certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

If you have questions or comments, please contact Ethan Herman, Project Engineer at (423) 337-3993, or my consultant, Shea Cofer at (615) 418-1414.

Sincerely, Camron Rudd

Camron Rude President



NON-TITLE V PERMIT APPLICATION FACILITY IDENTIFICATION

Тур	e or print and sub	mit. Atta	ach a	ppropriate s	ource descriptior	n forms.		
		SITE	INFO	ORMATION				
1. Organization's lega	l name and SOS o	ontrol n	umb	er [as regist	ered with the TN	Secretary of State (SOS)]		
Hormann LLC 00093260	6							
2. Site name (if differe	nt from legal name	e)						
3. Is a construction per (see instructions for	••		ig su	bmitted?	Yes 🖌 No			
4. Site address (St./Rd.	/Hwy.)					County name		
420 Airport Road	-					White		
City			Zip	code		5. NAICS or SIC code		
Sparta			385	83		332321		
6. Site location	Latitude				Longitude			
(in lat. /long.)	36.05565 N				85.52171 W			
	CONTACT I	NFORM	ΑΤΙΟ	N (RESPONS	IBLE PERSON)			
7. Responsible person	/Authorized con	tact			Phone numb	er with area code		
Camron Rudd					(630) 859-300	(630) 859-3000		
Mailing address (St.	/Rd./Hwy.)				Fax number v	with area code		
5050 Baseline Rd	2							
City		State		Zip code	Email addres	S		
Montgomery		IL		60538	c.rudd@horm	ann.us		
	CONT	ACT INF	ORM	IATION (TEC	HNICAL)			
8. Principal technical	contact				Phone numb	er with area code		
Ethan Herman					(630) 859-300	0 ext. 160		
Mailing address (St.	/Rd./Hwy.)				Fax number v	with area code		
5050 Baseline Rd					(630) 859-812	2		
City		State		Zip code	Email addres	S		
Montgomery		IL		60538	e.herman@ho	ormann.us		
	CON	ITACT IN	IFOR	MATION (BI	LLING)			
9. Billing contact					Phone numb	er with area code		
Dana Bavilacqua					(630) 859-300	0 ext. 152		
Mailing address (St.	/Rd./Hwy.)				Fax number v	with area code		
5050 Baseline Rd								
City		State		Zip code	Email addres	S		
Montgomery		IL		60538	d.bavilacqua@	phormann.us		

AIR CONTAMINANT SOURCE(S) INFORMATION

-	of air contaminant sou		-							
process emission sources, fuel burning installations, and incinerators that are contained in this application and include a Unique Source ID for each source. The Unique Source ID is a name/number/letter, which										
uniquely identifies the air contaminant source(s), like Boiler #1, Paint Line #1, Engine #1, etc. (see										
instructions for more details)										
The Garage Door Manufacturing facility will have 5 processes which are potential air contaminant sources. Three will qualify as insignificant activities due to their low potential emissions, and two require an air permit.										
			potential	emissic	ins, and two requi					
Source Descripti	on									
	ed steel coil is formed i	nto door ha	ardware ·	- Insignit	ficant Activity					
002 EPS Foar	n Panel Imprinting and	Gluing Ope	eration: I	EPS foar	n panels are impri	nted or embossed to the				
-		ssions are fr	rom the f	foam bu	rned away in the i	mpressions and gluing to				
	l door panels.									
-	-				-	ane foam is injected into a				
-		0				m is cured in a NG fired particulate emissions.				
		-			-	th and NG fired cure oven				
	acement air unit Insig			operati	on with spray boo					
		•	-	ulation L	.oop Component L	eaks - Fugitive Emissions -				
	cant Activity					2				
11. Is the air con	aminant source(s) in	a nonattai	inment a	area? If	"Yes", then mind	or source BACT must be				
11. Is the air contaminant source(s) in a nonattainment area? If "Yes", then minor source BACT must be										
addressed.										
	es No									
addressed. Y	es No	Days/\ 7			Weeks/Year 52	Days/Year 365				
addressed. Y	es No Hours/Day 24	Days/\ 7			Weeks/Year	Days/Year				
addressed. Y	es No Hours/Day 24	Days/\ 7	Week		Weeks/Year 52	Days/Year 365				
addressed. Y	es No Hours/Day 24 al Dec. – Feb. 25	Days/\ 7 March 25	Week 1 – May		Weeks/Year 52 June – August	Days/Year 365 Sept. – Nov.				
addressed. Y	es No Hours/Day 24 al Dec. – Feb. 25	Days/V 7 March 25 RMIT REQU	Week 1 – May	check a	Weeks/Year 52 June – August 25 ppropriate box)	Days/Year 365 Sept. – Nov.				
addressed. Y	es No Hours/Day 24 al Dec. – Feb. 25 TYPE OF PEF	Days/V 7 March 25 RMIT REQU	Week n – May ESTED (d	check a	Weeks/Year 52 June – August 25 ppropriate box)	Days/Year 365 Sept. – Nov. 25				
addressed. Y	es No Hours/Day 24 al Dec. – Feb. 25 TYPE OF PEF	Days/V 7 March 25 RMIT REQU started	Week n – May ESTED (d	check a npleted	Weeks/Year 52 June – August 25 ppropriate box)	Days/Year 365 Sept. – Nov. 25 ship change (if applicable)				
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addressed. Y	es No Hours/Day 24 al Dec. – Feb. 25 TYPE OF PEF Date construction Last permit numb	Days/V 7 March 25 RMIT REQUI started I er(s)	Week n – May ESTED (d	c heck a npleted Emissio	Weeks/Year 52 June – August 25 ppropriate box) Date of owners on Source Referen	Days/Year 365 Sept. – Nov. 25 ship change (if applicable) ice Number(s)				
addressed. Y	es No Hours/Day 24 al Dec. – Feb. 25 TYPE OF PEF Date construction Last permit numb	Days/V 7 March 25 RMIT REQUI started I er(s)	Week n – May ESTED (d	c heck a npleted Emissio	Weeks/Year 52 June – August 25 ppropriate box) Date of owners	Days/Year 365 Sept. – Nov. 25 ship change (if applicable) ice Number(s)				
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addressed. Y	es No Hours/Day 24 al Dec. – Feb. 25 TYPE OF PEF Date construction Last permit numb New Facility ruction permit above, t	Days/V 7 March 25 RMIT REQU started I er(s)	Week – May ESTED (d Date cor	check a mpleted Emissio Emissio	Weeks/Year 52 June – August 25 ppropriate box) Date of owners on Source Referen	Days/Year 365 Sept. – Nov. 25 ship change (if applicable) ice Number(s)				
addressed. Y	es No Hours/Day 24 al Dec. – Feb. 25 TYPE OF PEF Date construction Last permit numb New Facility ruction permit above, t Starting date	Days/V 7 March 25 RMIT REQU started I er(s)	Week - May ESTED (d Date cor e either N	check a npleted Emission Emission	Weeks/Year 52 June – August 25 ppropriate box) Date of owners on Source Referen	Days/Year 365 Sept. – Nov. 25 Ship change (if applicable) ace Number(s)				
addressed. \\ 12. Normal operation: 13. Percent annu throughput 14. Operating permit Construction permit If you chose Const New Construction √	es No Hours/Day 24 al Dec. – Feb. 25 TYPE OF PEF Date construction Last permit numb New Facility ruction permit above, t Starting date September 2018	Days/N 7 March 25 RMIT REQUI started I er(s) eer(s)	Week n – May ESTED (d Date cor	check a npleted Emission Emission New Cor ompletic Decembe	Weeks/Year 52 June – August 25 ppropriate box) Date of owners on Source Referent on Source Referent on Source Referent on date er 2019	Days/Year 365 Sept. – Nov. 25 ship change (if applicable) ce Number(s) ce Number(s)				
addressed. Y	es No Hours/Day 24 al Dec. – Feb. 25 TYPE OF PEF Date construction Last permit numb New Facility ruction permit above, t Starting date	Days/N 7 March 25 RMIT REQUI started I er(s) eer(s)	Week n – May ESTED (d Date cor	check a npleted Emission Emission New Cor ompletic Decembe	Weeks/Year 52 June – August 25 ppropriate box) Date of owners on Source Referen	Days/Year 365 Sept. – Nov. 25 ship change (if applicable) ce Number(s) ce Number(s)				
addressed. \\ 12. Normal operation: 13. Percent annu throughput 14. Operating permit Construction permit If you chose Const New Construction √	es No Hours/Day 24 al Dec. – Feb. 25 TYPE OF PEF Date construction Last permit numb New Facility ruction permit above, t Starting date September 2018	Days/N 7 March 25 RMIT REQUI started I er(s) eer(s)	Week ESTED (C Date cor e either N CC D start D	check a mpleted Emission Emission New Cor ompletic December ate com	Weeks/Year 52 June – August 25 ppropriate box) Date of owners on Source Referent on Source Referent on Source Referent on date er 2019	Days/Year 365 Sept. – Nov. 25 ship change (if applicable) ce Number(s) ce Number(s)				

	escribe changes that have been or operating permit application:	made to this equipment or o	operation(s) since the last construction
Ŭ			
i. C	comments		
		SIGNATURE	
			l, as the responsible person of the above
			ation is accurate and true to the best of r
_	edge. As specified in TCA Section 39		
'. Sig	gnature (application must be signe	d before it will be processed)	Date
	(tem	the	17 Sept. 2018
Sig	gner's name (type or print)	Title	Phone number with area code
2	nton Rudd	Resident Hormann	UK 63Ø-518-Ø623
an	mar juda	TOMENA	up and she years

Plantwide Emission Summary Hormann LLC Sparta, TN

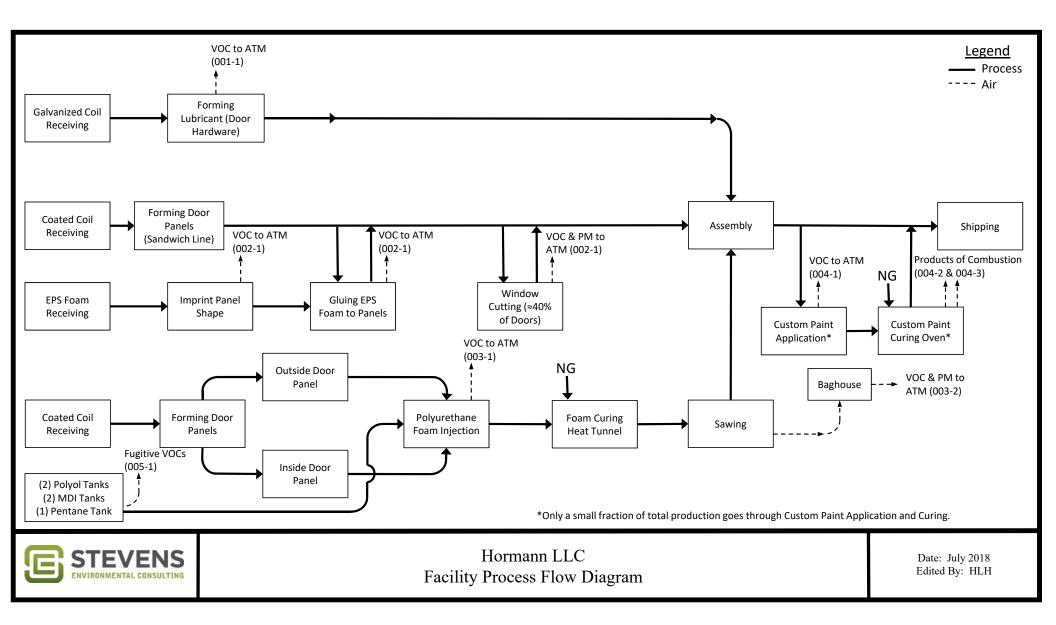
				Criteria	Poluttant Emissi	ons (tpy)				Hazardous Air Po	llutant (HAP) Emiss	ions
Source	Description	TSP ²	PM10 ²	PM2.5 ²	NOx	VOC	SO2	со	CO2eq	Methylene Diphenyl Diisocyanate (MDI) CAS:101- 68-8	Styrene CAS:100-42-5	Total HAPs
001 (insignificant)	Forming Door Hardware					0.21						0.00
002	EPS Foam Panel Imprinting and Gluing Operation ¹					4.89				3.10	0.03	3.13
003	Polyurethane Foam Injection, Heat Tunnel, and Sawing Operation	2.57	2.57	2.57	0.26	25.87	0.002	0.22	318.37	0.001		0.001
004 (insignificant)	Custom Paint Application (Includes Paint Cure Oven Burner and Replacement Air Unit Combustion Emissions)	0.18	0.18	0.18	2.36	4.48	0.01	1.98	2,850.96			0.00
005 (insignificant)	12,000 gal Pentane (Blowing Agent) Tank Recirc Loop Components					0.58						0.00
	Totals =	2.75	2.75	2.75	2.63	36.03	0.02	2.20	3,169.33	3.10	0.03	3.13

Note:

1) Source 002 VOC emission calculations based on maximum garage door production of

80,000 Doors per Year

2) TSP, PM10 and PM2.5 include filterable and condensable particulate matter.





APC 102

NON-TITLE V PERMIT APPLICATION PROCESS OR FUEL BURNING SOURCE DESCRIPTION

Type or print. Submit with the APC 100.											
GENERAL IDENTIFICATION AND DESCRIPTION											
1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] 2. Emission Source Hormann LLC 000932606 Reference Number											
3. Is this air contaminant source s If Yes, list rule citation, including F	•		No								
4. Unique Source ID (see instruction	ns)	5. Unique Emission Point	t ID (see ins	tructions)							
001 Forming Door Hardware		001-1									
6. Description of air contaminant	source	L									
Galvanized steel coil is formed into d	oor hardware. Form	ning lubricant releases VOCs	Insignifica	ant Activity							
7. Type of air contaminant source	(Check only one op	tion to the right)		1							
Process Emission Source: For each p (Check at right and complete lines 8,		ırce, submit a separate appl	ication.	\checkmark							
Process Emission Source with in pro- heated. For each process emission s complete lines 8 through 14)											
Non-Process fuel burning source: Pro Complete this form for each boiler o Description Form (APC 101) for each	r fuel burner and co	omplete a Non-Title V Emissio	on Point								
	S EMISSION SOURC	CE DESCRIPTION AND DATA									
8. Type of operation: Continuous ✓	Batch	Normal batch time	Norr	nal batches/day							
9. Process material inputs and	Diagram	Input rates	(pounds/ho	ur)							
In-process solid fuels	reference	Design		Actual							
A. 921 DS 1MO CANT RUST (M2)	001-1	390 LB/YEAR	39	0 LB/YEAR							
B. 251 ROLL FILM	001-1	66.7 LB/YEAR	66.	7 LB/YEAR							
С.											
D.											
Ε.											
F.											
G.											
Totals		459.7 LB/YEAR	459	.7 LB/YEAR							

* A simple process flow diagram must be attached.

DESCRI	PTION	OF BOI	LER, BURNE	R, ENGI	NE, OR OTH	ER FUE	L BURNING S	ou	RCE
10. Boiler or burner da	ata: (Co	mplete	lines 10 thr	ough 14	using a sepa	rate for	m for each bo	oile	r, burner, etc.)
Serial Number				Тур	e of firing**	*			
Rated horsepower	ted horsepower Rated input capacity (10 ⁶ BTU/Hr.) Other rating (specify capacity and								
Date constructed		Date n	nanufacture	ed	Date of las	t modifi	cation (explai	n ir	n comments below)
** Source with a com									
** Source with a comi *** Cyclone, spreader (dry hott	om with or w	ith	out reinjection)
other stoker (speci						-			2
FUEL	USED II	N BOILE	ER, BURNER	, ENGIN	E, OR OTHEI	R FUEL	BURNING SO	UR	CE
11. Fuel data: (Comple	te for a	process	s emission s	ource wi				s f	uel burning source)
Primary fuel type (s							pe(s) (specify)		
Fuels used	Annu	al usage		y usage	%	%	BTU value		(For APC use only)
	6		Design	Averag	e Sulfur	Ash	of fuel		SCC code
Natural gas:	10 ⁶ Cı	u. Ft.	Cu. Ft.	Cu. Ft.	/////////		1,000		
					///////////////////////////////////////	/////	1,000		
#2 Fuel oil:	10 ³ G	al.	Gal.	Gal.		/////			
						/////			
#5 Fuel oil:	10 ³ G	al.	Gal.	Gal.		/////			
						/////			
#6 Fuel oil:	10 ³ G	al.	Gal.	Gal.		/////			
						/////			
Coal:	Tons		Lbs.	Lbs.					
Wood:	Tons		Lbs.	Lbs.		/////			
					///////////////////////////////////////				
Liquid propane:	10 ³ G	al.	Gal.	Gal.	///////	/////			
					////////	/////	85,000		
Other (specify type &									
units):									
12. If Wood is used as	a fuel,	specify	types and	estimate	e percent by	/ weigh	t of bark	<u> </u>	1
		-			-	-			
13. If Wood is used wit	th othe	r fuels.	specify pe	rcent bv	weight of w	vood ch	arged to the	bu	irner.
				J	0		0		

	APC 102
14. Comments	
SIGNATURE	-
If this form is being submitted at the same time as an APC 100 form, then a signature is not required on	this form.
Date this form regardless of whether a signature is provided. If this form is NOT being submitted at the	same time
as an APC 100 form, then a signature is required.	
Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the	e above
mentioned facility, certify that the information contained in this application is accurate and true to the b	
knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury	
15. Signature Date 17 Sept. 2918	
Signer's name (type or print) Title Phone number with area co	de
Camron Rudd Resident, Mormonn UC 630-518-062	3



NON-TITLE V PERMIT APPLICATION EMISSION POINT DESCRIPTION

Type or print and submit for each stack or air contaminant source. Submit with the APC 100.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] Hormann LLC 000932606

2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) 001 Forming Door Hardware

3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) 001-1

4. Brief description of air contaminant source (Attach a diagram if appropriate):

Galvanized steel coil is formed into door hardware. Forming lubricant releases VOCs. - Insignificant Activity

5. Emission poin	t Latitude		Longitude		6. Dis	stance to neare	st property line (Ft.)
location	36.05565 N	I	85.52171 W				
		S	TACK AND EMIS	SION DA	TA		
7. Stack or emission	Height above (Ft.)	0	Diameter (Ft.) N/A	Tempe (°F)	rature	% of time over 125°F	Direction of exit (Up down or horizontal)
point data: \rightarrow	N/A			N/A		N/A	N/A
Data at exit	Flow (actual F	t. ³ /Min.)	Velocity (Ft. /Sec	.)	Moistu	ire (Grains/Ft. ³)	Moisture (Percent
conditions: \rightarrow	N/A		N/A		N/A		N/A
Data at	Flow (Dry std	Ft. ³ /Min.)	Velocity (Ft. /Sec.)			ire (Grains/Ft. ³)	Moisture (Percent
standard conditions:	N/A		N/A		N/A		N/A
\rightarrow 8. Monitoring de	vice and reco	rding instru	ment (check all	that an	nlv).		
Opacity	SO ₂	NO _x	Strip	Electr		Other (speci	ify No monitor
monitor	monitor	monitor	chart	da <u>ta l</u>	ogger	in comment	
9. Control devic	:e. Descriptior	n of proposed	d monitoring, red	ordkeep	ing, and	reporting to as	sure compliance with
emission limit	s. Include ope	rating param	eters of control	device (fl	ow rate,	, temperature, p	ressure drop, etc.).
None.							

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

instructions for	more details	5)						
Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concen- tration	Average Emissions (Ton/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Effi- ciency %
Particulate matter (PM)			**					
Sulfur dioxide (SO ₂)			***					
Carbon monoxide (CO)			PPM					
Volatile organic compounds (VOC)			PPM	0.21	0.21	2	000	N/A
Nitrogen oxides (NO _X)			PPM					
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								
Other (specify)								
Other (specify)								

	APC 101
11. Comments	
	(25)
SIGNATURE	그는 아이는 것은 것은 가지 않는 것을 했다.
If this form is being submitted at the same time as an APC 100 form, ther	a signature is not required on this form.
Date this form regardless of whether a signature is provided. If this form	is NOT being submitted at the same time
as an APC 100 form, then a signature is required.	
Based upon information and belief formed after a reasonable inquiry, I, a	as the responsible person of the above
mentioned facility, certify that the information contained in this application	on is accurate and true to the best of my
knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is	
12. Signature	Date IM Carl 2014
(time find	At sept. cseno
Signer's name (type or print) Title	Phone number with area code
Camron Rudd Hesident, Hormon UC	630-519-0623
* Refer to the tables in the instructions for estimation method and co	ntrol device codes.
** Exit gas particulate matter concentration units: Process – Grains/Dry	Standard Ft³ (70°F), Wood fired boilers -
Grains/Dry Standard Ft ³ (70 ⁰ F), all other boilers – Lbs. /Million BTU h	eat input.

*** Exit gas sulfur dioxide concentrations units: Process – PPM by volume, dry bases, and boilers – Lbs. /Million BTU heat input

.

Hormann LLC Source 001 Forming Door Hardware VOC Emissions from Forming lubricant for galvanized coil forming (Insignificant Activity)

Operating Parameters Hours of Operation

8,760 hrs/yr

Lubricant Name	Annual Usage (gal)	Material Density (lb/gal)	VOC Content (%)	VOC En	nissions
	Allitudi Usage (gal)	Waterial Density (D/gai)	VOC Content (%)	lb/year	ТРҮ
921 DS 1MO CANT RUST (M2)	55	7.089	90%	350.9	0.18
251 ROLL FILM	10	6.672	99%	66.1	0.03
				Total	0.21

Example Calculation:

VOC Emissions = Annual Usage (gal) x Material Density (lb/gal) x VOC Content (%)



NON-TITLE V PERMIT APPLICATION PROCESS OR FUEL BURNING SOURCE DESCRIPTION

Type or print. Submit with the APC 100.									
GENERAL IDENTIFICATION AND DESCRIPTION									
1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] 2. Emission Source Hormann LLC 000932606 Reference Number									
3. Is this air contaminant source subject to an NSPS or NESHAP rule? Yes No									
4. Unique Source ID (see instruction 002 EPS Foam Panel Imprinting and C		5. Unique Emission Point	ID (see ins	tructions)					
6. Description of air contaminant	source								
EPS Foam Panel Imprinting and Gluing Operation: EPS foam panels are imprinted or embossed to the shape of the garage door. Emissions are from the foam burned away in the impressions and gluing to the metal door panels.									
7. Type of air contaminant source	(Check only one op	tion to the right)							
	Process Emission Source: For each process emission source, submit a separate application. (Check at right and complete lines 8, 9, and 14)								
•	n process fuel: Products of combustion contact materials sion source, submit a separate application. (Check at right and								
Non-Process fuel burning source: Pro Complete this form for each boiler o Description Form (APC 101) for each	r fuel burner and co	omplete a Non-Title V Emissio	on Point						
	S EMISSION SOURC	CE DESCRIPTION AND DATA		•					
8. Type of operation: Continuous ✔	Batch	Normal batch time	Norr	nal batches/day					
9. Process material inputs and	Diagram	Input rates	(pounds/ho	ur)					
In-process solid fuels	reference	Design		Actual					
A. N/A (Foam Panel Imprinting)	(002-1)	200		200					
B. PURMELT 513C GLUE	(002-1)	7.07		7.07					
С.									
D.									
E.									
F.									
G.									
Totals		7.07		7.07					

* A simple process flow diagram must be attached.

DESCRIPTION OF BOILER, BURNER, ENGINE, OR OTHER FUEL BURNING SOURCE									
10. Boiler or burner data: (Complete lines 10 through 14 using a separate form for each boiler, burner, etc.)									
Serial Number Type of firing***									
Rated horsepower		R	ated input c	apacity (10 ⁶ BTU/Hr.)	Othe	r rating (speci	fy	capacity and units)
Date constructed		Date n	nanufacture	ed	Date of las	t modifi	cation (explai	n ir	n comments below)
** Source with a com									
** Source with a comi *** Cyclone, spreader (dry hott	om with or w	ith	out reinjection)
other stoker (speci						-			2
FUEL	USED II	N BOILE	ER, BURNER	, ENGIN	E, OR OTHEI	R FUEL	BURNING SO	UR	CE
11. Fuel data: (Comple	te for a	process	s emission s	ource wi				s f	uel burning source)
Primary fuel type (s							pe(s) (specify)		
Fuels used	Annu	al usage		y usage	%	%	BTU value		(For APC use only)
	6		Design	Averag	e Sulfur	Ash	of fuel		SCC code
Natural gas:	10 ⁶ Cı	u. Ft.	Cu. Ft.	Cu. Ft.	/////////		1,000		
					///////////////////////////////////////	/////	1,000		
#2 Fuel oil:	10 ³ G	al.	Gal. Gal	Gal.		/////			
						/////			
#5 Fuel oil:	10 ³ G	al.	Gal.	Gal.		/////			
						/////			
#6 Fuel oil:	10 ³ G	al.	Gal.	Gal.		/////			
						/////			
Coal:	Tons		Lbs.	Lbs.					
Wood:	Tons		Lbs.	Lbs.		/////			
					///////////////////////////////////////				
Liquid propane:	10 ³ G	al.	Gal.	Gal.	///////	/////			
					////////	/////	85,000		
Other (specify type &									
units):									
12. If Wood is used as a fuel, specify types and estimate percent by weight of bark									
		-			-	-			
13. If Wood is used wit	th othe	r fuels.	specify pe	rcent bv	weight of w	vood ch	arged to the	bu	irner.
				J	0		0		

	APC 102
14. Comments	
16	
SIGNATURE	State of the second
If this form is being submitted at the same time as an APC 100 form, then	a signature is not required on this form.
Date this form regardless of whether a signature is provided. If this form	is NOT being submitted at the same time
as an APC 100 form, then a signature is required. Based upon information and belief formed after a reasonable inquiry, I, a	s the responsible person of the above
mentioned facility, certify that the information contained in this application	on is accurate and true to the best of my
knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is	made under penalty of perjury.
15. Signature	Date
(Im m	17 Sept. 2018
Signer's name (type or print) Title	Phone number with area code
Comron Rudd Resident, Hormann LLC	650-513-0623
	1



NON-TITLE V PERMIT APPLICATION EMISSION POINT DESCRIPTION

Type or print and submit for each stack or air contaminant source. Submit with the APC 100.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] Hormann LLC 000932606

2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) 002 EPS Foam Panel Imprinting and Gluing Operation

3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) 002-1

4. Brief description of air contaminant source (Attach a diagram if appropriate):

EPS Foam Panel Imprinting and Gluing Operation: EPS foam panels are imprinted or embossed to the shape of the garage door. Emissions are from the foam burned away in the impressions and gluing to the metal door panels.

5. Emission poin	t	Latitude		Longitude		6. Dis	stance to neare	est property line (Ft.)
location		36.05565 N	N	85.52171 W				
				STACK AND EMI	SSION DA	TA		
7. Stack or	He	eight above	e grade	Diameter (Ft.)	Tempe	erature	% of time	Direction of exit (Up
emission	(F	t.)		2.12 ft	(°F)		over 125°F	down or horizontal)
point data: \rightarrow	45	ft			N/A		N/A	Up
Data at exit	Flo	ow (actual l	-t. ³ /Min.)	Velocity (Ft. /Se	c.)	Moistu	ure (Grains/Ft. ³)	Moisture (Percent
conditions: \rightarrow	10	,600 ACFM		50 ft/s		N/A		N/A
Data at	Fl	ow (Dry std	. Ft. ³ /Min.)	Velocity (Ft. /Se	c.)	Moistu	re (Grains/Ft. ³)	Moisture (Percent
standard conditions: \rightarrow	10	,600		50 ft/s		N/A		N/A
8. Monitoring de	evio	e and reco	ording instru	ument (check a	ll that ap	ply):		I
Opacity	S	02	NO _X	Strip	Electr	onic	Other (spec	ify No monitor
monitor	n	nonitor	m <u>oni</u> tor	chart	dat <u>a l</u>	ogger	in comment	ts) (none)
9. Control devi	ce.	Descriptio	n of propose	d monitoring, re	cordkeep	ing, and	l reporting to as	sure compliance with
emission limi	ts. I	nclude ope	rating paran	neters of control	device (fl	ow rate	, temperature, p	ressure drop, etc.).
None.								

APC 101

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

instructions for	more details	s)						
Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concen- tration	Average Emissions (Ton/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Effi- ciency %
Particulate matter (PM)			**					
Sulfur dioxide (SO ₂)			***					
Carbon monoxide (CO)			PPM					
Volatile organic compounds (VOC)	1.12	1.12	PPM	4.89	4.89	2	000	N/A
Nitrogen oxides (NO _X)			PPM					
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)								
Hazardous air pollutant (specify) MDI (101-68-8)	0.71	0.71		3.10	3.10	2	000	N/A
Hazardous air pollutant (specify) Styrene (100-42-5)	0.01	0.01		0.03	0.03	2	000	N/A
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								
Other (specify)								
Other (specify)								

	APC 101
11. Comments	
SIGNA	
If this form is being submitted at the same time as an APC	100 form, then a signature is not required on this form.
Date this form regardless of whether a signature is provid	ed. If this form is NOT being submitted at the same time
as an APC 100 form, then a signature is required.	
Based upon information and belief formed after a reason	able inquiry, I, as the responsible person of the above
mentioned facility, certify that the information contained i	n this application is accurate and true to the best of my
knowledge. As specified in TCA Section 39-16-702(a)(4), thi	
12. Signature	Date
man task	Nº7 Sept. CONS
Signer's name (type or print) Title	Phone number with area code
Camton Rudd Fesident	Hormann UC 650-518-0623
 Refer to the tables in the instructions for estimation r 	nethod and control device codes.
** Exit gas particulate matter concentration units: Proce	ss – Grains/Dry Standard Ft ³ (70 ⁰ F), Wood fired boilers -
Grains/Dry Standard Ft ³ (70 ⁰ F), all other boilers – Lbs.	/Million BTU heat input.

*** Exit gas sulfur dioxide concentrations units: Process – PPM by volume, dry bases, and boilers – Lbs. /Million
 BTU heat input

Hormann LLC Source 002

Summary

Source Summary	V	OC	HAP (S	tyrene)	HAPs (MDI)		HAPs Total
	lb/hr	TPY	lb/hr	TPY	lb/hr	tpy	tpy
Emissions from EPS Panel	0.41	1.79	0.01	0.03			0.03
Emissions from Gluing EPS Foam	0.71	3.10			0.71	3.10	3.10
Total	1.12	4.89	0.01	0.03	0.71	3.10	3.13

Hormann LLC Source 002 Imprinting Panel Shape in EPS Foam¹

VOC Emissions from EPS Foam Loss during Imprinting Door Foam Panels.

EPS = Expanded Polystryene Direct Data Entry

Operating Parameters							
Hours of Operation	8,760 hrs/yr						
		Stack D	ia.	Duct Exit Velocity			
Ventilation Rate	10,600 CFM (ass	umed) 2.12	2 ft	<mark>3000</mark> fpm			
				50 ft/s			
Foam Loss Calculation:							
	24 Impressions pe	r average 12 ft by 7					
Number of impressions	ft Door						
Production Rate ¹	80,000 Doors produce	d per year					
Foam Loss Rate (Volume)	0.0334 Ft ³ of foam is burned away per impression						
Annual Imprinting EPS Foam Loss							
(Volume)	64,128 Ft ³ of foam bur	ned away per year (from im	printing)				
Assumed additional Foam loss from							
window cutting and router	1.5% Margin of Safet	y - from cutting panels with	ı hot wire or	routers for windows			
Annual Total Foam Loss (volume)	65,090 Ft ³ of foam lost	annually from imprinting a	nd cutting				
Emission Calculation:							
EPS Foam Density	1.0 pcf or lb/ft ³	Nominally 1pcf per	EPS Foam To	ech Sheet			
Tolerance for Density Variance	10%						
EPS Foam VOC Content	5% per EPS Foam S	DS from Pentanes					

0.10% Styrene content per EPS Foam SDS

Source Summary	VOC ²		HAP (Styrene)	
	lb/hr	TPY	lb/hr	TPY
Emissions from EPS Panel Imprinting and Cutting	0.41	1.79	0.01	0.03

Notes and Example Calculation:

EPS Foam HAP Content

1) VOC emission calculations based on maximum garage door production of80,000Doors per Year2) VOC emissions (TPY) = [EPS Foam Density (pcf) x Annual EPS Foam Loss from Imprinting and cutting (ft³) x EPS Foam VOCContent(%)]/2,000 lb/ton

Hormann LLC Source 002 EPS Foam Panel Gluing Emissions VOC and HAP Emissions from Annual Usage of PURMELT Adhesive

Direct Data Entry

Operating Parameters	h					
Hours of Operation 8,760	nrs/yr					
		HAP Content				
PURMELT 513C GLUE contains		5%	Percent Methylenebis(phenylisocyanate). Also known as MDI. C number 101-68-8			
				Input Rate		
Current Annual Usage of EPS Foam Pa (PURMELT 513C)	anel Glue	61,920	Lbs per year	7.07	lb/hr	
Multiplier for increased production		2	Assumed that at full capa production/glue usage do		lift at the TN plant,	
Source Summary	HAPs (VOC	C) from MDI				
	lh/hr	tov				

Source Summary	HAPS (VOC) from MDI	
	lb/hr	tpy
Emissions from Gluing EPS Foam to	0.71	3.10
Door Panels	0.71	5.10

Example Calculation:

HAP Emissions from MDI (tpy) = [Annual usage of PURMELT 513C (lbs/yr) x Multiplier for increased production x Content (%)] / 2,000 lb/ton

HAP



NON-TITLE V PERMIT APPLICATION PROCESS OR FUEL BURNING SOURCE DESCRIPTION

GENERAL IDENTIFICATION AND DESCRIPTION 1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] 2. Emission Source Reference Number Hormann LLC 000932606 2. Statis (SOS)] 3. Is this air contaminant source subject to an NSPS or NESHAP rule? If Yes, list rule citation, including Part, Subpart, and applicable Sections: No ✓ 4. Unique Source ID (see instructions) 5. Unique Emission Point ID (see instructions) 003-1 and 003-2 003-1 and 003-2 6. Description of air contaminant source 003-1 and 003-2 Polyurethane foam is injected into a cavity between two door panels resulting in a release of VOC emissions. Foam is cured in a NG fired Heat Tunnel. 7. Type of air contaminant source (Check only one option to the right) Image: Check at right and complete lines 8, 9, and 14) Process Emission Source: For each process emission source, submit a separate application. (Check at right and complete lines 8, 9, and 14) Image: Check at right and complete lines 8 through 14) Non-Process fuel buring source: Products of combustion contact materials heated. For each process ensision source, submit a separate application. (Check at right and complete lines 10 through 14) Non-Process fuel buring source: Products of combustion don to contact materials heated. Complete this form for each boiler or fuel burner and complete lines 10 through 14) Process Emission Source Wistons On Quart and complete lines 10 through 14)	Type or print. Submit with the APC 100.								
Secretary of State (SOS)] Reference Number Hormann LLC 000932606 No ✓ 3. Is this air contaminant source subject to an NSPS or NESHAP rule? Yes No ✓ If Yes, list rule citation, including Part, Subpart, and applicable Sections: No ✓ 4. Unique Source ID (see instructions) 03-1 and 003-2 003 Polyurethane Foam Injection, Heat Tunnel, and Saw 003-1 and 003-2 6. Description of air contaminant source Polyurethane foam is injected into a cavity between two door panels resulting in a release of VOC emissions. Foam is cured in a NG fired Heat Tunnel. 7. Type of air contaminant source (Check only one option to the right) Process Emission Source: For each process emission source, submit a separate application. (Check at right and complete lines 8, 9, and 14) Process Emission Source: Products of combustion contact materials heated. For each process fuel burning source: source, submit a separate application. (Check at right and complete Ines 8 through 14) Image: Complete lines 8 through 14) Non-Process fuel burning source: Products of combustion do not contact materials heated. Complete lines 8 through 14) Normal batch time Normal batch time Normal batches/day Continuous ✓ Batch Normal batch time Normal batches/day 9. Process material inputs and in-process solif vels reference Design Actual A. PE									
If Yes, list rule citation, including Part, Subpart, and applicable Sections: 4. Unique Source ID (see instructions) 003 Polyurethane Foam Injection, Heat Tunnel, and Saw 003-1 and 003-2 5. Unique Emission Point ID (see instructions) 003-1 and 003-2 6. Description of air contaminant source Polyurethane foam is injected into a cavity between two door panels resulting in a release of VOC emissions. Foam is cured in a NG fired Heat Tunnel. 7. Type of air contaminant source (Check only one option to the right) Process Emission Source: For each process emission source, submit a separate application. (Check at right and complete lines 8, 9, and 14) Process Emission Source with in process fuel: Products of combustion contact materials heated. For each process emission source, submit a separate application. (Check at right and complete lines 8 through 14) Non-Process fuel burning source: Products of combustion do not contact materials heated. For each process emission source, submit a separate application. (Check at right and complete lines 8 through 14) Non-Process fuel burning source: Products of combustion do not contact materials heated. For each process emission Source to fuel burner and complete lines 10 through 14) PROCESS EMISSION SOURCE DESCRIPTION AND DATA 8. Type of operation: Continuous Batch. 9. Process material inputs and Diagram In-process solid fuels A. PENTANE (003-1) 7.2 7.2 B. MDI (003-1) 7.2 7.2 B. MDI (003-2) N/A N/A N/A E. F. C.	Secretary of State (SOS)]	Secretary of State (SOS)] Reference Number							
003 Polyurethane Foam Injection, Heat Tunnel, and Sav 003-1 and 003-2 6. Description of air contaminant source Polyurethane foam is injected into a cavity between two door panels resulting in a release of VOC emissions. Foam is cured in a NG fired Heat Tunnel. 7. Type of air contaminant source (Check only one option to the right) Process Emission Source: For each process emission source, submit a separate application. (Check at right and complete lines 8, 9, and 14) Process Emission Source with in process fuel: Products of combustion contact materials heated. For each process emission source, submit a separate application. (Check at right and complete lines 8 through 14) Non-Process fuel burning source: Products of combustion do not contact materials heated. Complete lines for each boiler or fuel burner and complete lines 10 through 14) PROCESS EMISSION SOURCE DESCRIPTION AND DATA 8. Type of operation: Continuous Continuous Batch Normal batch time Normal batches/day 9. Process solid fuels reference Design Actual A. PENTANE (003-1) 7.7.2 77.2 B. MDI (003-1) 1,382.3 1,382.3 D. N/A (Sawing Operation) (003-2) N/A N/A E.		3. Is this air contaminant source subject to an NSPS or NESHAP rule? Yes If Yes, list rule citation, including Part, Subpart, and applicable Sections: No							
6. Description of air contaminant source Polyurethane foam is injected into a cavity between two door panels resulting in a release of VOC emissions. Foam is cured in a NG fired Heat Tunnel. 7. Type of air contaminant source (Check only one option to the right) Process Emission Source: For each process emission source, submit a separate application. (Check at right and complete lines 8, 9, and 14) Process Emission Source with in process fuel: Products of combustion contact materials heated. For each process emission source, submit a separate application. (Check at right and complete lines 8 through 14) Non-Process fuel burning source: Products of combustion do not contact materials heated. Complete this form for each boiler or fuel burner and complete a Non-Title V Emission Point Description Form (APC 101) for each stack. (Check at right and complete lines 10 through 14) PROCESS EMISSION SOURCE DESCRIPTION AND DATA 8. Type of operation: Continuous / Batch Normal batch time 9. Process material inputs and In-process solid fuels Piagram A. PENTANE (003-1) 7.7.2 8. MDI (003-1) 2.281.8 C. POLYOL (003-1) 1.382.3 D.N/A (Sawing Operation) (003-2) N/A F. I I F. I I G. I I	• • • • • • • • •								
Polyurethane foam is injected into a cavity between two door panels resulting in a release of VOC emissions. Foam is cured in a NG fired Heat Tunnel. 7. Type of air contaminant source (Check only one option to the right) Process Emission Source: For each process emission source, submit a separate application. (Check at right and complete lines 8, 9, and 14) Process Emission Source with in process fuel: Products of combustion contact materials heated. For each process emission source, submit a separate application. (Check at right and complete lines 8 through 14) Non-Process fuel burning source: Products of combustion do not contact materials heated. Complete this form for each boiler or fuel burner and complete a Non-Title V Emission Point Description Form (APC 101) for each stack. (Check at right and complete ines 10 through 14) PROCESS EMISSION SOURCE DESCRIPTION AND DATA 8. Type of operation: Normal batch time Continuous Batch Process solid fuels reference PLOY (003-1) A. PENTANE (003-1) O.N/A (Sawing Operation) (003-2) N/A (Sawing Operation) (003-2) F. Image: Solid Solid Complete Sol			003-1 and 003-2						
Foam is cured in a NG fired Heat Tunnel. 7. Type of air contaminant source (Check only one option to the right) Process Emission Source: For each process emission source, submit a separate application. (Check at right and complete lines 8, 9, and 14) Process Emission Source with in process fuel: Products of combustion contact materials heated. For each process emission source, submit a separate application. (Check at right and complete lines 8 through 14) Non-Process fuel burning source: Products of combustion do not contact materials heated. Complete this form for each boiler or fuel burner and complete a Non-Title V Emission Point Description Form (APC 101) for each stack. (Check at right and complete lines 10 through 14) PROCESS EMISSION SOURCE DESCRIPTION AND DATA 8. Type of operation: Continuous of Batch Normal batch time Normal batches/day 9. Process material inputs and In-process solid fuels Diagram Input rates (pounds/hour) A. PENTANE (003-1) 77.2 77.2 B. MDI (003-1) 1,382.3 1,382.3 D. N/A (Sawing Operation) (003-2) N/A N/A E. Image: Continuous of the set	6. Description of air contaminant	source							
Process Emission Source: For each process emission source, submit a separate application. Image: Character Stress of Computation Stress Stress of Computer Stress Stress Stress Stress of Computer Stress Stres									
(Check at right and complete lines 8, 9, and 14) □ Process Emission Source with in process fuel: Products of combustion contact materials heated. For each process emission source, submit a separate application. (Check at right and complete lines 8 through 14) ✓ Non-Process fuel burning source: Products of combustion do not contact materials heated. Complete this form for each boiler or fuel burner and complete a Non-Title V Emission Point Description Form (APC 101) for each stack. (Check at right and complete lines 10 through 14) ✓ PROCESS EMISSION SOURCE DESCRIPTION AND DATA PROCESS EMISSION SOURCE DESCRIPTION AND DATA 8. Type of operation: Continuous ✓ Batch Normal batch time Normal batches/day 9. Process material inputs and In-process solid fuels Diagram reference Input rates (pounds/hour) Actual A. PENTANE (003-1) 77.2 77.2 B. MDI (003-1) 2,281.8 2,281.8 C. POLYOL (003-2) N/A N/A E. Inscription N/A Inscription F. Inscription Inscription Inscription G. Inscription Inscription Inscription Inscription In-process solid fuels Inscription Inscription Inscription Inscription	7. Type of air contaminant source	(Check only one opt	tion to the right)						
heated. For each process emission source, submit a separate application. (Check at right and complete lines 8 through 14) ✓ Non-Process fuel burning source: Products of combustion do not contact materials heated. Complete this form for each boiler or fuel burner and complete a Non-Title V Emission Point Description Form (APC 101) for each stack. (Check at right and complete lines 10 through 14) ✓ PROCESS EMISSION SOURCE DESCRIPTION AND DATA Normal batch time Inormal batches/day 9. Process material inputs and In-process solid fuels Diagram reference Design Actual A. PENTANE (003-1) 77.2 77.2 B. MDI (003-1) 1,382.3 1,382.3 D. N/A (Sawing Operation) (003-2) N/A N/A F. Inclusion N/A Inclusion Inclusion			rce, submit a separate appli	cation.					
Complete this form for each boiler or fuel burner and complete a Non-Title V Emission Point Description Form (APC 101) for each stack. (Check at right and complete lines 10 through 14) Image: Complete this form for each stack. (Check at right and complete lines 10 through 14) 8. Type of operation: Continuous Batch Normal batch time Normal batches/day 9. Process material inputs and In-process solid fuels Diagram reference Input rates (pounts/hour) Actual A. PENTANE (003-1) 77.2 77.2 B. MDI (003-1) 2,281.8 2,281.8 C. POLYOL (003-1) 1,382.3 1,382.3 D. N/A (Sawing Operation) (003-2) N/A N/A F. Image: Complete the stack of the st	heated. For each process emission so	heated. For each process emission source, submit a separate application. (Check at right and							
8. Type of operation: Continuous ✓BatchNormal batch timeNormal batches/day9. Process material inputs and In-process solid fuelsDiagram referenceInput rates;ActualA. PENTANE(003-1)77.277.2B. MDI(003-1)2,281.82,281.8C. POLYOL(003-1)1,382.31,382.3D. N/A (Sawing Operation)(003-2)N/AN/AF.InterferenceInterferenceInterferenceG.InterferenceInterferenceInterferenceB. MDI(003-1)1,382.31,382.3C. POLYOL(003-2)N/AN/AF.InterferenceInterferenceInterferenceG.InterferenceI	Complete this form for each boiler of	r fuel burner and co	mplete a Non-Title V Emissio	on Point					
ContinuousBatchInput rates (pounds/hour)9. Process material inputs and In-process solid fuelsDiagram referenceInput rates (pounds/hour)A. PENTANE(003-1)77.277.2B. MDI(003-1)2,281.82,281.8C. POLYOL(003-1)1,382.31,382.3D. N/A (Sawing Operation)(003-2)N/AN/AF.InterferenceInterferenceInterferenceG.InterferenceInterferenceInterference		S EMISSION SOURC							
In-process solid fuels reference Design Actual A. PENTANE (003-1) 77.2 77.2 B. MDI (003-1) 2,281.8 2,281.8 C. POLYOL (003-1) 1,382.3 1,382.3 D. N/A (Sawing Operation) (003-2) N/A N/A F.		Batch	Normal batch time	Norr	nal batches/day				
A. PENTANE (003-1) 77.2 77.2 B. MDI (003-1) 2,281.8 2,281.8 C. POLYOL (003-1) 1,382.3 1,382.3 D. N/A (Sawing Operation) (003-2) N/A N/A F.	-	0	Input rates	(pounds/ho					
B. MDI (003-1) 2,281.8 2,281.8 C. POLYOL (003-1) 1,382.3 1,382.3 D. N/A (Sawing Operation) (003-2) N/A N/A E. F. G.	In-process solid fuels	reference	Design		Actual				
C. POLYOL (003-1) 1,382.3 1,382.3 D. N/A (Sawing Operation) (003-2) N/A N/A E. F. G.		(003-1)	77.2		77.2				
D. N/A (Sawing Operation)(003-2)N/AN/AE.F.G.	B. MDI	(003-1)	2,281.8		2,281.8				
E. Image: Control of the second	C. POLYOL	(003-1)) 1,382.3 1,382.3						
F. Image: Constraint of the second seco	D. N/A (Sawing Operation)	(003-2)	N/A N/A						
G. Enderstand	E.								
Totals 3,741.2 3,741.2	G.								
	Totals		3,741.2		3,741.2				

* A simple process flow diagram must be attached.

DESCRIPTION OF BOILER, BURNER, ENGINE, OR OTHER FUEL BURNING SOURCE										
10. Boiler or burner da	ita: (Complet	te lin	es 10 thro	0		<u> </u>	ate for	m for each bo	iler	r, burner, etc.)
Serial Number				Тур	e of	firing***				
Automatic										
Rated horsepower R			d input c	apacity (1	10 ⁶ E	BTU/Hr.)	Othe	r rating (speci	fy c	capacity and units)
				0.614				18	30	kw
			<u> </u>							
Date constructed	Date	e mar	nufacture	a	Da	te of last	modifi	cation (explair	n In	i comments below)
2018			2018							
** Source with a comr	non stack wi	ll hav	ve the sar	ne stack i	num	nber.				
*** Cyclone, spreader (-	•			-			-
other stoker (specif										
								BURNING SOU		
11. Fuel data: (Complet				ource wit					s fu	uel burning source)
Primary fuel type (s Fuels used		r				Standby f		e(s) (specify) BTU value		(For ADC use only)
Fuels used	Annual usa	ge		y usage	_	% Sulfur	% Ash			(For APC use only)
			Design	Average	e	Sunui	7.511	of fuel		SCC code
Natural gas:	10 ⁶ Cu. Ft.		Cu. Ft.	Cu. Ft.		////////	/////	1,000		
	5.27		602	602		///////////////////////////////////////	/////	1,000		
#2 Fuel oil:	10 ³ Gal.		Gal.	Gal.			/////			
							/////			
#5 Fuel oil:	10 ³ Gal.		Gal.	Gal.			/////			
							/////			
#6 Fuel oil:	10 ³ Gal.		Gal.	Gal.						
							///// /////			
Coal:	Tons		Lbs.	Lbs.						
coal.	10113		LD3.	LD3.						
	-				_					
Wood:	Tons		Lbs.	Lbs.		///////	/////			
						///////////////////////////////////////	/////			
Liquid propane:	10 ³ Gal.		Gal.	Gal.		///////		85,000		
						///////		83,000		
Other (specify type &										
units):										
12. If Wood is used as	a fuel, speci	fy ty	pes and	estimate	e pe	rcent by	weigh	t of bark		
N/A	-		-		-	2	•			
13. If Wood is used wit	h other fue	le en	ecify nor	cent by	wai	ght of we	od ch	arged to the	hu	rner
N/A		13, sp	eeny per	cent by	wei	SIL OI WC		מוצבע נט נוופ	มน	
1 1 1 / 1										

	APC 102
14. Comments	and the second se
See Process Flow Diagram	
SIGNATURE	
If this form is being submitted at the same time as an APC 100 form, ther	
Date this form regardless of whether a signature is provided. If this form as an APC 100 form, then a signature is required.	is NOT being submitted at the same time
Based upon information and belief formed after a reasonable inquiry, I, a	as the responsible person of the above
mentioned facility, certify that the information contained in this application	
knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is	
15. Signature	Date Date
(mon m	17 Sept. Cp18
Signer's name (type or print) Title	Phone number with area code
Camron Kindd Mesiden, Hormann UC	650-518-666



APC 101

NON-TITLE V PERMIT APPLICATION EMISSION POINT DESCRIPTION

Type or print and submit for each stack or air contaminant source. Submit with the APC 100.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] Hormann LLC 000932606

2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) 003 Polyurethane Foam Injection, Heat Tunnel, and Sawing Operation

3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) 003-1

4. Brief description of air contaminant source (Attach a diagram if appropriate):

Polyurethane foam is injected into a cavity between two door panels resulting in a release of VOC emissions. Foam is cured in a NG fired Heat Tunnel.

•	5. Emission pointLatitudeLongitude6. Distance to nearest pro			property line (Ft.)						
location		36.05565 N			85.52171 W					
STACK AND EMISSION DATA										
7. Stack or emission point data:	(F	eight above t.) 6 ft	grade		iameter (Ft.) 00 ft	Tempe (°F) Ambier	erature	% of time over 125°F N/A	C	Direction of exit (Up, down or horizontal) Jp
→ Data at exit conditions: →	Fl	ow (actual F ,189 ACFM	t. ³ /Min.)		elocity (Ft. /Sec.)) ft/sec			re (Grains/Ft. ³)		Moisture (Percent)
Data at standard conditions: →	21	ow (Dry std. ,189		Velocity (Ft. /Sec.) 50			Moisture (Grains/Ft. ³) N/A			Moisture (Percent) N/A
8. Monitoring de			•	un		-				
Opacity monitor		iO ₂ nonitor	NO _x monitor		Strip chart	Electr dat <u>a l</u>		Other (speci in comment		No monitor (none)
		•	• •		•	•	0			re compliance with ssure drop, etc.).

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

Air contaminants Emissions Emissions Emissions Emissions Emissions Emissions Emissions Emissions Emissions	instructions for	more details	<u>s)</u>	-	-	-	-	-	
1 Alt Collade Indiced 0 0 0.02 0.02 3 000 N/A Sulfur dioxide (SO ₂) 0 0 *** 1.58 E-03 1.58 E-03 3 000 N/A Carbon monoxide (CO) 0.05 0.05 PPM 0.22 0.22 3 000 N/A Volatile organic compounds (VOC) 5.8 5.8 PPM 25.36 25.36 2 000 N/A Nitrogen oxides (NO _x) 0.06 0.06 PPM 0.26 0.26 3 000 N/A Hydrogen fluoride (HF)	Air contaminants	Emissions	Emissions		Emissions	Emissions	Estimation Method	Devices	Control Effi- ciency %
John Moxde 0 0 1.58 E-03 3 000 N/A Carbon monoxide (CO) 0.05 0.05 PPM 0.22 0.22 3 000 N/A Volatile organic compounds (VOC) 5.8 5.8 PPM 25.36 25.36 2 000 N/A Nitrogen oxides (NO _X) 0.06 0.06 PPM 0.26 0.26 3 000 N/A Hydrogen fluoride (HF) <t< td=""><td></td><td>0</td><td>0</td><td>**</td><td>0.02</td><td>0.02</td><td>3</td><td>000</td><td>N/A</td></t<>		0	0	**	0.02	0.02	3	000	N/A
(CO) 0.05 0.05 0.22 0.22 3 000 N/A Volatile organic compounds (VOC) 5.8 5.8 PPM 25.36 25.36 2 000 N/A Nitrogen oxides (NO _x) 0.06 0.06 PPM 0.26 0.26 3 000 N/A Hydrogen fluoride (HF)		0	0	***	1.58 E-03	1.58 E-03	3	000	N/A
compounds (VOC) 3.5 2.5.3 2.5.35 <th2.5.35< th=""> 2.5.35 <th2.5.< td=""><td>(CO)</td><td>0.05</td><td>0.05</td><td>PPM</td><td>0.22</td><td>0.22</td><td>3</td><td>000</td><td>N/A</td></th2.5.<></th2.5.35<>	(CO)	0.05	0.05	PPM	0.22	0.22	3	000	N/A
(NO _x) 0.08 0.28 0.28 3 000 N/A Hydrogen fluoride (HF) Image: Second	compounds (VOC)	5.8	5.8		25.36	25.36	2	000	N/A
(HF)Image: constraint of the second seco	(NO _X)	0.06	0.06	PPM	0.26	0.26	3	000	N/A
(HCI)Image: state									
Greenhouse gases (CO2 equivalents)3183183000N/AHazardous air pollutant (specify) MDI (101-68-8)0.0010.0015000N/AHazardous air pollutant (specify)0.0010.0015000N/AHazardous air pollutant (specify)0.0010.0015000N/AHazardous air pollutant (specify)0.0010.0015000N/AHazardous air pollutant (specify)0.0010.0010.0010.0010.0010.001Hazardous air pollutant (specify)0000000Hazardous air pollutant (specify)0000000Hazardous air pollutant (specify)00000000Other (specify)0000000000Other (specify)0000000000Other (specify)0000000000									
(CO2 equivalents)518	Lead (Pb)								
pollutant (specify) MDI (101-68-8)0.0010.0015000N/AHazardous air pollutant (specify)IIIIIIHazardous air pollutant (specify)IIIIIIIHazardous air pollutant (specify)IIIIIIIIHazardous air pollutant (specify)II	_				318	318	3	000	N/A
pollutant (specify)Image: specify and specific and speci	pollutant (specify)				0.001	0.001	5	000	N/A
pollutant (specify)Image: specify and specific									
pollutant (specify)Image: Specify and Specific									
pollutant (specify)Image: Specify (Specif									
Other (specify) Image: Constraint of the specify in the specific of									
Other (specify)	Other (specify)								
	Other (specify)								
Other (specify)	Other (specify)								
	Other (specify)								

		APC 101
11. Comments		
	SIGNATURE	
f this form is being submitted at the sa	me time as an APC 100 form,	then a signature is not required on this form.
		form is NOT being submitted at the same time
as an APC 100 form, then a signature is		
Based upon information and belief for	ned after a reasonable inquir	y, I, as the responsible person of the above
mentioned facility, certify that the infor knowledge. As specified in TCA Section	39-16-702(a)(4), this declarati	lication is accurate and true to the best of my on is made under penalty of perjury.
12. Signature	m	Date 7 Sept. 2018
Signer's name (type or print)	Title President, Horman	Phone number with area code $630 - 519 - 0623$
Refer to the tables in the instruction	ons for estimation method an	d control device codes.
 Exit gas particulate matter concent 	tration units: Process – Grains	s/Dry Standard Ft ³ (70 ⁰ F), Wood fired boilers -
Grains/Dry Standard Ft ³ (70 ⁰ F), all	other boilers – Lbs. /Million B	TU heat input.
** Exit gas sulfur dioxide concentration	ons units: Process – PPM by v	olume, dry bases, and boilers – Lbs. /Million
BTU heat input		

Hormann LLC Source 003

Summary

Emission Point	Source Summary	PI	Μ	N	Ох	V	C		SO2	C	0	CO2eq	HAPs (MDI)
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	ТРҮ	lb/hr	ТРҮ	TPY	ТРҮ
002.1	Polyurethane Foam Injection					5.79	25.35						0.001
003-1	Heat Tunnel	0.00	0.02	0.06	0.26	0.00	0.01	0.00	1.58E-03	0.05	0.22	318.37	0.000
	Subtotal	0.00	0.02	0.06	0.26	5.79	25.36	0.00	1.58E-03	0.05	0.22	318.37	0.001
003-2	Sawing	0.58	2.55										
005-2	Sawing VOCs					0.12	0.51						
	Subtotal	0.58	2.55	0.00	0.00	0.12	0.51	0.00	0.00E+00	0.00	0.00	0.00	0.000
9	Source 003 Total	0.59	2.57	0.06	0.26	5.91	25.87	0.00	1.58E-03	0.05	0.22	318.37	0.001

Hormann LLC Source 003 Polyurethane Foam Injection VOC emissions from blowing agent, MDI

VOC (Pentane) Emissions

Development of Emission Factor

	Direct data entry	
Average Pentane (blowing agent) added	77.16	lb/hr
Assumed Pentane Released in Manufacturing	7.5%	Note 1
Average inlet mass to ATM	5.79	lb/hr
Emission Factor	0.075	Ib VOC to ATM/Ib Pentane added

VOC Emissions from Manufacturing

Maximum Annual Pentane Usage (Blowing Agent added to process)		VOC Emis	sions
(Ibs/yr)	Emission Factor	(lbs/yr)	(TPY)
675,930	0.075	50,695	25.35

Notes and Example Calculation:

1) Conservative Estimate based upon engineering judgement and testing results in similar industry processes.

2) VOC Emissions (TPY) = [Maximum Pentane Added(lbs/yr) x Emission Factor(lb VOC to ATM/lb Pentane added)]/2,000 lb/ton

Source 003 Polyurethane Foam Injection VOC emissions from blowing agent, MDI Fugitive Emissions MDI - HAPs

Emission Calculation Develop	ment (MDI)		Page 104 (App A) Vapor Pressu Page 109 (App B) Vapor Pressu		
			Per Production Data		on at max production
Average Foam Injection rate	3,741	lb/hr		kg/hr	lb/hr
MDI Introduced	2,282	lb/hr	Pentane	35	77.2
L_{c} (MDI Emissions) =	0.9616	lb/yr	MDI	1,035	2281.8
			Polyol	627	1382.3
			Total	1,697	3,741.2
Margin of Compliance ¹ =	15%				
L_c (MDI Emissions) =	1.1058	lb/yr			

MDI Calculations RCAP Combined

Equation for Calculating Stack Emissions of MDI from Doors

Section 10.0 page 5-25 of MDI Emissions Reporting Guidelines for the Polyurethanes Industry

Lc = Vair * (1 / 359) * (273.15 / Tproc) * (VPMDI / 760) * Mw * KMDI

Tproc =	158 °F (or 70°C in the polyurethane line heat tunnel)	
Tproc =	343.15 К	
VP _{MDI} =	1.36E-03 mm Hg per App A MDI Emissions Reporting Guidelines	
Mw =	250.26 this is the molecular weight of MDI	
K _{MDI} =	0.659 adjustment factor (function of MDI Concentration in feedstock and temperature) App B Reporting Guidelines	VDI Emissions
359	359 the molar volume of an ideal gas in ft^3 /lb-mole @ 0°C and 1-atmosphere	

Mixture = 61% MDI

61.0%

Door Section Volume		
Avg. Section Height	21	inch
Avg. Section Thickness	1.75	inch
Avg. Section Width	12	ft
Volume per section	3.0625	ft ³
Average Door Number of		sections / garage
sections	6	door
Production rate Number of		
sections/yr	480,000	sections/year
Annual Volume of Air displaced		
= Vair =	1,470,000	ft³

MDI Emissions Calculations

Max. MDI Usage	MDI Fugitive	Emissions
(lbs/yr)	(lb/yr)	(tpy)
19,988,226	1.11	0.001

Notes:

(1) Based on process knowledge, variability is estimated at 10%. A conservative value of 15% is used in calculations. This value may be adjusted in the future as additional emissions data is obtained.

Operating Parameters

Fuel Type	Natural Gas			
Unit Description	Maximum Firing Rate (MMBtu/hr)			
Heat Tunnel for Polyurethane Foam Injection Operating hours	0.614 8,760	MMBtu/hr hr/yr		
Annual Fuel Usage Heat Tunnel	Nat 5.27	ural Gas MMCF/yr	Hourly Usag 602 Cu. Ft	

Emission Calculations

Emission Factors for Natural Gas Combustion 1,2

	lb/10 ⁶ scf	Ib/MMBtu-HHV	
Particulate Matter (PM _{Total})	7.6	0.0075	AP-42
Particulate Matter (PM _{Cond})	5.7	0.0056	AP-42
Particulate Matter (PM _{Filter}) ³	1.9	0.0019	AP-42
Nitrogen Oxides (NO _x)	100	0.0980	AP-42
Carbon Monoxide (CO)	84	0.0820	AP-42
Sulfur Dioxide (SO ₂)	0.6	0.0006	AP-42
VOC	5.5	0.0054	AP-42
Carbon Dioxide (CO ₂)	120,000	117.65	AP-42
Methane (CH ₄)	2.3	2.255E-03	AP-42
Nitrous Oxide (N ₂ O)	2.2	2.157E-03	AP-42

Natural Gas Emissions

Heat Tunnel

	lb/hr	Annual ^{4,5} ton/year
Particulate Matter (PM _{Total}) ³	0.00	0.02
Particulate Matter (PM ₁₀) ³	0.00	0.02
Particulate Matter (PM _{2.5}) ³	0.00	0.02
Nitrogen Oxides (NO _x)	0.06	0.26
Carbon Monoxide (CO)	0.05	0.22
Sulfur Dioxide (SO ₂)	0.000	1.58E-03
Combustion VOC	0.00	0.01
Carbon Dioxide (CO ₂)	72	316
Methane (CH ₄)	0.00	0.01
Nitrous Oxide (N ₂ O)	1.32E-03	0.006
CO ₂ Equivalent (CO ₂ eq) ⁷		318

GWP ⁶			
CH4	25		
N2O	298		

Example Calculations/Notes:

(1) Compilation of Air Pollutant Emission Factors, AP-42, Supplement D, Fifth Edition, Section 1.4, Tables 1.4-1

- and 1.4-2, July 1998, Small Boilers < 100 MMBtu/hr
- (2) Per AP-42, Table 1.4-1 and 1.4-2, to convert from $lb/10^6$ scf to kg/ 10^6 m³, multiply by 16. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020.
- (3) Assume $PM_{Total} = PM_{2.5} = PM_{10}$. (Includes filterable and condensable particulate matter)
- (4) Maximum Emissions (lb/hr) = Emission Factor (lb/MMscf) * Natural Gas Usage (MMCF)
- (5) Annual Emissions (tpy) = Average Emissions (lb/hr) * 8,760 (hr/yr) / 2,000 (lb/ton)
- (6) GWP from 40 CFR 98 Subpart A Table A-1

(7) CO₂ Equivalent (CO₂eq) = CO₂ + [GWP_{CH4} * CH₄] + [GWP_{N20} * N₂O]



NON-TITLE V PERMIT APPLICATION EMISSION POINT DESCRIPTION

Type or print and submit for each stack or air contaminant source. Submit with the APC 100.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] Hormann LLC 000932606

2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) 003 Polyurethane Foam Injection, Heat Tunnel, and Sawing Operation

3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) 003-2

4. Brief description of air contaminant source (Attach a diagram if appropriate):

Sections are cut in the sawing process and a baghouse controls particulate emissions.

5. Emission poir	nt Latitud	e	Longitude6. Distance to nearest property line (Ft.					
location	36.0556	55 N	85.52171 W					
	ł		STACK AND EMI	SSION DA	ATA			
7. Stack or	Height ab	ove grade	Diameter (Ft.)	Tempe	erature	% of time	Direction of exit (Up,	
emission	(Ft.)		1.0 ft	(°F)		over 125°F	down or horizontal)	
point data: \rightarrow	45 ft			N/A		N/A	Up	
Data at exit	Flow (actu	ial Ft.³/Min.)	Velocity (Ft. /Se	c.)	Moistu	ure (Grains/Ft. ³)	Moisture (Percent)	
conditions: \rightarrow	3,531 ACFI		75 ft/sec		N/A		2%	
Data at	Flow (Dry	std. Ft. ³ /Min.)	Velocity (Ft. /Se	c.)	Moistu	ure (Grains/Ft. ³)	Moisture (Percent)	
standard conditions:	3,397 DSC	FM	72 ft/sec		N/A		N/A	
\rightarrow	• •							
8. Monitoring de		-		-			:f. No monitor	
Opacity	SO ₂	NO _X	Strip	Electr	× 1		-	
monitor	monitor	monitor	chart dat <u>a lo</u>		logger in comments)		rs) (none)	
9. Control device. Description of proposed monitoring, recordkeeping, and reporting to assure compliance with								
emission limits. Include operating parameters of control device (flow rate, temperature, pressure drop, etc.).								
Baghouse pressu	re drop.							

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

instructions for	more details	5)						
Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concen- tration	Average Emissions (Ton/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Effi- ciency %
Particulate matter (PM)	0.58	0.58	**	2.55	2.55	2	018	99%
Sulfur dioxide (SO ₂)			***					
Carbon monoxide (CO)			PPM					
Volatile organic compounds (VOC)	0.12	0.12	PPM	0.51	0.51	2	018	N/A
Nitrogen oxides (NO _X)			PPM					
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								
Other (specify)								
Other (specify)								

	APC 101
11. Comments	
	a a la Ala a
SIGNATURE	
If this form is being submitted at the same time as an APC 100 form, th	
Date this form regardless of whether a signature is provided. If this for	rm is NOT being submitted at the same time
as an APC 100 form, then a signature is required.	
Based upon information and belief formed after a reasonable inquiry,	I, as the responsible person of the above
mentioned facility, certify that the information contained in this application	
knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration	
12. Signature	Date 17 Set 2018
Im man	IT SUDI- GONO
Signer's name (type or print) Title	Phone number with area code
Camion Kudd (President) Hormann U	4 650-510-0025
 Refer to the tables in the instructions for estimation method and one 	control device codes. /
** Exit gas particulate matter concentration units: Process – Grains/D	Dry Standard Ft ⁻ (70°F), Wood fired bollers -
Grains/Dry Standard Ft ³ (70 ^o F), all other boilers – Lbs. /Million BTU	
*** Exit gas sulfur dioxide concentrations units: Process – PPM by volu	inte, dry bases, and bollers – LDS. /Willion
BTU heat input	

Hormann LLC Source 003 Polyurethane Foam Injection Line Sawing Operation: VOC released to Dust Collector

Operating Parameters

Hours of Operation

8,760 hrs/yr

Maximum Potential to Emit - VOC

Maximum Annual Pentane Usage	VOC Loss at Manufacturing	VOC Available at Sawing ¹	Section Foam Trimmed ^{2,3}	VOC Em	issions ^{4,5}	
(lbs/yr)	(lbs/yr)	(lbs/yr)	(%)	(lbs/yr)	(tpy)	lb/hr
675,930	50,695	625,236	0.16%	1,026	0.51	0.12

Notes:

(1) VOC Available at Sawing (lbs) = Max Blowing Agent VOC (lbs) - VOC Loss at Manufacturing (lbs)

(2) The maximum cut volume is determined first by calculating the trim from each side of the garage door section. As indicated, automated saws trim the edges of the doors, trimming approximately 3mm from each side. Average Garage door section width is 12 ft, average section height is 21 inch, and the average section thickness is 1.75 inch. All saw cut emissions are collected and routed to the baghouse dust collector. The table below contains a detailed calculation of the % volume cut during sawing.

(3) Assume that the mass of trimmed door section is proportional to volume (0.16%).

(4) VOC Emissions (lbs) = VOC Available at Sawing (lbs) * Section Foam Trimmed (%) / 100

(5) VOC Emissions (tons) = VOC Emissions (lbs) / 2000

Door Section Volume		
Avg. Section Height	21	inch
Avg. Section Thickness	1.75	inch
Avg. Section Width	12	ft
Volume of Untrimmed		2
Section	3.06	ft°
Volume of Section Trimmed		
Saw Kerf	3	mm
Volume Trimmed/cut	0.0025	ft ³
Number of cuts per		
section	2	cuts
Percentage of Total		
Volume	0.16%	

Hormann LLC Source 003 Sawing Dust Collector Emissions

Operating Hours 8,760 hr/yr

	Flow Rate	Exhaust	Exhaust	Exit Velocity	Exit	Exit Temp	Moisture	Flow	Exhaust	PI	N		
Baghouse I.D.	(ACFM)	(ACFM)	(ACFM)	Diameter (ft)	Cross-Sectional Area (ft ²)	(ft/sec)	Velocity (ft/min)	(F)	Content %	Rate⁺ (DSCFM)	PM Conc. (gr/dscf)	lb/hr ²	tpy ³
Sawing DC	3,531	1.22	1.18	50.0	3000.0	80	2.0%	3,397	0.02	0.58	2.55		

Example Calculations and Notes:

(1) Flow Rate (DSCFM) = (ACFM x ((460+70)/(460 + Exit Temp))) x (1 - Moisture Content)

(2) PM Emissions (lb/hr) = DSCFM x Exhaust PM Conc. x 60 (min/hr) x (1 lb / 7000 grains)

(3) PM Emissions (tpy) = (PM Emissions (lb/hr) x 8760 (hr/yr)) / (2000 (lb/ton))



NON-TITLE V PERMIT APPLICATION PROCESS OR FUEL BURNING SOURCE DESCRIPTION

	Type or print. Subm	nit with the APC 100.		
GEN	IERAL IDENTIFICAT	ION AND DESCRIPTION		
 Organization's legal name and S Secretary of State (SOS)] Hormann LLC 000932606 	SOS control numbe	r [as registered with the TN		ion Source ence Number
3. Is this air contaminant source s If Yes, list rule citation, including F	-] No	
4. Unique Source ID (see instruction 004 Custom Paint Application	ns)	5. Unique Emission Poin 004-1, 2, & 3	t ID (see ins	tructions)
6. Description of air contaminant	SOURCA	/ /		
A small custom painting operation w cure oven Insignificant Activity		NG fired replacement air (fl	ash tunnel)	and NG fired
7. Type of air contaminant source	(Check only one opt	tion to the right)		
Process Emission Source: For each p (Check at right and complete lines 8,		rce, submit a separate appl	ication.	
Process Emission Source with in pro- heated. For each process emission s complete lines 8 through 14)				\checkmark
Non-Process fuel burning source: Pro Complete this form for each boiler o Description Form (APC 101) for each	r fuel burner and co	mplete a Non-Title V Emissi	on Point	
	S EMISSION SOURC	E DESCRIPTION AND DATA		
8. Type of operation: Continuous ✔	Batch	Normal batch time	Norr	nal batches/day
9. Process material inputs and	Diagram	Input rates	(pounds/ho	ur)
In-process solid fuels	reference	Design		Actual
A. CARBITHANE 11 SERIES	(004-1)	14.6		14.6
В.				
С.				
D.				
Ε.				
F.				
G.				
Totals		14.6		14.6

* A simple process flow diagram must be attached.

DESCRI	PTION (OF BOIL	ER, BURNE	ER, ENGIN	NE, OR OTHE	R FUEI	BURNING SO	วบ	RCE
10. Boiler or burner da	ata: (Co	mplete l	ines 10 thro	ough 14 ι	using a separ	ate for	m for each bo	ileı	r, burner, etc.)
Serial Number				Тур	e of firing***				
							Automatic		
Rated horsepower		Ra	ited input c	apacity (1	0 ⁶ BTU/Hr.)	Othe	r rating (speci	fy d	capacity and units)
		2	2.5 Oven + 3	3.0 Make	up air = 5.5				
Date constructed	[Date m	anufacture	d	Date of last	modifi	cation (explain	- ir	comments below)
2018		Datem	2018	u	Date of last	moum	cation (explain		Comments below)
** Source with a comr									
*** Cyclone, spreader (other stoker (specil				•		2			
· ·	5 51								
11. Fuel data: (Complet									
Primary fuel type (s		•			· ·		pe(s) (specify)		
Fuels used	Annua	al usage	Hourl	y usage	%	%	BTU value		(For APC use only)
			Design	Average	e Sulfur	Ash	of fuel		SCC code
Natural gas:	10 ⁶ Cu	ı. Ft.	Cu. Ft.	Cu. Ft.	/////////	/////			
	47	7.23	5,392	5,392		/////	1,000		
#2 Fuel oil:	10 ³ Ga	al.	Gal.	Gal.		/////			
						/////			
#5 Fuel oil:	10 ³ Ga	al.	Gal.	Gal.		/////			
						/////			
#6 Fuel oil:	10 ³ Ga	al.	Gal.	Gal.		/////			
						/////			
Coal:	Tons		Lbs.	Lbs.					
Wood:	Tons		Lbs.	Lbs.					
	10115		205.	2005.	////////	///// /////			
Liquid propane:	10 ³ Ga		Gal.	Gal.					
	10 02	11.	Gai.	Gai.	///////	///// /////	85,000		
Other (specify type &									
units):									
12. If Wood is used as	a fuel, s	specify	types and	estimate	e percent by	weigh	t of bark		
N/A									
13. If Wood is used wit	h othe	r fuels, s	specify per	rcent by	weight of w	ood ch	arged to the	bu	rner.
N/A				2	-		-		

SIGNATURE

If this form is being submitted at the same time as an APC 100 form, then a signature is not required on this form. Date this form regardless of whether a signature is provided. If this form is NOT being submitted at the same time as an APC 100 form, then a signature is required.

Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

15. Signature Date Phone number with area code Title Signer's name (type or print) GLS nnsmio maria



NON-TITLE V PERMIT APPLICATION SURFACE COATING DESCRIPTION

	Туре о	r print. Subi	mit for	•	2	•		her surface co	ating	g equipme	ent.
			CENI		ubmit with			SCRIPTION			
	Organization's Tennessee Secr mann LLC 0009	etary of Sta	e and S	OS cont							ion Source ence Number
3.	3. Is this air contaminant source subject to an NSPS or NESHAP rule? Yes No ✓ If Yes, list rule citation, including Part, Subpart, and applicable Sections:										
				COA	ATING OP	ERATIO	ON DAT	A			
	Unique Source					ely iden	tifies th	iis air contamii	nant	source, lik	ke Paint Line 1)
5.	Type of coating	operation	Spray	booth [Dip tank	Other (describ	e)			
6.	Spray booth dimensions	Width (ft.) 10		Не 10	eight (ft.)		Dep 20	th (ft.)	N	umber of	open sides
7.	Method of spray:	Airless	Air ato	mized	Airless	Elec Disc	<u>trostat</u> Air at	ic comized	(Per	erspray rcent) 20-30	Date purchased * 2018
8.	Exhaust data:	Number o	f fans 1		Total ho	rsepow	er 5		Tota	al volume 12	(CFM) ,600
9.	Exhaust control:	None	Wate	erwash	Exhaust filters		Baffle Dl <u>ates</u>	Adsorption **	Oth	ier (Descri	be)
10.	10. Exhaust Diameter (Ft.) Height (Ft.) Above Flow (CFM) Specify serial numbers that share this vent stack data 2.5 45 45 45										
	Control device with emission li etc.). cords will be mai	mits. Includ	e opera	ating par	ameters	of contr	•		-		•

* The actual surface coating equipment (spray gun, spray heads, etc.) and not the spray booth per se determines the status of the source (new or existing).

** Complete one line for each stack or vent. Attach additional sheets if necessary

NOTE: This application will not be processed unless all of the following information is provided.

MATERIAL DATA

12. Coatings, Thinners, and Clean-up Solvents used:

List all types of coatings, thinners, and clean-up solvents used and attach a statement of the chemical composition of each (i.e. Safety Data Sheet). This statement usually may be obtained from the coating, thinner, or clean-up solvent supplier. The minimum information required is the percent of solids by weight, the percent volatile by weight, the hydrocarbon composition and/or description of the volatile component, and the density of the coating, thinner, or clean-up solvent in pounds per gallon.

	Base	%Solids		Density		Quantity used	k
Coating name	[Water,	by	%Volatile	(Lbs.	Gallo	ons/Day	Gal./Mo.
	Powder or Solvent*]	Weight	by Weight	, /Gal.)	Average	Maximum **	Average
Carbithane 11 Series		58%	24.8%	11.7	25	25	250
			(2.9 lb/gal)				
Thinner name							
Clean – up solvent name							

* Name Solvent Base type

** For new construction, this quantity will be used as a permit limitation on capacity.

13. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

instructions for	more details	5)						
Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concen- tration	Average Emissions (Tons/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Effi- ciency %
Particulate matter (PM)	2.54	2.54		3.05	3.05	2	000	N/A
Sulfur dioxide (SO ₂)								
Carbon monoxide (CO)			PPM					
Volatile organic compounds (VOC)	3.63	3.63	PPM	4.35	4.35	2	000	N/A
Nitrogen oxides (NO _X)			PPM					
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)								
Hazardous air pollutant (specify) MDI				0.001	0.001	2	000	NA
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								

* Refer to the tables in the instructions for estimation method and control device codes.

APC 107

	EQUIPMENT DESC	RIPTION
14. Equipment manufacturer	Model number	Serial number (or plant ID)
Construction date		Modification date
Describe any modifications*		
15. Describe articles coated		
16. Comments		
The CALL AND A DECK OF A DECK OF A DECK	SIGNATUR	E
	JUINAIUN	
Date this form regardless of whether as an APC 100 form, then a signatur Based upon information and belief mentioned facility, certify that the in	e same time as an APC 100 er a signature is provided. e is required. formed after a reasonable formation contained in thi	form, then a signature is not required on this form. If this form is NOT being submitted at the same time inquiry, I, as the responsible person of the above s application is accurate and true to the best of my
Date this form regardless of whether as an APC 100 form, then a signatur Based upon information and belief mentioned facility, certify that the in	e same time as an APC 100 er a signature is provided. e is required. formed after a reasonable formation contained in thi	form, then a signature is not required on this form. If this form is NOT being submitted at the same time inquiry, I, as the responsible person of the above

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Hormann LLC Source 004

Summary

Emission Point	Source Summary	PM		NOx		VOC		SO2		CO		CO2eq	HAPs (MDI)
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	TPY	ТРҮ
004-1	Custom Paint Application	2.54	3.05			3.63	4.35						0.001
004-2	Replacement Air	0.02	0.10	0.29	1.29	0.02	0.07	0.00	0.01	0.25	1.08	1555.07	
004-3	Custom Paint Cure Oven	0.02	0.08	0.25	1.07	0.01	0.06	0.00	0.01	0.21	0.90	1295.89	
	Subtotal	2.59	3.23	0.54	2.36	3.65	4.48	0.00	0.014	0.45	1.98	2850.96	0.001

Hormann LLC Source 004 Custom Paint Application VOC Emissions from Annual Usage of Custom Paint

Operating Parameters Hours of Operation	8,760 hrs/yr		
Potential Overspray		30%	
Material Density		11.7 lb/Gal	
Solid Content		58% by weight	
Carbithane 11 Series Low VOC	Coatings	2.9 lb VOC/gal per Product Data Shee	t
Custom Paint Application Annu Anticipated Actual Operation	ial Usage	3,000 Gallons per year 2,400 hours/yr	

Source Summary	Р	Μ	VOC		
	lb/hr ²	TPY ¹	lb/hr ²	TPY ¹	
Emissions from Custom Paint Application	2.54	3.05	3.63	4.35	

Example Calculation:

1. PM emissions (tpy) = Coating Annual Usage (gal/yr) x Material Density (lb/gal) x Solids Content (%) x Potential Overspray (%) / 2000 lb/ton

2. VOC emissions (tpy) = Coating VOC Content (lb/gal) x Coating Annual Usage (gal/yr) / 2,000 lb/ton

3. The Lb/hr emission rate is estimated based upon this source operating at just 2,400 hrs/year due to the anticipated actual operation. Though Hormann LLC does not wish to limit the operating hours for the source.



NON-TITLE V PERMIT APPLICATION

EMISSION POINT DESCRIPTION

Type or print and submit for each stack or air contaminant source. Submit with the APC 100.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] Hormann LLC 000932606

2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) 004 Custom Paint Application

3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) 004-2

4. Brief description of air contaminant source (Attach a diagram if appropriate):

NG fired replacement air (flash tunnel) for custom paint application. - Insignificant Activity

5. Emission poir	nt	Latitude			Longitude		6. Dis	stance to neare	st	property line (Ft.)
location		36.05565 N	l		85.52171 W					
				ST/	ACK AND EMISS	SION DA	ATA			
7. Stack or	H	eight above	grade	D	iameter (Ft.)	Tempe	erature	% of time		Direction of exit (Up
emission	(-·/		1.	1.0 (°F)			over 125°F	C	down or horizontal)	
point data: \rightarrow	45				150		100		ip	
Data at exit	Fl	ow (actual F	t. ³ /Min.)	V	elocity (Ft. /Sec.))	Moistu	ure (Grains/Ft. ³)		Moisture (Percent
conditions: \rightarrow	1,3	300		28	3		N/A			N/A
Data at	Fl	ow (Dry std.	Ft. ³ /Min.)	V	elocity (Ft. /Sec.))	Moistu	ure (Grains/Ft. ³)		Moisture (Percent
standard conditions:	1250			27	27		N/A			N/A
\rightarrow	L_	<u> </u>								
8. Monitoring de			-	un		-			<u>د</u> .	
Opacity monitor		50 ₂ nonitor	NO _X monitor		Strip c <u>hart</u>	Electr	onic ogger	Other (speci in comment	-	
									.5)	(none)
		•			-	•	-			re compliance with
emission limi	ts. I	nclude oper	rating parar	ne	ters of control d	levice (fl	ow rate	, temperature, p	res	ssure drop, etc.).
None.										

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

instructions for	more details	s)		-				
Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concen- tration	Average Emissions (Ton/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Effi- ciency %
Particulate matter (PM)	0.02	0.02	**	0.10	0.10	3	000	N/A
Sulfur dioxide (SO ₂)	0.00	0.00	***	0.01	0.01	3	000	N/A
Carbon monoxide (CO)	0.25	0.25	PPM	1.08	1.08	3	000	N/A
Volatile organic compounds (VOC)	0.02	0.02	PPM	0.07	0.07	3	000	N/A
Nitrogen oxides (NO _X)	0.29	0.29	PPM	1.29	1.29	3	000	N/A
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)				1,555	1,555	3	000	N/A
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								
Other (specify)								
Other (specify)								

	APC 101
11. Comments	
SIGNATURE	
If this form is being submitted at the same time as an APC 100 form, ther	
Date this form regardless of whether a signature is provided. If this form	is NOT being submitted at the same time
as an APC 100 form, then a signature is required.	the second state of the second
Based upon information and belief formed after a reasonable inquiry, I, a	as the responsible person of the above
mentioned facility, certify that the information contained in this application	
knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is	
12. Signature	Date
1 the	AT SpA. CONO
Camian Rudd Title Resident, Hörmenn LC	Phone number with area code $G3\beta - 5\lambda b - \beta G23$
 Refer to the tables in the instructions for estimation method and cor 	
** Exit gas particulate matter concentration units: Process – Grains/Dry	
Grains/Dry Standard Ft ³ (70 $^{\circ}$ F), all other boilers – Lbs. /Million BTU h	eat input.

*** Exit gas sulfur dioxide concentrations units: Process – PPM by volume, dry bases, and boilers – Lbs. /Million BTU heat input

Hormann LLC Source004 Insignificant Emissions Unit: Replacement (Make-up) Air Unit (Flash Tunnel) 004-2

Operating Parameters

Fuel Type	Natural Gas		
Unit Description	Maximum Firing Rate (MMBtu/hr)		
Replacement Make-up Air Unit	3.00		
Operating hours	8,760	hr/yr	
Annual Fuel Usage Replacement Make-up Air Unit	Nat 25.76	ural Gas MMCF/yr	Hourly Usage 2,941 Cu. Ft./hr

Emission Calculations

Emission Factors for Natural Gas Combustion ^{1,2}

	<u>lb/10⁶ scf</u>	<u>lb/MMBtu-HHV</u>	
Particulate Matter (PM _{Total})	7.6	0.0075	AP-42
Particulate Matter (PM _{Cond})	5.7	0.0056	AP-42
Particulate Matter (PM _{Filter}) ³	1.9	0.0019	AP-42
Nitrogen Oxides (NO _x)	100	0.0980	AP-42
Carbon Monoxide (CO)	84	0.0820	AP-42
Sulfur Dioxide (SO ₂)	0.6	0.0006	AP-42
VOC	5.5	0.0054	AP-42
Carbon Dioxide (CO ₂)	120,000	117.65	AP-42
Methane (CH ₄)	2.3	2.255E-03	AP-42
Nitrous Oxide (N ₂ O)	2.2	2.157E-03	AP-42

Natural Gas Emissions

Replacement Air Make-up Unit

		Annual ^{4,5}
	lb/hr	ton/year
Particulate Matter $(PM_{Total})^3$	0.02	0.10
Particulate Matter $(PM_{10})^3$	0.02	0.10
Particulate Matter $(PM_{2.5})^3$	0.02	0.10
Nitrogen Oxides (NO _x)	0.29	1.29
Carbon Monoxide (CO)	0.25	1.08
Sulfur Dioxide (SO ₂)	0.002	0.01
Combustion VOC	0.02	0.07
Carbon Dioxide (CO ₂)	353	1,546
Methane (CH ₄)	0.01	0.03
Nitrous Oxide (N ₂ O)	6.47E-03	0.028
CO_2 Equivalent (CO_2eq) ⁷		1,555

GWP ⁶				
CH4	25			
N2O	298			

Example Calculations/Notes:

(1) Compilation of Air Pollutant Emission Factors, AP-42, Supplement D, Fifth Edition, Section 1.4, Tables 1.4-1 and 1.4-2, July 1998, Small Boilers < 100 MMBtu/hr

(2) Per AP-42, Table 1.4-1 and 1.4-2, to convert from $lb/10^6$ scf to kg/ 10^6 m³, multiply by 16. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020.

(3) Assume $PM_{Total} = PM_{2.5} = PM_{10}$. (Includes filterable and condensable particulate matter)

(4) Maximum Emissions (lb/hr) = Emission Factor (lb/MMscf) * Natural Gas Usage (MMCF)

(5) Annual Emissions (tpy) = Average Emissions (lb/hr) * 8,760 (hr/yr) / 2,000 (lb/ton)

(6) GWP from 40 CFR 98 Subpart A Table A-1

(7) CO₂ Equivalent (CO₂eq) = CO₂ + [GWP_{CH4} * CH₄] + [GWP_{N20} * N₂O]



NON-TITLE V PERMIT APPLICATION

EMISSION POINT DESCRIPTION

Type or print and submit for each stack or air contaminant source. Submit with the APC 100.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] Hormann LLC 000932606

2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) 004 Custom Paint Application

3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) 004-3

4. Brief description of air contaminant source (Attach a diagram if appropriate):

NG fired cure oven for custom paint application. - Insignificant Activity

E Emission noin	+	Latitude		Longitu	Ida		6 Die	tanco to noar	oct	property line (Et)
5. Emission poin location			6. Distance to nearest property line (Ft			property line (FL)				
location		36.05565 N	1	85.52171 W						
STACK AND EMISSION DATA										
7. Stack or	He	eight above	grade	Diameter	(Ft.)	Tempe	erature	% of time		Direction of exit (Up
emission	(F1	t.)		1.5		(°F)		over 125°F	(down or horizontal)
point data: $ ightarrow$	45					150		100	ι	qı
Data at exit	Flo	ow (actual F	t. ³ /Min.)	Velocity (F	t. /Sec.))	Moistu	ire (Grains/Ft. ³)		Moisture (Percent
conditions: \rightarrow	3,4	100				N/A		2.0		
Data at	Flo	ow (Dry std	. Ft. ³ /Min.)	Velocity (F	t. /Sec.))	Moistu	Moisture (Grains/Ft. ³)		Moisture (Percent
standard	3,2	270		31		N/A		N/A		
conditions:										
\rightarrow										
8. Monitoring de			-			-				
Opacity		O ₂	NO _X	Strip		Electr		Other (spec		
monitor	n	onitor	monitor	c <u>har</u>	"t]	da <u>ta l</u>	ogger	in commen	ts)	(none)
9. Control devi	ce.	Descriptior	n of propose	d monitori	ng, reco	ordkeep	ing, and	reporting to as	ssu	re compliance with
emission limit	ts. I	nclude ope	rating paran	neters of co	ontrol d	evice (fl	ow rate,	temperature, p	ore	ssure drop, etc.).
None.										

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

instructions for	more details	s)	-	-				
Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concen- tration	Average Emissions (Ton/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Effi- ciency %
Particulate matter (PM)	0.02	0.02	**	0.08	0.08	3	000	N/A
Sulfur dioxide (SO ₂)	0.00	0.00	***	0.01	0.01	3	000	N/A
Carbon monoxide (CO)	0.21	0.21	PPM	0.90	0.90	3	000	N/A
Volatile organic compounds (VOC)	0.01	0.01	PPM	0.06	0.06	3	000	N/A
Nitrogen oxides (NO _X)	0.25	0.25	PPM	1.07	1.07	3	000	N/A
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)				1,296	1,296	3	000	N/A
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								
Other (specify)								
Other (specify)								

	9 E		APC 101
11. Comments			And Andrews
			Local Contract Section
			s == -
			2.0
	n North Harrison	SIGNATURE	
			a signature is not required on this form.
			is NOT being submitted at the same time
as an APC 100 form, then a			the second stills reason of the should
			as the responsible person of the above
			on is accurate and true to the best of my made under penalty of perjury.
	ICA Section Sarre	5-70z(a)(4), this decial ation is	
12. Signature	$ \subset $		Date 17 Sept. 2018
Compan Kudd		Title Resident, Hormonn UC	Phone number with area code
* Refer to the tables in t	he instructions fo	r estimation method and cor	ntrol device codes.
** Exit gas particulate ma	tter concentratio	n units: Process – Grains/Dry	[•] Standard Ft ³ (70 ⁰ F), Wood fired boilers -
		boilers – Lbs. /Million BTU h	
*** Exit gas sulfur dioxide	concentrations un	nits: Process – PPM by volum	e, dry bases, and boilers – Lbs. /Million

BTU heat input

 $\epsilon_{\rm e}$

Hormann LLC Source 004 Custom Paint Cure Oven 004-3

Operating Parameters

Fuel Type	Natural Gas			
Unit Description	Maximum Firing Rate (MMBtu/hr)			
Custom Paint Cure Oven Burner	<u> </u>	- MMBtu/hr		
Operating hours	8,760	hr/yr		
Annual Fuel Usage	Nat	ural Gas	Hourly Usage	
Custom Paint Cure Oven Burner	21.47	MMCF/yr	2,451 Cu. Ft./hr	

Emission Calculations

Emission Factors for Natural Gas Combustion ^{1,2}

	<u>lb/10⁶ scf</u>	<u>lb/MMBtu-HHV</u>	
Particulate Matter (PM _{Total})	7.6	0.0075	AP-42
Particulate Matter (PM _{Cond})	5.7	0.0056	AP-42
Particulate Matter (PM _{Filter}) ³	1.9	0.0019	AP-42
Nitrogen Oxides (NO _x)	100	0.0980	AP-42
Carbon Monoxide (CO)	84	0.0820	AP-42
Sulfur Dioxide (SO ₂)	0.6	0.0006	AP-42
VOC	5.5	0.0054	AP-42
Carbon Dioxide (CO ₂)	120,000	117.65	AP-42
Methane (CH ₄)	2.3	2.255E-03	AP-42
Nitrous Oxide (N ₂ O)	2.2	2.157E-03	AP-42

Natural Gas Emissions

Custom Paint Cure Oven

	lb/hr	Annual ^{4,5} ton/year
Particulate Matter $(PM_{Total})^3$	0.02	0.08
Particulate Matter $(PM_{10})^3$	0.02	0.08
Particulate Matter $(PM_{2.5})^3$	0.02	0.08
Nitrogen Oxides (NO _x)	0.25	1.07
Carbon Monoxide (CO)	0.21	0.90
Sulfur Dioxide (SO ₂)	0.001	0.01
Combustion VOC	0.01	0.06
Carbon Dioxide (CO ₂)	294	1,288
Methane (CH ₄)	0.01	0.02
Nitrous Oxide (N ₂ O)	5.39E-03	0.024
CO_2 Equivalent (CO_2 eq) ⁷		1,296

GWP ⁶				
CH4	25			
N2O	298			

Example Calculations/Notes:

(1) Compilation of Air Pollutant Emission Factors, AP-42, Supplement D, Fifth Edition, Section 1.4, Tables 1.4-1 and 1.4-2, July 1998, Small Boilers < 100 MMBtu/hr

(2) Per AP-42, Table 1.4-1 and 1.4-2, to convert from $lb/10^6$ scf to kg/ 10^6 m³, multiply by 16. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020.

(3) Assume $PM_{Total} = PM_{2.5} = PM_{10}$. (Includes filterable and condensable particulate matter)

(4) Maximum Emissions (lb/hr) = Emission Factor (lb/MMscf) * Natural Gas Usage (MMCF)
(5) Annual Emissions (tpy) = Average Emissions (lb/hr) * 8,760 (hr/yr) / 2,000 (lb/ton)
(6) GWP from 40 CFR 98 Subpart A Table A-1
(7) CO₂ Equivalent (CO₂eq) = CO₂ + [GWP_{CH4} * CH₄] + [GWP_{N20} * N₂O]



NON-TITLE V PERMIT APPLICATION STORAGE TANK DESCRIPTION

Type or print. Submit for each storage tank. Submit with the APC 100.											
		GENERAL IDENT	FICA	TION	AND DE	SCRI	ΡΤΙΟ	ON			
-	State (SOS)]	e and SOS control ເ	numl	ber [a:	s registe	red w	vith	the TN	l	2. Emission S Reference	
		ource subject to an uding Part, Subpart,						′es 🗌		No 🖌	
ii tes, iist tu	ne citation, inci	uullig Part, Subpart,	anu	applic	able Sec	lions	•				
		TANK DE	SCRI	PTION		ATA					
4. Tank ident		ber			struction	date					
Pentane (Blowin		T		2018							
5. Tank diamo	e ter (Ft.)	Height (Ft.)	Capacity (gallons) 12,000					Сар	oacity (barrels)		
6. Shape	Cylinder (up)	Cylinder (horizonta	al)	Sphere					Other (describe)		
7. Tank color:		Aluminum		Gray			Oth	ner (describe)			
	White	Specular Diffuse	2	Light	: Medi	um	Da	rk			
A. Roof:	\checkmark]					
B. Shell	\checkmark]					
8. Paint cond	ition:	Good 🖌			Poor						
9. Tank Check	Fixed roof	Floating roof C)pen	top]	p Underground Other (describe)						
10. Insulated a	nd/or heated	to: (°F)	P	ressu	rized to:	(PSIA	A)				
11. Loading type: Bottom Subme Type					erged Vapor balanced Other (describe)						
-	• •	ises, or mixtures to	be s	stored	l in this	tank	. Giv	e the	per	cent by weigh	t of each
component		- blashet									
Pentane (100%)	with a nitroger	n blanket									

APC 104

of tank to liquid surface	ce in feet from top	Average throughput (gallons/day)	Maximum number of tank turnovers per year
14. Complete the followin	g only if the tank	is equipped with a floati	ng roof:
A. Roof type:	Doub <u>le</u> deck	Pontoon Pan	Other (describe)
B. Seal type:	Single	Double	Other (describe)
C. Shell construction:	Riveted	Welded	Other (describe)
15. Comments			
		SIGNATURE	
	whether a signatur	e as an APC 100 form, ther re is provided. If this form	a signature is not required on this form is NOT being submitted at the same
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NON-TITLE V PERMIT APPLICATION EMISSION POINT DESCRIPTION

Type or print and submit for each stack or air contaminant source. Submit with the APC 100.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Organization's legal name and SOS control number [as registered with the TN Secretary of State (SOS)] Hormann LLC 000932606

2. Unique Source ID (name/number/letter which uniquely identifies this air contaminant source, like Boiler #1) 005 Blowing Agent Tank Recirculation Loop

3. Unique Emission Point ID (name/number/letter which uniquely identifies this emission point, like Stack #1) 005

4. Brief description of air contaminant source (Attach a diagram if appropriate):

12,000 gallon Pentane (Blowing Agent) Tank Recirculation Loop Component Leaks - Fugitive Emissions -Insignificant Activity

5. Emission point		Latitude			Longitude		6. Dis	stance to neare	st property line (Ft.)	
location		36.05565 N	I		85.52171 W					
				STA	CK AND EMISS	SION DA	TA			
emission (Ft.)		-t.) N			Diameter (Ft.) Temper I/A (°F)		over 125°F		Direction of exit (L down or horizonta	
→	N/	A				N/A		N/A	N/A	
Data at exit	Fl	ow (actual F	t. ³ /Min.)	Ve	elocity (Ft. /Sec.))	Moistu	re (Grains/Ft. ³)	Moisture (Percent)	
conditions: \rightarrow	N/	A		N/	A		N/A		N/A	
Data at	Flo	ow (Dry std.	Dry std. Ft. ³ /Min.) Velocity (Ft. /Sec.))	Moistu	ire (Grains/Ft. ³)	Moisture (Percent		
standard conditions:	N/	A		N/	A		N/A		N/A	
\rightarrow 8. Monitoring de	viv	e and reco	rding instru	um	ent (check all	that an	nlv).			
Opacity		O_2	NO _X		Strip	Electr		Other (spec	ify No monitor	
monitor	n	nonitor	monitor		chart	dat <u>a l</u>	ogger	in comment	s) (none)	
		•	• •		•	•	0		sure compliance with	
emission limit	ts. I	nclude ope	rating paran	net	ers of control d	evice (fl	ow rate,	temperature, p	ressure drop, etc.).	
None.										

APC 101

10. Air contaminants. Emission estimates for each air contaminant emitted from this point should be based on stack sampling results or engineering calculations. Calculations should be attached on a separate sheet. (see instructions for more details)

instructions for	more details	s)						
Air contaminants	Average Emissions (Lbs./Hr.)	Maximum Emissions (Lbs./Hr.)	Concen- tration	Average Emissions (Ton/Yr.)	Potential Emissions (Ton/Yr.)	Emissions Estimation Method Code *	Control Devices *	Control Effi- ciency %
Particulate matter (PM)			**					
Sulfur dioxide (SO ₂)			***					
Carbon monoxide (CO)			PPM					
Volatile organic compounds (VOC)	0.13	0.13	PPM	0.58	0.58	5	000	N/A
Nitrogen oxides (NO _X)			PPM					
Hydrogen fluoride (HF)								
Hydrogen chloride (HCl)								
Lead (Pb)								
Greenhouse gases (CO ₂ equivalents)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Hazardous air pollutant (specify)								
Other (specify)								
Other (specify)								
Other (specify)								
Other (specify)								

	APC 101
11. Comments	
8	
SIGNATURE	
If this form is being submitted at the same time as an APC 100 form, ther	a signature is not required on this form.
Date this form regardless of whether a signature is provided. If this form	is NOT being submitted at the same time
as an APC 100 form, then a signature is required.	- the user problem even of the phone
Based upon information and belief formed after a reasonable inquiry, I, a	
mentioned facility, certify that the information contained in this application knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is	
12. Signature	Date In C. J. Odly
1 mm th	17 Sept. CONO
Signer's name (type or print) Title	Phone number with area code
Camran Rudd Resident Hormenn UC	630-3NO-0623
 Refer to the tables in the instructions for estimation method and cor 	ntrol device codes.
** Exit gas particulate matter concentration units: Process – Grains/Dry	
Grains/Dry Standard Ft ³ (70 ⁰ F), all other boilers – Lbs. /Million BTU he	eat input.

*** Exit gas sulfur dioxide concentrations units: Process – PPM by volume, dry bases, and boilers – Lbs. /Million
 BTU heat input

Hormann LLC Blowing Agent Component Fugitive Emissions Source 005

The tank has a nitrogen blanket. Therefore, no emissions are calculated from the tank itself.

Operating Parameters Hours of Operation

8,760 hrs/yr

The blowing agent tank has a recirculating pump and loop that runs continually. The process draws blowing agent off this loop as required for production. The loop fittings are included. Fugitive blowing agent emissions from leaks in the transfer lines and the process piping were calculated using US EPAs publication "Fugitive VOC Emissions in the Synthetic Organic Chemical Manufacturing Industry (SOCMI)", December 1984 (EPA-625/10-84-004) Emission Factors The factors presented in the original publication were revised based on June 1994 guidance from the Texas Natural Resource Conservation Commission (TNRCC). The most conservative factors (i.e. light liquids) were used to represent blowing agent. The emission factors are as follows:

lb/hr/component

Valves	0.0035	lb/hr/component		
Pump Seals	0.0386	lb/hr/component		
Flanges	0.0005	lb/hr/component		
Relief Valves**	0.22963	lb/hr/component	**	0

Hormann expects that the blowing agent transfer and process system will consist of a maximum of 2 pumps, 27 flanged connections, 12 valves, and 2 relief valves. **Because each tank will operate under pressure, there are assumed to be no emissions from pressure relief valves. Therefore, the minimum expected emissions from blowing agent transfer lines and process piping are:

	# of Components	% VOC in Blowing	Emission Factor	VOC Emissions ^{1,2}		
Components	# of components	Agent	(lb/hr/component)	(lb/hr)	(lb/yr)	(tpy)
Valves	12		0.0035	0.04	368	0.18
Pump Seals	2	100%	0.0386	0.08	676	0.34
Flanges	27		0.0005	0.01	118.3	0.06
Relief Valves	5		0	0.00	0.0	0.00
			Total =	0.13	1.162	0.58

Notes:

(1) VOC Emissions (lbs) = # of Components * % VOC in Blowing Agent (%) * Emission Factor (lb/hr/component) / 100
 (2) VOC Emissions (tpy) = VOC Emissions (lb/yr) / 2000 (lb/ton)