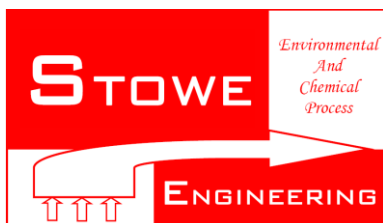


# 2021 NPRI - ANNUAL SUMMARY REPORT

Prepared for:  
**WEATHERSTRONG BUILDING PRODUCTS**  
37 Union Street, Smiths Falls, Ontario, K7A 4Z4



Attention: **Mark Boisclair, Plant Manager**  
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## 1.0 SUMMARY

Weatherstrong paints aluminum sheet metal used, as siding for example, for building materials. Order quantities, paint colour, and coating specifications are provided through the parent company Kaycan by its customers. Weatherstrong operates an industrial automated paint line where large aluminum rolls are loaded at one end and fed through the paint line in a long strip. The strip passes through a roll-coater to apply the paint and a high temperature curing oven to cure the coating dry before the strip is coiled into a finished roll at the opposite end of the line. The coatings contain various VOC solvents that act as a carrier for paint pigment (colour) application. Weatherstrong uses an exhaust equipped with a high efficiency catalytic oxidizer to destroy VOCs volatilizing from the paint as it dries.

Regarding NPRI:

- (i) The facility does not create solvents therefore, there is no plan to address reducing solvent creation.
- (ii) Prior to painting, chromic acid, containing hexavalent chrome is applied to prepare the surface. The liquid roll application is isolated within a recirculating system and the thin aqueous film dries on the surface prior to the paint roller application. There are no air emissions and the chrome pre-treatment applied either stays on the metal or remains in the application tank.

### 2021 NPRI REPORT SUMMARY

Substances					
CAS RN	Substance Name	Releases	Disposals	Recycling	Unit
111-76-2	2-Butoxyethanol	1.13			tonnes
1330-20-7	Xylene (all isomers)	0.99			tonnes
71-36-3	n-Butyl alcohol	0.56			tonnes
95-63-6	1,2,4-Trimethylbenzene	1.09			tonnes
NA - 19	Hexavalent chromium (and its compounds)		10.18		kg

#### Notes

The use and emission quantity of Part 1A solvents is based on demand for painted products. Demand increased slightly between 2020 and 2021. There is no plan to reduce the quantity or change the type of material used. There was no need to report on VOCs to air or the specific Part 5 VOC substances because the catalytic oxidizer effectively reduced emissions below the reporting threshold.

## 2.0 OBJECTIVE

Weatherstrong strives to minimize waste and optimize the use of paints, efficiently preventing excessive emissions by using a catalytic oxidizer maintained to support a highly efficient destruction rate.

### 2.1 TARGETS

- (i) To improve spill containment strategies on site;
- (ii) To optimize energy consumption relating to paint line operations.

## 3.0 DESCRIPTION OF THE TOXIC SUBSTANCE

All paints contain Volatile Organic Compounds (VOCs) to varying percentages depending on the formulation. There are over 200 different paint formulations. Based on the annual paint use, the four VOC chemicals tabled below met the NPRI reporting threshold. The high efficiency catalytic oxidizer reduced the overall VOC emissions to air (Part 5) below the reporting threshold.

A pre-treatment chemical contains hexavalent chrome which meets the 50 kg reporting threshold requirement.

Reducing toxics is difficult because the organization has no control over the paint formulation. The paint-roll transfer application is efficient with minimal waste as no paint is atomized.

## 4.0 FACILITY INFORMATION

**Name:** Weatherstrong Building Products, 37 Union Street, Smiths Falls, Ontario, K7A 4Z4  
**NPRI #:** 0000005703  
**NAICS Code:** 332810  
**# of Full-time Employees:** 32  
**UTM Coordinates (NAD83):** Latitude 44.9125, Longitude -76.0220

### 4.1 Owner/Contact of the Facility Information

**Contact:** Mark Boisclair, Plant Manager, Weatherstrong Building Products  
**Address:** 37 Union Street, Smiths Falls Ontario, K7A 4Z4  
**Phone:** (613) 283-0999  
**E-mail:** [mark90@kaycan.ca](mailto:mark90@kaycan.ca)

### 4.2 Operator of the Facility Information

**Name:** Mark Boisclair, Plant Manager, Weatherstrong Building Products  
**Address:** 37 Union Street, Smiths Falls Ontario, K7A 4Z4  
**Phone Number:** (613) 283-0999

#### 4.3 Highest Ranking Employee at the Facility Information

**Name:** Mark Boisclair, Plant Manager, Weatherstrong Building Products

**Address:** 37 Union Street, Smiths Falls Ontario, K7A 4Z4

**Phone:** (613) 283-0999

**E-mail:** [Mark90@kaycan.ca](mailto:Mark90@kaycan.ca)

*This facility is a subsidiary of Kaycan Inc.*

#### 4.4 Parent Company Information

**Name:** Kaycan

**Address:** 3075 Trans Canada Hwy, Pointe Claire, Quebec, H9R 1B4

**Phone:** (613) 283-0999

**Percentage of Facility Owned by Company:** 100 per cent

**Business Number:** 102777612RC0001

#### 4.5 Plan Contacts

*Person Coordinating the Preparation of the Plan*

**Name:** Mark Boisclair, Plant Manager, Weatherstrong Building Products

**Address:** 37 Union Street, Smiths Falls Ontario, K7A 4Z4

**Phone:** (613) 283-0999

**E-mail:** [Mark90@kaycan.ca](mailto:Mark90@kaycan.ca)

#### 4.6 Person Who Prepared the Plan

**Name:** Doug Stowe P.Eng. TSRP

**Position:** Toxic Substance Reduction Planner (#TSRP0157)

**Address:** 211 Spring St., Almonte, Ontario K0A1A0

**Phone:** (613)256-9321

**E-mail:** [Doug@stowe-engineering.ca](mailto:Doug@stowe-engineering.ca)

#### 4.7 Public Contact

**Name:** Mark Boisclair, Plant Manager, Weatherstrong Building Products

**Address:** 37 Union Street, Smiths Falls Ontario, K7A 4Z4

**Phone:** (613) 283-0999

**E-mail:** [Mark90@kaycan.ca](mailto:Mark90@kaycan.ca)

#### 4.8 Technical Contact

**Name:** Doug Stowe P.Eng. TSRP

**Position:** Toxic Substance Reduction Planner (#TSRP0157)

**Address:** 211 Spring St., Almonte, Ontario K0A1A0

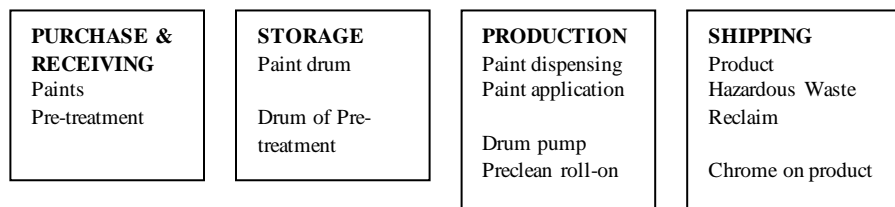
**Phone:** (613)256-9321

**E-mail:** [Doug@stowe-engineering.ca](mailto:Doug@stowe-engineering.ca)

## 5.0 STAGES AND PROCESSES THAT USE THE TOXIC SUBSTANCES

### 5.1 STAGES

The main stages for paint processing: Purchasing & Receiving, Storage, Production and Shipping. The substances are present in the first three stages.



### 5.2 Paint Line Description

Weatherstrong produces painted aluminum sheet for building applications.

Paint Line: Bare aluminum sheet is received at the plant warehouse in large rolls. A roll is loaded onto the feed station cradle at the start of the paint line and gradually uncoiled to feed through a series of processing stages. Initially the aluminum is cleaned and dried before it passes across a paint roller. Paint is applied both sides of the roll. A 'Backer' coating may be used if only one side is painted. The painted surfaces pass through a long, enclosed gas-heated drying oven that cures the paint onto the aluminum and releases any carrier solvents. The finished dry painted sheet is coiled up again at the opposite end of the line, removed from the cradle and packaged for shipment.

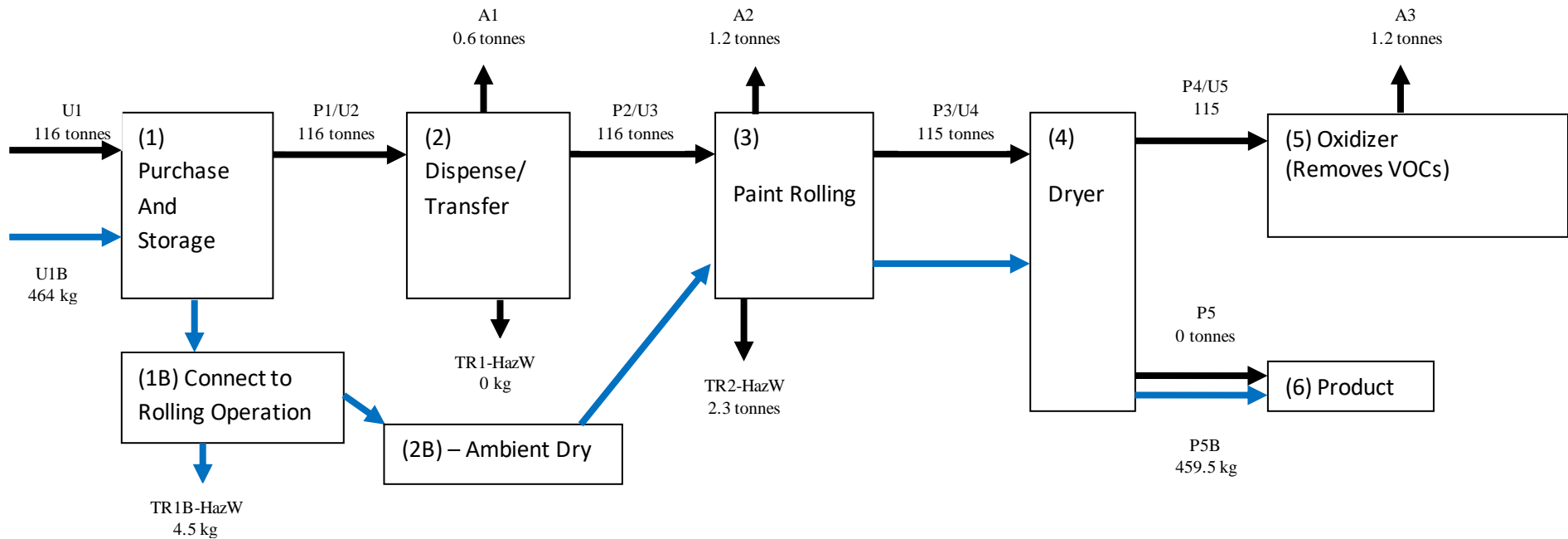
All solvent vapours emitted from the drying oven during production are captured and treated in a high efficiency catalytic oxidizer.

Pre-treatment: contains chromic acid, which includes a small percentage of hexavalent chrome (VI). It is used from the supply drums and is connected to a recirculating system.

Solvent Dispense: Solvent dispensing is done in an ancillary Solvent Dispense Room serviced with two wall mounted exhaust fans. Diacetone alcohol, Vansol and a recycled solvent made up of both these products are used to clean sections of the paint line. Solvents are dispensed into 20 litre containers and brought to the paint line for in-situ cleaning. Contaminated solvent solutions are brought back into the Solvent Dispense Room and decanted into a storage container for recycling and eventual shipment as hazardous waste.

## 6.0 FLOW CHARTS

### 6.1 Paint Line Process (Mass Balance based on 2020 Production)



LEGEND	
	Paint Line Process Components
	Chrome VI Process
U1	Solvent VOC Used
U1B	Chrome VI Used
P	Produced
TR	Toxic Waste Recycled or Hazardous Waste Disposal
A	Air Emission
Re	Reclaim
HazW	Hazardous Waste

DQL Data Quality Level = "Average"

## 6.2 NPRI Substances Summary

Name	ID#	Part	Limit	UOM	Qty	UOM	Reportable?
<b>Part 1A - MPO</b>							
Butoxyethanol	111-76-2	1A	10	tonnes	37.5	tonnes (MPO)	YES
Butyl alcohol	71-36-3	1A	10	tonnes	18.6	tonnes (MPO)	YES
Trimethylbenzene	95-63-6	1A	10	tonnes	36.2	tonnes (MPO)	YES
Xylene (all isomers) <sup>15</sup>	1330-20-7	1A	10	tonnes	32.9	tonnes (MPO)	YES
<b>Part 1B</b>							
Hexavalent chromium (and its compounds) <sup>3</sup>	NA-46	1B	50	kg	508.9	kg (MPO)	YES
<b>Part 4 - Criteria Air Contaminants (CAC)</b>							
Carbon monoxide	630-08-0	4	20	tonnes	0.64	tonnes	NO
Nitrogen oxides (expressed as nitrogen dioxide)	11104-93-1	4	20	tonnes	3.22	tonnes	NO
PM <sub>2.5</sub> <sup>22,23</sup>	NA - M10	4	0.3	tonnes	0.06	tonnes	NO
PM <sub>10</sub> <sup>23,24</sup>	NA - M09	4	0.5	tonnes	0.06	tonnes	NO
Sulphur dioxide	7446-09-5	4	20	tonnes	0.02	tonnes	NO
Total particulate matter <sup>23,25</sup>	NA - M08	4	20	tonnes	0.06	tonnes	NO
Volatile organic compounds <sup>26</sup>	NA - M16	4	10	tonnes (to air)	9.4	tonnes (to air)	NO
<b>Part 5 - VOCs to Air</b>							
Total VOCs used from paints and solvents	NA - M16				242.3	tonnes	
Catalytic Oxidizer efficiency	96%	4%					
Air Emission of VOCs from paints and solvents	NA - M16	5			9.0	tonnes	
VOCs from combustion (natural gas)	NA - M16	5			0.44	tonnes	
<b>TOTAL VOCs (tonnes)</b>	NA - M16	5	10	tonnes (to air)	9.4	tonnes (to air)	NO

MPO = Manufactured, Processed or Otherwise used



	2019		2020		2021		% Change
<b>Part 1A (tonnes)</b>	<b>Part 1A</b>	<b>Part 5</b>	<b>Part 1A</b>	<b>Part 5</b>	<b>Part 1A</b>	<b>Part 5</b>	
<b>Components</b>	<b>2019</b>	<b>to air</b>	<b>2020</b>	<b>to air</b>	<b>2021</b>	<b>to air</b>	
Butoxyethanol	34.3	0.34	34.4	1.03	37.5	1.13	8.3%
Butyl alcohol	17.8	0.18	17.6	0.53	18.6	0.56	5.4%
Trimethylbenzene	34.3	0.34	32.6	0.98	36.2	1.09	9.9%
Xylene (all isomers) <sup>15</sup>	32.9	0.33	31.8	0.95	32.9	0.99	3.3%
<b>Part 1B (kg)</b>	<b>Part 1B</b>		<b>Part 1B</b>		<b>Part 1B</b>		
Hexavalent chromium (and its compounds) <sup>3</sup>	463.7		475.30		508.90		6.6%
to hazardous waste	4.64		4.75		5.09		
On product	459.1		470.5		503.8		
<b>Total Paint used (Imp Gal)</b>	153,420		165,612		182,681		9.3%
<b>Total Paint used (kg)</b>	845,909		884,568		951,232		7.0%
<b>Natural Gas Used (m3)</b>	1,710,720		1,693,585		2,010,585		15.8%

## 7.0 CONCLUSIONS

1. As of 2021, the Ontario Toxic Substance Reduction Plan is no longer required. Elements of the 'Plan' were retained in the report to demonstrate the process flow and mass balance.
2. The calculations were based on paint consumption and measured oxidizer efficiency.
3. NPRI Reportable substances are identified in the table in section 6.2
4. Part 1A: Four main VOC solvents, a component of the paints, are destroyed using a high efficiency catalytic oxidizer. Only the residual solvent VOC remains as a release to air.
5. Part 2: hexavalent chrome is applied onto the product. Residual chrome is collected and shipped as hazardous waste through Anachemia.

Regards,

A handwritten signature in blue ink, appearing to read "Doug Stowe", is placed over a faint, light-colored rectangular stamp or watermark.

Doug Stowe P.Eng.  
President, Stowe Engineering