

From: [Air.Pollution Control](#)
To: [APC Permitting](#)
Subject: FW: Non-Major Source Construction Permit Application for Round Bar Heating - Gerdau 57-0189
Date: Tuesday, August 3, 2021 4:04:31 PM
Attachments: [image001.png](#)
[Gerdau 57-0189 Rod Heater Construction Application 080321.pdf](#)

From: Will Ownby <William.Ownby@gerdau.com>
Sent: Tuesday, August 3, 2021 3:57 PM
To: Air.Pollution Control <Air.Pollution.Control@tn.gov>; Terri Ledsinger <Terri.Ledsinger@tn.gov>
Cc: Steve Marquardt <Steve.Marquardt@erm.com>; Josh Wigger <Josh.Wigger@gerdau.com>;
Melanie Ragan <Melanie.Ragan@gerdau.com>
Subject: [EXTERNAL] Non-Major Source Construction Permit Application for Round Bar Heating -
Gerdau 57-0189

***** This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. *****

Please find attached a non-major source construction permit application for Post Process Heating Operation for Round Bars for Gerdau Ameristeel U.S. Inc.(Facility ID 57-1089) . Please let me know if you have any questions or comments regarding this application.

Thanks

Will Ownby
Environmental Manager
Gerdau – Jackson TN Mill
801 Gerdau Drive
Jackson, TN 38305
(731)423-5274 (Office)
(731)-225-3797 (Cell)



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August 3, 2021

Technical Secretary
Tennessee Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

**RE: GerdaU AmeriSteel U.S. Inc., Facility ID 57-0189
Jackson, TN Facility
Construction Permit Application for Post Processing Heating Operation for Round Bars**

To Whom It May Concern:

On behalf of GerdaU AmeriSteel U.S. Inc., please find the enclosed a construction permit application for the relocation of a post processing heating operation for round bars from the Minnesota facility to the Jackson, TN facility. GerdaU AmeriSteel U.S. Inc. (GerdaU) owns and operates a steel mill facility including a steel scrap shredder and electric arc steel melting furnace (EAF) located at 801 GerdaU Drive in Jackson, Madison County, Tennessee. The facility currently operates under the authority granted by Title V Permit No. 574449 issued on December 11, 2019 by the Tennessee Department of Environment and Conservation (TDEC).

The proposed project will be minor with respect to federal new source review/prevention of significant deterioration permitting.

As allowed by 1200-03-07-.01(5) of the Tennessee air pollution regulations, GerdaU AmeriSteel formally agrees to limit the hours of operation of this operation to 4,700 hours during any period of twelve consecutive months. GerdaU also agrees to limit particulate matter emissions from this operation to 0.16 pounds per hour (0.38 tons per year).

Should any further information be required, please do not hesitate to contact our consultant, Steve Marquardt of ERM at (615) 656-7100.

Sincerely,

A handwritten signature in black ink, appearing to read 'Josh Wigger'.

Josh Wigger, Vice President/General Manager



Gerdau AmeriSteel U.S., Inc.
(Gerdau)

Construction Permit Application for Post Bundle Heater for Post Bundle Heater

Gerdau AmeriSteel U.S., Inc. Jackson,
Tennessee

22 July 2021

Project No.: 0599943

The business of sustainability



Document details	The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.
Document title	Construction Permit Application for Post Bundle Heater
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Project No.	0599943
Date	22 July 2021
Version	1.0
Author	Mariah Martinez
Client Name	Gerdau AmeriSteel U.S., Inc. (Gerdau)

Document history

Version	Revision	Author	Reviewed by	ERM approval to issue		Comments
				Name	Date	
00	00	Mariah Martinez				

Signature Page

22 July 2021

Construction Permit Application for Post Bundle Heater for Post Bundle Heater

Gerdau AmeriSteel U.S., Inc. Jackson, Tennessee



Jeffrey H. Twaddle
Partner-In-Charge

Environmental Resources Management
5000 Meridian Blvd
Suite 300
Franklin, TN 37067

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1. INTRODUCTION

Gerdau AmeriSteel U.S., Inc. (Gerdau) owns and operates a steel mill facility including a steel scrap shredder and electric arc steel melting furnace (EAF) located at 801 Gerdau Drive in Jackson, Madison County, Tennessee. The facility currently operates under the authority granted by Title V Permit No. 574449 issued on December 11, 2019 by the Tennessee Department of Environment and Conservation (TDEC).

Gerdau is submitting this construction permit to authorize the addition of a Post Bundle Heater. Based on the increase in emissions calculations, ERM found that the increase in PM, NO_x, CO, SO₂, and VOC emissions were not significant. These emissions qualify for a non-major source construction permit. Appendix B provides details of the increase in emissions calculations.

This construction permit application includes the information necessary to describe the equipment to be permitted. A description of the equipment is provided in Section 2 of this document. An overview of applicable regulations is provided in Section 4 of this document. A process flow diagram is provided in Appendix A. The following Tennessee Department of Environmental Conservation (TDEC) Air Pollution Control Program (APC) forms are applicable to this permit modification and can be found in Appendix B:

- APC 1 (Facility Identification Form)
- APC 2 (Operations and Flow Diagrams)
- APC 10 (Miscellaneous Processes)
- APC 19 (Compliance Certification – Monitoring and Reporting Description of Methods Used for Determining Compliance)
- APC 22 (Compliance Demonstration by Monitoring Control System Parameters or Operating Parameters of a Process)
- APC 26 (Compliance Demonstration by Recordkeeping)
- APC 28 (Emissions from Process Emission Source / Fuel Burning / Installation / Incinerator)
- APC 30 (Current Emissions Requirements and Status)

A summary of the emission calculations and detailed emission calculations associated with this modification are provided in Section 3 of this document and Appendix C, respectively.

2. PROCESS DESCRIPTION

The Gerdau Jackson facility plans to relocate the Post Bundle Heating operation from the Gerdau facility in Minnesota. Note that the equipment used to complete the process will be new. The purpose of the operation is to heat the ends of steel bars post production. The bars are eventually used in the manufacture of mill balls and the purpose of heating the ends of the bars is to reduce cracking when the bars are later sheared into short lengths. Air emissions result from the combustion of natural gas. The post processing heating operation includes two burner walls with an installed heat input capacity of 21.6 MMBtu per hour, and will operate on natural gas with no back up fuel. While the bars are produced in the Melt Shop at the Jackson facility this is a stand-alone project, and in no way increases the emissions from the remainder of the plant.

A process flow diagram is provided in Appendix A.

3. AIR EMISSIONS

Potential emissions from the addition of the post processing heating operation are provided in Appendix C.

3.1 Fugitive Emissions

Emissions consist of natural gas combustion products that exhaust from the burners.

4. REGULATORY APPLICABILITY REVIEW

Gerdau is to comply with all applicable Tennessee Air Pollution Control Regulation (TAPCR). This section addresses the potentially applicable regulatory requirements as they relate to the post processing operation for round bars at the Jackson facility.

4.1 Control of Nitrogen Oxides Emissions (TAPCR 1200-03-07)

TAPCR 1200-03-07-.07(2) dictates that any person constructing an air contaminant source after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall utilize equipment and technology which is deemed reasonable and proper by the Technical Secretary. Per an APC – Perm – G – 03 – Low NO_x Draft – 092120: Low NO_x Technology Requirements for New and Modified Sources, low NO_x burners are deemed reasonable and proper control technology for natural gas combustion. The document also indicates that sources may agree to limits that lower allowable NO_x emissions below five (5) tpy to avoid the requirement for low NO_x burners. Gerdau will limit hours of operation to 4,700 hours during any period of twelve consecutive months in order to limit NO_x emissions to below five (5) tpy. Assuming the burners were fired at their maximum burner capacity for 4,700 hours per year in combination with a heat content of 1,020 Btu/scf, the annual natural gas usage would be 99.53 MMscf/yr. Based on the use of the AP-42 natural gas emission factor of 100 lbs/MMscf from Table 1.4-1 for small boilers, the annual NO_x emissions would be less than 5 tons per year.

4.2 Control of Particulate Matter Emissions (TAPCR 1200-03-07)

TAPCR 1200-03-07-.03(1) dictates that the allowable emission level of particulate matter from any process emission source beginning operation on or after April 3, 1972 shall be determined by Table 2. The bars will be processed in 4,000 ton batch runs requiring approximately 96 hours per run. Actual operation is estimated to be 60,000 tons per year and would require approximately 1,440 hours of operation per year. Interpolation of Table 2 to TAPCR 1200-03-07-.03 the post processing heating operation for round bars shall not emit particulate matter in excess of 31.4 lb/hr for a 42 ton/hr process rate.

However, as allowed by TAPCR 1200-03-07-.01(5), Gerdau formally agrees to limit PM emissions to 0.16 lbs/hr, and 0.38 tons/yr by virtue of an annual operating limit of 4,700 hours during any period of twelve consecutive months and the use of only natural gas as fuel for the Post Bundle Heating operation.

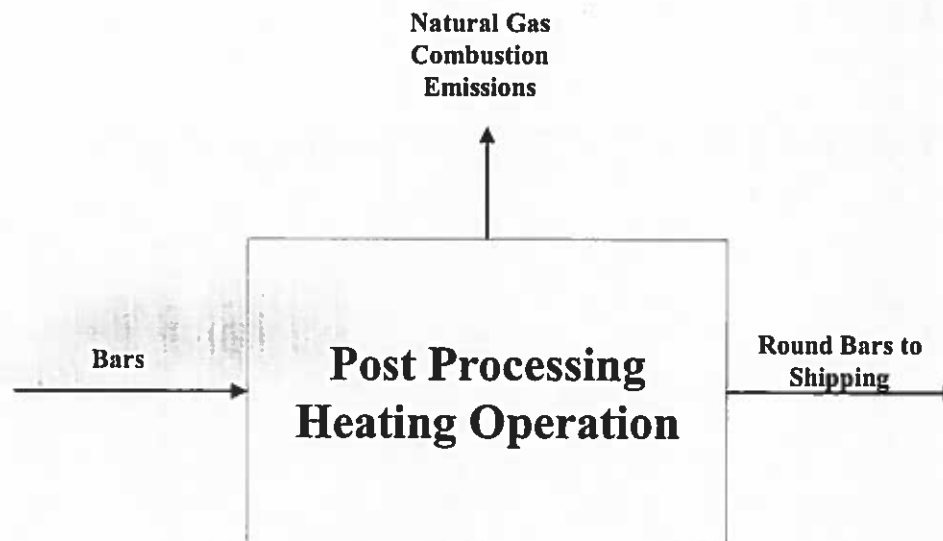
4.3 Control of Sulfur Dioxide Emissions (TAPCR 1200-03-14)

TAPCR 1200-03-14-.03(3) applies to owners and operators of an air contaminant source located in a Class IV, V, or VI county. Madison county is a Class VI county as per TAPCR 1200-03-14-.01(2)(g). Therefore, the post processing heating operation for round bars shall not emit sulfur dioxide in excess of 2,000 ppm.

4.4 Control of Opacity (TAPCR 1200-03-05)

TAPCR 1200-03-05-.01 dictates that no person shall cause, suffer, allow, or permit discharge from any air contaminant source with an opacity in excess of twenty (20) percent for an aggregate of more than five (5) minutes in any one (1) hour or more than twenty (20) minutes in any twenty-four (24) hours. The post processing heating operation for round bars shall not have discharge with an opacity in excess of twenty (20) percent.

APPENDIX A PROCESS FLOW DIAGRAM



Environmental Resources Management

DESIGN: Mariah Martinez	DRAWN: Mariah Martinez	CHKD.:
DATE: July 2021	SCALE: N/A	REV.: 0
W.O. NO.: 0599943		

Figure 1-1
Process Flow Diagram
 Post Processing Heating Operation Round Bars
 Gerdau AmeriSteel U.S., Inc.
 Jackson, Madison County, Tennessee



APPENDIX B

TDEC AIR PERMIT APPLICATION FORMS



TITLE V PERMIT APPLICATION INDEX OF AIR POLLUTION PERMIT APPLICATION FORMS

Section 1: Identification and Diagrams		
This application contains the following forms	APC Form 1, Facility Identification	1
	APC Form 2, Operations and Flow Diagrams	1

Section 2: Emission Source Description Forms		
		Total number of this form
This application contains the following forms (one form for each incinerator, printing operation, fuel burning installation, etc)	APC Form 3, Stack Identification	
	APC Form 4, Fuel Burning Non-Process Equipment	
	APC Form 5, Stationary Gas Turbines or Internal Combustion Engines	
	APC Form 6, Storage Tanks	
	APC Form 7, Incinerators	
	APC Form 8, Printing Operations	
	APC Form 9, Painting and Coating Operations	
	APC Form 10, Miscellaneous Processes	1
	APC Form 33, Stage I and Stage II Vapor Recovery Equipment	
	APC Form 34, Open Burning	

Section 3: Air Pollution Control System Forms		
		Total number of this form
This application contains the following forms (one form for each control system in use at the facility)	APC Form 11, Control Equipment - Miscellaneous	
	APC Form 13, Adsorbers	
	APC Form 14, Catalytic or Thermal Oxidation Equipment	
	APC Form 15, Cyclones/Settling Chambers	
	APC Form 17, Wet Collection Systems	
	APC Form 18, Baghouse/Fabric Filters	

(OVER)

Section 4: Compliance Demonstration Forms

		Total number of this form
This application contains the following forms (one form for each incinerator, printing operation, fuel burning installation, etc)	APC Form 19, Compliance Certification - Monitoring and Reporting - Description of Methods for Determining Compliance	1
	APC Form 20, Continuous Emissions Monitoring	
	APC Form 21, Portable Monitors	
	APC Form 22, Control System Parameters or Operating Parameters of a Process	1
	APC Form 23, Monitoring Maintenance Procedures	
	APC Form 24, Stack Testing	
	APC Form 25, Fuel Sampling and Analysis	
	APC Form 26, Record Keeping	1
	APC Form 27, Other Methods	
	APC Form 28, Emissions from Process Emissions Sources / Fuel Burning Installations / Incinerators	1
	APC Form 29, Emissions Summary for the Facility or for the Source Contained in This Application	
	APC Form 30, Current Emissions Requirements and Status	1
	APC Form 31, Compliance Plan and Compliance Certification	
	APC Form 32, Air Monitoring Network	

Section 5: Statement of Completeness and Certification of Compliance

I have reviewed this application in its entirety and to the best of my knowledge, and based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete. I have provided all the information that is necessary for compliance purposes and this application consists of 10 pages and they are numbered from page 1 to 10. The status of this facility's compliance with all applicable air pollution control requirements, including the enhanced monitoring and compliance certification requirements of the Federal Clean Air Act, is reported in this application along with the methods to be used for compliance demonstration.

Name and Title of Responsible Official

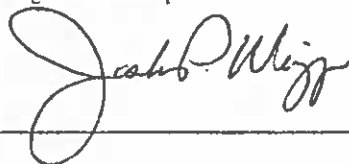
Telephone Number with Area Code

Josh Wigger Vice President/General Manager

731-424-5600

Signature of Responsible Official

Date of Application



August 3, 2021

(For definition of responsible official, see instructions for APC Form 1)

State of Tennessee
 Department of Environment and Conservation
 Division of Air Pollution Control
 William R. Snodgrass Tennessee Tower
 312 Rosa L. Parks Avenue, 15th Floor
 Nashville, TN 37243
 Telephone: (615) 532-0554



APC 1

TITLE V PERMIT APPLICATION FACILITY IDENTIFICATION

SITE INFORMATION				
1. Organization's legal name Gerdau Ameristeel U.S. Inc.		For APC Use Only	APC company point no.	
2. Site name (if different from legal name) N/A			APC Log/Permit no.	
3. Site address (St./Rd./Hwy.) 801 Gerdau Drive		NAICS or SIC Code 33		
City or distance to nearest town Jackson		Zip code 38305		County name Madison
4. Site location (in Lat./Long.)		Latitude 35.727493		Longitude -88.810269
CONTACT INFORMATION (RESPONSIBLE OFFICIAL)				
5. Responsible official contact Josh Wigger		Phone number with area code 731-424-5600		
6. Mailing address (St./Rd./Hwy.) PO Box 10848		Fax number with area code 731-422-4247		
City Jackson	State TN	Zip code 38308	Email address josh.wigger@gerdau.com	
CONTACT INFORMATION (TECHNICAL)				
7. Principal technical contact Will Ownby		Phone number with area code 731-423-5274		
8. Mailing address (St./Rd./Hwy.) PO Box 10848		Fax number with area code 731-422-4247		
City Jackson	State TN	Zip code 38308	Email address william.ownby@gerdau.com	
CONTACT INFORMATION (BILLING)				
11. Billing contact Will Ownby		Phone number with area code 731-423-5274		
12. Mailing address (St./Rd./Hwy.) PO Box 10848		Fax number with area code 731-422-4274		
City Jackson	State TN	Zip code 38308	Email address william.ownby@gerdau.com	
TYPE OF PERMIT REQUESTED				
13. Permit requested for: Initial application to operate : ☐ Permit renewal to operate : ☐ Administrative permit amendment : ☐ Minor permit modification : ☐ Significant modification : ☐ Construction permit : ☒				

(OVER)

HAZARDOUS AIR POLLUTANTS, DESIGNATIONS, AND OTHER PERMITS ASSOCIATED WITH FACILITY

14. Is this facility subject to the provisions governing prevention of accidental releases of hazardous air contaminants contained in Chapter 1200-03-32 of the Tennessee Air Pollution Control regulations?

☐

Yes

☒

No

If the answer is Yes, are you in compliance with the provisions of Chapter 1200-03-32 of the Tennessee Air Pollution Control regulations?

☐

Yes

☐

No

15. If facility is located in an area designated as "Non-Attainment" or "Additional Control", indicate the pollutant(s) for the designation.

N/A

16. List all valid Air Pollution permits issued to the sources contained in this application (identify all permits with most recent permit numbers and emission source reference numbers listed on the permit(s)).

N/A

17. Page number :

Revision number:

Date of revision:

N/A

Construction Permit - July 2021

State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243
Telephone: (615) 532-0554



APC 2

TITLE V PERMIT APPLICATION OPERATIONS AND FLOW DIAGRAMS

1. Please list, identify, and describe briefly process emission sources, fuel burning installations, and incinerators that are contained in this application. Please attach a flow diagram for this application.

The proposed construction is the installation of a post processing heating operation for round bars.
See attached narrative, which includes a process description.

2. List all insignificant activities which are exempted because of size or production rate and cite the applicable regulations.

N/A

3. Are there any storage piles?

YES _____

NO X _____

4. List the states that are within 50 miles of your facility.

Alabama, Missouri, Arkansas, Mississippi, Kentucky

5. Page number:

Revision Number:

N/A

Date of Revision:

Construction Permit - July 2021

APC 10

TITLE V PERMIT APPLICATION MISCELLANEOUS PROCESSES

GENERAL IDENTIFICATION AND DESCRIPTION			
1. Facility name: Gerdau Ameristeel U.S., Inc.			
2. Process emission source (identify): New Source: Post Heating Round Bars			
3. Stack ID or flow diagram point identification(s) N/A		4. Year of construction or last modification: TBD	
If the emissions are controlled for compliance, attach an appropriate Air Pollution Control system form.			
5. Normal operating schedule: 24 Hrs./Day 4 Days/Wk. 60 Days/Yr.			
6. Location of this process emission source in UTM coordinates. UTM Vertical: 3955234.72 UTM Horizontal: 336276.56			
7. Describe this process (Please attach a flow diagram of this process) and check one of the following: ☒ Batch ☐ Continuous			
PROCESS MATERIAL INPUT AND OUTPUT			
8. List the types and amounts of raw materials input to this process:			
Material	Storage/Material handling process	Average usage (units)	Maximum usage (units)
Bar	Natural gas-fired burner	60,000 tpy	195,833 tpy
9. List the types and amounts of primary products produced by this process:			
Material	Storage/Material handling process	Average usage (units)	Maximum usage (units)
Round Bar	Shipped	60,000 tpy	195,833 tpy
10. Process fuel usage:			
Type of fuel	Max heat input (10 ⁶ BTU/lr)	Average usage (units)	Maximum usage (units)
Natural Gas	21.6	30.49 MMscf/yr	99.53 MMscf/yr
11. List any solvents, cleaners, etc., associated with this process: N/A			
If the emissions and/or operations of this process are monitored for compliance, please attach the appropriate Compliance Demonstration form.			
12. Describe any fugitive emissions associated with this process, such as outdoor storage piles, open conveyors, open air sand blasting, material handling operations, etc (please attach a separate sheet if necessary) N/A			
13. Page number:		Revision Number:	
N/A		Date of Revision:	
Construction Permit - July 2021			



TITLE V PERMIT APPLICATION
COMPLIANCE CERTIFICATION - MONITORING AND REPORTING
DESCRIPTION OF METHODS USED FOR DETERMINING COMPLIANCE

All sources that are subject to 1200-03-09- 02(11) of the Tennessee Air Pollution Control Regulations are required to certify compliance with all applicable requirements by including a statement within the permit application of the methods used for determining compliance. This statement must include a description of the monitoring, recordkeeping, and reporting requirements and test methods. In addition, the application must include a schedule for compliance certification submittals during the permit term. These submittals must be no less frequent than annually and may need to be more frequent if specified by the underlying applicable requirement or the Technical Secretary.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Facility name: Gerdau AmeriSteel U.S., Inc.
2. Process emission source, fuel burning installation, or incinerator (identify): New Source: Post Heating Round Bars
3. Stack ID or flow diagram point identification(s): N/A

METHODS OF DETERMINING COMPLIANCE

4. This source as described under Item #2 of this application will use the following method(s) for determining compliance with applicable requirements (and special operating conditions from an existing permit). Check all that apply and attach the appropriate form(s)

☐ Continuous Emission Monitoring (CEM) - APC 20
 Pollutant(s): _____

☐ Emission Monitoring Using Portable Monitors - APC 21
 Pollutant(s): _____

☒ Monitoring Control System Parameters or Operating Parameters of a Process - APC 22
 Pollutant(s): NOx, Opacity, Hours of Operation

☐ Monitoring Maintenance Procedures - APC 23
 Pollutant(s): _____

☐ Stack Testing - APC 24
 Pollutant(s): _____

☐ Fuel Sampling & Analysis (FSA) - APC 25
 Pollutant(s): _____

☒ Recordkeeping - APC 26
 Pollutant(s): NOx, PM, SO2, Hours of Operation

☐ Other (please describe) - APC 27
 Pollutant(s): _____

5. Compliance certification reports will be submitted to the Division according to the following schedule:

Start date: According to the schedule after incorporation in the Title V Operating Permit
 And every 365 days thereafter.

6. Compliance monitoring reports will be submitted to the Division according to the following schedule:

Start date: According to the schedule after incorporation in the Title V Operating Permit
 And every 365 days thereafter.

7. Page number: _____ Revision number: N/A Date of revision: Construction Permit - July 2021

State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243
Telephone: (615) 532-0554



APC 22

**TITLE V PERMIT APPLICATION - COMPLIANCE DEMONSTRATION BY
MONITORING CONTROL SYSTEM PARAMETERS OR OPERATING PARAMETERS OF A PROCESS**

The monitoring of a control system parameter or a process parameter shall be acceptable as a compliance demonstration method provided that a correlation between the parameter value and the emission rate of a particular pollutant is established.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Facility name Gerdau AmeriSteel U.S., Inc.	2. Stack ID or flow diagram point identification(s) N/A
--	--

3. Emission source:
New Source: Post Heating Round Bars

MONITORING DESCRIPTION

4. Pollutant(s) being monitored:
NOx, Opacity

5. Description of the method of monitoring and establishment of correlation between the parameter value and the emission rate of a particular pollutant:
Monitor and record the hours of operation once per day. Gerdau has agreed to limit the hours of operation to 4,700 hours per any period of twelve consecutive months.

Visible emissions from the Post Heating Round Bars operation will not exceed twenty percent (20%) opacity.

6. Compliance demonstration frequency (specify the frequency with which compliance will be demonstrated):
Hours of operation will be recorded during each day of operation. The total hours of operation during any period of twelve consecutive months will not exceed 4,700.

7. Page number:	Revision number: N/A	Date of revision: Construction Permit - July 2021
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State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243
Telephone: (615) 532-0554



APC 26

**TITLE V PERMIT APPLICATION
COMPLIANCE DEMONSTRATION BY RECORDKEEPING**

Recordkeeping shall be acceptable as a compliance demonstration method provided that a correlation between the parameter value recorded and the applicable requirement is established.

GENERAL IDENTIFICATION AND DESCRIPTION

1. Facility name Gerdau AmeriSteel U.S., Inc.	2. Stack ID or flow diagram point identification(s): N/A
3. Emission source (identify): New Source: Post Heating Round Bars	

MONITORING AND RECORDKEEPING DESCRIPTION

4. Pollutant(s) or parameter being monitored: NOx
5. Material or parameter being monitored and recorded: Hours of Operation
6. Method of monitoring and recording: Daily record of burner's hours of operation. The total number of hours of operation will not exceed 4,700 hours during any period of twelve consecutive months.

7. Compliance demonstration frequency (specify the frequency with which compliance will be demonstrated): Monthly
--

8. Page number: N/A	Revision number: N/A	Date of revision: Construction Permit - July 2021
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TITLE V PERMIT APPLICATION
EMISSIONS FROM PROCESS EMISSION SOURCE / FUEL BURNING INSTALLATION / INCINERATOR

GENERAL IDENTIFICATION AND DESCRIPTION

1. Facility name: GerdaU AmeriSteel U.S., Inc.	2. Stack ID or flow diagram point identification(s): N/A
---	---

3. Process emission source / Fuel burning installation / Incinerator (identify):
 New Source: Post Heating Round Bars

EMISSIONS SUMMARY TABLE – CRITERIA AND FUGITIVE EMISSIONS

4. Complete the following emissions summary for regulated air pollutants. Fugitive emissions shall be included. Attach calculations and emission factor references.

Air Pollutant	Maximum Allowable Emissions		Actual Emissions	
	Tons per Year	Reserved for State use (Pounds per Hour - Item 7, APC 30)	Tons per Year	Reserved for State use (Pounds per Hour - Item 8, APC 30)
Particulate Matter (TSP)	0.38		0.12	
(Fugitive Emissions)				
Sulfur Dioxide	0.03		0.01	
(Fugitive Emissions)				
Volatile Organic Compounds	0.27		0.08	
(Fugitive Emissions)				
Carbon Monoxide	4.18		1.28	
(Fugitive Emissions)				
Lead	2.49E-05		7.62E-06	
(Fugitive Emissions)				
Nitrogen Oxides	4.98		1.52	
(Fugitive Emissions)				
Total Reduced Sulfur				
(Fugitive Emissions)				
Mercury	1.29E-05		3.96E-06	
(Fugitive Emissions)				

(Continued on next page)

(Continued from last page)

AIR POLLUTANT	Maximum Allowable Emissions		Actual Emissions	
	Tons per Year	Reserved for State use (Pounds per Hour - Item 7, APC 30)	Tons per Year	Reserved for State use (Pounds per Hour - Item 8, APC 30)
Asbestos				
(Fugitive Emissions)				
Beryllium	5.97E-07		1.83E-07	
(Fugitive Emissions)				
Vinyl Chloride				
(Fugitive Emissions)				
Fluorides				
(Fugitive Emissions)				
Gaseous Fluorides				
(Fugitive Emissions)				
Greenhouse Gases in CO ₂ Equivalents				

EMISSIONS SUMMARY TABLE – FUGITIVE HAZARDOUS AIR POLLUTANTS

5. Complete the following emissions summary for regulated air pollutants that are hazardous air pollutant(s). Fugitive emissions shall be included. Attach calculations and emission factor references.

Air Pollutant & CAS	Maximum Allowable Emissions		Actual Emissions	
	Tons per Year	Reserved for State use (Pounds per Hour - Item 7, APC 30)	Tons per Year	Reserved for State use (Pounds per Hour - Item 8, APC 30)
See Appendix C				

6. Page number:

Revision number:

Date of revision

N/A

Construction Permit - July 2021

State of Tennessee
 Department of Environment and Conservation
 Division of Air Pollution Control
 William R. Snodgrass Tennessee Tower
 312 Rosa L. Parks Avenue, 15th Floor
 Nashville, TN 37243
 Telephone: (615) 532-0554



APC 30

TITLE V PERMIT APPLICATION CURRENT EMISSIONS REQUIREMENTS AND STATUS

GENERAL IDENTIFICATION AND DESCRIPTION					
1. Facility name Gerdau AmeriSteel U.S., Inc.			2. Emission source number New Source - Post Heating Round Bars		
3. Describe the process emission source / fuel burning installation / incinerator. Post Heating Round Bars					
EMISSIONS AND REQUIREMENTS					
4. Identify if only a part of the source is subject to this requirement	5. Pollutant	6. Applicable requirement(s) TN Air Pollution Control Regulations, 40 CFR, permit restrictions, air quality based standards	7. Limitation	8. Maximum actual emissions	9. Compliance status (In/Out)
Post Heating Round Bars	NOx	TAPCR 1200-03-07-.07(2)	4.98 tpy	< 4.98 tpy	In
Post Heating Round Bars	PM	TAPCR 1200-03-07-.01(5)	0.16 lb/hr	< 0.16 lb/hr	In
Post Heating Round Bars	PM	TAPCR 1200-03-07-.01(5)	0.38 tons/12 mo	< 0.38 tons/12 mo	In
Post Heating Round Bars	SO2	TAPCR 1200-03-14-.01(3)	2,000 ppm	< 2,000 ppm	In
	Opacity	TAPCR 1200-03-05-.01(1)	20%	< 20%	In
	All	TAPCR 1200-03-07-.01(5)	4,700 hrs/12 mo	< 4,700 hrs/12 mo	In
10. Other applicable requirements (new requirements that apply to this source during the term of this permit)					
N/A					
11. Page number		Revision number N/A		Date of revision Construction Permit - July 2021	

APPENDIX C

EMISSION CALCULATIONS

Gerdau - Jackson

Parameter	Value	Units
Average Annual Production	60,000	tpy
Average Natural Gas Consumption	30.49	MMscf/yr
Maximum Hourly Production	42	ton/hr
Average Hours of Operation	1,440	hr/yr
Allowable Annual Production	195,833	tpy
Allowable Annual Natural Gas Consumption	99.53	MMscf/yr

Normal Operating Schedule	
Value	Units
24	hr/day
4	day/wk
60	day/yr

Gerdau - Jackson

Parameter		Value	Units
Allowable Annual Operation		4,700	hrs/yr
Maximum Annual Production		195,833	tpy
Heat Input Capacity		21.6	MMBtu/hr
Heating Value		1,020	Btu/scf
Maximum Hourly Natural Gas Consumption		0.02	MMscf/hr
Maximum Annual Natural Gas Consumption		99.53	MMscf/yr

Notes:

1. Heating value obtained from AP-42, 5th Edition, Volume I, Section 1.4: Natural Gas Combustion

Pollutant Type	Pollutant	Emission Factor (lb/MMscf)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (tpy)
Criteria	NO _x	100	2.12	4.98
	CO	84	1.78	4.18
	Total PM	7.6	0.16	0.38
	Condensable PM	5.7	0.12	0.28
	Filterable PM	1.9	4.02E-02	0.09
	SO ₂	0.6	1.27E-02	0.03
	VOC	5.5	0.12	0.27
	Lead	5.00E-04	1.06E-05	2.49E-05
Greenhouse Gas (GHG)	CO ₂	120,000	2,541	5,972
	CH ₄	2.3	4.87E-02	0.11
	N ₂ O	2.2	4.66E-02	0.11
	Greenhouse Gas Equivalent(CO ₂ e)	-	2,556	6,007

Hazardous Air Pollutants (HAPs)	2-Methylnaphthalene	2.40E-05	5.08E-07	1.19E-06
	3-Methylcholanthrene	1.80E-06	3.81E-08	8.96E-08
	7,12-Dimethylbenz(a)anthracene	1.60E-05	3.39E-07	7.96E-07
	Acenaphthene	1.80E-06	3.81E-08	8.96E-08
	Acenaphthylene	1.80E-06	3.81E-08	8.96E-08
	Anthracene	2.40E-06	5.08E-08	1.19E-07
	Benz(a)anthracene	1.80E-06	3.81E-08	8.96E-08
	Benzene	2.10E-03	4.45E-05	1.05E-04
	Benzo(a)pyrene	1.20E-06	2.54E-08	5.97E-08
	Benzo(b)fluoranthene	1.80E-06	3.81E-08	8.96E-08
	Benzo(g,h,i)perylene	1.20E-06	2.54E-08	5.97E-08
	Benzo(k)fluoranthene	1.80E-06	3.81E-08	8.96E-08
	Chrysene	1.80E-06	3.81E-08	8.96E-08
	Dibenzo(a,h)anthracene	1.20E-06	2.54E-08	5.97E-08
	Dichlorobenzene	1.20E-03	2.54E-05	5.97E-05
	Fluoranthene	3.00E-06	6.35E-08	1.49E-07
	Fluorene	2.80E-06	5.93E-08	1.39E-07
	Formaldehyde	0.08	1.59E-03	3.73E-03
	Hexane	1.80	3.81E-02	0.09
	Indeno(1,2,3-cd)pyrene	1.80E-06	3.81E-08	8.96E-08
	Naphthalene	6.10E-04	1.29E-05	3.04E-05
	Phenanthrene	1.70E-05	3.60E-07	8.46E-07
	Pyrene	5.00E-06	1.06E-07	2.49E-07
	Toluene	3.40E-03	7.20E-05	1.69E-04
	Arsenic	2.00E-04	4.24E-06	9.95E-06
	Beryllium	1.20E-05	2.54E-07	5.97E-07
	Cadmium	1.10E-03	2.33E-05	5.47E-05
	Chromium	1.40E-03	2.96E-05	6.97E-05
	Cobalt	8.40E-05	1.78E-06	4.18E-06
	Manganese	3.80E-04	8.05E-06	1.89E-05
	Mercury	2.60E-04	5.51E-06	1.29E-05
	Nickel	2.10E-03	4.45E-05	1.05E-04
	Selenium	2.40E-05	5.08E-07	1.19E-06
	Total HAPs	1.89	4.00E-02	0.09

Notes:

2. Emission factors obtained from AP-42, 5th Edition, Volume I, Section 1.4: Natural Gas Combustion, Table 1.4-1: Emission Factors for Nitrogen Oxides (NO_x) and Carbon Monoxide (CO) from Natural Gas Combustion, Table 1.4-2: Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion, and Table 1.4-3: Emission Factors for Speciated Organic Compounds from Natural Gas Combustion.

3. GHG equivalent factors from 40 CFR Part 98, Table A-1.

Gerdau - Jackson

Parameter	Value	Units
Allowable Annual Operation	1,440	hrs/yr
Average Annual Production	60,000	tpy
Heat Input Capacity	21.6	MMBtu/hr
Heating Value	1,020	Btu/scf
Maximum Hourly Natural Gas Consumption	2.12E-02	MMscf/hr

Notes:

1. Heating value obtained from AP-42, 5th Edition, Volume I, Section 1.4: Natural Gas Combustion

Pollutant Type	Pollutant	Emission Factor (lb/MMscf)	Hourly Emission Rate (lb/hr)	Annual Emission Rate (tpy)
Criteria	NOx	100	2.12	1.52
	CO	84	1.78	1.28
	Total PM	7.6	0.16	0.12
	Condensable PM	5.7	0.12	0.09
	Filterable PM	1.9	4.02E-02	0.03
	SO ₂	0.6	1.27E-02	0.01
	VOC	5.5	0.12	0.08
	Lead	5.00E-04	1.06E-05	7.62E-06
Greenhouse Gas (GHG)	CO ₂	120,000	2,541	1,830
	CH ₄	2.3	4.87E-02	0.04
	N ₂ O	2.2	4.66E-02	0.03
	Greenhouse Gas Equivalent(CO ₂ e)	-	2,556	1,841

Hazardous Air Pollutants (HAPs)	2-Methylnaphthalene	2.40E-05	5.08E-07	3.66E-07
	3-Methylcholanthrene	1.80E-06	3.81E-08	2.74E-08
	7,12-Dimethylbenz(a)anthracene	1.60E-05	3.39E-07	2.44E-07
	Acenaphthene	1.80E-06	3.81E-08	2.74E-08
	Acenaphthylene	1.80E-06	3.81E-08	2.74E-08
	Anthracene	2.40E-06	5.08E-08	3.66E-08
	Benz(a)anthracene	1.80E-06	3.81E-08	2.74E-08
	Benzene	2.10E-03	4.45E-05	3.20E-05
	Benzo(a)pyrene	1.20E-06	2.54E-08	1.83E-08
	Benzo(b)fluoranthene	1.80E-06	3.81E-08	2.74E-08
	Benzo(g,h,i)perylene	1.20E-06	2.54E-08	1.83E-08
	Benzo(k)fluoranthene	1.80E-06	3.81E-08	2.74E-08
	Chrysene	1.80E-06	3.81E-08	2.74E-08
	Dibenzo(a,h)anthracene	1.20E-06	2.54E-08	1.83E-08
	Dichlorobenzene	1.20E-03	2.54E-05	1.83E-05
	Fluoranthene	3.00E-06	6.35E-08	4.57E-08
	Fluorene	2.80E-06	5.93E-08	4.27E-08
	Formaldehyde	0.08	1.59E-03	1.14E-03
	Hexane	1.80	3.81E-02	0.03
	Indeno(1,2,3-cd)pyrene	1.80E-06	3.81E-08	2.74E-08
	Naphthalene	6.10E-04	1.29E-05	9.30E-06
	Phenanathrene	1.70E-05	3.60E-07	2.59E-07
	Pyrene	5.00E-06	1.06E-07	7.62E-08
	Toluene	3.40E-03	7.20E-05	5.18E-05
	Arsenic	2.00E-04	4.24E-06	3.05E-06
	Beryllium	1.20E-05	2.54E-07	1.83E-07
	Cadmium	1.10E-03	2.33E-05	1.68E-05
	Chromium	1.40E-03	2.96E-05	2.13E-05
	Cobalt	8.40E-05	1.78E-06	1.28E-06
	Manganese	3.80E-04	8.05E-06	5.79E-06
	Mercury	2.60E-04	5.51E-06	3.96E-06
	Nickel	2.10E-03	4.45E-05	3.20E-05
	Selenium	2.40E-05	5.08E-07	3.66E-07
	Total HAPs	1.89	4.00E-02	0.03

Notes:

- Emission factors obtained from AP-42, 5th Edition, Volume I, Section 1.4: Natural Gas Combustion, Table 1.4-1: Emission Factors for Nitrogen Oxides (NO_x) and Carbon Monoxide (CO) from Natural Gas Combustion, Table 1.4-2: Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion, and Table 1.4-3: Emission Factors for Speciated Organic Compounds from Natural Gas Combustion.
- GHG equivalent factors from 40 CFR Part 98, Table A-1.

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