



Mitchell E. Daniels, Jr.  
Governor

Thomas W. Easterly  
Commissioner

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Indianapolis, Indiana 46204  
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TO: Interested Parties / Applicant  
DATE: September 28, 2005  
RE: Gerdau Ameristeel / 035-21734-00076  
FROM: Paul Dubenetzky  
Chief, Permits Branch  
Office of Air Quality

### Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures  
FNPER-AM.dot 1/10/05



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We make Indiana a cleaner, healthier place to live.*

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Mr. Louis Nieves  
Gerdau Ameristeel  
1810 S. Macedonia  
Muncie, IN 47302

September 28, 2005

Dear Mr. Nieves:

Re: Exempt (Experimental Trial) Construction and  
Operation Status,  
**035-21734-00076**

The application from Gerdau Ameristeel, received on September 2, 2005, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1-1 and 326 IAC 2-1.1-3 (h)(3), it has been determined that the following operation located at 1810 S. Macedonia, Muncie, Indiana, is classified as exempt from air pollution permit requirements:

- (a) One (1) experimental rotating spray gun with a maximum application rate of two pounds per gun per minute, using 3,000 cfm baghouse for particulate control, and exhausting inside the building.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
  - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
2. Pursuant to 326 IAC 6-3-2 (d) (Particulate Emission Limitations, work practices, and control technologies), the experimental rotating spray gun shall comply with the following requirements:
  - (a) Particulate from the surface coating manufacturing processes shall be controlled by a dry particulate filter, waterwash, or an equivalent control device, and the Permittee shall operate the control device in accordance with manufacturer's specifications.

- (b) If overspray is visibly detected at the exhaust or accumulates on the ground, the Permittee shall inspect the control device and do either of the following no later than four (4) hours after such observation:
- (1) Repair control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.
  - (2) Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.
- (c) If overspray is visibly detected, the Permittee shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visibly detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

In order to comply with the provisions of 326 IAC 6-3-2 (d), the baghouse for PM control shall be in operation and control emissions from the spray gun at all times that the spray booths are in operation.

The Permittee shall maintain records in accordance with this condition in order to document compliance.

This exemption (experimental trial) is the first air approval issued to the source. The source shall operate in compliance with this approval.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original Signed By:  
Nysa James, Section Chief  
Office of Air Quality

GS/EVP

cc: File – Delaware County  
Delaware County Health Department  
Air Compliance Section Inspector – Mark Goldman  
Compliance Data Section  
Administrative and Development  
Technical Support and Modeling

## Indiana Department of Environmental Management Office of Air Quality

### Technical Support Document (TSD) for an Exemption (Experimental Trial)

#### Source Background and Description

**Source Name:** Gerdau Ameristeel  
**Source Location:** 1610 S. Macedonia, Muncie, IN 47302  
**County:** Delaware  
**SIC Code:** 3479  
**Operation Permit No.:** 035-21734-00076  
**Permit Reviewer:** GS/ EVP

The Office of Air Quality (OAQ) has reviewed an application from Gerdau Ameristeel relating to the construction and operation of an experimental process to apply a protective polyurethane coating to the ends of steel rebar.

#### New Emission Units and Pollution Control Equipment

The source consists of the following new emission units and pollution control devices during this review process:

- (a) One (1) experimental rotating spray gun with a maximum application rate of two pounds per gun per minute, using 3,000 cfm baghouse for particulate control, and exhausting inside the building.

#### Explanation of Modification Requested

Gerdau Ameristeel currently operates a steel rebar processing facility. On September 2, 2005, the source requested approval to construct and operate an experimental process line to apply a protective polyurethane coating to the ends of steel rebar. The purpose of the experimental trials is to determine if this process can successfully be used to effectively conduct steel rebar end patching operations on a production-scale level. The potential emissions from this experimental trial are less than twenty-five (25) tons for the duration of the operation. The construction shall not be a major source or modification as defined by 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7. The purpose of the construction, reconstruction, or modification is to collect data for experimental purposes and the duration of the temporary operation or experimental trial is less than thirty (30) days of total operating time. This operation will not be part of a pilot plant, will not be characterized by frequent product changes and the facility operations will not be experimental in nature. Therefore, pursuant to 326 IAC 2-1.1-3 (h)(3), the requirements for an operating permit revision under 326 IAC 2-6.1-6 or 326 IAC 2-8-11.1, modification approval under 326 IAC 2-7-10.5, or an administrative amendment under 326 IAC 2-8-10 shall not apply to this modification.

#### Existing Approvals

The source has no existing approvals.

#### Enforcement Issue

There are no enforcement actions pending.

## Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on September 2, 2005 and additional information was received on September 16, 2005.

## Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	0.03
PM-10	0.03
SO <sub>2</sub>	0.00
VOC	1.71
CO	0.00
NO <sub>x</sub>	0.00

HAPs	Potential To Emit (tons/year)
Lead Compounds	0.02
Chromium Compounds	0.06
Methy diphenyl diisocyanate	1.71
Total HAPs	1.79

- (a) The Permittee meets the criteria for experimental trial specified in 326 IAC 2-1.1-3 (h)(3). Therefore, pursuant to 326 IAC 2-5.1-1(1), this source is exempt from the requirement to obtain a registration or permit. (Please refer Appendix A, two pages for emission calculations).

## County Attainment Status

The source is located in Delaware County.

Pollutant	Status
PM2.5	Attainment or Unclassifiable
PM10	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Basic Nonattainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Delaware County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (b) Delaware County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability for the source section.
- (c) Delaware County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.

### Part 70 Permit Determination

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

### Federal Rule Applicability

There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) and National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in the exemption (experimental trial) for this source.

### **State Rule Applicability - Entire Source**

#### **326 IAC 2-2 (Prevention of Significant Deterioration)**

The source wide potential to emit all attainment criteria pollutants from the source is each less than 250 tons per year. Therefore, this source, which is not one of the 28 listed source categories, is classified as minor for the purpose of 326 IAC 2-2 and the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) do not apply.

#### **326 IAC 2-3 (Emissions Offset)**

Delaware County has been designated as non-attainment for the 8-hour ozone standard on June 15, 2004. VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the 8-hour ozone standard. The source wide potential to emit of VOC is less than 100 tons per year. Therefore, the source is classified as minor for the purpose of 326 IAC 2-3 and the requirements of 326 IAC 2-3 (Emissions Offset) do not apply.

#### **326 IAC 2-6 (Emission Reporting)**

Pursuant to 326 IAC 2-6-1, this source is not subject to this rule because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake or Porter counties, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

#### **326 IAC 5-1 (Opacity Limitations)**

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in the permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

### **State Rule Applicability**

#### **326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))**

Pursuant to 326 IAC 2-4.1-1 (New Source Toxics Control), any new process or production unit, which in and of itself emits or has the potential to emit (PTE) 10 tons per year of any HAP or 25 tons per year of the combination of HAPs, and is constructed or reconstructed after July 27, 1997, must be controlled using technologies consistent with Maximum Achievable Control Technology (MACT). The highest individual HAP and combination of HAPs from the experimental trial are less than 10 tons per year and 25 tons per year, respectively. Therefore, 326 IAC 2-4.1 does not apply.

#### **326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes) for surface coating**

Particulate from the experimental polyurethane coating line shall be controlled by a baghouse, and the Permittee shall operate the control device in accordance with manufacturer's specifications.

If overspray is visibly detected at the exhaust or accumulates on the ground, the Permittee shall inspect the control device and do either of the following no later than four (4) hours after such observation:

Repair control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

If overspray is visibly detected, the Permittee shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visibly detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

**326 IAC 8-1-6 (New Facilities; General VOC Reduction Requirements)**

This rule applies to facilities located anywhere in the State that were constructed on or after January 1, 1980, which have a potential to emit (PTE) VOC at 25 tons per year or more, and which are not otherwise regulated by another provision of Article 8. The experimental polyurethane coating line does not have a PTE VOC at 25 tons per year or more. Therefore, 326 IAC 8-1-6 does not apply.

**Conclusion**

The construction and operation of the experimental rotating spray gun shall be subject to the conditions of the attached proposed Exemption 035-21734-00076.

**Appendix A: Emission Calculations Summary**

Company Name: Gerdau Ameristeel  
 Address City IN Zip: 1610 S. Macedonia, Muncie, IN 47302  
 Exemption No.: 035-21734-00076  
 Pit ID: 035-00076  
 Reviewer: GS/EVP

**Potential To Emit (PTE) MDI from Experimental Trial for New Patch Operations****Uncontrolled Emissions - 4,4' Diphenylmethane diisocyanate (MDI) Assumption 100% of non-reacted MDI is emitted**

Emission Sources- Spray Application of Epoxy Patch (Part A Isocyanate and Part B Polyol)

Product Name - Chemthane 6200 A (Polyurethane isocyanate prepolymer with additives)

**MDI Emission Calculations****Key Operational Information**

Spray Guns - one gun at each end, with separate Part A and Part B lines on each gun for a total of 2 guns per line  
 One spray hood (booth) per gun, connected to a 3,000 cfm unit = 1500 cfm estimate per hood  
 Temperature of material at application = 180 F (355.37 K)  
 Maximum number of cycles per hour = 40  
 Cycle time = 30 seconds  
 Maximum minutes operation per hour = 20 (0.333 hour)  
 Maximum hours operation during experimental trial period = 240 (30 days \* 24 hours/day \* 0.333 hours maximum operation per hour)  
 Maximum percentage of pure MDI in Part A = 70% (rest is prepolymeric MDI - PMDI)

**Information included in API Publication**

MDI Vapor Pressure at 179.6 F ( $VP_{mdi}$ ) = 3.993E-03  
 MDI/PMDI Adjustmet Factor at 180 F and 70% pure MDI = 0.77

Source: MDI/Polymeric MDI Emissions Reporting Guidelines for the Polyurethane Industry", developed by the Alliance for the Polyurethanes Industry (API), 2002, Page 114

**Emissions Calculation Methodology for Spray Booth**

$$L_{sp} = (V_{air}/359) * (273.15/T_{sp}) * 60 * (C_{mdi}/1000000) Mw * k_{mdi} * t_{sp}$$

$L_{sp}$  = emissions in lbs/yr  
 $V_{air}$  = exhaust airflow rate in cfm  
 $T_{sp}$  = spray temp in Kelvin  
 $C_{mdi}$  is MDI concentration in exhaust =  $(VP_{mdi}/760) * 10^6$   
 $Mw$  = molecular weight of MDI (250.26)  
 $k_{mdi}$  = adjustment factor (0.77)  
 $t_{sp}$  = total hours operation per trial period

$$C_{mdi} = 52.5$$

**Potential to Emit (PTE) Uncontrolled MDI Emissions during 30-day trial (assume 100% of unreacted MDI is emitted)**

$$L_{sp} = (1500/359) * (273.15/355.37) * 60 * (52.5/1000000) * 250.26 * 0.77 * 240$$

140.3597 lbs uncontrolled emissions max per hood during 30 day trial period  
 280.7194 lbs uncontrolled emissions max for line during 30 day trial period  
 0.14036 tons uncontrolled emissions max for line during 30 day trial period  
 1.169664 pounds per hour uncontrolled emissions for experimental line during trial

Maximum potential VOC Emissions 1.71 TPY  
 Maximum annual potential MDI Emissions 1.71 TPY

**Appendix A: Emission Calculations Summary**

Company Name: Gerdau Ameristeel  
Address City IN Zip: 1610 S. Macedonia, Muncie, IN 47302  
Exemption No.: 035-21734-00076  
Plt ID: 035-00076  
Reviewer: GS/EVP

**Potential To Emit (PTE) Lead Chromate from Experimental Trial for New Patch Operations****Emission Sources- Spray Application of Epoxy Patch Part B Polyol**

Product Name - Chemthane 6200B Yellow (Amine/Polyol blend with additives)

**Lead Chromate Emission Calculations**

Lead Chromate (PbCrO<sub>4</sub> - Molecular wt of 323.2) = 64.11% Lead, 16.09 % Chromium, and Balance Oxygen

**Key Operational Information**

Spray Guns - one gun at each end, with separate Part A and Part B lines on each gun for a total of 2 guns per line  
One spray hood (booth) per pair of guns, connected to a 3,000 cfm unit - 1500 cfm estimate per hood  
Temperature of material at application = 180 F (355.37 K)  
Maximum number of cycles per hour = 40  
Cycle time = 30 seconds  
Maximum minutes operation per hour = 20 (0.333 hour)  
Maximum hours operation during experimental trial period = 240 (30 days \* 24 hours/day \* 0.333 hours maximum operation per hour)  
Maximum percentage of Lead Chromate pigment in Part B = 5%  
Max Gun spray rate for Part B = 1 lb per minute per hood, 2 lb per minute for line  
Worst-Case Spray efficiency = 25% overspray (assumption 100% of overspray emitted)

**Uncontrolled Emissions Calculation Lead Chromate during Experimental Trial**

Max Application of Part B per line = 2lb/minute \* 20 minutes/hour = 40 lbs/hr \* 24 hrs/day \* 30 days = 28800 lbs max application during trial

**Max Amount Part B overspray (25% max) to baghouse =** 7200 lbs of Part B overspray for line to baghouse max during trial  
360 lbs PTE during trial of Lead Chromate as uncontrolled emissions  
0.18 tons of Lead Chromate as uncontrolled PTE during trial  
0.5 lbs/hr uncontrolled PTE of Lead Chromate during trial

**Max Amount of Lead in overspray (64.11% of Lead Chromate)** 0.115398 tons Lead PTE during trial  
230.796 lbs Lead PTE during trial  
0.32055 lbs/hr PTE Lead during trial

**Max Amount of Chromium in overspray (16.09% Lead Chromate)** 0.028962 tons Chromium PTE during trial  
57.924 lbs Chromium PTE during trial  
0.08045 lbs/hr PTE Chromium during trial

**Estimated Controlled Emissions During Trial- (Assume 99% Control Efficiency for the baghouse)**

<b>Estimated Amount of Lead Chromate in overspray after controls</b>	<b>3.600 lbs in controlled estimated Lead Chromate for trial</b> <b>0.002 tons in controlled estimated Lead Chromate for trial</b> <b>0.005 lbs/hr in controlled estimated Lead Chromate for trial</b>
<b>Estimated Amount of Lead in overspray after controls</b>	<b>0.001 tons in controlled estimated Lead Chromate for trial</b> <b>2.308 lbs in controlled estimated Lead for trial</b> <b>0.003 lbs/hr in controlled estimated Lead Chromate for trial</b>
<b>Estimated Amount of Chromium in overspray after controls</b>	<b>0.0003 tons in controlled estimated Lead Chromate for trial</b> <b>0.579 lbs in controlled estimated Lead for trial</b> <b>0.001 lbs/hr in controlled estimated Lead Chromate for trial</b>
<b>Maximum annual lead emissions after controls</b>	<b>0.0219 TPY</b>
<b>Maximum annual chromium emissions after controls</b>	<b>0.061 TPY</b>
<b>Total annual potential HAP emissions</b>	<b>1.790 TPY</b>