



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 022016-008 Project Number: 2015-06-033
Installation Number: 165-0042

Parent Company: Haarslev - Denmark

Parent Company Address: Bogensevej 85, DK-5471 Sonderso, Denmark

Installation Name: Haarslev Industries

Installation Address: 9700 Northwest Conant Avenue, Kansas City, MO 64153

Location Information: Platte County (S36, T52N, R34W)

Application for Authority to Construct was made for:

The installation of a new paint booth and the evaluation of all previously unpermitted emission units. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

Prepared by
Ryan Schott
New Source Review Unit

Director or Designee
Department of Natural Resources

FEB 16 2016

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of startup of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources' regional office responsible for the area within which you are located within 15 days after the actual startup of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Haarslev Industries
Platte County (S36, T52N, R34W)

1. Chromium (VI) Emission Limitation
 - A. Haarslev Industries shall emit less than 0.002 tons of Chromium (VI) in any consecutive 12-month period from EU-02 (Welding).
 - B. Attachment A or an equivalent form, such as an electronic form approved by the Air Pollution Control Program, shall be used to demonstrate compliance with Special Condition 1.A.
2. Control Device Requirement – Baghouse
 - A. Haarslev Industries shall control emissions from EU-01 (Sandblasting) using a baghouse as specified in the permit application.
 - B. The baghouse shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
 - C. Replacement filters for the baghouse shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. Haarslev Industries shall monitor and record the operating pressure drop across the baghouse. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. Haarslev Industries shall maintain a copy of the baghouse manufacturer's performance warranty on site.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- F. Haarslev Industries shall maintain an operating and maintenance log for the baghouse which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

- 3. Capture Device Requirement – Paint Booth
 - A. Haarslev Industries shall capture emissions from EU-05 (Spray Painting) using a totally enclosed paint booth, as specified in the permit application.

 - B. All doors and windows shall be closed.

 - C. All fresh air vents shall be equipped with a visual indicator, such as streamers, that show air flow into the booth.

- 4. Control Device Requirement – Paint Booth Filters
 - A. Haarslev Industries shall control emissions from EU-05 (Spray Painting) using a paint booth filter, as specified in the permit application.

 - B. The filters shall be operated and maintained in accordance with the manufacturer's specifications.

 - C. Replacement filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).

 - D. Haarslev Industries shall maintain a copy of the filter manufacturer's performance warranty on site.

 - E. Haarslev Industries shall maintain an operating and maintenance log for the filters which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

- 5. Record Keeping and Reporting Requirements
 - A. Haarslev Industries shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. Haarslev Industries shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2015-06-033
Installation ID Number: 165-0042
Permit Number:

Installation Address:

Haarslev Industries
9700 Northwest Conant Avenue
Kansas City, MO 64153
Platte County (S36, T52N, R34W)

Parent Company:

Haarslev – Denmark
Bogensevej 85, DK-5471 Sonderso, Denmark

REVIEW SUMMARY

- Haarslev Industries has applied for authority to install a new paint booth and evaluate all previously unpermitted emission units.
- The application was deemed complete on June 30, 2015.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are the result of welding, plasma cutting, and spray painting.
- None of the NSPS or NESHAPs apply to the installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- A baghouse and a paint booth filter are being used to control the PM, PM₁₀, and PM_{2.5} emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of Chromium (VI) are conditioned below the SMAL, and potential emissions of all other pollutants are below de minimis levels.
- This installation is located in Platte County, a maintenance area for ozone and an attainment area for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Emissions testing is not required for the equipment.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION/ PROJECT DESCRIPTION

Haarslev Industries provides cleaning, refurbishing, and painting services for owners and operators of agricultural and industrial equipment. The installation consists of one large building that contains all operations. Facility emission units include EU-01 (Sandblasting), EU-02 (Welding), EU-03 (Machining/ Grinding), EU-04 (Plasma Cutting), and EU-05 (Spray Painting).

EU-01 includes one sandblasting cabinet able to spray 195 pounds of abrasive per hour, which is controlled by a dust collector. EU-02 contains two welding units capable of performing gas metal arc welding (GMAW), shield metal arc welding (SMAW), and gas tungsten arc welding (GTAW) utilizing various electrodes. A maximum of 5.088 pounds of electrode per hour is consumed. EU-03 is made up of a single, sparsely used, rotary surface grinding machine, which is estimated to be able to grind up to 1,050 parts per year. EU-04 is a plasma cutter that operates under semi-dry conditions and is capable of cutting carbon steel and stainless steel at a rate of 2,000 millimeters per minute. EU-05 consists of a 0.25 gallon per hour paint gun in an enclosed paint booth, controlled by cube filters.

The facility has been in operation since 2006 but has never previously applied for a construction permit from the Air Pollution Control Program. The recent installation of a paint booth prompted Haarslev Industries to apply for this permit.

EMISSIONS/ CONTROLS EVALUATION

Emissions from sandblasting were calculated using flow rates, material densities, and emission factors for abrasives taken from the STAPPA/ ALAPCO Abrasive Blasting Guidance (May 1991). A baghouse (dust collector) is being used to control particulate emissions from the sandblasting operation. The baghouse is rated with an overall control efficiency of 80% for PM, PM₁₀, and PM_{2.5}.

Emissions from GMAW and SMAW were calculated using emission factors from the EPA document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition, Section 12.19 *Electric Arc Welding* (January 1995). Emissions from GTAW were calculated using emission factors and methods taken from the San Diego Air Pollution Control District database. It was assumed that the electrodes with the highest potential to emit for each pollutant were used for each type of welding.

Emissions from machining/ grinding were calculated based on the total amount of metal removed during surface operations. The two types of metal parts, knives and anvils, were each weighed before and after grinding, and the maximum difference in weight was found to be 2 pounds per part. Taking into consideration that machining/ grinding is currently unsolicited business for Haarslev Industries, a factor of four was applied to the 151 knives and 111 anvils (262 total parts) that were ground in 2015 in order to estimate any future potential machining/ grinding throughput. It was conservatively assumed that 100% of the metal lost during grinding is emitted as particulate matter and that all emitted particulate matter is PM_{2.5}.

Emissions from plasma cutting were calculated using emission factors from the National Pollutant Inventory Emission Estimation Technique Manual (December 1999). The plasma cutter operates under semi-dry conditions and is capable of cutting carbon steel and stainless steel from 0.125 inches up to 1 inch in thickness. It was assumed that all steel is 1 inch thick and is cut at a maximum rate of 2,000 millimeters per minute. Because of the difference in composition of the steel, potential emissions for each type of steel vary. The potential to emit for each type of steel cut at the maximum design rate was compared, and the highest potential emissions for each pollutant were chosen as an overall worst-case scenario. It was assumed that 100% of the metal removed by plasma cutting is emitted as particulate matter and/ or HAPs.

VOC and HAP emissions from spray painting were calculated using a mass balance approach. The paint with the highest theoretical volatile percentage/ HAP percentage was multiplied by the paint density and the maximum design rate of the process to obtain a maximum VOC/ HAP usage rate. It was assumed that 100% of VOCs and HAPs are emitted. PM₁₀ and PM_{2.5} emissions from spray painting were also calculated using a mass balance approach. The paint with the highest theoretical solids content was multiplied by the paint density, a minimum solids transfer efficiency of 65% for the spray gun, and the maximum design rate of the process. It was assumed that all emitted particulate matter is PM_{2.5}. Cube filters are being used to control particulate emissions from the enclosed paint booth. The cube filters used in the paint booth are rated at 99% control efficiency for PM, PM₁₀, and PM_{2.5} as listed in the provided test report.

Emissions from haul roads were not considered because the loading dock is proximate to the property boundary, the driveway is paved, and fugitive emissions are expected to be negligible.

The following table provides an emissions summary for this project. This installation has previously never been permitted, so existing potential and actual emissions have not been determined. Potential emissions of the application represent the potential of the equipment, assuming continuous operation (8,760 hours per year). The New Installation Conditioned Potential represents the subsequent potential emissions of the equipment after limiting Chromium (VI) emissions below the SMAL and requiring the use of a baghouse and paint booth filters.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels / SMAL	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	N/D	N/D
PM ₁₀	15.0	N/D	N/D	36.35	11.67
PM _{2.5}	10.0	N/D	N/D	23.95	9.19
SO _x	40.0	N/D	N/D	N/A	N/A
NO _x	40.0	N/D	N/D	6.91	0.17
VOC	40.0	N/D	N/D	8.87	8.87
CO	100.0	N/D	N/D	N/A	N/A
Chromium	10.0 / 5	N/D	N/D	0.74	0.62
Chromium (VI)	10.0 / 0.002	N/D	N/D	0.08	<0.002
Ethylbenzene	10.0 / 10	N/D	N/D	0.12	0.12
Manganese	10.0 / 0.8	N/D	N/D	0.39	0.18
Nickel	10.0 / 1	N/D	N/D	0.59	0.54
Selenium	10.0 / 1	N/D	N/D	0.06	0.05
Toluene	10.0 / 10	N/D	N/D	3.73	3.73
Xylene	10.0 / 10	N/D	N/D	0.46	0.46
Total HAPs	25.0	N/D	N/D	6.17	5.70

N/A = Not Applicable; N/D = Not Determined

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of Chromium (VI) are conditioned below the SMAL, and potential emissions of all other pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Haarslev Industries shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220

- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated June 5, 2015, received June 10, 2015, designating Haarslev – Denmark as the owner and operator of the installation.

Attachment A – Chromium (VI) Compliance Worksheet

Haarslev Industries
 Platte County, (S36, T52N, R34W)
 Project Number: 2015-06-033
 Installation ID Number: 165-0042
 Permit Number: _____

This sheet covers the period from _____ to _____.
(month, year) (month, year)

A	B	C	D	E	F	G	H
Month	Process	Monthly Throughput ¹ (lbs)	Emission Factor (lbs/1,000 lbs)	Monthly Emissions ² (lbs)	Monthly Emissions ³ (tons)	Total Monthly Emissions ⁴ (tons)	12-Month Total Emissions ⁵ (tons)
<i>Example</i>	Gas Metal Arc Welding	80.0	0.100	0.00800	0.00000400	0.00016651	0.00199812
	Shield Metal Arc Welding	90.0	3.590	0.32310	0.00016155		
	Gas Tungsten Arc Welding	20.0	0.096	0.00192	0.00000096		
	Gas Metal Arc Welding		0.100				
	Shield Metal Arc Welding		3.590				
	Gas Tungsten Arc Welding		0.096				
	Gas Metal Arc Welding		0.100				
	Shield Metal Arc Welding		3.590				
	Gas Tungsten Arc Welding		0.096				
	Gas Metal Arc Welding		0.100				
	Shield Metal Arc Welding		3.590				
	Gas Tungsten Arc Welding		0.096				
	Gas Metal Arc Welding		0.100				
	Shield Metal Arc Welding		3.590				
	Gas Tungsten Arc Welding		0.096				

¹ Record the throughput of each process, in pounds of electrode consumed, for the given month.
² [Column E] = [Column C] x [Column D] ÷ (1,000)
³ [Column F] = [Column E] ÷ (2,000)
⁴ Add the Monthly Emissions from [Column F] for all processes in the given month.
⁵ Add the Total Monthly Emissions from [Column G] to the sum of the Total Monthly Emissions for the previous 11 months.
A total of less than 0.002 tons per year is necessary for compliance.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual cubic feet per minute	MW	megawatt
BACT	Best Available Control Technology	MHDR	maximum hourly design rate
BMPs	Best Management Practices	MMBtu	Million British thermal units
Btu	British thermal unit	MMCF	million cubic feet
CAM	Compliance Assurance Monitoring	MSDS	Material Safety Data Sheet
CAS	Chemical Abstracts Service	NAAQS ...	National Ambient Air Quality Standards
CEMS	Continuous Emission Monitor System	NESHAPs	National Emissions Standards for Hazardous Air Pollutants
CFR	Code of Federal Regulations	NO_x	nitrogen oxides
CO	carbon monoxide	NSPS	New Source Performance Standards
CO₂	carbon dioxide	NSR	New Source Review
CO_{2e}	carbon dioxide equivalent	PM	particulate matter
COMS	Continuous Opacity Monitoring System	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CSR	Code of State Regulations	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
dscf	dry standard cubic feet	ppm	parts per million
EQ	Emission Inventory Questionnaire	PSD	Prevention of Significant Deterioration
EP	Emission Point	PTE	potential to emit
EPA	Environmental Protection Agency	RACT	Reasonable Available Control Technology
EU	Emission Unit	RAL	Risk Assessment Level
fps	feet per second	SCC	Source Classification Code
ft	feet	scfm	standard cubic feet per minute
GACT	Generally Available Control Technology	SDS	Safety Data Sheet
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Kevin Wilson
Director of Technical Group
Haarslev Industries
9700 Northwest Conant Avenue
Kansas City, MO 64153

RE: New Source Review Permit - Project Number: 2015-06-033

Dear Mr. Wilson:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.

If you have any questions regarding this permit, please do not hesitate to contact Ryan Schott, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:rss

Enclosures

c: Kansas City Regional Office
PAMS File: 2015-06-033

Permit Number: