

STATE OF MISSOURI



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: **022012-008** Project Number: 2011-04-069
Installation Number: 159-0059

Parent Company: Edwards FRP Repair, Inc.
Parent Company Address: 31197 Wingate Road, Sedalia, MO 65301
Installation Name: Edwards FRP Repair, Inc.
Installation Address: 31197 Wingate Road, Sedalia, MO 65301
Location Information: Pettis County, S4, T44N, R21W

Application for Authority to Construct was made for:

The construction of a new filament winding machine for the manufacturing of fiberglass tanks. The machine was installed without first obtaining a construction permit. This permit is issued as part of a remedial action required by the Air Pollution Control Program. This review was conducted in accordance with Section (6), 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.

FEB 17 2012

EFFECTIVE DATE

Kyra L Moore

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

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 Departments' Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual start up. 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 start up 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.

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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."

Edwards FRP Repair, Inc.
Pettis County, S4, T44N, R21W

1. **Superseding Condition**
The conditions of this permit supersede all the special conditions found in the previously issued construction permit 052007-005 and its amendment 052007-005A issued by the Air Pollution Control Program.
2. **Operational Requirement**
 - A. Edwards FRP Repair, Inc. shall not operate more than twelve hours per day.
 - B. Edwards FRP Repair, Inc. shall not use any gelcoats containing Methyl Methacrylate (CAS no. 80-62-6).
 - C. Edwards FRP Repair, Inc. shall keep all resins, gelcoats, activators and any other chemicals containing volatile organic compounds (VOC) and hazardous air pollutants (HAPs) in sealed containers whenever the materials are not in use. Edwards FRP Repair, Inc. shall provide and maintain suitable, easily read, permanent markings on all chemical containers used with this equipment.
 - D. Attachment A, or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A.
3. **Nuisance Odor and Corrective Action**
If a continuing situation of demonstrated nuisance odor exists in violation of Missouri State Rules 10 CSR 10-6.165, *Restriction of Emission of Odors*, the Director may require Edwards FRP Repair, Inc. to submit a corrective action plan within thirty (30) days to timely, adequately and significantly mitigate the odors. Edwards FRP Repair, Inc. shall implement any such plan immediately upon its approval by the Director. Failure to either submit or implement such a plan shall be a violation of this permit.

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SPECIAL CONDITIONS:

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

4. **Maximum Achievable Control Technology (MACT)**
Edwards FRP Repair, Inc. shall comply with all applicable requirements of 40 CFR Part 63, Subpart WWWW, *National Emission Standards for Hazardous Air Pollutants: Reinforced Plastics Composites Productions*.
5. **Record Keeping and Reporting Requirements**
 - A. Edwards FRP Repair, Inc. shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used.
 - B. Edwards FRP Repair, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2011-04-069
Installation ID Number: 159-0059
Permit Number:

Edwards FRP Repair, Inc.
31197 Wingate Road
Sedalia, MO 65301

Complete: May 5, 2011

Parent Company:
Edwards FRP Repair, Inc.
31197 Wingate Road
Sedalia, MO 65301

Pettis County, S4, T44N, R21W

REVIEW SUMMARY

- Edwards FRP Repair, Inc. has applied for authority to construct a new filament winding machine.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. The HAP of concern from this process is styrene.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- 40 CFR 63, Subpart WWWW, *National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production*, of the Maximum Achievable Control Technology (MACT) standards applies to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of volatile organic compounds (VOC) are greater than the *de minimis* level.
- This installation is located in Pettis County, an attainment area for all 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 for criteria pollutants is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was performed because the potential emissions of styrene of the project are above the Screening Model Action Level (SMAL) of 1.0 tons per year.
- Emissions testing are not required for the equipment.
- A Part 70 Operating Permit Application is required for this installation within one year of permit issuance.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Edwards FRP Repair, Inc. operates a fiberglass tank manufacturing plant in Sedalia. The process begins by spraying resin to a tank mold covered with mylar. Next, resin containing chopped fiberglass filament is sprayed with a chop gun. Then a layer of veil is hand applied, followed by air removal with rollers. Another light chop layer is sprayed and the fiberglass wind is added, after which another layer of chop is applied. For each tank manufactured, a maximum of 700 pounds (lbs.) of resin and 100 lbs. of gelcoat will be used. The facility can produce, on average, one tank every nine hours.

The installation was originally constructed without obtaining a permit. Permit no. 052007-005 was issued in 2007 as a part of a remedial action required by the Air Pollution Control Program. This permit allowed the facility to emit more than 10.0 tons per year of Styrene and therefore, the facility was subject to 40 CFR Part 63, Subpart WWWW, *National Emission Standard for Hazardous Air Pollutants: Reinforced Plastic Composites Production*. However, this permit was amended in 2008 to give the facility limits of 10.0 tons per year individual HAP and 25.0 tons per year combined HAP so it would no longer be subject to Subpart WWWW. The facility was allowed to take this limit because it had never had actual emissions greater than major source levels for HAPs.

The filament winding machine was constructed without a permit and its potential emissions exceed the major source threshold for HAPs. Due to the facility's history of constructing equipment that has potential HAP emissions greater than major source levels without obtaining a permit, the Enforcement Unit of the Air Pollution Control Program has decided that the facility will no longer be allowed to take limits to opt out of complying with Subpart WWWW. According to this subpart, Edwards FRP Repair, Inc. is considered a new affected source because they commenced construction after August 2, 2001. The facility will now be a major source for HAPs, and it will also be required to submit a Part 70 Operating Permit Application within one year of permit issuance.

PROJECT DESCRIPTION

Edward FRP Repair has applied to permit a new filament winding machine that will be used in the manufacturing of fiberglass tanks. Approximately 350 pounds of the 700 pounds of resin used on each tank will be applied by using the new filament winding machine. All of the equipment previously permitted is also included in this project because the facility has changed its method of operations. The previous permit was based on the manufacturing of small septic tanks which can be made using 200 lbs. of resin and in which three tanks can be made in an eight hour shift. The

facility now produces larger tanks that take more time (9 hours per tank) and resins/gelcoats (700 pounds of resin, 100 pounds of gelcoat per tank).

EMISSIONS/CONTROLS EVALUATION

The filament winding machine, the chop gun and the gelcoat gun is expected to emit only styrene, which is considered both a HAP and VOC. Styrene emission factors were obtained from the table of “Unified Emission Factors for Open Molding of Composites,” (7/01). The facility uses multiple types of resins and gelcoats. Some are used for both field work and onsite production while others are either used only for field work or only onsite. To calculate potential emissions, it was assumed that the resins and gelcoats with the highest styrene content were used onsite.

VOCs are expected from cleaning and flushing and the potential emissions were calculated assuming that all of the VOC in the chemicals are emitted. The facility also uses an activator which contains Dimethyl Phthalate, a VOC and HAP. The activators are primarily used for repairs and refurbishing of tanks during field work but some will be used onsite. For a conservative evaluation, it was assumed that all of the resins used at the site require the activator and that the activator is 2% of the total resin and gelcoat volume. The 2% usage rate is the maximum rate listed for the activator according to industry product catalogs. The facility does not currently use gelcoats containing Methyl Methacrylate (MMA) and does not anticipate using them in the future.

The conditioned potential emissions are based on the hourly operation limit in Special Condition No. 2, which is needed for the facility to maintain a styrene ambient impact less than the Risk Assessment Level (RAL) of 2,240 µg/m³ on a 24-hour basis and 333 µg/m³ on an annual basis.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	² Existing Potential Emissions	³ Existing Actual Emissions	Potential Emissions of the Application	New Installation Conditioned Potential
PM _{2.5}	10.0	N/A	N/A	N/A	N/A
PM ₁₀	15.0	N/A	N/A	N/A	N/A
PM	25.0	N/A	N/A	N/A	N/A
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	12.63	N/A	67.37	41.69
CO	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	12.15	N/A	58.26	32.58
Styrene	¹ 1.0	12.15	N/A	49.93	28.58
Dimethyl Phthalate	10.0	N/A	N/A	8.33	4.00

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

Note 1: Screening Model Action Level (SMAL)

Note 2: Existing potential emissions taken from Permit No. 052007-005. The calculations were based on the manufacture of septic tanks and are no longer applicable to the facility.

Note 3: Existing actual emissions are listed as N/A because the facility reported no production for 2010 in the 2010 Emissions Inventory Questionnaire (EIQ).

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of styrene, a HAP, are greater than the major level to trigger a Section (9) review. However, Section (9) does not apply to facilities that are regulated under 40 CFR Part 63, *National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastics Composites Productions*.

APPLICABLE REQUIREMENTS

Edwards FRP Repair, Inc. 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. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *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

- *Maximum Achievable Control Technology (MACT) Regulations*, 10 CSR 10-6.075, *National Emission Standards for Hazardous Air Pollutants: Reinforced Plastics Composites Productions*, 40 CFR Part 63, Subpart WWWW

AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impacts of Styrene on a 24-hour and an annual averaging period to ensure that they are below the Risk Assessment Levels (RAL). Modeling was required because the project has styrene emissions greater than the SMAL of 1.0 tons per year. The Aermid Modeling System Version 11103 was used. The facility could not pass modeling at its maximum emission rate. However, if the styrene emissions were limited to 73.98 lbs/day from the chop gun (EU2), 26.64 lbs/day from the gelcoat gun (EU3) and 55.98 lbs/day from the filament winding machine, the facility can maintain a styrene ambient impact below the Risk Assessment Levels (RAL). These emissions limits correspond to 12 hours of operation per day, which is now a limit in this permit.

Table 2: Ambient Air Impact Analysis Results

Pollutant	¹ Conditioned Impact ($\mu\text{g}/\text{m}^3$)	RAL ($\mu\text{g}/\text{m}^3$)	Averaging Period
Styrene	260.21	333	Annual
Styrene	2078.30	2240	24-hours

Note 1: Conditioned Impact based on the limit of 12 hours of operation per day.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Chia-Wei Young
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated April 27, 2011, received April 28, 2011, designating Edwards FRP Repair, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated May 24, 2011.

Mr. Robert Edwards
President
Edwards FRP Repair, Inc.
31197 Wingate Road
Sedalia, MO 65301

RE: New Source Review Permit - Project Number: 2011-04-069

Dear Mr. Edwards:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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, your new source review permit application and with your amended operating permit 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 have any questions regarding this permit, please do not hesitate to contact Chia-Wei Young, at the Department's 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 M. Heckenkamp
New Source Review Unit Chief

SMH:cyl

Enclosures

c: Kansas City Regional Office
PAMS File: 2011-04-069

Permit Number: