

West Virginia Department of Environmental Protection

Austin Caperton
Cabinet Secretary

Title V Operating Permit Revision



For Minor Modification Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Action Number: MM01 **SIC:** 3296
Name of Permittee: Armstrong World Industries, Inc.
Facility Name/Location: Armstrong Millwood Plant
County: Jackson
Permittee Mailing Address: P.O. Box 220, Millwood, WV 25262

Description of Permit Revision: This permitting action corrects and updates various emission units as permitted in R13-2864D with no new construction or modification.

Title V Permit Information:

Permit Number: R30-03500049-2019
Issued Date: July 29, 2019
Effective Date: August 12, 2019
Expiration Date: July 29, 2024

Directions To Facility: From US-33 E, turn left onto WV 68 S. Continue on WV 68 S for 0.4 miles. Turn right onto WV 2 S. Continue for approximately 6 miles. Turn right onto Jack Burlingame Road.

THIS PERMIT REVISION IS ISSUED IN ACCORDANCE WITH THE WEST VIRGINIA AIR POLLUTION CONTROL ACT (W.VA. CODE §§ 22-5-1 ET SEQ.) AND 45CSR30 - "REQUIREMENTS FOR OPERATING PERMITS." THE PERMITTEE IDENTIFIED AT THE FACILITY ABOVE IS AUTHORIZED TO OPERATE THE STATIONARY SOURCES OF AIR POLLUTANTS IDENTIFIED HEREIN IN ACCORDANCE WITH ALL TERMS AND CONDITIONS OF THIS PERMIT.

A handwritten signature in blue ink, appearing to read "Laura M. Crowder".

Laura M. Crowder
Director, Division of Air Quality

November 26, 2019

Date Issued

1.0 Emission Units and Active R13, R14, and R19 Permits

1.1 Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device ¹
1S	1-2E	Raw Material Transfer and Electric Arc Furnace (EAF)	2011	40,000 lb/hr	Scrubber 1C & Dust Collector 2C
3S	3-4E	Spinner Collection Chamber #1	2011	34,500 lb/hr	Baghouse 3C
4S	3-4E	Spinner Collection Chamber #2	2011		Baghouse 4C
5S	5E	Housekeeping Vacuum System	2011	1,000 cfm	Dust Collector 5C
6S	6E	Hydrated Lime Storage Silo	2011	3,300 cfm	Filter 6C
7S	7E	Backup Generator	2011	565 500 kWe	N/A
8S	Fugitive	Haulroads	2011	8,880 VMT/yr	WS
9S	Fugitive	Slag Handling and Storage	2011	175,000 tpy	N/A
10S	10E	Cooling Tower #1	2011	1,500 GPM	N/A
11S	Fugitive	Railcar Unloading	2011	300 TPH	N/A
12S	Fugitive	Diesel Storage Tank #1	2011	500 900 Gal	N/A
13S	Fugitive	Diesel Storage Tank #2	2011	500 Gal	N/A
14S	Fugitive	Glycol Additive Storage Tank	2011	10,000 Gal	N/A
15S	8E	Slag Wool Processing Line #1	2011	28,000 lb/hr (based on a 24-hour average)	Baghouse 7C
16S	8E	Slag Wool Processing Line #2	2011		Baghouse 7C
17S	17E	Cooling Tower #2	2011	800 GPM	N/A
18S	18E	Propane-fueled Sand Dryer	2017	2,000 lb/hr sand 5 gal/hr propane	None

¹ Control Device abbreviations: WS – Wet Suppression

1.2 Active R13, R14, and R19 Permits

The underlying authority for any conditions from R13, R14, and/or R19 permits contained in this operating permit is cited using the original permit number (e.g. R13-1234). The current applicable version of such permit(s) is listed below.

Permit Number	Date of Issuance
R13-2864C	March 15, 2018
R13-2864D	September 23, 2019

- c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 C.F.R. § 82.161.

[40 C.F.R. 82, Subpart F]

- 3.1.8. **Risk Management Plan.** Should this stationary source, as defined in 40 C.F.R. § 68.3, become subject to Part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in 40 C.F.R. § 68.10 and shall certify compliance with the requirements of Part 68 as part of the annual compliance certification as required by 40 C.F.R. Part 70 or 71.

[40 C.F.R. 68]

- 3.1.9. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-2864, R13-2864A, R13-2864B, R13-2864C, R13-2864D and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to.
[45CSR13, R13-2864, 2.5.1.; 45CSR§§13-5.10 and 10.3]

3.2. Monitoring Requirements

- 3.2.1. Reserved.

3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:
 - a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63, if applicable, in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable.
 - b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit.

- 3.4.2. **Retention of records.** The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of monitoring sample, measurement, report, application, or record creation date. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Where appropriate, records may be maintained in computerized form in lieu of the above records.

[45CSR§30-5.1.c.2.B.]

- 3.4.3. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.

[45CSR§30-5.1.c. State-Enforceable only.]

3.5. Reporting Requirements

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

[45CSR§§30-4.4. and 5.1.c.3.D.]

- 3.5.2. A permittee may request confidential treatment for the submission of reporting required under 45CSR§30-5.1.c.3. pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

[45CSR§30-5.1.c.3.E.]

- 3.5.3. Except for the electronic submittal of the annual compliance certification and semi-annual monitoring reports to the DAQ and USEPA as required in 3.5.5 and 3.5.6 below, all notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class or by private carrier with postage prepaid to the address(es), or submitted in electronic format by e-mail as set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

DAQ:

Director
WVDEP
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

US EPA:

~~Associate Director~~ [Section Chief](#)
~~Office of Air Enforcement and Compliance~~
~~Assistance (3AP20)~~
U. S. Environmental Protection Agency, Region III
[Enforcement and Compliance Assurance Division](#)
[Air Section \(3ED21\)](#)
1650 Arch Street
Philadelphia, PA 19103-2029

DAQ Compliance and Enforcement¹:

DEPAirQualityReports@wv.gov

¹For all self-monitoring reports (MACT, GACT, NSPS, etc.), stack tests and protocols, Notice of Compliance Status reports, Initial Notifications, etc.

4.0 Manufacturing Process Sources Requirements [1S, 3S, 4S, 5S, 6S, 9S, 11S, 15S, 16S, 18S]

4.1. Limitations and Standards

4.1.1. Emissions from the facility shall not exceed the limitations set forth in Tables 4.1.1.1 and 4.1.1.2:

Table 4.1.1.1

Source	PM		PM ₁₀ ¹		NO _x		VOC		SO ₂		CO	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
1S	2.60	11.39	2.60	11.39	5.00	21.90	5.00	21.90	55.94	245.00	55.00 ²	240.90
3S	7.09	31.06	7.09	31.06	--	--	0.04 0.39	0.17 1.71	--	--	--	--
4S	7.09	31.06	7.09	31.06	--	--	0.04 0.39	0.17 1.71	--	--	--	--
5S	0.34	1.50	0.34	1.50	--	--	--	--	--	--	--	--
6S	0.51 1.13	2.25 4.95	0.51 1.13	2.25 4.95	--	--	--	--	--	--	--	--
9S	--	1.98	--	0.97	--	--	--	--	--	--	--	--
11S	0.02	0.10	0.01	0.05	--	--	--	--	--	--	--	--
15S/16S	2.39	10.47	2.39	10.47	--	--	--	--	--	--	--	--
18S ³	0.1	0.44	0.1	0.44	0.07	0.28	0.01	0.02	--	--	0.03	0.16

¹All PM₁₀ is assumed to be PM_{2.5} and all PM, PM₁₀, PM_{2.5} emission limits include both filterable and condensable particulate matter.

²Hourly CO emission limits from the EAF are 55 pounds per hour based on a rolling 30 day average and 100 pounds per hour based on a rolling 24 hour average.

³Hourly emissions for the Propane-fueled Sand Dryer (18S) are calculated based on burning 5 gal/hr of propane; Annual emissions for the Propane-fueled Sand Dryer (18S) are based on operating for 8,760 hr/yr.

Table 4.1.1.2

Source	Mn		VOC HAP		Total HAP	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
1S	0.28	1.25	--	--	0.28	1.25
3S	0.78	3.40	--	--	0.78	3.40
4S	0.78	3.40	--	--	0.78	3.40
5S	0.04	0.16	--	--	0.04	0.16
6S	--	--	--	--	--	--
9S	0.02	0.22	--	--	0.02	0.22
11S	0.01	0.01	--	--	0.01	0.01
15S/16S	0.26	1.15	--	--	0.26	1.15
18S	--	--	--	--	--	--

Compliance with the PM emission limits shall demonstrate compliance with the less stringent PM emission limits of 45CSR§7-4.1.

[45CSR13, R13-2864, 4.1.1 and 4.1.9.2, Tables 4.1.1.1 and 4.1.1.2, 45CSR§7-4.1.]

4.1.2. The total annual SO₂ emissions from the Submerged Electric Arc Furnace (1S) shall not exceed 245 tons per year based on a rolling 12 month total basis.

[45CSR13, R13-2864, 4.1.2]

- 4.1.8. The permittee shall ensure that the water trucks and/or water sprays are properly equipped with winterization systems capable of operating in a manner such that all such fugitive dust control systems remain effective and functional, to the maximum extent practicable, during winter months and cold weather. At all times, including periods of cold weather, the registrant shall comply with the water trucks and/or water sprays requirements of this permit.
[45CSR13, R13-2864, 4.1.7]
- 4.1.9. Total slag throughput to the EAF shall not exceed 175,200 tons per year on a rolling 12 month total.
[45CSR13, R13-2864, 4.1.8]
- 4.1.10. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity, except for smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.
[45CSR§7-3.1 & 45CSR§7-3.2, 45CSR13, R13-2864, 4.1.9.1 (1S, 3S, 4S, 5S, 15S, 16S, 18S)]
- 4.1.11. No person shall cause, suffer, allow or permit visible emissions from any storage structure(s) associated with any manufacturing process that pursuant to Condition 4.1.13. is required to have a full enclosure and be equipped with a particulate matter control device.
[45CSR§7-3.7.] (6S)
- 4.1.12. Any stack serving any process source operation or air pollution control equipment on any process source operation shall contain flow straightening devices or a vertical run of sufficient length to establish flow patterns consistent with acceptable stack sampling procedures.
[45CSR§7-4.12.]
- 4.1.13. No person shall cause, suffer, allow or permit any manufacturing process or storage structure generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable.
[45CSR§7-5.1., 45CSR13, R13-2864, 4.1.9.3]
- 4.1.14. The owner or operator of a plant shall maintain particulate matter control of the plant premises, and plant owned, leased or controlled access roads, by paving, application of asphalt, chemical dust suppressants or other suitable dust control measures. Good operating practices shall be implemented and when necessary particulate matter suppressants shall be applied in relation to stockpiling and general material handling to minimize particulate matter generation and atmospheric entrainment.
[45CSR§7-5.2., 45CSR13, R13-2864, 4.1.9.4]
- 4.1.15. No person shall cause, suffer, allow or permit the emission into the open air from any source operation an in-stack sulfur dioxide concentration exceeding 2,000 parts per million by volume from existing source operations, except as provided in subdivisions 4.1.a through 4.1.e. of 45CSR10.
[45CSR§10-4.1., 45CSR13, R13-2864, 4.1.10.] (1S)

- 4.1.16. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.

[45CSR§13-5.110., 45CSR13, R13-2864, 4.1.13]

- ~~4.1.17. The Housekeeping Dust Collector (5C) which controls particulate matter emissions from the Housekeeping Vacuum System (5S) is subject to the requirements of 40 C.F.R. Part 64 "Compliance Assurance Monitoring". The permittee shall develop and submit a plan which meets the requirements of 40 C.F.R. Part 64 at least ninety (90) days prior to the proposed start up of the Housekeeping Vacuum System (5S) and associated Housekeeping Dust Collector (5C). The requirements shall be submitted as part of a Title V permit modification. The permittee shall not start up the Housekeeping Vacuum System (5S) and associated Housekeeping Dust Collector (5C) until a Title V permit modification has been approved by the Director which incorporates the CAM Plan for the Housekeeping Dust Collector (5C).~~

~~[40 C.F.R. §64.4; 45CSR§30-5.1.e.]~~

4.2. Monitoring Requirements

- 4.2.1. The permittee shall install, maintain, and operate all monitoring equipment required by this permit in accordance with all manufacturers recommendations concerning maintenance and performance.

[45CSR13, R13-2864, 4.2.1]

- 4.2.2. The permittee shall conduct visible emission checks and/or opacity monitoring and recordkeeping for all emission sources subject to an opacity limit.

The visible emission check shall determine the presence or absence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training may be obtained from written materials found in the References 1 and 2 from 40CFR Part 60, Appendix A, Method 22 or from the lecture portion of the 40CFR Part 60, Appendix A, Method 9 certification course.

Visible emission checks shall be conducted at least once per calendar month with a maximum of forty-five (45) days between consecutive readings. These checks shall be performed at each source (stacks, conveyors, crushers, silos, bins, and screens) for a sufficient time interval, but no less than one (1) minute, to determine if any visible emissions are present. Visible emission checks shall be performed during periods of facility operation and appropriate weather conditions.

If visible emissions are present at a source(s) for three (3) consecutive monthly checks, the permittee shall conduct an opacity reading at that source(s) using the procedures and requirements of Method 9 as soon as practicable, but within seventy-two (72) hours of the final visual emission check. Method 9 checks shall be performed on the source for at least six (6) minutes. A Method 9 observation at a source(s) restarts the count of the number of consecutive readings with the presence of visible emissions.

[45CSR13, R13-2864, 4.2.2] (1S, 3S, 4S, 5S, 6S, 15S, 16S, 18S)

5.0 Storage Tanks [12S, ~~and 13S, and 14S~~] and Cooling Tower [10S and 17S]

5.1. Limitations and Standards

5.1.1. Emissions from the storage tanks shall not exceed the limitations set forth below:

Source	VOC		VOC HAP		Total HAP	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
12S	0.01 0.02	0.04 0.07	0.01 0.02	0.04 0.07	0.01 0.02	0.04 0.07
13S	0.01	0.04	0.01	0.04	0.01	0.04
14S	0.01	0.04	---	---	---	---

[45CSR13, R13-2864, 4.1.1, Tables 4.1.1.1 & 4.1.1.2; State-enforceable only]

5.1.2. Emissions from the cooling towers shall not exceed the limitations set forth below:

Source	PM		PM ₁₀ ¹	
	lb/hr	tpy	lb/hr	tpy
10S	0.77	3.37	0.77	3.37
17S	0.41	1.80	0.41	1.80

¹All PM₁₀ is assumed to be PM_{2.5} and all PM, PM₁₀, PM_{2.5} emission limits include both filterable and condensable particulate matter.

[45CSR13, R13-2864, 4.1.1, Table 4.1.1.1; State-enforceable only]

5.2. Monitoring Requirements

5.2.1. Reserved.

5.3. Testing Requirements

5.3.1. Reserved.

5.4. Recordkeeping Requirements

5.4.1. Reserved.

5.5. Reporting Requirements

5.5.1. Reserved.

5.6. Compliance Plan

5.6.1. Reserved.

6.0 Backup Generator Requirements [7S]

6.1. Limitations and Standards

6.1.1. Emissions from the backup generator, 7S, shall not exceed the following limitations:

Pollutant	Hourly limit in lb/hr	Annual limit in tpy
PM	0.25 <u>0.08</u>	0.07 <u>0.02</u>
PM ₁₀ ¹	0.25 <u>0.08</u>	0.07 <u>0.02</u>
NO _x	6.47 <u>8.17</u>	1.62 <u>2.04</u>
VOC	0.20 <u>0.07</u>	0.05 <u>0.02</u>
SO ₂	0.02 <u>0.31</u>	0.01 <u>0.08</u>
CO	4.36 <u>1.93</u>	1.09 <u>0.48</u>
VOC HAP	0.01	0.01 <u>0.002</u>
Total HAP	0.01	0.01 <u>0.002</u>

¹All PM₁₀ is assumed to be PM_{2.5} and all PM, PM₁₀, PM_{2.5} emission limits include both filterable and condensable particulate matter.

[45CSR13, R13-2864, 4.1.1, Tables 4.1.1.1 and 4.1.1.2; State-enforceable only]

6.1.2. The permittee shall comply with all applicable requirements of 40 CFR 60 Subpart IIII (backup generator 7S) including but not limited to the following:

Emissions from the Backup Generator (7S) shall not exceed the following:

NO _x +NMHC (g/kW-hr)	CO (g/kW-hr)	PM (g/kW-hr)
4.0	3.5	0.20

[40 C.F.R. §60.4205(b); 45CSR13, R13-2864, 4.1.11.1; 45CSR16; 40 C.F.R. §§63.6590(c) and (c)(1); 45CSR34]

6.1.3. Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §60.4205 over the entire life of the engine.

[40 C.F.R. §60.4206; 45CSR13, R13-2864, 4.1.11.2; 45CSR16; 40 C.F.R. §§63.6590(c) and (c)(1); 45CSR34]

6.1.4. The nonroad diesel fuel that is used in the backup generator must have a sulfur content less than 15 parts per million. The nonroad diesel fuel must have a minimum cetane index of 40, or a maximum aromatic content of 35 volume percent.

[40 C.F.R. §60.4207(b); 45CSR13, R13-2864, 4.1.11.3; 45CSR16; 40 C.F.R. §§63.6590(c) and (c)(1); 45CSR34]