BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R08-19
NITROGEN OXIDES EMISSIONS FROM	)	(Rulemaking – Air)
VARIOUS SOURCE CATEGORIES:	)	
AMENDMENTS TO 35 ILL. ADM. CODE	)	
PARTS 211 AND 217	)	

NOTICE OF FILING

TO: Mr. John T. Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 W. Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA HAND DELIVERY)

Timothy Fox, Esq.
Hearing Officer
Illinois Pollution Control Board
100 W. Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA U.S. MAIL)

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board **PRE-FILED COMMENTS FOR THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY SUBMITTED BY ARCELORMITTAL USA, INC.** a copy of which is herewith served upon you.

Respectfully submitted,

By: Christina L Archer
Christina L. Archer

Dated: 11/25/08

Christina L. Archer
Associate General Counsel
ARCELORMITTAL USA, INC.
1 South Dearborn, 19th Floor
Chicago, Illinois 60603
(312) 899-3865

CERTIFICATE OF SERVICE

I, Christina L. Archer, the undersigned, hereby certify that I have served the attached PRE-FILED COMMENTS FOR THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY SUBMITTED BY ARCELORMITTAL USA, INC:

upon:

Mr. John T. Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

via hand delivery on November 25, 2008 (original plus 9 copies); and upon:

Timothy Fox, Esq.
Hearing Officer
Illinois Pollution Control Board
100 Wet Randolph, Suite 11-500
Chicago, Illinois 60601

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Springfield, Illinois 62701

by depositing said documents in the United States Mail, postage prepaid, in

Chicago, Illinois on November 25, 2008.

Christina L. Archer

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R08-19
NITROGEN OXIDES EMISSIONS FROM	)	(Rulemaking – Air)
VARIOUS SOURCE CATEGORIES:	)	
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PRE-FILED COMMENTS FOR THE
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
SUBMITTED BY ARCELORMITTAL USA, INC.

NOW COMES ARCELORMITTAL USA INC. (ArcelorMittal) and submits the following Pre-Filed Comments for the Illinois Environmental Protection Agency (Illinois EPA or Agency) for presentation at the 1st round of hearings scheduled in the above-referenced matter for December 9, 2008. Specifically, the proposed regulations at 35 Ill. Adm. Code Part 217, Subpart H apply to iron and steel and aluminum manufacturing and regulate reheat, annealing and galvanizing furnaces. ArcelorMittal's Riverdale, Illinois facility has a permitted roller-hearth tunnel furnace equipped with ultra- low NOx tube burners (ULNBs), which processes cast steel slabs. However, the tunnel furnace cannot be considered as a reheat, annealing, or galvanizing furnace and the arbitrary NOx reduction proposed is inappropriate for the tunnel furnace in operation at ArcelorMittal's Riverdale facility. ArcelorMittal finds that based on the applicability provisions provided in the proposed regulation at 35 IAC 217.150, the tunnel furnace is not subject to this regulation. Should the Agency deem that ArcelorMittal's tunnel furnace requires regulation under the proposed rule, it will be necessary for the Agency to include a specific definition and emission factor for the existing tunnel furnace at ArcelorMittal's Riverdale, Illinois facility, recognizing the unique nature of the operation and the advanced NOx control technologies already in use.

1. For clarification purposes, a brief background on these types of furnaces within the iron and steel industry is provided herein. Annealing and galvanizing furnaces are used to further process steel that has already been hot-rolled and exists as a steel strip, while reheat furnaces are used to process steel slabs, billets and blooms, which are typically considered intermediate products. At traditional mills, liquid steel is cast into slabs; the slabs are then stored in a slab yard, transported to a reheat furnace, heated to a temperature sufficient for rolling, rolled into a strip, and finally coiled as a finished product.

In 1986, new technology was developed that allowed continuous casting of thin slabs. At the Riverdale facility, a state of the art compact strip production (CSP) facility was constructed and began operation in 1996. The CSP process allows liquid steel to be cast into thin slabs, which then directly enter a tunnel furnace, before being rolled into a strip and coiled. ArcelorMittal Riverdale casts a thin slab with a 2-inch height, which is then cut to length by the shear, and conveyed directly into the tunnel furnace which serves to equalize slab temperature prior to rolling at the hot strip mill (HSM). The CSP design represents advanced energy efficiency process technology (and emission reductions) compared to traditional methods of making "hot bands."

Clearly, the tunnel furnace is not an annealing or galvanizing furnace. ArcelorMittal has prepared the remainder of these comments to further illustrate that a tunnel furnace cannot be considered as a reheat furnace.

2. The Technical Support Document (TSD) prepared in support of the rulemaking provides a general description of reheat furnaces; however, the Illinois EPA provides no proposed definition of reheat furnaces in 35 Ill. Adm. Code Part 211. Temperature and fuel mixture are two components used in defining a reheat furnace. As described in Section 6.2.1 of

the TSD, the typical temperature range for a reheat furnace is a continuous 2150 to 2450°F. A typical reheat furnace must increase the slab to this temperature from ambient levels; however, the tunnel furnace at ArcelorMittal's Riverdale facility maintains the slab at its cast temperature with only a small increase in temperature from approximately 1800-1900°F to 2040-2146°F. The maximum temperature of the tunnel furnace is 2150°F, well below a typical reheat furnace's capacity. Additionally, while traditional reheat furnaces use fuel-rich mixtures, the tunnel furnace uses a leaner fuel mixture.

3. Design parameters also differ in the tunnel furnace versus a traditional reheat furnace. ArcelorMittal's predecessor, Acme Steel Company, applied for a construction permit for the CSP facility, including the tunnel furnace, on April 12, 1993. The application stated that "The Tunnel Furnace NOx control technology is planned to consist of low NOx burners and burner control equipment. In the unlikely event of burner(s) or associated burner control(s) malfunction or breakdown, the tunnel furnace must continue to operate because it is in-line with the continuous caster and is the only outlet for cast steel slabs. The tunnel furnace is not designed as a conventional reheat furnace; therefore, any slabs that must be diverted are not recoverable by Acme." In review, it was found that the burners are equivalent in design and operation to ULNB, not LNBs (See paragraph #4 below for more details). As previously indicated, the tunnel furnace receives slabs directly from the continuous caster. Unlike a traditional caster which produces a slab that is stored prior to processing, there is no place to store the slabs and no way to "reheat" a slab from ambient temperature. The entire CSP process operates as one continuous process and all sections must be operating optimally to produce a quality finished product. Further, the tunnel furnace often holds the slabs until they can be processed at the downstream HSM. Slabs are only held to accommodate maintenance of HSM

equipment; any lengthy holding time is detrimental to the quality of the slab and thus the final product.

4. ArcelorMittal's current NOx emission factor for the tunnel furnace is 0.171 lb/mmBtu and the tunnel furnace already employs ULNBs. Information from the manufacturer of the ULNBs, Bloom Engineering, is attached hereto as Exhibit A. In addition, the Agency has already testified that it would be surprised if sources were required to install post-combustion controls to achieve the proposed emission limits. *See R08-19, Transcript from October 14, 2008 hearing, pp. 27, 116-117, 171.* Notwithstanding, while reheat furnaces generally combust fuel under higher oxidizing conditions allowing for greater ability to use post-combustion controls, the tunnel furnace does not afford this ability, and because it is already employing ULNBs, no additional reductions can feasibly be achieved. Furthermore, the CSP design (which incorporates the continuous caster, tunnel furnace and HSM) represents advanced energy efficiency process technology (and emissions reductions) compared to traditional methods to making "hot bands" using "Reheat" furnace process technology (e.g., casting slabs, reheating slabs and rolling slabs to hot bands). For comparison purposes, in a April 1998 evaluation, the Riverdale facility CSP process was 65% more efficient than the previous production operations that produced hot band coil at the facility, which translates into a significant reduction of baseline NOx emissions in-itself. The advance CSP (including the tunnel furnace) process technology should be considered in the overall evaluation to reduce emissions.

5. Additional variations in reheat furnaces detailed in the TSD include the surface area, thickness and composition of the material to be heated. ArcelorMittal's Riverdale facility produces both high and low carbon grades and carbon alloy grade steel. Many of these grades (including high carbon grades with up to 0.95% carbon; carbon alloy grades with specific

additions of chromium, nickel, molybdenum, and vanadium; and carbon grade steels with boron additions) are not typically produced at other facilities. The continuous caster at Riverdale casts a very thin slab of approximately 2 inches in height, compared to a traditional slab height of 9 to 13 inches. These production variations also have an impact on temperature and oxygen content. A reheat furnace design affords a lower flame temperature at the burner under higher oxidizing conditions, which results in the ability to achieve lower NOx emissions. Because of the small increase in temperature as stated above, the tunnel furnace does not afford this ability. The specific ratio of oxygen to gas is also important as the correct ratio generates a proper scale on the slab, which can easily be removed by the descaler, and prevents the scale from being rolled into the strip at the HSM. As stated above, the entire CSP is a continuous process and any scale rolled into the strip can lead to issues with product quality. Unlike other facilities that operate tunnel furnaces, the Riverdale facility does not have a second tunnel furnace or shuttle furnace that can be used to divert product between furnaces; nor does the Riverdale facility have any downstream finishing operations (such as pickling) to remove scale. Therefore, operationally and functionally, ArcelorMittal's Riverdale tunnel furnace cannot be compared to, or considered to be a reheat furnace (or even compared to other tunnel furnace facilities for that matter).

For the above reasons, ArcelorMittal USA, Inc. requests the Agency recognize the unique differences in the tunnel furnace design and propose a specific definition for the existing tunnel furnace recognizing the unique nature of ArcelorMittal's operation and the advanced NOx control technologies already in use.

Respectfully submitted,
ARCELORMITTAL USA, INC.

By: Christina L Archer
Christina L. Archer

Dated: 11/25/08

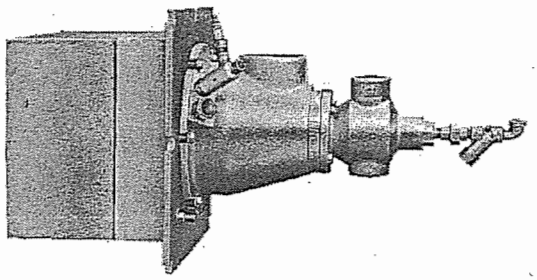
Christina L. Archer
Associate General Counsel
ARCELORMITTAL USA, INC.
1 South Dearborn, 19th Floor
Chicago, Illinois 60603
(312) 899-3865

Bloomengineering
GLOBAL ENERGY AND ENVIRONMENTAL SOLUTIONS

1430 SERIES – HOT OR COLD AIR ULTRA LOW NO_X BAFFLE BURNER

CAPABILITIES

- High or low temperature furnaces
- High excess air 800% or more
- Ratio or tempered flame operation
- Suitable for fiber or dense refractory wall construction
- Gas only burner readily converted to dual fuel burner



FEATURES

- Refractory baffle design
  - provides positive flame stabilization
  - shields burner internals from furnace temperature
- Extra rugged port block and mounting plate construction
  - high alumina blocks
  - thicker block refractory
  - cast metal mounting plate with integral port container
  - hook bolt anchor system
  - simplified mounting requirements
- Heat resistant gas nozzle
- Cast body construction
- Integral fuel orifices

CONTROL

- Cross connected regulator
- Metered flow

FLAME MONITORING

- U.V. detector
- Flame rod

APPLICATIONS

- Car Type Heat Furnaces
- Forge Furnaces
- Plate Heat Treat Furnaces
- Roller Hearths
- Ceramic Kilns
- Continuous Strip Lines and Reheat Furnaces
- Tundish and Ladle Preheat Drying
- Batch Heat Treating and Annealing
- Ladle and Tundish Heating and Drying

BURNER IGNITION

- Pilot
- Direct spark

FUEL CAPABILITIES

- Natural Gas
- Coke Oven Gas
- Propane/Air Mixture
- Producer Gas
- Mixture of Blast Furnace Gas and a richer gas having a minimum heating value of 250 Btu/cubic foot (2300 kcal/M^3)

OPTIONS

- Light or heavy oil versions
- Air Lance
- Tile Lengths

CAUTION: The improper use of combustion equipment can result in a condition hazardous to people and property. Users are urged to comply with National Safety Standards and/or Insurance Underwriters recommendations

Bloomengineering
GLOBAL ENERGY AND ENVIRONMENTAL SOLUTIONS

1430 SERIES – HOT OR COLD AIR ULTRA LOW NO_X BAFFLE BURNER

MAXIMUM CAPACITIES

Catalog No. 1430-	100°F (38°C) Combustion Air					800°F (427°C) Combustion Air					Pilot at 4" WC (9.95mBar)
	Capacity MM BTU/HR	Air Flow		Air Pressure		Capacity MM BTU/HR	Air Flow		Air Pressure		
		SCFH	Nm^3/hr	" WC	mBar		SCFH	Nm^3/hr	" WC	mBar	
020	0.315	3,465	92.90	6.8	16.92	0.315	3,465	92.90	13.5	33.58	010
025	0.506	5,565	149.20	5.9	14.68	0.506	5,565	149.20	13.3	33.08	010
030B	0.550	6,050	162.20	5.5	13.68	0.550	6,050	162.20	12.4	30.85	010
030A	0.710	7,810	209.38	5.5	13.68	0.710	7,810	209.38	12.4	30.85	010
035	0.947	10,417	279.28	5.6	13.93	0.947	10,417	279.28	12.6	31.34	010
040	1.300	14,300	383.38	5.7	14.18	1.300	14,300	383.38	12.9	32.09	020
045	2.000	22,000	589.81	6.8	16.92	2.000	22,000	589.81	15.5	38.56	020

FLAME SIZES

Catalog No. 1430-	Capacity MM BTU/HR	100°F (38°C) Air 10% Excess	800°F (427°C) Air 10% Excess
020	0.28	30" x 12"	28" x 12"
025	0.45	36" x 14"	33" x 14"
030B	0.52	39" x 15"	35" x 15"
030A	0.67	44" x 17"	39" x 17"
035	0.98	52" x 20"	45" x 20"
040	1.20	60" x 33"	50" x 24"
045	1.60	72" x 28"	66" x 28"

The small capacity low NO_X 1430 Burner Series utilizes Bloom's refractory baffle for blame stabilization. The baffle design induces furnace products of combustion back into the burner port. Port geometry and mixing velocities control the amount of induced flue gas to maintain flame stability, proper heat release and reduced NO_X. The excellent flame stability allows operation with exhaust gas recirculation to reduce NO_X further. By shielding the burner internals from flame and furnace radiation, the baffle minimizes maintenance. The burner port block is a high alumina refractory with an iron alloy mounting plate.

Six or nine inch port blocks are standard. The unlined burner body with heat resistant alloy iron is suitable for air temperatures up to 1000°F (538°C). For air temperatures greater than 1000°F (538°C), special designs are available.

Each burner has a machined integral gas distribution orifice eliminating the need for individual gas balancing or throttle valves ensuring even distribution throughout a given zone with approximately sized piping. Turndown lances and momentum jets are available options.

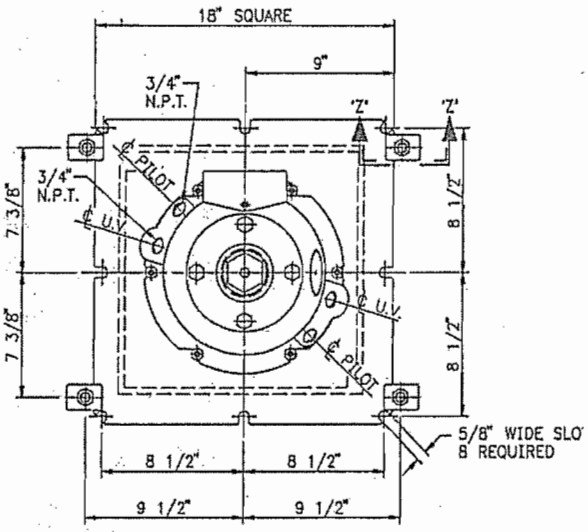
The 1430 Series Burners are suitable for operation with continuous, intermittent or interruptible pilots utilizing UV monitoring. The use of flame rods for main flame monitoring is not recommended. Direct spark or manual ignition is also available. The 1430 Series Burners operate from stoichiometric to oxidizing firing. Pressure balance ratio regulator systems or volumetric fuel/air ratio control systems can be utilized.

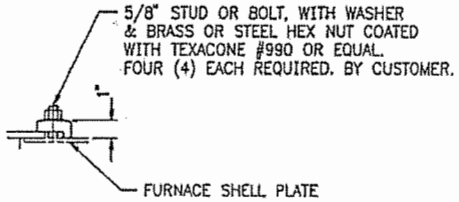
CAUTION: The improper use of combustion equipment can result in a condition hazardous to people and property. Users are urged to comply with National Safety Standards and/or Insurance Underwriters recommendations

Bloomengineering
GLOBAL ENERGY AND ENVIRONMENTAL SOLUTIONS

1430 SERIES – HOT OR COLD AIR ULTRA LOW NO_X BAFFLE BURNER

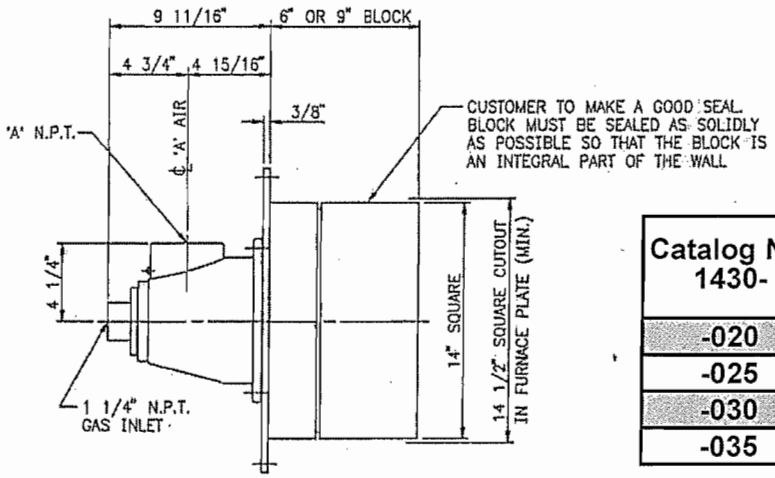
GENERAL DIMENSIONS -020 THRU -035





SECTION 'Z-Z'

CLAMP MOUNTING REQUIRED FOR BURNERS USED ON HARD WALL.



Catalog No. 1430-	"A"	Shipping Weight	
		lbs	kg
-020	2	220	100
-025	2 ½	220	100
-030	3	220	100
-035	3	220	100

NOTE: GENERAL DIMENSION INFORMATION. SEE BLOOM REPRESENTATIVE FOR CERTIFIED DIMENSIONS FOR CONSTRUCTION.

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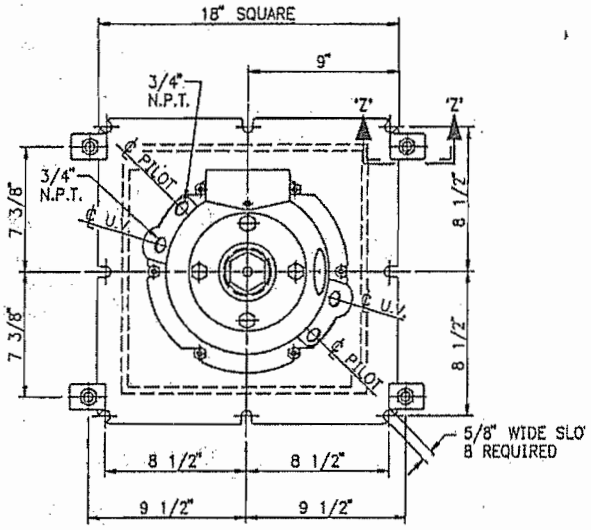
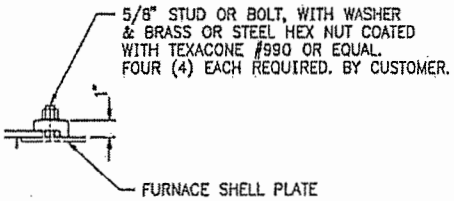
Bloomengineering
GLOBAL ENERGY AND ENVIRONMENTAL SOLUTIONS

1430 SERIES – HOT OR COLD AIR ULTRA LOW NO_X BAFFLE BURNER

GENERAL DIMENSIONS -040 THRU -045





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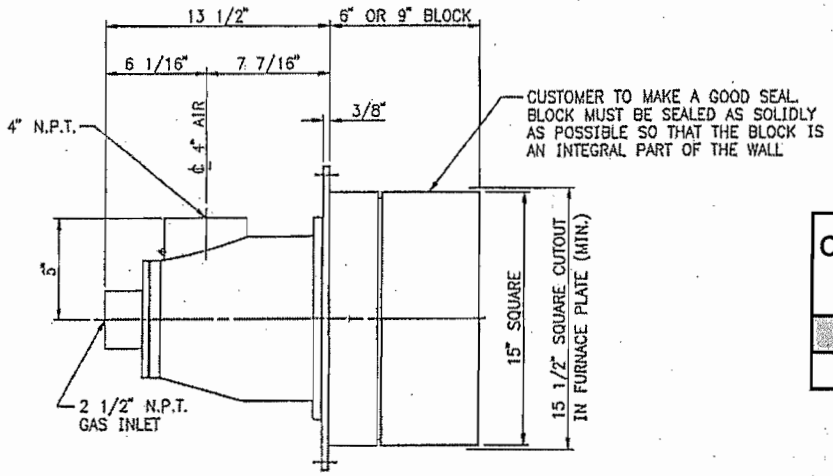

Catalog No. 1430-	Shipping Weight	
	lbs	kg
-040	220	100
-045	220	100

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