Kiln Room

Design and Product Specifications

A guide to properly designing an area to locate a kiln for schools and other facilities. This document is to be used as a general reference. Always make sure you consult Local and National Building and Electrical Codes.

SKUTT

EFFECTIVE 10/25/18

WWW.SKUTT.COM

INTRODUCTION

Kilns for firing ceramics and glass are installed safely in thousands of schools, universities, community centers and homes across the nation every year. The following guidelines were established to help architects and contractors design areas to locate the kiln which are safe, efficient, and user friendly. You can find more detailed information and some very helpful tools by visiting our web site at:

www.skutt.com/architects

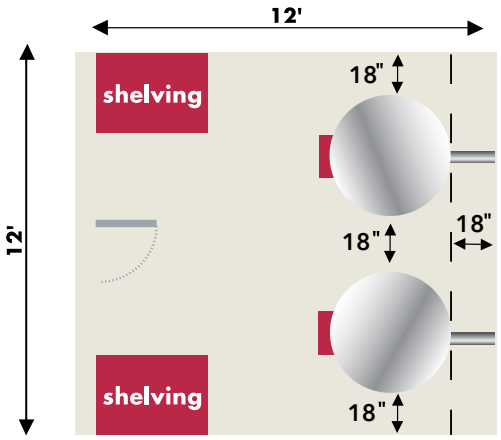
- Downloadable CSI 3 Part Specs
- Build-A-Spec – Creates a custom page complete with dimensional drawings and installation specifications.
- Build-My-Kiln – Helps you select the right kiln and accessories for your particular application.
- Safety Listings
- Installation Directions
- Warranty Information
- Distributor Locator

Designing The Room

ROOM SIZE

The size of the room will be dictated by several factors:

- The size of the kiln
- The number of kilns
- HVAC design
- Teacher requirements



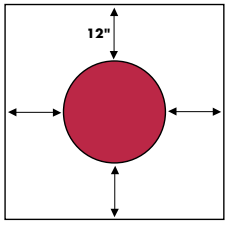
Skutt kilns have been tested to be safe by Underwriters Laboratories when installed a minimum of 18" (46 cm) from any wall or combustible material.

When multiple kilns are installed, they may be placed as close as 18" (46 cm) apart, however it is important to orient the kilns so the controller does not face the other kiln or kilns. This is to help limit the heat exposure to the controller.

It is a good idea to have a kiln room that can be secured from children and pets entering the room. The art teacher will need a place to store ceramic ware, kiln shelves, and other items used in conjunction with the kiln. If possible, consult them with regards to their storage needs when planning the size of the room.

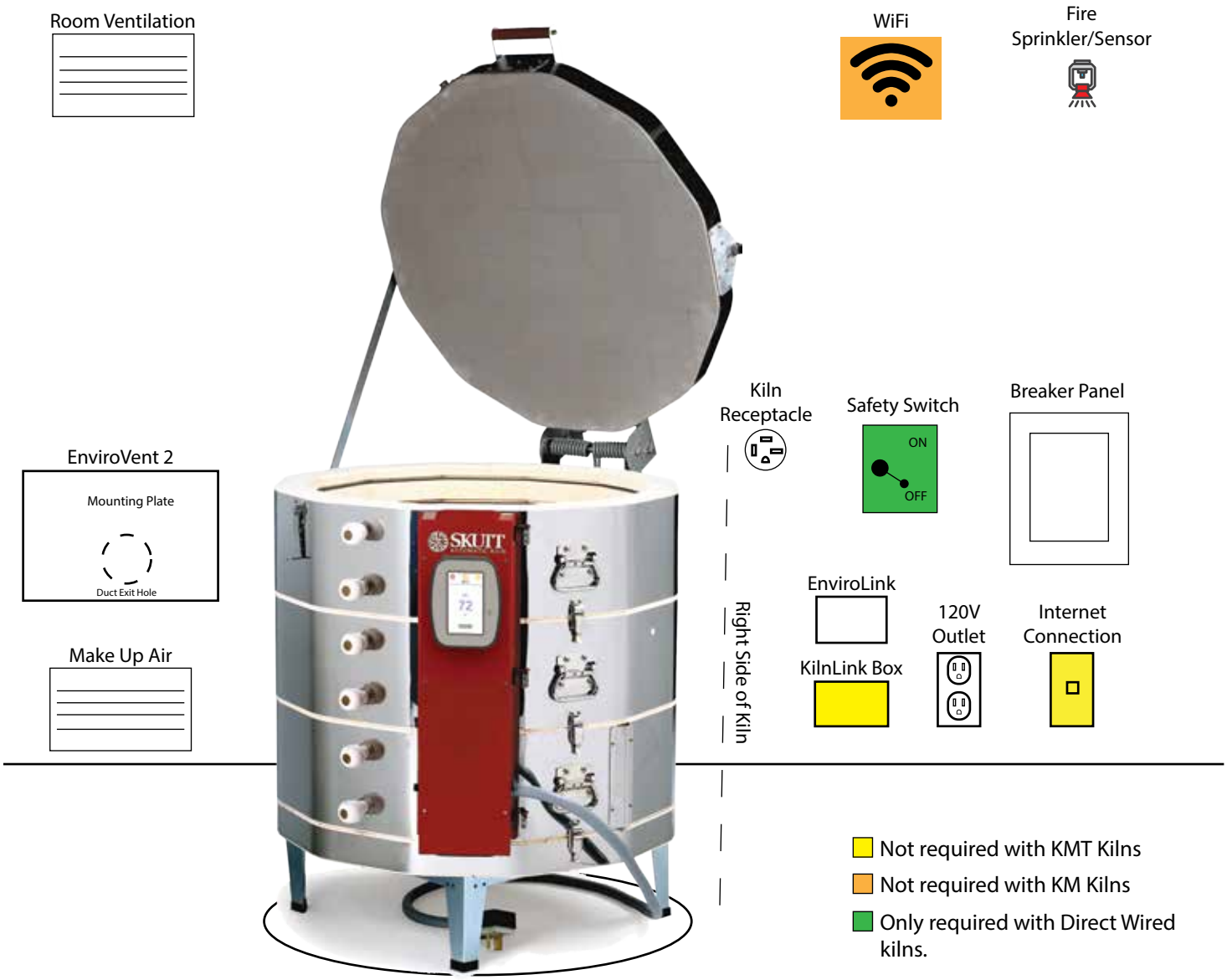
WALL AND FLOOR COVERINGS

No special wall material is required when the kilns are placed at the designated setbacks. Kilns must be placed on a non-combustible floor such as concrete or ceramic tile. It is not recommended to place the kilns on wood, carpet, or vinyl floors which may discolor or ignite from the heat of the kiln.



If a noncombustible floor is not available, one may be constructed. Uniform mechanical code requires the floor to be constructed of a minimum of 2" (5 cm) thick solid masonry extending a minimum of 12" (31 cm) beyond the outer perimeter of the kiln.

Kiln Room Preparation



FIRE SYSTEMS

Sprinkler heads or heat sensors should not be placed directly above the kiln. Sprinkler heads and heat sensors come in a range of temperature ratings. Any sprinkler head or heat sensor in the room must be adequately rated so that they will not be activated through normal use of the kiln. Whenever possible use the maximum rating allowed by local code.

ROOM COOLING

Skutt Automatic Kilns are designed to shutoff if the electronics get too hot. In order to prevent this from happening the room must be kept below 100°F (38°C). Depending on the room size, this will most likely require some HVAC design and installation. We publish the maximum BTU output for each model to assist you in making the proper calculations.

ACCESS, STORAGE AND FUNCTIONALITY

Consult with the Art Teacher whenever possible to determine how they plan on using the room. They will need easy access to the controller and to open and close the lid. The kilns do get hot, so you may want to design a way to limit access to the kiln when desired. In most cases it will be necessary to plan space for storage and racks. Often times the teacher will also want the room designed large enough to perform other related activities such as glazing and drying ceramic ware.

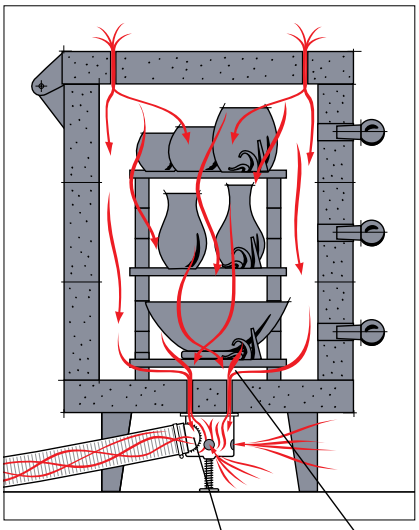
FUME VENTILATION

Clay, glazes and other items that are fired in the kiln can emit odorous fumes that need to be vented from the room. This is best done through the use of a Downdraft Vent, such as the EnviroVent 2. Unlike overhead vents, it captures the fumes before they are allowed to enter the room. These units draw a small amount of air from the kiln chamber and use room air to cool it before it is forced outside through duct work. Some local codes require that you use a negative pressure vent system like the EnviroVent 2.

All manufactures of kilns recommend active fume removal through the use of a Downdraft Vent. Downdraft Ventilation was invented by the Orton Foundation for the purpose of removing 100% of the fumes from the room. By actively removing the fumes from the kiln chamber, the quality of the ceramics, heat uniformity and component life is greatly improved. Overhead venting systems do not provide these added benefits and also require the operator to prop the lid at the beginning of the firing and then return to lower it when the kiln reaches 1000°F (538°C).

Downdraft vents may be vented through the wall or the roof. When vented through the roof, it may place the in-line switch for the fan motor out of reach. If this is the case, it will be necessary to wire the outlet for the vent to a switch which is easily accessible. Visit the web site for specific installation specifications.

Systems for venting fumes and heat should be operated independent of the schools main HVAC system. Shutting down the system during a firing could cause the room to overheat and activate the sprinklers. A vent shut off system is available through Skutt that works in conjunction with the kilns controller.



In addition to a downdraft vent, you may also need air conditioning or a larger room vent to prevent the room from exceeding 100°F (38°C) or other maximum temperature designation. Use the BTU ratings of the kiln to calculate the venting or air conditioning needed.

Make-up air will need to be provided for the 140 CFM (3.96 CMM) that are vented outside by the Downdraft vent and HVAC systems. This is often done by installing a vent panel in the kiln room door or wall.

ELECTRICAL AND COMMUNICATIONS

The Right Voltage and Phase

Unlike many appliances, kilns are designed to run on a specific voltage, either 240V or 208V. Therefore, it is extremely important to order the kiln that matches the supply. We can design units that run on either 1 phase or 3 phase power supplies. They cannot be easily or cheaply converted, so as with voltage, make sure you order a unit that matches your phase supply. Certain models have a lower temperature rating when hooked up to 208V/ 1 phase supply, so if you have a choice, you may want to consider using a different supply or a different kiln model.

Wire Type and Size

Kilns can be susceptible to drops in voltage caused by inadequately sized wiring or heavy draws on the power grid caused by other equipment. Be sure to use adequate sized wire and dedicated circuits to help avoid this problem. A list of suggested wire gauges can be found on the web site. We recommend using only copper wire. Always consult local and national electrical codes when determining adequate wire size for length and circuit method used.

Outlets and Plugs

Most kilns used in schools come equipped with a NEMA 6-50 plug if they are 1 phase or a NEMA 15-50 plug if they are 3 phase. The PK line of kilns is designed to go to higher temperatures and must be hard wired. The power cords exit from the control box in the front of the kiln and are 6 ft. (1.8 m) long. Locate the wall outlet (or junction box for direct wire kilns) to the right side of the kiln 18" (46 cm) to 40" (102 cm) from the floor and close enough for the end of the power cord to reach the outlet without touching the kiln or putting strain on the plug. Direct wire kilns will need a means of disconnect visible from the kiln or lockable. Remember that you will want to also wire a 120 Volt outlet near the kiln to power a Downdraft Vent, and/or KilnLink Box (KM kilns only).

WiFi or Internet Connection

Both Skutt KM and KMT kilns have the ability to connect to the Internet for purposes of remote monitoring, diagnostics and data logging using KilnLink. KMT kilns have built in WiFi. They require a signal that does not have a captive portal to connect, only a user name and password. If a WiFi connection without a captive portal is not possible, you may need to purchase a standard KM kiln that connects to the internet with a standard Ethernet cable and additional hardware (KilnLink Box and factory installed Link Board).

The Kilns

What size and how many?

There are so many factors that determine how many kilns or what sizes will be required. Again, the art teacher who will be using the kilns is the best resource to determine what is needed. A typical school installation will have a minimum of two 7 to 10 cu/ft electric kilns equipped with downdraft vents and furniture kits.

How important is the temperature rating?

Most clay programs in schools use low fire clays and glazes which all of the kilns listed below can handle. There does however seem to be a trend for schools to begin working with high fire clay and glazes. If working with high fire products on a consistent basis, you will want to use a Cone 10 rated kiln.

If you would like to specify the 1227-3, but would like to offer the flexibility of a Cone 10 kiln, you will want to pick the PK model. Also, you may want to choose the 3" brick (as opposed to 2.5" brick) for the 1027. Even though the standard KM1027 is rated to Cone 10, the KM1027-3 will use less energy. All of the other models listed below have 3" brick standard.

What are the kiln controller options?

The type of controller is designated by the letters before the model name. The 2 main choices are KMT and KM. Also available, but less popular, are the KS (KilnSitter) which is manually operated and the GM (GlassMaster), which is specifically for firing glass.

KMT

The KilnMaster Touchscreen Controller is the newest and most technologically advanced controller. It has built in WiFi which allows for free remote monitoring with the use of a free App. Must have a non-captive WiFi portal. Help screens guide users easily through the programming process. Controller is mounted on hinge so it can be pulled up for easy viewing.

KMT Controller

KM

The standard KilnMaster Controller has some of the same capabilities but requires a little more training to operate. It does not include WiFi however it may be connected to the Internet with the purchase of additional hardware.

KM Controller

Most Popular Models

1227-3

- 9.9 Cu/Ft
- Great low fire kiln
- Available as a High Fire kiln when "PK" model is ordered
- Lid Lifter and 3-inch brick are standard

1222-3

- 8.1 Cu/Ft
- High fire kiln
- Lid Lifter and 3-inch brick are standard
- Low profile makes it easy to load for shorter people

1027

- 7.0 Cu/Ft
- High fire kiln
- Available with optional 3-inch energy saving brick
- Lid Lifter standard

Model	Phase	Volts	Amps	Watts	Cone Rating	Temp	Cubic Feet	Opening	Depth	Ship Wt.	Copper Wire Size	NEMA Recep-tacle	BTU Output
KM or KMT 1227-3	1	240	48.0	11520	8	2300	9.9	28.13"	27"	400	6	6-50	23000
		208	48.0	9984	5	2185	9.9	28.13"	27"	400	6	6-50	21500
	3	240	29.3	11520	8	2300	9.9	28.13"	27"	400	8	15-50	23000
		208	31.7	11000	8	2300	9.9	28.13"	27"	400	8	15-50	23000
KM or KMT 1227-3PK	1	240	60.0	14300	10	2350	9.9	28.13"	27"	410	4	Dir. Wr.	24540
		208	69.0	14300	10	2350	9.9	28.13"	27"	410	3	Dir. Wr.	24540
	3	240	40.0	14300	10	2350	9.9	28.13"	27"	410	8	Dir. Wr.	24540
		208	46.7	14300	10	2350	9.9	28.13"	27"	410	6	Dir. Wr.	24540
KM or KMT 1222-3	1	240	48.0	11520	10	2350	8.1	28.13"	22"	330	6	6-50	22120
		208	48.0	9984	8	2300	8.1	28.13"	22"	330	6	6-50	21170
	3	240	34.6	11520	10	2350	8.1	28.13"	22"	330	8	15-50	22120
		208	40.0	11000	10	2350	8.1	28.13"	22"	330	8	15-50	22120
KM or KMT 1027	1	240	48.0	11520	10	2350	7.0	23.38"	27"	290	6	6-50	22000
		208	48.0	9984	6	2250	7.0	23.38"	27"	290	6	6-50	19500
	3	240	29.3	11520	10	2350	7.0	23.38"	27"	290	8	15-50	22000
		208	31.7	11000	10	2350	7.0	23.38"	27"	290	8	15-50	22000
KM/KMT 1027-3	1	240	48.0	11520	10	2350	6.4	22.38"	27"	320	6	6-50	18940
		208	48.0	9984	10	2350	6.4	22.38"	27"	320	6	6-50	18940
	3	240	29.3	11520	10	2350	6.4	22.38"	27"	320	8	15-50	18940
		208	31.7	11000	10	2350	6.4	22.38"	27"	320	8	15-50	18940

The Accessories

What accessories are absolutely necessary?

In order to fire the kiln, it is necessary to have an EnviroVent 2 System and a Kiln Furniture Kit. There are other accessories that add durability, convenience, or expanded features. You can find all of the accessories available on the website. If you use the Build-My-Kiln tool on the website, it will list all of the accessories available for the model you have chosen along with part numbers and pricing.

THE ENVIROVENT 2

The EnviroVent 2 is a negative pressure venting system that is U.L. Listed and meets building code standards for venting fumes from electric kilns. When used in conjunction with the **EnviroLink,** the vent can be turned off automatically when the kiln is done firing.

The EnviroVent 2 Kit includes the motor, plenum cup, 8 ft. of 3" aluminum duct and all the necessary hardware. Two kilns under 12 Cu/Ft each may be vented with one vent motor if used with the **Dual Exhaust Kit.**

115V 1.4 Amps 140 CFM

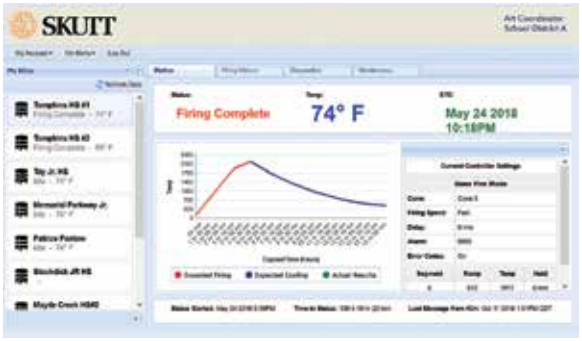
FURNITURE KITS

A furniture kit is used to create shelf layers inside your kiln. Although the contents of shelf kits vary depending on the kiln model, all shelf kits will contain a selection of shelves and 1 or more post assortment kits. Furniture kits for kilns with 8 sides or less will come with 18 posts, 3 each in lengths 1" through 6". Kits for larger kilns will come with 36 posts.

KILNLINK

KilnLink is a cloud based Kiln Monitoring System that allows you to check the status of your kiln from anywhere you have access to the internet. KilnLink connects your kiln to the internet and feeds information from each firing in real time to the KilnLink Database. Authorized users just log on to their account using a computer or smart phone connected to the internet. You can even set it up to send you Email or Text alerts. Know what you kiln is doing at all hours of the day no matter where you are.

You can check the current temperature, view a graph of the firing, even check multiple kilns. The peace of mind you will gain from knowing your kiln is safely off is invaluable. All of your firings are logged on the server so you can go back and check your notes to see what has worked in the past.



You can also monitor the costs of your electrical use for budgeting purposes. Checking the amperage and voltage of your kiln is necessary at times in order to diagnose problems and anticipate maintenance. This can be expensive to hire a professional. With KilnLink all of that data is logged without even having to open the control box.

The easy to navigate screens will allow you to find the following information:

- Current Status
- Current Temperature
- Graph of Firing
- Current Program
- Graphs of Every Firing
- Programs Run
- Start and End Times
- Firing History
- Firing Costs
- Firing Notes
- Performance
- Amperage Readings by Section
- Voltage Readings

Recommended Product List

The most commonly ordered kiln model for schools is the KM1227-3 and the KMT1227-3. These models hold approximately 60 average sized student projects. Most school programs will require 2 of theses units along with the recommended accessory items listed below. The KMT models offer the newest technology along with a free monitoring app that can be used in conjuction with KilnLink. It requires a WiFi connection in the Kiln Room that does not have an active portal. If this is not possible then you will need to specify a KM model with additional hardware.

KMT1227-3 INSTALLATION

- 2 - KMT1227-3 Models
- 2 - 1227 5/8" Furniture Kits
- 2 - EnviroVent 2*
- 2 - EnviroLinks*
- 2 - 5 year KilnLink Data Plans

KM1227-3 INSTALLATION

- 2 - KM1227-3 Models with installed Link Boards
- 2 - 1227 5/8" Furniture Kits
- 2 - EnviroVent 2*
- 2 - EnviroLinks*
- 2 - 5 year KilnLink Data Plans
- 1 - KilnLink Box (Connects up to 5 kilns)

*Installations that are not including EnviroLinks, may run both kilns on one EnviroVent 2 if a Dual Exhaust kit is installed.

3 Part CSI Specifications

SECTION 11 54 13

KILNS

PART 1 - GENERAL

1.1 CONDITIONS AND REQUIREMENTS

A. The General Conditions, Supplementary Conditions, and Division 01 – General Requirements apply.

1.2 SECTION INCLUDES

A. Electric kilns.

Specifier Note: Retain either or both of the paragraphs below after editing the section text.

B. Downdraft ventilation system.

C. Accessories.

1.3 RELATED SECTIONS

Specifier Note: In this article, specify work specified in other sections that is related to work of this section.

A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Services and connections to kilns and ventilation systems.

1.4 DESIGN REQUIREMENTS

Specifier Note: Visit manufacturer's web site for kiln BTU ratings for use in calculating air conditioning and ventilation requirements for rooms containing kilns.

A. Install kiln in well-ventilated, sheltered area. Do not permit room/area temperature to exceed 100 degrees F while kiln is in use.

B. Provide a minimum of 18 inches between kiln and adjacent walls, other kilns, shelving, and other obstructions. When installing multiple kilns in the same room, ensure that the control boxes on the kilns are not facing adjacent kilns.

C. Locate kiln in a room or space with a bare concrete floor. If a bare concrete floor is not available provide a non-combustible substrate and two (2) inches of solid masonry below the kiln extending a minimum of 12 inches beyond the outside dimensions of the kiln.

D. If installing kilns in a room or space with a fire suppression system, do not place kilns in such a manner so as to cause sprinkler heads or heat sensors to activate.

E. Locate the kilns indoors and protect from exposure to damp air to avoid corrosion.

1.5 SUBMITTALS

Specifier Note: In this article, specify various types of data to be furnished by the contractor before, during, or after construction. Topics included in this article are: product data, shop drawings, samples, design data, test reports, certificates, manufacturers' instructions, manufacturers' field reports, qualification statements, and closeout submittals.

A. Submit under provisions of Section [01 33 00] [_____].

B. Product Data: Submit for kilns, ventilation systems, and accessories. Include product data, installation instructions, and manufacturer's recommendations.

C. Shop Drawings: Submit for kilns. Include plans indicating space required and relationship to work of other sections.

D. Operating and Maintenance Data: For kilns and ventilation systems to include in maintenance manuals.

E. Warranties: Special warranties specified in this section.

1.6 QUALITY ASSURANCE

Specifier Note: In this article, describe qualifications, regulatory requirements, certifications, field samples, mock-ups, and pre-installation meetings.

A. Source Limitations: Obtain kilns, ventilation systems, and accessories through one (1) source from a single manufacturer. Kiln and ventilation system to be UL listed as a system.

B. Regulatory Requirements: Comply with provisions of the following product certifications:

1. NFPA: Provide kilns and ventilation systems listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
2. UL and NEMA: Provide electrical components required as part of kilns and ventilation systems that are listed and labeled by UL and that comply with applicable NEMA standards.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver kilns, ventilation systems, and accessories in manufacturer's original packaging with protective covering intact.

B. Do not stack other items on top of packaged kilns during transportation and storage. Store kilns with top end up.

C. Utilize equipment capable of moving the kiln and packaging without damage and install kilns into location.

D. Protect from damage due to weather, excessive temperature, and construction operations.

1.8 WARRANTY

A. Special Warranties: Manufacturer's standard form in which manufacturer of each kiln specified agrees to repair or replace kilns that fail in materials or workmanship within specified warranty period. Warranty includes labor for repair or replacement.

1. Kiln: Two-year limited warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: The design for kilns, ventilation systems, and accessories is Skutt Kilns, 6441 SE Johnson Creek Blvd, Portland, OR 97206-9552, Telephone: 503-774-6000, Fax: 503-774-7833, Web Site: www.skutt.com.

Specifier Note: Select either of the following two (2) paragraphs and delete the other.

B. Substitutions are not permitted.

C. Substitutions will be considered under provisions of Section 01 60 00.

2.2 ELECTRIC KILNS

Specifier Note: Insert kiln model number in the following paragraph. Consult with manufacturer for assistance in selecting a kiln model appropriate for your application.

A. Electric Kilns: Manufacturer's Model No. [Insert kiln model number] [10-sided] [12-sided] electric kilns with components, options, and accessories needed to comply with requirements and provide complete functional kilns including the following components.

1. Kiln stand.
2. Kiln floor or slab.
3. Fire brick.
4. Kiln elements.
5. Section latch.
6. Section handle.
7. Lid with lifter and latch.
8. Control box.
9. Thermocouple.
10. Touchscreen Controller.or Touchpad Controller. Must include diagnostic Current Sensor.
11. Peep plugs.

B. Factory pre-wire kilns for electrical switching devices. Factory predrill holes in the kiln lid and floor for the downdraft ventilation system.

2.3 DOWNDRAFT VENTILATION SYSTEM

A. Downdraft Ventilation System: Skutt "EnviroVent 2" negative pressure downdraft ventilation system; capable of removing hazardous fumes only, not heat. System to consist of the following components:

1. Blower motor with eight (8) ft. power cord and in-line switch.
2. 8 x 12 inch mounting plate.
3. Eight (8) ft. x three (3) inch flexible aluminum duct.

4. Spring-loaded plenum cup assembly.
5. Blower inlet tube.
6. Blower discharge tube.
7. Plenum spring.
8. Three (3) to four (4) inch connector.
9. Floor mounting plate.
10. Mounting hardware.

B. System fits a single top-loading, multi-sided, electric kiln with a chamber size less than 12 cu. ft. Provide a dual exhaust kit to vent a single kiln over 12 cu. ft. or two (2) kilns with chamber volumes each under 12 cu. ft. Maximum chamber volume that can be vented with one (1) motor is 24 cu. ft.

C. Electrical Switching Device: Skutt "EnviroLink" electrical switching device utilizing a programmable power output in the kiln controller to turn the downdraft ventilation system on and off with the kilns controller.

2.4 ACCESSORIES

A. EasyView angled touchpad mount. (KM model kilns only. KMT models have built in adjustable angle controller)

B. KilnLink: Web interface system. Requires a 1 or 5 year data plan with KMT and KM Kilns. KM models will also require additional hardware to connect to the internet. Additional hardware not required on KMT models with built in WiFi.

C. Furniture Kits: Kit includes shelves and one (1) post assortment. Kits are designed to fire to Cone 10 temperatures.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where kilns, ventilation systems, and accessories will be used, for compliance with requirements that affect installation and installation tolerances. Notify the Architect in writing of conditions detrimental to proper completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Downdraft Ventilation System:

1. Ensure that kiln stand is a minimum of eight (8) inches high. If stand is lower than eight (8) inches high, either shim legs to increase distance from floor to eight (8) inches or replace stand with one (1) that is eight (8) inches high.
2. If kiln does not have factory drilled holes, provide number and size of holes as recommended by the manufacturer for the specific kiln model. Locate holes in accordance with manufacturer's recommendations.

3.3 INSTALLATION

A. Install in strict accordance with manufacturer's written installation instructions and recommendations. Coordinate installation with adjacent work to ensure proper clearances.

B. Install units in final locations after finishes have been completed in each area. Verify that clearances are adequate to properly operate equipment.

C. Set units level, plumb, properly aligned, and securely in place.

D. See Division 26 sections for electrical requirements.

E. Downdraft Ventilation System:

1. Assemble and install system components on kiln in accordance with manufacturer's written instructions.
2. Install the blower and motor assembly on the wall in a location that is close enough for the flexible aluminum duct to reach the kiln without overstretching the duct. Where wall-mounting is not possible, mount the vent motor on the floor or to the ceiling.

3.4 CLEANING AND PROTECTION

A. Test kilns, ventilation systems, and accessories to verify proper operation. Make necessary adjustments.

B. Verify that accessories required have been furnished and installed.

C. Remove packing material and leave kilns in clean condition, ready for operation.

END OF SECTION

Skutt Kiln Order Request

DATE : _____

Please fill out this form and provide it to the authorized Skutt distributor listed in the bottom right hand corner of the form. If no distributor information is provided, please contact Skutt Kilns directly for a recommended distributor in your area.

DELIVERY INFORMATION

SCHOOL OR FACILITY: _____

ADDRESS: _____

CITY, ST, ZIP: _____

PHONE: _____

CONTACT: _____

REQ. DELIVERY DATE: _____

APPROVAL SIGNATURES

ART TEACHER: _____

PURCHASING: _____

ARCHITECT/CONTRACTOR: _____

VOLTAGE AND PHASE VERIFICATION: _____
(By signing I agree that the voltage and phase ordered below matches the electrical supply available.)

All models are pictured with the standard KM controller. Substitute KMT in the model name for the Touchscreen Controller.

***KM1227-3**

Cone 8/5 - 9.9 Cu./Ft.

KM1227-3PK

Cone 10 - 9.9 Cu./Ft.

***KM1222-3**

Cone 10/8 - 8.1Cu./Ft.

***KM1027**

Cone 10/6 - 7 Cu./Ft.

KM1027-3

Cone 10 - 6.4 Cu./Ft.

QTY	MODEL	VOLTS 208 or 240	PHASE 1ph or 3ph	5/8" FURN. KIT	ENVIROVENT 2 **	EnviroLink	Dual Exhaust Kit ***	KilnLink Data Plan 1 Yr or 5 Yr

* 1 PHASE/208 VOLT MODELS HAVE THE LOWER CONE RATING
** KILNS WILL BE PRE-DRILLED TO ACCEPT THE ENVIROVENT 2 IN THE FACTORY
***INSTALLATIONS NOT INCLUDING ENVIROLINKS, MAY RUN BOTH KILNS ON ONE ENVIROVENT 2 IF A DUAL EXHAUST KIT IS INSTALLED.

SKUTT

We help you make great things.

Skutt Ceramic Products
6441 SE Johnson Creek Blvd. ■ Portland, OR 97206-9552
503-774-6000 ■ Fax 503-774-7833 ■ skutt@skutt.com ■ **www.skutt.com**

SKUTT DISTRIBUTOR INFORMATION