Henry Ford Community College
Technology Investment Fund
Project Funding Request

This application form with original signatures must be received by the Vice President/Controller's office by 4:00 p.m. on either **the first Friday after Labor Day** (Fall semester) **or the third Friday in January** (Winter semester) in order to be eligible for funding. Applications will only be accepted on this form. Applications must include an Executive Summary which will be shared with the Campus Community. ***(Attach additional sheets for any section needed.)***

Date of Application: September 10, 2010	**Project Type: [ ] New**	**[X] Upgrade/Expansion**
Project Director: Steve Glazer **Department/Division:** Fine Arts and Fitness	**How many students will *directly* benefit from the project?** 125-200 per school year	**Total TIF Funds Requested:** $127,000

Problem Statement

Define the problem/idea. *(What do you want to do? Why?)*	We wish to upgrade the gas fired reduction kilns in the ceramics area of the Division of Fine Arts and Fitness. We currently have two older gas kilns that when new, were available only with complete manual operation and very little, if any, safety features. Furthermore, over the years, what limited safety features our kiln had when new, have long since been gutted in order to keep the kilns functioning. This is actually quite common on older gas kilns as I have seen the same at most institutions I have either attended or taught at. In fact, I have actually seen this done by maintenance personnel when burnt out safety features where the only thing prohibiting an otherwise perfect kiln from working. I assume similar has happened at Henry Ford Community College over the years. While manual operation is still the industry standard for gas reduction kilns, some new kilns are now available with a computer control board that will adjust the "ramp", or rate of that climb, during the firing process. Literature claims that such a system is safer as well as more energy efficient then a totally manually operated kiln. Geil kilns are one of three companies making gas fired ceramic kilns for studio and school usage in the USA. Most in the ceramic industry view Geil kilns as being far superior then their two main competitors, Bailey and A.R.T. Geil kilns are known to fire with far more even heat distribution then either of the other two. This is the major reason for wanting to get Geil kilns rather than ones by their competitors. We would like to equip the new kilns with Advancer kiln shelves. Advancers are the only brand made with an innovative formula that is 1/3 the thickness of traditional kilns shelves, 19 times stronger than traditional kilns shelves and half the weight of traditional kiln shelves. A 14" X 28" Advancer weights less than 10 lbs, while a traditional kiln shelve of this size weights around 25 lbs. This is a huge difference in lifting when loading one of the gas kilns usually takes about 20 shelves. Additionally, since the kiln the Advancer kilns shelves are so much lighter, yet so much stronger than older style kilns shelves, we would like to purchase these for our other kilns that us larger shelves, the gas atmospheric kiln and one of the four electric kilns.

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Evidence for Project Validity *(What is the current situation?)*	
What resources do you have/use now?	The ceramics area of the Division of Fine Arts and Fitness currently has two very old Geil kilns that were purchased in the mid 1980's. These kilns constant safety and maintenance issues are since the May have been on an unusable "lockdown" status under the orders of Buildings and Grounds.
Why can't you use your existing resources to do this project?	As stated, our existing gas reduction kilns re quite old. During Winter 2010, the pilot line went out on one of the two kilns. When checked by Buildings and Grounds for potential repair, the kiln was deemed unsafe by current code and put on permanent "lockdown." While the second kiln is still working, I was allowed to finish the Winter 2010 semester using it, but since it is identical to the other one, once all work was fired, it too was put on permanent "lockdown" status.
What evidence do you have that this project will be successful? *(Cite specific information.)* • **Current research** • **Examples from other schools or teachers** • **Letters of support from experts in the field** • **Your own past experience.**	As previously stated, Geil Kilns are one of only three gas kiln manufacturers in the USA that make and sell these type of kilns for school/studio usage. They are looked at by most potters, ceramic artists, and ceramic educators as the forerunner of the industry. In fact, both Schoolcraft College and Eastern Michigan University have installed Geil kilns in their labs after seeing how well they worked at Henry Ford Community College over the years.

Relevance to Technology Investment Committee Guidelines *(Address only those that apply.)*	
INNOVATION: **Is the proposal innovative to the field of Instructional Technology?**	Only by having equipment that operates using the latest technology can we put students in a position to learn this technology. Many students look at ware that comes out of the kilns as "magical", with little understanding of what the firing process actually entails. While there definitely is some magic in all ceramics, it would be beneficial to have a contemporary system to teach with. Having contemporary safety features is icing on the cake.
Is the proposal innovative to HFCC?	While the structural portion of the kilns are quite similar to the old ones that we have, the computer control board and the safety features are totally new to Henry Ford Community College. The kiln shelves that are part of this proposal are 1/3 the thickness, weigh less than half of what older kilns weigh yet are 19 times as strong. These would be totally new to HFCC. (I actually bought two as a test at the annual ceramics conference, and they seem to be everything they are advertised to be.)
Is the proposal innovative to the specific discipline?	As stated above, while the structural portion of the kilns are essentially the same as they have been for years, the computer control board and additional safety features of the latest available. The kilns shelves are the newest technology available.

NEED:	
Is the proposal essential for the instructional design?	Having working kilns is essential for the instructional design of ceramics classes. While we do have other kilns, including 4 electric kilns that were funded by TIF in 2006-2007, a gas fired atmospheric kiln, and a gas fired raku kiln, they are all much smaller than the either of the old gas kilns or either of the potential new gas kilns. The atmospheric kiln and raku kiln are special process kilns that are not used nearly as often as any of the others. Even the electric kilns are best suited for bisque firing (the first firing that ceramic ware goes through) and special effect glazes rather than general purpose pottery glazes. Once the semester is in full swing, until it ends, each of the electric kilns is fired two to three times a week, sometimes more. That means that each one is loaded, fired, unleaded, reloaded, fired, unloaded, on and on, on a continuous basis. Once the semester is in full swing, until it ends, each gas kiln is generally fired at least once a week, but the firing cycle for the gas kiln is much longer. We load it and start it one day, fire it the next day, and then let it cool for two days before unloading it. Each of our gas kilns holds approximately as much ware as all four of the electric kilns combined. It has been suggested that course requirements be altered so the gas kilns were not needed. In order to do this, we would have to eliminate 50-75% of current course content just to get everything fired. Having new gas kilns are very essential for the survival of ceramics at Henry Ford Community College. (Especially at a time when it has been requested that we increase sections, not cut back on sections.) While the kiln shelves are not "needed", as cheaper traditional kiln shelves would function in much the same manner, the weight difference in this design is significant. As part of learning the ceramic process, students are expected to help load and unload the kilns. Significantly lowering the weight of something that is lifted over and over makes the work much easier for anyone that is doing it, and this could save the school big time if it ever came down to a lawsuit over a back injury.
Does it create new programs or courses with the potential for increased student enrollment?	The proposal would keep us were we have been. If this proposal is not funded, we will be very hard pressed to keep the ceramics program functioning as it has for so many years.
Is it necessary to remain competitive with post-secondary institutions?	Yes, very much so. All but one of our major competitors in Metro Detroit have gas kilns in their ceramics program. (Wayne County Community College District does not, but they do not offer any degrees in art and currently have no full time art faculty.) For years, Henry Ford Community College has had one of the best equipped Ceramics facilities in southeast Michigan. Our studio has compared favorably to those at Wayne State University, Eastern Michigan University, Schoolcraft College and Wayne County Community College. We have had many students that have bypassed other schools specifically to take ceramics classes at Henry Ford Community College. Eastern Michigan opened up a new ceramics lab one year ago, and Schoolcraft College opened up a new ceramics lab this fall. Due to lack of funding over recent years, along with some serious ventilation problems that no one seems to want to address, we are slipping really fast. If we lose our gas firing capabilities, we are toast.

Does it provide skills that are transferable to the workplace?	Our Associates degree in Ceramics is designed for students who want to set up a private studio and be productive professionals in the field. This proposal would help us provide and knowledge of equipment that is a regular part of the field.
Does it prepare students for transfer to upper-level curriculum?	Yes, it does. Not long ago, a HFCC graduate that transferred to one of the regional universities stated to me how overwhelmed he was by how little his classmates there knew compared to what he learned from the Ceramics program at HFCC. Because our facilities have traditionally been so good, our students have often been ahead of their classmates when they transfer. With the new lab, and accompanying new equipment at Eastern Michigan University, advanced students are responsible for firing the gas kilns. If we don't have this equipment, our students that wish to transfer there are at an extreme disadvantage. We really need this funding to prepare our students transferability.

Relevance to Technology Investment Committee Guidelines (continued) *(Address only those that apply.)*	
Does it keep the course or program current in the related technology?	Yes, it does. Funding of this proposal would provide the ceramics area with working gas kilns that have the lasted control systems and safety features.
NATURE OF PROPOSAL: **Is the proposal a component of curricular revision?**	This proposal is not a component of curricular revision, but rather a means to fulfill and our current curricular needs. Furthermore, it is my belief that advanced students should learn the basics of loading and firing the kilns. This technological improvement, as simple as it is, would make this much more feasible. (Most students were afraid to get near the old kilns…they had gotten to the point that if nothing else, they looked old and scary due to rusted metal from the heat.) Loading and unloading kilns is something students are expected to take part in as part of the ceramic process. The kiln shelf portion of this proposal makes this much more feasible to many. Hence, while neither new kilns nor new kiln shelves will make be directly responsible for curricular revision, they will both contribute directly to student learning.
Is it the next logical step in the evolution of the course/curriculum?	As stated earlier, we have had one of the best ceramics programs in southeast Michigan. The lack of updated, continuously working gas kilns is one of the areas where we are seriously lacking.
Will it help attract students to HFCC?	Students already come to HFCC for the ceramics program. Funding this proposal would help ensure that this continues to happen. Without the kilns that this proposal would fund, we face the possibility of falling way behind most of the other schools in the region.
Will it support HFCC community outreach/public relations activities?	The HFCC Ceramics Club has been quite active in the community over the years. The club has hosted workshops by visiting artists, hosted sales of student work both on and off campus. The Ceramics Club has had booths in local art fairs. When the Club has had these often campus sales, the members have agreed to give 30% of the proceeds back to HFCC, 1% to the club funds and 15% into the Ceramic Scholarship Fund. During the 2008 Christmas season, River's Edge Gallery in Wyandotte hosted an exhibition and sale of HFCC student and technicians work. This past summer, River's Edge Gallery hosted another exhibition/sale of HFCC faculty, staff and student work. During the 2008-2009 school year, the Ceramics Club worked with 7th, 8th and 9th graders at Lessinger Middle School in Detroit to produce twin sets of ceramic murals. One set is permanently installed in the school while a second set is permanently installed at Children's Hospital in Detroit. The Ceramics Club has done demos at the Dearborn Farmer's Market, at the Wyandotte Art Fair, at the Monroe Art Fair, at an art fair in Clinton Township, and at River's Edge Gallery.

	Club members have also donated work to be part of charitable auctions and to be used as gifts given to high school art teachers as promotional gifts. Funding of this proposal will enable us to keep these things going, if not enhance and expand these outreach capablitities.
Will it support student retention activities at HFCC?	Yes, In fact, as already stated, we have students coming to HFCC just for our ceramics program. These students, while only planning on taking ceramics classes to begin with, often end up taking other classes as well. Furthermore, many continue talking ceramics courses here beyond their graduation. This program will keep alive if not enhance what we already having going for us.
Will it become an integral part of the course, program or curriculum?	Yes. Having advanced students understand the firing process should be (and in my opinion, needs to be) part of the curriculum. This proposal would make that much more feasible.

Resources	
Where will the project hardware be installed?	In the gas kiln room that is part of F-163 (Ceramics Studio) of the MacKenzie Fine Arts Center.
Who will do the job? • **List the personnel** • **List their duties**	Buildings and Grounds will have to disconnect, tear down and remove the old kilns and then install and connect the new kilns. Some infrastructure modifications must be made to the room and adjacent kiln patio. I have consulted with Buildings and Grounds and they have consulted with Terry Biernet, the architect employed by the school. A cost breakdown, prepared by Terry Biernet is included with this proposal.
Who will use the hardware?	The kilns will be fired by Ceramics area faculty and technicians. While advanced students should learn the process, it will only be done under immediate supervision of the faculty and technicians (for safety and insurance reasons.)
Who will conduct any necessary project-hardware training?	Our old kilns are Geil's, our current staff (myself and the three technicians) are pretty much familiar with the way they work. Additional, one of our technicians has fired the new kiln at Eastern Michigan University, which is identical to the ones that this proposal would fund. Additionally, Geil annually hosts a four day workshop on the usage of their kilns. I would strongly consider attending this next year, and would suggest the same to our techs (and I would suggest the school cover cost.) I think this would greatly benefit our understanding on the full potential of the new kilns
Who will handle any spring and	

summer semester duties related to hardware installation?	Myself, Steve Glazer.	
Do you have commitment from your administration for personnel support? *(Be specific, include documentation.)*	Yes, both Martin Anderson, Assoicate Dean of Fine Arts and Fitness and Dr. Reg Gerlica, Academic Dean of Arts and Sciences are totally behind this project.	
Is release time required to complete this project? **If yes, has it been approved at this time by your Associate Dean?**	**[ ] Yes [X] No** **[ ] Yes [ ] No**	*TIF does not fund release time. If you are requesting release time, it must be approved by the appropriate administrators prior to proposal submission.*

Evaluation

(How will you know if it worked?)

How will you demonstrate to the college that this was an effective use of funds? *(How will you evaluate the goals listed as Expected Outcomes?)*	Since this proposal is an upgrade of current equipment, the best demonstration of its success will be the smoothness in which the Ceramics studio operates once the new equipment is installed. Equally important will be the success of upper level students in learning the operating and safety procedures of the equipment once it is in place.
How will you determine the success or shortcomings of the project?	See answer directly above.

Budget

(You must also include an itemized budget statement.)

What do you need to complete this project? *(Be specific about equipment, software, and training.)*	Two Geil Downdraft model DLB-18 kilns, 18 Cu. Ft., Front Stacking, Brick Lined, natural Draft, Front Loading, ETL Certified, with Microprocessor based programmable temperature controllers and standard shelving kit. 60 14" X 28" Advancer Kiln Shelves to fit above kilns 12 12" X 24" Advancer Kiln Shelves to fit the atmospheric kiln 12 27" half octagon Advancer Kiln Shelves to fit widest of our electric kilns Various repair and safety work to the existing room and the adjacent kiln patio. (A detailed estimate sheet has been prepared by Terry Biernet in conjunction with Buildings And Grounds and a copy is included with this proposal.)
What is the TOTAL COST? *(You must attach an itemized cost analysis with this proposal.)*	Geil kilns (including freight) $40,000 Advancer kiln shelves (including freight) $19,000 Facility upgrades $60,000 Disposal of old kilns $2,000 Workshop for faculty and techs, 4 @ 1,5000 $6,000 Total $127,000
How recent is your quote?	Kilns: May, 2010. Kiln shelves: September, 2010 Facility upgrades: May, 2010, revised, September 2010
Are changes to the college infrastructure necessary to support this project?	**[X] Yes [ ] No** *If "yes" provide an explanation from the Directors of Data & Voice and Buildings & Grounds, and from the Administrator in charge of the affected room(s).* $60,000 of facility upgrades are needed in order to make this proposal feasible. These include removal of kilns, upgrading gas and electrical equipment to handle

	new kilns.
What other monetary commitments exist? *(Department/Division/ External) Please be specific; include documentation wherever possible.*	None, at the moment
If other sources of funding are not available, why? • **Doesn't have the support?** • **Not viewed as feasible?** • **Not a priority?** • **Other?**	1) While this proposal has full support of Martin Anderson, Assoicate Dean of Fine Arts and Fitness, the belief is that since it is a technological upgrade of the area's facilities, the source of funding should be via the Technology Improvement Fund. 2) The Division of Fine Arts does not have $95,000 to devote one area such as this.

Strategic Plan

Include with your application a document that indicates the ways in which your project addresses the goals and objectives of the Henry Ford Community College Strategic Plan. Also, indicate how your project addresses your Division or Department plan. Be as specific as possible.

If your proposal is Non-Instructional (Library Services, Learning Lab, Counseling, Placement Services), please skip this section and complete the information in the Non-Instructional section.

Instructional Proposals

Complete this section if this is an Instructional Proposal, directly impacting student teaching and learning.

Expected Outcomes *(Project Objectives)*	
What is your current teaching method? How will this project fit into your current plan?	All ceramics classes will directly benefit from having new kilns funded. Ceramics classes are hands on studio art classes, meaning that the largest component of student learning is done via the work they produce. We have different types of kilns that are each used for specific process. The electric kilns (funded by TIF in 2006-2007) are fairly small all purpose kilns. The electric kilns handle almost all of the bisque (the first of two firings that clay goes through) as well as some specialty glazes. As stated earlier in this proposal, we are already firing these back to back on almost a continuous basis throughout the semester just to get students work bisques and some special effects glazes fired. We have a small raku kiln, which is a quick fire Japanese process. This is a special effect process that only fires a few pieces at a time. We have a gas fired atmospheric kiln. This is the outdoor kiln, which is also a special effects type of kiln. Almost all of the student ware is glaze fired in the gas reduction kilns, which are currently on permanent "lockdown" status. We attempt to introduce all ceramic students to six different firing processes, reduction glazes fired in the gas kilns, the special effects of both the atmospheric and raku kilns, and at least three different types of firing in the electric kilns. This proposal will ensure that this can continue to be done.
How will this improve student learning? *(List specific goals.)*	*As a result of this project students will:* As a result of this proposal students will: Continue to have ware fired in a wide variety of ways, including gas reduction, which is viewed as the standard for pottery. Advanced students will have the opportunity to learn what is involved in firing kilns that are commonly on the market today. Furthermore, as stated earlier, this proposal will help ensure that all student works gets fired prior to the end of the semester. This may sound trivial, but it really does increase retention. Students are much less likely to return when their work doesn't get finished, due to no fault of their own. With just one of the old gas kilns on "lockdown", most of the advanced students did not get all of their work from Winter 2010 fired until mid way through Spring semester.

Instructional Proposals (continued)

State how the project addresses the Seven Principles of Good Practice in Undergraduate Education. *(Address only the relevant criteria.)*	
Supports student-faculty contact	Ceramics classes are hands on studio classes. Students often assist in loading and unloading the kilns. All students get excited when their work comes out of the kilns. The best way to equate this, and the way it is often stated amongst the ceramic community, is that every time a glaze kiln is unloaded, it is like "Christmas" in the ceramics room. This "Christmas" like atmosphere permeates the room when the gas kilns are unloaded during class time and students as always excited to see how their work comes out. Consequently, this proposal promotes student-faculty contact.
Supports cooperation among students	The more equipment is working (the better it is working), the more students want to be actively involved in the total process. This builds both teamwork and trust among the students.
Supports active learning	As stated earlier, this proposal would ensure that we are able to continue to do with students a variety of processes, including introduce them to the way most professional work is done. Gas fire reduction is the standard for production pottery. We cannot continue to do this, nor teach this, without working gas fired reduction kilns. Again, as students get more excited about their own projects, they willingly become more involved in the total process. Additional, this will give students firsthand experience with current equipment on the market today.
Supports prompt feedback	The better the program's equipment works, the quicker student work gets fired. The best way to get positive feedback, on the student's part, in this type of classroom is to get the finished work into the students' hands as quickly as possible. (Last Winter, 2010, several students didn't get their work fired, or a final grade until a month after the semester was over.) With gas reduction kilns, it is not good practice to fire a kiln that is not full. We usually try to fire kilns as soon as there is enough ware to fill it. This is a huge reason behind having two kilns rather then one larger kiln that takes twice as long to fill. Prompt firing of ware is the only way to ensure prompt feedback. From a faculty standpoint, the quicker works gets through the system, the quicker it can be evaluated in relationship to student learning
Supports time on task	Working equipment with the latest advances is much better then old equipment that sometimes works, and regularly needs special care by the faculty and technicians and/or regular visits from Building And Grounds.

Supports high expectations	I sincerely believe that we cannot have high expectations of students if we fail in having the basic facilities that are commonly used in the said field. With the quality and dependability associated with Geil kilns, the durabity associated with the Advancer kilns shelves, there should be no reason not to have working equipment for the foreseeable future.
Supports diverse talents and ways of learning	All students who take ceramics classes are introduced to a wide variety of processes within the ceramics medium. As lead faulty of the Ceramics program. I take great pride in the skill level and diversity of our students work. Ceramics I classes introduces students to a wide range of processes and techniques including gas fired reduction ware . The primary focus focus of Ceramics II and Ceramics III is functional pottery, in which gas fired reduction is the standard. Directed Studies students write a proposal for the direction of their own work, including how they wish to fire the work. Furthermore, with I am sure there will be processes that we will be able to do in new kilns that have not been readily available to us with our old kilns. (If we can get reduction copper red glazes on a consistent basis, something that Geil kilns are known for, it will be special us, as this is something that is hard to get, and therefore coveted by the students.)

SIGNATURES:

9-8-10		9-8-10		9/15/10	
**Project Director	Date	*Associate Dean/Department Head	Date	*Vice President	Date
9/8/10		9-8-2010			
**Director of Building & Grounds	Date	**Director of Data & Voice	Date		

* For notification purposes only
* * For project feasibility

Non-Instructional Proposals

Complete this section if this is a Non-Instructional Proposal, related to college areas that serve and support student instructional progress. *(Non-Instructional areas include Library Services, the Learning Lab, Counseling, and Placement Services.)*

Expected Outcomes *(Project Objectives)*	
What will this project accomplish that you can't accomplish now?	
How does the project enrich or support the learning, teaching, or communication technology needs of students? *(List specific examples.)*	*As a result of this project, service to students will be improved through:*

SIGNATURES:

**Project Director	Date	*Associate Dean/Department Head	Date	*Vice President	Date
**Director of Building & Grounds	Date	**Director of Data & Voice	Date		

* For notification purposes only
* * For project feasibility

Henry Ford Community College

Technology Investment Fund
Project Funding Request

Executive Summary

DATE OF APPLICATION	PROJECT TYPE
9-10-2010	G New G Upgrade/Expansion
NAME OF PROJECT DIRECTOR OR PRESENTER	**DEPARTMENT/DIVISION**
Steve Glazer	Ceramics/Fine Art/Fine Arts & Fitness
COST OF PROPOSED PROJECT	**NUMBER OF STUDENTS SERVED ANNUALLY**
$94.000	125-200
SUMMARY	

This project proposal is for an upgrade of gas reduction kilns of the ceramics area by replacing two old kilns with two new ones. The old kilns have been put on permanent "lockdown" by Buildings And Grounds, which leaves the ceramics area without one of our main firing resources. The project calls for replacing each of the old ones with a new one that has a modern control system and all current safety features. Along with the new kilns, the proposal calls for the purchase of 80 new kiln shelves that are totally new technology in that they are much lighter, much stronger, and yet 1/3 the thickness of older ones.

With this proposal we will be not only be able to increase what we are able to teach students in an efficient and timely manner, but also increase student involvement in the total ceramic process.

Furthermore, Henry Ford Community College will again be able to honestly state that we have an up to date ceramics facility. We will again be able to boost that Henry Ford Community College's Ceramics program is one of the most complete and comprehensive in the region.

Itemized Costs:
2 Geil Downdraft DLB-18 kilns with Microprocessor based programmable controllers, standard shelve kits, including freight to HFCC
$39,272.40 (attached is quote from Geil Kilns)

60 14" X 28" Advancer kiln shelves
12 12" X 24" Advancer kiln shelves
12 27" half octagon Advancer kiln shelves
Freight to HFCC
$19,000.00 (attached is quote by Smith-Sharpe Fire Brick Supply, the USA distributor of Advancer Shelves)

Facility upgrade according to Terry Biernet
$60,000.00 (attached is extimate by Terry Biernet, revised by Allen Gigliotti)

Disposal of old kilns
$2,000.00

Sending faculty and 3 Non-Instructional Technicians to Geil workshop on firing Geil Kilns
$6,000.00

Total Costs:
$40,000.00 Kilns
$19,000.00 Kiln shelves
$60,000.00 Facility upgrade
$2,000.00 Disposal of old kilns
$6,000.00 Geil workshop for four individuals

$127,000.000 Total

Henry Ford Community College
Technology Investment Fund
Project Funding Request

Steve Glazer
Fine Arts and Fitness
September 10, 2010

Strategic Plan

Include with your application a document that indicates the ways in which your project addresses the goals and objectives of the Henry Ford Community College Strategic Plan. Also, indicate how your project addresses your Division or Department plan. Be as specific as possible.

According to the Underlying Principals of the Henry Ford Community College Mission statement, having working gas reduction kilns is paramount to Henry Ford Community College having a Ceramics program.

The idea that "Teaching & Learning Are Central" goes right out the door if we do not have essential working equipment in any program. Functional gas kilns, such as the one that are the major portion of this proposal, are essential to a successful Ceramics program.

"Helping Students Succeed Is Paramount" is a noble idea, but in ceramics, we may be hurting students' chances of success if we do not have equipment that is viewed as standard elsewhere.

We can only state that "The Curriculum Must Be Comprehensive" if we provide exactly that. Any curriculum is not comprehensive if regular equipment doesn't exist. A Ceramics program without gas reduction kilns is hardly comprehensive at all.

The statement that "Technology Facilitates Learning," is again quite noble if programs are provided with equipment that makes use of the latest technology. Making this statement without providing the latest technology for the classroom defeats the concept and purpose of the statement. The equipment that makes up this proposal is of the latest technology available.

The funding of this proposal will address the Goals And Objectives of the Henry Ford Community College Strategic Plan in many ways. Specifically, this proposal will:

2-A This proposal provides a revision to any existing program that will better meet the expectations of both our students and of those students starting with us and transferring by having new equipment tht is as good or better than our competitors.

2-D Having working, up to date equipment (kilns) will encourage faculty and staff to develop course work that specially uses the new equipment in unique ways.

2-E In art classes, student learning and its assessment is the result of a hands on approach. In the ceramics area, working kilns are quite essential.

3-B and 3-E The history of ceramics is rich with traditions that are worldly based. The Raku process has its roots in Japan. The atmospheric kiln has its roots in Germany. Porcelain (which is favored by many functional potters and some of our Directed Studies students) is rooted in China. The concept of using clay as a sculptural Medium has its roots in China and the Italian Renaissance, Ceramic tile work has its roots in the Middle East. High fire ceramics (as we do in the proposed gas kilns) has its roots in China. These are all stressed when different assignments, techniques, and/or approaches to working are presented to students. Working kilns keep the ability to teach these vital concepts alive.

4-A The proposed kilns and shelves will provide the latest technology available, and consequently will enhance student learning.

4-B For the past two decades, Henry Ford Community College has had one of the, if not the, premier ceramics facilities in southeast Michigan. New gas reduction kilns is the main item needed to make sure we retain this position into the foreseeable future.

5A and 5 E During the 2008-2009 school year, Henry Ford Community College Ceramics faculty, staff and students, along with a representative from Children's Hospital, did a large mural project with the 6th, 7th, and 8th graders at Lessinger School in Detroit. Two large ceramic murals were made and finished pieces not hang in both Lessinger School and Children's Hospital in Detroit. The project was extremely rewarding to all involved. Having the firing capacity provided by the proposal would provide the opportunity to do more of this type of thing.

While there are likely even more ways that this proposal will tie into the Henry Ford Community College strategic plan that I am overlooking at this time, I hope the aforementioned give an idea of why this proposal is important to the college as a whole.

From a Division of Fine Arts and Fitness standpoint, the ceramics facilities at Henry Ford Community College have been a source of pride in comparison to others in the region. The division would very much wants it to remain as such. This proposal is a big step in ensuring just that into the foreseeable future.

Technology Investment Committee
Henry Ford Community College

Dear Committee,

This letter is intended to voice my support for the application by instructor Steve Glaser for funds to add both technology and safety to our Ceramics program. Both existing gas kilns and support structures have been condemned. They are unsafe. Replacing them and refurbishing surrounding support structure will alleviate any problems of safety. The advanced technology of state of the art digital readouts will provide us with a record of each firing for use in comparison and analysis of the ceramic objects produced. Students will be able to more clearly understand how variants in firing a kiln have consequences in the end result. I whole heartedly support this initiative and hope that you will recommend its acceptance.

Martin Anderson

Associate Dean
Fine Arts and Fitness Division
Henry Ford Community College

GAS KILN INSTALLATION
FINE ARTS BUILDING - HFCC

T. BIERNAT
5/27/2010

SUMMARY - BUDGET ESTIMATE - KILNS INSTALLATION

ITEMS	TRADES $	TRADE $ TOTALS	COMMENTS
ARCHITECTURAL			
NEW GATES AT EXTERIOR	$10,000		NEED SECURITY FOR AREA
TOTAL ARCHITECTURAL		$10,000	HOT FIRINGS
MECHANICAL			
REWORK PIPING FOR NEW KILN AND METERING CAPABILITIES	$8,500		
ADD CLOSE-OFF PANEL AT LOUVER	$2,500		
REWORK GAS LINE AT RAKU KILN TO EXTERIOR	$4,500		
TOTAL MECHANICAL		$15,500	
ELECTRICAL			
CLEAN POWER TO EQUIP.	$3,000		
TOTAL ELECTRICAL		$3,000	REQUIRED?
SUB-TOTAL		**$28,500**	
GEN. CONTR. 15% O.H./PROF.		$4,275	
SUB-TOTAL		**$32,775**	
20 ~~5%~~ CONTINGENCY		~~$3,278~~	$13,000
CONSTRUCTION COSTS (EST.) (BASE CONTRACT)		**$36,053**	
BASE CONTRACT FEES			
ARCHITECTURAL	$2,000		
M/E ENGINEERING	$1,950		
STATE PLAN REVIEW	$455		
TOTAL FEES		$4,405	
TOTAL - BASE CONTRACT (CONSTRUCTION PLUS FEES)		~~**$40,458**~~	$60,000 TAG.

ADD $10,000 CONTINGENCY FOR ROOF REPAIRS.

T. Biernat 9/7/10

GEIL INDUSTRIES

7201 CLAY AVE
HUNTINGTON BEACH, CA 92648
800-887-4345

QUOTATION

DATE	QUOTE#
5/17/2010	777

NAME/ADDRESS
HENRY FORD COMMUNITY COLLEGE ATTN: STEVE GLAZER 5101 EVERGREEN DEARBORN, MI 48128

Terms	PROJECT	REP	FOB
Net 30	GAS KILNS	PG	H.B.,CA

ITEM	DESCRIPTION	QTY	UNIT COST	Total
DLB-18	GEIL DOWNDRAFT KILN MODEL DLB-18, 18 CU. FT. STACKING, BRICK LINED, NATURAL DRAFT, FRONT LOADING. ETL CERTIFIED.	2	15,598.00	31,196.00
10% DISC	DISTRBUTOR DISCOUNT 10%		-10.00%	-3,119.60
MICRO PRO	MICROPROCESSOR BASED PROGRAMABLE TEMERATURE CONTROLLER, PROPORTIONAL CONTROL, 8 RAMP/SOAK SEGMENTS, W/ HI-LIMIT OVERRIDE, TYPE 'R' T/C.	2	3,618.00	7,236.00
SKDL-18	SHELVING KIT SK-18 CONSISTING OF 10 EA. 14" X 28" X 1" HOLLOW CORE SHELVES, AND 8 EA. POSTS 1',2',4', 6', 7', 8', 9', 10'.	2	705.00	1,410.00
CRATE B&F	CRATING BRICK AND FIBER KILNS, FRONT LOADING.	2	275.00	550.00
FREIGHT	NOTE: FREIGHT CHARGES SUBJECT TO CHANGE DUE TO FUEL SUR CHARGES. FREIGHT DOES NOT INCLUDE OFF LOADING KILN. CUSTOMER MUST ARRANGE FOR FORKLIFT AND OFFLOADING.	1	2,000.00	2,000.00

QUOTATION VALID FOR 30 DAYS.

Subtotal	$39,272.40
Sales Tax (0.0%)	$0.00
Total	$39,272.40

Smith-Sharpe Fire Brick Supply
2129 Broadway St NE
Minneapolis, MN
55413-1716

Voice: 612-331-1345
Fax: 612-331-2156

QUOTATION

Quote Number: 25023
Quote Date: Sep 7, 2010
Page: 1

Quoted To:

Henry Ford Community College
5101 Evergreen
Dearborn, MI 48128
USA

Customer ID	Good Thru	Payment Terms	Sales Rep
HENRYFORDCOMMCOLLEGE	10/7/10	Prepaid	Marshall Browne

Quantity	Item	Description	Unit Price	Amount
		Current promise after receipt of an order is 8-9 weeks. Freight is based on estimate from factory to destination. Thank you for the opportunity to quote on your requirements. Purchase orders are acceptable. dona@ssfbs.com		
60.00	KS-ADV1428x5/16	Kiln Shelf Advancer 14 x 28 x 5/16", Mix: CN703, Silicon Nitride-Bonded Sil. Carbide, 2730F Max, 11# each,PN2471503A, sold per each	234.00	14,040.00
12.00	KS-ADV1224x5/16	Kiln Shelf Advancer 12" x 24" x 5/16". Mix: CN703, Silicon Nitride-Bonded SiC, 2730F Max, sold/ea. 8# each F.O.B Minneapolis, MN	170.00	2,040.00
12.00	KS-ADV2613H12S	Advancer Kiln Shelf, 26" X 13" X 5/16" Half Shelf for 12 Sided, 3" Wall Kilns. CN-703 Silicon-Nitride Bonded Silicon Carbide. 8 lbs. Price/each.	187.00	2,244.00
1.00		Estimated freight from Worcester, MA to Dearborn, MI	550.00	550.00

Subtotal	18,874.00
Sales Tax	
Freight	
TOTAL	**18,874.00**

We've moved. Please note new address!

Geil/Coleman 3-Day Kiln Firing Workshop
@ The Fine Line Creative Arts Center
July 22-24, 2010
(Thursday, Friday, Saturday)

THIS IS AD FOR 2010 WORKSHOP, PROPOSAL TO ATTEND SIMILAR IN 2011.

Workshop Outline

Location: The Fine Line Creative Arts Center
6N158 CRANE ROAD
ST. CHARLES, ILLINOIS 60174
Cost: $300 for The Fine Line Members
$325 for **Non Members** (We are accepting up to 40 participants only)

Day 1 **Thursday, July 22nd** **9:00 am-4:00 pm**	**9:00am-9:30am:** • Introduction **9:30am-12:30pm:** • Glaze techniques and applications • Glaze in Spray booth • Discuss types of glazes; Shinos, Copper Reds and Celedon. **12:30pm-1:30pm:** Lunch **1:30pm-4:00pm:** • Load Kiln **a)** Loading and firing theory
Day 2 **Friday, July 23rd** **9:00 am- 4:00 pm**	**9:00am-12:30pm:** • Start Reduction **a)** Kiln theory and Firing theory **b)** Kiln controllers **12:30pm-1:30pm:** Lunch **1:30pm-4:00pm:** • Demonstrate throwing techniques for Porcelain. • As kiln is firing, continue firing theory and controller discussion.
Day 3 **Saturday, July 24th** **9:00 am- 12:00 pm**	**9:00am-12:00pm:** • Unload Kiln **a)** Critique/discuss glaze results


Home

Insulating Fire Brick Lined Front Loading Kilns

GEIL Natural Draft Kilns

The frame construction and exterior shell of the GEIL Downdraft Gas Fired Fire Brick Kilns consists of heavy gauge structural strength steel. All frames are welded at each joint to provide for maximum strength and durability. Full width, front loading doors and the minimal area between the door opening and the setting space facilitates loading and unloading. These fire brick kilns are built with full depth arch construction extending directly to the door opening, providing stacking space to the top of the arch, 2600° F and 2800° F High Alumina (60% or more) Insulating Fire Brick backed by high-temperature block insulation constitutes the kiln's interior. All DL models will fire to 2500° F (cone 14).

Natural draft, high velocity ceramic burners were specifically designed and developed by GEIL Kilns to produce excellent fuel-air mixture without the need of electric blowers. These burners provide for simple and trouble-free firing.

Fire Brick Lined Natural Draft Kiln Model DLB-30

STANDARD EQUIPMENT

- Electronic flame safety, 100% Shut Off.
- Push button automatic spark ignition.
- Manual control valve.
- 0-15" water column pressure gauge.
- DD-1 digital, solid state, electronic controller which functions as a high-limit, on/off soaking controller.

OPTIONAL EQUIPMENT

- **Automatic damper system**
- **Microprocessor Based** Programmable temperature Controller.

GEIL Forced Draft Kilns

Forced Draft models are the same superior construction technique as that of the Natural Draft models, with the exception of the burner system.

A standard Forced Draft system incorporates the use of an electric blower to force air through the burners to insure complete combustion. The Geil Forced Draft System is particularly unique in that the forced draft burners are placed in the same position as our Natural Draft models, thus maintaining the same downdraft circulation and functioning much like our Natural Draft models. All specifications for the Forced Draft Kilns are the same as the Natural Draft except the number of burners

Specifications - Fire Brick Lined Front Loading Natural Draft Kilns

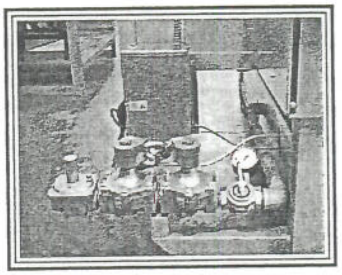
DLB-6	DLB-8	DLB-12	DLB-16	DLB-18	DLB-20	DLB-24
DLB-28	DLB-30	DLB-36	DLB-40	DLB-50	DLB-60	

Home

STANDARD FEATURES

ON ALL GAS KILNS

- Electronic flame safety, 100% Shut Off.
- Push button automatic spark ignition.
- Manual control valve.
- 0-15" water column pressure gauge.
- DD-1 digital, solid state, electronic controller which functions as a high-limit, on/off soaking controller.

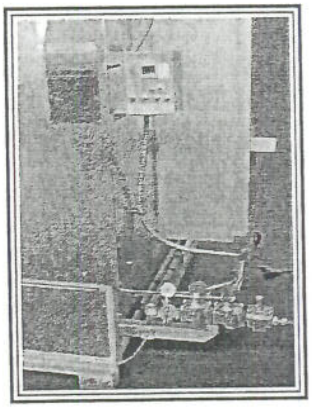


Control System

Standard manual control system used on most GEIL Kilns.

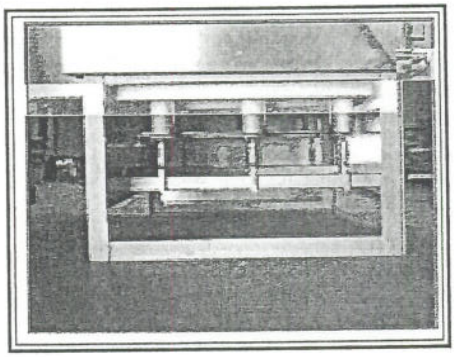
DD-1 Digital Electronic Controller

The DD-1 is a high limit, on-off solid state electronic controller with a digital readout and digital set from 0 to 2500° F. When the controller is set at the "High Limit" position, it will automatically shut the kiln off at the set point temperature. The on-off position functions as a "soaking" controller, holding the temperature at the set point temperature plus or minus 5°



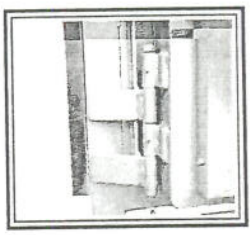
Control System

Standard manual control system used on most GEIL Kilns.



Burner System

Natural draft, high velocity ceramic Venturi burners were specifically created and designed by GEIL Kiln Company for the GEIL Downdraft Design system and have proven to be quite efficient in all applications.



Heavy Duty Hinge

An exclusive feature on all front loading GEIL Kilns, this hinge is fully greased to prevent rusting and reduce wear.

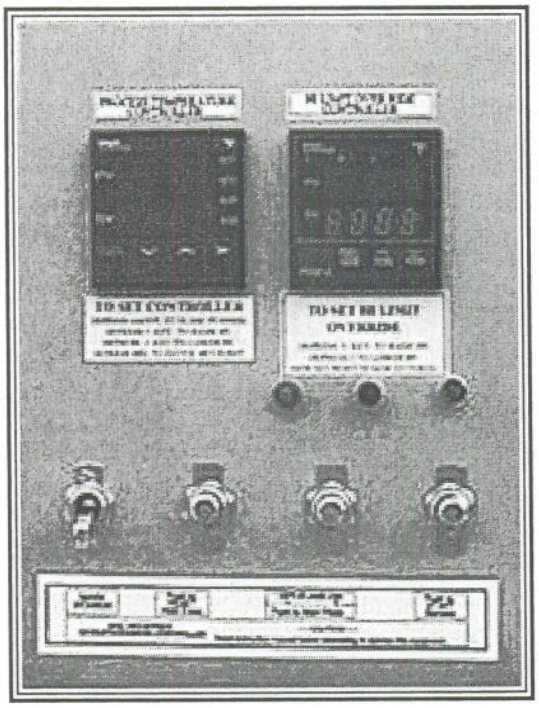
NOTE: All individual shelving not ordered with kiln carries a 10% packing charge. Silicon Carbide Shelving -- Quoted upon request.

Prices effective June 30, 2004 All information and prices stated on this sheet are subject to change without notice. All prices F.O.B. Huntington Beach, California

Home

OPTIONAL EQUIPMENT

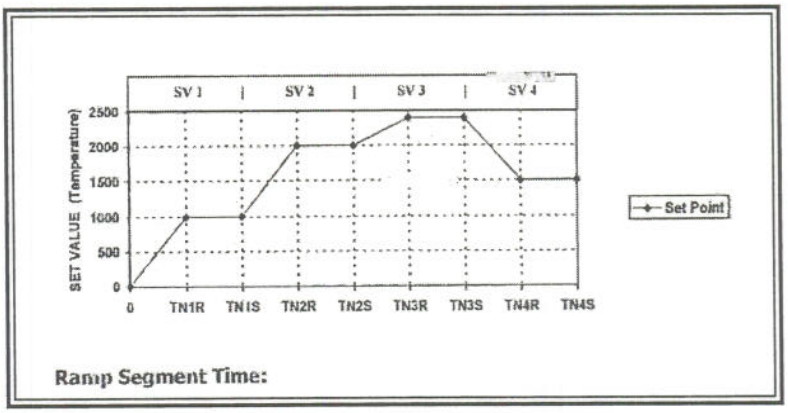
Microprocessor Controller



Microprocessor Controller

Microprocessor Based Programmable Temperature Controller. Full proportional control, minimum four Ramp/Soak segments and Auto/Manual Control

Sample Program



UNDERSTANDING THE PYX MICROPROCESSOR

The PYX controller is the main controller of the system, responsible for the time and temperature of a kiln firing. It reads the temperature by means of a thermocouple mounted on the back wall protruding into the interior of the kiln. The PYX reads the temperature via the thermocouple. It then processes the pre-programmed information (ie: ramp soak segments) and adjusts the output signal to the proportioning valve. Depending on the call for heat form the PYX, the proportioning valve will vary the amount of gas reaching the burners. The output signal is shown as a percent in the OUT1 parameter. Each parameter is explained in detail in the next section.

By programming the PYX parameters with time and temperature, the kiln can be fired by ramping to a set point in a particular time. This ramp time plus a soak time is one segment. The PYX contains four ramp soak segments making up what is called a firing profile. This profile is stored in the microprocessor's nonvolatile memory. The PYX contains two operating modes, AUTO and MANUAL. This pre-programmed profile is operated by the AUTO mode. The kiln can also be fired manually by the PYX controller. Manual firing can be used to perform a reduction.

Home

Specifications - Fire Brick Lined Front Loading Natural Draft Kilns	
Model Number	**DLB-18**
Inside Volume -Cu.Ft.	31
Setting Space-Cu.Ft.	18
Setting Area-Inches	W D H 28x28x40
Inside Dimension-Inches	39x34x40
Outside Dimension-Inches	55x64x70
Instrumentation (Microprocessor Controller Optional Equipment)	DD1 Controller
Stacking Height-Inches	40
Temperature Range	0-2500° F.
Shelf Size-Inches Per Level	4-14x14 or 2-14x28
Maximum BTU/HR. Input	224,000
Maximum Gas Consumption CFH	270
Minimum Gas Pressure	6 Inches Water Column Pressure
Gas Line Inlet Inches	1
Number of Burners	6
Average Firing Time-Cone 06	6 Hours
Average Firing Time-Cone 10	8-10 Hours
Approximate Shipping Weight	2,700 lbs.

Electrical hook-up required on all models. No extra charge for kilns firing with propane gas. Please specify.
Specifications subject to change without notice. Patent 4,531,910 CSA Certified

Back to Table

PRICE LIST

GAS KILNS FRONT LOADING NATURAL DRAFT KILNS		
MODEL NUMBER		
FIBER	BRICK	PRICE $
N/A	DLB-6	8,377.00
DL-8F	DLB-8	10,544.00
DL-12F	DLB-12	12,709.00
DL-16F	DLB-16	14,587.00
DL-18F	DLB-18	15,598.00
DL-20F	DLB-20	17,041.00
DL-24F	DLB-24	19,207.00
DL-28F	DLB-28	20,221.00
DL-30F	DLB-30	21,375.00
DL-36F	DLB-36	24,410.00
DL-40F	DLB-40	27,151.00
DL-50F	DLB-50	29,752.00
DL-60F	DLB-60	41,884.00

GAS KILNS FIBER OR BRICK LINED NATURAL DRAFT SHUTTLE		
MODEL NUMBER (ONE CAR)		
FIBER	BRICK	PRICE $
DL-27FS	DLB-27S	25,346.00
DL-40FS	DLB-40S	28,901.00
DL-54FS	DLB-54S	34,280.00
DL-70FS	DLB-70S	40,227.00
DL-82FS	DLB-82S	46,057.00
DL-100FS	DLB-100S	58,067.00
MODEL NUMBER (TWO CAR)		
DL-27FS	DLB-27S	33,897.00
DL-40FS	DLB-40S	38,781.00
DL-54FS	DLB-54S	44,354.00
DL-70FS	DLB-70S	49,237.00
DL-82FS	DLB-82S	55,836.00
DL-100FS	DLB-100S	67,256.00

ELECTRIC KILNS FRONT LOADING BRICK LINED	
MODEL NUMBER	
BRICK	PRICE $
EDLB-6	8,810.00
EDLB-8	10,759.00
EDLB-12	12,726.00
EDLB-16	14,319.00
EDLB-18	15,885.00
EDLB-20	17,585.00
EDLB-24	19,283.00
EDLB-28	20,604.00
EDLB-30	21,214.00
EDLB-36	24,769.00
EDLB-40	27,224.00
EDLB-50	29,376.00
EDLB-60	31,521.00

FIBER MEDIUM DUTY KILN	Price
MODEL 802	5,887.00

STANDARD EQUIPMENT (GAS MODELS):

- CSA CERTIFIED, formerly AGA (AMERICAN GAS ASSOCIATION)
- 100% ELECTRONIC FLAME SAFETY SHUT-OFF
- PUSH BUTTON AUTOMATIC SPARK IGNITION
- DD-1 CONTROLLER
- 0-15 "PRESSURE GAUGE

CRATING CHARGES (domestic orders)	Price
Brick & Fiber Kilns	$275.00
One-Car Shuttle Kilns	$450.00
Two-Car Shuttle Kilns	$650.00
Fiber medium duty kiln Model 802	$175.00
Vent package	$175.00
Shelves **CALL FOR PRICE** (when ordered separately)	

PLEASE NOTE:

A surcharge will apply on the optional controllers due to the platinum market price fluctuation.

OPTIONAL EQUIPMENT	Price
DD-1RP CONTROLLER. SINGLE RAMP TO SET POINT AND SOAK, PROPORTIONAL CONTROL.	$ 1,779.00
MICROPROCESSOR BASED PROGRAMMABLE TEMPERATURE CONTROLLER. PROPORTIONAL CONTROL. 4 RAMP / SOAK SEGMENTS	$ 3,61800
MICROPROCESSOR BASED PROGRAMMABLE TEMPERATURE CONTROLLER WITH AUTOMATIC DAMPER ATMOSPHERE CONTROL PROPORTIONAL 4 RAMP / SOAK SEGMENTS (COMPUTER CONTROL).	$ 7,326.00

Prices effective August 01, 2008. All information and prices stated on this sheet are subject to change without notice.
All prices F.O.B. Huntington Beach, California.

Home

Innovation for the Artist

Saint-Gobain has been producing innovative products since the 17th century, when we crafted mirrors for King Louis XIV's Versailles Palace. Today we offer innovation for the artist. Saint-Gobain invites you to take your talent to the next level using our innovative kiln shelves, helping you create art like you have never created before.

Whether you're a hobbyist or a professional studio potter, ADVANCER® kiln shelves from Saint-Gobain Ceramics will revolutionize the way you work.

ADVANCER® "The Thin, Lightweight Kiln Shelves"

Made from an advanced nitride-bonded silicon carbide composition, ADVANCER® kiln shelves possess excellent thermal properties. Low mass and high thermal conductivity result in shorter firing cycles helping potters to save energy, improve productivity and reduce overall firing costs. At only 5/16-inch thick, ADVANCER® kiln shelves are 19 times stronger and weigh 50% less than conventional one-inch thick cordierite kiln shelves. ADVANCER® kiln shelves are also made flat and stay flat so there's no warping after repeated cycling even under heavy loads.

ADVANCER® is Superior Compared to Cordierite

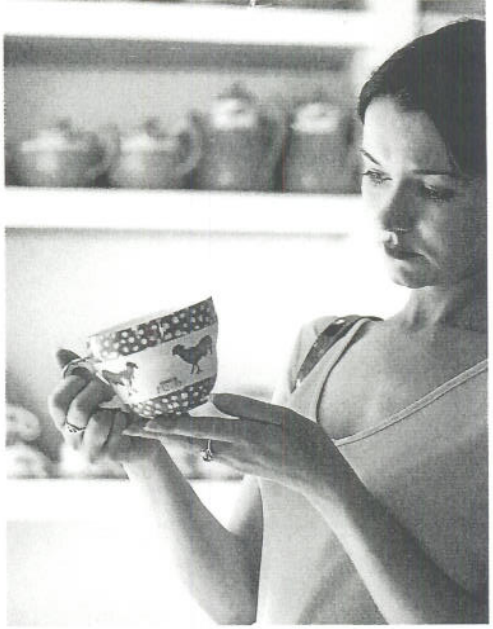
Typical Properties	Cordierite	ADVANCER®
Max Use Temperature °F	2372 – Cone 10	2642 – Cone 16
Porosity (%)	30	1
Strength at Room Temp. (PSI @ 68 °F)	1,450	24,500
Strength Under Fire (PSI @ 1250 °F)	1,305	25,500
Thermal Conductivity (BTU-in./hr.ft^2 °F)	8	125
Weight of a 24" x 12" Shelf	Up to 21 lbs.	8 lbs.

Typical Chemical Analysis	%	%
Silicon Carbide	—	70
Silicon-Nitride Bond	—	30
Alumina	46	—
Silica	43.8	—
Magnesia	6.2	—
Other	4	—

Photo courtesy of Northern Clay Center, Minneapolis, MN.

Photo courtesy of Eric Jensen, Chicago, IL.

Photo courtesy of Cloth & Clay, Inc., St. Paul, MN



Versatile in Many Applications

ADVANCER® kiln shelves exhibit outstanding performance in a variety of applications and firing atmospheres. ADVANCER® kiln shelves are used in the production of commercial and manufactured clay bodies including low fire white ware, tile, stoneware and porcelain.

Gas-Fired Kilns: ADVANCER® kiln shelves are most widely used in gas-fired kilns. For years the benefits of ADVANCER® kiln shelves have been proven to increase productivity and save money in hobby, production and industrial applications.

Photo courtesy of Bill Campbell Studios, Cambridge Springs, PA

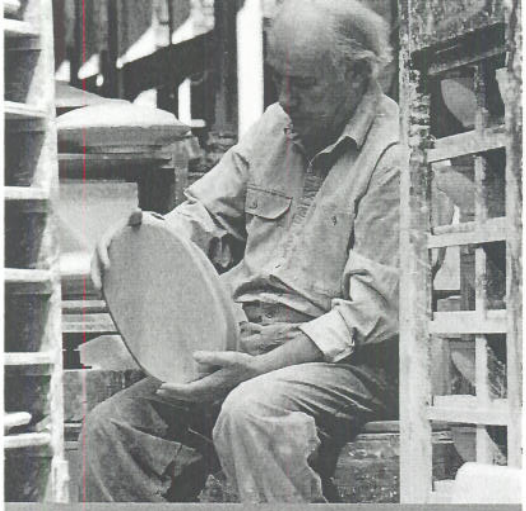
Soda Firing: ADVANCER® kiln shelves are a smart choice for soda firing where soda is introduced indirectly. The extremely low porosity of the shelves allows for soda drips to be easily removed without the time consuming grinding typically associated with conventional cordierite or silicon carbide shelves.

Wood Firing: ADVANCER® kiln shelves are successfully used in second and third chambers of wood-fired kilns. A combination of ADVANCER® kiln shelves and conventional silicon carbide shelves is often a sound kiln furniture system in areas where temperature uniformity is a problem.

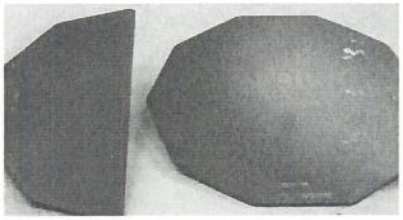
Contact an Application Engineer to discuss the compatibility of ADVANCER® kiln shelves with your application and firing conditions.

Features	Benefits
High Strength	Supports heavy loads with minimal mass (reduces refractory-to-ware ratio)
Light Weight	Safer and easier to stack/unstack loads
Flatness Retention	Supports heavy loads without warping
Low Porosity (<1%)	Glaze resistant* (lower maintenance costs)
Excellent Thermal Properties	Faster heat transfer (reduced energy consumption)

** Kiln wash required for specific applications (e.g., porcelain). Consult an Application Engineer for more information.*



Save Space and Energy in Your Electric Kiln

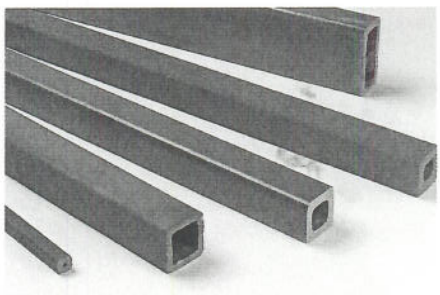


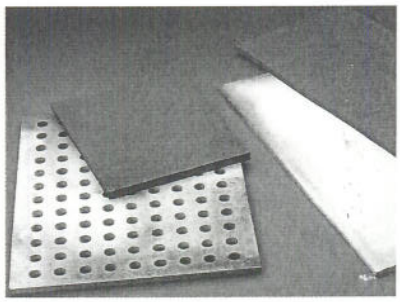
ADVANCER® kiln shelves are available in 10 and 12-sided shapes (full and half) to fit top-loading resistance coil element kilns. At only 5/16-inch thick, ADVANCER® kiln shelves allow for much more stacking space when compared to conventional 5/8-inch to one-inch thick cordierite kiln shelves. At less than half the weight of conventional shelves, ADVANCER® kiln shelves are far easier to handle and lift in and out of the kiln.

Lower mass and faster heat transfer means shorter firing cycles and reduced energy consumption. No wonder an increasing number of potters are improving productivity and saving money using ADVANCER® kiln shelves in their electric kilns.

Saint-Gobain Offers a Diverse Line of Kiln Furniture Products

Saint-Gobain also manufactures a broad range of conventional oxide-bonded and nitride-bonded silicon carbide products known as CRYSTOLON®, CRYSTON®, CARBOFRAX® and REFRAX®. Other LO-MASS®, high strength, advanced silicon carbide products include CRYSTAR® 2000, ANNASICON® RT and RTH and SILIT® SK. Choose from a variety of kiln furniture components including plates, support beams and support posts. Consult an Application Engineer for more information about these products.





SAINT-GOBAIN
CERAMICS

Saint-Gobain Ceramics and Plastics, Inc.
1 New Bond Street
PO Box 15136
Worcester, MA 01615-0136
USA

TEL: 508.795.5577
FAX: 508.795.5011
Email: ceramicsystems@saint-gobain.com

www.refractories.saint-gobain.com
www.LO-MASS.com

Form POT2
February 2005

WARNING

ADVANCER® refractory components should be stored in a dry, enclosed area. Do not expose components to any prolonged moisture including rain, snow, condensation, etc. Components exposed to prolonged moisture should be dried in accordance with Saint-Gobain's recommended drying schedule prior to normal use. Contact an Application Engineer for more information.

To prevent the hazard of electric shock from any source within an electric kiln, ADVANCER® kiln shelves should not come into direct contact with electrical heating elements. Contact an Application Engineer for more information.

KilnShelf.com

Call **866-545-6743** to Order

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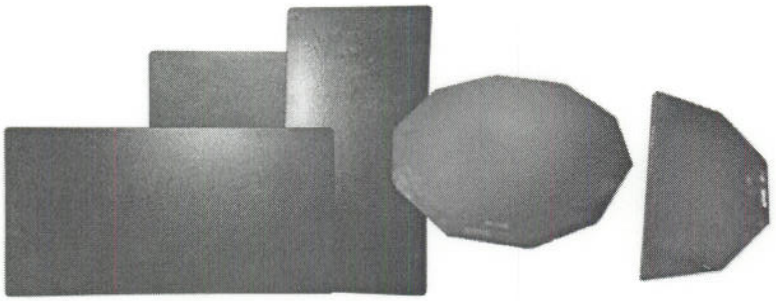

ADVANCER® Shelves in a range of sizes

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ADVANCER®

"The Thin, Lightweight Kiln Shelves"

Imitated but never equaled, ADVANCER® kiln shelves are made from an advanced nitride-bonded silicon carbide composition. Advanced nitride-bonded silicon carbide (NSiC) is distinguished from conventional nitride-bonded silicon carbide in that it is significantly stronger, thinner and much more resistant to oxidation; suitable for temperatures up to 2600°F!

ADVANCER kiln shelves possess excellent thermal properties. Low mass and high thermal conductivity result in shorter firing cycles helping potters to save energy, improve productivity and reduce overall firing costs. At only 5/16" thick, ADVANCER kiln shelves are 19 times stronger, and weigh 50% less than conventional 1" thick cordierite kiln shelves. ADVANCER kiln shelves are also made flat to stay flat so there's no warping even after many firings under heavy loads.

ADVANCER kiln shelves exhibit outstanding performance in a variety of applications and firing atmospheres. ADVANCER kiln shelves are used in the studio production of commercial and manufactured clay bodies including low fired white ware, tile, stoneware and porcelain.

Versatile in Many Applications

Gas-Fired Kilns: ADVANCER® kiln shelves are most widely used in gas fired oxidation and reduction kilns. The use of ADVANCER kiln shelves has been proven to increase productivity and save money in hobby, production studio and industrial applications.

Soda Firing: ADVANCER® kiln shelves are a smart choice for soda firing where soda is introduced indirectly (not by direct spraying onto shelves). The extremely low porosity of the shelves allows for soda drips to be easily removed by scraping without the time consuming grinding typically associated with conventional cordierite or silicon carbide shelves.

Wood Firing: ADVANCER® kiln shelves have been used successfully in second and third chambers of wood-fired kilns. A combination of ADVANCER kiln shelves and conventional silicon carbide shelves is often a sound kiln furniture system in areas where direct flame impingement and temperature uniformity is a problem.

- Read important information regarding the oxidation differences between ADVANCER® and conventional (CRYSTOLON®) shelves in wood burning kilns

Contact us to discuss the compatibility of ADVANCER® shelves with your kiln application and firing conditions.

We currently maintain inventory of ADVANCER® shelves in the following sizes:

12" X 24" X 5/16" : 8lb.
14" X 28" X 5/16" : 11lb.
10" X 20" X 5/16" : 6lb.

Important information about moisture in ADVANCER® Kiln Shelves

Product Features*

- High Strength
- Lightweight
- Flatness Retention
- Low Porosity (<1%)
- Excellent Thermal Properties

Product Benefits

- Supports heavy loads with minimal mass
- Reduces kiln furniture to ware ratio
- Safer and easier to stack and unstack loads
- Supports heavy loads without warping
- Glaze resistant** (lower maintenance costs)
- Faster heat transfer (reduced energy consumption)

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12" X 12" X 5/16" : 4lb.
12" X 28" X 5/16" : 10lb.
13" X 26" X 5/16" : 8lb.
22" X 22" X 5/16" : 13lb.

Please call for price and availability of all sizes. There are many additional sizes available.

*See ADVANCER® CN-703 Technical Bulletin for complete information.

** Kiln wash required for specific applications (e.g., porcelain). Call us for more for more information.

SMITH-SHARPE
FIRE BRICK SUPPLY

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ADVANCER® Kiln Shelves FAQ

1. Do I need to use kiln wash on my ADVANCER® shelves?

While many individual customers report that they do not need to use a wash coat on their ADVANCER® shelves, we generally recommend using a suitable high alumina wash on ADVANCER® shelves – particularly in studio or classroom settings where multiple users are present.

Due to the extremely low porosity of ADVANCER (less than1%) vs. conventional silicon carbide (18% typical) and cordierite (30% typical), it is true that there is much less of a tendency for glaze to penetrate into or stick onto the ADVANCER surface. Never the less it is still possible for glaze to react with the protective oxide glass surface of ADVANCER, especially at higher temperatures, and bond onto the ADVANCER surface. Glaze drips are usually easily removed without grinding because extremely low porosity of ADVANCER. On the other hand glazes that volatilize at temperature, leaving a fine mist of glaze on the shelf may require light grinding or sanding for complete removal.

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2. What kiln wash is recommended for ADVANCER®?

Kiln wash for ADVANCER® should be high in alumina. Many commercially available kiln washes are high in silica and are not recommended for ADVANCER due to the tendency of silica to interact with the oxide glass layer of the shelf. In some cases alumina hydrate can be substituted for silica (flint) in an existing wash formula with success.

Please contact us for a wash recommendation or with questions regarding your specific wash formula.

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3. I have heard that porcelain clay bodies stick to ADVANCER® shelves?

Due to the high amount of flux used in porcelain clay bodies (up to 50% typical) to achieve translucency, it is not uncommon for porcelain clay bodies to stick to the ADVANCER surface. The higher the firing temperature is, the greater the opportunity for the flux to interact with the oxide glass layer of the shelf. Pieces with trimmed foot rings supporting larger pieces, like bowls, tend to stick more tenaciously than broad, flat bottomed pieces due to increased pressure on contact area.

Some cone 6 porcelains may not have a sticking problem on ADVANCER. Please contact us for more specific information. You may also refer to the article "Why Porcelain May Stick to ADVANCER" on this website for a more technical explanation.

Didn't Find Your Answer?
Ask Your Question Now!

Name *

First

Last

Email Address

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(XXX) XXX- XXXX

I prefer to be contacted by:

phone

e-mail

Ask Your Question

Email Address *

Submit

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4. Do I need special posts for use with ADVANCER® shelves?

In general you do not need any special posts for use with ADVANCER® shelves. Round or square cordierite posts with a hole down the center will work just fine. Hard fire brick soaps (2-1/4" x 2-1/2"x 9"L) in various lengths may also be used. It is not advisable to use full hard bricks (2-1/2" x 4-1/2"x 9"L) as posts with ADVANCER due to potential uneven thermal gradient problems created by such massive shelf/post contact areas.

Wadding between shelves and posts is frequently used to promote setting stability, and is an acceptable practice with ADVANCER shelves. It is also recommended to use a suitable kiln wash on the ends of posts to prevent sticking between ADVANCER shelves and posts after repeated firings with posts in the same spot on the shelf surface.

5. Because ADVANCER® shelves are thin, is it better to use a 4 point stacking system?

ADVANCER® shelves are up to 19 times stronger than one-inch thick cordierite shelves! Therefore it is unnecessary and not recommended to use any arrangement other than a 3 point stack. This is the most stable system and puts the least amount of stress on any single shelf.

6. Do I need to flip ADVANCER® shelves to even out potential warping problems?

No. ADVANCER® shelves will not warp under typical pottery firing conditions even after repeated firings to cone 12 under heavy loads.

7. I've heard that ADVANCER® shelves can explode if they get wet?

Due to the extremely low porosity (less than 1%) of ADVANCER® kiln shelves, it takes prolonged exposure to a direct and continuous moisture source such as rain, standing water from a floor or condensation to penetrate the shelf. Water is slow to get in, and once in it is slow to get out. Therefore a temperature controlled dry out schedule must be observed prior to taking the shelves to normal firing temperatures. Slow bisque firing is not adequate to insure complete moisture removal! If you know or suspect that your shelves have water in them, you must follow the dry-out schedule outlined in the Saint-Gobain Technical Bulletin Warning "Storing and Drying Requirements for ADVANCER® Refractory Components."

If you are uncertain about moisture exposure problems with your shelves, please don't hesitate to contact us!

8. Will kiln washing ADVANCER® shelves or getting a few drops of water on them cause a problem?

No. It takes prolonged exposure to a continuous moisture source to cause problems. It should also be noted that there is no evidence of atmospheric humidity causing moisture problems with ADVANCER® shelves. They are in use almost everywhere in the world!

9. What about firing damp pots or pots with wet glaze on them?

Generally this will not cause a problem, but we recommend letting green or freshly glazed pots dry completely prior to firing on ADVANCER®.

10. What about using ADVANCER® shelves in a soda kiln?

ADVANCER® is often used in soda kilns. Clean-up of soda drips from the surface of the shelf is a breeze since the low porosity of ADVANCER does not allow the soda glass to get much of a grip on the shelf. Spraying or dumping soda into the kiln firebox and having it naturally disperse throughout the kiln is the preferred method of introducing soda into the kiln. Soda can also be introduced in a dry form when combined with whiting, with good results. We do not recommend spraying liquid soda solutions directly onto ADVANCER® shelves through a port hole, since this practice may lower the temperature enough to the point of soda contact to cause a significant temperature gradient across the shelf leading to cracking, thermal shock and failure.

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11. Can I use ADVANCER® shelves in a Raku kiln?

No. Direct flame impingement on ADVANCER® shelves early in a firing will usually cause thermal shock and lead to shelf failure. ADVANCER can withstand rapid heat-up and cool-down, but temperature across the shelf must be even, which is never the case in Raku kilns.

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12. What would cause an ADVANCER® shelf to crack during a firing?

The vast majority of failures with ADVANCER® shelves can be traced to uneven temperatures across the shelf (thermal gradients) causing thermal shock and shelf failure. This can occur on heat-up or on cool-down for a variety of reasons. Typical problem areas in kilns include the bottom layer of shelves in a car kiln, where the seal between car and kiln is not tight permitting cold air to rush in when the kiln is shut off, using posts that are too massive (see "Do I need special posts for use with ADVANCER shelves?" above), direct flame impingement on shelves early in the firing, overly large sight ports permitting cold air to cool off shelf areas unevenly, shelves too close to damper areas causing uneven cool-down of shelves in close proximity to damper.

If you have any concerns regarding the use of ADVANCER shelves in your kiln, please call to discuss your particular situation to make sure that ADVANCER is right for you!

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12. Do you recommend ADVANCER® shelves for use in wood-fired kilns?

ADVANCER® shelves have been used successfully in many wood-fired kilns. However, they should not be used in areas where there will be direct flame impingement early in the firing, such as fire mouths and areas adjacent to checker walls in second chambers. In these areas a conventional, thicker silicon carbide is preferred due to their ability to better withstand thermal shock. Wadding on brick posts under ADVANCER shelves is also recommended to minimize surface contact areas with massive kiln furniture.

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13. Are ADVANCER® shelves safe to use in electric kilns?

Yes. Although some forms of silicon carbide are known to conduct electricity, ADVANCER® is a relatively poor conductor of electricity due to the oxide glass layer present on all ADVANCER shelves. Be sure to select the correct size shelf for your kiln and make sure your kiln is in good repair with no elements hanging out of the grooves where they can sprawl out onto shelves. Finally use common sense and never reach into an energized electric kiln!

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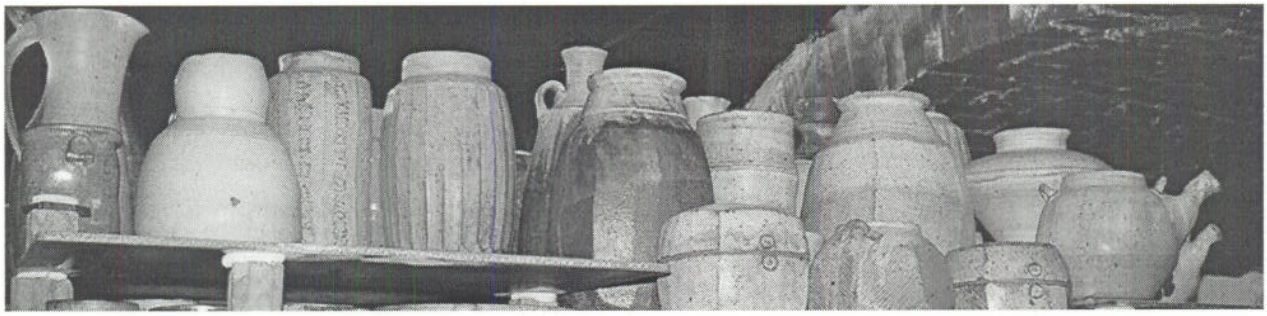

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