

FREE WALL MOVEMENT . . . MAXIMUM SUPPORT WITH A. P. GREEN ANCHORAGE SYSTEMS

The A. P. Green Company offers the most versatile line of anchorage systems for monolithic wall and arch construction on the market today. Many years experience in plastic and castable construction has led to the development of the best possible anchor and suspension accessories for application to specific installations. These easy-to-use systems provide for maximum expansion and contraction . . . plus giving more than adequate support for the refractories.

A. P. Green anchorage systems are not experimental. They have been developed over a period of years to cope with any monolithic installation situation. The Green line of anchors includes refractory anchors in all qualities . . . super duty, 70%, and 80% alumina plus both metal and high temperature alloy types.

Green anchor versatility covers suspended arches, vertical walls, air cooled walls, sectionally supported walls, and all other applications requiring a top quality anchor as a means of holding plastic or castable refractories tightly against the outer wall without allowing it to pull away or bulge, and at the same time permit the lining to move independently.

A selection of A. P. Green quality anchors and accessories are illustrated below and on the following page.

A. P. GREEN REFRACTORY ANCHORS

All A. P. Green refractory anchors are specifically designed for monolithic flat suspended arches. They are made by the dry press process. Each type is designed for use with a variety of suspension accessories to fit every situation.

- All four sides are tapered and ribbed for maximum holding power.
- The ribs give maximum bearing surface and tend to break up any lamination lines which might develop.
- No sharp corners or edges that tend to crack the plastic or castable.
- Available in super duty, 70% and 80% alumina qualities to suit any service condition.



APG-21-M
with
APG-19
Top
Hanger

U.S. Patent No. 3,161,162.

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A. P. GREEN

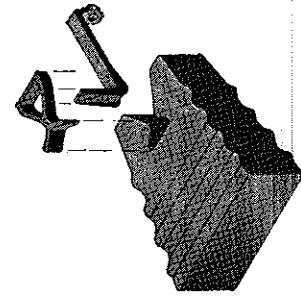
FURNACE
ACCESSORIES

and

INDUSTRIAL
INSULATIONS

REFRACTORY ANCHORS

FOR PLASTIC CONSTRUCTION



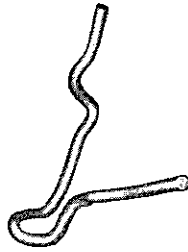
A. P. GREEN refractory anchors with link clip attachment have more flexibility than any other anchors now in use, combining the principle of flared refractory anchorage with metal clip attachment. Corrugations on all 4 sides increase the anchorage — the link clip provides ample flexibility in all directions. The careful design of the slot results in exceptional strength. Available in various lengths from 9" to 20".

VS AND SS ROD TYPE ALLOY ANCHORS

FOR CASTABLE CONSTRUCTION

Two series of rod alloy anchors have been designed specifically by A. P. Green to facilitate the most effective method of anchoring castable walls and arches.

The VS series anchors are Type 304 alloy with a temperature limit of 1700° F. and the SS series of rod Type 310 alloy with a temperature limit of 1900° F.



- Salient features of the VS and SS series of rod type alloy anchors are:
- (1) One piece, machined formed — available in ten sizes for anchoring linings from 2½" to 15" thick.
 - (2) Positive holding power — permitting greater working loads without slippage.
 - (3) Cracking of the castable is minimized. No sharp corners or edges to set up stresses or planes of weakness.
 - (4) Resistant to corrosive atmosphere.
 - (5) Easily attached to steel casing or brickwork.
- VS and SS anchors may be installed quickly either by bolting or welding to the casing or shell of the furnace.

INSFIBER

Line of Ceramic Fiber Insulations

The Green Company offers a complete line of ceramic fiber insulations in the form of wool, blanket, felt, rope, and paper. INSFIBER products are recommended for continuous service to 2300° F. and, under certain conditions, can be used at higher temperatures. Regardless of its form, INSFIBER products contain a multitude of outstanding features.

- **Light Weight • High Temperature Stability • Low Thermal Conductivity • Low Heat Storage • Easy to Wrap, Form, Cut • Resilience**
- **Resistance to Thermal Shock • Good Sound Absorption • High Heat Reflectance • Excellent Corrosion Resistance**

INSFIBER products exhibit excellent resistance to most corrosive agents. Hydrofluoric and phosphoric acids and concentrated alkalis are exceptions. INSFIBER products also resist oxidation and reduction. If they become wet from water, steam, or oil, their thermal and physical properties are restored upon drying. No water of combination is present.

INSWOOL — a high temperature, high purity, alumina-silica bulk ceramic fiber insulation. It comes in a light-weight, ready-to-pack form which is clean, dry, non-irritating. It is easily packed, fitted, and formed. Available in 10-lb. cartons and 25-lb. bags.

INSBLANKET — a light weight, flexible batting made from bulk ceramic fibers. The fibers interlock to form a strong, resilient insulation which contains no binders and is completely inorganic. The outstanding insulating properties of INSBLANKET enable it to be used in thinner thicknesses or lower densities, resulting in direct cost savings. Stocked in ½" and 1" thick rolls, 24" wide. The ½" roll is 25 feet long, the 1" roll is 12½ feet long. Weighs 6-lbs./cu. ft.

INSFELT — a flexible batting material made from bulk ceramic fibers and a small quantity of non-flaming organic binder to provide superior handling strength for easy application in those applications where organic burn-out at low temperatures is acceptable. INSFELT weighs 6-lbs./cu. ft. A standard 24" wide roll is available ½" thick-25 feet long or 1" thick 12½ feet long.

INSPAPER — alumina-silica fibers formed into a flexible sheet that has a highly uniform structure which assures equal thermal conductivity throughout. Its clean, smooth surface makes it ideal as a gasket, seal, and spacer material. Contains 5% organic binder to provide increased handling strength. Comes 24" wide, ⅛" thick. 10-lb. roll-50 linear feet, 25-lb. roll - 125 linear feet.

INSROPE — a twisted three-ply rope made from long staple alumina-silica fibers. It contains 15-20% organic carrier to facilitate the carding process. Ideal for expansion joint packing, door seals, skid rail insulation, and many other applications. 25-lbs./cu. ft. Available in ½" and 1" diameters.

BLOCK INSULATION

1900° F. Mineral Wool Block

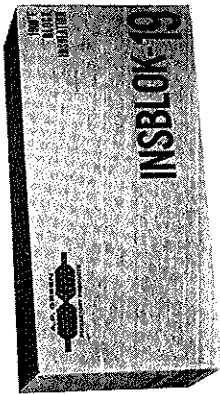
A. P. Green Block Insulation is a lightweight mineral wool block that retains its stability and high thermal efficiency up to 1900° F. It is honeycombed with countless dead air cells for maximum insulating value — yet its interlocking fibrous structure produces a tough, resilient block. Comes in 12" x 36" blocks — 1", 1½", 2", 2½", 3", 3½", and 4" thick.

MAXIMUM THERMAL EFFICIENCY — Low thermal conductivity insures maximum insulating efficiency. Cuts heat losses and speeds heating up time. Provides better heat distribution and closer temperature control.

HIGH TEMPERATURE RESISTANCE — Withstands temperatures up to 1900° F. without loss of its high insulating value.

EASY TO HANDLE, CUT, AND FIT — Its light weight facilitates handling — simplifies reinforcing. Can be applied to flat or curved surfaces, and can be cut easily with a knife.

MOISTURE RESISTANT — Contains a water proofing agent which resists absorption of water from castable materials poured against it.



INSBLOK-12

1200° F. Mineral Wool Block

A lightweight mineral wool block for use at temperatures to 1200° F. Available in 24" x 36" blocks — 1", 1½", 2", 2½", 3", 3½", and 4" thick.

Features include: LOW THERMAL CONDUCTIVITY; MOISTURE RESISTANT; LIGHT WEIGHT; EASILY CUT AND FIT TO CURVED OR FLAT SURFACES.

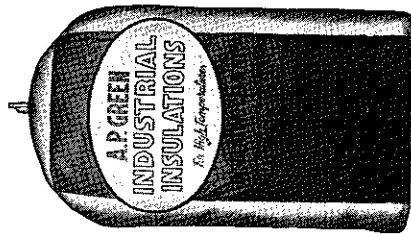
INSULATING CEMENT

A. P. GREEN INSULATING CEMENT is an 1800° F. mineral wool plastic insulation. Its light weight and low thermal conductivity make it highly efficient in reducing heat losses.

This all purpose insulation can be used on almost any size or shape of furnace or heating equipment. Easily applied with a trowel. Its excellent workability and adhesive properties insure a workmanlike job.

OFFERS 4 ADVANTAGES:

- 1. Greater Coverage** — means lower cost per square foot. Only 2 lb. of INSULATING CEMENT required per sq. ft., one inch thick.
- 2. Adhesion** — Sticks to any clean surface — hot or cold — and forms a strong bond.
- 3. Thermal Efficiency** — "K" factor of .74 at 500° F. mean temperature.
- 4. Non-Corrosive** — Contains rust inhibitor. Packaged in 25 and 50 pound bags.



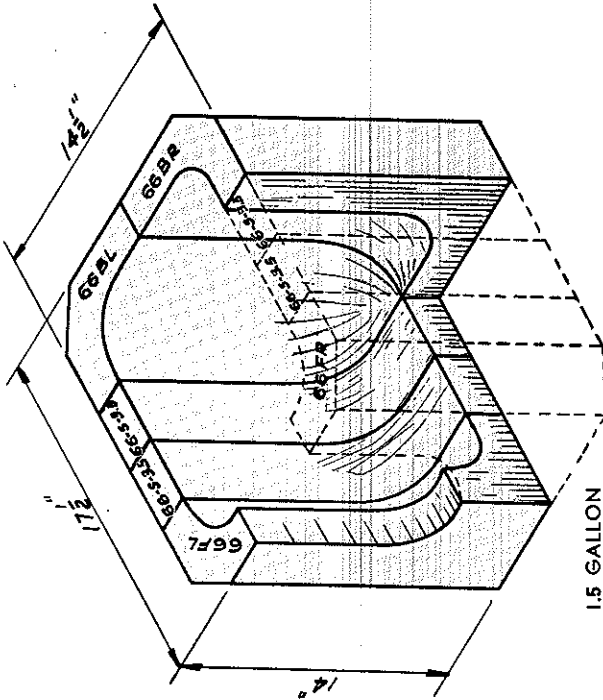
LOOSE WOOL INSULATION

1200° F. Loose Fill

A mineral wool for use as a high temperature loose fill insulation up to 1200° F. Its long, stringy fibers make it an extremely efficient insulator — will not settle down or lose its insulating value over a long period of time. Moisture resistant — chemically inert. About 15 pounds required per cubic foot.



STREAMLINED CHAMBERS



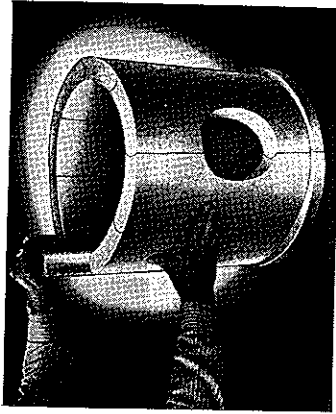
1.5 GALLON

Chamber Capacity (Gallons Per Hour)	Pieces Required for Chamber Without Top Extension										Additional Pieces for Optional Top Extension			
	66FR	66FL	66BR	66BL	66S-3.5	66S-4.5	66FC	66BL	66BR	66S-3.5	66S-4.5	66-6.5B	66-11-B	No. 2 Split
1.0	1	1	1	1	2	2	1	1	1	1	1	1	1	1
1.35	1	1	1	1	4	4	1	1	1	1	1	1	1	1
1.5	1	1	1	1	4	4	1	1	1	1	1	1	1	1
2.0	1	1	1	1	4	4	1	1	1	1	1	1	1	1

Chamber Capacity (Gallons Per Hour)	Pieces Required for Chamber Without Top Extension									
	66R	66L	66BR	66BL	66FC	66S-3.5	66S-4.5	66-6.5B	66-11-B	No. 2 Split
2.5	1	1	1	1	1	4	5	1	1	1
3.0	1	1	1	1	1	4	3	1	1	1
3.5	1	1	1	1	1	4	7	1	1	1

Chamber Capacity (Gallons Per Hour)	Additional Pieces Required for Optional Top Extension									
	66CR	66CL	66CC	66-6.5B	66-11-B	No. 2 Split				
2.5	1	1	1	1	1	1				
3.0	1	1	1	1	1	1				
3.5	1	1	1	1	1	1				

PERFECTO CHAMBERS



The PERFECTO Combustion Chamber, because of its flexibility, is the practical solution to many oil burner installation problems. A small number of easily fitted tile can be adapted to almost any type or size of domestic furnace or boiler. Round, oval, or pear-shaped chambers can be formed with a few basic shapes. The side tile are 16" high and 2" thick. Made from the finest Missouri

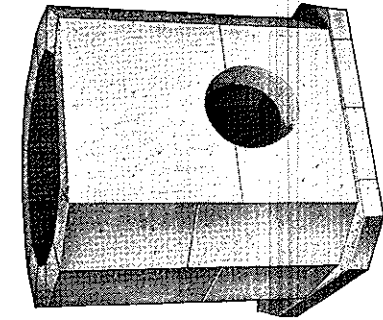
fire clays, the PERFECTO Chamber will give many years of service. PERFECTO shapes can be furnished as individual pieces or packed in sets. A few of the various sizes of round and oval shaped chambers are shown below:

Chamber Number	Inside Dim.	Floor Area Sq. In.	Est. Cap. G.P.H.	NO. TILE PER CHAMBER				
				CC-1	CC-2	CC-3	CC-4	CC-5
1200	12" Dia.	113	1.2	1	1	5		
1300	13" Dia.	133	1.5	1	1	5	1	
1400	14" Dia.	154	1.7	1	1	6	1	
1500	15" Dia.	176	2.0	1	1	6	1	
1600	16" Dia.	201	2.2	1	1	7	1	
1700	17" Dia.	227	2.5	1	1	7	1	
1800	18" Dia.	254	2.8	1	1	8	1	
1450	12"x15 1/2"	160	1.8	1	1	2	4	4
1550	12"x19"	202	2.2	1	1	2	4	6
1750	12"x21 1/2"	244	2.7	1	1	2	4	8
1250	10"x14"	115	1.2	1	1	2	4	2
1450	10"x17 1/2"	150	1.7	1	1	2	4	4
1550	10"x21"	185	2.1	1	1	2	4	6



Four CC-B tile form a 19" diameter base which is large enough for most installations. A larger base is formed by the addition of standard 9"x4 1/2"x1 1/4" firebrick. If a monolithic base is preferred, it can be poured with A. P. Green KAST-SET . . . available in 25 pound bags.

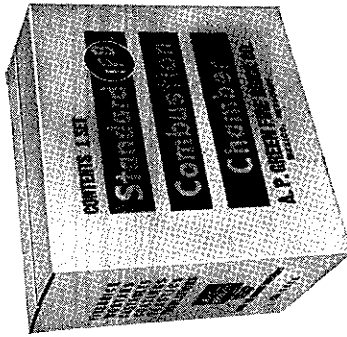
STANDARD I.F.B.
(Insulating Firebrick) **CHAMBERS**



The STANDARD I.F.B. Combustion Chamber was designed to meet the exacting requirements of small capacity domestic oil burners operating with short on-off cycles. Its light weight and excellent radiant properties mean faster heating. A minimum amount of fuel is required to bring the chamber to high heat output. Its excellent insulating qualities result in high surface temperatures — an aid to combustion, greater efficiency, and quieter operation. Constructed entirely of A. P. Green G-23 2300° F. Insulating Firebrick for long life and maximum performance.

Available in five standard, individually packaged models to meet your particular oil burner capacity requirements.

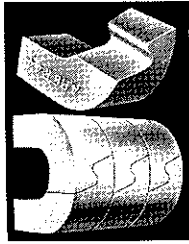
Chamber Number	Capacity Gal. Per Hr.	Inside Diameter	Outside Diameter	Inside Floor Area Sq. In.	Chamber Volume Cu. In.
75	0.75 to 1.00	8½"	12¾"	56	670
100	1.00 to 1.25	12"	17"	97	1550
135	1.35 to 1.50	13½"	18½"	128	2050
150	1.50 to 2.00	15"	20"	160	2560
200	2.00 to 2.40	16¾"	21¼"	194	3100



PACKAGING

The STANDARD I.F.B. Chamber is packaged in a special reinforced carton designed for maximum protection of the individual brick during shipment. A 5-pound can of SAIRSET High Temperature Bonding Mortar is included in each package.

PERFECTO BLOW-OFF PROTECTOR TILE



PERFECTO Blow-Off Protector Tile give protection from flame action for blow-off pipes on H.R.T. boilers. They eliminate bulky piers of firebrick masonry. Two standard interlocking shapes comprise a set. Three sets are required per lineal foot.

Their use is approved by insurance companies. They offer three distinct advantages over brick piers: less obstruction to flow of hot gases — easy to remove and replace for boiler inspection since no mortar is used — and lower cost.

PERFECTO REAR ARCH BLOCKS

A. P. GREEN PERFECTO Rear Arch Blocks are used to form gas-tight rear arches for H.R.T. boilers. Because of their perfect fit, which eliminates gas leakage, Rear Arch Blocks give more effective combustion control.

The entire weight of the arch is suspended from standard 3 or 4 inch I-beams that rest on the top of the outside wall of the installation. Cast iron clips are furnished with the blocks. These are strung on the I-beam and the blocks suspended from the clips. Easy to install, easy to replace and highly efficient.

PERFECTO

AIR COOLED OBSERVATION PORT

The Perfecto Air Cooled Observation Port is designed to give maximum furnace observation and to provide greater convenience in observing internal furnace conditions during operation. Recommended for use in all types of industrial furnaces, generators, ovens, kilns, oil stills and for all types of boiler furnaces.

OIL BURNER BAFFLE BRICK

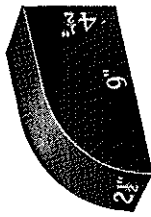
The A. P. Green Baffle Brick can be quickly and easily installed with practically all types and sizes of domestic oil burner combustion chambers. Since there are no metal parts to wear out, it will withstand severe firing conditions. Individually packaged as a complete unit. Approximate shipping weight 31 pounds for 13" diameter baffle and 24 pounds for 10" diameter baffle.

PERFECTO SPRAY GUN

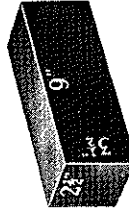
The PERFECTO Spray Gun is a pressure gun for applying protective coatings to refractory surfaces. A real time saver, it permits better "spray control"—no dripping, no slopping and practically no waste. The PERFECTO Spray Gun has a convenient handgrip for directional control. The nozzle is made of hardened steel to resist wear. Air pressure of at least 45 lbs. per sq. in. and preferably of 55 lbs. per sq. in. delivering 55 cu. ft. of air per minute is required for satisfactory operation.

9" x 4 1/2" x 2 1/2" SERIES—IN STOCK . . .

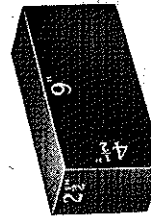
Illustrated here are the standard shapes of 9-inch firebrick shapes which are specifically designed to be used in connection with the Standard 9-inch firebrick, size 9 x 4 1/2 x 2 1/2 inches. Sometimes the Standard 9-inch firebrick is called "Square" or "Straight". We recommend the use of these 9-inch Shapes where needed, rather than cutting a Standard 9-inch Straight. Cutting is expensive.



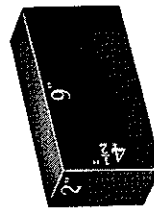
JAMB BRICK
9" x 4 1/2" x 2 1/2"



SMALL 9" BRICK
9" x 3 1/2" x 2 1/2"



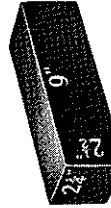
9" STRAIGHT
9" x 4 1/2" x 2 1/2"



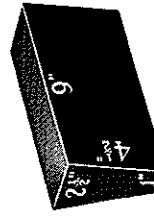
No. 2 SPLIT
9" x 4 1/2" x 2"



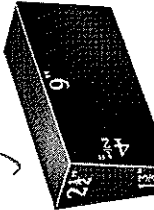
No. 1 SPLIT
9" x 4 1/2" x 1 1/4"



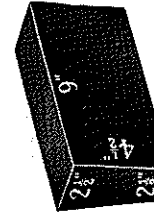
SOAP
9" x 2 1/2" x 2 1/4"



No. 3 ARCH
9" x 4 1/2" x (2 1/2" - 1")



No. 2 ARCH
9" x 4 1/2" x (2 1/2" - 1 3/4")



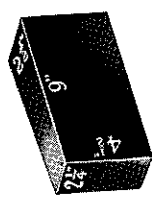
No. 1 ARCH
9" x 4 1/2" x (2 1/2" - 2 1/8")

A. P. GREEN

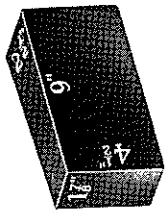
FIREBRICK SHAPES

STANDARD AND SPECIAL

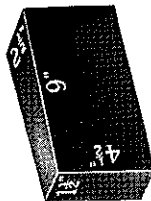
9" x 4 1/2" x 2 1/2" SERIES . . .



No. 1-X WEDGE
9" x 4 1/2" x 2 1/2" - 2 1/4"



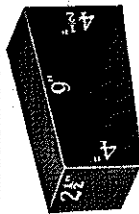
No. 1 WEDGE
9" x 4 1/2" x 2 1/2" - 1 7/8"



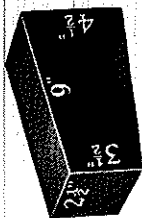
No. 2 WEDGE
9" x 4 1/2" x 2 1/2" - 1 1/2"



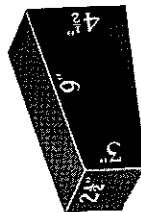
9" NECK
9" x 4 1/2" x 2 1/2" - 5/8"



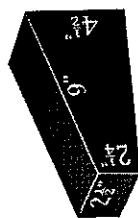
No. 1 KEY
9" x 4 1/2" - 4" x 2 1/2"



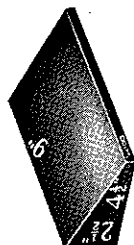
No. 2 KEY
9" x 4 1/2" - 3 1/2" x 2 1/2"



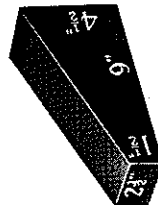
No. 3 KEY
9" x 4 1/2" - 3" x 2 1/2"



No. 4 KEY
9" x 4 1/2" - 2 1/4" x 2 1/2"



FEATHER EDGE
9" x 4 1/2" x 2 1/2" - 1/8"



EDGE SKEW
9" x 4 1/2" - 1 1/2" x 2 1/2"

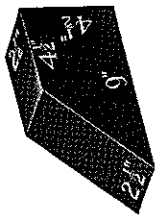


SIDE SKEW
9" x 4 1/2" - 2 1/4" x 2 1/2"
Also 60° SIDE SKEW
9" x 4 1/2" - 3 1/8" x 2 1/2"

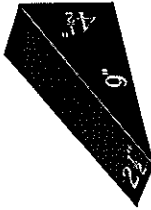


END SKEW
9" - 6 3/4" x 4 1/2" x 2 1/2"
Also 60° END SKEW
9" - 7 9/16" x 4 1/2" x 2 1/2"

9" x 4 1/2" x 2 1/2" SERIES—MODIFIED . . .



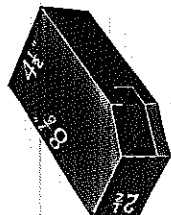
ANGLE "A" SKEW
9" - 4 1/2" x 4 1/2" x 2 1/2"



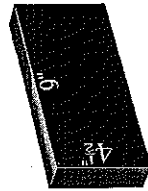
ANGLE "B" SKEW
9" - 4 1/2" x 4 1/2" x 2 1/2"



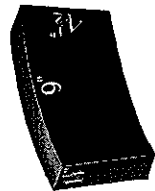
ANGLE "C" SKEW
9" - 4 1/2" x 4 1/2" x 2 1/2"



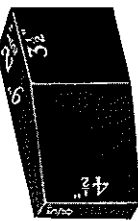
770 ANCHOR
8 7/8" x 4 1/2" x 2 1/2"



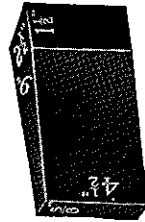
THIN SPLIT
9" x 4 1/2" x 1 1/2"
9" x 4 1/2" x 3/4"
9" x 4 1/2" x 7/8"
9" x 4 1/2" x 1"



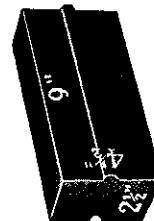
CIRCLE SPLIT
9" x 4 1/2" x 1 1/4"
Available in all diameters
shown in CIRCLE BRICK
table on Page 117.



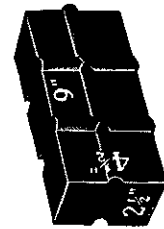
No. 1 NECK
9" - 3 1/2" x 4 1/2" x 2 1/2" - 3/8"



No. 2 NECK
9" - 1 1/2" x 4 1/2" x 2 1/2" - 5/8"



SINGLE TONGUE
AND GROOVE
9" x 4 1/2" x 2 1/2"



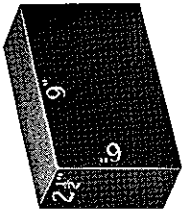
DOUBLE TONGUE
AND GROOVE
9" x 4 1/2" x 2 1/2"

9" x 4 1/2" x 3" SERIES . . .

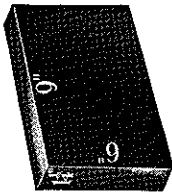
Listed below are the standard shapes of the 9" x 4 1/2" x 3" series which are available on order. (See section on 9" x 4 1/2" x 2 1/2" series for illustrations of the various shapes.)

- 9" Straight — 3" Series 9" x 4 1/2" x 3"
- Small 9" Brick — 3" Series 9" x 3 1/2" x 3"
- 9" Soap — 3" Series 9" x 2 1/4" x 3"
- 9" Split Brick — 3" Series 9" x 4 1/2" x 1 1/2"
- 9" No. 1 Key — 3" Series 9" x (4 1/8" - 4") x 3"
- 9" No. 2 Key — 3" Series 9" x (4 1/8" - 3 1/2") x 3"
- 9" No. 3 Key — 3" Series 9" x (4 1/8" - 3") x 3"
- 9" No. 4 Key — 3" Series 9" x (4 1/8" - 2 1/4") x 3"
- 9" No. 1 Arch — 3" Series 9" x 4 1/2" x (3" - 2 3/4")
- 9" No. 2 Arch — 3" Series 9" x 4 1/2" x (3" - 2 1/2")
- 9" No. 3 Arch — 3" Series 9" x 4 1/2" x (3" - 2")
- 9" No. 4 Arch — 3" Series 9" x 4 1/2" x (3" - 1")
- 9" No. 1 Wedge — 3" Series 9" x 4 1/2" x (3" - 2 3/4")
- 9" No. 2 Wedge — 3" Series 9" x 4 1/2" x (3" - 2 1/2")
- 9" No. 3 Wedge — 3" Series 9" x 4 1/2" x (3" - 2")
- 9" Featheredge — 3" Series 9" x 4 1/2" x (3" - 1 1/8")
- 9" Neck Brick — 3" Series 9" x 4 1/2" x (3" - 5/8")
- 9" Edge Skew — 3" Series 9" x (4 1/2" - 1 1/2") x 3"
- 9" Jamh — 3" Series 9" x 4 1/2" x 3"
- 9" — 60° End Skew — 3" Series (9" - 7 1/4") x 4 1/2" x 3"
- 9" — 48° End Skew — 3" Series (9" - 6 5/8") x 4 1/2" x 3"
- 9" — 60° Side Skew — 3" Series 9" x (4 1/2" - 2 3/4") x 3"
- 9" — 48° Side Skew — 3" Series 9" x (4 1/2" - 1 3/8") x 3"
- Large 9" Straight — 3" Series 9" x 6 3/4" x 3"
- Large 9" No. 1 Wedge — 3" Series 9" x 6 3/4" x (3" - 2 3/4")
- Large 9" No. 2 Wedge — 3" Series 9" x 6 3/4" x (3" - 2 1/2")
- Large 9" No. 3 Wedge — 3" Series 9" x 6 3/4" x (3" - 2")

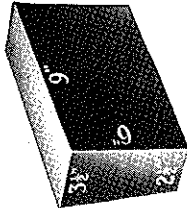
9" x 6" SHAPES —



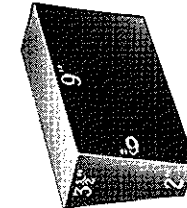
STRAIGHT
9" x 6" x 2 1/4"
Also
9" x 6" x 3"
9" x 6" x 2"



SPLIT
9" x 6" x 1 1/4"



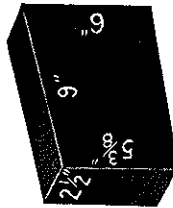
No. 1 ARCH
9" x 6" x (3 1/2" - 2 1/4")



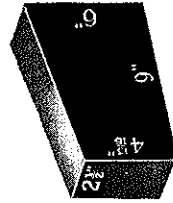
No. 2 ARCH
9" x 6" x (3 1/2" - 2")

Also Available In:
9" x 6" No. 1 ARCH 9" x 6" x (3" - 2 3/4")
9" x 6" No. 2 ARCH 9" x 6" x (3" - 2 1/2")
9" x 6" No. 3 ARCH 9" x 6" x (3" - 2")

See tables on 9" x 6" x 3 1/2" Arch Brick Pages 124 and 125.



No. 1 KEY
9" x (6" - 5 3/8" - 1 x 2 1/2")
Also 9" x (6" - 5 3/8" - 1) x 3"

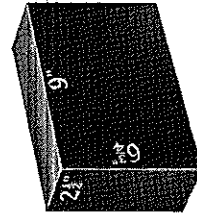


No. 2 KEY
9" x (6" - 4 13/16" - 1 x 2 1/2")
Also 9" x (6" - 4 13/16" - 1) x 3"

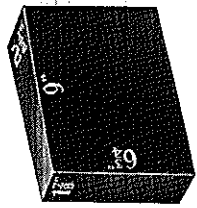
See tables on 9" x 6" Keys on Pages 138, 139, 140.

LARGE 9" SERIES (9"x6 3/4")—

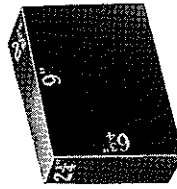
From the standpoint of good firebrick construction, this series (9" x 6 3/4") is especially valuable. As is readily seen, this series is designed to work in connection with the 9" Straight Brick. For example, the large 9" Straight is the same as a full-size 9" brick and a Soap combined. The Wedges have the same taper as the corresponding Wedges in the 9" Shapes. This makes these brick very desirable for breaking joints.



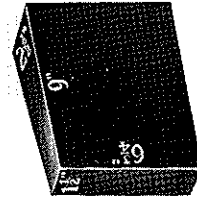
LARGE 9" STRAIGHT
9"x6 3/4"x2 1/2"
ALSO 9"x6 3/4"x3"
9"x6 3/4"x2"
9"x6 3/4"x1 1/4"



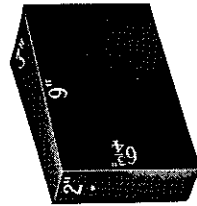
LARGE 9" No. 1 WEDGE
9"x6 3/4"x(2 1/2"-1-7/8")



LARGE 9" No. 1-X WEDGE
9"x6 3/4"x(2 1/2"x2 1/4")



LARGE 9" No. 2 WEDGE
9"x6 3/4"x(2 1/2"-1 1/2")



LARGE 9" No. 3 WEDGE
9"x6 3/4"x(3"-2")

9"x9" SHAPES

- 9"x9" STRAIGHT 9"x9"x2"
- 9"x9" STRAIGHT 9"x9"x2 1/2"
- 9"x9" STRAIGHT 9"x9"x3"
- 9"x9" SPLIT 9"x9"x1 1/4"
- 9"x9" ARCH OR WEDGE 9"x9"x(2 1/2"x1 1/2")
- 9"x9" ARCH OR WEDGE 9"x9"x(2 1/2"x1 1/2")
- 9"x9" ARCH OR WEDGE 9"x9"x(2 1/2"x1 1/2")
- 9"x9" ARCH OR WEDGE 9"x9"x(3"-2 1/2")

12"x6" SHAPES

- 12"x6" STRAIGHT 12"x6"x2 1/2"
- 12"x6" STRAIGHT 12"x6"x2 1/4"
- 12"x6" STRAIGHT 12"x6"x3"
- 12"x6" No. 1 ARCH 12"x6"x(3"-2 3/4")
- 12"x6" No. 2 ARCH 12"x6"x(3"-2 1/2")
- 12"x6" No. 3 ARCH 12"x6"x(3"-2")
- 12"x6" No. 1 WEDGE 12"x6"x(3"-2 3/4")
- 12"x6" No. 2 WEDGE 12"x6"x(3"-2 1/2")
- 12"x6" No. 3 WEDGE 12"x6"x(3"-2")
- 12"x6" No. 1 KEY 12"x6"x(6"-5 1/2")x3"
- 12"x6" No. 2 KEY 12"x6"x(6"-5")x3"
- 12"x6" No. 3 KEY 12"x6"x(6"-4")x3"

13 1/2" SERIES

- 13 1/2" STRAIGHT 13 1/2"x6"x2 1/2"
- 13 1/2" STRAIGHT 13 1/2"x6"x3"
- 13 1/2" No. 1 WEDGE 13 1/2"x6"x(3"-2 3/4")
- 13 1/2" No. 2 WEDGE 13 1/2"x6"x(3"-2 1/2")
- 13 1/2" No. 3 WEDGE 13 1/2"x6"x(3"-2")

NOTE — Also in stock 13 1/2"x4 1/2"x2 1/2"; 13 1/2"x4 1/2"x3"; 13 1/2"x9"x2 1/2" and 13 1/2"x9"x3". In ordering 13 1/2" series brick, always give complete dimensions. See tables on Pages 153, 154, 157 and 158.

SQUARE EDGE SHAPES

Size	Size	Size
1"x12"x12"	2 1/2"x6"x18"	3"x6"x24"
1 1/4"x9"x9"	2 1/2"x9"x9"	3"x9"x9"
1 1/2"x6"x12"	2 1/2"x9"x13 1/2"	3"x9"x13 1/2"
1 1/2"x12"x12"	2 1/2"x9"x18"	3"x9"x18"
2"x6"x12"	2 1/2"x12"x12"	3"x9"x24"
2"x9"x9"	2 1/2"x12"x15"	3"x12"x12"
2"x12"x12"	2 1/2"x12"x18"	3"x12"x15"
2"x12"x15"	2 1/2"x12"x20"	3"x12"x18"
2"x12"x18"	2 1/2"x12"x24"	3"x12"x20"
2"x12"x24"	2 1/2"x12"x30"	3"x12"x24"
2"x15"x18"	2 1/2"x15"x18"	3"x12"x30"
2"x15"x24"	2 1/2"x15"x24"	3"x15"x18"
2"x18"x24"	2 1/2"x18"x24"	3"x15"x24"
2 1/2"x4 1/2"x12"	3"x4 1/2"x13 1/2"	3"x18"x18"
2 1/2"x4 1/2"x18"	3"x6"x9"	3"x18"x24"
2 1/2"x6"x12"	3"x6"x12"	3"x18"x30"
2 1/2"x6"x13"	3"x6"x13 1/2"	4"x6"x24"
2 1/2"x6"x13 1/2"	3"x6"x18"	4"x9"x18"
		4"x9"x20"
		4"x9"x24"
		4 1/2"x9"x18"
		5"x6"x18"
		5"x9"x18"
		5"x9"x24"
		5"x9"x30"
		5"x12"x30"
		5"x13 1/2"x24"

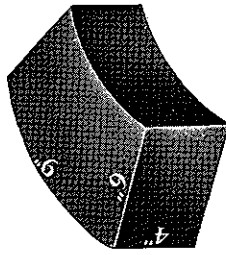
SHIPLAP SHAPES

Size	Size
2" x 6"x12" (lapped 2 sides)	2" x 6"x12" (lapped 4 sides)
2" x 12"x18" (lapped 2 sides)	2" x 12"x18" (lapped 4 sides)
2 1/2"x12"x12" (lapped 2 sides)	2 1/2"x12"x12" (lapped 4 sides)
2 1/2"x12"x15" (lapped 2 sides)	2 1/2"x12"x15" (lapped 4 sides)
2 1/2"x12"x18" (lapped 2 sides)	2 1/2"x12"x18" (lapped 4 sides)

Other shiplap tile, and tongue and groove tile, made to order. When ordering give the number of sides to be lapped. When two sides only are lapped, specify which sides.

CUPOLA BLOCKS

6" LINING (9" —) x 6" x 4"



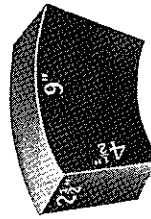
STANDARD BLOCKS

No. of Block	Dimensions	DIAMETER		No. Blocks to Circle
		Inside	Outside	
6-30	(9"-)x6"x4"	30"	42"	15
6-36	(9"-)x6"x4"	36"	48"	17
6-42	(9"-)x6"x4"	42"	54"	19
6-48	(9"-)x6"x4"	48"	60"	21
6-54	(9"-)x6"x4"	54"	66"	23
6-60	(9"-)x6"x4"	60"	72"	26
6-66	(9"-)x6"x4"	66"	78"	28
6-72	(9"-)x6"x4"	72"	84"	30
6-78	(9"-)x6"x4"	78"	90"	32
6-84	(9"-)x6"x4"	84"	96"	34

9"x9"x4" blocks also available. See tables on Page 124 (9"x6"x4" blocks) and Page 141 and 142 (9"x9"x4" blocks).

STANDARD CIRCLE BRICK

4 1/2" LINING (9" —) x 4 1/2" x 2 1/2"

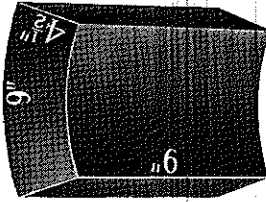


Name of Brick	Dimensions	DIAMETER		No. Brick to Circle
		Inside	Outside	
24" Circle	(9"-)x4 1/2"x2 1/2"	24"	33"	12
36" Circle	(9"-)x4 1/2"x2 1/2"	36"	45"	16
48" Circle	(9"-)x4 1/2"x2 1/2"	48"	57"	20
60" Circle	(9"-)x4 1/2"x2 1/2"	60"	69"	24
72" Circle	(9"-)x4 1/2"x2 1/2"	72"	81"	29
84" Circle	(9"-)x4 1/2"x2 1/2"	84"	93"	33
96" Circle	(9"-)x4 1/2"x2 1/2"	96"	105"	37
108" Circle	(9"-)x4 1/2"x2 1/2"	108"	117"	41
120" Circle	(9"-)x4 1/2"x2 1/2"	120"	129"	45

See Page 117 for table of 9" Circle Brick.
Circle Splits 9"x4 1/2"x1 1/4" also available in Circle Brick sizes.

CUPOLA (OR CALLIAU) BLOCKS

4 1/2" LINING (9" —) x 4 1/2" x 9"



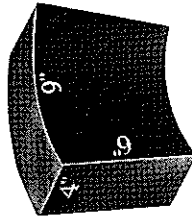
No. of Block	Dimensions	DIAMETER OF LINING		No. Blocks to Circle
		Inside	Outside	
A	(9"-)x4 1/2"x9"	16"	25"	9
1A	(9"-)x4 1/2"x9"	18"	27"	10
B	(9"-)x4 1/2"x9"	21"	30"	11
2B	(9"-)x4 1/2"x9"	24"	33"	12
C	(9"-)x4 1/2"x9"	27"	36"	13
D	(9"-)x4 1/2"x9"	30"	39"	14
2D	(9"-)x4 1/2"x9"	33"	42"	15
3D	(9"-)x4 1/2"x9"	36"	45"	16
E	(9"-)x4 1/2"x9"	40"	49"	18
AE	(9"-)x4 1/2"x9"	42"	51"	18
CE	(9"-)x4 1/2"x9"	47"	56"	20
2E	(9"-)x4 1/2"x9"	48"	57"	20
F	(9"-)x4 1/2"x9"	51"	60"	21
2F	(9"-)x4 1/2"x9"	56"	65"	23
G	(9"-)x4 1/2"x9"	60"	69"	24
H	(9"-)x4 1/2"x9"	73"	82"	29

ROTARY KILN BLOCKS

6" LINING (9" —) x 6" x 4" *

9" LINING (9" —) x 9" x 4" **

4 1/2", 7 1/2", and other lining thicknesses also available



Much of the success of refractory liners in cement and lime kilns is dependent upon the application of the proper refractory to meet varying operating conditions. To meet these conditions A. P. Green Rotary Kiln Liners are made in high heat duty, super duty and 50%, 60% and 70% high alumina qualities. Each is manufactured with the right physical structure and chemical properties necessary to fill a specific need as required in the various zones of rotary kilns.

A. P. Green KRUZITE D (70% Al₂O₃) are ideal for use in conjunction with Green B 80 and Green B 70 Kiln Liners and are especially recommended where operating conditions are severe. High temperature resistant and carefully controlled and tested during manufacture, their chemical composition cause attraction and retention of a protective coating that means long trouble-free service.

The Engineering Department of the A. P. Green Refractories Co. offers its facilities, without obligation to you, in determining the proper refractories to meet your specific operating conditions.

*See table on page 124.

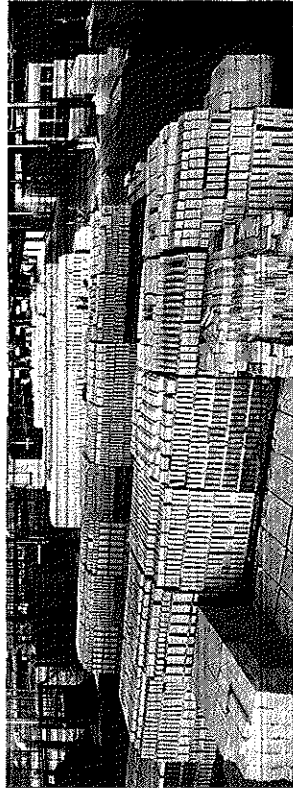
**See table on page 141 and 142.

SPECIAL REFRACTORY SHAPES

We are able to supply special refractory shapes made to blueprint specifications. Many of the more generally used shapes are carried in stock.

Quality and workmanship are of the highest. Production facilities are unsurpassed. The accuracy and uniformity of A. P. Green special shapes are the result of craftsmanship, scientific control and perfected processes and equipment.

The Green Company keeps molds on hand to manufacture thousands of other special refractory shapes. New molds can be made as required.



View of unloading docks at the A. P. Green Refractories Co.
Finished ware ready to be unloaded from kiln cars.

DEVIATIONS IN DIMENSIONS

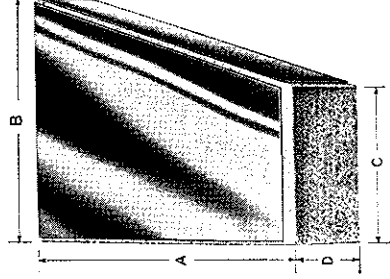
Variations (plus or minus) of 2% allowed from specifications on dimensions of 4 inches or over. On dimensions under 4 inches the allowed variations will be 3%.

OVER-SHIPMENTS ON SPECIAL SHAPES

It is generally necessary to make a few 'overs' in the production of special material. This is done so that the special shapes, necessary to fill your order, may be carefully selected. If the kiln run has been unusually good, there will frequently be some 'overs' of first quality. These will be shipped in quantities, not to exceed 10%, unless specified to the contrary.

Special Shapes

GREENGLAD DOOR JAMB BRICK*

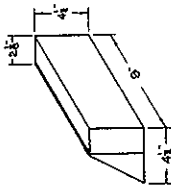


DIMENSION

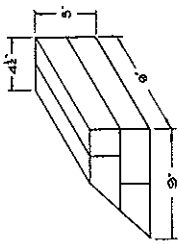
BRAND	A	B	C	D
DJ-1-2½	9"	4½"	1½"	2½"
DJ-1-3	9"	4½"	1½"	3"
DJ-2-2½	9"	6¾"	3¾"	2½"
DJ-2-3	9"	6¾"	3¾"	3"
DJ-3-2½	9"	9"	6"	2½"
DJ-3-3	9"	9"	6"	3"
BS-115-2½	13½"	6¾"	2¾"	2½"
BS-115-3	13½"	6¾"	2¾"	3"
BS-116-2½	13½"	9"	5"	2½"
BS-116-3	13½"	9"	5"	3"
DJ-18-1-2½	18"	6¾"	2¾"	2½"
DJ-18-1-3	18"	6¾"	2¾"	3"
DJ-18-2-2½	18"	9"	5"	2½"
DJ-18-2-3	18"	9"	5"	3"

*Not internally plated—can also be externally plated on one, two or three sides.

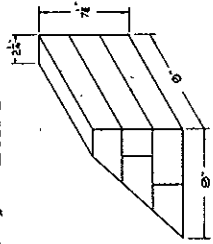
SKEWS BUILT FROM STANDARD 9" BRICK



For 4 1/2" Arch; Rise = 1 1/2" per Foot of Span. One Skew Requires — One Feathered; 9" x 4 1/2" x (2 1/2" x 1/8"), One 2" Brick — 9" x 4 1/2" x 2". See Tables, Pages 164, 165.

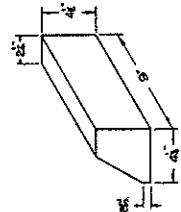


For 4 1/2" Arch; Rise = 2.302" per Foot of Span. One Skew Requires — Two Side Skews 9" x (4 1/2" x 2 1/4") x 2 1/2"; One Straight Brick — 9" x 4 1/2" x 2 1/2"; One Soap Brick — 9" x 2 1/2" x 2 1/4". See Tables, Pages 170, 171.

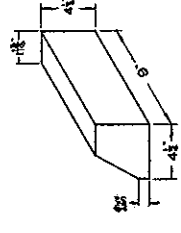


For 9" Arch; Rise = 2.302" per Foot of Span. One Skew Requires — Three Side Skews 9" x (4 1/2" x 2 1/4") x 2 1/2"; One Straight Brick — 9" x 4 1/2" x 2 1/2"; One Soap Brick — 9" x 2 1/2" x 2 1/4". See Tables, Pages 188-191.

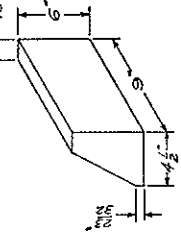
SPECIAL SKEWS



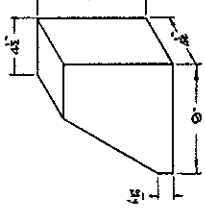
4160-A—For 4 1/2" Arch; Rise = 1.608" per Foot of Span. Central Angle = 60°; and Radius = Span. See Tables, Pages 166, 167.



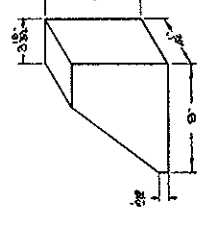
4160-C—For 4 1/2" Arch; Rise = 2" per Foot of Span. See Tables, Pages 168, 169.



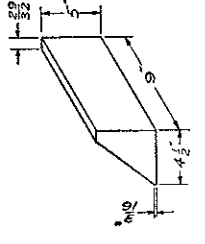
4160-E—For 6" Arch; Rise = 1 1/2" per Foot of Span. See Table, Page 172.



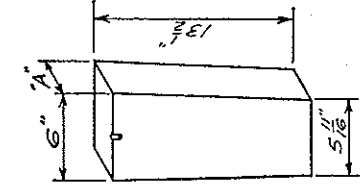
4160-B—For 9" Arch; Rise = 1.608" per Foot of Span. Central Angle = 60°; and Radius = Span. See Tables, Pages 180-183.



4160-D—For 9" Arch; Rise = 2" per Foot of Span. See Tables, Pages 184-187.

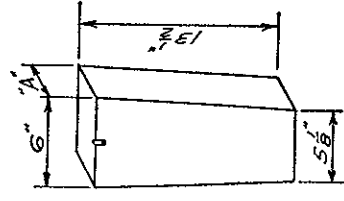


4160-F—For 6" Arch; Rise = 2" per Foot of Span. See Table, Page 174.



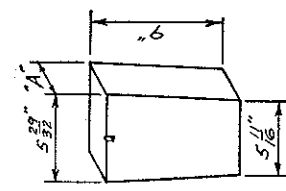
BRAND	Dimen. "A"
A-1K	3"
A-1K-2 1/2	2 1/2"
A-1K-S	1 1/2"

See Table, Page 148.



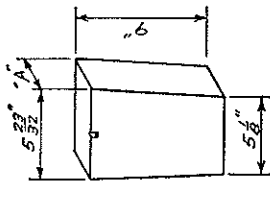
BRAND	Dimen. "A"
A-2K	3"
A-2K-2 1/2	2 1/2"
A-2K-S	1 1/2"

See Table, Page 148.



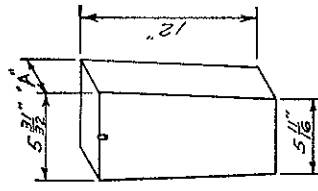
BRAND	Dimen. "A"
B-1K	3"
B-1K-2 1/2	2 1/2"
B-1K-S	1 1/2"

See Table, Page 148.



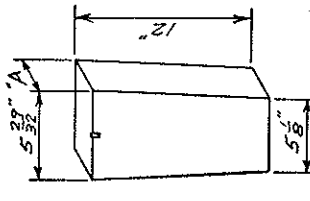
BRAND	Dimen. "A"
B-2K	3"
B-2K-2 1/2	2 1/2"
B-2K-S	1 1/2"

See Table, Page 148.



BRAND	Dimen. "A"
C-1K	3"
C-1K-2 1/2	2 1/2"
C-1K-S	1 1/2"

See Table, Page 148.



BRAND	Dimen. "A"
C-2K	3"
C-2K-2 1/2	2 1/2"
C-2K-S	1 1/2"

See Table, Page 148.

Tables of Brick Combinations for Circles and Arches

The following tables are offered for use in estimating the quantities of brick required for circular linings of various diameters and for the construction of arches. No joint allowance was used in computing these tables. Generally it will be necessary to cut one or two brick to complete each course of the circular lining or arch.

An index for the tables is given below. They are arranged according to the thickness of the lining or arch, starting with 4 1/2 inches and progressively increasing to 18 inches.

The majority of the shapes listed in the tables are stock items in many qualities. Contact your Green representative for definite shipping promises on specific bills of material.

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A. P. GREEN

**FIREBRICK
COMBINATIONS**

**For circular
linings and arches**

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COMPLETE CIRCLES
9" x 4 1/2" x 2 1/2" or 13 1/2" x 4 1/2" x 2 1/2" ARCH BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				STRAIGHT 9 3/4" x 2 1/2"	TOTAL
	No. 3 ARCH 9 3/4" x (2 1/2-1)	No. 2 ARCH 9 3/4" x (2 1/2-1 1/4)	No. 1 ARCH 9 3/4" x (2 1/2-2 1/8)	No. 4 ARCH 9 3/4" x 2 1/2		
0'-6"	19					19
0'-7"	17	4				21
0'-8"	16	6				22
0'-9"	15	8				23
0'-10"	14	10				24
0'-11"	12	14				26
1'-0"	11	16				27
1'-1"	10	18				28
1'-2"	9	20				29
1'-3"	7	24				31
1'-4"	6	26				32
1'-5"	5	28				33
1'-6"	4	30				34
1'-7"	2	34				36
1'-8"	1	36				37
1'-9"		38				38
1'-10"		38	3			39
1'-11"		35	6			41
2'-0"		34	8			42
2'-1"		33	10			43
2'-2"		31	13			44
2'-3"		30	16			46
2'-4"		29	18			47
2'-5"		28	20			48
2'-6"		26	23			49
2'-7"		25	26			51
2'-8"		24	28			52
2'-9"		23	30			53
2'-10"		21	33			54
2'-11"		20	36			56
3'-0"		19	38			57
3'-1"		18	40			58
3'-2"		16	43			59
3'-3"		15	46			61
3'-4"		14	48			62
3'-5"		13	50			63
3'-6"		11	53			64
3'-7"		10	56			66
3'-8"		9	58			67
3'-9"		8	60			68
3'-10"		6	64			70
3'-11"		5	66			71
4'-0"		4	68			72
4'-1"		3	70			73
4'-2"		3	74			75
4'-3"		1	76			76
4'-4"			76		1	77
4'-5"			76		2	78
4'-6"			76		4	80
4'-8"			76		6	82
4'-10"			76		9	85

COMPLETE CIRCLES
9" x 4 1/2" x 2 1/2" or 13 1/2" x 4 1/2" x 2 1/2" ARCH BRICK
4 1/2"-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 ARCH 9x4 1/2" x (2 1/2"-1)	No. 2 ARCH 9x4 1/2" x (2 1/2"-1 3/4)	No. 1 ARCH 9x4 1/2" x (2 1/2"-2 1/8)	STRAIGHT 9x4 1/2" x 2 1/2"	
13'-4"	137	213
13'-6"	76	215
13'-8"	76	218
13'-10"	76	220
14'-0"	76	223
14'-2"	76	225
14'-4"	76	228
14'-6"	76	230
14'-8"	76	233
14'-10"	76	235
15'-0"	76	238
15'-6"	76	245
16'-0"	76	253
16'-6"	76	261
17'-0"	76	268
18'-0"	76	276
18'-6"	76	283
19'-0"	76	291
19'-6"	76	298
20'-0"	76	306
20'-6"	76	313
21'-0"	76	321
21'-6"	76	328
22'-0"	76	336
22'-6"	76	343
23'-0"	76	351
23'-6"	76	359
24'-0"	76	366
24'-6"	76	374
25'-0"	76	381
25'-6"	76	389
26'-0"	76	396
26'-6"	76	404
27'-0"	76	411
27'-6"	76	419
28'-0"	76	426
28'-6"	76	434
29'-0"	76	441
29'-6"	76	449
30'-0"	76	457
30'-6"	76	464
31'-0"	76	472
31'-6"	76	479
32'-0"	76	487
32'-6"	76	494
33'-0"	76	502
33'-6"	76	509
34'-0"	76	517
	448	524

COMPLETE CIRCLES
9" x 4 1/2" x 2 1/2" or 13 1/2" x 4 1/2" x 2 1/2" ARCH BRICK
4 1/2"-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 ARCH 9x4 1/2" x (2 1/2"-1)	No. 2 ARCH 9x4 1/2" x (2 1/2"-1 3/4)	No. 1 ARCH 9x4 1/2" x (2 1/2"-2 1/8)	STRAIGHT 9x4 1/2" x 2 1/2"	
5'-0"	11	87
5'-2"	14	90
5'-4"	16	92
5'-6"	19	95
5'-8"	21	97
5'-10"	24	100
6'-0"	26	102
6'-2"	29	105
6'-4"	31	107
6'-6"	34	110
6'-8"	36	112
6'-10"	39	115
7'-0"	41	117
7'-2"	44	120
7'-4"	46	122
7'-6"	49	125
7'-8"	51	127
7'-10"	54	130
8'-0"	56	132
8'-2"	59	135
8'-4"	61	137
8'-6"	64	140
8'-8"	66	142
8'-10"	69	145
9'-0"	71	147
9'-2"	74	150
9'-4"	76	152
9'-6"	79	155
9'-8"	81	157
9'-10"	84	160
10'-0"	87	163
10'-2"	89	165
10'-4"	92	168
10'-6"	94	170
10'-8"	97	173
10'-10"	99	175
11'-0"	102	178
11'-2"	104	180
11'-4"	107	183
11'-6"	109	185
11'-8"	112	188
11'-10"	114	190
12'-0"	117	193
12'-2"	119	195
12'-4"	122	198
12'-6"	124	200
12'-8"	127	203
12'-10"	129	205
13'-0"	132	208
13'-2"	134	210

COMPLETE CIRCLES
9" x 4 1/2" x 3" or 13 1/2" x 4 1/2" x 3" ARCH BRICK
4 1/2-INCH LINING

COMPLETE CIRCLES
9" x 4 1/2" x 3" or 13 1/2" x 4 1/2" x 3" ARCH BRICK
4 1/2-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 4 ARCH 9x4 1/2 x (3-1)	No. 3 ARCH 9x4 1/2 x (3-2)	No. 2 ARCH 9x4 1/2 x (3-2 1/2)	No. 1 ARCH 9x4 1/2 x (3-2 3/4)	
4'-7"				21	67
4'-8"			46	23	68
4'-9"			45	25	70
4'-10"			44	29	71
4'-11"			42	31	72
5'-0"			41	32	73
5'-1"			39	35	74
5'-2"			38	37	75
5'-3"			38	38	76
5'-4"			36	41	77
5'-5"			35	43	78
5'-6"			34	45	79
5'-7"			33	47	80
5'-8"			32	49	81
5'-9"			32	50	82
5'-10"			30	53	83
5'-11"			29	55	84
6'-0"			28	57	85
6'-1"			27	59	86
6'-2"			26	61	87
6'-3"			25	63	88
6'-4"			24	65	89
6'-5"			23	67	90
6'-6"			21	71	92
6'-7"			20	73	93
6'-8"			19	75	94
6'-9"			18	77	95
6'-10"			17	79	96
6'-11"			16	81	97
7'-0"			15	83	98
7'-1"			14	85	99
7'-2"			13	87	100
7'-3"			12	89	101
7'-4"			11	91	102
7'-5"			10	93	103
7'-6"			9	95	104
7'-7"			8	97	105
7'-8"			7	99	106
7'-9"			6	101	107
7'-10"			5	103	108
7'-11"			4	105	109
8'-0"			3	107	110
8'-1"			2	109	111
8'-2"			1	111	112
8'-3"				113	113
8'-4"				113	114
8'-5"				113	115
8'-6"				113	116
8'-7"				113	117
8'-8"				113	118
8'-9"				113	119
8'-10"				113	120
8'-11"				113	121
9'-0"				113	122
9'-1"				113	123
9'-2"				113	124
9'-3"				113	125
9'-4"				113	126
9'-5"				113	127
9'-6"				113	128
9'-7"				113	129
9'-8"				113	130
9'-9"				113	131
9'-10"				113	132
9'-11"				113	133
10'-0"				113	134
10'-1"				113	135
10'-2"				113	136
10'-3"				113	137
10'-4"				113	138
10'-5"				113	139
10'-6"				113	140

Continued Next Page

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 4 ARCH 9x4 1/2 x (3-1)	No. 3 ARCH 9x4 1/2 x (3-2)	No. 2 ARCH 9x4 1/2 x (3-2 1/2)	No. 1 ARCH 9x4 1/2 x (3-2 3/4)	
0'-4 1/2"	15				15
0'-5"	14				16
0'-6"	13				17
0'-7"	12				18
0'-8"	11				19
0'-9"	10				20
0'-10"	8				21
0'-11"	7				22
1'-0"	6				23
1'-1"	5				24
1'-2"	4				25
1'-3"	2				26
1'-4"	1				27
1'-5"					28
1'-6"			1		29
1'-7"			3		30
1'-8"			5		31
1'-9"			7		32
1'-10"			9		33
1'-11"			11		34
2'-0"			13		35
2'-1"			15		36
2'-2"			17		37
2'-3"			19		38
2'-4"			21		39
2'-5"			23		40
2'-6"			25		41
2'-7"			27		42
2'-8"			29		43
2'-9"			31		44
2'-10"			33		45
2'-11"			36		46
3'-0"			39		48
3'-1"			41		49
3'-2"			43		50
3'-3"			45		51
3'-4"			47		52
3'-5"			49		53
3'-6"			51		54
3'-7"			53		55
3'-8"			55		56
3'-9"			57		57
3'-10"			59		58
3'-11"			55		59
4'-0"			54	2	60
4'-1"			51	4	61
4'-2"			50	6	62
4'-3"			49	9	63
4'-4"			48	11	64
4'-5"			47	13	65
4'-6"			47	15	66
4'-7"			47	17	67
4'-8"			47	19	68
4'-9"			47	21	69
4'-10"			47	23	70
4'-11"			47	25	71
5'-0"			47	27	72
5'-1"			47	29	73
5'-2"			47	31	74
5'-3"			47	33	75
5'-4"			47	35	76
5'-5"			47	37	77
5'-6"			47	39	78
5'-7"			47	41	79
5'-8"			47	43	80
5'-9"			47	45	81
5'-10"			47	47	82
5'-11"			47	49	83
6'-0"			47	51	84
6'-1"			47	53	85
6'-2"			47	55	86
6'-3"			47	57	87
6'-4"			47	59	88
6'-5"			47	61	89
6'-6"			47	63	90
6'-7"			47	65	91
6'-8"			47	67	92
6'-9"			47	69	93
6'-10"			47	71	94
6'-11"			47	73	95
7'-0"			47	75	96
7'-1"			47	77	97
7'-2"			47	79	98
7'-3"			47	81	99
7'-4"			47	83	100
7'-5"			47	85	101
7'-6"			47	87	102
7'-7"			47	89	103
7'-8"			47	91	104
7'-9"			47	93	105
7'-10"			47	95	106
7'-11"			47	97	107
8'-0"			47	99	108
8'-1"			47	101	109
8'-2"			47	103	110
8'-3"			47	105	111
8'-4"			47	107	112
8'-5"			47	109	113
8'-6"			47	111	114
8'-7"			47	113	115
8'-8"			47	115	116
8'-9"			47	117	117
8'-10"			47	119	118
8'-11"			47	121	119
9'-0"			47	123	120
9'-1"			47	125	121
9'-2"			47	127	122
9'-3"			47	129	123
9'-4"			47	131	124
9'-5"			47	133	125
9'-6"			47	135	126
9'-7"			47	137	127
9'-8"			47	139	128
9'-9"			47	141	129
9'-10"			47	143	130
9'-11"			47	145	131
10'-0"			47	147	132
10'-1"			47	149	133
10'-2"			47	151	134
10'-3"			47	153	135
10'-4"			47	155	136
10'-5"			47	157	137
10'-6"			47	159	138

Continued Next Page

COMPLETE CIRCLES 4 1/2-INCH LINING
 9" x 4 1/2" x 2 1/2" or 9" x 4 1/2" x 3" CIRCLE BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE						TOTAL
	9 1/4" x 2 1/2" (24-33)	9 1/4" x 2 1/2" (36-45)	9 1/4" x 2 1/2" (48-57)	9 1/4" x 2 1/2" (60-69)	9 1/4" x 2 1/2" (72-81)	9 1/4" x 2 1/2" (72-81)	
2'-0"	12	7					12
2'-6"	7	16					14
3'-0"		9					16
3'-6"		20	9				18
4'-0"		11	20				20
4'-6"			11	11			22
5'-0"				24			24
5'-6"				13		14	27
6'-0"						29	29

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE						TOTAL
	9 1/4" x 2 1/2" (72-81)	9 1/4" x 2 1/2" (84-93)	9 1/4" x 2 1/2" (96-105)	9 1/4" x 2 1/2" (108-117)	9 1/4" x 2 1/2" (120-129)	9 1/4" x 2 1/2" (120-129)	
6'-6"	15	16					31
7'-0"		33					33
7'-6"		17	18				35
8'-0"			37				37
8'-6"			19	20			39
9'-0"				41			41
9'-6"				21		22	43
10'-0"						45	45

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE						TOTAL
	9 1/4" x 2 1/2" (120-129)	9 1/4" x 2 1/2" (132-141)	9 1/4" x 2 1/2" (144-153)	9 1/4" x 2 1/2" (156-165)	9 1/4" x 2 1/2" (168-177)	9 1/4" x 2 1/2" (168-177)	
10'-6"	23	24					47
11'-0"		50					50
11'-6"		26	26				52
12'-0"			54				54
12'-6"			28	28			56
13'-0"				58			58
13'-6"				30		30	60
14'-0"						62	62

COMPLETE CIRCLES 4 1/2-INCH LINING
 9" x 4 1/2" x 3" or 13 1/2" x 4 1/2" x 3" ARCH BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE					TOTAL
	No. 4 ARCH 9 1/4" x (3-1)	No. 3 ARCH 9 1/4" x (3-2)	No. 2 ARCH 9 1/4" x (3-2 1/2)	No. 1 ARCH 9 1/4" x (3-2 1/2)	STRAIGHT 9 1/4" x 3	
11'-0"				113	35	148
11'-6"				113	41	154
12'-0"				113	48	161
12'-6"				113	54	167
13'-0"				113	60	173
13'-6"				113	66	179
14'-0"				113	73	186
14'-6"				113	79	192
15'-0"				113	85	198
15'-6"				113	92	205
16'-0"				113	98	211
16'-6"				113	104	217
17'-0"				113	110	223
17'-6"				113	117	230
18'-0"				113	123	236
18'-6"				113	129	242
19'-0"				113	136	249
19'-6"				113	142	255
20'-0"				113	148	261
20'-6"				113	154	267
21'-0"				113	161	274
21'-6"				113	167	280
22'-0"				113	173	286
22'-6"				113	180	293
23'-0"				113	186	299
23'-6"				113	192	305
24'-0"				113	198	311
24'-6"				113	205	318
25'-0"				113	211	324
25'-6"				113	217	330
26'-0"				113	224	337
26'-6"				113	230	343
27'-0"				113	236	349
27'-6"				113	242	355
28'-0"				113	249	362
28'-6"				113	255	368
29'-0"				113	267	374
29'-6"				113	268	381
30'-0"				113	274	387
30'-6"				113	280	393
31'-0"				113	286	399
31'-6"				113	293	406
32'-0"				113	299	412
32'-6"				113	305	418
33'-0"				113	312	425
33'-6"				113	318	431
34'-0"				113	324	437

COMPLETE CIRCLES
9"x6"x3", 12"x6"x3" or 13 1/2"x6"x3" ARCH BRICK
6-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 ARCH 9x6x (3-2)	No. 2 ARCH 9x6x (3-2 1/2)	No. 1 ARCH 9x6x (3-2 1/4)	STRAIGHT 9x6x3	
6'-2"	61	29			90
6'-3"	60	31			91
6'-4"	58	35			93
6'-5"	57	37			94
6'-6"	56	39			95
6'-7"	55	41			96
6'-8"	54	43			97
6'-9"	53	45			98
6'-10"	52	47			99
6'-11"	51	49			100
7'-0"	50	51			101
7'-1"	49	53			102
7'-2"	48	55			103
7'-3"	47	57			104
7'-4"	46	59			105
7'-5"	45	61			106
7'-6"	44	63			107
7'-7"	43	65			108
7'-8"	42	67			109
7'-9"	41	69			110
7'-10"	40	71			111
7'-11"	39	73			112
8'-0"	38	75			113
8'-1"	37	78			115
8'-2"	36	80			116
8'-3"	35	82			117
8'-4"	34	84			118
8'-5"	33	86			119
8'-6"	32	88			120
8'-7"	31	90			121
8'-8"	30	92			122
8'-9"	29	94			123
8'-10"	27	97			124
8'-11"	26	99			125
9'-0"	25	101			126
9'-3"	22	107			129
9'-6"	19	113			132
9'-9"	16	119			135
10'-0"	13	126			139
10'-3"	10	132			142
10'-6"	6	139			145
10'-9"	3	145			148
11'-0"		151	3		151
11'-3"		151	6		154
11'-6"		151	10		157
11'-9"		151	13		161
12'-0"		151	16		164
12'-3"		151	19		167
12'-6"		151	22		170
12'-9"		151			173

COMPLETE CIRCLES
9"x6"x3", 12"x6"x3" or 13 1/2"x6"x3" ARCH BRICK
6-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 ARCH 9x6x (3-2)	No. 2 ARCH 9x6x (3-2 1/2)	No. 1 ARCH 9x6x (3-2 1/4)	STRAIGHT 9x6x3	
2'-0"	38				38
2'-1"	37				39
2'-2"	36				40
2'-3"	35				41
2'-4"	34				42
2'-5"	33				43
2'-6"	32				44
2'-7"	31				45
2'-8"	30				46
2'-9"	28				49
2'-10"	27				50
2'-11"	26				51
3'-0"	25	26			51
3'-1"	24	28			52
3'-2"	23	30			53
3'-3"	22	32			54
3'-4"	21	34			55
3'-5"	20	36			56
3'-6"	19	38			57
3'-7"	18	40			58
3'-8"	17	42			59
3'-9"	16	44			60
3'-10"	15	46			61
3'-11"	14	48			62
4'-0"	13	50			63
4'-1"	12	52			64
4'-2"	11	54			65
4'-3"	10	56			66
4'-4"	9	58			67
4'-5"	8	60			68
4'-6"	6	64			70
4'-7"	5	66			71
4'-8"	4	68			72
4'-9"	3	70			73
4'-10"	2	72			74
4'-11"	1	74			75
5'-0"		76	2		76
5'-1"		75	4		77
5'-2"		74	7		78
5'-3"		72	9		79
5'-4"		71	11		80
5'-5"		70	13		81
5'-6"		69	15		82
5'-7"		68	17		83
5'-8"		67	19		84
5'-9"		66	21		85
5'-10"		65	23		86
5'-11"		64	25		87
6'-0"		63	27		88
6'-1"		62			89

COMPLETE CIRCLES
9"x6"x3 1/2" ARCHES WITH 9"x6"x2 1/2" STRAIGHTS
6-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 ARCH 9x6x (3 1/2-1 1/2)	No. 2 ARCH 9x6x (3 1/2-2)	No. 1 ARCH 9x6x (3 1/2-1 1/2)	STRAIGHT 9x6x2 1/2	
0'-9"	19				19
0'-10"	16	4			20
0'-11"	13	8			21
1'-0"	10	12			22
1'-1"	7	16			23
1'-2"	4	20			24
1'-3"	1	24			25
1'-4"		26			26
1'-5"		24			26
1'-6"		22			27
1'-7"		20			28
1'-8"		18			29
1'-9"		16			30
1'-10"		14			31
1'-11"		12			32
2'-0"		10			33
2'-1"		8			34
2'-2"		8			34
2'-3"		6			35
2'-4"		4			36
2'-5"		2			37
2'-6"					38
2'-7"					38
2'-8"					38
2'-9"					38
2'-10"					42
2'-11"					43
3'-0"					44
3'-1"					47
3'-2"					48
3'-3"					49
3'-4"					51
3'-5"					52
3'-6"					53
3'-7"					56
3'-8"					58
3'-10"					58
4'-0"					61
4'-2"					63
4'-4"					66
4'-6"					68
4'-8"					71
4'-10"					73
5'-0"					76
5'-2"					78
5'-4"					81
5'-6"					83
5'-8"					86
5'-10"					88
6'-0"					91

COMPLETE CIRCLES
9"x6"x3 1/2" ARCHES WITH 9"x6"x3" STRAIGHTS
6-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 ARCH 9x6x (3 1/2-1 1/2)	No. 2 ARCH 9x6x (3 1/2-2)	No. 1 ARCH 9x6x (3 1/2-2 1/2)	STRAIGHT 9x6x3	
0'-9"	19				19
0'-10"	16	4			20
0'-11"	13	8			21
1'-0"	10	12			22
1'-1"	7	16			23
1'-2"	4	20			24
1'-3"	1	24			25
1'-4"		26			26
1'-5"		24	2		26
1'-6"		22	8		27
1'-7"		20	14		28
1'-8"		18	18		29
1'-9"		16	22		30
1'-10"		14	26		31
1'-11"		12	30		32
2'-0"		10	34		33
2'-1"		8	38		34
2'-2"		8	38		34
2'-3"		6	38		35
2'-4"		4	38		36
2'-5"		2	38		37
2'-6"			38		38
2'-7"			38		38
2'-8"			38		39
2'-9"			38		40
2'-10"			38		41
2'-11"			38		42
3'-0"			38		43
3'-1"			38		44
3'-2"			38		45
3'-3"			38		46
3'-4"			38		47
3'-5"			38		49
3'-6"			38		50
3'-7"			38		51
3'-8"			38		53
3'-10"			38		55
4'-0"			38		57
4'-2"			38		59
4'-4"			38		61
4'-6"			38		63
4'-8"			38		65
4'-10"			38		67
5'-0"			38		69
5'-2"			38		72
5'-4"			38		74
5'-6"			38		76
5'-8"			38		78
5'-10"			38		80
6'-0"			38		82

COMPLETE CIRCLES

6-INCH LINING

9" x6" x3" ARCH TYPE ROTARY KILN LINERS

KILN SIZE	PER CIRCLE	2/5 SPLIT	3/4 SPLIT
7'-0"	88	(2-1 ¹³ / ₃₂)	(2 1/4 - 1 ¹⁵ / ₁₆)
7'-3"	92	(2-1 ²⁹ / ₃₂)	(2 1/4 - 1 ¹⁵ / ₁₆)
7'-6"	95	(2-1 ²⁹ / ₃₂)	(2 1/4 - 1 ¹⁵ / ₁₆)
7'-9"	98	(2-1 ³ / ₄)	(2 1/4 - 1 ¹⁵ / ₁₆)
8'-0"	101	(2-1 ³ / ₄)	(2 1/4 - 1 ¹⁵ / ₁₆)
8'-3"	104	(2-1 ³ / ₄)	(2 1/4 - 1 ¹⁵ / ₁₆)
8'-6"	107	(2-1 ³ / ₄)	(2 1/4 - 2)
8'-9"	110	(2-1 ²⁵ / ₃₂)	(2 1/4 - 2)
9'-0"	113	(2-1 ²⁵ / ₃₂)	(2 1/4 - 2)
9'-3"	117	(2-1 ²⁵ / ₃₂)	(2 1/4 - 2)
9'-6"	120	(2-1 ²⁵ / ₃₂)	(2 1/4 - 2)
9'-9"	123	(2-1 ²⁵ / ₃₂)	(2 1/4 - 2 1/32)
10'-0"	126	(2-1 ¹³ / ₁₆)	(2 1/4 - 2 1/32)
10'-3"	129	(2-1 ¹³ / ₁₆)	(2 1/4 - 2 1/32)
10'-6"	132	(2-1 ¹³ / ₁₆)	(2 1/4 - 2 1/32)
10'-9"	135	(2-1 ¹³ / ₁₆)	(2 1/4 - 2 1/32)
11'-0"	139	(2-1 ¹³ / ₁₆)	(2 1/4 - 2 1/32)
11'-3"	142	(2-1 ¹³ / ₁₆)	(2 1/4 - 2 1/16)
11'-6"	145	(2-1 ¹³ / ₁₆)	(2 1/4 - 2 1/16)
11'-9"	148	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/16)
12'-0"	151	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/16)
12'-3"	154	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/16)
12'-6"	157	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/16)
12'-9"	161	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/16)
13'-0"	164	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/16)
13'-3"	167	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/32)
13'-6"	170	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/32)
13'-9"	173	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/32)
14'-0"	176	(2-1 ²⁷ / ₃₂)	(2 1/4 - 2 1/32)

COMPLETE CIRCLES

6-INCH LINING

9" x6" x3 1/2" ARCH TYPE ROTARY KILN LINERS

KILN SIZE	PER CIRCLE	2/5 SPLIT	3/4 SPLIT
7'-0"	76	(2 ¹¹ / ₃₂ -2)	(2 ⁵ / ₈ -2 1/4)
7'-3"	78	(2 ¹¹ / ₃₂ -2 1/32)	(2 ⁵ / ₈ -2 1/4)
7'-6"	81	(2 ¹¹ / ₃₂ -2 1/32)	(2 ⁵ / ₈ -2 ⁵ / ₃₂)
7'-9"	84	(2 ¹¹ / ₃₂ -2 1/32)	(2 ⁵ / ₈ -2 ⁵ / ₃₂)
8'-0"	87	(2 ¹¹ / ₃₂ -2 1/32)	(2 ⁵ / ₈ -2 ⁵ / ₃₂)
8'-3"	89	(2 ¹¹ / ₃₂ -2 1/16)	(2 ⁵ / ₈ -2 ⁵ / ₁₆)
8'-6"	92	(2 ¹¹ / ₃₂ -2 1/16)	(2 ⁵ / ₈ -2 ⁵ / ₁₆)
8'-9"	95	(2 ¹¹ / ₃₂ -2 1/16)	(2 ⁵ / ₈ -2 ⁵ / ₁₆)
9'-0"	97	(2 ¹¹ / ₃₂ -2 1/16)	(2 ⁵ / ₈ -2 ¹¹ / ₃₂)
9'-3"	100	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ¹¹ / ₃₂)
9'-6"	103	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ¹¹ / ₃₂)
9'-9"	105	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ¹¹ / ₃₂)
10'-0"	108	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ⁵ / ₃₂)
10'-3"	111	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ⁵ / ₃₂)
10'-6"	113	(2 ¹¹ / ₃₂ -2 1/8)	(2 ⁵ / ₈ -2 ⁵ / ₃₂)
10'-9"	116	(2 ¹¹ / ₃₂ -2 1/8)	(2 ⁵ / ₈ -2 ⁵ / ₃₂)
11'-0"	119	(2 ¹¹ / ₃₂ -2 1/8)	(2 ⁵ / ₈ -2 ⁵ / ₃₂)
11'-3"	122	(2 ¹¹ / ₃₂ -2 1/8)	(2 ⁵ / ₈ -2 ¹³ / ₃₂)
11'-6"	124	(2 ¹¹ / ₃₂ -2 1/8)	(2 ⁵ / ₈ -2 ¹³ / ₃₂)
11'-9"	127	(2 ¹¹ / ₃₂ -2 1/8)	(2 ⁵ / ₈ -2 ¹³ / ₃₂)
12'-0"	130	(2 ¹¹ / ₃₂ -2 1/8)	(2 ⁵ / ₈ -2 ¹³ / ₃₂)
12'-3"	132	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ¹³ / ₃₂)
12'-6"	135	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ¹³ / ₃₂)
12'-9"	138	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ¹³ / ₃₂)
13'-0"	140	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ⁷ / ₁₆)
13'-3"	143	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ⁷ / ₁₆)
13'-6"	146	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ⁷ / ₁₆)
13'-9"	149	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ⁷ / ₁₆)
14'-0"	151	(2 ¹¹ / ₃₂ -2 ⁵ / ₃₂)	(2 ⁵ / ₈ -2 ⁷ / ₁₆)

COMPLETE CIRCLES

9"x6"x4" ROTARY KILN BLOCKS

6-INCH LINING

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE										TOTAL
	9x6x4 30-42	9x6x4 36-48	9x6x4 42-54	9x6x4 48-60	9x6x4 54-66	9x6x4 60-72	9x6x4 66-78	9x6x4 72-84	9x6x4 78-90	9x6x4 84-96		9x6x4 90-102
3'-6"	15	8									15
3'-9"	8	17									16
4'-0"		9									17
4'-3"		19									18
4'-6"		10									19
4'-9"											20
5'-0"											21
5'-3"											22
5'-6"											23
5'-9"											24
6'-0"	26	14									26
6'-3"	13	28									27
6'-6"		14									28
6'-9"											29
7'-0"											30
7'-3"											31
7'-6"											32
7'-9"											33
8'-0"											34
8'-3"											35
8'-6"											36
8'-9"											37
9'-0"											38
9'-3"											39
9'-6"											40
9'-9"											41
10'-0"											42
10'-3"											43
10'-6"											44
10'-9"											45
11'-0"											46
11'-3"											48
11'-6"											49
11'-9"											50
12'-0"											51
12'-3"											52
12'-6"											53
12'-9"											54
13'-0"											55

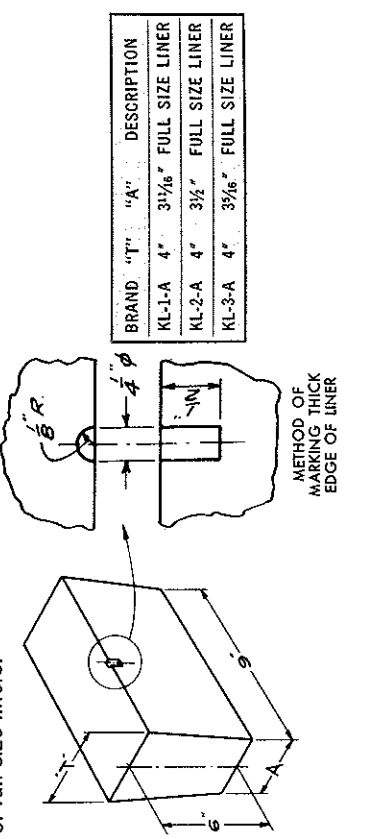
COMPLETE CIRCLES

9"x6"x4" ARCH TYPE ROTARY KILN BLOCKS

6-INCH LINING

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE			TOTAL
	KL-3-A 9x6x(4-3 ⁵ / ₁₆)	KL-2-A 9x6x(4-3 ¹ / ₂)	KL-1-A 9x6x(4-3 ¹ / ₈)	
5'-9"	54			54
6'-0"	50	7		57
6'-3"	44	15		59
6'-6"	38	24		62
6'-9"	32	32		64
7'-0"	25	41		66
7'-3"	19	50		69
7'-6"	13	58		71
7'-9"	6	67		73
8'-0"		76	6	76
8'-3"		72	13	78
8'-6"		68	19	81
8'-9"		64	25	83
9'-0"		60	32	85
9'-3"		56	38	88
9'-6"		52	44	90
9'-9"		48	51	92
10'-0"		44	57	95
10'-3"		40	63	97
10'-6"		36	69	99
10'-9"		33	76	102
11'-0"		28	82	104
11'-3"		24	88	106
11'-6"		21	94	109
11'-9"		17	100	111
12'-0"		13	107	113
12'-3"		9	113	116
12'-6"		5	118	118
12'-9"		1	119	120

KL-4-A, 9x6x(3-2⁵/₁₆), and KL-5-A, 9x6x(2¹/₂-2¹/₂), may be used for keying each ring to avoid cutting last brick. Two of each should be ordered for each ring of full size liners.



COMPLETE CIRCLES—BASIC BRICK ONLY
ROTARY KILN 9"x6"x3" ARCHES

Kiln Size	No. Pieces Per Circle	Kiln Size	No. Pieces Per Circle
7'-0"	86	9x6x(3-2 ²⁵ / ₃₂)A-(72-84)	166
7'-3"	89	9x6x(3-2 ¹⁹ / ₃₂)A-(75-87)	169
7'-6"	92	9x6x(3-2 ¹³ / ₃₂)A-(78-90)	172
7'-9"	95	9x6x(3-2 ⁷ / ₃₂)A-(81-93)	175
8'-0"	98	9x6x(3-2 ¹ / ₃₂)A-(84-96)	178
8'-3"	102	9x6x(3-2 ¹ / ₃₂)A-(87-99)	182
8'-6"	105	9x6x(3-2 ¹ / ₃₂)A-(90-102)	185
8'-9"	108	9x6x(3-2 ¹ / ₃₂)A-(93-105)	188
9'-0"	111	9x6x(3-2 ¹ / ₃₂)A-(96-108)	191
9'-3"	114	9x6x(3-2 ¹ / ₃₂)A-(99-111)	194
9'-6"	117	9x6x(3-2 ¹ / ₃₂)A-(102-114)	197
9'-9"	120	9x6x(3-2 ¹ / ₃₂)A-(105-117)	200
10'-0"	123	9x6x(3-2 ¹ / ₃₂)A-(108-120)	203
10'-3"	126	9x6x(3-2 ¹ / ₃₂)A-(111-123)	206
10'-6"	129	9x6x(3-2 ¹ / ₃₂)A-(114-126)	209
10'-9"	132	9x6x(3-2 ¹ / ₃₂)A-(117-129)	212
11'-0"	135	9x6x(3-2 ¹ / ₃₂)A-(120-132)	215
11'-3"	138	9x6x(3-2 ¹ / ₃₂)A-(123-135)	218
11'-6"	142	9x6x(3-2 ¹ / ₃₂)A-(126-138)	222
11'-9"	145	9x6x(3-2 ¹ / ₃₂)A-(129-141)	225
12'-0"	148	9x6x(3-2 ¹ / ₃₂)A-(132-144)	228
12'-3"	151	9x6x(3-2 ¹ / ₃₂)A-(135-147)	231
12'-6"	154	9x6x(3-2 ¹ / ₃₂)A-(138-150)	234
12'-9"	157	9x6x(3-2 ¹ / ₃₂)A-(141-153)	237
13'-0"	160	9x6x(3-2 ¹ / ₃₂)A-(144-156)	240
13'-3"	163	9x6x(3-2 ¹ / ₃₂)A-(147-159)	243
			246

Kiln Diameter	No. Per Ring
7'-0" To 13'-6"	1
Over 13'-6"	1
	1
	1

COMPLETE CIRCLES—BASIC BRICK ONLY
ROTARY KILN 9"x6"x3¹/₂" ARCHES

Kiln Size	No. Pieces Per Circle	Kiln Size	No. Pieces Per Circle
7'-0"	74	9x6x(3 ¹ / ₂ -3)A-(72-84)	143
7'-3"	77	9x6x(3 ¹ / ₂ -3)A-(75-87)	146
7'-6"	79	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(78-90)	148
7'-9"	82	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(81-93)	151
8'-0"	85	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(84-96)	154
8'-3"	87	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(87-99)	156
8'-6"	90	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(90-102)	159
8'-9"	93	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(93-105)	161
9'-0"	95	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(96-108)	164
9'-3"	98	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(99-111)	167
9'-6"	101	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(102-114)	169
9'-9"	103	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(105-117)	172
10'-0"	106	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(108-120)	175
10'-3"	109	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(111-123)	177
10'-6"	111	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(114-126)	180
10'-9"	114	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(117-129)	183
11'-0"	116	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(120-132)	185
11'-3"	119	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(123-135)	188
11'-6"	122	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(126-138)	191
11'-9"	124	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(129-141)	193
12'-0"	127	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(132-144)	196
12'-3"	130	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(135-147)	199
12'-6"	132	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(138-150)	201
12'-9"	135	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(141-153)	204
13'-0"	138	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(144-156)	206
13'-3"	140	9x6x(3 ¹ / ₂ -3 ¹ / ₂)A-(147-159)	209
			212

Kiln Diameter	No. Per Ring
7'-0" To 13'-6"	1
Over 13'-6"	1
	1
	1

COMPLETE CIRCLES
 9"x4 1/2"x2 1/2", 9"x6 3/4"x2 1/2" or 9"x9"x2 1/2" WEDGE BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 2 WEDGE 9x4 1/2 x (2 1/2-1 1/2)	No. 1 WEDGE 9x4 1/2 x (2 1/2-1 1/2)	No. 1-X WEDGE 9x4 1/2 x (2 1/2-2 1/4)	STRAIGHT 9x4 1/2 x 2 1/2	
2'-3"	57				57
2'-4"	55	3			58
2'-5"	52	7			59
2'-6"	51	10			61
2'-7"	48	14			62
2'-8"	46	17			63
2'-9"	44	20			64
2'-10"	42	24			66
2'-11"	40	27			67
3'-0"	38	30			68
3'-1"	36	33			69
3'-2"	34	37			71
3'-3"	32	40			72
3'-4"	29	44			73
3'-5"	27	47			74
3'-6"	25	51			76
3'-7"	23	54			77
3'-8"	21	57			78
3'-9"	19	62			79
3'-10"	17	64			81
3'-11"	15	67			82
4'-0"	13	70			83
4'-1"	11	74			85
4'-2"	9	77			86
4'-3"	6	81			87
4'-4"	4	84			88
4'-5"	2	88			90
4'-6"		91			91
4'-7"		90	2		92
4'-8"		89	4		93
4'-9"		88	7		95
4'-10"		87	9		96
4'-11"		86	11		97
5'-0"		85	13		98
5'-1"		85	15		100
5'-2"		84	17		101
5'-3"		83	19		102
5'-4"		82	21		103
5'-5"		82	23		105
5'-6"		81	25		106
5'-7"		80	27		107
5'-8"		79	29		108
5'-9"		78	32		110
5'-10"		77	34		111
5'-11"		76	36		112
6'-0"		75	38		113
6'-1"		75	40		115
6'-2"		74	42		116
6'-3"		73	44		117
6'-4"		72	46		118
6'-5"		72	48		120

COMPLETE CIRCLES
 9"x4 1/2"x2 1/2", 9"x6 3/4"x2 1/2" or 9"x9"x2 1/2" WEDGE BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 2 WEDGE 9x4 1/2 x (2 1/2-1 1/2)	No. 1 WEDGE 9x4 1/2 x (2 1/2-1 1/2)	No. 1-X WEDGE 9x4 1/2 x (2 1/2-2 1/4)	STRAIGHT 9x4 1/2 x 2 1/2	
6'-6"		71	50		121
6'-7"		70	52		122
6'-8"		69	54		123
6'-9"		68	57		125
6'-10"		67	59		126
6'-11"		66	61		127
7'-0"		65	63		128
7'-1"		65	65		130
7'-2"		64	67		131
7'-3"		63	69		132
7'-4"		62	72		134
7'-5"		61	74		135
7'-6"		60	76		136
7'-7"		59	78		137
7'-8"		59	80		139
7'-9"		58	82		140
7'-10"		57	84		141
7'-11"		56	86		142
8'-0"		56	88		144
8'-1"		55	90		145
8'-2"		54	92		146
8'-3"		53	94		147
8'-4"		52	97		149
8'-5"		51	99		150
8'-6"		50	101		151
8'-7"		49	103		152
8'-8"		49	105		154
8'-9"		48	107		155
8'-10"		47	109		156
8'-11"		46	111		157
9'-0"		46	113		159
9'-1"		45	115		160
9'-2"		44	117		161
9'-3"		43	119		162
9'-4"		42	122		164
9'-5"		41	124		165
9'-6"		40	126		166
9'-7"		39	128		167
9'-8"		39	130		169
9'-9"		38	132		170
9'-10"		37	134		171
9'-11"		36	136		172
10'-0"		35	139		174
10'-1"		35	140		175
10'-2"		34	142		176
10'-3"		33	144		177
10'-4"		32	147		179
10'-5"		31	149		180
10'-6"		30	151		181
10'-7"		30	153		183
10'-8"		29	155		184

COMPLETE CIRCLES
9" x 4 1/2" x 3", 9" x 6 3/4" x 3", 9" x 9" x 3", or 9" x 9" x 3" WEDGE BRICK

COMPLETE CIRCLES
9" x 4 1/2" x 2 1/2", 9" x 6 3/4" x 2 1/2" or 9" x 9" x 2 1/2" WEDGE BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 WEDGE 9x4 1/2 x (3-2)	No. 2 WEDGE 9x4 1/2 x (3-2 1/2)	No. 1 WEDGE 9x4 1/2 x (3-2 3/4)	STRAIGHT 9x4 1/2 x 3	
3'-0"	57	2			57
3'-1"	56	4			58
3'-2"	55	6			59
3'-3"	54	9			60
3'-4"	52	11			61
3'-5"	51	13			62
3'-6"	50	15			63
3'-7"	49	17			64
3'-8"	48	19			65
3'-9"	47	21			66
3'-10"	46	23			67
3'-11"	45	25			68
4'-0"	44	27			69
4'-1"	43	30			70
4'-2"	42	32			72
4'-3"	41	34			73
4'-4"	40	36			74
4'-5"	39	38			75
4'-6"	38	40			76
4'-7"	37	42			77
4'-8"	36	44			78
4'-9"	35	46			79
4'-10"	34	48			80
4'-11"	33	50			81
5'-0"	32	52			82
5'-1"	31	55			83
5'-2"	29	57			84
5'-3"	28	59			85
5'-4"	27	61			86
5'-5"	26	63			87
5'-6"	25	65			88
5'-7"	24	67			89
5'-8"	23	69			90
5'-9"	22	71			91
5'-10"	21	74			93
5'-11"	20	76			94
6'-0"	19	78			95
6'-1"	18	80			96
6'-2"	17	82			97
6'-3"	16	84			98
6'-4"	15	86			99
6'-5"	14	88			100
6'-6"	13	90			101
6'-7"	12	92			102
6'-8"	11	94			103
6'-9"	10	96			104
6'-10"	9	99			105
6'-11"	7	101			106
7'-0"	6	103			107
7'-1"	5				108

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 2 WEDGE 9x4 1/2 x (2 1/2-1 1/2)	No. 1-X WEDGE 9x4 1/2 x (2 1/2-2 3/4)	STRAIGHT 9x4 1/2 x 2 1/2		
10'-9"	28	157			185
10'-10"	27	159			186
10'-11"	26	162			188
11'-0"	25	164			189
11'-1"	24	166			190
11'-2"	23	168			191
11'-3"	23	170			193
11'-4"	22	172			194
11'-5"	21	174			195
11'-6"	20	176			196
11'-7"	20	178			198
11'-8"	19	180			199
11'-9"	18	182			200
11'-10"	17	184			201
11'-11"	16	187			203
12'-0"	15	189			204
12'-1"	14	191			205
12'-2"	13	193			206
12'-3"	13	195			208
12'-4"	12	197			209
12'-5"	11	199			210
12'-6"	10	201			211
12'-7"	10	203			213
12'-8"	9	205			214
12'-9"	8	207			215
12'-10"	7	209			216
12'-11"	6	212			218
13'-0"	5	214			219
13'-1"	4	216			220
13'-2"	4	218			221
13'-3"	3	220			223
13'-4"	3	222			224
13'-5"	2	224			225
13'-6"	1	227			227
14'-0"		227	7		234
14'-6"		227	15		242
15'-0"		227	22		249
15'-6"		227	30		257
16'-0"		227	37		264
16'-6"		227	45		272
17'-0"		227	52		279
17'-6"		227	60		287
18'-0"		227	67		294
18'-6"		227	75		302
19'-0"		227	82		309
19'-6"		227	90		317
20'-0"		227	98		325
20'-6"		227	105		332
21'-0"		227	113		340

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COMPLETE CIRCLES
9" x 4 1/2" x 3", 9" x 6" x 3", 9" x 6 3/4" x 3", or 9" x 9" x 3" WEDGE BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 WEDGE 9x4 1/2 x (3-2)	No. 2 WEDGE 9x4 1/2 x (3-2 1/2)	No. 1 WEDGE 9x4 1/2 x (3-2 3/4)	STRAIGHT 9x4 1/2 x 3	
7'-2"	4	105			109
7'-3"	3	107			110
7'-4"	2	109			111
7'-5"	1	111			112
7'-6"		113			113
7'-7"		114			114
7'-8"		115	2		116
7'-9"		116	5		117
7'-10"		117	7		118
7'-11"		118	9		119
8'-0"		119	11		120
8'-1"		120	13		121
8'-2"		121	15		122
8'-3"		122	17		123
8'-4"		123	19		124
8'-5"		124	21		125
8'-6"		125	23		126
8'-7"		126	25		127
8'-8"		127	27		128
8'-9"		128	29		129
8'-10"		129	31		130
8'-11"		130	33		131
9'-0"		131	35		132
9'-1"		132	37		133
9'-2"		133	39		134
9'-3"		134	41		135
9'-4"		135	43		136
9'-5"		136	45		137
9'-6"		137	47		138
9'-7"		138	49		139
9'-8"		139	51		140
9'-9"		140	53		141
9'-10"		141	55		142
9'-11"		142	57		143
10'-0"		143	59		144
10'-1"		144	61		145
10'-2"		145	63		146
10'-3"		146	65		147
10'-4"		147	67		148
10'-5"		148	69		149
10'-6"		149	71		150
10'-7"		150	73		151
10'-8"		151	75		152
10'-9"		152	77		153
10'-10"		153	79		154
10'-11"		154	81		155
11'-0"		155	83		156
11'-1"		156	85		157
11'-2"		157	87		158
11'-3"		158	89		159
11'-4"		159	91		160
11'-5"		160	93		161

COMPLETE CIRCLES
9" x 4 1/2" x 3", 9" x 6" x 3", 9" x 6 3/4" x 3", or 9" x 9" x 3" WEDGE BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 WEDGE 9x4 1/2 x (3-2)	No. 2 WEDGE 9x4 1/2 x (3-2 1/2)	No. 1 WEDGE 9x4 1/2 x (3-2 3/4)	STRAIGHT 9x4 1/2 x 3	
11'-4"		65	97		162
11'-5"		64	99		163
11'-6"		63	101		164
11'-7"		61	105		166
11'-8"		59	109		168
11'-9"		57	113		170
11'-10"		55	117		172
11'-11"		52	122		174
12'-0"		50	126		176
12'-1"		48	130		178
12'-2"		47	133		180
12'-3"		44	139		183
12'-4"		42	143		185
12'-5"		40	147		187
12'-6"		38	151		189
12'-7"		36	155		191
12'-8"		34	159		193
12'-9"		32	163		195
12'-10"		29	168		197
12'-11"		27	172		199
13'-0"		25	176		201
13'-1"		23	180		203
13'-2"		21	185		206
13'-3"		19	189		208
13'-4"		17	193		210
13'-5"		15	197		212
13'-6"		13	201		214
13'-7"		11	205		216
13'-8"		8	210		218
13'-9"		6	214		220
13'-10"		4	218		222
13'-11"		2	222		224
14'-0"			226		226
14'-1"			226		226
14'-2"			226		226
14'-3"			226		226
14'-4"			226		226
14'-5"			226		226
14'-6"			226		226
14'-7"			226		226
14'-8"			226		226
14'-9"			226		226
14'-10"			226		226
14'-11"			226		226
15'-0"			226		226
15'-1"			226		226
15'-2"			226		226
15'-3"			226		226
15'-4"			226		226
15'-5"			226		226
15'-6"			226		226
15'-7"			226		226
15'-8"			226		226
15'-9"			226		226
15'-10"			226		226
15'-11"			226		226
16'-0"			226		226
16'-1"			226		226
16'-2"			226		226
16'-3"			226		226
16'-4"			226		226
16'-5"			226		226
16'-6"			226		226
16'-7"			226		226
16'-8"			226		226
16'-9"			226		226
16'-10"			226		226
16'-11"			226		226
17'-0"			226		226
17'-1"			226		226
17'-2"			226		226
17'-3"			226		226
17'-4"			226		226
17'-5"			226		226
17'-6"			226		226
17'-7"			226		226
17'-8"			226		226
17'-9"			226		226
17'-10"			226		226
17'-11"			226		226
18'-0"			226		226
18'-1"			226		226
18'-2"			226		226
18'-3"			226		226
18'-4"			226		226
18'-5"			226		226
18'-6"			226		226
18'-7"			226		226
18'-8"			226		226
18'-9"			226		226
18'-10"			226		226
18'-11"			226		226
19'-0"			226		226
19'-1"			226		226
19'-2"			226		226
19'-3"			226		226
19'-4"			226		226
19'-5"			226		226
19'-6"			226		226
19'-7"			226		226
19'-8"			226		226
19'-9"			226		226
19'-10"			226		226
19'-11"			226		226
20'-0"			226		226
20'-1"			226		226
20'-2"			226		226
20'-3"			226		226
20'-4"			226		226
20'-5"			226		226
20'-6"			226		226
20'-7"			226		226
20'-8"			226		226
20'-9"			226		226
20'-10"			226		226
20'-11"			226		226
21'-0"			226		226

COMPLETE CIRCLES
9" x 4 1/2" x 2 1/2" or 9" x 4 1/2" x 3" KEY BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				STRAIGHT 9x4 1/2 x 2 1/2	TOTAL
	No. 4 KEY 9x (4 1/2 - 2 1/4) x 2 1/2	No. 3 KEY 9x (4 1/2 - 3) x 2 1/2	No. 2 KEY 9x (4 1/2 - 3 1/2) x 2 1/2	No. 1 KEY 9x (4 1/2 - 4) x 2 1/2		
9'-10"						95
10'-0"						97
10'-2"						98
10'-4"						100
10'-6"						101
10'-8"						102
10'-10"						104
11'-0"						105
11'-2"						107
11'-4"						108
11'-6"						109
11'-8"						111
11'-10"						112
12'-0"						113
12'-6"						118
13'-0"						122
13'-6"						126
14'-0"						130
14'-6"						134
15'-0"						139
15'-6"						143
16'-0"						147
16'-6"						151
17'-0"						155
17'-6"						159
18'-0"						164
18'-6"						168
19'-0"						172
19'-6"						176
20'-0"						180
20'-6"						185
21'-0"						189
21'-6"						193
22'-0"						197
22'-6"						201
23'-0"						206
23'-6"						210
24'-0"						214
24'-6"						218
25'-0"						222
25'-6"						227
26'-0"						231
26'-6"						235
27'-0"						239
27'-6"						243
28'-0"						247
28'-6"						252
29'-0"						256
29'-6"						260
30'-0"						264

COMPLETE CIRCLES
9" x 4 1/2" x 2 1/2" or 9" x 4 1/2" x 3" KEY BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				STRAIGHT 9x4 1/2 x 2 1/2	TOTAL
	No. 4 KEY 9x (4 1/2 - 2 1/4) x 2 1/2	No. 3 KEY 9x (4 1/2 - 3) x 2 1/2	No. 2 KEY 9x (4 1/2 - 3 1/2) x 2 1/2	No. 1 KEY 9x (4 1/2 - 4) x 2 1/2		
1'-6"	25					25
1'-8"	23					27
1'-10"	20					28
2'-0"	17					30
2'-2"	14					31
2'-4"	11					32
2'-6"	9					34
2'-8"	6					35
2'-10"	3					37
3'-0"						38
3'-2"						39
3'-4"						41
3'-6"						42
3'-8"						44
3'-10"						45
4'-0"						46
4'-2"						48
4'-4"						49
4'-6"						51
4'-8"						52
4'-10"						53
5'-0"						55
5'-2"						56
5'-3"						57
5'-4"						58
5'-5"						59
5'-6"						60
5'-8"						62
5'-10"						63
6'-0"						65
6'-2"						66
6'-4"						67
6'-6"						69
6'-8"						70
6'-10"						72
7'-0"						73
7'-2"						74
7'-4"						76
7'-6"						77
7'-8"						79
7'-10"						80
8'-0"						81
8'-2"						83
8'-4"						84
8'-6"						85
8'-8"						87
8'-10"						88
9'-0"						90
9'-2"						91
9'-4"						92
9'-6"						94

Continued Next Page

COMPLETE CIRCLES 9" x 6" x 2 1/2" or 9" x 6" x 3" KEY BRICK

COMPLETE CIRCLES 9" x 6" x 2 1/2" or 9" x 6" x 3" KEY BRICK

9-INCH LINING

9-INCH LINING



INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE					TOTAL
	No. 3 KEY 9x (6-3)x2 1/2	No. 2-X KEY 9x (6-4)x2 1/2	No. 2 KEY 9x (6-4 1/2)x2 1/2	No. 1 KEY 9x (6-5 1/2)x2 1/2	STRAIGHT 9x6x2 1/2	
1'-6"	19	2				19
1'-7"	18	3				20
1'-8"	17	5				20
1'-9"	16	6				21
1'-10"	15	8				21
1'-11"	14	9				22
2'-0"	13	11				22
2'-1"	12	12				23
2'-2"	11	14				23
2'-3"	10	15				24
2'-4"	9	17				24
2'-5"	8	18				25
2'-6"	7	18				25
2'-7"	5	21				26
2'-8"	5	22				27
2'-9"	3	24				27
2'-10"	2	26				28
2'-11"	1	27				28
3'-0"		29				29
3'-1"		28				29
3'-2"		27	1			30
3'-3"		26	3			30
3'-4"		26	4			31
3'-5"		25	5			31
3'-6"		24	6			32
3'-7"		23	8			32
3'-8"		22	9			33
3'-9"		21	11			33
3'-10"		21	12			34
3'-11"		20	13			34
4'-0"		19	14			35
4'-1"		18	16			35
4'-2"		18	17			36
4'-3"		17	18			36
4'-4"		17	19			37
4'-5"		16	21			38
4'-6"		16	22			38
4'-7"		15	23			39
4'-8"		14	25			39
4'-9"		13	26			39
4'-10"		13	27			40
4'-11"		12	28			40
5'-0"		11	30			41
5'-1"		10	31			41
5'-2"		9	33			42
5'-3"		8	34			42
5'-4"		8	35			43
5'-5"		7	36			43
5'-6"		6	38			44
5'-7"		5	39			44
5'-8"		5	40			45
5'-9"		4	41			45
		3	43			46

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE					TOTAL
	No. 3 KEY 9x (6-3)x2 1/2	No. 2-X KEY 9x (6-4)x2 1/2	No. 2 KEY 9x (6-4 1/2)x2 1/2	No. 1 KEY 9x (6-5 1/2)x2 1/2	STRAIGHT 9x6x2 1/2	
5'-10"		2				46
5'-11"		1	44			47
6'-0"			46			47
6'-2"			47			49
6'-4"			46			50
6'-6"			45			51
6'-8"			44			52
6'-10"			43			53
7'-0"			41			54
7'-2"			40			55
7'-4"			39			56
7'-6"			38			57
7'-8"			37			58
7'-10"			36			59
8'-0"			34			60
8'-2"			33			61
8'-4"			32			62
8'-6"			31			63
8'-8"			30			64
8'-10"			28			65
9'-0"			27			66
9'-2"			26			67
9'-4"			25			68
9'-6"			24			69
9'-8"			23			70
9'-10"			22			72
10'-0"			21			73
10'-2"			19			74
10'-4"			18			75
10'-6"			17			76
10'-8"			16			77
10'-10"			15			78
11'-0"			13			79
11'-2"			12			80
11'-4"			11			81
11'-6"			10			82
11'-8"			9			83
11'-10"			8			84
12'-0"			6			85
12'-2"			5			86
12'-4"			4			87
12'-6"			3			88
12'-8"			2			89
12'-10"			1			90
13'-0"						91
13'-6"					4	95
14'-0"					7	98
14'-6"					10	101
15'-0"					13	104
15'-6"					16	107

COMPLETE CIRCLES

9-INCH LINING

9"x6"x2 1/2" or 9"x6"x3" KEY BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE					TOTAL
	No. 3 KEY 9x (6-3)x2 1/2	No. 2-X KEY 9x (6-4)x2 1/2	No. 2 KEY 9x (6-4 1/2)x2 1/2	No. 1 KEY 9x (6-5 1/2)x2 1/2	STRAIGHT 9x6x2 1/2	
16'-0"	91	19	110
16'-6"	91	22	113
17'-0"	91	26	117
17'-6"	91	29	120
18'-0"	91	32	123
18'-6"	91	35	126
19'-0"	91	38	129
19'-6"	91	41	132
20'-0"	91	44	135
20'-6"	91	48	139
21'-0"	91	51	142
21'-6"	91	54	145
22'-0"	91	57	148
22'-6"	91	60	151
23'-0"	91	63	154
23'-6"	91	66	157
24'-0"	91	70	161
24'-6"	91	73	164
25'-0"	91	76	167
25'-6"	91	79	170
26'-0"	91	82	173
26'-6"	91	85	176
27'-0"	91	88	179
27'-6"	91	92	183
28'-0"	91	95	186
28'-6"	91	98	189
29'-0"	91	101	192
29'-6"	91	104	195
30'-0"	91	107	198
30'-6"	91	110	201
31'-0"	91	114	205
31'-6"	91	117	208
32'-0"	91	120	211
32'-6"	91	123	214
33'-0"	91	126	217
33'-6"	91	129	220
34'-0"	91	132	223
34'-6"	91	135	226
35'-0"	91	139	230
35'-6"	91	142	233
36'-0"	91	145	236
36'-6"	91	148	239
37'-0"	91	151	242
37'-6"	91	154	245
38'-0"	91	157	248
38'-6"	91	161	252
39'-0"	91	164	255
39'-6"	91	167	258
40'-0"	91	170	261

COMPLETE CIRCLES

9-INCH LINING

9"x6"x3" WEDGE TYPE ROTARY KILN LINERS

KILN SIZE	PER CIRCLE	2% SPLIT	3/4 SPLIT
10'-0"	9x6x (3-29/16) (102-W-120)	(2-11/16)	(2 1/4 -129/32)
10'-3"	9x6x (3-29/16) (105-W-123)	(2-129/32)	(2 1/4 -129/32)
10'-6"	9x6x (3-29/16) (108-W-126)	(2-133/32)	(2 1/4 -129/32)
10'-9"	9x6x (3-29/32) (111-W-129)	(2-129/32)	(2 1/4 -115/16)
11'-0"	9x6x (3-29/32) (114-W-132)	(2-129/32)	(2 1/4 -115/16)
11'-3"	9x6x (3-29/32) (117-W-135)	(2-129/32)	(2 1/4 -131/32)
11'-6"	9x6x (3-29/32) (120-W-138)	(2-13/4)	(2 1/4 -131/32)
11'-9"	9x6x (3-29/32) (123-W-141)	(2-13/4)	(2 1/4 -131/32)
12'-0"	9x6x (3-29/32) (126-W-144)	(2-13/4)	(2 1/4 -131/32)
12'-3"	9x6x (3-29/32) (129-W-147)	(2-13/4)	(2 1/4 -131/32)
12'-6"	9x6x (3-29/32) (132-W-150)	(2-13/4)	(2 1/4 -131/32)
12'-9"	9x6x (3-29/32) (135-W-153)	(2-13/4)	(2 1/4 -2)
13'-0"	9x6x (3-29/32) (138-W-156)	(2-129/32)	(2 1/4 -2)
13'-3"	9x6x (3-29/32) (141-W-159)	(2-129/32)	(2 1/4 -2)
13'-6"	9x6x (3-29/32) (144-W-162)	(2-129/32)	(2 1/4 -2)
13'-9"	9x6x (3-29/32) (147-W-165)	(2-129/32)	(2 1/4 -2)
14'-0"	9x6x (3-29/16) (150-W-168)	(2-129/32)	(2 1/4 -2)
14'-3"	9x6x (3-29/16) (153-W-171)	(2-129/32)	(2 1/4 -2)
14'-6"	9x6x (3-29/16) (156-W-174)	(2-129/32)	(2 1/4 -2 1/2)
14'-9"	9x6x (3-29/16) (159-W-177)	(2-129/32)	(2 1/4 -2 1/2)
15'-0"	9x6x (3-29/16) (162-W-180)	(2-113/16)	(2 1/4 -2 1/2)
15'-3"	9x6x (3-29/32) (165-W-183)	(2-113/16)	(2 1/4 -2 1/2)
15'-6"	9x6x (3-29/32) (168-W-186)	(2-113/16)	(2 1/4 -2 1/2)
15'-9"	9x6x (3-29/32) (171-W-189)	(2-113/16)	(2 1/4 -2 1/2)
16'-0"	9x6x (3-29/32) (174-W-192)	(2-113/16)	(2 1/4 -2 1/2)
16'-3"	9x6x (3-29/32) (177-W-195)	(2-113/16)	(2 1/4 -2 1/2)
16'-6"	9x6x (3-29/32) (180-W-198)	(2-113/16)	(2 1/4 -2 1/2)
16'-9"	9x6x (3-29/32) (183-W-201)	(2-113/16)	(2 1/4 -2 1/2)
17'-0"	9x6x (3-29/4) (186-W-204)	(2-113/16)	(2 1/4 -2 1/2)
17'-3"	9x6x (3-29/4) (189-W-207)	(2-113/16)	(2 1/4 -2 1/2)
17'-6"	9x6x (3-29/4) (192-W-210)	(2-127/32)	(2 1/4 -2 1/2)
17'-9"	9x6x (3-29/4) (195-W-213)	(2-127/32)	(2 1/4 -2 1/2)
18'-0"	9x6x (3-29/4) (198-W-216)	(2-127/32)	(2 1/4 -2 1/2)
18'-3"	9x6x (3-29/4) (201-W-219)	(2-127/32)	(2 1/4 -2 1/2)
18'-6"	9x6x (3-29/4) (204-W-222)	(2-127/32)	(2 1/4 -2 1/2)
18'-9"	9x6x (3-29/4) (207-W-225)	(2-127/32)	(2 1/4 -2 1/2)
19'-0"	9x6x (3-29/4) (210-W-228)	(2-127/32)	(2 1/4 -2 1/2)
19'-3"	9x6x (3-29/32) (213-W-231)	(2-127/32)	(2 1/4 -2 1/2)
19'-6"	9x6x (3-29/32) (216-W-234)	(2-127/32)	(2 1/4 -2 1/2)
19'-9"	9x6x (3-29/32) (219-W-237)	(2-127/32)	(2 1/4 -2 3/2)
20'-0"	9x6x (3-29/32) (222-W-240)	(2-127/32)	(2 1/4 -2 3/2)

COMPLETE CIRCLES

9" x 6" x 3 1/2" WEDGE TYPE ROTARY KILN LINERS

KILN SIZE	PER CIRCLE	2/3 SPLIT	3/4 SPLIT
10'-0"	9x6x(3 1/2-3 1/2) (102-W-120)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
10'-3"	9x6x(3 1/2-3) (105-W-123)	(2 1/2-2)	(2 3/8-2 1/4)
10'-6"	9x6x(3 1/2-3) (108-W-126)	(2 1/2-2)	(2 3/8-2 1/4)
10'-9"	9x6x(3 1/2-3) (111-W-129)	(2 1/2-2)	(2 3/8-2 1/4)
11'-0"	9x6x(3 1/2-3 1/2) (114-W-132)	(2 1/2-2)	(2 3/8-2 3/8)
11'-3"	9x6x(3 1/2-3 1/2) (117-W-135)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
11'-6"	9x6x(3 1/2-3 1/2) (120-W-138)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
11'-9"	9x6x(3 1/2-3 1/2) (123-W-141)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
12'-0"	9x6x(3 1/2-3 1/2) (126-W-144)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
12'-3"	9x6x(3 1/2-3 1/2) (129-W-147)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
12'-6"	9x6x(3 1/2-3 1/2) (132-W-150)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
12'-9"	9x6x(3 1/2-3 1/2) (135-W-153)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
13'-0"	9x6x(3 1/2-3 1/2) (138-W-156)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
13'-3"	9x6x(3 1/2-3 1/2) (141-W-159)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
13'-6"	9x6x(3 1/2-3 1/2) (144-W-162)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
13'-9"	9x6x(3 1/2-3 1/2) (147-W-165)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
14'-0"	9x6x(3 1/2-3 1/2) (150-W-168)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
14'-3"	9x6x(3 1/2-3 1/2) (153-W-171)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
14'-6"	9x6x(3 1/2-3 1/2) (156-W-174)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
14'-9"	9x6x(3 1/2-3 1/2) (159-W-177)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
15'-0"	9x6x(3 1/2-3 1/2) (162-W-180)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
15'-3"	9x6x(3 1/2-3 1/2) (165-W-183)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
15'-6"	9x6x(3 1/2-3 1/2) (168-W-186)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
15'-9"	9x6x(3 1/2-3 1/2) (171-W-189)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
16'-0"	9x6x(3 1/2-3 1/2) (174-W-192)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
16'-3"	9x6x(3 1/2-3 1/2) (177-W-195)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
16'-6"	9x6x(3 1/2-3 1/2) (180-W-198)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
16'-9"	9x6x(3 1/2-3 1/2) (183-W-201)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
17'-0"	9x6x(3 1/2-3 1/2) (186-W-204)	(2 1/2-2 1/2)	(2 3/8-2 3/8)
17'-3"	9x6x(3 1/2-3 1/2) (189-W-207)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
17'-6"	9x6x(3 1/2-3 1/2) (192-W-210)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
17'-9"	9x6x(3 1/2-3 1/2) (195-W-213)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
18'-0"	9x6x(3 1/2-3 1/2) (198-W-216)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
18'-3"	9x6x(3 1/2-3 1/2) (201-W-219)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
18'-6"	9x6x(3 1/2-3 1/2) (204-W-222)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
18'-9"	9x6x(3 1/2-3 1/2) (207-W-225)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
19'-0"	9x6x(3 1/2-3 1/2) (210-W-228)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
19'-3"	9x6x(3 1/2-3 1/2) (213-W-231)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
19'-6"	9x6x(3 1/2-3 1/2) (216-W-234)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
19'-9"	9x6x(3 1/2-3 1/2) (219-W-237)	(2 1/2-2 1/2)	(2 3/8-2 1/2)
20'-0"	9x6x(3 1/2-3 1/2) (222-W-240)	(2 1/2-2 1/2)	(2 3/8-2 1/2)

COMPLETE CIRCLES

9" x 9" x 4" ROTARY KILN BLOCKS

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE						TOTAL
	9x9x4 48-66	9x9x4 54-72	9x9x4 60-78	9x9x4 66-84	9x9x4 72-90	9x9x4 78-96	
5'-6"	23						23
5'-9"	12						24
6'-0"		26					26
6'-3"		13	14				27
6'-6"			28				28
6'-9"			14	15			29
7'-0"				30			30
7'-3"				15	16		31
7'-6"					32		32
7'-9"					16	17	33

SHAPES REQUIRED TO TURN CIRCLE

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE						TOTAL
	9x9x4 78-96	9x9x4 84-102	9x9x4 90-108	9x9x4 96-114	9x9x4 102-120	9x9x4 108-126	
8'-0"	34						34
8'-3"	17	18					35
8'-6"		36					36
8'-9"		18	19				37
9'-0"			38				38
9'-3"			19	20			39
9'-6"				40			40
9'-9"				20	21		41
10'-0"					42		42
10'-3"					21	22	43

SHAPES REQUIRED TO TURN CIRCLE

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE						TOTAL
	9x9x4 108-126	9x9x4 114-132	9x9x4 120-138	9x9x4 126-144	9x9x4 132-150	9x9x4 138-156	
10'-6"	44						44
10'-9"	22	23					45
11'-0"		46					46
11'-3"		24	24				48
11'-6"			49				49
11'-9"			25	25			50
12'-0"				51			51
12'-3"				26	26		52
12'-6"					53		53
12'-9"					27		54

COMPLETE CIRCLES

9" x 9" x 4" ROTARY KILN BLOCKS

9-INCH LINING

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE								TOTAL
	9x9x4 138-186	9x9x4 144-162	9x9x4 150-168	9x9x4 156-174	9x9x4 162-180	9x9x4 168-186	9x9x4 174-192	9x9x4 180-198	
13'-0"	55								55
13'-3"	28	28							56
13'-6"		57							57
13'-9"		29	29						58
14'-0"			59						59
14'-3"			30	30					60
14'-6"				61					61
14'-9"				31	31				62
15'-0"					63				63
15'-3"					32			32	64

COMPLETE CIRCLES

12' x 9" x 4" ROTARY KILN BLOCKS

9-INCH LINING

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE								TOTAL
	12x9x4 108-126	12x9x4 114-132	12x9x4 120-138	12x9x4 126-144	12x9x4 132-150	12x9x4 138-156	12x9x4 144-162	12x9x4 150-168	
10'-6"	33								33
10'-9"	17	17							34
11'-0"		35							35
11'-3"		18	18						36
11'-6"			37						37
11'-9"			18	19					37
12'-0"				38					38
12'-3"				19	20				39
12'-6"					40				40
12'-9"					20				40

COMPLETE CIRCLES

9" x 9" x 4" ROTARY KILN BLOCKS

9-INCH LINING

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE								TOTAL
	9x9x4 168-186	9x9x4 174-192	9x9x4 180-198	9x9x4 186-204	9x9x4 192-210	9x9x4 198-216	9x9x4 204-210	9x9x4 210-216	
15'-6"	65								65
15'-9"	33	33							66
16'-0"		67							67
16'-3"		34	34						68
16'-6"			69						69
16'-9"			35	36					71
17'-0"				72					72
17'-3"				36	37				73
17'-6"					74				74
17'-9"					37			38	75
18'-0"								76	76

COMPLETE CIRCLES

12' x 9" x 4" ROTARY KILN BLOCKS

9-INCH LINING

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE								TOTAL
	12x9x4 138-156	12x9x4 144-162	12x9x4 150-168	12x9x4 156-174	12x9x4 162-180	12x9x4 168-186	12x9x4 174-192	12x9x4 180-198	
13'-0"	41								41
13'-3"	21	21							42
13'-6"		43							43
13'-9"		22	22						44
14'-0"			44						44
14'-3"			22	23					45
14'-6"				46					46
14'-9"				23					47
15'-0"					24				48
15'-3"					24				48

COMPLETE CIRCLES

12' x 9" x 4" ROTARY KILN BLOCKS

9-INCH LINING

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE								TOTAL
	12x9x4 168-186	12x9x4 174-192	12x9x4 180-198	12x9x4 186-204	12x9x4 192-210	12x9x4 198-216	12x9x4 204-210	12x9x4 210-216	
15'-6"	49								49
15'-9"	25	25							50
16'-0"		51							51
16'-3"		25	26						51
16'-6"			52						52
16'-9"			26	27					53
17'-0"				54					54
17'-3"				27	28				55
17'-6"					55				55
17'-9"					28				56

COMPLETE CIRCLES

9-INCH LINING

12"x9"x4" ROTARY KILN BLOCKS

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE						TOTAL
	12x9x4 198-216	12x9x4 204-222	12x9x4 210-228	12x9x4 216-234	12x9x4 222-240	12x9x4 228-246	
18'-0"	57						57
18'-3"	29	29					58
18'-6"		58					58
18'-9"		29	30				59
19'-0"			60				60
19'-3"			30	31			61
19'-6"				62			62
19'-9"				31	31		63
20'-0"					63		63
20'-3"					32	32	64

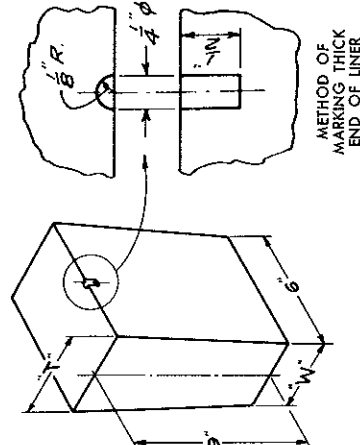
COMPLETE CIRCLES

9-INCH LINING

9"x6"x4" WEDGE TYPE ROTARY KILN BLOCKS

KILN SIZE	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	9x6x(4-2 ¹ / ₂) KL-3-W	9x6x(4-3 ¹ / ₄) KL-2-W	9x6x(4-3 ¹ / ₂) KL-1-W	9x6x(4-3 ¹ / ₂) KL-1-W	
5'-9"	54				54
6'-0"	50	7			57
6'-3"	44	15			59
6'-6"	33	24			62
6'-9"	25	32			64
7'-0"	19	41			66
7'-3"	13	50			69
7'-6"	6	58			71
7'-9"		67			73
8'-0"		76			76
8'-3"		72	6		78
8'-6"		68	13		81
8'-9"		64	19		83
9'-0"		60	25		85
9'-3"		56	32		88
9'-6"		52	38		90
9'-9"		48	44		92
10'-0"		44	51		95
10'-3"		40	57		97
10'-6"		36	63		99
10'-9"		33	69		102
11'-0"		28	76		104
11'-3"		24	82		106
11'-6"		21	88		109
11'-9"		17	94		111
12'-0"		13	100		113
12'-3"		9	107		116
12'-6"		5	113		118
12'-9"		1	119		120

KL-4-W, 9x6x(3-2¹/₁₆), and KL-5-W, 9x6x(2²³/₃₂-2³/₁₆), may be used for keying each ring to avoid cutting last brick. Two of each should be ordered for each ring of full size liners.



BRAND	"T"	"W"	DESCRIPTION
KL-1-W	4"	3 ¹⁷ / ₃₂ "	FULL SIZE LINER
KL-2-W	4"	3 ¹ / ₄ "	FULL SIZE LINER
KL-3-W	4"	2 ¹¹ / ₃₂ "	FULL SIZE LINER

COMPLETE CIRCLES—BASIC BRICK ONLY
ROTARY KILN 9"x6"x3 1/2" WEDGES

Kiln Size	No. Pieces Per Circle	Kiln Size	No. Pieces Per Circle
7'-0"	86	7'-0"	74
7'-3"	89	7'-3"	77
7'-6"	92	7'-6"	79
7'-9"	95	7'-9"	82
8'-0"	98	8'-0"	85
8'-3"	102	8'-3"	87
8'-6"	105	8'-6"	90
8'-9"	108	8'-9"	93
9'-0"	111	9'-0"	95
9'-3"	114	9'-3"	98
9'-6"	117	9'-6"	101
9'-9"	120	9'-9"	103
10'-0"	123	10'-0"	106
10'-3"	126	10'-3"	109
10'-6"	129	10'-6"	111
10'-9"	132	10'-9"	114
11'-0"	135	11'-0"	116
11'-3"	138	11'-3"	119
11'-6"	142	11'-6"	122
11'-9"	145	11'-9"	124
12'-0"	148	12'-0"	127
12'-3"	151	12'-3"	130
12'-6"	154	12'-6"	132
12'-9"	157	12'-9"	135
13'-0"	160	13'-0"	138
13'-3"	163	13'-3"	140

COMPLETE CIRCLES—BASIC BRICK ONLY
ROTARY KILN 9"x6"x3 1/2" WEDGES

Kiln Size	No. Pieces Per Circle	Kiln Size	No. Pieces Per Circle
7'-0"	166	9x6x (3-2 1/2) W. (144-162)	
7'-3"	169	9x6x (3-2 1/2) W. (147-165)	
7'-6"	172	9x6x (3-2 1/2) W. (150-168)	
7'-9"	175	9x6x (3-2 1/2) W. (153-171)	
8'-0"	178	9x6x (3-2 1/2) W. (156-174)	
8'-3"	182	9x6x (3-2 1/2) W. (159-177)	
8'-6"	185	9x6x (3-2 1/2) W. (162-180)	
8'-9"	188	9x6x (3-2 1/2) W. (165-183)	
9'-0"	191	9x6x (3-2 1/2) W. (168-186)	
9'-3"	194	9x6x (3-2 1/2) W. (171-189)	
9'-6"	197	9x6x (3-2 1/2) W. (174-192)	
9'-9"	200	9x6x (3-2 1/2) W. (177-195)	
10'-0"	203	9x6x (3-2 1/2) W. (180-198)	
10'-3"	206	9x6x (3-2 1/2) W. (183-201)	
10'-6"	209	9x6x (3-2 1/2) W. (186-204)	
10'-9"	212	9x6x (3-2 1/2) W. (189-207)	
11'-0"	215	9x6x (3-2 1/2) W. (192-210)	
11'-3"	218	9x6x (3-2 1/2) W. (195-213)	
11'-6"	222	9x6x (3-2 1/2) W. (198-216)	
11'-9"	225	9x6x (3-2 1/2) W. (201-219)	
12'-0"	228	9x6x (3-2 1/2) W. (204-222)	
12'-3"	231	9x6x (3-2 1/2) W. (207-225)	
12'-6"	234	9x6x (3-2 1/2) W. (210-228)	
12'-9"	237	9x6x (3-2 1/2) W. (213-231)	
13'-0"	240	9x6x (3-2 1/2) W. (216-234)	
13'-3"	243	9x6x (3-2 1/2) W. (219-237)	
13'-6"	246	9x6x (3-2 1/2) W. (222-240)	

COMPLETE CIRCLES—BASIC BRICK ONLY
ROTARY KILN 9"x6"x3 1/2" WEDGES

Kiln Size	No. Pieces Per Circle	Kiln Size	No. Pieces Per Circle
13'-6"	143	9x6x (3 1/2-3 3/2) W. (144-162)	
13'-9"	146	9x6x (3 1/2-3 3/2) W. (147-165)	
14'-0"	148	9x6x (3 1/2-3 3/2) W. (150-168)	
14'-3"	151	9x6x (3 1/2-3 3/2) W. (153-171)	
14'-6"	153	9x6x (3 1/2-3 3/2) W. (156-174)	
14'-9"	156	9x6x (3 1/2-3 3/2) W. (159-177)	
15'-0"	159	9x6x (3 1/2-3 3/2) W. (162-180)	
15'-3"	161	9x6x (3 1/2-3 3/2) W. (165-183)	
15'-6"	164	9x6x (3 1/2-3 3/2) W. (168-186)	
15'-9"	167	9x6x (3 1/2-3 3/2) W. (171-189)	
16'-0"	169	9x6x (3 1/2-3 3/2) W. (174-192)	
16'-3"	172	9x6x (3 1/2-3 3/2) W. (177-195)	
16'-6"	175	9x6x (3 1/2-3 3/2) W. (180-198)	
16'-9"	177	9x6x (3 1/2-3 3/2) W. (183-201)	
17'-0"	180	9x6x (3 1/2-3 3/2) W. (186-204)	
17'-3"	183	9x6x (3 1/2-3 3/2) W. (189-207)	
17'-6"	185	9x6x (3 1/2-3 3/2) W. (192-210)	
17'-9"	188	9x6x (3 1/2-3 3/2) W. (195-213)	
18'-0"	190	9x6x (3 1/2-3 3/2) W. (198-216)	
18'-3"	193	9x6x (3 1/2-3 3/2) W. (201-219)	
18'-6"	196	9x6x (3 1/2-3 3/2) W. (204-222)	
18'-9"	198	9x6x (3 1/2-3 3/2) W. (207-225)	
19'-0"	201	9x6x (3 1/2-3 3/2) W. (210-228)	
19'-3"	204	9x6x (3 1/2-3 3/2) W. (213-231)	
19'-6"	206	9x6x (3 1/2-3 3/2) W. (216-234)	
19'-9"	209	9x6x (3 1/2-3 3/2) W. (219-237)	
20'-0"	212	9x6x (3 1/2-3 3/2) W. (222-240)	

COMPLETE CIRCLES—BASIC BRICK ONLY
ROTARY KILN 9"x6"x3 1/2" WEDGES

Kiln Diameter	No. Per Ring
7'-0" To 13'-6"	1
Over 13'-6"	1

COMPLETE CIRCLES—BASIC BRICK ONLY
ROTARY KILN 9"x6"x3 1/2" WEDGES

Kiln Diameter	No. Per Ring
7'-0" To 13'-6"	1
Over 13'-6"	1

COMPLETE CIRCLES

9", 12" and 13½-INCH LINING
Special blast furnace key brick
Brands 1K and 2K—See Page 107 for sizes

SHAPES REQUIRED TO TURN CIRCLE			SHAPES REQUIRED TO TURN CIRCLE		
INSIDE DIAMETER	2K	1K	INSIDE DIAMETER	2K	1K
13'-3"	98	.....	28'-6"	44	150
13'-6"	96	3	28'-9"	43	152
14'-0"	94	8	29'-0"	42	155
14'-6"	93	13	29'-3"	41	157
15'-0"	91	18	29'-6"	40	160
15'-6"	89	23	29'-9"	39	162
16'-0"	87	28	30'-0"	38	165
16'-6"	85	33	30'-3"	37	167
17'-0"	84	37	30'-6"	37	169
17'-6"	82	42	30'-9"	36	172
18'-0"	80	48	31'-0"	35	174
18'-6"	79	52	31'-3"	34	177
18'-9"	78	54	31'-6"	33	179
19'-0"	77	57	31'-9"	32	182
19'-3"	76	59	32'-0"	31	184
19'-6"	75	62	32'-3"	31	186
19'-9"	74	65	32'-6"	30	189
20'-0"	73	67	32'-9"	29	191
20'-3"	72	70	33'-0"	28	194
20'-6"	71	72	33'-3"	27	196
20'-9"	71	74	33'-6"	26	199
21'-0"	70	76	33'-9"	25	201
21'-3"	69	79	34'-0"	24	204
21'-6"	68	82	34'-3"	24	206
21'-9"	67	84	34'-6"	23	208
22'-0"	66	87	34'-9"	22	211
22'-3"	65	89	35'-0"	21	213
22'-6"	65	91	35'-3"	20	216
22'-9"	64	93	35'-6"	19	218
23'-0"	63	96	35'-9"	18	221
23'-3"	62	99	36'-0"	18	223
23'-6"	61	101	36'-3"	16	226
23'-9"	60	104	36'-6"	16	228
24'-0"	59	106	36'-9"	15	230
24'-3"	58	109	37'-0"	14	233
24'-6"	57	111	37'-3"	13	235
24'-9"	57	113	37'-6"	12	238
25'-0"	56	116	37'-9"	11	241
25'-3"	55	118	38'-0"	10	243
25'-6"	54	121	38'-3"	10	245
25'-9"	53	123	38'-6"	9	247
26'-0"	52	126	38'-9"	8	250
26'-3"	51	128	39'-0"	7	252
26'-6"	51	130	39'-3"	6	255
26'-9"	50	133	39'-6"	5	258
27'-0"	49	135	39'-9"	4	260
27'-3"	48	138	40'-0"	4	262
27'-6"	47	140	40'-3"	2	265
27'-9"	46	143	40'-6"	2	267
28'-0"	45	145	40'-9"	1	269
28'-3"	45	147	41'-0"	.....	272

COMPLETE CIRCLES

12" x 4½" x 3", 12" x 6" x 3", 12" x 9" x 3" or 12" x 9" x 3" WEDGE BRICK
12-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 WEDGE 12x6x (3-2)	No. 2 WEDGE 12x6x (3-2½)	No. 1 WEDGE 12x6x (3-2¾)	No. 1-X WEDGE 12x6x (3-2¾)	
4'-0"	76	.....	.....	.....	76
4'-3"	72	7	.....	.....	79
4'-6"	69	13	.....	.....	82
4'-9"	66	19	.....	.....	85
5'-0"	63	25	.....	.....	88
5'-3"	60	31	.....	.....	91
5'-6"	57	37	.....	.....	94
5'-9"	54	44	.....	.....	98
6'-0"	51	50	.....	.....	101
6'-3"	47	57	.....	.....	104
6'-6"	44	63	.....	.....	107
6'-9"	41	69	.....	.....	110
7'-0"	38	75	.....	.....	113
7'-3"	35	81	.....	.....	116
7'-6"	32	88	.....	.....	120
7'-9"	29	94	.....	.....	123
8'-0"	25	101	.....	.....	126
8'-3"	22	107	.....	.....	129
8'-6"	19	113	.....	.....	132
8'-9"	16	119	.....	.....	135
9'-0"	13	125	.....	.....	138
9'-3"	10	132	.....	.....	142
9'-6"	7	138	.....	.....	145
9'-9"	3	145	.....	.....	148
10'-0"	.....	151	.....	.....	151
10'-3"	.....	148	.....	.....	154
10'-6"	.....	145	.....	.....	157
11'-0"	.....	139	.....	.....	164
11'-6"	.....	132	.....	.....	170
12'-0"	.....	126	.....	.....	176
12'-6"	.....	119	.....	.....	182
13'-0"	.....	113	.....	.....	189
13'-6"	.....	107	.....	.....	195
14'-0"	.....	101	.....	.....	201
14'-6"	.....	95	.....	.....	208
15'-0"	.....	88	.....	.....	214
15'-6"	.....	82	.....	.....	220
16'-0"	.....	75	.....	.....	226
16'-6"	.....	69	.....	.....	233
17'-0"	.....	63	.....	.....	239
17'-6"	.....	57	.....	.....	245
18'-0"	.....	51	.....	.....	252
18'-6"	.....	44	.....	.....	258
19'-0"	.....	38	.....	.....	264
19'-6"	.....	31	.....	.....	270
20'-0"	.....	25	.....	.....	277
20'-6"	.....	19	.....	.....	283
21'-0"	.....	13	.....	.....	289
21'-6"	.....	7	.....	.....	296
22'-0"	.....	.....	.....	.....	302

COMPLETE CIRCLES
12" x 4 1/2" x 3", 12" x 6" x 3", 12" x 9" x 3" WEDGE BRICK
12-INCH LINING

COMPLETE CIRCLES
12" x 6" x 2 1/2" or 12" x 6" x 3" KEY BRICK
12-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				STRAIGHTS 12x6x3	TOTAL
	No. 3 WEDGE 12x6x (3-2)	No. 2 WEDGE 12x6x (3-2 1/2)	No. 1 WEDGE No. 12x6x (3-2 1/2)	No. 1-X WEDGE No. 12x6x (3-2 1/2)		
22'-0"	295	13	295	13	.....	308
23'-0"	289	25	289	25	.....	314
23'-6"	283	38	283	38	.....	321
24'-0"	277	50	277	50	.....	327
24'-6"	270	63	270	63	.....	333
25'-0"	264	75	264	75	.....	339
25'-6"	258	88	258	88	.....	346
26'-0"	251	101	251	101	.....	352
26'-6"	245	113	245	113	.....	358
27'-0"	239	126	239	126	.....	365
27'-6"	233	138	233	138	.....	371
28'-0"	226	151	226	151	.....	377
28'-6"	220	163	220	163	.....	383
29'-0"	214	176	214	176	.....	390
29'-6"	207	189	207	189	.....	396
30'-0"	202	200	202	200	.....	402
30'-6"	195	214	195	214	.....	409
31'-0"	189	226	189	226	.....	415
31'-6"	182	239	182	239	.....	421
32'-0"	176	251	176	251	.....	427
32'-6"	170	264	170	264	.....	434
33'-0"	163	277	163	277	.....	440
33'-6"	158	288	158	288	.....	446
34'-0"	151	301	151	301	.....	452
34'-6"	145	314	145	314	.....	459
35'-0"	138	327	138	327	.....	465
35'-6"	132	339	132	339	.....	471
36'-0"	126	352	126	352	.....	478
36'-6"	119	365	119	365	.....	484
37'-0"	113	377	113	377	.....	490
37'-6"	107	389	107	389	.....	496
38'-0"	101	402	101	402	.....	503
38'-6"	94	415	94	415	.....	509
39'-0"	88	427	88	427	.....	515
39'-6"	82	440	82	440	.....	522
40'-0"	76	452	76	452	.....	528
40'-6"	69	465	69	465	.....	534
41'-0"	63	477	63	477	.....	540
41'-6"	57	490	57	490	.....	547
42'-0"	50	503	50	503	.....	553
42'-6"	44	515	44	515	.....	559
43'-0"	38	527	38	527	.....	565
43'-6"	32	540	32	540	.....	572
44'-0"	25	553	25	553	.....	578
44'-6"	19	565	19	565	.....	584
45'-0"	13	578	13	578	.....	591
45'-6"	6	591	6	591	.....	597
46'-0"	.....	603	.....	603	.....	603
46'-6"	.....	604	.....	604	.....	609
47'-0"	.....	604	.....	604	.....	616

Continued Next Page

COMPLETE CIRCLES
13 1/2" x 4 1/2" x 3", 13 1/2" x 6" x 3" or 13 1/2" x 9" x 3" WEDGE BRICK

COMPLETE CIRCLES
12" x 6" x 2 1/2" or 12" x 6" x 3" KEY BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 WEDGE 13 1/2" x 6" (3-2)	No. 2 WEDGE 13 1/2" x 6" (3-2 1/2)	No. 1 WEDGE 13 1/2" x 6" (3-2 3/4)	No. 1-X WEDGE 13 1/2" x 6" (3-2 3/4)	
4'-6"	85	12			85
5'-0"	79				79
5'-6"	73	25			98
6'-0"	66	38			104
6'-6"	60	50			110
7'-0"	54	63			117
7'-6"	47	76			123
8'-0"	41	88			129
8'-6"	35	100			135
9'-0"	29	113			142
9'-6"	22	126			148
10'-0"	16	138			154
10'-6"	9	151			160
11'-0"	3	164			167
11'-3"		170			170
11'-6"		167	6		173
12'-0"		160	19		179
12'-6"		154	32		186
13'-0"		148	44		192
13'-6"		141	57		198
14'-0"		135	69		204
14'-6"		129	82		211
15'-0"		123	94		217
15'-6"		116	107		223
16'-0"		110	119		229
16'-6"		104	132		236
17'-0"		97	145		242
17'-6"		92	157		249
18'-0"		85	170		255
18'-6"		79	182		261
19'-0"		72	195		267
19'-6"		66	207		273
20'-0"		60	220		280
20'-6"		53	233		286
21'-0"		48	244		292
21'-6"		41	258		299
22'-0"		35	270		305
22'-6"		28	283		311
23'-0"		22	295		317
23'-6"		16	308		324
24'-0"		9	321		330
24'-6"		4	332		336
24'-9"			339		339
25'-0"			336	7	343
25'-6"			330	19	349
26'-0"			324	31	355
26'-6"			317	44	361
27'-0"			311	57	368
27'-6"			305	69	374
28'-0"			298	82	380

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 KEY 12x(6-3)x3	No. 2-X KEY 12x(6-4)x3	No. 2 KEY 12x(6-5)x3	No. 1 KEY 12x(6-5 1/2)x3	
10'-9"				9	80
11'-0"				13	82
11'-3"				16	84
11'-6"				19	85
11'-9"				22	87
12'-0"				25	88
12'-3"				29	90
12'-6"				31	91
12'-9"				35	93
13'-0"				38	95
13'-3"				41	96
13'-6"				44	98
13'-9"				47	99
14'-0"				50	101
14'-3"				53	102
14'-6"				57	104
14'-9"				60	106
15'-0"				63	107
15'-3"				66	109
15'-6"				69	110
15'-9"				72	112
16'-0"				75	113
16'-3"				79	115
16'-6"				82	116
16'-9"				85	118
17'-0"				88	120
17'-3"				91	121
17'-6"				94	123
17'-9"				97	124
18'-0"				101	126
18'-3"				104	127
18'-6"				107	129
18'-9"				110	131
19'-0"				113	132
19'-3"				116	134
19'-6"				119	135
19'-9"				123	137
20'-0"				125	138
20'-3"				129	140
20'-6"				132	142
20'-9"				135	143
21'-0"				138	145
21'-3"				141	146
21'-6"				145	148
21'-9"				148	149
22'-0"				151	151
22'-6"				151	154
23'-0"				151	157
23'-6"				151	160
24'-0"				151	164
24'-6"				151	167

COMPLETE CIRCLES
13 1/2" x 4 1/2" x 3", 13 1/2" x 6" x 3", 13 1/2" x 9" x 3" WEDGE BRICK

COMPLETE CIRCLES—BASIC BRICK ONLY
13 1/2" x 4 1/2" x 3" KEY BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				TOTAL
	No. 3 WEDGE 13 1/2" x 6" (3-2)	No. 2 WEDGE 13 1/2" x 6" (3-2 1/2)	No. 1 WEDGE 13 1/2" x 9" (3-2 3/4)	1-X WEDGE 13 1/2" x 6" (3-2 3/4)		STRAIGHTS 13 1/2" x 6" x 3"
28-6"	292	94	386		
29-0"	286	107	393		
29-6"	280	119	399		
30-0"	273	132	405		
30-6"	267	145	412		
31-0"	261	157	418		
31-6"	254	170	424		
32-0"	248	182	430		
32-6"	242	195	437		
33-0"	236	207	443		
33-6"	229	220	449		
34-0"	223	233	456		
34-6"	217	245	462		
35-0"	210	258	468		
35-6"	204	270	474		
36-0"	198	283	481		
36-6"	192	295	487		
37-0"	185	308	493		
37-6"	179	321	500		
38-0"	173	333	506		
38-6"	167	345	512		
39-0"	160	358	518		
39-6"	154	371	525		
40-0"	148	383	531		
40-6"	141	396	537		
41-0"	135	408	543		
41-6"	129	421	550		
42-0"	122	434	556		
42-6"	116	446	562		
43-0"	110	459	569		
43-6"	104	471	575		
44-0"	97	484	581		
44-6"	91	496	587		
45-0"	85	509	594		
45-6"	79	521	600		
46-0"	72	534	606		
46-6"	66	547	613		
47-0"	60	559	619		
47-6"	54	571	625		
48-0"	47	584	631		
48-6"	41	597	638		
49-0"	35	609	644		
49-6"	28	622	650		
50-0"	22	635	657		
50-6"	16	647	663		
51-0"	9	660	669		
51-6"	3	672	675		
51-9"		679	679		
52-0"		679	682	3	
52-6"		679	688	9	

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE					TOTAL
	No. 4 KEY 13 1/2" x (4 1/2-2 1/4) x 3	No. 3 KEY 13 1/2" x (4 1/2-3) x 3	No. 2 KEY 13 1/2" x (4 1/2-3 1/2) x 3	No. 1 KEY 13 1/2" x (4 1/2-4) x 3	STRAIGHTS 13 1/2" x 4 1/2" x 3	
2'-3"	38					38
2'-4"	37	2				39
2'-6"	34	6				40
2'-8"	31	11				42
2'-10"	28	15				43
3'-0"	25	19				44
3'-2"	23	23				46
3'-4"	20	27				47
3'-6"	17	32				49
3'-8"	14	36				50
3'-10"	11	40				51
4'-0"	9	44				53
4'-2"	6	48				54
4'-4"	3	53				56
4'-6"		57				57
4'-8"		54	4			58
4'-10"		51	9			60
5'-0"		48	13			61
5'-2"		46	17			63
5'-4"		43	21			64
5'-6"		40	25			65
5'-8"		37	30			67
5'-10"		34	34			68
6'-0"		32	38			70
6'-2"		29	42			71
6'-4"		26	46			72
6'-6"		23	51			74
6'-8"		20	55			75
6'-10"		18	59			77
7'-0"		15	63			78
7'-2"		12	67			79
7'-4"		9	72			81
7'-6"		6	76			82
7'-8"		4	80			84
7'-10"		1	84			85
8'-0"			84	2		86
8'-2"				5		88
8'-4"				8		89
8'-6"				11		91
8'-8"				14		92
8'-10"				16		93
9'-0"				19		95
9'-2"				22		96
9'-4"				24		97
9'-6"				28		99
9'-8"				30		100
9'-10"				33		102

COMPLETE CIRCLES—BASIC BRICK ONLY
13½" x 4½" x 3" KEY BRICK

COMPLETE CIRCLES—BASIC BRICK ONLY
13½" x 4½" x 3" KEY BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE					TOTAL
	No. 4 KEY 13½" (4½" x 3") x 3	No. 3 KEY 13½" (4½" x 3") x 3	No. 2 KEY 13½" (4½" x 3½") x 3	No. 1 KEY 13½" (4½" x 4") x 3	STRAIGHTS 13½" x 4½" x 3	
10'-0"	36	..	103
10'-2"	67	38	..	104
10'-4"	66	41	..	106
10'-6"	65	44	..	107
10'-8"	63	47	..	109
10'-10"	62	50	..	110
11'-0"	60	52	..	111
11'-2"	59	55	..	113
11'-4"	58	58	..	114
11'-6"	56	61	..	116
11'-8"	55	64	..	117
11'-10"	53	66	..	118
12'-0"	52	69	..	120
12'-2"	51	72	..	121
12'-4"	49	75	..	123
12'-6"	48	78	..	124
12'-8"	46	80	..	125
12'-10"	45	83	..	127
13'-0"	44	86	..	128
13'-2"	42	89	..	130
13'-4"	41	92	..	131
13'-6"	39	94	..	132
13'-8"	38	97	..	134
13'-10"	37	100	..	135
14'-0"	35	103	..	137
14'-2"	34	106	..	138
14'-4"	32	108	..	139
14'-6"	31	111	..	141
14'-8"	30	114	..	142
14'-10"	28	117	..	144
15'-0"	27	120	..	145
15'-2"	25	122	..	146
15'-4"	24	125	..	148
15'-6"	23	128	..	149
15'-8"	21	131	..	151
15'-10"	20	134	..	152
16'-0"	18	136	..	153
16'-2"	17	145	..	158
16'-4"	13	153	..	162
16'-6"	9	162	..	166
17'-0"	4	170	..	170
17'-6"	170	..	174
18'-0"	170	4	178
18'-6"	170	8	183
19'-0"	170	13	187
19'-6"	170	17	187
20'-0"	170	..	..

COMPLETE CIRCLES
13½" x 6" x 2½" or 13½" x 6" x 3" KEY BRICK

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE					TOTAL
	No. 3 KEY 13½" (6-3") x 3	No. 2 X KEY 13½" (6-3¼") x 3	No. 2 KEY 13½" (6-4½") x 3	No. 1 KEY 13½" (6-5") x 3	STRAIGHTS 13½" x 6 x 3	
2'-3"	29	..	..	..	..	29
2'-4"	27	..	..	..	..	29
2'-6"	24	2	..	..	..	30
2'-8"	20	6	..	..	..	31
2'-10"	17	11	..	..	..	32
3'-0"	14	15	..	..	..	33
3'-2"	11	19	..	..	..	34
3'-4"	8	23	..	..	..	35
3'-6"	5	27	..	..	..	37
3'-8"	2	32	..	..	..	38
3'-10"	..	36	..	..	..	38
4'-0"	..	38	..	..	..	39
4'-2"	..	37	2	..	..	40
4'-4"	..	34	6	..	..	41
4'-6"	..	31	10	..	..	42
4'-8"	..	28	14	..	..	43
4'-10"	..	26	17	..	..	44
5'-0"	..	23	21	..	..	45
5'-2"	..	20	25	..	..	46
5'-4"	..	18	28	..	..	47
5'-6"	..	15	32	..	..	48
5'-8"	..	12	36	..	..	49
5'-10"	..	9	40	..	..	50
6'-0"	..	7	43	..	..	51
6'-2"	..	4	47	..	..	52
6'-4"	..	1	51	..	..	53
6'-6"	52	1	..	53
6'-8"	51	2	..	54
6'-10"	49	5	..	55
7'-0"	48	7	..	56
7'-2"	46	10	..	57
7'-4"	44	13	..	58
7'-6"	43	15	..	60
7'-8"	41	19	..	61
7'-10"	40	21	..	62
8'-0"	38	24	..	63
8'-2"	36	27	..	64
8'-4"	35	29	..	65
8'-6"	33	32	..	66
8'-8"	31	35	..	67
8'-10"	30	37	..	68
9'-0"	28	40	..	69
9'-2"	26	43	..	70
9'-4"	24	46	..	71
9'-6"	23	48	..	72
9'-8"	21	51	..	73
9'-10"	19	54	..	74
10'-0"	18	56	..	75
10'-2"	16	59	..	76
..	14	62	..	77
..	13	64	..	78
..	11	67	..	..

COMPLETE CIRCLES
15" x 6" x 3" or 15" x 9" x 3" WEDGE BRICK
15-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				STRAIGHTS 15x6x3	TOTAL
	No. 3 WEDGE 15x6x (3-2)	No. 2 WEDGE 15x6x (3-2 1/2)	No. 1 WEDGE 15x6x (3-2 1/4)	No. 1-X WEDGE 15x6x (3-2 1/4)		
5'-0"	95	13				95
5'-6"	88	25				101
6'-0"	82	38				107
6'-6"	75	51				113
7'-0"	69	63				120
7'-6"	63	75				126
8'-0"	57	88				132
8'-6"	50	101				138
9'-0"	44	113				145
9'-6"	38	126				151
10'-0"	31	138				157
10'-6"	25	151				163
11'-0"	19	163				170
11'-6"	13	176				176
12'-0"	6	189				182
12'-6"		182	13			189
13'-0"		176	25			195
13'-6"		170	37			201
14'-0"		164	50			207
14'-6"		157	63			214
15'-0"		151	75			220
15'-6"		145	88			226
16'-0"		138	101			233
16'-6"		132	113			239
17'-0"		126	125			245
17'-6"		120	138			251
18'-0"		113	151			258
18'-6"		107	163			264
19'-0"		100	176			270
19'-6"		94	189			276
20'-0"		88	201			283
20'-6"		82	213			289
21'-0"		76	226			295
21'-6"		69	239			302
22'-0"		63	251			308
22'-6"		56	264			314
23'-0"		50	277			320
23'-6"		44	289			327
24'-0"		38	301			333
24'-6"		32	314			339
25'-0"		25	327			346
25'-6"		19	339			352
26'-0"		12	352			358
26'-6"		6	365			364
27'-0"			371	12		371
27'-6"			371	25		377
28'-0"			365	38		383
28'-6"			352	50		390
29'-0"			352			396
29'-6"			352			402

Continued Next Page

COMPLETE CIRCLES
13 1/2" x 6" x 2 1/2" or 13 1/2" x 6" x 3" KEY BRICK
13 1/2-INCH LINING

INSIDE DIAMETER	SHAPES REQUIRED TO TURN CIRCLE				STRAIGHTS 13 1/2 x 6 x 3	TOTAL
	No. 3 KEY 13 1/2 x (6-3) x 3	No. 2-X KEY 13 1/2 x (6-3 1/2) x 3	No. 2 KEY 13 1/2 x (6-4 1/2) x 3	No. 1 KEY 13 1/2 x (6-5) x 3		
10'-4"			9	70		79
10'-6"			6	73		81
10'-8"			4	78		82
11'-0"			3	81		84
11'-2"			1	84		85
11'-3"				85		85
11'-6"				85	2	87
12'-0"				85	5	90
12'-6"				85	8	93
13'-0"				85	11	96
13'-6"				85	14	99
14'-0"				85	17	102
14'-6"				85	20	105
15'-0"				85	24	109
15'-6"				85	27	112
16'-0"				85	30	115
16'-6"				85	33	118
17'-0"				85	36	121
17'-6"				85	39	124
18'-0"				85	42	127
18'-6"				85	46	131
19'-0"				85	49	134
19'-6"				85	52	137
20'-0"				85	55	140
20'-6"				85	58	143
21'-0"				85	61	146
21'-6"				85	64	149
22'-0"				85	68	153
22'-6"				85	71	156
23'-0"				85	74	159
23'-6"				85	77	162
24'-0"				85	80	165
24'-6"				85	83	168
25'-0"				85	86	171
25'-6"				85	89	174
26'-0"				85	93	178
26'-6"				85	96	181
27'-0"				85	99	184
27'-6"				85	102	187
28'-0"				85	105	190
28'-6"				85	108	193
29'-0"				85	111	196
29'-6"				85	115	200
30'-0"				85	118	203
30'-6"				85	121	206
31'-0"				85	124	209
31'-6"				85	127	212
32'-0"				85	130	215
32'-6"				85	133	218
33'-0"				85	137	222