

KNOWLEDGE IS THE KEY IN THE CONCRETE INDUSTRY

**INSIDER SECRETS TO**

**The Only Block Machine  
Buying Guide  
You'll Ever Need**

BILL FLEMING

Bill Fleming, 2015 - All Rights Reserved®

*Discover the advanced  
Knowledge you need to know to  
Help grow your business.*

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**Everything you'll ever need to know about the concrete block industry!**

**83 things you need to know about the concrete industry!**

**83 things you need to know about the concrete block industry! 75 answers to your most basic and most complicated block questions**

## 83 ANSWERS FOR QUESTIONS ABOUT SMALL, MEDIUM and LARGE BLOCK & PAVER OPERATION PRODUCERS!

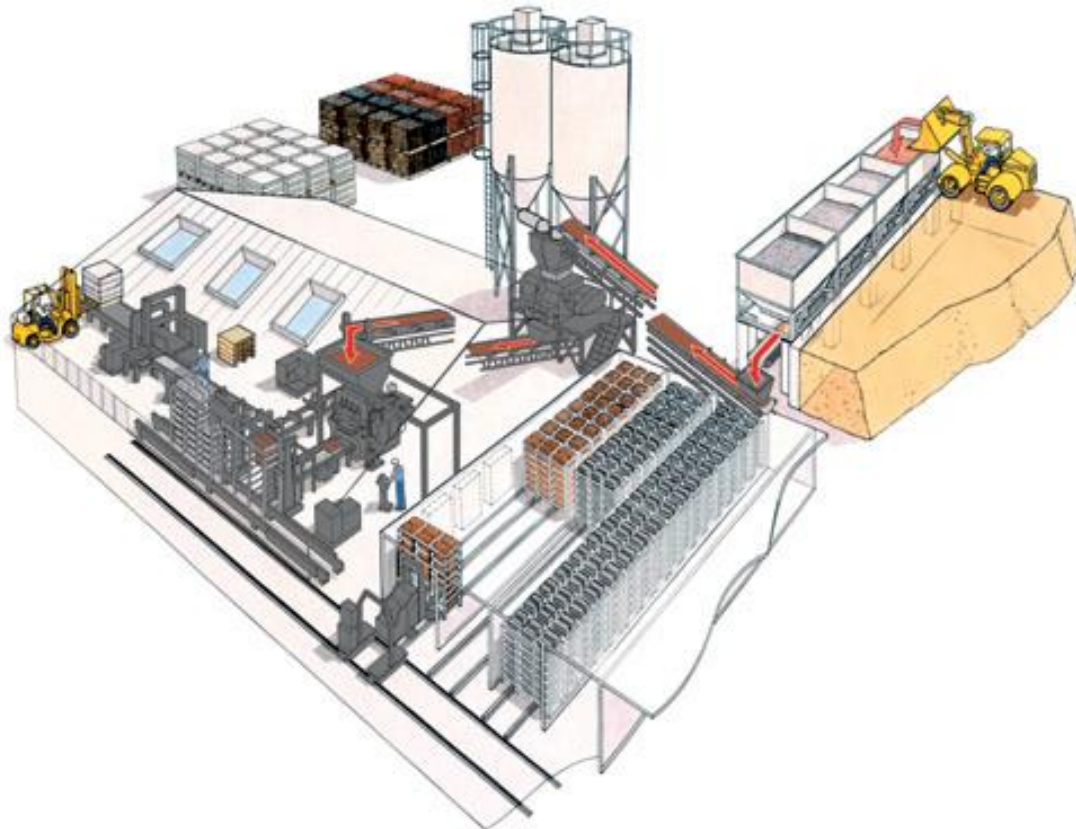
### Section 1: Choosing & Ordering the Right Equipment

#### *1. Do you sell block machines and if so, what types do you sell?*

Yes, we sell all categories of concrete products making machinery which include Block Machines, Interlocking Paver Machines and Wet Cast Machines. All types are available such as, Stationary Pallet, Portable, Press and Multilayer.

#### *2. What is a Stationary Pallet block machine?*

A stationary block machine is permanently mounted at your factory for production of concrete products.



The advantages of this type of machine includes high output

production with the ability to manufacture a wide variety of products that can be produced by the block machine. The products machine incorporates a vibratory system that uses a dry cast mix to fill the empty mold cavities with concrete mix. Once the mold cavities are full of concrete mix the same vibration system is also used during the compaction stage of the process for making concrete products. This complete process is very fast and requires very little cement content in the concrete mix compared to a wet cast mix.

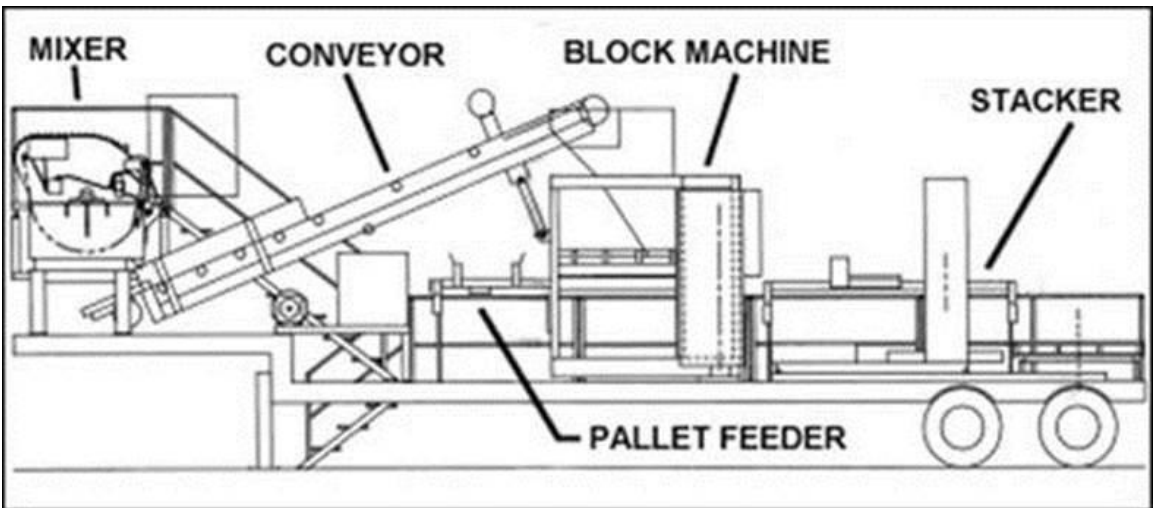


### ***3. What is a Portable block machine?***

A Portable block machine utilizes a vibratory system for filling of concrete in the mold and compaction of the concrete products. The generally smaller sized machine can be taken and set up directly for operation on the job site. Producing the blocks on site at the same location where the concrete products are being used eliminates the freight cost.

### **SAMPLE PLANT #1**

The Mobile Plants have been in the past an affordable solution to manufacture on site, erosion control units, interlocking street pavers, concrete building and mortarless blocks. With the Mobile Plant, you are able to produce up to 1000, 8" x 8" x 16" (20 x 20 x 40 cm) units per hour and 1600 sq.ft. (148 m<sup>2</sup>) of pavers per hour!





**The automated plant comes complete with:**

- Mobile block machinery
- Mobile batch plant
- Mobile cement silo
- Portable generator
- 2000 production pallets

Keep in mind, the plant can be broken down into smaller elements to reduce startup investment. In some cases, output remains the same and additional labor is all that is needed. I can also insert renovated equipment to lower the investment and still provide warranties and service as if it were new.



### Here's How It Works:

Supplying almost 9000 sq. ft. of Interlocking Street Pavers a day to a project 1000 miles away causes no logistical problems for a Paver Producer.

What is shipped are not the concrete pavers, but only the equipment needed to make them. The 30 tons of machinery is permanently mounted on a 40-foot "low-boy" trailer and ready to be moved to any job site.

The process begins with washed raw materials which consist of 6mm. crushed limestone and a clean washed sand. The aggregates, stored in open bunkers in the yard, are collected by a front-end loader and fed into the 30 Cubic Foot Plant Mixer. Cement is fed direct from the 20 ton portable silo into the same Mixer. Mixing takes about 4 minutes, after which the mix is discharged into the belted conveyor. The conveyor, full of freshly mixed concrete is then conveyed directly into the feed hopper on top of the block making machine. The machine is controlled either manually or automatically by the machines solid state programmer.

When the blocks leave the machine on their production pallet, they are collected, 2 pallets at a time, by the Auto stacker, which lifts them



clear of the production conveyor, withdraws a few feet, and then builds up a stack of palletized blocks on a single forklift truck pallet. Even at this stage the newly pressed blocks are strong enough for each succeeding row of units to be placed directly upon the preceding row. When the cube has reached 18 layers high, it is collected by a forklift truck and carried to a suitable position, where it remains until the following day. No artificial curing is employed, but because of the very dry mix vibration and pressures involved, very high strengths are achieved and the units are ready to be handled the following day.



This unique setup is not only capable of producing ASTM Quality Street Pavers, but over a thousand different products with a simple change of molds. Several reasons for producers choosing for their equipment needs are:



### **SAMPLE PLANT#2**

I would foresee a mobile plant to be very simple. On a much smaller trailer mount the mixer and block machine. See below plant that we could fit into containers and you take directly to job site.

## Factory in a Box Cars

ry is ready to be set up and to begin block production at site that is accessible by truck. The containers are to allow easy off-loading from flatbed trucks. The two designed containers are then quickly converted into a ig, sheltered manufacturing facility.

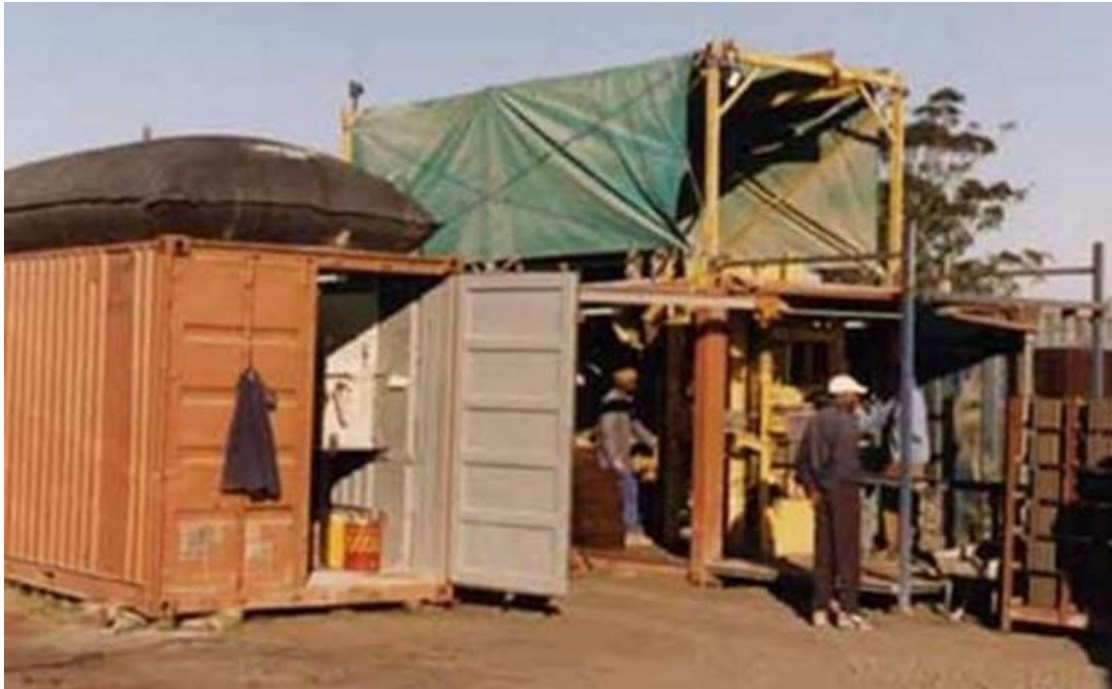
Concrete blocks or pavers are made by mixing of Cement, Sand, Aggregate and Water. These ingredients are mixed together in appropriate proportions with a metered quantity of water. This mix is then pressed through the block machine to form a concrete unit which when cured is ready for installation in 3-5 days to reach full compression strength of unit.



off loading



No extra machinery or tools are required.



easy conversion



## SAMPLE PLANT#3

I had built many portable block plants in the past and the below is for high production of concrete building blocks. This plant was the unit actually made to produce the mortarless block products!



**This Block Machine Can Be Used Mobile Or Stationary.**



The complete mobile plant can produce building block and pavers with the following outputs:

Four (4) - (10cm) 4"x8"x16" building blocks per cycle. (1,200 blocks per hour)

Four (4) - (13cm) 5"x8"x16" building blocks per cycle. (1,200 blocks per hour)

Three (3) - (15cm) 6"x8"x16" building blocks per cycle. ( 900 blocks per hour)

Two (2) - (20cm) 8"x8"x16" building blocks per cycle. ( 600 blocks per hour)

Eight (8)- 10x20x6cm pavers per cycle.(2,400 pieces) (533 sq.ft. pavers per hour)

#### ***4. What is a concrete Press machine?***

A concrete Press machine utilizes only hydraulic pressure to compress the concrete and squeezes the water out of a semi wet concrete mix to form a very strong, dense concrete product. The advantage of this type of process is the finished product is an extremely high strength dense unit. Because the products are so strong and dense the units are able to have a wide variety of post treatments applied to them. This can include grinding, polishing, engraving, shot blasting, flame surfacing or sand blasting surfaces. Another unique advantage of this method of making slabs is that the products can emulate the textures, finishes and blended colors of natural stone or travertine stone. The Press system is the best machinery system for producing these unique slabs, kerbstones, and high strength roof ballast slabs. These types of concrete products are normally sold at a premium price because of their superior quality and long lasting value.



### **5. *What is a Multi-Layer paving stone machine?***

A Multi-Layer machine utilizes a vibratory compaction system with a dry cast concrete mix. The Multi-Layer is primarily and best used for the production of interlocking street pavers. The unique advantage of this system is the ability to stack the freshly formed pavers directly on top of each other during the manufacturing process. Therefore this system requires no production pallets and takes up very little plant space. By forming layers of the freshly made pavers on top of each other, the machinery is creating a cube of pavers the same size as a finished product cube.

After the cube of pavers have been produced and cured overnight they are brought back to a piece of machinery that squeezes the cube tightly together leaving no spaces between the pavers. At this time in the process the cube is banded tightly and taken to the storage yard for future shipping. This eliminates any need for automated cubing systems commonly used with Stationary Pallet machines.

### **6. *How much do your Block Machine Plants cost?***

Concrete blocks making machine plants can be divided into fully automatic, automatic and semi-automatic categories. According to the degree of automation and daily output needed, the prices can vary. You can email us for a price based on your specific needs. We will put together options within your budget.

Fully Automated Block Machine Plant systems range from US \$550,000 to nearly US\$1,500,000

Automatic Block Machine Plant systems range from US \$150,000 to US \$450,000

Semi-Automated Block Machine Plant systems range from US \$15,000 – US \$60,000.

***7. Where is the machinery you sell manufactured?***

I offer and supply new, reconditioned or used Block Machines, Palletizing equipment, Batching equipment, Cement Silos, Aggregate bins and hoppers, concrete Mixers, Block Handling systems, Block Splitters and related items from here in North America.

My company name Global Machine Market comes from the aspect that we sell machines and have customers from around the world. Global Machine Market also represents companies from three continents in the world to offer a complete line of concrete machinery products. By doing this, my customers are able to choose from the highest quality products in the world that are not available or made by USA manufacturers.

Whether the equipment you purchase from me is new, reconditioned or used equipment, it will produce USA ASTM quality concrete products! All of the casting machinery supplied I also have the same or similar level system currently being operated in the USA. I will not work with any company that does not pass the same machine quality and product standards that my customers or I would expect to be operated in the USA. That is a good quality standard by itself to judge the quality of the machinery and the durability of the equipment. If it is good enough to meet North American quality standards, it will meet or exceed any standards in the world market.

***8. Can your machines make other products in addition to concrete blocks and paving stones?***

Absolutely, with a simple mold change our machines can make a wide variety of products. Some models of machines are best suited and more profitable for you to produce certain products on than others.

Our machines have manufactured a wide variety of concrete

products. I've listed below, a few of the hundreds of products that have been produced on our equipment.

Concrete Hollow core building blocks  
Solid Building blocks  
Interlocking street pavers  
Concrete Erosion Control blocks  
Solid and cored bricks  
Manhole adjusting Rings  
Insolated building blocks  
Mortarless building blocks  
Retaining Wall blocks  
Architectural Cast Stone Products  
Thin set pavers 3/4" (19mm) thickness  
Mining support Blocks  
Roof shingles  
Rubber pavers  
Soffit Cored Blocks  
Electrical meter box  
Manhole Blocks

Rubber blocks  
Split blocks  
Kerb stones  
Fencing blocks  
Lawn edger's  
Silo blocks  
Rebar Spacer units  
Drainage blocks  
Landscape units  
Water meter boxes  
Cribbing  
Roof Ballast slabs  
Air conditioner pads  
100% Fly Ash Pavers  
Screen Block  
Parking Bumpers  
Splash Blocks





*9. What are some of the most unique products you have made with your machinery?*

Wood Structured Block (made of all of wood chips)

Steel Slag Pucks (Formed into small oval shape. Cured pucks are sent back to the steel mill furnace for recycling)

Washing machine Counter weights (Used in washing machines)

Roof ballast Slabs (to support and protect rubber membrane roofing)

Mine Support Crib Supports (Has steel in block 1/64" flatness Spec)

Rebar Spacers (used to raise and support during construction pour)

Rubber mats (used for flooring as construction material)

Fire insert blocks (used in fireplaces)

Red clay pavers (ground to showing natural beauty of clay chips)

Exposed aggregate slabs made from seashells and also granite.

Silo blocks (used to make grain silos)

Slabs 24"x24"x1/2" (609x609x12.7 mm) then grinded and polished

*10. What kind of electrical power do I need for the plant?*

All the machines operate on 3-phase industrial electricity. Many of my international customers will purchase a generator to power the plant. Some of the Level 1 machines and mixer systems are available in a gasoline version upon request.

*11. What is the best location to locate a block operation?*

First select a site that is close to the raw material supplies such as your rock and sand. Some of my international producers will even locate their plants on the same site as the aggregate quarry. This is to save time and freight cost of the aggregates to the block plant.

Compare the saving with the transportation cost of cement which is your most expensive material cost. Confirm the obtainability of securing 3 Phase electrical industrial power which is required for most block plant operations. At the same time you should be researching if building permits, zoning approvals, air quality and noise level clearances would be required in the area you are considering.

**12. Do you make a portable block machine that can be taken to the job site?**

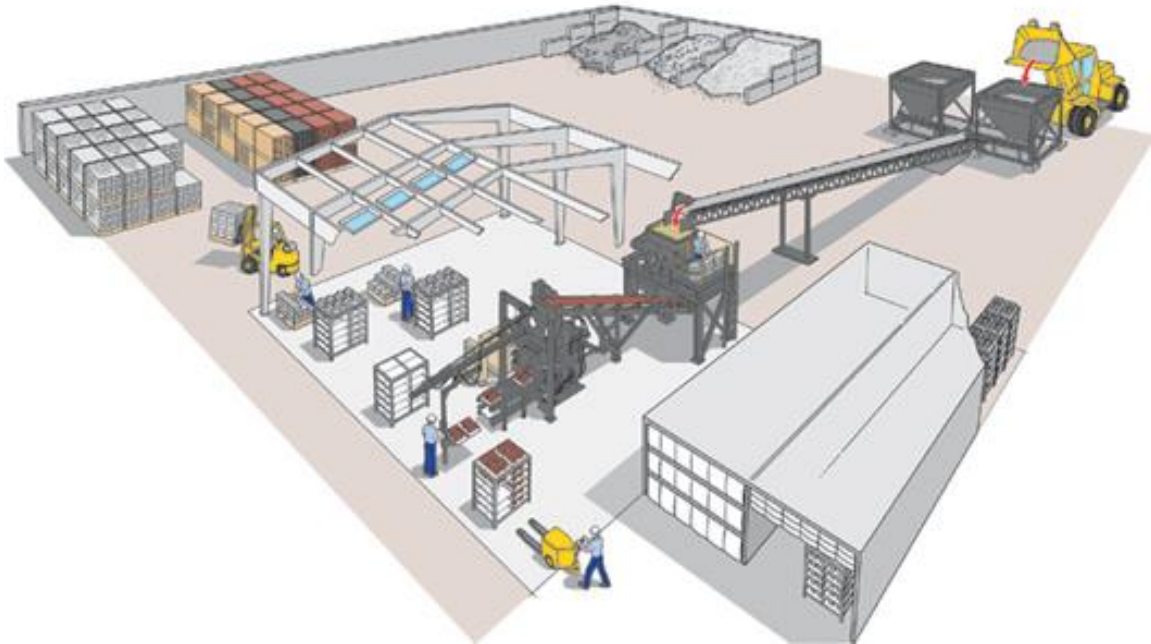
Yes, we have a portable machine systems that can produce both block and interlocking pavers. It can be powered by a single-phase electrical motor or by a gasoline powered engine.

The portable machine systems can be offered as an individual machine system that is a Level 5 or Level 4 system. I also have available completely portable plants that are mounted on trailers or in containers and can be taken to the job site.

**13. How many people does it take to operate a plant?**



Level 5 requires 2 people to operate and palletize products in an 8-hour shift.



Level 4 requires 3 people to operate and palletize products in an 8-hour shift.

Level 3 requires 4 people to operate and palletize products in an 8-hour shift.

Level 2 requires 6 people to operate and palletize products in an 8-hour shift.

Level 1 requires 6-7 people to operate and palletize products in an 8-hour shift.

**14. Do you offer a block machine for less than \$8,000?**

I get many requests each day for machinery and many people start the conversation by asking me the same question, "I need a cheap block machine, something to just get started for \$8000.00 or less. What is the price of your block machine?"

Although I know price is always important to any investment many people often believe a cheap block machine is all they need and they will be successful. Unfortunately purchasing industrial machinery is not as simple as buying on just price. If you are trying to buy on just price it is a very risky game. It would be similar to walking into the

hospital and asking the heart surgeon what is the cheapest heart surgery you have? The first question the doctor should have for you is tell me more about why you think you need to see me for heart surgery? What type of surgery do you need and why? The doctor's job is to provide the best solutions for you and not be selling you a cheap alternative that will not accomplish what you need or want.



It sounds so simple but unfortunately I have seen too many newcomers to the industry purchase equipment on price alone and throw their money away because they did not choose the correct equipment or understand it is a system they are buying not one machine.

I would really enjoy for us to do business together so please take my sincere suggestions and do just a little research and ask a few simple questions to suppliers you research. Explore all the options and when you are done looking and doing your research I would enjoy talking with you. I have a booklet I wrote called "21 tips in buying a Building Block & Paving Stone Machine" that could be very helpful for you. I welcome of opportunity in supplying equipment and my three generations of my families experience to you.

The answer to the question is no I do not offer a system to make blocks for \$8000.00 The question you should be asking yourself and suppliers is in my opinion, what does it cost to get started in the block making industry with everything I need? The block machine itself is just one piece of many pieces of equipment you will need. Please don't get fooled that all you need is a block machine. That is far from the truth.

**15. Can the machines be powered by diesel or gasoline?**

Yes. We do offer the Level 1 machines in gasoline-powered engines upon request.



All the other Levels of building block and paving stones machines operate on 3 Phase 60/50-hertz industrial electricity. We can have them wired to your specific requirements in your country in regards to voltage and hertz. On some Levels you can even specify the brand name motors, electrical switches and PLC controller you desire. This is a huge advantage in being able to service your machinery with your local suppliers, saving time and any shipping cost.

**16. How many square feet or square meters of pavers will your machines make per hour?**

Level 5: up to 2667 sq. ft. (248 m<sup>2</sup>) Interlocking pavers per hour.



Level 4: up to 1920 sq. ft. (178 m<sup>2</sup>) Interlocking pavers per hour.

Level 3: up to 1200 sq. ft. (112 m<sup>2</sup>) Interlocking pavers per hour.

Level 2: up to 1280 sq. ft. (119 m<sup>2</sup>) Interlocking pavers per hour.

Level 1: up to 280 sq. ft. (26 m<sup>2</sup>) Interlocking pavers per hour.



### ***17. What is your cycle time on the machines?***

I am a big believer that quality and consistency in making concrete products is more important than cycle time. I see in so many concrete factories I visit machine operators may be running the machinery at a fast cycle time of 7 seconds, but each hour he is only operating at 70% efficiency. This is because operators are stopping and starting the machine for various reasons and not paying attention to quality. I would rather see an operator produce at a steady 10 second cycle time, obtain 98% efficiency and not put as much wear and tear on the machinery by trying to operate the machine faster. Many times running faster can also lead to producing a higher percentage of unusable products by trying to operate the machinery too fast on certain products.

Another key factor in the speed of a working cycle times of each machine is their mold specific production working area and pallet size. This can vary greatly depending on which machine system you choose. The larger the working area, generally the slower the machine cycle will be. For example a large pallet machine may operate 12-15 seconds per cycle. Because the working area of the

mold is large a lot of products can be made per cycle.

A machine with a smaller mold working area will usually operate at a faster cycle time such as 6-10 seconds per cycle because there is less area to fill the mold with concrete mix. However because it has a smaller mold working area will also produce fewer products per cycle.

Generally taller products take a longer cycle time to produce than the shorter products. Normally, concrete products that require a higher strength psi (MPA) have a longer cycle time. This is because it takes more time to fill and compact the mold with concrete to achieve a higher strength product in most situations depending on your concrete materials being used.

*18. How consistent is the height control of your blocks during production?*

It is vital to have good height control on building blocks in the USA market and many other markets throughout the world. In some areas of the USA it is very common to consistently maintain each individual height of the building block during manufacturing to be within 1/16" or 1.58 mm.

*19. What is the difference between a paving stone machine and a building block making machine?*

Generally speaking you will see advertised in the market each manufacturer of block making machines stating their machine can make both pavers and building blocks.

Some companies that are supplying poor quality machines cannot produce either product to ASTM USA standards and are totally false claims. Ask them for references of customers, making both products on the same model machine that you can talk to on the phone.

I believe most machines are best suited for their intended purposes. I use the analogy of a 4-wheel drive pickup truck and a car. A 4-wheel drive pickup truck with large oversized tires is really good on a rainy day coming up a muddy driveway. You can also drive it down the road at 65 MPH (105 KM/H) on a



raining day. It may start to hydroplane because of those big wheels, but it can do it. Is it best suited for coming up the muddy driveway or going faster on the highway is the question?

The opposite is true for the car driving down the highway at 65 MPH (105 KM/H) on a misty raining day because the car has small narrow tires limiting the risk of hydroplaning. However coming up the muddy driveway the car tires are spinning and the car is sliding side to side but eventually makes it up the driveway without stopping. What was the car best at doing compared to the 4-wheeler?

In summary, some but not all machines will make a variety of products including mine. The most important factor to understand which system is best at its most intended purpose to match your needs. That will make the most money and help grow your business? I can help you analyze the options and discuss which products and best suited for which machine is best for you.

We will compare your business plan, goals and budget to match machine system makes the most sense for you.

### ***20. Can your machines make any size block?***

The concrete building block and interlocking paving stone machines have the capability to make product as long as 55" (1400 mm) long x 55" (1400 mm) long x 16" (40 mm) high product.

Our specialty casting machinery can produce up to 20' (600 cm) long products.



### ***21. How many blocks can a machine make?***

It is very important to understand the difference between how many blocks are made per cycle in a building block machine and how many are made per hour. Sometimes a machine may make more per cycle but make less per hour because the cycle time is so slower on the larger output machine. More blocks per cycle does not always mean better and more output production at the end of the day when comparing machines.

It is important to ask first what size block we are talking about. The smaller the building block size the more units we make in mold working area and per cycle. The smallest machine I offer makes one 8"x8"x16" (20x20x40 cm) hollow core building block per cycle. The largest machine I offer makes fifteen 8"x8"x16" (20x20x40 cm) blocks per cycle. I supply machinery systems that can make between 1000 and 28,800 8"x8"x16" (20x20x40 cm) per 8-hour shift.

### ***22. How many acres of land & building do I need for a block plant?***

This is always a good question. How much do you need and how much can you afford and still run an operation to top level efficiency are two different questions.

One big mistake to avoid when building a new building block or

interlocking paving stone plant, is not to under estimate the future finished inventory yard space to store the building blocks and pavers. This is mainly caused for three reasons.

#1 Reason is in today's world one machine can make a wide variety of products with a simple mold change. For example with most machines I provide, a producer can be making several types of products in the same day. In the morning they can be producing building blocks, make a quick ten-minute and in the afternoon be making retaining wall units. The next morning they might be making paving stones.

The good news is the producer saves a lot of money having to purchase only one machine to produce a wide variety of products. The challenge is to plan your inventory reserves so you enough products in stock to supply your customers when they need products. Because you only have one machine to produce all the products manufactured, the plant will require additional inventory space.

#2 Reason is the foresight to predict how large your business will grow. I have seen many of my customers start with one block machine and today have five and now don't have the space to store all the products and volume those machines can produce.

#3 Reason is plain and simple, the cost may be too expensive or producers may not have the resources to afford more land or be available.

If any of these situations happen, it can greatly affect the growth of your business in years to come. An accurate space design can end up saving your business in years to come.

If you start the business and two years later you don't have space to inventory products you are facing a serious problem. You need to have the products in stock for your customers or they will go to your competitor and buy them. Plan ahead and don't get yourself landlocked on your growth potential.

Generally, it's ideal to build your plant next to a piece of property where you can have an option to purchase or lease the land in the future. You don't want to limit the growth of your company by having limited space.

See Below, the space requirements for each size Block Plant:

#### **Level 5 Plants.**

Plan on at least 15 acres (60,702 m<sup>2</sup>) for the plant including the yard space and ideally 20 acres (80,937 m<sup>2</sup>) with optional land space available to grow your business. Additional inventory yard space will be required when you start operating two and three shifts per day.

#### **Level 4 Plants.**

I see plants that have only 5 acres (20,234 m<sup>2</sup>) but inventory is very limited. You really need more in the range of at least 10 acres (40,464 m<sup>2</sup>) and ideally, 15-20 acres. (60,702-80,937 m<sup>2</sup>) Your next step would be to add a second block machine on the same site. So plan on a site with adjoining expansion possibilities and a first right to purchase land option to grow your business. In the years to follow you will be glad you did.

#### **Level 3 Plants.**

Total acres for the plant should be 6 acres (24,281 m<sup>2</sup>) and ideally, if possible, up to 15 acres. (60,702 m<sup>2</sup>)

#### **Level 2 Plants.**

Total acres for the plant should be 4 acres (16,187 m<sup>2</sup>) and ideally, if possible, up to 8 acres. (32,375 m<sup>2</sup>)

#### **Level 1 Plants.**

Machine systems are very good as portable units allowing you to go on-site with equipment to dramatically limit space and storage area. In the case of a normal plant setting, 1 to 5 acres (4047-20,234 m<sup>2</sup>) is good allowing for growth in the future.

### ***23. How big of building do I need for a block making plant?***

#### **Level 5 Plants.**

This will depend on the design of your plant and if you choose to incorporate you're batching and mixing operating inside the building or outside. Ideally a minimum of a 15,000-25,000 Sq. Ft. (60,702 - 101,171 m<sup>2</sup>) building is necessary. This would include curing space, which is required.

### **Level 4 Plants.**

This will also depend of the design of your plant, but normally at this level the batching is outside with the mixing inside the building. Ideally, a minimum of 10,000-20,000 Sq.Ft. (40,464 - 80,937 m<sup>2</sup>) building is necessary. This would include curing space, which is required.

### **Level 3 Plants.**

Now you can start be more create with layouts and building because the equipment package has less equipment in the plant. Normally batching is outside unless in cold weather climates. In some sunny warm weather locations the building block and paving stone machinery can be stored outside with covered roof with no sidewalls. Total building size if enclosed including the curing rooms is 8,000 to 10,000 Sq. Ft. (32,375 - 40,464 m<sup>2</sup>)

### **Level 2 Plants.**

This level of operation is very popular for international markets because of its simplistic and affordable set up. In most installations no building is required other than a 5,000 Sq. Ft - 8,000 Sq. Ft. (20,234 - 32,375 m<sup>2</sup>) covered roof shelter without sidewalls to keep the rain from pouring down on the equipment.

### **Level 1 Plants.**

This level of operation is the simplest of all the machine systems I can offer you. The machine is a very portable machine and is often taken to the job site where no building is required and blocks are stored on job site. In most installations no building is required other than a 3,000 sq. ft. - 5,000 sq. ft. (12,141- 20,234 m<sup>2</sup>) covered roof shelter without sidewalls to keep the rain from pouring down on the equipment.

### ***24. How long does it take until I can actually start making products from the time I place a down payment?***

I always take a realistic viewpoint on this question because there are many factors that go into the perk chart when we make a detailed schedule. Some of the issues that affect the delivery can totally be out of the control of the machine builder or the buyer of the equipment.

For example the most common delays I see are either getting the proper permits or securing the electric service by the time the equipment arrives. The first installation I ever did we had all the equipment installed and ready for test operation but we had no three phase power. It took an additional four weeks waiting time for the regional electrical service company to install the three-phase power into the building. The main 3 phase power was on the electric pole only 150 Ft. (46 m) from the building! The buyer of the equipment planned two months earlier for the electric service installation and was told by the electric utility company installation time should be done in one week. Scheduling utility companies to do work for industrial installation moves of electrical 3 phase power lines is not like calling your local electrician. Generally you have no control over the big utility companies, they tell you when they will come.

Other real life situations that occur are new building construction delays by contractors due to weathers or conditions.

For overseas shipments, I have seen cargo containers delayed by weather or by customs holding the goods at their port for up to six weeks in one case.

Typically, from the time you order the equipment to the time the machinery is actually making products I recommend you plan four months. The Level 5 plants take up to six to eight months to be up and operating from placement of order. This naturally depends on the size and what level of facility you are installing. I have seen the plants shipped, installed and making products much faster but I believe you should be realistic in your goals.

Remember there is a difference between getting the machinery installed and operating and then getting your people trained in making good quality products everyday learning the business of operating and maintaining machinery.

***25. If I order new equipment, does it take longer than if I purchase used equipment?***

I wouldn't advise making a long-term purchase decision solely based solely on delivery time but used equipment generally has a much

faster delivery time. For example a common Level 3 plant can be loaded on shipping trucks or containers in approximately three weeks from the from time I receive your down payment. The same set-up, installation times and training times would apply whether new or used.

***26. How much will it cost for the machine to be delivered?***

Before your equipment is ordered, you should know the totals for what it will cost, including freight and insurance, to have all the equipment delivered to your exact address or shipping port. We need to specify the exact equipment you are considering to purchase in detail before providing you a freight offer. You would normally obtain an exact freight offer after you have visited me or have seen the equipment in operation. I don't provide freight quotes until we both know exactly what you need and have been quoted on equipment.

***27. What simple questions should I ask when researching concrete machinery systems?***

How many years have you personally been in the concrete industry?

Do you have any machines operating in the USA?

Has your business ever been sold, purchased or in bankruptcy?

Where can I go to see one of your machines?

Do you have service people to help me get started and train my staff and people?

What are your machines best at doing?

What is the working area of your machine?

What is the cycle time of your machine?

Tell me about your service program?

What types of steel are your molds made from?

Does your block machinery have height control bins to maintain control of building block height?

Are the block molds made in welded construction only or have bolt-in replaceable parts?

Where are the replacement parts and molds shipped from when you need them in the future?

Do you have references of customers who have purchased the machine I'm interested in?

What type of vibration system does your block machine utilize to make concrete products?

How fast can the supplier normally supply replacement parts?

**28. *What does Global Machine Market do as a company?***

I am a 3<sup>rd</sup> generation equipment builder. Global Machine Market supplies equipment to different segments of the concrete industry, which include the block, precast, pipe, veneer stone and ready mix industries.

I sell new paving stone, building block, press slab machines, mixing and batching systems. In addition I rebuild and recondition USA made block machines as well as broker used concrete machinery equipment. This helps concrete producers by supplying a complete plant operation, installation, and full service and on-site training from one single source company.

By being able to do all of the above, I am able to offer you a complete turnkey system customized to your needs. This allows you the ease of having to work with only one person and company to coordinate, design, install, service and guide you through your project.

**29. *Do you sell equipment internationally?***

Absolutely. We have shipped equipment all around the world. I have personally installed equipment we supplied in Australia, Singapore, South, Central and North America. In all total, I've supplied concrete



machinery equipment in over 80 countries.





**30. Do your machines all make USA quality concrete block?**

I supply concrete machinery equipment that only produces USA ASTM quality products! All the machines systems I offer are not only operating internationally but the same machines are operating in the USA. If the equipment is good enough to operate successfully in the USA and North America meeting and exceeding their performance standards I am sure it will do the same for any International markets around the world as well.

**32. Why is a concrete mixer so important to concrete products plant operation?**

A lot times when a novice person walks into a block or paving stone factory the first piece of machinery they want to go watch is the block machine. It is exciting to watching at the Level 1 and 2 levels. The machinery is making a lot of rapid movements, clanging, loud vibration sounds and magically out of the machines comes concrete products. It is logical to think that the block machine is the most important piece of machinery in the plant? After all, when an imperfect or poor quality concrete product comes out from of the block machine it must be the block machines fault?

I am here to say that the machine is vital to any operation but most of all the quality problems start with poor blended and moisture inconsistencies in your concrete mix. That is controlled by the mixer, not the block machine! Always remember a block factory is made up

of a series of independent machines working together in unison.

The mixer is a vital machinery link in the chain of making any concrete product. I often use the similarity of a block plant to a bakery. If you don't have good cookie dough and a good blender it does not matter how good of cookie cutter you have. The cookies are not going to be any good.

It is the same in the block business. If you don't have a good mix and mixer it does not matter how good of block machine you have. The blocks are not going to be any good.

### ***33. What is the best method to maintain moisture consistency in a concrete mix?***

In order to make the good quality concrete products every day it is vital to maintain a consistent moisture content in the concrete mix. Many years ago before technology was available this was done by testing each batch by hand. The mixer operator would normally take a hand full of mix while the mixer was running and squeeze making a concrete ball in his fist to feel and determine to determine the correct moisture content. Typically in the morning the mix requires less water to be added in each batch and in the afternoon the sun and heat dry's the aggregates requiring more water to be added to the batch of concrete mix. The hand moisture concrete testing process is an art that is very similar to a chef learning the feel and look of making the correct dough consistency for cakes, breads or pizza.

Then in the later 1960's, 70's, 80's technology tried to replace the human element with devices to add water control moisture consistency automatically within the mixer. In most applications the meters and systems would work satisfactory but were not totally reliable with all types of different sand, rock, lightweight or heavy weight materials and heat differences in aggregates.

In the last two decades technology has made huge advancements that have proven to be extremely accurate and reliable by introducing Microwave Technology. With the introduction of the Microwave moisture meter probes, sensors and programming to control these systems the concrete industry has made huge innovations. This is done by using sensors that utilize digital techniques for measuring the change in a microwave resonator frequency with changes of moisture in the material. Possibly the most important factor is that this

technique provides a greater accuracy of measurement over a far wider range of moisture contents, and is suitable for working with a far wider range of materials provide a superior accuracy in repeating the required amount of water needed in your mix.

To add even greater accuracy probes can be put in mixers and also the aggregate bins for even greater consistency which allows producers to maintain within 2% of your target moisture content using this type of system. This saves you money in cement, quality control, labor savings, loss of any bad products and any hauling charges and much more.

***34. I want to make a specific product and need to see if your machines can make it?***

This is a very common question since so many of my customers have used my machinery systems to create new products. This is because we listen and adapt our standard machines with changes to meet your needs.

This process is started by you sending me a picture or two dimensional sketch of the product you what to produce. I will call you back to discuss the overall details. We will talk in more detail the specific concepts of the product, strength requirements, materials you want to use in making the product. Other questions normally talked about are dimensional tolerance of the product and production output requirements. Within a week I will forward to you details on pricing and what equipment is required to manufacture and produce your product.

***35. What are your payment terms to purchase the machinery?***

Generally the terms are 50% down payment and balance paid prior to shipment.

***36. We are interested in a small concrete block machine. Can you assist with this request?***

Absolutely, I can supply you with the same basic design of block machine that my grandfather Harry Fleming made. The machinery is an extremely simple block machine to operate and makes the same quality building block or paving stone as the larger machines I supply producers today.



It is normally supplied in 3 phase electric power, which is the most economical way to power the machine. However, as an option the machine is available in a gasoline powered version for areas of the world that do not have access to 3-phase power.

***37. I need a machine to test the market and the product I want to make. Do you have a machine you would recommend?***

The normal process is for you to send me a two dimensional sketch or picture of the product you want to produce. I will then call you back with my suggestions and find out more about your goals. We can come up with many options.

In many cases I am able to obtain a production plant that could produce a similar shaped and sized product for you perform your own testing and research.

A second option would be for us to design and supply you a mold to the exact product specifications you require. We would make sure the mold for a specific model and brand name machine. We could then introduce you to many producers across North America that could produce small or large production runs for you by shipping your mold to them.



Your third option would be to supply you with a simple low cost Level 1 machine and customize mold at a very affordable cost. You then could manufacture your own products and do your testing and market evaluations while controlling all your efforts in one location.

**38. *Why don't you show prices of your new or used equipment on your website?***

The concrete equipment industry is not like buying a car. In our industry it is a combination of machines linked together sometimes physically and most times electronically that make up an operation. I have found that just showing a price on a single machine item can be very confusing and misleading to buyers.

A buyer needs to understand all the details it takes to put together a concrete products facility before purchasing individual machines. If not, this could lead to huge problems for you, which in turn doesn't do me any good having a potential dissatisfied customer. Compared to the car analogy you are not buying just a car. You are buying the individual machinery and equipment it takes to manufacture a car.

**39. *How do I request a quote on blocks plants and concrete machinery?***

The normal sequence of events is done two ways.

1. Please note if you want prices on a new plant or used equipment don't ask to me quote all the Levels of plants or machines I have available. That is like walking up to a car dealer and saying "give me every price of every car you have for sale." If you need to don't understand the Levels of equipment or confused about what you need, try to simply explain your project to me in detail. Let me know what products you want to make and how many you want to make or how

- many concrete units you think can be sold in a day? Why do you need to do this project? It is also helpful to know what month you need to be in operation and how much you are willing to invest for a concrete products manufacturing operation.
2. If you tell me about your project I should have enough information to send you an offer. If I do not have enough information I will contact you by email or phone within approximately 72 hours with any further questions. After gathering any additional details, I then will make sure you get the most appropriate equipment package offer to match your needs.
  3. You can simply pick up the phone and give me call at 913-766-1025. We can discuss your project and I will answer your questions.

***40. How long has Bill Fleming been involved in the concrete industry?***

I am a third generation equipment builder in the concrete machinery industry. My grandfather made thousands of small semi-manual operated concrete building block machines and spiral blade concrete mixers from the early 1940's to 1960's. My father made concrete block and paving stone machines, block splitters, skip hoist, stackers and block molds since 1952. I made large paving stone and block machines, concrete batch plants, and molds for most German and all the USA brand name machines with additional block palletizing automation since 1981.

My father had me making mixing concrete and making building blocks on our machinery when I was 12 years old. I've been in more block plants than I can remember and visited in person most the major block machine builder's facilities in the world. I have been very blessed to attend trade shows across the globe and have seen hundreds of block and paving stone plants with a wide variety of competitive machinery systems operating.

***41. How long does it take to manufacture the equipment?***

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		
31						

Normally, we have the smaller output machines in stock however the molds are made to order and your product specifications. A mold can be made in six to seven weeks. With level 2 or level 3 machinery, the normal delivery time frame is six weeks. Finally, the largest output machines (level 4 and 5) are made to order and generally take four to six months.

**42. How tall of building is needed to house a concrete manufacturing plant?**

The type of building you will need varies based on where you are located in the world. In most cases, you will ultimately like to have an enclosed building, but many producers in areas where cold weather is not a factor will start with a building that has a poured concrete floor and a cover or ceiling but no finished sidewalls. They save the cost of finishing the building for a future date. It is also best to build a building that is expandable in one direction for future expansion as you grow your business. Building sizes will vary depending on which level of machinery you are considering.

Questions should include do you plan on installing your mixing and batching systems inside the building? What type of block handling system do you plan to use? Do you plan to incorporate the curing inside the same building?

See below approximations based on if you desire to have cabling and



wiring of machine overhead which is becoming more popular come.



Level 5 preferred 60' (18 m) Ceiling height



Level 4 preferred 50' (15 m) Ceiling height



Level 3 preferred 40' (12 m) Ceiling height

Level 2 preferred 25' (8 m) Ceiling height



Level 1 preferred 15' (6 m) Ceiling height

**43.** *Do you finance equipment?*

Yes, if you live in the USA and the equipment is going to operate in the USA we have many financial packages. Unfortunately, if you plan to operate the equipment anywhere other than in the USA I do not have a financial package available at this time.

***44. Are you willing to sign a confidentiality agreement?***

Yes, I have always worked with clients on development of machinery or concrete products that require the utmost secrecy and confidentiality. I recommend to my clients they always have their suppliers sign a CA if they are introducing new products or something that if of great value. Especially if this item or process could be of finance lose to you if someone else were to gain access to it.



***45. Where can I go see a machine or complete plant in operation?***



Because of confidentiality and respect to my clients I do not talk specifically about who, what and where they are located. I can however ask for their permission for you to tour their facility once you and I discuss what products you want to produce. It is always good for you to visit a plant operation that is using similar equipment and products that you might be producing. In most cases it is not a problem to obtain a plant tour.

*46. Do you help people with consulting if they just want to learn the business?*



I offer several ways to assist startup and existing producers in consulting which can be tailored to meet their needs. The most common program is where I become your consultant for your project and you pay me a onetime fee. I will teach you the entire industry from plant layouts, learning your real cost to make your product, how to make products efficiently, and introducing you to all of the machinery systems on the market available today. My role is not to sell you anything because you have already paid me for my time. I provide you an honest non-bias opinion and provide you unlimited access to me by phone, email or Skype at a very affordable fee.



## Section 2: Concrete Product & Material Questions

### *47. What is concrete?*

Concrete consists of a mix of ingredients, including Portland cement, pozzolans, water, coarse aggregates, fine aggregates, and additives. Concrete may also contain mineral colors, granulated blast furnace slag, and blended cements. When fresh, cement can be molded hours after it is produced. Once the initial set time is reached, the concrete continues to gain strength.

### *48. What is the difference between cement and concrete?*

It's simple. Concrete is used for the finished products, such as interlocking paver sidewalks, block foundations, and CMU building blocks and retaining walls products. Concrete contains sand, gravel and cement.

Cement is the special hardening ingredient (the gray powder) that makes the concrete harden. Cement is usually made of 60% lime (limestone), 25% silica, 5% alumina, and 10% other materials, such as gypsum and iron oxide.



#### **49. Why is concrete gray?**

First of all, concrete can be made in many colors. The natural color of concrete is gray because the color of the cement used to make it is typically gray. Now, the reason the cement is gray has to do with the manufacture of Portland cement. When manufacturing cement, Iron Ore is used as one of the main constituents. Iron Ore is black in color, so when it is combined and melted with the other materials it tints the cement gray.

#### **50. What is fly ash?**

Fly ash is a by-product of coal combustion. Most commonly the material is produced by coal fired electrical generating facilities. Fly ash is a cementitious material, meaning it has certain properties that cause it to harden upon exposure to water. Typically, fly ash does not develop much compressive strength on its own. However, in the presence of Portland cement, fly ash can develop strength

characteristics very similar to cement. We commonly use a small percentage of fly ash as a cement replacement to save money since it is much cheaper in cost. Be aware fly ash reacts with a chemical by-product of the cement hydration reaction called calcium hydroxide. This can cause deleterious effects in concrete such as increased porosity and efflorescence (the formation of calcium carbonate crystals on the concrete). Because fly ash reacts with the calcium hydroxide to form more calcium silicate hydrate (the binder derivative of cement), fly ash actually adds strength to the concrete and helps to remove an agent that may be harmful.

***51. How is the strength of concrete measured?***

Scientists use a compression and flexural mechanical strength-testing machine to determine the strength of concrete. The strength of concrete depends upon various factors including the quality of the vibration used in making the product. Also, to a large degree on the water-cement ratio, and the quality of the aggregates used to make the concrete product.

***52. Are there quality standards for concrete products?***

Yes. In the USA concrete must comply with local building codes, ACI, and ASTM standards.

***53. Does concrete gain strength by drying out?***

No, mixing cement, aggregates and water together makes concrete. When the water comes in contact with the cement a chemical reaction starts to take place. This chemical reaction is called hydration. Hydration is the reaction between the chemicals in water and the chemicals in cement. This reaction forms new compounds and crystals interlocking themselves and the aggregates together.

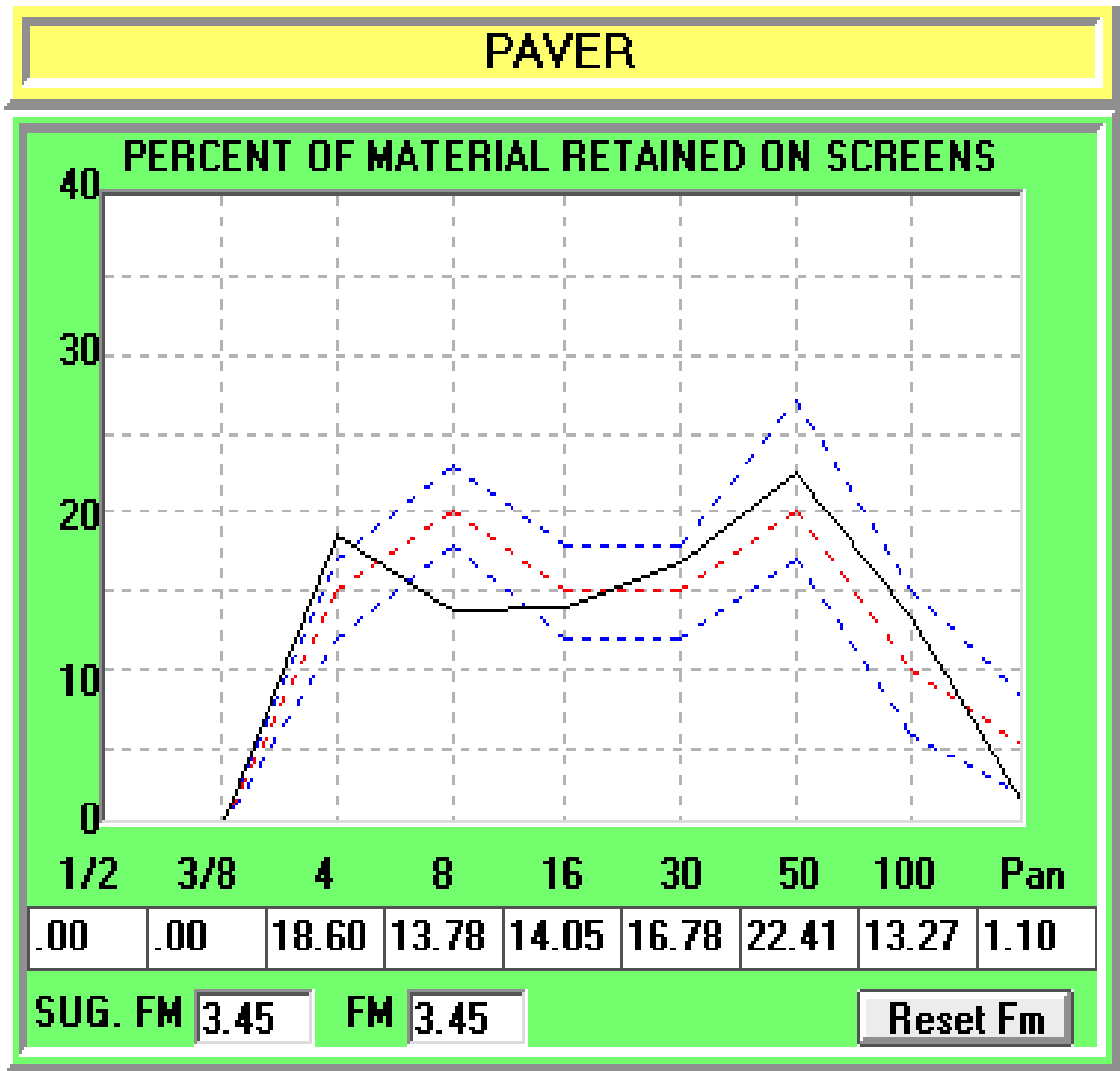
A majority of the hydration reaction takes place from the first 8 hours after being formed in the block or paving stone machine. Small amounts of additional reaction and strength gains could take place for years as long as moisture is still present to cause more hydration. Actually, when the concrete does finally dry out, it stops gaining strength.

**54. *What Materials are used to make Building Blocks?***

Concrete Masonry Units (CMU) are made of a proportioned combination of powdered Portland cement, water, sand, and gravel. This produces a light colored gray block with a fine surface texture and a high compressive strength. A typical concrete block 8"x8"x16" (20x20x40 cm) in the USA weighs 38-43 lbs. (17.2-19.5 kg). You can also make the CMU in different colors by adding Iron Oxides colors into the mix or by using a white cement to change the color of the CMU's.

**55. *What size sand and rock does it take to make block?***

The most commonly used size of aggregate (rock) is 3/8" (9.5 mm) and the sand sieve size is #8 (2.36 mm). It is extremely important to have the correct amount of blended materials not only to make a strong product but also a profitable unit with the texture you require.



**56. How much cement goes into making a block?**

This can depend greatly on the aggregates you are using along with the block strength and finished texture you are trying to obtain. It also has to do with the quality standard you may be experiencing in your country. For example in the USA we make a very tight smooth textured texture block because we use the block as a finished exterior wall unit. The most common ratio of cement to aggregates to make a normal height CMU building block is 1 to 10 or 1 to 11 Cement to aggregates ratio. When making a high strength structure block, the average is a 1 to 9 Cement ratio.

In other parts of the world it is not required to make a smooth textured block because the blocks are all stucco finished after being laid in a



wall. That means the blocks producers are able to use larger sized aggregates which requires less percentage of cement in the mix. I have seen some of my international customers make very good products with as little as a 1 to 13 Cement ratio.

My theory is to always make the best product you possibly can. Using the smallest amount of cement possible could cost you losing existing and future sales in your business. I have seen this happen many times with companies I've studied that did not even use my equipment for manufacturing. Making too cheap of block with poor quality can make you lose customer and it is hard to regain the trust and get the customers back buying from you even if you are the low cost leader in the market.

**57. *What is the ratio of sand, rock and cement it takes to make a quality concrete building block that is be produced in the USA?***

Building Blocks

70% sand

30% Rock

1 to 10 or 1 to 11 Cement Ratio

Retaining walls "Structural

70% sand

30% Rock

1 to 9 Cement Ratio

Paving Stones "USTA Specified Type Paver)

25% sand

75% Rock

1 to 5.0 Cement Ratio

**58. *How are building blocks made?***

To briefly explain the concept to someone that has never seen a block making facility it is similar in overall concept to a bakery that makes cookies. It all starts with the blending of your ingredients into a blender. In the block industry we call the blender a mixer. First, the ingredients of sand, 3/8" rock, Portland cement, water, optional colors and special additives (admixtures that enhance the properties of the concrete mix) are loaded into the mixer. They are then thoroughly mixed and dispensed in many different ways to the cookie cutter or

what we call in the block industry the block machine. The block machine, like a cookie cutter has different shapes and sizes of dies and can make a wide variety of thickness, widths and lengths of products. These dies (molds) can be taken in and out of the machine depending on the product you want to make that day.

All the cookies (Concrete products CMU's) are made on cookie sheets or what we call in the industry, production pallets which are used to transfer the freshly made products either into racks or other stacking methods to a curing room. The curing room is the oven to the bakery but we don't necessarily bake the products in the concrete industry. We just want them to cure in an atmospherically controlled area overnight. The next morning the concrete products CMU's are taken away from the curing room and either manually or fully automatically palletized onto wooden shipping skids. The empty production pallets that the CMU's were produced on are then returned to the block machine and reused in the next day's production sequence.

***59. What does curing of the concrete building block or interlocking paving stone mean?***

Curing is the process of maintaining satisfactory moisture content and a favorable temperature in the interlocking street pavers or concrete building blocks. The process ensures the hydration of the cement and development of optimum strength for the concrete products.

***60. How long does it take to cure the blocks?***

Normally the concrete building blocks just have to cure overnight. In internationally markets it is not always common or necessary to have an enclosed curing room to maintain a consistent temperature. In this case I recommend covering the freshly made blocks with a dark or even colored light plastic. This will help in containing the moisture in the units and prevents the wind or sun light from prematurely drying out the blocks.

***61. Can I cure building blocks inside a building with no heat?***

Yes, you can do what we call an open cure, which is generally inside of the building using curing bays. A curing bay or room is a narrow with a low ceiling room that a fork lift places the freshly made building blocks into and the pulls down a curtain to hold in the moisture and

heat the block is self-creating. Generally the old industry rule is build one curing bay for each one hours' worth of block production.

If your normal air temperature inside the curing bay is 75 °F (24 °C) degrees when you are loading fleshing made blocks into the curing room the next morning it will be 95 degrees. This is because the heat of hydration process activated and heated up the blocks hence raising the temperature in the enclosed room that had no assisted heat. Depending on the aggregates and mix design after one nights curing you can set the cured hollow core building blocks outside. In today's world there are many type of curing methods you can also use depending on your climate conditions if you are planning on producing during the winter months,



**62.** *Do you have to bake the block at a high temperature overnight to make them hard?*

No, concrete building blocks are not baked. However it is import that the building blocks stay as warm as possible so the curing hydration process can begin. The most common method in the USA is steam curing. This is where the block plant has several curing rooms and once full of building blocks the temperature is raised up to no more than 150-165°F (66-74°C) for a short period of time. They will also combine this with mist steam to ensure all the blocks absorb water

which allows the cement to activate and start its hydration process. Keeping moisture in the building block so it does not dry out prematurely is vital. If this does not occur the curing process slows down or stops which has a negative effect on PSI (MPA), strength. Allowing moisture out of the block in inconsistent ways can also change and the colors of your block if using color pigment in your mix and can lead to cracking of the block.

**63. *What is the coldest temperature I can still make concrete building blocks without heating the mix?***



In cold weather areas of the world the general rule is you need to have the aggregates to be at least 42 °F (6°C). If the temperature gets any lower you will want to consider heating the aggregates before they are placed into the concrete mixer. The reason is you need the concrete mix warm enough to allow the cement hydration process to begin. Without this reaction the building blocks will have no psi (MPA) strength because the cement did not activate in the hydration process bounding the sand, rock and cement together.

The ideal temperature for aggregates is between 55-60 °F (13-16°C) Adding water before you add cement to the sequence of materials is vital so you don't will get a premature set or flash set in the concrete mix. If you have very cold aggregates and want to bring them up to the correct temperature you might need a water boiler unit. To bring them up to proper temperature might be adding up to 5% of the total mix by weight in water at 115 °F (46°C).

**64. *How long do I have to let the blocks cure before I can ship them?***

This will depend on many factors such as the type of curing method you are using, your mix design and the type of block being produced. In many parts of the world, I have seen building blocks made and shipped within 24 hours of being produced! We would never suggest

this in the USA because your breakage factor is going to be higher since generally your blocks are not fully cured. Also if the moisture in the block has not fully hydrated with the cement you could have cracking in the mortar joints after the mason has laid the blocks. That means the masonry walls might have to be knocked down and re installed by the mason. That could mean lost profits for you. I would suggest if you were in the USA you inventory the blocks a minimum of at least one to two weeks from the time it leaves the curing room. If you are making retaining walls and pavers, you will be able to ship sooner. It is not uncommon for producers to ship these products in one to two days. I still think for good quality control it is best to give the products at least a week to fully cure depending on your own unique situations.

*65. Can you achieve 8000-PSI paver strength and meet ASTM standards?*



Yes, all the machines I offer meet or exceed ASTM specifications of interlocking pavers, load bearing structural building blocks, cast stone or steel recycled materials.

In regards to paving stones Thickness of concrete pavers varies according to the application:

- Pool deck and light sidewalks and even sidewalks in

certain parts of the USA use 19mm thick thickness pavers.

- Pedestrian areas, driveways, and areas subject to limited vehicular use are paved with unit's 6 cm (2 3/8") thickness.
- Light traffic with good foundation preparation for Streets Should be at least 8cm and ideally 10 cm.
- Industrial pavements such as ports or heavy traffic should use 12 cc thickness pavers.

Pavers made in the United States should meet or exceed the requirements established in the American Society for Testing and Materials (ASTM) C 936, Standard Specifications for Solid Interlocking Concrete Paving Units.

Here are the requirements for this standard:

- An average compressive strength of 8,000 psi
- An average absorption no greater than 5%
- Resistance to at least 50 freeze-thaw cycles with average material loss not exceeding 1%
- Conformance to abrasion resistance tests



**Tensile Interlocking Paver Strength Test**



**Interlocking Paver PSI Compression test**

**66. *How much does it cost to make a block?***

This is determined by the cost of your local materials. You will need to know your cost per delivered ton of all your raw materials which includes cement, sand and rock. In addition you will need to know the cost of any other ingredients you are including in a batch of concrete such as color, water and add mixtures. I can help you with this using my Cost of Goods sold program. This allows us to insert your specific material costs, the products you are considering to produce and your equipment investment. The program will then show you the actual cost for you to make each concrete product. I provide this program to my serious clients that know what equipment they are considering to purchase from me and also companies that I consult with in the concrete block and paving stone industry. This program was used with one of my startup customers to show the investors the profitability of the investment. The program was incorporated in their presentation which and helped them secure over four million dollars in Federal, state grant money and financial loans using this program.

## Section 3: Pre-installation Questions

### *67. How do you service the equipment if something when I need help?*

You will only be a phone call away from service and parts. With many of the machines we offer, we have Internet modem access whereby the service technicians can login into your control panel and actually see how your machine is operating. Other technology includes apps where your plant manager can be at home and log in and see the statics, details and settings of the machines performance.

What I always recommend to any of my customers is you must become as self-reliant as possible by doing good preventative maintenance and also stocking the parts that cannot be obtained from the Internet. Even though we can provide great service it is also you're responsibly to take the necessary steps to be as profitable as you can be. We can ship you parts overnight, but that still leaves you not operating and losing production.

As an analogy I jokingly say if you did not have a spare tire in the trunk of your car and you had a flat tire on Sunday evening. Even if I could get you a tire with next day service you are stuck on the side of the road until it comes in on Monday. Some critical items you need to stock yourself for this very reason. There is a reason all the cars in the world have spare tires. People on occasion have flats and you can't predict when they will occur so make sure you spend the money to have a spare replacement so you don't get stranded for hours or longer with unnecessary downtime. The same common sense can be applied to a concrete block plant in organizing your spare parts in a system so you know when you need to order a replacements parts before you need them.

### *69. Do you have a service program where a man comes and visits operations yearly?*

We do not have a program where a serviceman calls on each customer. If we are in the area we always make it a point to make sure to see if you are available for a visit. We do have service technicians available at any time you desire that can come to your



facility on a daily fee basis.

**70. *How do you get trained to operate a block making plant?***

If anyone ever tells you their machine is so simple all you need is a video to learn how to operate the machinery, they don't understand this industry or are not telling you the truth. The equipment I supply you has complete service, training, installation, parts replacement listings. Also included is the contact information of everyone you will ever need to talk to in service to support your machinery purchase.

In addition, if a machine maker won't or can't supply a video of their machinery in operation making building block concrete products prior to your purchase, start to wonder why? You want to see machinery making products. Seeing a video of a block machine dry cycling means nothing because it does not show the actual operating speed with concrete in the machine. In addition, it does not show the quality of products the machine should be making. You need an actual installation person to come to your site and install and train your people on operational and preventative maintenance techniques of the machinery.

**71. *What is your warranty on equipment?***

When you receive an offer from Global Machine you will see the warranty details on each of the many Levels of machinery I offer. In general below is the summary of the warranty.

New Equipment at any Level: One year Warranty

Reconditioned Equipment: Optional One Year Warranty

Used Equipment: Sold without any Warranty

**72. *How long does it take to install a plant?***

The goal of installing and getting you training is to make absolutely sure your people know how to operate, troubleshoot, make quality products and do preventative maintenance with your machinery. You as an owner have invested a great deal of time, effort, expense and risk in your business. The biggest mistake you can make is to cut a few days or even a week off of the most vital step of training. I see too many people in the industry try to shorten the time the service man stays with them and it cost them money both in the short and long term.

My logic is you never learn anything until something goes wrong with machinery and if you are running production and operating the machine daily you are not going to experience real life situation. Just because you made one days production of blocks and everyone is really happy with the quality of the equipment and products, does not mean you are ready to start running real production. Everything has a learning curve, an art and a skill. Operating and maintaining a plant is something no book or video course will ever teach you. It is all hands on experience. People are what make the difference in running an efficient block manufacturing operation. If you don't train the people properly you will never get over the barrier of fighting production headaches.

### **Level 5**

This level will include fully automatic batching, usually two mixers, two cement silos and fully automatic block and paving stone machinery that may have as little one to two people operating the entire plant.

Installation will start with service technicians visiting shortly after the equipment is ordered to detail all the building, electrical, foundation and operation questions your operations people will have. The first step will be pouring the extensive foundations, which will be supplied by us and coordinated with you and your soils engineer and local contractor.

Our service technicians will be on site when the machinery arrives assisting with unloading of containers and trucks.

We will have the most experienced fitters, electrical programmers and service people on site. From the time the equipment arrives until the time you are operating you should plan for at least fourteen weeks before you are making products. I have seen this process go much quicker but you need to plan real life. I had a client that could not get his electric hookup from the city for sixty days after the machinery arrived when we he and I were both told they would have it sixty days before the equipment arrived. Things happen so plan in a conservative real life manner, and if you do better you will be ahead of schedule.

I would also recommend you consider doing what I had one of my customer's do that had not previously been in the industry. He had me contract him an experienced person to operate and train his people for one year. He called it an Insurance policy because he realized he had no one in his staff with experience operating such a level facility and did not want to lose any money. Looking back in time it was the best investment he ever made!

#### **Level 4**

Usually includes a complete system of batching, mixing, block machinery, handling systems and cubing system of concrete products. I supply the foundation blueprints after the purchase is made so that the foundation will be completed prior to the machinery arriving in most cases. For the machinery installation, I would have a crew of service men install the equipment and supply electrical hookups from your main power supply. I would then have additional service men come in for operational training and preventative maintenance training. For your time budget, you need to allow real life amount of time 7-8 weeks.

#### **Level 3**

Starts to get less complicated depending if we are providing used reconditioned or fully new operations. It will depend on the equipment systems you choose but generally this level would take four to five weeks with an optional two week for further training if you have not previously been in the business before.

#### **Level 2**

This level the machinery system incorporates using PLC controls. The overall set up time will go very fast and I would recommend that most of the quality time be spent of training of production of concrete products. In doing this we will be able to teach how to make efficient mold changes and do good overall maintenance procedures. I would allow three to four weeks to have proper training which would include you running production for your production orders. Therefore you need to have enough orders ready for machinery to fulfill to be operating at capacity for at least one week.

## Level 1

In this situation, if you can send your operational person that will be in charge of operating the equipment to the factory I can set up training for him. I will make sure he actually works in actual plants making concrete products using the same model machine you purchased. He will learn the actual daily procedures and details on how to not only make quality products but also service the machine. This way when your machine arrives at your site we can say, he is already 80% trained on knowing all the details of the machinery. He still has to understand your exact mix design and concrete product quality standard, which may differ slightly from his previous training.

When the service technician arrives for installation and final training your operations person will be extremely prepared the visit. He will be able to ask the intelligent questions and work with the service technician and focus on the important issues of operating a plant. I still would recommend at least seven to ten days

### 73. Is it smarter to start pre-selling your concrete products before your block machine arrives or wait till the machinery is operating?

I have seen both schools of thought on this issue and I think a lot of the answer depends on if you are an existing business or new startup business. Either way a company has a risk that your sales team may not be happy. This could be because you are not up and operating quickly enough, product quality may not be up to expectations, or the production orders are not filled fast enough.

An existing company has a huge advantage of already having the organizational structure and knowledge to operate equipment. This would include mix designs, procedures, and knowing how to make quality products.

The start-up company has a lot more to learn in a start-up situation. The production team is often forced to produce make to order production runs to please customers by the sales team or owners of the company. This causes two problems because the production team is not yet fully trained to top efficiency levels with any long production runs. Second the sales team is just supplying even products to the customer temporally satisfying his needs.

The third situation most common to both new start-up and existing

companies is they don't have enough sales or raw materials prepared for immediate production when the machinery installation is completed. They may make sales within the company but the production orders are not organized to reach the machinery while the service technician is still on the job site.

The fourth situation is with small startup companies where they are forced to start pre-selling the products because they don't have the cash flow to do otherwise. If it were start-up or existing company I would absolutely pre-sell as much concrete products as you could without giving an exact delivery date until the machinery arrives on site. You need to have the machine running as much as possible when the service technician is still on site with you. It is also just as important to get your customers excited and get started making money and growing your business.

## **Section 4: What Do I Need to Know and Do Before My Machinery Arrives**

### *74. Do I need any special flooring requirements for the equipment?*

The equipment Levels of 1 and 2 require extensive foundation preparation work in preparation of the block making machine. Foundation work is also formed in concrete for the automatic handling systems.

Levels 3, 4 and 5 require specialized concrete and steel work beneath the block machine itself and lesser degree of foundation preparation for the handling systems.

All the engineering blueprints showing the foundation pads and equipment location will be supplied to you at no charge. You will have to meet and pay the cost with your local soil engineer to confirm your soil conditions that supports the foundations and equipment. It is also the buyer's responsibility and cost to work with local officials to confirm any zoning or regulations for installing a concrete manufacturing plant.

### *75. How do I get equipment shipped to my location?*

I can provide full service business-to-business or ship equipment to your requested shipping port for you. As a second option, you can

forward me your freight forwarders company contact information and I will coordinate all the shipping details with them. They will keep you informed of details step by step and bill you directly.

In the USA, I work with national trucking lines that can carry any size standard, over width or overweight loads. All you have to do is provide the address you want the equipment shipped to and we will take care of the rest?

*76. How will I know what size and type of off-loading machinery is needed when the trucks and containers arrive with my new machinery?*

Our service technicians will provide you with a detailed list of the size crane and forklifts you will need prior to the machinery arriving. The list will also include all the dimensions and individual weights of the machines and accessory items. In addition, there will be extensive coordination including a checklist of recommended tools and accessory items that will be required to operate, maintain and clean a building block and paving stone operation.

*77. What are hidden costs?*

Let's look at an example. Your builder has just started excavating the foundation pad and floor for your new factory. Naturally, you're very excited about the project starting and the prospect of being up and producing concrete products to fulfill orders coming. But then you get a knock on the door by the contractor asking how you would like to pay the hauling fees for disposing of the dirt. This was never discussed during the entire sales process, and you become irate at having to pay an additional \$500-\$2,000 you were not planning on. There are many such scenarios that become a reality every day...this is what we're trying to avoid in your planning and installing of a complete building block making plant.

**Most Common Hidden Costs:**

- Dirt Hauling In/Out during construction phase
- Electrical Hook-ups to main panel, individual equipment
- Fencing and properly to secure equipment
- Landscaping outside the building if located in a city
- Shipping skids purchase for startup phase of business
- Drainage work in storage yard if needed
- Welder and cutting torch purchase

- Tools required for maintenance purchase
- Hitting round water or hard bedrock during excavation

#### How to Avoid Hidden Costs:

We will disclose all potential costs and clearly specify what is and is not included in our installer's scope of work. I make it a point of discussions as early in the buying process as possible for you.

#### **78. How long does a block machine last?**

I often explain to people that ask this good question that a block machine is like a Caterpillar Dozer. In general, you really never wear it out if you have good preventative maintenance and replace the wear parts. However, the newer machines have more electronic advancements, more versatility and added features that might make it worthy to replace the older machine. Last year I saw a 50 year old USA made block machine running as good as the day it was sold. In the city I live in today, both block plants have machines that were made in 1980 operating 240 days a year eight to ten hours a day!

#### **79. Do you supply block molds?**

Yes, I supply molds for most any block machine made in the market. All I need to know is the exact brand name of the machine, model number and product pallet dimensions. In addition, you need to send me a two dimensional sketch, product illustrations or picture of the unit you want to make.

I will normally will call you back with a few questions and you will be able to receive a mold offer from me within a few days.

#### **80. How long does a mold last?**

There is no one perfect number that can answer this question. Many factors go into determining this, such as the following top five:

1. The hardness of aggregates you use to make your concrete specific units.
2. How the operator secures, installs and sets up the mold in the block machine.
3. The amount of vibration time programmed into the machine cycle.
4. The density and tightness of the product you are trying to produce.
5. The product quality and tolerance standards allowed by the producer.

### ***81. How long does it take to change molds in a machine?***

There are two factors when you change a mold. One is the physical time it takes to replace the mold in the building block machine. The second is how long it takes to be operating making good products once that mold has been changed.

A typical mold change time also depends on whether you are changing molds that are making the same or different height product already set up in the block machine. For example, changing a building block mold to a same height building block mold is much faster than changing a building block mold (taller) to an interlocking paving stone mold (less height).

It depends on the level of machine system we are talking about but in general the following applies:

1. Same height to same height mold change can be as fast as 5 minutes.
2. Different mold height change as fast as 15 minutes.

### ***82. How much maintenance does it take to operate a plant?***

This can vary widely of course with the products you are producing and what level of automation you have chosen in your operation. My general rule is for every 40 hours run time you need to have 8 hours preventative maintenance time. That means during each day you still have to do the daily tightening of bolts, greasing, check oils and cleaning of machinery.

At the end of the week, normally on a Saturday you would have two people come into the plant for four hours (half day) to check details that are not part of the daily checklist.

The two maintenance people would be doing the weekly & monthly checklists on all the equipment. This would include examining every inch of the machinery and doing detailed inspections. By doing these weekly procedures, it will greatly reduce your risk of any downtime during the weekly production runs.

Preventative maintenance will make you money. You need to fix the problems correctly and not just put a Band-Aid or quick fix on the problem. The time will come when all those small quick fixes will cause you to lose a lot of money and you will not be able to grow your business. Remember you have to have good procedures and people to make a concrete products plant successful!



## Section 5: Basic Answers You Need to Know

### **83. What brand electrical components do your machines utilize?**

When I provide used equipment we generally have to provide what is already previously supplied on the machinery. In most cases that is Allen Bradley, GE, Lincoln, Baldor or US electric Motors. With some of the new equipment I supply, you can specify the actual brand name of controller, motors and switches you would like on the equipment. This is a great value that allows you to become self-reliant with your operation by being able to purchase replacement parts locally.

For example, if your existing equipment utilizes Siemens Controls with Baldor motors and you would like to maintain service standardization in your operation with your new machine, I can supply you the same brand name components.

### **84. What skills and qualifications should I be looking for when hiring a person to operate the block machinery?**

A block machine operator has good common sense and does not mind getting his hands dirty. He knows how to trouble shoot any problems that arise without always reading a manual or book to look for solutions. With that in consideration, I believe the best operators I have ever seen in the industry and worked with are either farmers or people that ride motorcycles.



**Farmers tend to remain calm and solve problems**

Farmers are used to working by themselves and don't need supervision to do their jobs. They work hard and when a problem arises they know how to fix equipment. Farmers tend to remain calm when problems arise and diagnosis the problem and look for solutions.



**Harley Owners take Pride in their machinery**

People that ride motor cycles especially Harley Davidson bikers take pride in their machine. They like to keep it clean and running to top performance and understand how vital preventative maintenance is to operating any piece of machinery. All block machines make a tremendous loud harmonic sound when they are vibrating and compacting. A Harley rider, like a block machine operator can be one hundred yards (91 m) away from the block machine and can hear when something is not adjusted correctly. The same is true when listening to a Harley.

One of the best operators I ever worked with in a block plant amazed me when he asked me what qualities would should he consider and be looking for when firing a new machine operator. I told him the above story and he told me he was a farmer and owned and road a Harley Davidson Softtail!



Thank you for reading the Block Machine  
Buying Guide and the best to you in growing  
your business.

*Bill Fleming*