

## How HydroBlend Works

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HydroBlend is the trade name used for an NSF approved scale preventing / corrosion inhibiting compound.

HydroBlend is listed by NSF under PHOS-HW, PHOS-CW, and PHOS-FE.

HydroBlend differs from standard polyphosphates (glassy or Siliphos) treatments in that it has shown to work in both high temperature (90°F-200°F) and high hardness (10+grains) applications.

HydroBlend works similar as standard polyphosphates but does so in high temp & high hardness applications.

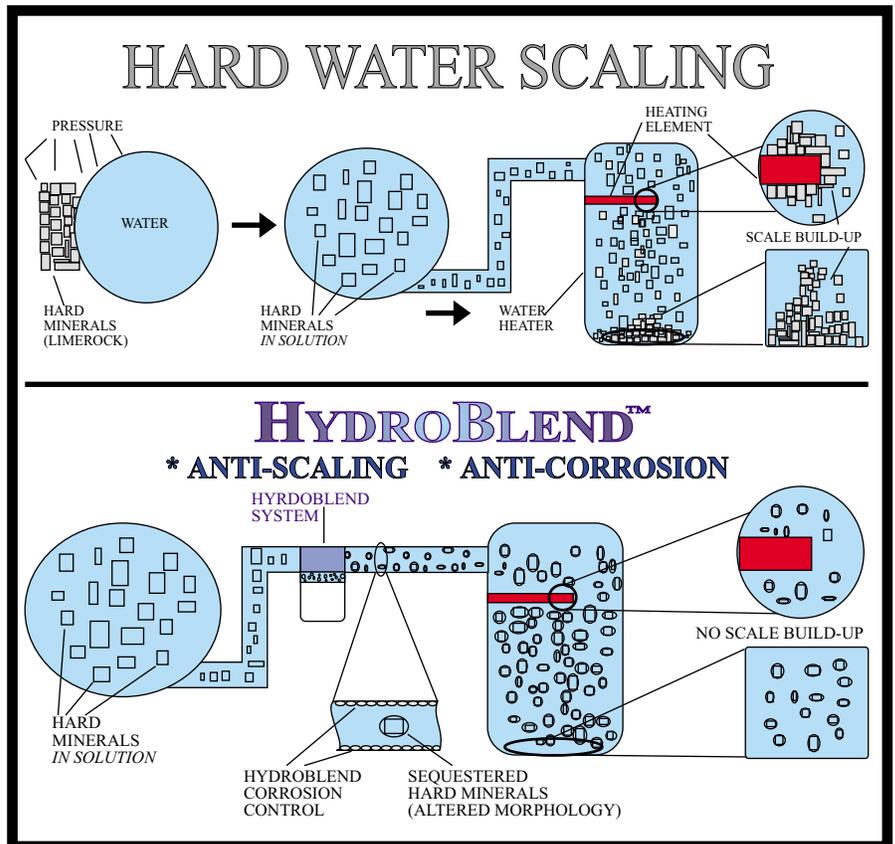
1) HydroBlend sequesters scale-causing minerals keeping them in solution for longer periods of time. These minerals will remain in solution long enough to pass through the equipment without the ability to precipitate out as a hard tenacious scale deposit. The length of time HydroBlend can hold these minerals in solution depends on water temperature, hardness level, alkalinity level, TDS, and pressure. The higher hardness, temperature, alkalinity, and TDS, the shorter the period of time that HydroBlend will be able to keep these minerals in solution.

2) When HydroBlend is present in the water, it alters the morphology (shape) of the scale molecule. If the scale-causing minerals precipitate out of solution, they do not have the ability to build up on themselves to form hard scale deposits. This precipitate is more in the form of a fine powder and will either pass through the equipment and down the drain or collect at the bottom of the boiling chamber until the equipment is drained or blown down.

3) HydroBlend helps remove scale deposits by “softening” the existing scale, dissolving back into solution scale-causing molecules. This slow de-liming process may eventually remove all the scale deposits although this claim is not made. In some cases the existing scale deposits are not completely removed, but only partially removed depending on the water source.

4) HydroBlend combines with dissolved minerals and forms a micro-thin layer of corrosion protection on wetted parts. This layer of protection does not build up on itself.

A common question posed is if you have twice the hardness, does this mean that you must have twice the amount of HydroBlend to effectively treat the water? The answer is no. HydroBlend works on a “threshold effect”. This basically means that if a small amount of this product is present in the water supply, it interferes with the formation of the symmetrical crystalline molecules needed to form scale deposits. HydroBlend is a “threshold treatment” able to handle high hardness levels with relatively low amounts of product (1-4 ppm).



## HydroBlend Systems

HydroBlend is delivered into the water supply by way of a flow-thru media delivery head. This flow thru head has two small feedholes allowing water to enter the housing. Water comes in contact with the HydroBlend product and dissolves it forming a super-saturated solution that is slowly drawn into the water stream by way of a center feedhole. As the saturated solution is drawn from the housing into the water steam, more freshwater enters the housing, further dissolving more HydroBlend. Unlike many polyphosphate feed systems, HydroBlend is not a true “erosion” system since erosion is more related to water passing through the media in order for it to dissolve.

HydroBlend is fed using two methods:

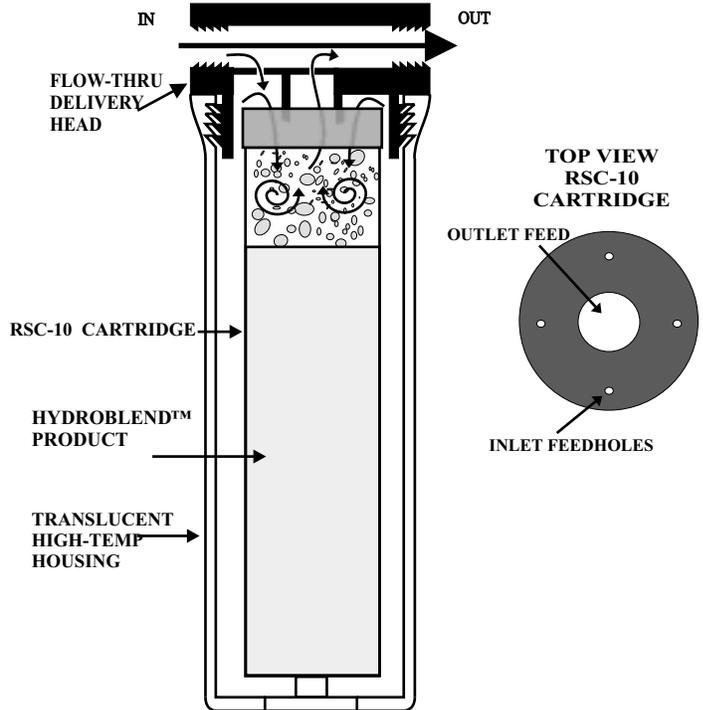
- 1) The flow-thru media deliver head. All HydroBlend units utilize this head (including the HBW), with the exception of the ScaleStick.
- 2) The patented HydroBlend ScaleStick utilizes a standard 10” filter housing and pre-filter head. The ScaleStick is the only HydroBlend product that uses standard pre-filter heads.

HydroBlend cartridges have been designed to maintain a constant surface area allowing for consistent feed rates over the life of the product. In the flow-thru feed head, two small feedholes of different sizes are drilled into the pass-thru tube allowing water to enter the housing as well as allowing saturated product to exit the housing into the water stream. It is typical for a new cartridge to feed more HydroBlend product in the beginning than in the end. This occurs since the super saturated solution is closer to the feedhole when the cartridge is new. The rate at which the cartridge feeds slows over its life.

This is beneficial since the initial feed of the product ensures adequate amounts of HydroBlend for the “cleaning stage” which helps remove existing scale deposits. The slower rate of feed during the later stages of the cartridge can be considered the “maintenance stage”. What is important is that the product will last and provide effective treatment for the desired period of time. The bottom line is that despite certain feed characteristics, the HydroBlend product is very effective in preventing scale deposits and providing corrosion control over the life of the cartridge.

The only maintenance required when using the flow-thru media delivery head is to periodically ensure that the feedholes are not clogged. In extreme water conditions (high hardness & alkalinity) the feedholes may become clogged or restricted. In order to clean the feedholes, the sump must be removed, and the inlet and outlet feed holes can be cleaned using a paper clip.

MODEL - HBW



## The ScaleStick

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The ScaleStick uses an entirely different feed mechanism than the other HydroBlend cartridges (HBW). The HydroBlend product is contained in the lower half of the ScaleStick cartridge. Water enters a standard pre-filter housing containing the ScaleStick and has to pass just above the area where the HydroBlend product is contained in order to exit the housing. The water passes above the HydroBlend product located inside the ScaleStick's lower half, and then flows upward through the ScaleStick creating a slight vacuum that draws the HydroBlend product out of the lower half through a small feed hole and into the water stream. This patented feed system was developed since standard HydroBlend cartridges over-feed in low flow applications (< 1gpm), whereas the ScaleStick maintains excellent feed characteristics in low flow scenarios.

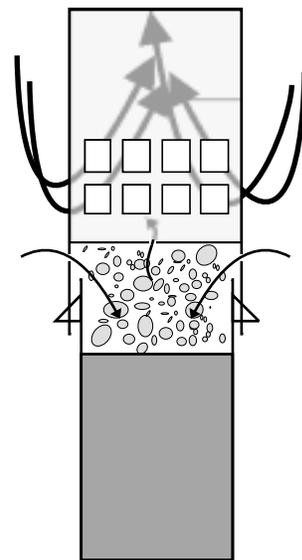
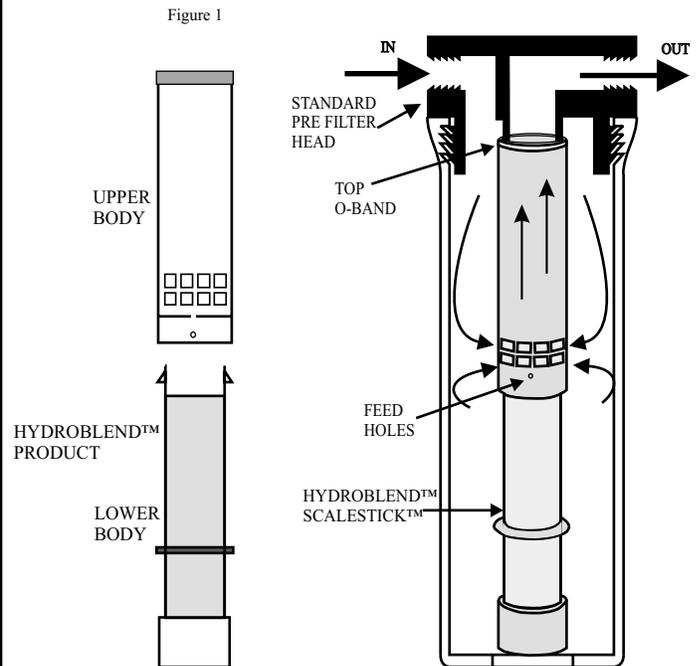
This makes the ScaleStick very applicable to most water-fed foodservice equipment such as steamers, combis, proofers, coffee, espresso, and ice machines where low flow is encountered. The small surface area of the ScaleStick makes it virtually impossible for the product to over-feed. The forgiving nature of the product allows application over a wide spectrum of equipment. Standard HydroBlend cartridges are susceptible to over-feeding in certain environments such as placement too close to a high-pressure pump or solenoid valve as these devices can create a vacuum. These environments do not affect the ScaleStick.

# SCALESTICK

U.S. PATENT #5,580,448

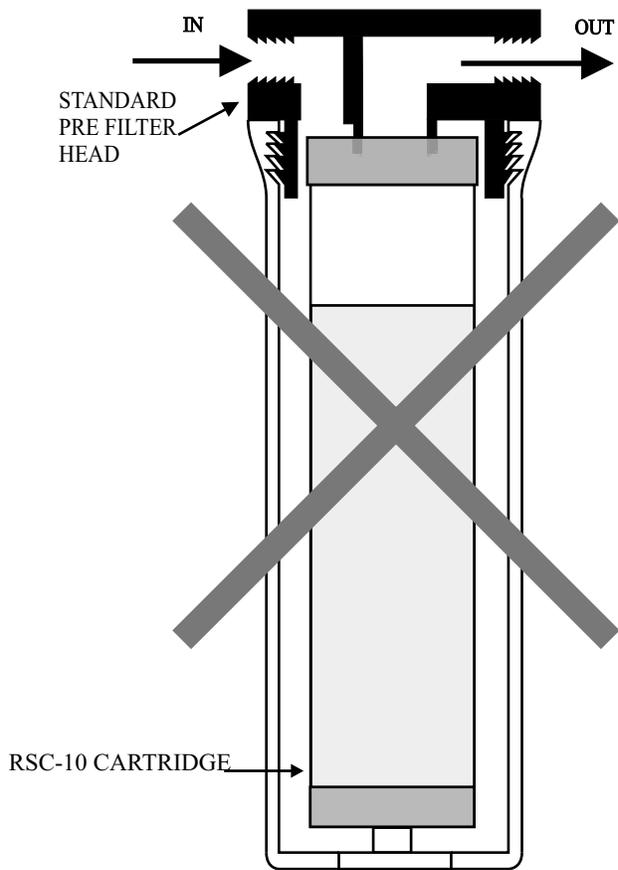
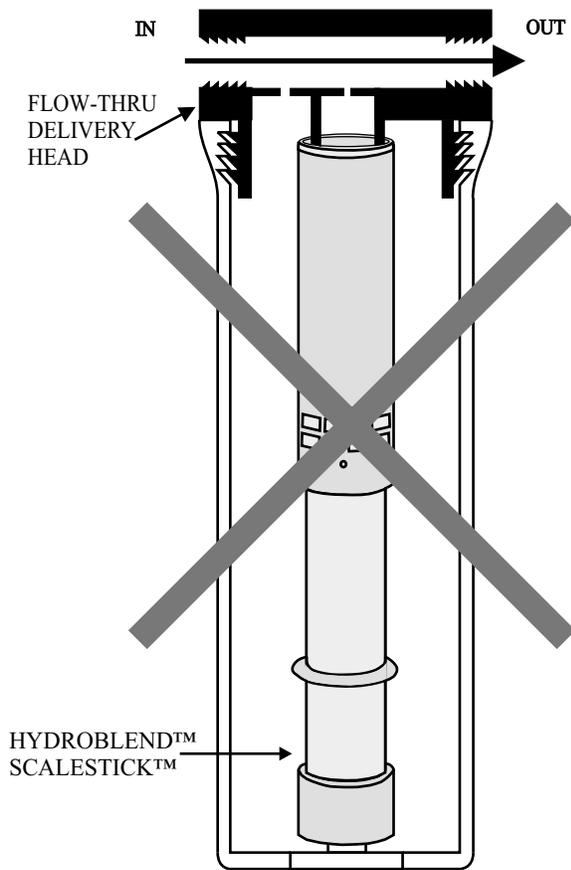
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Figure 2



**NOTE:** If a HydroBlend RSC-10 cartridge is placed in a standard pre-filter head, the product will be dissolved in a matter of days if not hours, as opposed to months. Always ensure that a flow-thru head is used. If a ScaleStick is placed in a flow-thru housing, it will not dissolve and will not feed product into the water supply.

## MISTAKE



The published rated capacities for HydroBlend products including the ScaleStick are only guidelines for use in certain continuous flow applications and should not be used to determine the length of time any given cartridge will last. For example, the ScaleStick has a published capacity of 3,000 to 6,000 gallons. However, in certain applications, this treatment range may range from 1,000 to 8,000 gallons depending on a variety of factors.

The most critical factor in determining the capacity of any HydroBlend product is flow rate. The general rule of thumb used is that the lower the flow rate, the higher the feed concentration of the product. The product will also run richer if the water flow is intermittent. This is important since most foodservice equipment has low flow requirements and the water flow is intermittent. It would be logical to assume that twice the flow rate means twice the product fed. This is incorrect.

Do not make the mistake of setting up maintenance schedules based on estimated water volume through the unit. If such were the case, the ScaleStick should last 2 years+ on espresso equipment where it actually only lasts roughly 6-12 months. How long the product will last depends on water flow rate, on/off cycles, water pressure, water temperature, TDS of the water, and hours of operation just to name a few. Ideally, all of the filter systems placed on foodservice equipment should be checked once every 3 months. Although most cartridges last an average of 6 months, the 3-month inspection cycle allows the service provider to check product level, and ensure that the feedholes are open.

Most important is to take into consideration all the factors relating to usage, and based on product experience let the end user know when to roughly expect cartridge replacement; six months usually being the conservative estimate. If the cartridge lasts for longer periods, then it will exceed customer expectations. Regardless, there is no guesswork in knowing when to replace the cartridge since the product is clearly visible to both the customer and service provider.

The key to HydroBlend's success is not in over analyzing water chemistry, feed rates, water flow rates, etc. in order to predict treatment volumes. Its success lies in the proper application on equipment and ensuring that the product is periodically checked. For 98% + applications in the field, the only decision one must make is whether to use the warewash unit (HBW), or the ScaleStick for all other water-fed foodservice equipment. There will be cases where differences in any number of factors will cause one ScaleStick to feed 2-3 ppm of product where in similar applications it feeds 1-2 ppm. This only means that the product will be used a little faster and require more frequent changes, say every 6 months instead of every 8 months. Even though feed rates may vary, what is most important is whether or not the product produced satisfactory results. HydroBlend is not always a "logical" product, however, it is unquestionably an extremely effective product.

HydroBlend is an effective scale prevention and corrosion control product. The way that the product is marketed is important in order to get customer expectations into realistic levels. More often than not, customer expectations are exceeded when the product is properly applied. HydroBlend must be marketed giving consideration to the water quality and type of equipment being used. The following are examples of how the product should be marketed.

- ❑ HydroBlend will never harm any equipment no matter how it is applied. In certain steamer / combi installations, the drain may become clogged upon initial installation as scale will begin to fall off and settle to the bottom of the chamber. This may require a couple of cleanings but should not reoccur after initial use.
- ❑ HydroBlend is not an anti-spotting agent. HydroBlend does act as a surfactant and does help reduce spotting although the claim is not emphasized. Spotting is not only a hardness issue but a TDS issue as well. HydroBlend does not lower TDS. It is best to play down spotting issues and if the product helps or eliminates spotting, the customer will be pleasantly surprised.
- ❑ HydroBlend will help remove and prevent scale deposits. In some cases, HydroBlend will completely remove and prevent scaling inside water-fed equipment. This is not always the case. Depending on water quality and the type of equipment, HydroBlend may reduce scaling by only 75%. If the customer expects 100% elimination of scale, there may be a let down on the horizon.
- ❑ HydroBlend will help prevent corrosion on wetted parts inside equipment. Corrosion is always a tricky issue as many factors may contribute to corrosion including pH, dissolved gases, scale deposits, past de-limings, temperature, chlorides, etc. HydroBlend will only help in the areas where the parts are in contact with water. It does not for example keep the top of a boiler from corroding due to dissolved chlorine gases being released from the water. (Carbon Filter)

These points should not necessarily appear on sale literature, but rather should be disseminated to all sellers of the product in order to temper naturally embellished sales presentations or proposals. Depending on the area and water chemistry, a local dealer or distributor will soon learn what can be expected from the product in their area. There is no question that this product will meet the vast majority of expectations from the sellers and the end users.

Most important to any product's success in the water treatment / foodservice industry is the proper maintenance of the product once it is installed. The end user must understand that the periodic replacement of the product is a requirement in order for it to work. In dealing with service companies, it should be stressed that a billable or non-billable inspection of the product is recommended once every 3 months. It should be stressed to sellers and re-sellers that every effort to set up a system to assure proper maintenance should be taken.

Since foodservice equipment vary in design and function, HydroBlend does not produce the exact same results in all types of foodservice equipment. Certain types foodservice equipment are more susceptible to scale and corrosion due to their function. Steamers for example evaporate water and increase the concentration of dissolved minerals in the boiler, increasing the likelihood of scale deposit formation and corrosion. Even among similar types of equipment, differences in technology employed in equipment (grades of stainless metals, gas or electric, pressure or atmospheric boilers) may affect overall results.

### **Booster Heaters / Dish Machines**

\* **Booster Heaters** - Since booster heaters increase water temperature to 180° F, they are very susceptible to the formation of scale deposits on heating elements and on wetted metal surfaces. As scale forms on the elements, it acts as an insulator and the water is not heated efficiently. In electric booster heaters the heating elements must heat the water for longer periods to achieve desired temperatures. The higher the temperature, the more scale will develop. When an excessive amount of scale forms on the element, heat will not dissipate off the element quick enough causing it to dry-fire which leads to eventual replacement. In gas booster heaters, scale build up will reduce capacity and greatly reduce its efficiency since scale also acts as an insulator from the heat source.

\* **Dish Machines** - Dish machines spray hot water along with chemicals to remove food from dishes. The fact that heated water is being sprayed encourages the formation of scale. Scale build-up decreases the life and efficiency of dish machines. As the water is being sprayed inside the machine, one can expect that scale will form everywhere as well as causing problems from plugged nozzles to sticking mechanical parts.

Booster heaters are hot water fed and are placed prior to the dish machine. The flow rates for this application will vary depending on the dish machine. As long as the flow rates average 1 gpm +, then the proper unit applied will be the HBW.

**HBW** - This unit is primarily used in booster heater / dish machine applications. It utilizes a translucent housing rated for water temperature up to 160° F. The HBW uses a flow-thru head. This means that you can see straight through the filter head. The RSC-10 HydroBlend cartridge is used in the HBW unit. Ensure that the holes in the cartridge cap are pointed upward when placed in the housing. Always place the HBE System prior to the booster heater.

When applying HydroBlend on booster heaters and dish machines, the results may vary depending on the water hardness, alkalinity, and other water characteristics. Since booster heaters maintain water pressure, one can expect lime scale reduction and possibly the elimination of lime scale inside the booster heater. In dish machines where the water is being released from pressure, expect a dramatic reduction in the amount of lime scale formation. As HydroBlend shows some wetting agent capacity, it may help with some spotting issues. However, spotting will relate to other factors beyond HydroBlend's control, so do not promote HydroBlend as an anti-spotting solution.

When using HydroBlend, it is recommended that the equipment be de-limed prior to application. This will increase the initial effectiveness of the product. Although not visible, one must remember that the internal plumbing of the dish machine will have scale accumulation as well. The amount of time required for the removal of this scale in the internal distribution system by HydroBlend will vary depending on the severity of the scale accumulation.

In warewash applications where high hardness and alkalinity exist, a white deposit found in the dish machine is sometimes mistaken as scale deposits. As explained earlier, even with HydroBlend present, in certain water conditions some minerals will still precipitated out of solution. However, when HydroBlend is present, these minerals will precipitate out as a white powdery substance and can collect inside the dish machine. This is often mistaken as scale deposits. The difference is that this white precipitate can be wiped off and does not require a harsh de-liming. This is the case only in certain high hardness/alkalinity application and is not the norm. One can also expect a dull film on the inside of the dish machine that is a beneficial layer of scale prevention.

## **Servicing**

Most importantly, ensure that the product is inspected periodically to ensure that the cartridge is being depleted and changed when empty. Upon inspection ensure that the feed holes in the flow-thru head are not clogged. This can be checked by turning on the water with the housing removed and ensuring that two small water streams come down from the feed head. If one or both of the feed holes appear clogged, insert a paper clip and unclog the feed holes. Handle the HydroBlend cartridge with care trying not to disturb the product inside.

## **Steamers And Combi-ovens**

\* Steamers and Combi-ovens - Steam equipment is very susceptible to poor water quality situations as a steamer distills water by driving it through a phase change. Dissolved solids will begin precipitate out of solution when the water changes state. Any sediment flowing with the water will also have to settle within the steam generator leading to clogged orifices and acceleration of scale formation. Scale formation plagues steam equipment more than any other water quality issue.

There are a number of failure modes that result from scale build up:

- \* Most steam generators use a mechanism (usually electronic probes) to sense water levels. These probes get coated with scale leading to over-fill and dry firing.
- \* Drain valves may clog from loose scale deposits.
- \* Scale may form in the condenser affecting steam flow.
- \* Gas and electric units may also suffer from accelerated stress/corrosion/cracking from scale formation and other chemicals present that accelerate corrosion in boiler metals.
- \* Harsh cleaners that are employed for removal of scale can present a safety hazard, and harm equipment as well.

These factors result in:

- \* Frequent maintenance requirements leading to downtime.
- \* High service and repair costs.
- \* Increased energy use.
- \* Slower cook cycles.
- \* Uneven cook cycles resulting in poor food quality.
- \* Warranty issues, as most manufacturers will not honor warranty agreements where the water does not meet stringent quality requirements.

Most steamers and combi-ovens are considered low flow applications (average flow rate < 1 gpm) therefore, the ScaleStick would be the correct HydroBlend cartridge used. The ScaleStick can be utilized in a variety of different configurations depending on the application. The inlet water temperature and usage parameters will determine the type of housing used and the correct ScaleStick configuration.

The Plain ScaleStick is slightly longer (1/8") than the Wrap ScaleStick that accepts a carbon wrap or sediment wrap. An O-band at the top of the Plain ScaleStick is used when the ScaleStick is used by itself. The Wrap ScaleStick does not use the O-band.

The Carbon Wrap is used in chlorinated water supplies. Chlorine in the water supply can contribute to corrosion in steamers and combi-ovens because when the water is heated, mild hydrochloric acids may form. The removal of chlorine is essential in helping prevent corrosion inside the boiler. The Carbon Block Filter Wrap effectively removes chlorine from the water supply as well as sediment.

The Sediment Wrap is used in non-chlorinated water supplies. Sediment present in the water supply may contribute to the formation of scale and also collect and clog orifices effecting equipment performance. The Sediment Filter Wrap effectively removes sediment from the water supply.

Both the Carbon Wrap and Sediment Wrap may need replacement prior to the ScaleStick needing replacement depending on the water quality. Both wraps can be removed from the ScaleStick and replaced with new wraps.

Steamers and Combi-ovens are either cold water or hot water fed.

Hot Water Feed Line - A high temp housing must be used. This housing is the same as the SC-610-EHT housing except that the head is not a flow-thru head, it is a standard pre-filter head (you cannot see through the head). The plain ScaleStick (SS-10) is the only model intended for use in hot water fed systems.

### **Scalestick Maintenance**

When installing or replacing filters, please make sure that the manager or operator is aware that they should do the following:

1. Change the ScaleStick before the product runs out.
2. Make it very clear that the product will perform better if the steamer or combi is turned off once per day allowing it to blow down.

### **Product Trouble Shooting**

The following are reasons why the product may fail to prevent scale build up.

1. Some high usage on boilers will prevent optimum benefits from using HydroBlend. The steamer or combi-oven must be turned off and allowed to drain after 6 hours of operation. The equipment cannot be left on for the duration of a day. This is most important on atmospheric boilers.
2. The ScaleStick is not changed when empty.

1. Do not over-sell the product. In many cases, the ScaleStick will prevent any scale build up from occurring, however, this is not always the case. Depending on the type of water, usage, and equipment, the ScaleStick may decrease de-liming from 50% to 100%. Tell the customer that it will dramatically help the situation.
2. Drill into the customer that the product will work as long as the equipment is not used all day without blow down in the case of steamers and combi-ovens.

### **Boiler Blow-down Requirements For Steamers & Combi-ovens**

As described in the HydroBlend / ScaleStick specification sheets, this product works by sequestering or “tying up” hardness molecules and not allowing them to form hard scale deposits. It accomplishes this in two ways:

- 1) By keeping the hardness in solution when the water is heated, as opposed to allowing it to come out of solution forming a scale deposit.
- 2) If the hardness comes out of solution when HydroBlend is present, it will settle to the bottom of the heating chamber as a powder-like substance, instead of forming scale deposits on heating surfaces.

HydroBlend's ability to hold hardness minerals in solution is dependent upon many factors, among these are:

- 1) Hardness & TDS Level - the harder the water and the higher the TDS, the more hardness will precipitate out of solution. When HydroBlend is present, this will settle to the bottom of the tank.
- 2) pH Level - High pH levels (7.5 +) increase the rate that hardness comes out of solution.
- 3) Temperature - the higher the temp, the more hardness will come out of solution.
- 4) Pressure - The lower the pressure the more hardness will come out of solution.
- 5) Equipment Type & Usage Characteristics - as in hours of operation, type of boiler, frequency of blow down, etc.

HydroBlend's ability to control scale is put to the test when there is high hardness, high pH, high temperature, low pressure, and high usage. This is most illustrated in atmospheric boilers used in many steamers & combi-ovens.

Hardness is less likely to come out of solution in pressure boilers than in atmospheric boilers. The hardness that does come out of solution in either boiler will settle to the bottom of the chamber when HydroBlend is present. When the equipment is shut off at the end of operation, the boiler chamber is drained of water - this is called a blow-down. At this point, the accumulated precipitated hardness should exit the drain. The amount of precipitated hardness and the force of the blow-down will determine if all the precipitated hardness is removed.

In most atmospheric boilers, the blow-down is a simple gravity drain, where a drain is opened and the water drains without pressure being applied. The force of the blow-down is minimal. In pressure boilers, the blow-down has more force as the water is being forced down the drain. Obviously, the pressure boiler will remove more precipitated hardness than the atmospheric boiler during blow-down.

In atmospheric boilers there are two factors that act in favor of scale formation -1) More hardness will come out of solution and settle to the bottom of the tank, and 2) the blow-down is just a gravity drain. In atmospheric boilers, expect to find upon inspection that there remains some of the precipitated hardness accumulated at the bottom of the boiling chamber which can be usually cleaned by scooping it out. Occasionally this precipitated hardness may clog the drain if enough of it accumulates at the bottom of the tank. To reduce the amount of precipitated hardness at the bottom of the boiler in atmospheric steamers or combi-ovens, it is recommended that the equipment be blown-down after 6 hours of operation.

In high usage environments, often the steamer or combi-oven is turned on early in the morning and not turned off until the late evening not allowing the equipment to blow-down. This not only prevents the precipitated hardness to be flushed out as it builds up, it also greatly increases the rate at which the hardness comes out of solution.

As water is evaporated in the boiling chamber, it leaves behind the mineral content. The more water is evaporated, the higher the concentration of dissolved minerals will be found in the boiling chamber. The dissolved mineral concentration will increase as the day progresses and eventually reach a point where the water is too saturated with minerals and will begin to release them at an accelerated rate. The rate of hardness coming out of solution will continue to increase unless the boiler is flushed or blown-down and new "fresh" water is allowed to enter the boiling chamber.

This is why it is extremely important that in high usage applications where steamers or combi-ovens are used, that the boiler is blown-down after 6 hours of operation, otherwise, HydroBlend will not perform at maximum effectiveness. If the equipment is not blown-down after 6 hours of operation, one can expect that eventually, even though HydroBlend is present, that scaling will occur in the boiling chamber, albeit less scaling than if no HydroBlend was used at all. In this case, HydroBlend would decrease the rate of scaling dramatically, however, the end user may assume that the product does not work based on the equipment needing de-liming.

Placing an atmospheric boiler in a high hardness area with high pH, and operating the boiler all day without a blow-down is inviting scale to form in large amounts. HydroBlend will help only to a point in this scenario. It must be drilled into an operator that they ***MUST ALLOW THE BOILER TO BLOW-DOWN AFTER 6 HOURS OF OPERATION.***

Take into account all factors when applying HydroBlend on steamers & combi-ovens, especially when water or usage characteristics are friendly to scale formation. High hardness, high pH, high usage, and atmospheric boilers should alert the person specifying HydroBlend that certain steps must be taken to ensure the most scale prevention possible. Do not promise more than the product can deliver in such cases. HydroBlend does in many applications completely prevent scale formation as long as the product is maintained and conditions are not extreme. However, in hard water areas where atmospheric boilers are used, it is important to educate the operator of their responsibility to allow the boiler to blow-down after 6 hours of operation.

HydroBlend will help prevent scale in all applications. The degree of help is dependent on all the previously explained factors. Even in the worst-case scenario, one can expect a 50% reduction in the amount of scale build-up. In order to ensure the optimum performance, please stress to operators that boiler blow-down is a very important part in controlling scale build-up in steamers and combi-ovens, especially in high usage applications.

Ice is 100% water, and as much as 70% of service calls on ice machines are water quality related. The three main water quality issues plaguing ice machines are lime scale accumulation, chlorine, and sediment. Both cubed and flaked ice machines suffer from the following water related problems:

- \* Scale accumulation on evaporator plate or auger reduces efficiency by slowing the freezing process requiring the compressors to run longer.
- \* Scale accumulation causes ice to "hang up" and "bridge" in the bin.
- \* Sediment and scale deposits clog distributor tubes reducing ice harvest.
- \* Sediment & scale deposits affect the operation of the float valve, circulating pump, and purge valve.
- \* Chlorine as well as ammonia present in municipal supplies can cause corrosion in ice bin, evaporator plate, auger, and cabinet.

Through proper filtration, the efficiency and life expectancy of the ice machine can be dramatically increased. Benefits include:

- \* A reduction in maintenance requirements and service related costs.
- \* Prolonged equipment life.
- \* Increased ice production.
- \* Decreased energy use.
- \* Higher quality of ice produced.

HydroBlend effectively prevents scale accumulation in ice machines as well as protecting wetted surfaces from corrosion. The ScaleStick is the correct choice in ice machines applications. Ice machine applications can be divided into two main categories:

### **Coffee & Espresso Machines**

Ninety-eight percent (98%) of a cup of coffee is composed of water, so the quality of your coffee is most dependent on the quality of the water. Chlorine ruins the taste of coffee. Moreover, scale build-up on heating elements does not allow high enough water temperature for brewing which is as important for high quality coffee. Untreated water forms lime scale in the brewing equipment necessitating expensive descaling procedures, and/or shortening the life of the unit.

Since most Coffee & Espresso applications are low flow, the ScaleStick should be used.

In Coffee & Espresso applications, the life of the ScaleStick should be calculated in time units as opposed to gallons. In these applications, expect a ScaleStick to last for a period up to six months depending on usage.

Instant-Hot Water Dispensers are basically small water booster heaters used in many foodservice applications especially where dry goods are used. For example, mashed potatoes, gravies, refried beans etc. are often made by mixing pre-packaged dry ingredients with hot water. The water temperature must be close to 200° F in order for the consistency of product to be of high quality. If the heating elements are scaled in this equipment, then these temperatures are not obtained, leading to poor quality and consistency (runny refried beans or mashed potatoes).

Often during busy time periods, the foodservice operator must wait for the water to achieve proper temperatures before dispensing it. This is not acceptable in most foodservice establishments, especially fast food restaurants where this equipment is widely used. Even worse, the restaurant employee doesn't wait for the water to achieve proper temperatures and dispenses it prematurely, which leads to poor quality product.

The same ScaleStick unit used in Coffee / Espresso equipment is used in Instant Hot Water Dispenser applications.

### **Proofers**

Proofers are mostly used in Supermarket Delis and Bakeries. Bread dough is placed in proofing ovens that are kept at warm temperatures and high humidity, allowing the bread to rise. Most proofers generate the humidity by way of boilers similar to those used in steamer and combi-ovens. Proofers are susceptible to the same scale and corrosion problems as steamer and combi-ovens. The same ScaleStick treatment applies to Proofers.