

**Encon**<sup>®</sup>  
SAFETY PRODUCTS

EMERGENCY  
SHOWERS  
SYSTEMS



ELECTRICAL



AIR DRIVEN



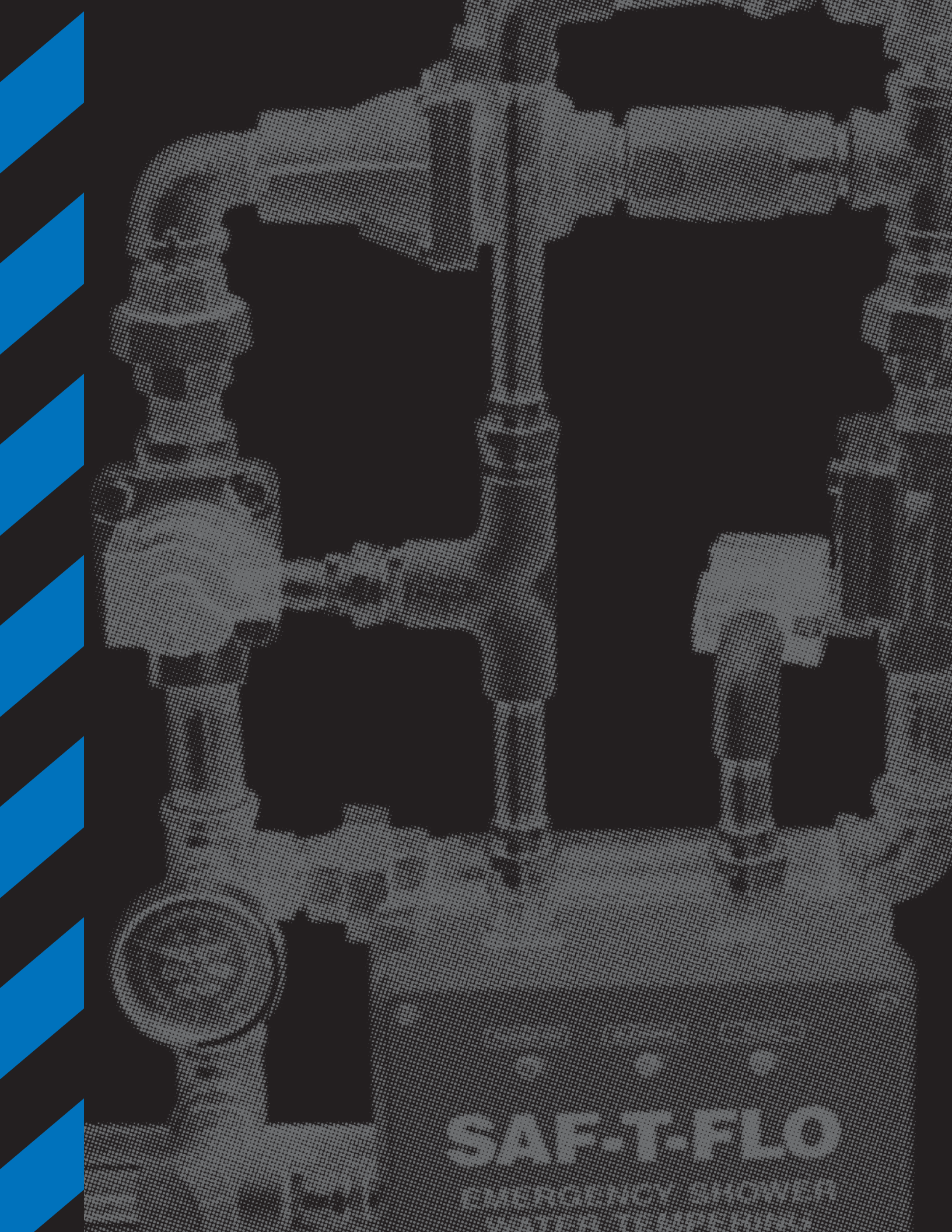
STEAM-HEATED



CUSTOM ENGINEERED

# TEMPERED WATER





SAF-T-FLO

EMERGENCY SHOWER

SAFETY SHOWER

# Encon – A Leader in Safety Products

With nearly 50 years experience as a manufacturer of quality safety equipment, Encon has earned a reputation for providing reliable, innovative products to protect people and provide emergency personnel treatment.

A leader in emergency shower and eyewash equipment, the company provides superior electrically heat-traced, freeze-protected emergency showers and commercially available, tempered water delivery systems designed with the industrial application in mind.

Products with electrical classification CL1Div 2 Group BCD, NEMA 4, and NEMA 4X are available CSA approved.

Safety experts, the Federal Register, and American National Standards Institute (ANSI) agree that it is essential for victims of a hazardous material splash and/or spray to receive immediate flushing of the exposed area with potable water from an emergency shower or eyewash to dilute and eliminate the intrusive material. Encon emergency showers and eyewash equipment are third-party tested and certified by the Safety Equipment Institute and comply with the ANSI Z358.1-2009 standard requirements for placement, water-flow patterns and treatment time.

## Tempered Water – The Preferred Treatment

Because of the duration of sustained water flow needed to comply with federal standards, a cold-water shower would be unsuitable in a situation where the victim is already in or subject to traumatic shock. Tempered water systems provide water at levels consistent with the standard requirements and at temperature quantities needed to provide relief to the affected tissue, while allowing the victim to remain in the irrigation flow for the required treatment period.

Time delays in receiving proper irrigation for hazardous material exposure such as acid, caustic and/or solvent splash increase the severity of the trauma and can result in lost-time injury accidents. Tempered water supplied showers and eyewashes, located in reasonable proximity to potential exposures, provide an environment conducive to quick and proper duration of treatment.

[www.enconsafety.com](http://www.enconsafety.com)

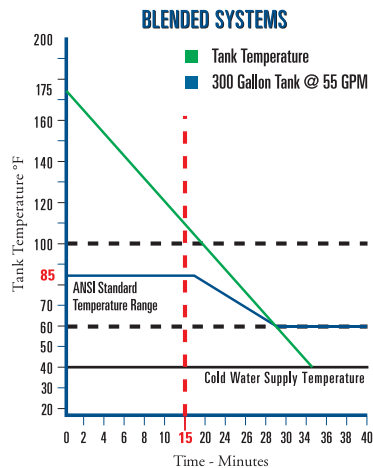
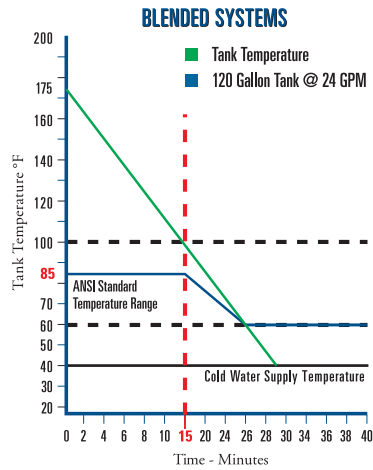


# TEMPERED WATER SYSTEMS

**Electrical** tempered water systems provide tempered water to emergency shower and eyewash equipment. Plumbed from local plant water supply, the heating systems generate 15 minutes of instantly available water at 78° to 93° F. Available for both indoor and outdoor applications, these self-contained units provide the first step of first aid during hazardous material removal.

## Vessel Heat Up Times

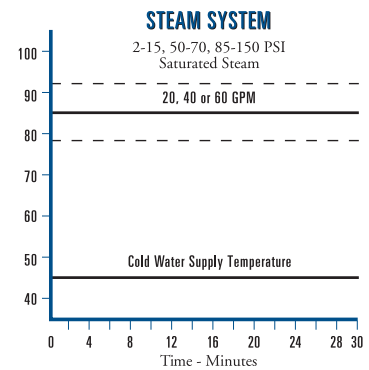
Heater	Vessel	Time
9 KW	120 Gallon	4 Hrs
9 KW	300 Gallon	10.5 Hrs
6.3 KW	120 Gallon	6 Hrs
6.3 KW	300 Gallon	15 Hrs





**Steam Units** Steam-heated systems are available to provide tempered water simultaneously to more than one operating shower. These units may be used to provide recirculating tempered water to a loop of showers, offering the lowest per-shower cost for multiple or simultaneous operation.

Steam units are available for indoor and outdoor applications in various pressure ratings and are completely prepped for customer connection to plant utilities.

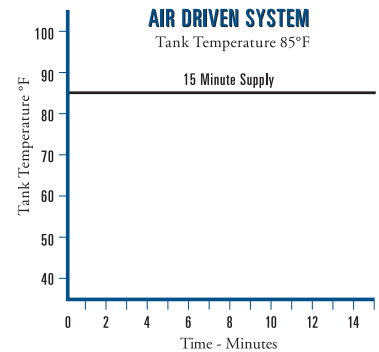


**Vessel Heat Up Times**

Heater	Vessel	Time
2 KW	400 Gallon	16 Hrs
6.3 KW	400 Gallon	5 Hrs
9 KW	400 Gallon	4 Hrs

**Air-Driven Units** are designed for remote areas where plumbed potable water is not available. These units provide water capacity sufficient for 15-minute flow time. Water from an electrically heated reservoir is delivered at pressure supplied by compressed air cylinders or plant supplied air.

The customer must supply potable water fill and electrical power to these units, which are available in both in-door and outdoor models. Hydrosep®, a water treatment additive, can be proportionately injected at time of fill.

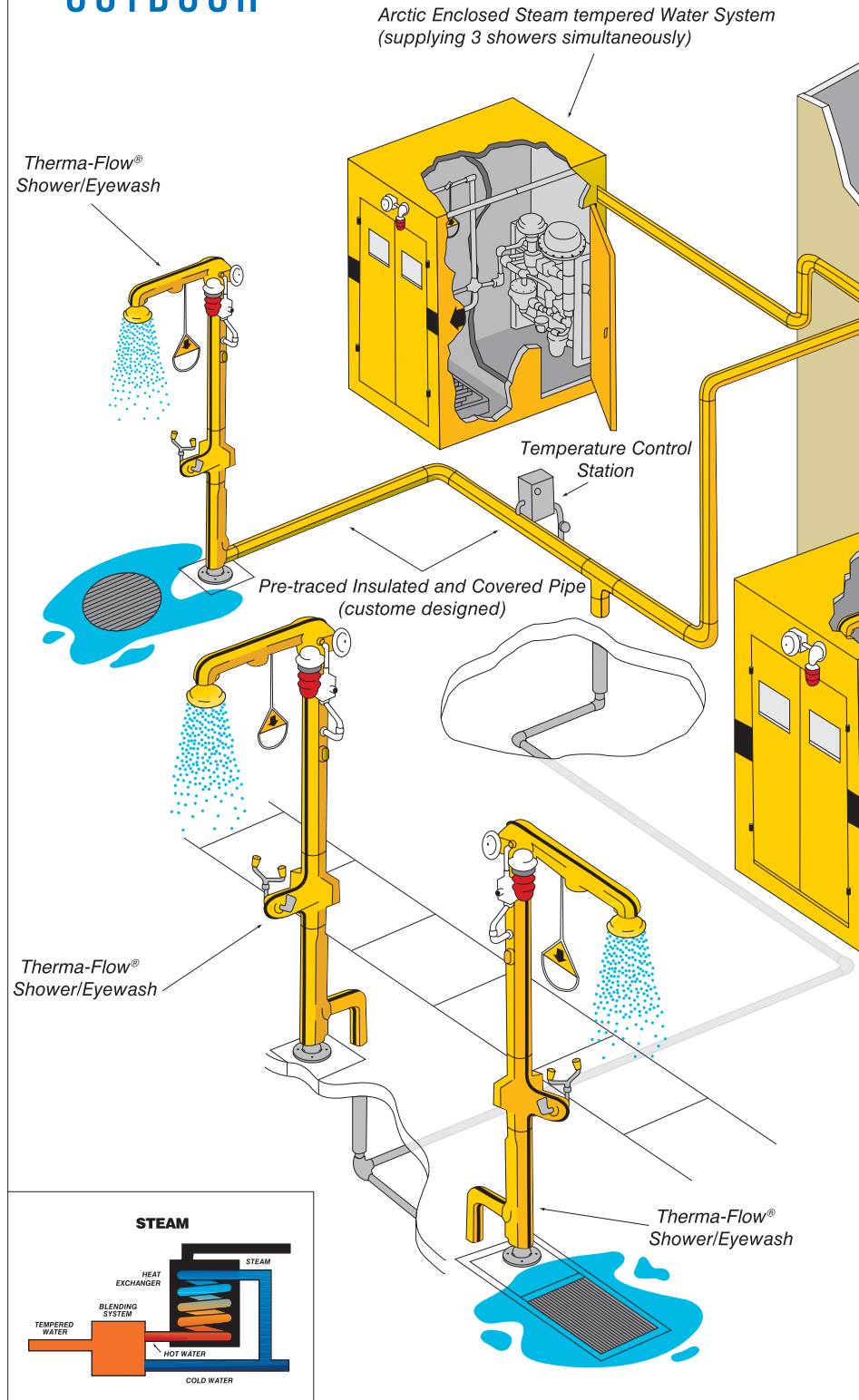


# TEMPERED WATER EMERGENCY SHOWER/EYEWASH SYSTEMS

**“Where** the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.”

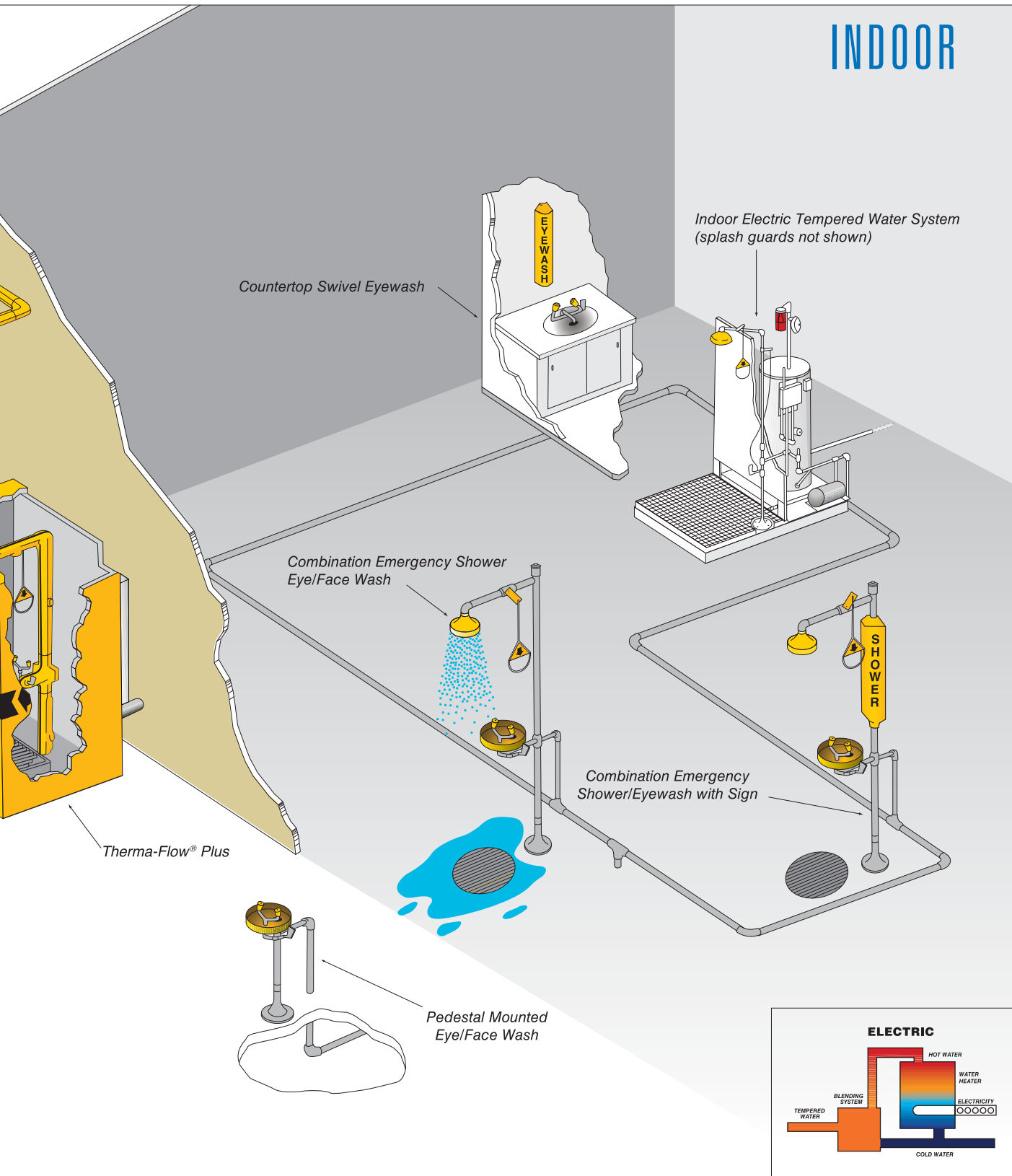
*Federal Register, (10601)  
Subpart K  
Section 1910.151  
Paragraph C*

## OUTDOOR

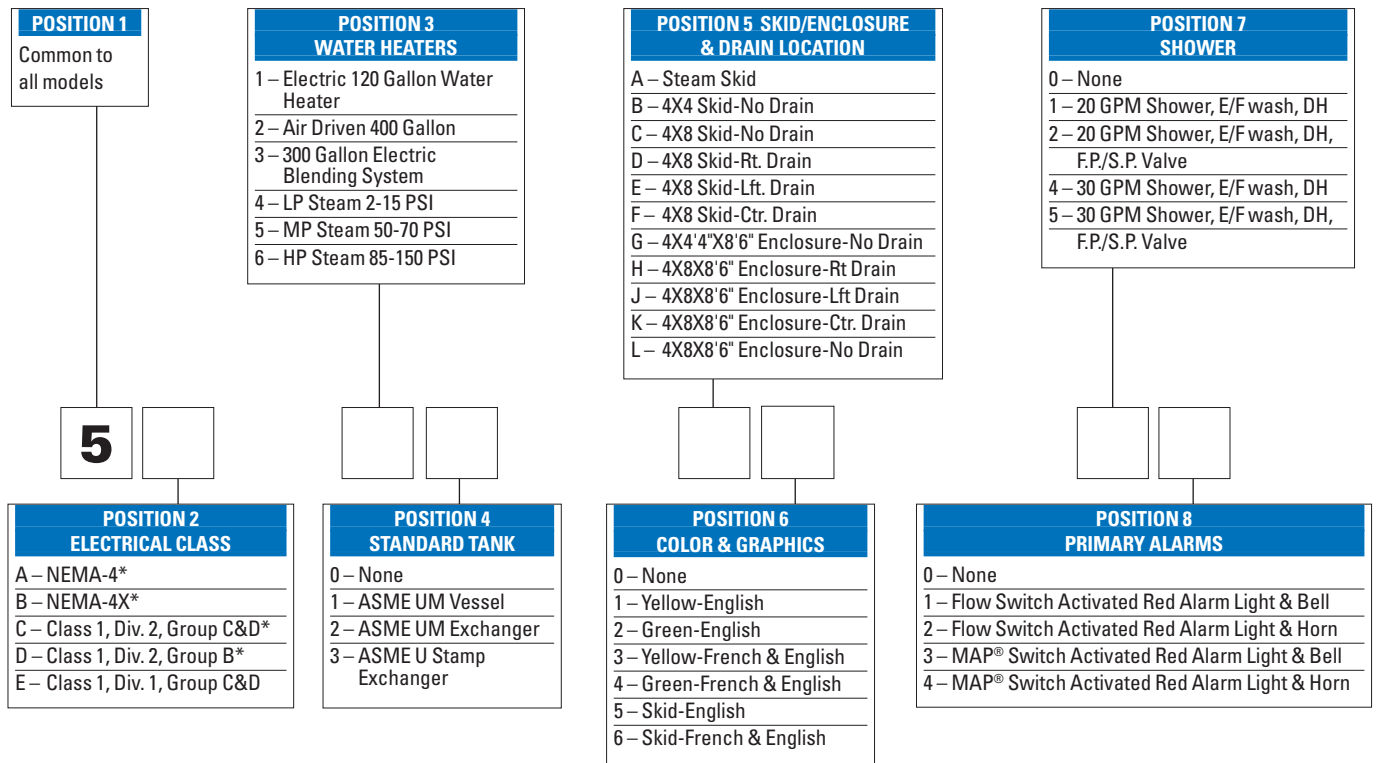


*Note: The products shown in this artist's rendition are designed to depict the concepts illustrated and are not necessarily technically accurate.*

# INDOOR



# TEMPERED WATER ORDERING GRID



## Factors Affecting Installation of Emergency Shower Equipment

**Type of Hazardous Exposure:** It is imperative that the types, number and locations of potential hazardous material exposures be identified. Knowing the type of exposure, (i.e. spill, forced spray, sample point, spilled flask, etc...), is essential to properly select the required emergency shower or delivery equipment. The type and concentration of hazardous material will ultimately determine the style of equipment required to perform the irrigation effort.

**Location of Equipment:** Emergency shower/eyewash equipment should be located away from the potential exposure but in close enough proximity that it can be reached within 10 seconds of an accident. It is also important that the site location be well lighted, highly visible and accessible. Location, by definition, includes the visibility of the equipment relative to the industrial background.

**Potential Number of Personnel Involved in an Exposure:** In order to properly select the emergency shower/eyewash equipment, it must be determined how many people might be required to use the equipment simultaneously. In the case of a ruptured flange and forced spray, as many as three people working in the area may be exposed. The number of showers, size of piping, pressure drop and volume required must be considered when simultaneous use is a possibility.

**Water Temperature and Flow Rate:** Emergency shower/eyewash equipment requires a minimum of twenty (20) gallons per minute in order to produce the proper flow patterns for irrigations after a chemical exposure. Some shower heads/systems are capable of delivering up to 100 GPM. The pipe size is determined by available water volume and pressure. Water below 83°F, (the critical body temperature), or above 93°F can result in further injury to exposed tissue. Water below 75°F will cause discomfort and often results in thermal shock causing personnel to leave the shower prior to receiving the minimum required treatment.

**Electrical Area Classification:** Improperly specified electrical component/systems, i.e. water heaters, area lights, alarm systems, may represent an ignition source in combustible atmospheres. It is important that the types and levels of hostile atmospheres be identified and the area electrical classification be specified. Hazardous vapors and dusts result in combustion when electric systems, electrical tracing, contactors, lights, etc..., are improperly specified. Successful plant operation depends on emergency shower systems that meet the proper electrical classification for the area of their intended use as well as the T Group (Temp.) classification.

**Drainage:** Water allowed to flow on plant floors can create a slipping or a below shower electrical hazard. Improper drainage can also contaminate ground water and violate EPA guidelines. An evaluation must be made prior to equipment selection affording the most economical equipment for the application.

**Visibility:** Awareness of shower locations PRIOR to an accident is essential to prompt treatment immediately following an exposure. It is therefore necessary to have the shower site properly illuminated with area lights and proper sign identification. Encon uses yellow to promote visibility and a "Recognition Factor." Yellow has been proven to be a highly visible contrasting color in industrial environments.

**Note:** Consult American National Standards Institute Z358.1-2009 Standard for information regarding the acceptable criteria for proper location and lighting of emergency shower/eyewash equipment as well as testing and maintenance.

For your convenience we have included an **Application Information Data Sheet** questionnaire on page 9 of this brochure. This form when completed for each shower installation, will assist in ensuring that the correct, lowest cost product will be selected for the application described.



# Tempered Water Ordering Grid Instructions

To generate a Model, select one item from each position, filling all 15 position digit boxes. For further assistance in Model Selection, Product Pricing, or Application Assistance, contact an Encon Customer Service Representative at 1-800-283-6266.

POSITION 9 SECONDARY ALARMS
0 – None
1 – Over Temperature
2 – MAP® Switch Door
3 – Power Failure Alarm
4 – Low Level Alarm
5 – Low Pressure Alarm

POSITION 11 VOLTAGE
A – 120 Volt
B – 208 Volt
C – 240 Volt
D – 240 Volt w/S.D. Transformer
E – 480 Volt
F – 480 Volt w/S.D. Transformer
G – 600 Volt
H – 600 Volt w/S.D. Transformer

POSITION 13 UNDERGROUND EXTENSIONS
0 – None
2 – 2 Foot
3 – 3 Foot
4 – 4 Foot
5 – 5 Foot

POSITION 15 DESTINATION
1 – United States
2 – Canada

--	--

--	--

--	--

--

POSITION 10 LOCATOR LIGHT
0 – None
1 – Clear
2 – Green
3 – Blue

POSITION 12 ENCLOSURE
0 – No Enclosure
1 – Enclosure Heater - 4X4
2 – Enclosure Heater - 4X8

POSITION 14 PUMP SYSTEMS
0 – None
1 – Recirculation Pump
2 – Booster Pump
3 – Recirculation Pump & Booster Pump
4 – Dual Recirculation Pumps
5 – Dual Booster Pumps
6 – Dual Recirculation Pumps, Single Booster Pump
7 – Single Recirculation Pump, Dual Booster Pumps
8 – Dual Recirculation Pumps, Dual Booster Pumps

### NOTES

**Position 2** - \* Indicates CSA approved model

**Position 5** - When Options C, G & L are selected, showers cannot be selected.

**Position 10** - Locator light is separate from alarm light.

**Position 13** - Dimension references length of pipe below grade.

## Electrical Component Specifications

Electrical	Models
Solenoid Valve-N.O. & N.C. (Cold & Hot)	EA
Solenoid Valve-NC	S
Alarm Relay-D.P.D.T.(3) (See Note 1)	EAS
Air Heater Contractor-S.P.D.T.	EAS
Heating Element (See Note 2)	EA
Air Heater 1.6KW-1.8KW @ 120 volts (See Note 3)	EAS
Thermostat Air Heater-S.P.D.T.	EA
Thermostat Water Heater-S.P.S.T.	EA
Thermostat Blending System-S.P.S.T.	EAS
Wiring-min. 14 ga., 600 Volt THHN (See Note 4)	EAS
Interior/Exterior Light 100 watt/120 Volt	EAS
MAP* Switch 20 watt/120 Volt	EAS
Flow Switch-S.P.D.T.	EAS
Level Switch-S.P.S.T	EAS
Bell-100 db@10', Horn-89 da@10'	EAS
Remote Alarm Relay, 3 amp N.O. & N.C.	EAS

\* E- Electrical, A-Air S-Steam

Note: 1) 1 set for customer connection to remote location

2) KW output varies with voltage specified, 600V 9KW, 480V 6.3KW, 240V 9KW, 208V 6.3KW, 120V 2KW

3) Radiant heater rated T3A (180°C) 356°F

4) Wires in accordance with N.E.C. & C.E.C. requirements

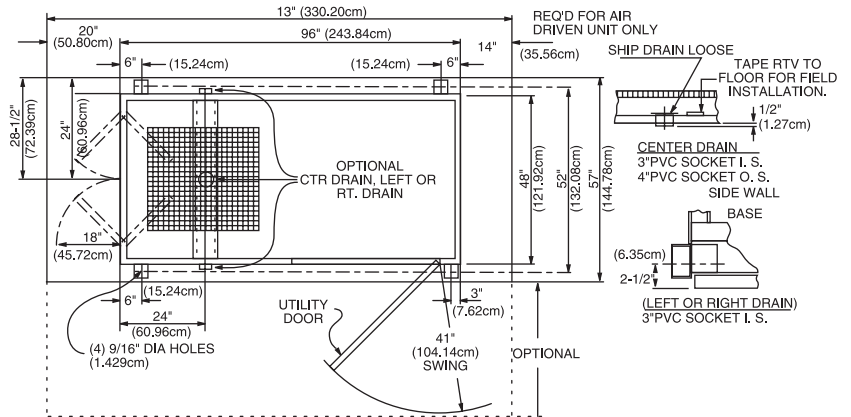
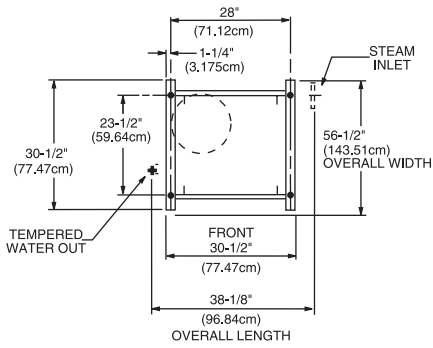
\*\* Lexan is a registered trademark of General Electric

Mechanical	Material	Models
Storage Tank 120 gallon	Glass lined carbon steel	E
Storage Tank 300 gallon	Glass lined carbon steel, ASME Cert.	E
Storage Tank 400 gallon	Glass lined carbon steel, ASME Cert.	EA
Piping	Schedule 80 galvanized steel	EAS
Heat Exchanger Shell	Ductile iron low pressure	S
	Carbon Steel high pressure	S
Heat Exchanger Coils	Copper	S
Condensate Traps	Cast iron	S
Enclosure	FRP urethane foam insulation	EAS
Piping	Sch. 80 Galv.	EAS
Windows	Lexan**	EAS
Skids	Galvanized structural steel	EA
Splash Guards	Epoxy painted steel	EAS
Shower Head	ABS plastic, 20 or 30 GPM	EAS
Drench Hose	Neoprene rubber	EAS
Eyewash	ABS plastic	EAS
Floor Grate	Galvanized Steel	EAS
Hand Valves	Bronze/stainless or bronze/chrome	EAS
Air Pressure Regulator	0-125 psi dual stage	A
Air Manifold	3000 psi	A
Freeze Protection Valve	Opens @ 38°F, Close 40°F	EAS
Scald Protection Valve	Opens @ 95°F, Full open 105°F	EAS
Temperature Rating	-40°F Enclosed System	EAS

# EQUIPMENT INSTALLATION & SPACE REQUIREMENT DATA

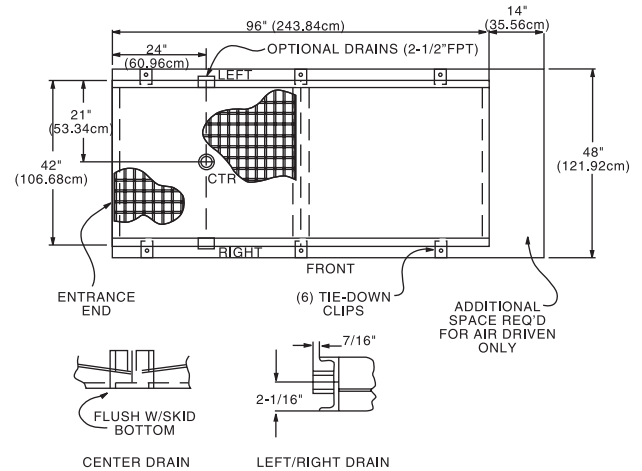
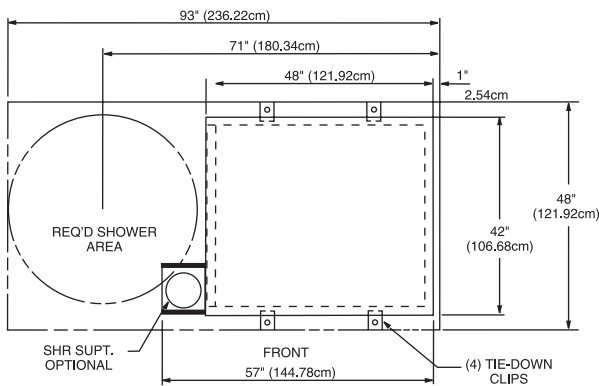
## SKID - Standard Steam Unit

## 4'x8' Arctic® Building



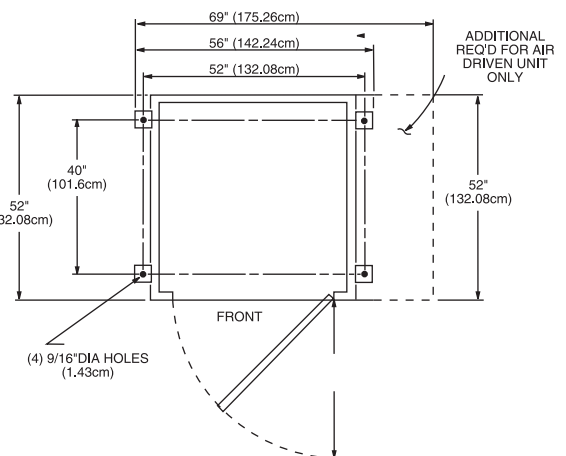
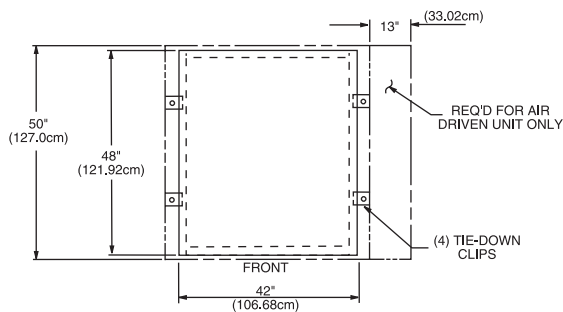
## SKID - TWS - 120 Gallon, Steam Unit

## SKID - TWS - 120 Gallon, 300 Gallon, Air Driven - 400 Gallon



## SKID - TWS - 300 Gallon, Air Driven - 400 Gallon

## BUILDING - TWS - 120 Gallon



**Application Information Data Sheet (please fill out this form and fax it to the Encon customer service representative)**

**Date:** \_\_\_\_\_ **Date Required:** \_\_\_\_\_

**Company:** \_\_\_\_\_

**Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_ **Plant Location:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Facsimile:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Hazard:** \_\_\_\_\_

**Location of Tempered Water System:** Low Temp: \_\_\_\_\_ Operative Temp: \_\_\_\_\_ High Temp: \_\_\_\_\_

**Number of Showers on System:** \_\_\_\_\_ **Eyewash:** \_\_\_\_\_ **Eye/Facewash:** \_\_\_\_\_ **Drench Hose:** \_\_\_\_\_

**Electrical Classification:**

ELECTRICAL CLASS	
A – NEMA-4*	<input type="checkbox"/>
B – NEMA-4X*	<input type="checkbox"/>
C – Class 1, Div. 2, Group C&D*	<input type="checkbox"/>
D – Class 1, Div. 2, Group B*	<input type="checkbox"/>
E – Class 1, Div. 1, Group C&D	<input type="checkbox"/>
X – Others (Define on application)	<input type="checkbox"/>

**T Group (AIT) Class:** \_\_\_\_\_

**Area Lighting:**

*Mark the desired box for light color.*

Plant Supplied ( )

None	Green
------	-------

Supplied with TWS: ( )

Clear	Blue
-------	------

Area Color ( )

**Alarm Systems:** Local ( ) Remote (3 Amp) ( ) Audible ( ) Visual ( )

**Utilities:** Supply Water Pressure (Dynamic) @ GPM: \_\_\_\_\_ Electrical Voltages Available: \_\_\_\_\_

**Supply Water Temp:** High: \_\_\_\_\_ Low: \_\_\_\_\_ Normal: \_\_\_\_\_

**Steam Pressure Available:** \_\_\_\_\_ **Steam Temperature:** \_\_\_\_\_

**Freeze Protection:** Required: \_\_\_\_\_

**Further Information Defining this Application:** Recirc. Loop \_\_\_\_\_ Max. Elevation \_\_\_\_\_

**Supply Line Pipe Size:** \_\_\_\_\_ **Pipe Type:** \_\_\_\_\_ **Pipe Schedule:** \_\_\_\_\_

**Isometric Drawing Available:** \_\_\_\_\_

**Further Information For Review:** \_\_\_\_\_





6825 West Sam Houston Pkwy. N.  
Houston, Texas 77041

P.O. Box 3826  
Houston, Texas 77253

---

Ph: 713.466.1449

Fax: 713.466.1703

---

[www.enconsafety.com](http://www.enconsafety.com)

---

1.800.AT.ENCON  
(1.800.283.6266)

©Copyright Encon Safety Products 2011