



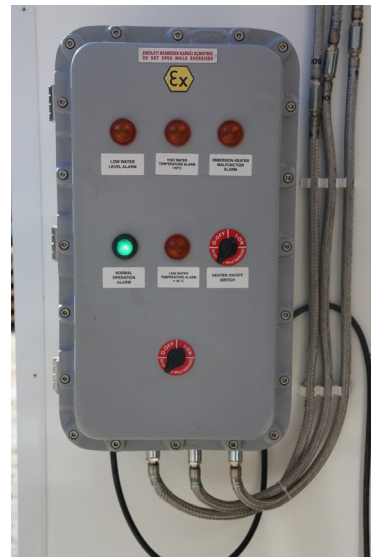
Smart Emergency Safety Showers

IST Safety Ltd

How is the product/service innovative in concept, design, or performance?

Emergency safety showers and eye/face washes are special occupational safety equipments designed to wash chemicals or toxic substances that come in contact with skin, eyes or clothing, meeting the requirements of international standards. Emergency showers can be defined as a first aid equipment that should be used as a necessity for emergency response to reduce the effects of accidents at a workplace. Since those are the products which are directly related to human health, it is a necessity to produce them in accordance with the relevant European and/or American standards and carry the markings of the relevant standards.

Since each emergency shower is designed for different purposes and may not replace another, standard heated or cooled systems with water tank may not always be the right choice for a workplace's needs. Thus, placing the water tank on top of the emergency shower with the help of a cabinet allows the flow to be obtained by using gravity and provides the flow required by the standards. Otherwise, installing the tank on the ground would require the use of an additional pump/booster. This means extra energy consumption and more cost.



Our emergency tank showers are completely tailored such as with insulated cabinet/doors according to customer's requirements. Enclosed insulated cabinet and door systems are preferred especially in cold climates. If the outside temperature is low,

which may harm the health of user after washing, it may also be necessary to install a separate space heater inside the cabinet. All these optional equipments such as space heater, audible and visual alarm which warns when shower is being used, lighting for the cabinet, and E-GSM device which sends SMS to the mobile phone when the shower is being used must be determined and projected according to the needs of the end-user. For that reason, we have launched the innovative **"safety shower builder"** smartphone app for custom built units for who needs an emergency safety shower but do not know what they exactly need and are looking for the right one.



On the other hand, mobile safety showers are ideal for temporary works where there is no mains water supply. In cases where there is no mains water supply in the facilities where the units will be installed and work is required outside the building or open areas, in order to

keep the water ready to use at a temperature of 16-38°C which is required by the standards and when the need for cooling or heating water with low energy in high or low ambient temperatures, for temporary works, it is ideal to use mobile emergency showers in terms of ease of use and transportation.

What problem/s is/are the product designed to solve?

The one of the most important issues is that vital data such as the level of water in the water tank, the temperature of the water, any malfunction in the system, whether or not the shower is being used should be monitored from time to time by the responsible person such as facility managers, workplace authorities and occupational safety experts. It is especially important to monitor the situation of multiple emergency showers located in a large facility scattered in different geographical areas.

According to ANSI/ISEA Z358.1-2014 standard, it is mandatory to check the emergency showers by activating once a week. For this reason, it might be necessary to keep records of the data such as the number of times the emergency shower works, when it works, and

a system to report if necessary. In such cases, by using smart emergency safety showers, remote monitoring and controllable solutions of the units can be provided. Smart safety showers are the units which have automation system. These systems offer the advantage of reliably, safely and economically performing the functions of collecting and controlling information about emergency showers from a central control point over a large geographical area in the workplace/facility. An interface is especially created for the system via HMI (Human-Machine Interface) panel and the authorized person can monitor the existing data simultaneously and control the system manually when necessary.

Providing tepid water is also one the most important issues. If you have a large facility which needs more than one emergency shower that shall be located in different geographical areas, it is important to have emergency safety shower systems fed from a centrally located heated or cooled water tank to reduce cost and energy consumption. In these systems, another most important issue that bacterial growth in the remaining water in the pipes of emergency showers. We solve this issue by providing self-draining design and/or circulation of water in the pipes.

What new or unique innovative solutions are used in producing this product or service?

Emergency Safety Shower Systems Fed from a Centrally Located Heated or Cooled Water Tank: All emergency showers located in different geographical areas in a facility are kept ready for 24-hour use with this system. Thanks to the circulation pump, water in the pipes is circulated and bacterial growth in the pipes is prevented and the user is provided with instant “TEPID” water. Thus, all showers in a facility

are fed from a single tank at affordable costs. The heated or cooled water tank, circulation pump and water booster pump capacities vary according to the number of emergency showers to be installed in the facility and how many showers are required to operate simultaneously at the same time.

Ex-Proof Emergency Safety Showers with Automation Technology: Emergency showers are occupational safety and first aid equipments that are required by law in the workplaces determined by the regulations according to the work and/or their employees. Connecting emergency showers to the network via cable will be costly and inefficient especially in large geographical areas. Wireless communication allows up to 10 kilometers of communication in the open areas. In order to use emergency showers equipped with electrical equipment in hazardous areas, the unit must be ATEX (or equivalent) certified. The latest addition to our ISTECS® Showers & Eyebaths range of emergency showers is ATEX Zone 1, 2 Certification according to new IEC TS 60079-46:2017 standard, Explosive atmospheres - Part 46: Equipment assemblies.

Cost-Effective Simple Automation Technology with ATEX LED Indicators: Especially in large premises, simple automation technology with LED indicators are used to monitor the status of emergency showers located in different geographical areas, the level of water in the water tank, the temperature of the water, any malfunction in the system and whether or not the shower is in use.

Does the product/service bring new techniques to the occupational safety and health industry?

Installing emergency tank showers to different locations in a facility may not always be a good and effective solution for a customer.

In addition, in such cases, different bacterial growth prevention and tepid water supply provision systems must be installed separately for each shower. This makes emergency showers difficult to control and causes high costs for users. Controlling all emergency showers from a single point could be a better solution for HSE professionals.

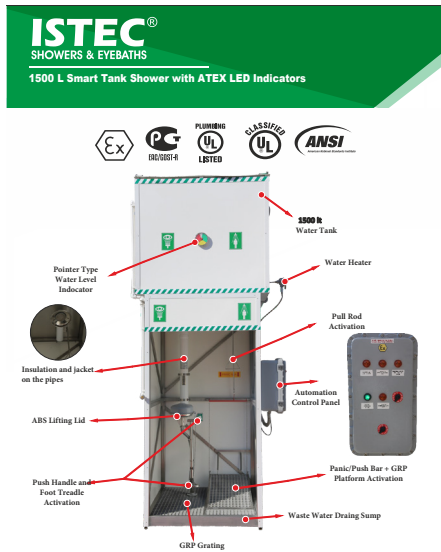
Thanks to the automation system, an authorized person in the facility receives information in any emergency and can intervene in the system immediately. For example, when the water temperature increases above a certain level, the water chiller should automatically switch on. If the thermostat in the system fails, the chiller may not automatically switch on. In such an emergency, the system warns that the water temperature exceeds a certain level and the system can be intervened or the chiller unit can be manually activated.

How will the product/service contribute to any improvements in occupational safety and health? Do provide an example of a case study if any

Especially in hot climates, temperatures of water in the water tank exposed to the sun and the pipes of the emergency shower reach very high temperatures. The water remaining in the pipes of the emergency shower can quickly heat up in hot climates, scald the user while using, and in cold climates, freezing water can clog the pipe and cause the shower not to operate. In the pipes of emergency showers, remaining water shall be protected from heating or freezing by providing our self-draining design and/or circulation technology or by using special scald or freeze protection valves. The system is completely mechanical and do not require any electrical consumption.

For one of our customer which has very large facility, we have developed a system which

is protective against legionella growth by a circulation pump and fed from a centrally located 1800 L tepid water tank with heater. With the system, the advantage of collecting and controlling information about emergency showers spreaded over a wide geographical area from a central control point in a reliable, safe and economical way has been offered. Thanks to the automation system, it is provided to have information about all situations and to intervene in the system instantly.



worker. It would not be a wrong example to compare emergency showers to a car's airbag. The airbag is expected to deploy in the event of a dangerous accident and save lives. An airbag may not be needed at all during the lifetime of a car, but it is vital that it does its duty in case it is actually needed. Keeping emergency showers ready to use efficiently and correctly in accordance with the international standards and following this, controlling and intervening in the system when necessary, is vital for occupational safety.

Doruk TÜRKUÇAR

IST Safety Ltd

Export Manager

HSE Professional

doruk.t@ist.com.tr

<https://www.ist.com.tr>

<https://linkedin.com/in/dorukturkucar>

Has the product/service assisted the reduction of any occupational accidents or injuries?

Although the usage rates of first aid equipments are low by its nature, it is vital to keep it ready for use when needed. An emergency shower may not be needed for months or even years, except when it is activated for weekly checks as per ANSI. But a worker who really needs an emergency shower will be sure that the emergency shower is going to do its duty well and this will be vital for the