

Laboratory fixtures and emergency showers

General guidelines

Fixture = Bench mounted, wall mounted and ceiling mounted fixtures

Valve = Front controlled valves and outlets

All laboratory fixtures/valves must be designed for laboratory use. All laboratory fixtures/ valves must comply with the specifications prescribed by the advisors or architects. The fixtures and valves must have good functional qualities, long durability, the possibility of easy cleaning and a high degree of flexibility and tested quality.

All fixture/valves must be supplied by one manufacturer to ensure that end-users only contact one manufacturer in case of replacement or maintenance of the fixtures.

To ensure maximum flexibility for end users, the fittings must use a flexible hose.

The manufacturer must have a quality management system - ISO 9001/EN 29001/BS 5750 part 1 or equivalent - and must be certified according to such a system.

The manufacturer must have a environmental management system in place - ISO 14001 or equivalent - and must be certified according to such a system.

The fixtures or valves must comply with the following requirements that are appropriate for the media used in the laboratory.

Media	Valve type
Water and coolant water	The water fixtures must have a ceramic head work with 180 ° open/close function. The outlet must have a removable hose pipe with a loose nut in metal. Fixtures must have a 110 degrees swing limitation that ensures that the spout cannot be turned out of the sink. All water fixtures must have a service valve/ball valve built-in and check valve and be ready for flexible hoses. All water fixtures/valves must be approved in accordance by the current standards. Coolant water fixtures/valves must be produced with a rubber cylinder head, where the outlet must have a check valve to ensure flow and backflow. The fixtures/valves must be ready for flexible hoses.



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Media	Valve type
Special water (distilled water, ion-exchanged water)	Taps for distilled or special water must be made of brass with PEX or PP pipes to isolate the special water from contact with the brass, otherwise the taps must be made of stainless steel, if this is a requirement of the advisors or the architect. The head work must be a membrane head work. Metal grip.
Burning gases	Fixtures/valves for burning gases (urban gas, propane, butane, acetylene, etc.) must be fitted with a built-in service valve/ball valve and the cylinder head work must be ceramic. The luminaire must have a safety handle with a "press-turn" opening function to avoid accidental opening of the luminaire. "Press-Turn" grip must have a "pop-up" indicator button that indicates when the luminaire is in open position. The fixtures and valves must be ready for flexible hoses. All fixtures and valves for burning gasses must have a US gas approval
Non-burning gasses and vacuum	Fixtures for non-burning gases with gas purity 5.0 (N₂, CA) must be produced with a needle head work with 3 x 360 dg. open/close function to ensure fine adjustment. Packing must be of PVDF. The fixture must have a built-in ball valve and a metal handle clearly marked according to EN 13792. The fixture must be mounting clips for flexible hoses. Valves and outlets for non-burning gases must, for safety reasons, be uniquely labeled according to EN 13792. Fixtures for vacuum must have a fast-closing 1.5 x 360 dg. high-flow cylinder head work.

Leak rates

All fixtures for non-burning gasses must be leak tested after the production.

Gas purity	Assembling and testing	Permissible leak rate for atmosphere
5.0 (99.000%)	Standard seam	<5x10 ⁻⁵ mbar x l/s (HE)

Accessories

All valves and fixtures must have a built-in service valve/ball valve. The ball valve provides the possibility for seal off, presetting, saving of the media and is also a safety mechanism.

The valve and the fixture must be delivered with installer-friendly fittings parts to secure the fixture and the valve in a completely fixed position.

The fixtures and valves must be ready for flexible pipes or hoses.



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Media indication

Handles on all fixtures must be made of metal and have media text. The color of the metal handle must be in accordance with EN 13792. The fixtures for burning gases must have a safety handle with either the "press-turn" or "lift-turn" opening function to avoid accidental opening of the fitting. "Press-Turn" grip must have a "pop-up" button that indicates when the fixture is in open position.

Outlet in fume cupboards must also have a clear media indication which must be clearly visible and be in accordance with the medium from the front controlled valve.

Materials and surface treatment

Fixtures (valve housing, hose tip, outlet nozzle etc.) must be made of the highest quality brass, where appropriate - depending on the medium, other materials such as stainless steel and plastic can be used.

All exterior surfaces of valves, outlet nozzles etc. must be made of polyester powder lacquer in the RAL color 9023, which is resistant to chemicals and UV effects. Min 50µm surface thickness.

Work pressure

All fittings/valves must be able to operate below these maximum working pressures

Media/Gas purity	Max. working pressure	After installation (Permitted test pressure without the use of valve)
Water and special water	10 bars (145 psi)	1.0 x Max. working pressure
Burning gases	7 bars (102 psi)	1.0 x Max. working pressure
Non-burning 2.0 gases and Vacuum	10 bars (232 psi)	1.0 x Max. working pressure

Leak rates

All fixtures for non-burning gasses must be leak tested after the production.

Gas purity	Assembling and testing	Permissible leak rate for atmosphere
2.0 (99%)	Standard seam	1x10 ⁻³ mbar x 1/s (HE)

Accessories

All valves and fixtures must have a built-in service valve/ball valve. The ball valve provides the possibility for seal off, presetting, saving of the media and is also a safety mechanism.

The valve and the fixture must be delivered with installer-friendly fittings parts to secure the fixture and the valve in a completely fixed position.

The fixtures and valves must be ready for flexible pipes or hoses.



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Bench or wall mounted eye shower

Eye shower is created in accordance with DS/EN 15154 part 2 and is provided as a double eye shower in 45° with self-opening protection lids in the signal color red and for desk mounting.

The eye shower is provided with a rubber shower head for an easy removal of lime scale. Shower head and protection lid must be protected by a rubber mantle. Built in check valve and flowfix will secure the correct water flow, max 14 l/min. Eye shower must be fixed by a mount. Dust cap must be removable only by tool to prevent unauthorized dismanteling.

The product must be able to handle up to 10 bars of static pressure and must work with a minimum work pressure of 1.5 bar. The eye shower connection must be ISO 228/1 - G½" union nut. Minimum distance from wall to shower head must be 150 mm.

For easy handling, the weight of the handheld eye shower mustn't exceed 0.5 kg

The eye shower must be supplied with tepid water from a thermostatic mixing unit designed for the purpose, with build-in intentional leak.

- Hot-Water Fail Safe: If the cold water is interrupted, the built-in anti-scalding device will automatically cease the flow of hot water.
- Cold Water Fail-Safe: If the hot water is interrupted, the built-in intentional leak will allow cold water to flow at a sufficient flowrate.
- Includes check valves on both hot and cold supply.

The thermostatic mixing valve must be made with a high quality polymer to make it more resistant of lime scale built-up.

Provided with a complete package of signs consisting of a wall mounted triangular sign and a service sign.

The supplier of eye showers must have an affiliated service team that can service the products according to DS/EN 15154 part 1, part 2 or part 5.

Emergency body shower

Emergency body shower must have a self-draining shower head and be produced in accordance with DS/EN 15154 part 1 or 5. The color for the body shower must be a signal red colour ie. RAL 2002 and be the polyester lacquering, which is resistant to chemicals and impact of UV. Minimum 50µm surface thickness.

To ensure an easy installation at limit the risk of leakage the body shower should be made with a plug and play system with a double o-ring sealing where no additional sealant is need.



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The body shower must be supplied with tepid water from a thermostatic mixing unit designed for the purpose, with build-in intentional leak.

- Hot-Water Fail Safe: If the cold water is interrupted, the built-in anti-scalding device will automatically cease the flow of hot water.
- Cold Water Fail-Safe: If the hot water is interrupted, the built-in intentional leak will allow cold water to flow at a sufficient flowrate.
- Includes check valves on both hot and cold supply.

Provided with a complete package of signs consisting of a wall mounted triangular sign and a service sign.

The supplier of body showers must have an affiliated service team that can service the products according to DS/EN 15154 part 1, part 2 or part 5.

