

Protective solutions

Applications

The ESL -series NBC-filtration units are used for an automatic NBC -ventilation in Military Command Posts and Operational Shelters. Purpose of the NBC -filtration units is to provide filtration of Nuclear Fallout and Biological and Chemical Warfare agents. The ESL -series NBC -filtration units can be integrated into building management systems or shelter control systems such as Temet TASCs (Temet Advanced Shelter Control System).

The ease of use of the ESL -series units and smart real-time monitoring system extend the service life of the NBC-filters. The units are provided with a sophisticated control system continuously balancing the airflow within the NBC-filtration bank thus maximizing the efficiency of NBC-filters to a new level.

The ESL -series units utilize the data of NBC-detection system and maximize the safety of personnel inside the shelter. The automatic operation and optimized use of the NBC -filter capacity make the ESL -series units a more attractive option than regenerative NBC-filtration systems.

The ESL -series units are of modular type providing the users freedom to design their own system for a best fit to the shelter facility. The units are completely factory tested before shipment.



Specification

Manufacturer of ESL -series NBC-filtration units is Temet, Helsinki Finland.

The ESL -series NBC -filtration units comprise the following main modules: NBC -blower module with main control valves and pre-heating and pre-filtration system, NBC -filter modules with control and gastight closing valves and an electronic control unit. The ESL -series units are completely ground shock isolated against the ground shock effect caused by the reference weapon. The ESL -series units have special NBC -ducting made of heavy gauge welded steel pipe.

The ESL -series NBC -filtration units can be built by selecting the NBC -filtration modules based on air flow requirements as follows:

NBC -filter Module	ES-2A	ES-3A	ES-2B	ES-3B
Filtration air flow m ³ /h	1200	1800	2500	3750

Example: for 3000m³/h air flow the combination of ES-2A (1200m³/h) and ES-3A (1800m³/h) modules shall be used =>The type of unit is ESL-3000A.

The ESL -series NBC-filtration units incorporate the following NBC -filters: A -series ES-600, B-series ES-1250.

The ESL -series NBC-filtration units provide for shelter over pressurization capacity of 1000 Pa after NBC-filtration. The ESL -series units can also be used for shelter testing purposes when the shelter is provided with an over pressurization control system. The units can even be operated at by-pass mode (bypassing the NBC -filters) providing an increased airflow into the protected facility..

Design Criteria

The NBC -filters used in the ESL -series NBC -Filtration units are made in accordance with client specification or with technical provisions issued by the Finnish Ministry of Interior. The A -series NBC -filters (type ES-600) are type tested and approved for use by VTT Technical Research Centre of Finland, an Independent Testing Authority mandated to perform type inspection for shelter equipment by the Ministry of Interior.

Test and performance data

The ESL -series NBC-filtration units are designed to withstand the leakage pressure and impulse behind intake air blast valves. The units are tested against reflected blast pressure of 1.5 bar and reflected total impulse of 7.5 bar ms measured at the intake air duct.

The ESL-series NBC-filtration units withstand the mechanical shock of the installation base having a maximum acceleration of 40 g in horizontal and 50 g in vertical direction.

For details and performance of the Temet ES-600 and ES-1250 NBC-filters used in the ESL -series NBC-filtration units, please see the pertinent Temet brochures. NBC-filtration units can be equipped with other ES-series filters, if required.

Temet NBC-Filtration Units

The ESL -series NBC -filtration units are composed of modules making possible fitting of the unit in the usually tight machinery room. The standard ESL -series system layout can easily be varied by taking the air intake and exhaust to different position and location. The ducting work to interface ESL -series NBC-filtration unit with gastight wall will be designed and provided by Temet. When given the dimensions of the NBC-plant room and the desired filtration air flow, Temet will select the suitable NBC-filtration unit and design the unit layout to optimize the usage of floor space.

Plug and Play

The ESL -series filtration units are made simple to install. The site installation work requires minimum amount of work. The installation is performed by bolting the modules together and by connecting electrical cables and ducts. The ESL -series units can be installed in any shelter facility, without the need for special tooling.



Standard ESL-3000A NBC-filtration unit includes:



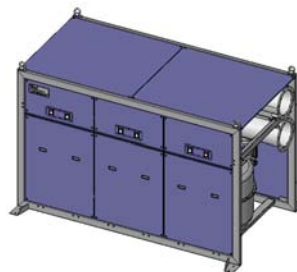
Double the filtration performance with double bank system

The system provides a unique feature for an NBC -shelter by introducing a stand-by line that can be taken into use at any time. The sophisticated control system monitors the performance of the NBC -filters, and when required, automatically starts the operation of the stand-by line. No more difficult and risky NBC -filter changing procedures during the NBC-filtration period. The ESL -series double bank system brings your system to new level of automation.



Stand-By filters in ground shock isolated bed

The ESL-series spare NBC-filters are installed on a ground shock isolated bed. Changing the filters is made simple by a filter changing trolley and the same trolley can be used for measuring the weight of the filters during peace time storage period. The mounting bed is designed to minimize the space required to store NBC-filters.



ECU Electronic Control Unit

Control unit for NBC-detection integration and NBC-filtration control features

SBU-1 Shelter Blower Unit

Blower unit with main gastight valves and intake air pre-heater to be connected to pre-filter assembly

ES-3A NBC Filter Module

3 pcs of ES-600 NBC-filters with gastight closing valves, control valves and pressure sensors

ES-2A NBC Filter Module

2 pcs of ES-600 NBC-filters with gastight closing valves, control valves and pressure sensors

Design - Production – Installation – Maintenance - Consultation