

Protecting Tanks And Their Contents

Why the Need for Filters and Rupture Discs?

The process of filling and draining a tank requires that air be allowed to flow freely into and out of the tank to accommodate the varying liquid volume in the tank. Otherwise, the creation of either overpressure or vacuum conditions generates stress that can challenge the integrity of the tank. The main reasons to incorporate filters and rupture discs in a storage solution are:

1. To protect the tank from conditions that may induce tank failure

Tank over or under pressurization occurs when tanks are emptied or filled faster than air is allowed to flow in or out of the vessel. This can cause tank deformation, weakening of the tank over time, and in critical situations, catastrophic failure. Therefore, appropriate filter and rupture disc sizing for each specific application is of critical importance.

2. To protect the valued contents of the tank

From ultra-pure water storage to storage of valuable chemicals or in-process materials, protection from microbial or particulate contamination is crucial. Although important in all applications, it is essential in the pharmaceutical, clinical, ultra-pure water, and food and beverage industries. Sterile filtration protects stored materials from submicron particle contamination and bacterial growth that can lead to spoilage, costly product loss, and lost productivity.

3. To protect the people in the workspace

There is no more important reason for the proper use of filtration and rupture disc protection than employee and workplace safety. In the event of filter or process automation failure or employee induced error, the proper use of filtration and rupture discs are the last line of protection. Sacrificial rupture discs eliminate critical pressure situations that can cause tank failures, protecting employees, the work space, and the valuable contents of the tank.



Replaceable cartridge (without housing) & a single-use filter

Filters

Re-usable filter housing types: available in both stainless steel and plastic

Replacement cartridges: single-use cartridges for reusable housings usually used with larger tanks

Single-use filters: available for any size tank, eliminates cleaning, sterilization



Sacrificial one-way burst disc

Burst Discs

One-way burst discs: can be used individually for over pressure protection or in tandem for pressure and vacuum protection

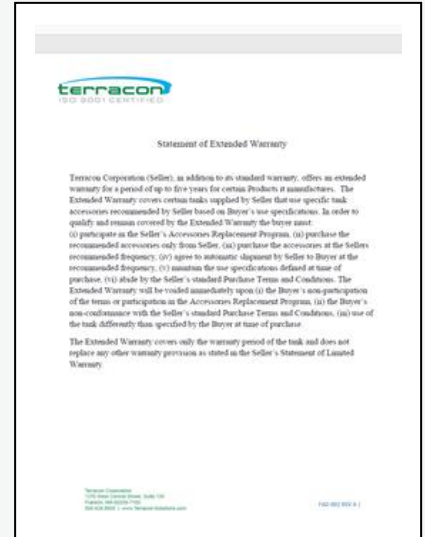
Bi-directional discs: a single disc that protects for both pressure and vacuum

Filter and Rupture Disc Sizing

Filter and disc sizing is critical in providing the appropriate protection across the range of conditions experienced in any application. Considerations include:

- The type of tank used
- Flow rates of the liquid: expected and peak rates
- Temperature extremes experienced such as in clean-in-place (CIP) processes
- The amount of particulates in the environment

Terracon has over 40 years of experience across many industries and numerous applications. We have established a wealth of knowledge in the proper design, fabrication, and use of storage systems. From calculating the optimal filter and rupture disc combination to custom mounting with tank accessory consoles, our Customer Advisor Services are available to assist you in providing a storage solution to meet your specific application needs.



Highlights

Extended 5-year warranty: when used with Terracon's Tank Accessories Program, the warranty of most tanks can be extended up to 5 years