- Double containment: this type of storage tank has two vertical walls, both of which are designed to contain the stored amount of liquid and withstand the hydrostatic pressure of the liquid. The roof rests on the inner wall.
- Full containment: the two walls of this closed storage tank are also designed to contain the stored amount of liquid, but in this case the roof rests on the outer wall.

The tank must be constructed in conformity with an agreed code for the construction of pressure vessels or storage tanks, taking account of its pressure and operating temperature. The design and materials of construction of the tank should be checked by consulting an appropriate national standard. These could make demands on the blast resistance of storage tanks in some cases.

The storage tank must be safeguarded against high pressure, and in the case of refrigerated liquid ammonia, also against a pressure below the minimum design pressure. The ingress of warm ammonia into cold ammonia must be avoided to eliminate risk of excessive evaporation and the “roll-over” phenomenon. All storage tanks should be equipped with two independent level indicators, each having a high-level alarm.

An automatic cut-off valve, operated by a very high-level alarm instrument, should be installed on the feeding line.

In cases of refrigerated liquid ammonia, storage tanks must be equipped with a recompression installation to liquefy the boil-off. There should be at least two refrigeration units to allow proper maintenance and to prevent the emission of ammonia via the relief valves. Furthermore, an installed alternative power supply may be necessary.