**SECTION 712 SUMPS AND EJECTORS

712.1 Building subdrains.**
Building subdrains that cannot be discharged to the *sewer* by gravity flow shall be discharged into a tightly covered and vented sump from which the liquid shall be lifted and discharged into the building gravity drainage system by automatic pumping equipment or other *approved* method. In other than existing structures, the sump shall not receive drainage from any piping within the building capable of being discharged by gravity to the *building sewer.*  **712.2 Valves required.**
A check valve and a full open valve located on the discharge side of the check valve shall be installed in the pump or ejector discharge piping between the pump or ejector and the gravity drainage system. *Access* shall be provided to such valves. Such valves shall be located above the sump cover required by Section 712.1 or, where the discharge pipe from the ejector is below grade, the valves shall be accessibly located outside the sump below grade in an *access* pit with a removable *access* cover.  **712.3 Sump design.**
The sump pump, pit and discharge piping shall conform to the requirements of Sections 712.3.1 through 712.3.5.

**712.3.1 Sump pump.**
The sump pump capacity and head shall be appropriate to anticipated use requirements.

**712.3.2 Sump pit.**
The sump pit shall be not less than 18 inches (457 mm) in diameter and not less than 24 inches (610 mm) in depth, unless otherwise *approved.* The pit shall be accessible and located such that all drainage flows into the pit by gravity. The sump pit shall be constructed of tile, concrete, steel, plastic or other *approved* materials. The pit bottom shall be solid and provide permanent support for the pump. The sump pit shall be fitted with a gas-tight removable cover adequate to support anticipated loads in the area of use. The sump pit shall be vented in accordance with Chapter 9.

**712.3.3 Discharge pipe and fittings.**
Discharge pipe and fittings serving sump pumps and ejectors shall be constructed of materials in accordance with Sections 712.3.3.1 and 712.3.3.2 and shall be *approved.*

**712.3.3.1 Materials.**
Pipe and fitting materials shall be constructed of brass, copper, CPVC, ductile iron, PE, or PVC.

**712.3.3.2 Ratings.**
Pipe and fittings shall be rated for the maximum system operating pressure and temperature. Pipe fitting materials shall be compatible with the pipe material. Where pipe and fittings are buried in the earth, they shall be suitable for burial.

**712.3.4 Maximum effluent level.**
The effluent level control shall be adjusted and maintained to at all times prevent the effluent in the sump from rising to within 2 inches (51 mm) of the invert of the gravity drain inlet into the sump.

**712.3.5. Pump connection to the drainage system.**
Pumps connected to the drainage system shall connect to a building sewer, building drain, soil stack, waste stack or horizontal branch drain. Where the discharge line connects into horizontal drainage piping, the connection shall be made through a wye fitting into the top of the drainage piping and such wye fitting shall be located not less than 10 pipe diameters from the base of any soil stack, waste stack or fixture drain.

**712.4 Sewage pumps and sewage ejectors.**
A sewage pump or sewage ejector shall automatically discharge the contents of the sump to the building drainage system.

**712.4.1 Macerating toilet systems.**
Macerating toilet systems shall comply with CSA B45.9 or ASME A112.3.4 and shall be installed in accordance with the manufacturer’s installation instructions.

**712.4.2 Capacity.**
A sewage pump or sewage ejector shall have the capacity and head for the application requirements. Pumps or ejectors that receive the discharge of water closets shall be capable of handling spherical solids with a diameter of up to and including 2 inches (51 mm). Other pumps or ejectors shall be capable of handling spherical solids with a diameter of up to and including 1 inch (25.4 mm). The capacity of a pump or ejector based on the diameter of the discharge pipe shall be not less than that indicated in Table 712.4.2.  **Exceptions:**

1. Grinder pumps or grinder ejectors that receive the discharge of water closets shall have a discharge opening of not less than 11/4 inches (32 mm).

2. Macerating toilet assemblies that serve single water closets shall have a discharge opening of not less than 3/4 inch (19 mm).  **TABLE 712.4.2 MINIMUM CAPACITY OF SEWAGE PUMP OR SEWAGE EJECTOR**

|  |  |
| --- | --- |
| **DIAMETER OF THE DISCHARGE PIPE (inches)**  | **CAPACITY OF PUMP OR EJECTOR (gpm)**  |
| 2 | 21 |
| 21/2  | 30 |
| 3 | 46 |

|  |
| --- |
| For SI: 1 inch = 25.4 mm, 1 gallon per minute = 3.785 L/m. |