



OUTDOOR INSTALLATION OF LOUDSPEAKERS

(INCLUDING INDOOR SWIMMING POOL INSTALLATION)

(Updated 1 July 2013)

One Systems speakers are designed to be used in direct weather outdoor environments, or specific indoor environments. Even with all of the substantial weather protection and corrosion resistant materials that are used in One Systems designs, it is still necessary to carefully select specific products for use in certain environments. It is also important to observe some fundamental “rules” when installing One Systems speakers.

One Systems produces three basic categories of products:

General purpose direct weather speakers

These models utilize 304-grade stainless steel for all structural points, grilles and associated hardware. They are suitable for use in direct weather “inland” environments that are not subjected to salt spray (marine) conditions nor to heavy industrial environments where corrosive gases and atmospheres are present.

Marine grade direct weather speakers

One Systems marine-grade models utilize 316-grade stainless steel for all structural points, grilles and associated hardware. One Systems **STRONGLY** recommends that any cruise ship, pleasure boat or ocean front applications use marine-grade products and associated marine-grade rigging.

Because the extent of the marine environment is determined by winds, surf conditions, etc., One Systems recommends that any outdoor installations within 10 miles of the ocean utilize –marine-grade models and associated rigging. Typical data suggests that although “marine environments” can fall off rapidly as the distance from sea water/ocean increases, locations and the extent of the marine environment cannot be predicted. Therefore a good

general “rule” is to utilize 316-grade stainless steel models within a 10-mile distance from sea water/ocean locations. This “rule” does not apply to fresh water lakes but DOES apply to large inland salt water lakes!

Indoor Swimming Pools (Natatoriums)

One Systems offers a range of speaker models designed for use in Natatorium (indoor swimming pool) environments. The presence of chloramines (various chlorides) above the “splash zone” in indoor swimming pool environments presents a very corrosive condition for both 304-grade and 316-grade stainless steel. One Systems produces application specific products for this environment that utilize what are referred to as 6% Moly stainless steels. These steels are a type of stainless steel (AL6XN, 254SMO (1.4547) and 1925hMo (1.4529)) that are extremely well suited for use in the high chloramine atmospheres found in indoor swimming pools. One Systems requires that ONLY the stainless steels that are used in NAT products be used for rigging points and associated structural supports. The 108/NAT and 112/NAT have been designed specifically for use in these environments.

General “Rules” for direct weather outdoor installations

If a loudspeaker is mounted in a direct exposure condition, it is recommended that the loudspeaker be tilted down to minimize direct rain on the acoustically transparent grille assembly. Direct weather loudspeaker grilles work by breaking up direct rain and then channeling the resultant moisture down a reticulated foam backing. The action of channeling the moisture down this foam is achieved by gravity. If the loudspeaker is tilted upward, gravity will naturally pull the moisture down, fill the woofer and horn cavities and void all warranties.

DO NOT AIM THE SPEAKER UPWARD (TOWARD THE SKY). Gravity is only our friend if it can pull the moisture down and AWAY from the cone and horn. Direct vertical installation is acceptable, but a slight down tilt is preferred. Tilting the enclosure upward is never a good idea!

Down tilt is particularly important in areas where ice and snow are expected. The down tilt will help to minimize the build-up of ice and snow on the grille.

Because outdoor environments present additional stress to all rigging and support components, the enclosure and all rigging components should be inspected at least yearly by a qualified professional with knowledge of local and national codes.

All “associated rigging” that is supplied or specified by others should be of the same alloy type as the One Systems enclosures and One Systems supplied rigging/brackets that are being used (i.e., 304-grade stainless steel, 316-grade stainless steel (marine-grade) or 6% Moly stainless steels). ***Do not mix alloy types for associated rigging!*** If the enclosure being used is a

304 grade stainless design then 304 grade associated rigging should be used. If the enclosure being used is a 316-grade (marine-grade) design, then 316-grade stainless steel associated rigging should be used. If the enclosure is a NAT model (Indoor Swimming Pool) that uses a 6% Moly stainless steel, then all associated rigging should also be 6% Moly stainless steel.

Please refer to and read “Rigging and Suspension of One Systems Products”. This document can be found on the One Systems web site in the “Documentation” section, then within the “Tech Papers/Install Guides” section of the One Systems website at http://onesystems.com/pdf/education/Rigging_and_Suspension.pdf.

As is the case with **ALL** overhead suspended products, a secondary safety should **ALWAYS** be utilized!