

HOSE EXPECTED LIFE PREDICTOR

HELP FROM HOSCO

**A guide to explain the factors used in
choosing paint hose materials of construction
and predict their lifespan.**



Hose Expected Life Predictor (HELP)

The functions of hose in the paint operations is critical. Paint Hoses, whether in automatic or manual stations, provide at least six identifiable functions for that paint station. They are:

1. Contain pressure safely to prevent loss of paint or harm to booth personnel.
2. Maintain critical velocity range to preserve temperature and viscosity.
3. Provide machine or hand spray applicator range of motion needed to complete the station assignment.
4. The fourth function is to contain electrostatic voltage on systems or guns using electrostatic application, an attribute called "dielectric strength".
5. The fifth function is the speed of flushing and cleaning the paint lines, typically from a color changer in an automatic system to the applicator.
6. The last function is to provide low moisture absorption or low permeability, which is important on catalyzed coating to prevent crystallization due to moisture absorption through the paint hoses.

The materials of construction of paint hoses provide a wide range of performance attributes to address these six factors.

Please remember the difference between hose and tubing. Hose is described,

specified and manufactured to meet the requirements of internal diameter (ID) characteristics. These characteristics include ID tolerances and surface finish levels. Hose is usually used with "Barb and Nut" style connectors.

Tubing is described, specified and manufactured to meet the requirements of outside diameter (OD) characteristic. These characteristics include OD tolerances and surface finish levels. Tubing is usually used with "Push-Lock" or "Compression style" fittings.

The workhorse of the industry is NYLON PAINT HOSE or tubing (NP or NHA Series), supplying as much as 85% of demand for Airspray, HVLP, Bells, and Discs; in either manual or automatic/robotic systems. Next is the COAXIAL PAINT HOSE (CPH Series), which is twice as flexible as nylon and about 20% lighter in weight. Its primary application is at handgun stations where ergonomic factors are critical. The last commonly used hose is TEFLON PAINT HOSE (FEP or PTFE Series), and it is used to address dielectric strength, provides rapid flushing and cleaning, and low moisture permeability.

The table below provides a performance ranking of each of these six factors evaluated against the three types of hose material of construction. A ranking of 1 is excellent, 2 is very good, 3 is good/average, 4 is poor and 5 is not recommended.

PERFORMANCE FACTOR	HOSE/TUBE MATERIAL OF CONSTRUCTION		
	NYLON	COAXIAL	FEP/PTFE
Pressure strength	1	3	3
Size availability	1	3	2
Motion/Flexibility	2-3	1	3-4
Dielectric strength	5	5	1-2
Speed of cleaning	3	3	1
Moisture resistance	3	3-5	1-2