A Potential for Disaster: Using PVC Pipe for Compressed Airlines

Many hobbyists and painters in small body shops often ask: "Can I run PVC (or CPVC) pipe for airlines in my shop or garage?" It's cheap, lightweight, readily available, easy to work with, AND it's rated 600psi. **The answer, unequivocally, is NO!**

Here are 6 reasons why PVC is a bad choice for use in compressed air lines:

1. OSHA has generally banned the use of PVC pipe in above ground compressed air systems in the workplace (OSHA Act Sec. 5(a)(1). There are also many individual State Laws that prohibit PVC use for airlines.
2. PVC is a brittle plastic. When it fails under pressure, it breaks into many sharp pieces. The rapid release of compressed air will send these pieces flying with enough energy and velocity that they can be lethal!
3. PVC is not durable. It does not withstand impacts or vibration well. Both hot (>120F) and cold (<40F) temperatures can cause a significant loss of strength. PVC is also susceptible to degradation and possible premature failure by ozone, UV Radiation, many automotive refinishing chemicals (acetone, xylene, etc), and synthetic compressor oils.
4. Movement of air within PVC pipe can, under certain circumstances, generate a static charge. This could create a potentially flammable/explosive situation with the dust/over spray and VOC's present during automotive painting.
5. Metal pipe is a thermal conductor, and this property promotes heat dissipation and moisture condensation in the first 30-60 feet after the compressor. This helps keep moisture out of paint jobs. Plastic pipe is an insulator, so it does not provide these benefits to your air system.
6. Most major insurance companies will not cover claims made when a piece of equipment is used in an unintended or illegal fashion. This includes the use of PVC pipe in compressed air systems. Doing so is prohibited by OSHA and is against the law in many states!

There are a lot of people who have used PVC piping in compressed air systems successfully for years. Those people are just plain lucky as that set up is an accident waiting to happen. PVC is not the right material. Look to copper, black iron, galvanized, or specialty aluminum pipe instead.