

## Tip 36: Hydraulic Hose Validation Process

Did you know what really goes into developing and testing a new hydraulic hose? Thanks to our Technical Team in Norfolk, we fill you in on all the details below!

*The design validation process of a hydraulic hose varies depending on the applicable industry specifications (SAE, EN, ISO, etc.) and specific customer requirements.*

### General Process

1. Hose trial is ran, tested per applicable standards, including but not limited to:
  1. Dimensions, Proof, Length Change, Burst
  2. Hydraulic Impulse (per SAE J343 / ISO 6803 or equivalent)
2. If trial is successful, it is repeated and re-tested to validate the hose design and production process.
3. After passing lab testing and impulse on two consecutive runs, the hose is released for extended trials, Production Part Approval Process (PPAP), or regular production depending on the project requirements.
4. Continuing conformance testing is done on a Lot or Periodic basis.

### Impulse Test Details

Test parameters for pressure, temperature, bend radius, and number of cycles are detailed in the applicable industry standards. The test pressure and temperature is usually 133% of a hoses Maximum Working Pressure (MWP) at 212 °F. Hoses with a higher temperature rating are tested at the max rated temperature.

Hoses are impulse tested at a tighter bend radius if the listed catalog bend radius exceeds the bend radius specified in the applicable standards.

Required number of impulse cycles is defined by the hose industry standard. The most common requirement for hydraulics hoses built to SAE standards is 200,000 cycles. During development, hoses are typically tested beyond the requirements to 300,000 or 500,000 cycles.