

Double Containment Is More Than Two Pipes

Putting one pipe inside another is the beginning of the engineering — not the finished solution. The annular space is its own system.

The Annular Space Is a Functioning System

Double-contained piping should be double-contained by design, not by coincidence. Every one of the following has to be an explicit engineering decision.

Supports

The annular space carries its own load path, distinct from the carrier pipe's support requirements.

Expansion allowance

Carrier and containment pipe expand at different rates under the same temperature swing.

Drainability

If the primary pipe leaks, the fluid has to go somewhere specific, not pool at a random low point.

Leak detection

Discrete-point or continuous-cable — the method has to match the consequence and the geometry.

Inspection access

A system nobody can physically inspect isn't really monitored, just installed.

Low points, termination points, penetrations

Engineered locations, not incidental ones created by however the run happened to be installed.

Valve / access boxes

The place double-contained runs are most often improvised — the box has to carry the same containment discipline as the pipe.

Discrete-Point vs. Continuous Cable

Real products, real tradeoffs — the right answer depends on consequence and geometry, not a default choice.

Discrete-Point Detection

Strength: Straightforward, lower cost.

Weakness: Leakage has to physically reach the sensor location.

Icon LD Sensor (adjustable sensitivity, NEMA 4X) and LDS-YN electrostatic sensor — explicitly engineered for the interstitial area between double-wall tanks, retention dikes, and secondary containment sumps.

Continuous Sensing Cable

Strength: Earlier detection over long runs, can localize the leak.

Weakness: Higher complexity — installation and maintenance matter.

Icon LDC CablPro (self-wicking, non-conductive PE, marketed for dual-containment or insulated piping) paired with LeakPoint — 492 ft (150m) sensing range over RS485 Modbus, reporting where along the cable the leak occurred. Asahi's own PAL-AT cable system does the same job on the Duo-Pro line.

REAL REPRESENTED CAPABILITY

MANUFACTURER	SYSTEM	REAL SPEC
Asahi/America	Duo-Pro Double Containment	PP/PVDF/ECTFE, 1x3–16x20, 150 psi + drainage, outer pipe meets EPA 30-day containment standard, leak-detection cable on 2x6+
Pexco / Altaflo	480 Dual Containment Tubing	Daikin AP-231SH UHP PFA inner (SEMI F-57/C-90) inside clear FEP outer — visual leak detection without disassembly

The Double-Containment Design Checklist

Run this on your next double-contained piping application before it's ordered.

- ☐ Single vs. dual containment requirement confirmed against the fluid hazard and consequence?
- ☐ Carrier pipe material and containment pipe material both explicitly specified — not assumed to match?
- ☐ Annular-space support and expansion allowance designed, not defaulted?
- ☐ Leak detection method selected — discrete-point or continuous cable — matched to consequence and geometry?
- ☐ Slope and drain locations engineered, with a defined low point?
- ☐ Valve and access boxes carry the same containment discipline as the pipe run?
- ☐ Penetrations detailed for containment integrity, not just carrier-pipe passage?
- ☐ Inspection access confirmed to be physically real, not theoretical?
- ☐ Required response to detected leakage documented and tied to a control-system interlock?

Run This on Your Next Application

LibertyCES engineers the annular space as a real system, not an afterthought — a documented answer, not a catalog guess. For a spec review, call, text, or email James directly.

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