Negative Air Pressure in Hospital Construction

THE DIRECT ANSWER

Negative air pressure means the air pressure inside the construction zone is lower than in surrounding areas - so air always flows into the work zone, never out of it. In hospital construction it is the primary engineering control that keeps dust, mold spores, and Aspergillus from migrating into occupied patient areas.

HOW IT WORKS

- Created by a sealed containment barrier plus a HEPA-filtered negative air machine exhausting more air than enters.
- Target: -0.01" water column (2.5 Pa) negative relative to adjacent spaces - a widely used facility target, not an ICRA 2.0 or CDC requirement.
- The cascade: corridor (highest pressure) -> anteroom (intermediate) -> work zone (lowest). Opening the work-zone door pulls anteroom air in, never work-zone air out.
- The entire construction area stays negatively pressurized for the whole project - every gap and door undercut becomes an inward airflow path.

WHY IT MATTERS CLINICALLY

- Construction dust carries Aspergillus spores - harmless to healthy people, but a cause of invasive aspergillosis with high mortality in neutropenic, transplant, and oncology patients.
- Negative pressure works continuously and independently of worker behavior. Barriers get breached and doors get propped; as long as the pressure holds, the air still flows the right way.

FIELD QUESTION

How negative should the pressure be?

-0.01 inches of water column (2.5 Pa) relative to adjacent spaces is the widely used facility target (common practice, not an ICRA 2.0 or CDC requirement), maintained for the entire project.

Pressure is the control that works while nobody's watching.

Caution: codes, editions, and targets vary by facility and authority having jurisdiction (AHJ). Figures marked as common practice are facility targets, not code requirements. Confirm against your AHJ and the current code text before acting.