

HOUSEPLANSDIRECT TECHNICAL GUIDES

CAVITY WALLS EXPLAINED

A complete guide to modern masonry cavity-wall construction



Modern insulated masonry cavity wall with its structure, drainage and principal junctions exposed.

NINE-PART PUBLICATION EDITION

Principles · Systems · Moisture · Anatomy · Construction · Fire · Regulations · Inspection

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About this guide

This guide explains masonry cavity-wall construction for low-rise housing in England. It is intended for clients, designers and site teams who need to understand wall selection, structure, weather resistance, insulation, wall ties, openings, floors, roofs, cavity barriers, workmanship and inspection. Project drawings, calculations, exposure assessment, fire strategy, current product evidence and Building Control requirements always take precedence.

SCOPE Cavity walls require coordinated structural, moisture, thermal, airtightness and fire information. Wall type, exposure, components and junctions are project-specific. Figures are explanatory and must not be scaled.

Part 1 – Introduction: What Is a Cavity Wall?

Two masonry leaves separated to control rain and heat flow

A cavity wall has an outer masonry leaf and an inner masonry leaf separated by a designed cavity and connected with wall ties. The outer leaf resists weather and provides the external finish; the inner leaf carries building loads and supports internal finishes. Insulation, DPCs, cavity trays, weeps, closers and barriers complete the wall as a coordinated environmental, structural and fire-resisting system.



Figure 1 – Typical modern insulated masonry cavity-wall construction.

1.1 Principal components

Component	Primary role
Outer leaf	Provides weathering, durability, impact resistance and appearance.
Cavity	Separates leaves and provides the designed drainage and drying zone.
Insulation	Limits heat flow and maintains internal surface temperatures.
Wall ties	Transfer lateral forces and restrain the two masonry leaves.
Inner leaf and finish	Carry loads and complete internal airtightness and finish.

1.2 Benefits and limitations

- The cavity separates rain-wetted external masonry from the inner leaf and internal environment.
- Insulation can be incorporated while retaining a deliberate drainage and drying strategy.
- Masonry provides robustness, durability, fire resistance and familiar finishes when correctly designed.
- Performance is workmanship-sensitive: mortar debris, insulation gaps, failed trays or incorrect ties can bypass the intended protection.

KEY PRINCIPLE A cavity works only when the drainage route remains clear and every interruption is completed with compatible trays, stop ends, weeps, closers, insulation and seals.