

Wi-Fi dead spots in new-build homes: causes and practical solutions

How to distinguish a broadband fault from an indoor coverage problem—and improve the signal without guesswork

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General advice

The short answer: a fast fibre connection does not guarantee strong Wi-Fi in every room. Wi-Fi is a radio signal created by the router inside the home. Distance, router position, walls, floors, metal, glass, water, electrical interference and the receiving device can all affect it. Some modern construction products can weaken the signal, but “new-build insulation” should not be treated as the explanation until simpler causes have been tested.

CheckSure’s Homeowner Knowledge Base draws on practical experience of building, inspecting and resolving defects in new homes. Our aim is to explain what homeowners should reasonably expect, what may require further investigation and what steps they can take next.

Broadband speed and Wi-Fi coverage are different

Broadband is the connection arriving at the home. Wi-Fi is the radio link between the router and your devices. A fast incoming service can therefore coexist with a weak signal in one room.

Broadband is the connection delivered to the home. Wi-Fi is the local wireless link between the router and phones, televisions, laptops and smart devices. A full-fibre Optical Network Terminal, or ONT, does not itself provide Wi-Fi. the router connects to it and distributes the service wirelessly or through Ethernet cables.

If a device connected by Ethernet performs well but a wireless device in another room is slow, the incoming broadband may be healthy and the issue is likely to be indoor Wi-Fi. If a wired device is also slow, disconnecting or the ONT shows a fault, contact the broadband provider before buying coverage equipment.

Why router position matters so much

A router sends radio energy in several directions. Ofcom recommends a central, raised and open position, away from objects such as radiators and fish tanks and from interfering equipment including microwave ovens, baby monitors and cordless phones. A router placed at floor level, behind a television or inside a utility cupboard begins with a disadvantage before the signal reaches a wall.

In a new home, the router position may be influenced by the ONT or incoming network point. Openreach guidance for new sites warns that placing the provider’s router in a service or under-stairs cupboard can significantly reduce coverage and recommends internal network cabling where the router cannot be positioned centrally. Do not move or tamper with an operator-owned ONT. use suitable Ethernet cabling to relocate the router or feed an access point instead.

Can modern insulation block Wi-Fi?

Wi-Fi weakens whenever it passes through building fabric. Dense masonry, reinforced concrete and several layers of material can all reduce the signal. Metal is particularly effective at reflecting or absorbing radio energy, so foil-faced insulation, foil-backed plasterboard, metal framing, mirrors, appliances and some coated glazing may contribute to a difficult route between router and device.

That does not mean every new build creates a radio-proof box. Construction varies between plots and rooms, and a weak signal can result from several smaller obstacles rather than one product. Underfloor heating systems containing metallic layers may affect transmission between storeys, while pipework, ductwork and steelwork can create local shadows. The practical answer is to test routes and positions rather than diagnose a hidden material from Wi-Fi bars alone.

Frequency affects the trade-off between speed and reach

Home Wi-Fi commonly uses the 2.4 GHz and 5 GHz bands, with newer equipment also able to use 6 GHz. Lower frequencies generally travel farther and penetrate obstacles more effectively, while higher-

frequency bands can offer greater capacity over shorter, clearer paths. A device may therefore show excellent performance near the router but struggle after crossing several walls or a floor.

Many modern routers automatically select bands and channels. Manual changes can help in some homes, but poorly chosen settings can make roaming or compatibility worse. Use the provider's app or support service first unless you understand the network configuration.



Figure 1. Walls, floors, distance and construction materials can weaken Wi-Fi, leaving some rooms with poorer coverage than others.

Test the home before buying equipment

- Restart the router and check its status lights, cables and provider service status.
- Test one modern device close to the router, then repeat in each problem room using the same speed-test service.
- Where possible, compare the result with a computer connected directly to the router by Ethernet.
- Move the router temporarily into a more open and central position using an appropriate Ethernet cable; do not strain or relocate the fibre.
- Record the room, position, time and result. Test more than once because interference and network demand can change.
- Check whether the problem affects every device. An older phone, laptop or smart product may support slower Wi-Fi standards than the router.

Choose the solution that matches the problem

Move the router

This is the cheapest first step. Raise it, expose it and move it away from metal, water, large electronics and the edge of the home. If the ONT is fixed in a poor position, a longer correctly specified Ethernet connection can often place the router elsewhere.

Use wired Ethernet or dedicated access points

Ethernet normally gives fixed devices the most predictable connection and can feed wireless access points in better locations. Where a home has internal data sockets, identify where they terminate and whether they are connected. For a home still under construction, ask early for Cat6 or suitable

structured cabling to workspaces, televisions and ceiling access-point positions, with nearby power where required.

Install a mesh Wi-Fi system

Mesh systems use several coordinated units to extend one network around the home. Nodes must still communicate with each other: placing a node inside the dead spot may be too late. Start where the main router signal remains usable, then adjust the nodes. A wired Ethernet connection between nodes, known as wired backhaul, can improve reliability where building fabric makes wireless links difficult.

Use an extender or powerline adaptor carefully

A Wi-Fi extender can improve reach but may reduce speed or responsiveness and can create awkward network switching. Powerline adaptors send data through the electrical wiring. performance depends on the installation, circuit arrangement and electrical noise. Neither should be assumed to reproduce the full speed measured at the router.

What should buyers ask before completion?

- Where will the ONT or incoming broadband point and the provider router be located?
- Are Ethernet outlets included, what cable category is installed and where do all cables terminate?
- Is there power beside the ONT, router position and any proposed access-point location?
- Can additional data cables or a more central router outlet be added through the formal extras process?
- Will cupboards containing communications equipment have enough space, ventilation and accessible power?

Is poor Wi-Fi a snagging defect?

A general snagging inspection can confirm whether specified data outlets, power points and visible network equipment are present and apparently undamaged. It may identify an obviously impractical location against the agreed drawings. It cannot guarantee wireless coverage, diagnose concealed radio attenuation or prove the performance of a retail broadband package from a visual inspection.

Poor Wi-Fi alone is not usually evidence of defective construction. A missing contracted data outlet, damaged cable or incomplete developer-installed network arrangement is different and should be recorded. Router configuration, provider equipment and whole-home coverage services normally sit outside the builder's construction obligations unless the sales specification expressly included them.

Common misunderstandings

“A poor signal means the broadband line is slow”

Wi-Fi performance inside the home and the speed delivered to the property are different issues.

“A more powerful router always solves every dead spot”

Position, construction materials, interference and building layout may make a mesh or wired access point more effective.

“Foil-backed insulation makes Wi-Fi impossible”

It can weaken signals across certain routes, but good equipment placement and network design usually provide practical solutions.

Frequently asked questions

Why is Wi-Fi slow when my package is very fast?

The advertised package concerns the broadband service. Wireless performance also depends on signal strength, interference, router and device capability, network demand and the route through the building.

Will a mesh system fix every dead spot?

No. It often improves coverage, but node position and the quality of the link between nodes matter. Difficult construction may require wired backhaul or dedicated wired access points.

Can I move the fibre box?

Do not move or alter an operator-owned ONT or tightly bend its fibre. Ask the provider if the equipment itself must be relocated. Often the safer solution is to leave the ONT and extend the Ethernet connection to a better router position.

Key takeaways

- Separate broadband performance from indoor Wi-Fi coverage by comparing wired and wireless tests.
- Try a central, raised and open router position before buying more equipment.
- Modern materials can weaken radio signals, but insulation is not the only possible cause.
- Ethernet and wired access points provide the most predictable solution for fixed locations.
- Place mesh nodes where they can still receive a good link—not at the centre of the dead spot.
- Plan internal data cabling during construction if home working, gaming or whole-home coverage is important.

EXPLORE FURTHER Explore the CheckSure Homeowner Knowledge Base for related guidance on buying, inspecting and looking after a new home. Please visit checksure.co.uk/knowledge-base/

Sources & References

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