ISOCOVER
THE RFID PERFORMANCE LAYER

Technical requirements for RFID shielding continuity

New stores and refurbishments

RFID shielding is only as effective as the continuity of the surface separating two RF zones. This document sets out the site requirements necessary to preserve that continuity: site preparation, treatment of specific cases and post-installation verification. Detailed product application is described in the ISO 3 installation instructions and the ISO Paint 26 application instructions.

General principle

In a retail store, the two RF zones to be separated are typically the stockroom and the sales floor. It is the continuity of the surface between them, rather than the material alone, that produces the result, and this principle must guide all site decisions.

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The wall to be treated must be cleared to allow the shielding to be applied continuously. Fixtures fixed in front of the wall, whether metallic or non-metallic, must be removed wherever possible in order to treat the wall continuously. This rule does not apply to solid metallic surfaces that themselves constitute the RF separation surface. Where such a fixture genuinely cannot be removed, the shielding must be applied as close to it as possible. If it covers a significant area of the wall and is not itself a solid metallic surface, its stockroom-facing side must also be treated in order to maintain continuity of the barrier.

Where a metallic element itself forms part of the RF separation surface, it already constitutes an RF barrier and does not require additional treatment.

Depending on the substrate and geometry, the treatment is carried out using ISO 3 or ISO Paint 26. ISO 3 is the reference solution for surfaces suitable for a wall covering; ISO Paint 26 is suited to uneven surfaces, complex shapes and areas where installing a wall covering is unsuitable. ISO 3 is white and does not require any drying time before providing its RF function; ISO Paint 26 is black and requires drying time before handling.

This does not remove the need to respect the adhesive curing time before any mechanical stress is applied, in accordance with the adhesive manufacturer's technical data sheet.

Extent and critical details

1. Extent of treatment

The shielding must not stop at a corner junction or at the top of a wall: it must extend onto the adjacent surface. Without this return, the junction between the two surfaces remains untreated.

Perimeter return. The shielding must extend at least 10 cm onto each adjacent untreated wall and onto the ceiling, wrapping around every internal and external corner and over the top edge of each treated wall. This distance applies equally to ISO 3 and ISO Paint 26. With ISO 3, all joints must have a minimum overlap of 2 cm and must never be installed edge to edge, including at corners. The return is treated like any other joint.

Treatment height. The shielding must extend from floor level to the suspended ceiling, with a return onto adjacent untreated surfaces.

Where there is no suspended ceiling, or where treatment cannot extend all the way to it, the shielding must extend at least 1 m above the highest point of the stored goods, in order to prevent the signal from passing over the treated area.

2. Bare shell and operational stores

Where the walls are still bare, before fixtures, ducts and plumbing are installed, the shielding is applied across the full wall surface wherever RF separation is required, including all perimeter returns. This creates a continuous surface from the outset without having to work around existing obstructions.

Refurbishment of an operational store. Fixtures, doors, ducts and plumbing fixtures are already in place, and shelving that needs to be removed may be carrying stock. The stockroom does not need to be completely emptied. In practice, clearing approximately one metre in front of the wall being treated will generally provide sufficient working space for the installers. Work can therefore progress one wall at a time while the store remains operational.

If fixtures, ducts or plumbing fixtures are installed after the walls have been treated, they must be handled in accordance with the relevant sections of this guide.

3. Shelving and fixed fixtures

Shelving must be removed before treatment, whether it is made of wood or metal: in both cases, it prevents the wall from being treated continuously.

Where a fixture genuinely cannot be removed, all accessible areas of the wall must be treated as close to the fixture as possible.

4. Untreated gaps

Any untreated surface constitutes an opening in the barrier, regardless of its size.

5. Doors and frames

On the stockroom side, ISO 3 is applied to the flat surfaces of the door and frame. A metal door does not require any treatment.

Where the door is treated with ISO Paint 26, the entire perimeter of the opening must be treated: the door, its edges and the side faces of the opening within the thickness of the partition. The paint allows these edges and returns to be treated and they must therefore be fully covered to maintain continuity of the barrier.

6. Ducts and pipework

A metallic duct or pipe does not need to be covered: the metal already constitutes an RF barrier. The wall behind it must nevertheless be treated wherever it is accessible.

For non-metallic elements, the priority is also to treat the wall. Where access behind the element allows it, ISO 3 must be installed normally behind it in order to maintain continuity of the wall surface.

Where the space behind a non-metallic element is too narrow to allow ISO 3 to be installed correctly on the wall, the element must be incorporated into the barrier: ISO 3 is applied over its stockroom-facing surface and connected to the wall treatment on both sides in order to maintain a continuous surface.

Where a duct or pipe passes through the partition, it must be wrapped for at least 20 cm on the stockroom side, while maintaining continuity with the treatment around the penetration.

7. Sinks and plumbing

Where a sink or other plumbing fixture is located in a separate room, it is preferable to treat the walls surrounding that room rather than its interior. The fixture then remains outside the treated volume and there is no need to work around the plumbing.

Where a sink is fixed against a wall that requires treatment, it must be removed so that the wall can be treated continuously behind it. This is generally a straightforward operation.

A stainless-steel sink and a solid metal splashback already constitute RF barriers and do not require additional treatment.

8. Floors treated with ISO Paint 26

When ISO Paint 26 is applied to a floor, it must be covered with a finishing floor covering (such as carpet, linoleum or parquet) and must never be covered with floor paint or varnish.

9. Post-installation verification

After installation, the effectiveness of the treatment must be verified under normal site operating conditions, using the client's RFID system and its usual settings. The objective is to confirm that reads remain within the intended zone.

In the event of unwanted reads, first check the joints, corners, doors, fixtures, ducts and penetrations before carrying out another test.

This verification does not constitute a laboratory measurement or RF certification.

2 cm	Minimum overlap between ISO 3 strips
10 cm	Minimum perimeter return
1 m	Minimum height above stored goods when treatment cannot reach the suspended ceiling
20 cm	Minimum wrapping on the stockroom side around a penetration