ISO 13006:2018 Implementation Guide

Ceramic tiles - Definitions, classification, characteristics and marking

Implementation Guide

Standard	ISO 13006:2018
Subject	Ceramic tiles - definitions, classification, characteristics and marking
Prepared for	Manufacturers, suppliers, importers, laboratories and product certification teams
Format	Clean old-format guide - no logo

A practical implementation guide for ceramic tile manufacturers, importers, suppliers and conformity teams seeking to align product controls, inspection records, testing coordination and marking practices with ISO 13006:2018.

Note: This guide is a practical implementation aid and is not a replacement for the official ISO 13006:2018 standard. Organizations should use the official standard and applicable test methods for formal conformity decisions.

Contents

1. Purpose of this Guide

ISO 13006:2018 is a product standard for ceramic tiles. It defines terms and establishes classification, product characteristics and marking requirements for ceramic tiles of best commercial quality, commonly referred to as first quality.

This guide converts the standard into a practical implementation approach. It does not reproduce the standard and should be used together with the official ISO 13006:2018 document and the applicable test methods in ISO 10545 series.

The objective is to help an organization create a controlled system for product classification, testing, inspection, records, packaging and customer technical information.

2. Applicability and Scope Control

ISO 13006:2018 applies to ceramic tiles made by normal processes of extrusion or dry pressing. Before implementing controls, the organization should confirm that the products under review fall within this scope.

The standard is not intended for tiles manufactured by processes other than normal extrusion or dry pressing. It is also not intended for decorative accessories, trim pieces, and very small mosaic pieces that fall outside the standard scope.

Implementation should begin with a product-scope register that lists tile families, sizes, intended use, manufacturing method, water absorption class, surface type, finish, brand name, production line and test route.

3. ISO 13006:2018 at a Glance

Standard type: Product specification and classification standard for ceramic tiles.

Main users: Ceramic tile manufacturers, private label suppliers, importers, distributors, inspection bodies, testing laboratories and product certification teams.

Core controls: Product classification, dimensional quality, surface quality, physical performance, chemical performance, marking, packaging information and technical records.

Key linked standard series: ISO 10545, which provides test methods used for determining ceramic tile product characteristics.

Implementation result: A documented product conformity system capable of proving that each tile family is correctly classified, tested, marked and controlled.

4. Implementation Principles

Treat ISO 13006:2018 as a product-conformity control framework rather than a management system standard.

Start with product classification, because incorrect classification can affect applicable characteristics, test methods, marking and customer declarations.

Maintain technical evidence by product family and production batch, including test reports, inspection records, dimensional checks, surface checks, material traceability, firing records and nonconformity records.

Ensure that marketing claims and catalogue specifications match tested characteristics and marking information.

Use competent internal or external laboratories for the applicable ISO 10545 tests.

5. Product Classification Framework

Ceramic tiles are generally classified by forming method and water absorption. Forming method is typically divided into extruded tiles and dry-pressed tiles. Water absorption groups are then used to classify the product family.

A classification register should be maintained for every tile family. The register should include product code, method of manufacture, nominal dimensions, water absorption range, classification group, intended application, surface type and applicable tests.

Where product groups are changed due to formulation, firing temperature, absorption performance or process route, the technical file should be reviewed and updated.

Forming method	Common classification approach	Implementation control
Extruded tiles	Usually identified as Group A with water absorption sub-groups	Confirm extrusion route, absorption results and applicable product family records.
Dry-pressed tiles	Usually identified as Group B with water absorption sub-groups	Confirm pressing route, absorption results and product-group classification.
Water absorption groups	Very low, low, medium and high absorption ranges are used for classification	Keep laboratory evidence and ensure the classification on documents and labels is consistent.
Product family	Tiles with shared body, process, finish and performance claims	Define rules for when new testing or reclassification is required.

6. Product Characteristics to Control

The organization should determine which ISO 13006 product characteristics apply to each product group. Typical areas include dimensions and surface quality, water absorption, breaking strength, modulus of rupture, resistance to abrasion, thermal shock, crazing, frost, chemicals, stains and moisture expansion where applicable.

Not every characteristic will apply in the same way to every product group or intended use. The implementation team should map each product family to its applicable performance checks and acceptance criteria using the official standard.

The control plan should clearly state whether checks are performed in-process, at final inspection, by laboratory testing, by external laboratory testing or through periodic product validation.

Control area	Examples of evidence	Why it matters
Dimensions and surface quality	Dimensional checks, warpage checks, visual inspection, sorting records	Confirms product consistency and customer usability.
Water absorption	Laboratory test report, product classification record	Determines classification group and performance expectations.
Mechanical performance	Breaking strength and modulus of rupture test evidence	Supports durability and suitability claims.
Surface performance	Abrasion, stain, chemical and crazing resistance records where applicable	Supports intended-use and marketing claims.
Marking and packaging	Approved artwork, carton label review, batch code and product code checks	Ensures accurate product identification and traceability.

7. Link with ISO 10545 Test Methods

ISO 13006 identifies the product characteristics, while the ISO 10545 series provides many of the test procedures used to determine those characteristics. The organization should not treat visual inspection alone as sufficient evidence for characteristics that require laboratory testing.

A test-method matrix should be maintained and controlled. It should identify the characteristic, applicable ISO 10545 test method, sample size, test frequency, responsible person, acceptance criteria, retained record and escalation action when results are outside the defined limit.

External laboratory reports should be reviewed for correct product identification, test method reference, issue date, sample details, results, acceptance conclusion and authorization.

8. Product Realization and Manufacturing Controls

Manufacturing controls should be aligned with product classification and customer specifications. The organization should define critical parameters for raw materials, body preparation, pressing or extrusion, drying, glazing, firing, sorting and packaging.

Key process parameters should be monitored and recorded. Examples include body moisture, press pressure, extrusion parameters, drying conditions, kiln temperature profile, firing cycle, glazing application, shade variation, dimensional settings and inspection outcomes.

Changes in formulation, supplier, kiln profile, dimensions, glaze, surface finish or intended use should trigger technical review before product release.

9. Incoming Material Controls

Raw materials and outsourced components should be controlled because changes in clay, feldspar, pigments, glazes, additives or packaging can affect performance and appearance.

Maintain approved supplier records, incoming inspection criteria, certificates of analysis where relevant, batch numbers, acceptance status and nonconforming material records.

High-risk materials should be subject to additional verification such as moisture checks, composition review, trial batches or laboratory confirmation.

10. In-Process and Final Inspection Controls

Inspection should be planned at points where defects can be detected and corrected before shipment. Inspection stages may include green tile inspection, dried tile inspection, post-firing inspection, sorting, dimensional checks, surface quality checks and final packing checks.

Inspection records should include product code, batch, date, inspector, sample size, observed defects, measured values, acceptance decision and action taken for rejected material.

The organization should define rules for regrading, rework, downgrading, segregation, scrap, re-testing and customer notification where applicable.

11. Marking, Packaging and Product Information

Marking and packaging information should be accurate, consistent and traceable to the tested and approved product family. Marking should not create claims that are not supported by testing or conformity evidence.

Packaging controls should cover product name, product code, nominal size, classification where applicable, shade or batch, quantity, manufacturer or supplier identity, intended use information, and traceability code.

Catalogue data sheets, technical brochures, websites, sales sheets and labels should be periodically reviewed to ensure they remain consistent with approved technical files.

12. Traceability and Batch Records

Traceability should allow the organization to connect finished tile cartons to production batch records, raw material batches, inspection results, test reports and release decisions.

A practical traceability system may use batch numbers, shade numbers, production dates, kiln numbers, line numbers, pallet numbers and dispatch records.

Traceability should be tested periodically by selecting a shipped product and tracing it back to production, inspection and testing evidence.

13. Nonconforming Product Control

Nonconforming product should be identified, segregated and controlled to prevent unintended release. Typical issues may include dimensional deviation, warpage, surface defects, shade mismatch, incorrect marking, damaged packaging or failed laboratory results.

Define disposition options such as rework, resorting, downgrade, concession, scrap, re-test or hold for technical review. Authorization for each disposition should be documented.

Recurring defects should be analyzed for root cause and corrective action, especially where defects affect safety, performance, durability or customer compliance requirements.

14. Control of Testing and Laboratory Evidence

Testing may be conducted internally or externally. In both cases, the organization should confirm competence, method control, equipment calibration, sample identification and report review.

Where an external laboratory is used, supplier approval should include scope of testing, accreditation or competence evidence, turnaround time, reporting format, confidentiality and sample-retention arrangements.

Internal testing equipment should be calibrated or verified at defined intervals. Records should show equipment ID, calibration date, due date, result, acceptance status and corrective action if equipment is found out of tolerance.

15. Documented Information Toolkit

- Product scope and classification register
- Applicable requirements matrix by product group
- Test-method matrix linked to ISO 10545
- Product technical file for each tile family
- Raw material approval and incoming inspection records
- Production control plan and process parameter records
- In-process inspection and final inspection records
- Laboratory test reports and report-review records
- Marking and packaging approval records
- Batch traceability records
- Nonconforming product register and corrective action log
- Calibration and verification records
- Customer complaint and technical claim records
- Internal product conformity review records

16. ISO 13006 Implementation Roadmap

- Step 1: Confirm products within scope and identify all tile families.
- Step 2: Classify each tile family by manufacturing method and water absorption group.
- Step 3: Build a product-characteristics matrix for each classification group.
- Step 4: Link product characteristics to applicable ISO 10545 test methods.
- Step 5: Create or update product technical files.
- Step 6: Establish incoming, in-process, final inspection and laboratory testing controls.
- Step 7: Validate marking, packaging, catalogue and customer-facing information.
- Step 8: Train production, quality, sales, dispatch and complaint-handling teams.
- Step 9: Conduct internal conformity review and correct gaps.
- Step 10: Prepare for external product certification or customer approval where required.

17. 90-Day Implementation Plan

- Days 1-15: Define implementation scope, product families, responsible team and project plan.
- Days 16-30: Complete product classification and create technical-file index.
- Days 31-45: Map applicable characteristics, test methods, sample plans and acceptance criteria.
- Days 46-60: Update production controls, inspection records, testing arrangements and nonconforming product controls.
- Days 61-75: Validate marking, packaging, catalogue claims, traceability and calibration records.
- Days 76-85: Conduct internal product conformity review and close document or record gaps.
- Days 86-90: Finalize evidence package for certification, customer approval or supplier qualification.

18. Certification Readiness Checklist

- Product families and scope are clearly defined.
- Products are correctly classified by forming method and water absorption group.
- Applicable characteristics are mapped for each product group.
- Test-method matrix is complete and linked to controlled reports.
- Raw material and production process controls are documented.
- Inspection records show objective evidence of conformity.
- Marking and packaging information is consistent with technical files.
- Traceability can connect finished goods to production and testing evidence.
- Nonconforming product records are maintained and reviewed.
- Calibration and laboratory competence evidence is available.
- Customer claims and complaints are reviewed for product conformity impact.
- Internal review has been completed and actions are closed.

19. Common Implementation Mistakes

- Using the same test plan for all product groups without considering classification and intended use.
- Making catalogue or marketing claims that are not supported by product testing.
- Failing to link test reports to exact product codes, batches or product families.
- Treating supplier certificates as full proof of conformity without internal review.
- Not controlling shade, size, warpage or surface quality records at production release.
- Allowing obsolete labels or packaging designs to remain in use.
- Not maintaining calibration records for measuring and testing equipment.
- Failing to investigate recurring nonconformities or customer complaints.

20. Frequently Asked Questions

Is ISO 13006:2018 a management system standard?

No. It is a product standard for ceramic tiles. An organization may still use a management system such as ISO 9001 to control implementation, but ISO 13006 itself focuses on tile definitions, classification, characteristics and marking.

Does ISO 13006:2018 apply to all ceramic products?

No. It applies to ceramic tiles within the stated scope. Some decorative accessories, trim pieces, mosaics and products made by other manufacturing processes may fall outside the scope.

Do we need ISO 10545 testing?

In many cases, yes. ISO 10545 parts provide test methods for characteristics listed in ISO 13006. The organization should map applicable tests by product group.

Can one test report cover all products?

Only where the technical justification is valid. Products with different body composition, firing route, absorption group, surface finish, size or intended use may require separate evaluation.

What is the main evidence required for certification or customer approval?

A complete product technical file, classification evidence, test reports, inspection records, marking controls, traceability and nonconforming product records are typically needed.

Should sales brochures be controlled?

Yes. Brochures, catalogues and websites should be reviewed because they may contain technical claims that must match verified product characteristics.

21. Final Implementation Note

Successful ISO 13006:2018 implementation depends on disciplined product classification, reliable testing, controlled manufacturing records, correct marking and accurate customer information.

Organizations should ensure that every product claim can be traced back to objective evidence. This reduces customer disputes, supports market access and strengthens product certification readiness.

Source and Use Note

This guide is based on the public scope information for ISO 13006:2018 and general product conformity implementation practice. It should be used together with the official ISO 13006:2018 publication, applicable ISO 10545 test methods, customer specifications and any national/regulatory requirements.