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Putty powders — Specification —

Part 2:

Exterior walls

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Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

DRS 464-2 was prepared by Technical Committee RSB/TC 056, *Paints, Varnishes, Adhesives and Related Products*.

DRS 464 consists of the following parts, under the general title *Putty Powders — Specification*:

— *Part 1: Interior walls*

— *Part 2: Exterior walls*

Committee membership

The following organizations were represented on the Technical Committee on *Paints, Varnishes, Adhesives and Related Products*. (RSB/TC 056) in the preparation of this standard.

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Rwanda Inspectorate, Competition and Consumer Protection Authority (RICA)

Standards for Sustainability

Yong Rui Mei Investments Ltd

AMACO Paints Ltd

AMEKI Colour Ltd

Rwanda Investigation Bureau (RIB)

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Introduction

Putty powder is a surface filling material for pre-treatment of the construction surface before paint construction. The main purpose is to fill the pores of the construction surface and correct the curve deviation of the construction surface, so as to lay a solid foundation for obtaining a uniform and smooth paint surface. The finished putty is divided into: general putty and water-resistant putty. General putty is used in places where water resistance is not required. Water-resistant putty is used in places where water resistance and high bonding strength are required. It is composed of double fly powder, ash calcium powder, cement, organic rubber powder, water retaining agent, etc. With water resistance, alkali resistance and bonding strength. The disadvantage of both general type putty and water-resistant putty is its poor versatility. As general type putty is not water-resistant, it can only be caused by room surface equipment such as living room. Although water-resistant putty powder has good water resistance, its whiteness and texture are not enough, it is generally only used in the bathroom.

Putty is divided into two types: interior wall and exterior wall. The exterior wall putty has to resist wind and sun, so it has high adhesiveness, high strength and slightly lower environmental protection index. Exterior wall putty powder is mainly used for cement and concrete walls. With the prolonged use of the building or other external reasons, the exterior surface of the building will have paint peeling off, wall cracking or tile peeling off, mainly because Traditional putty powder has defects such as poor weather resistance and weak adhesion.

Putty powders — Specification — Part 2: Exterior walls

1 Scope

This Draft Rwanda Standard specifies requirements, sampling and test methods for putty powders for exterior walls.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8130-14, *Coating powders — Vocabulary*

ISO 8130-1, *Coating powders — Part 1: Determination of particle size distribution by sieving*

ISO 20566, *Paints and varnishes — Determination of the scratch resistance of a coating system using a laboratory car-wash*

ISO 9117-3, *Paints and varnishes — Drying tests — Part 3: Surface-drying test using ballotini*

ASTM G139 – 05, *Standard test method for determining stress-corrosion cracking resistance of heat-treatable aluminium alloys products using breaking load method*

ISO 11503, *Paints and varnishes — Determination of resistance to humidity (Intermittent condensation)*

ISO 11998, *Paints and varnishes — Determination of wet-scrub resistance and cleanability of coatings*

ISO/TR 19402, *Paints and varnishes — Adhesion of coatings*

ISO 17132, *Paints and varnishes — T-bend test*

ISO 8130-8, *Coating powders — Part 8: Assessment of the storage stability of thermosetting powders*

ISO 11890-2, *Paints and varnishes — Determination of volatile organic compounds (VOC) and/or semi-volatile organic compounds (SVOC) content — Part 2: Gas-chromatographic method*

ISO 15234, *Paints and varnishes — Testing of formaldehyde-emitting coatings and melamine foams — Determination of the steady-state concentration of formaldehyde in a small test chamber*

ISO 6503, *Paints and varnishes — Determination of total lead — Flame atomic absorption spectrometric method*

ISO 3856-4, *Paints and varnishes — Determination of “soluble” metal content — Part 4: Determination of cadmium content — Flame atomic absorption spectrometric method and polarographic method*

ISO 3856-6, *Paints and varnishes — Determination of “soluble” metal content — Part 6: Determination of total chromium content of the liquid portion of the paint — Flame atomic absorption spectrometric method*

RS OIML R 87, *Quantity of product in pre-packages*

ISO 8130-9, *Coating powders — Sampling*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in ISO 8130-14 and the following apply.

3.1

putty powder

a surface filling material for pre-treatment of the construction surface before paint construction.

4 Requirements

4.1 General requirements

4.1.1 The product shall be free flowing powder based on synthetic resins such as polyester/TGIC (triglycidyl isocyanurate) and polyurethane, hardeners, pigments, fillers and additives suitable for application, for example, electrostatic spraying, tribostatic spraying, fluidized bed coating, etc.

4.1.2 The product shall be free from carcinogenic ingredients.

4.1.3 It shall give a continuous, smooth and hard film when applied and stoved as per schedule prescribed by the supplier

4.1.4 The particle size distribution, when tested in accordance with ISO 8130-1 and the application parameters shall be as agreed between supplier and the user.

4.1.5 The product shall not demonstrate evidence of biological growth and/or any type of reaction with the container;

4.1.6 The product shall show no evidence of biological growth, corrosion of the container and shall be uniform, free from lumps and foreign material.

4.2 Specific requirements

The product shall comply with the requirements given in Table 1 when tested in accordance with the methods prescribed therein.

Table 1 – Specific requirements of Putty powder for exterior walls

S/N	Parameters	Requirements	Test methods
2	Constructability	Scratch-free	ISO 20566
3	Drying time, h, max.	5	ISO 9117-3
4	Initial drying resistance to cracking (test condition; 6h)	Dynamic, No crack	ASTM G139 - 05
6	Water absorption, g/10min, max.	2	ISO 11503
7	Wet-scrub resistance (test condition: 96h)	No abnormality	ISO 11998
8	Alkali-resistance (test condition: 48h)	No abnormality	Annex A
9	Adhesive/bonding strength, mPa, min.	Standard states	ISOTR 19402
		Freeze-thaw cycles (5 times)	
11	Stress cracking resistance (mm)	No visible damage or detachment of film after 48 h	ISO 17132
12	Low temperature storage stability (at - 5°C for 4 hours)	No difficult in knife coating smoothly	ISO 8130-8
12	Volatile organic compounds	Absent	ISO 11890-2
13	Formaldehyde, mg/Kg, max.	Absent	ISO 15234
14	Lead, content, mg/Kg, max.	90	ISO 6503
	Cadmium content, mg/Kg, max	5	ISO 3856-4
15	Chromium (VI) content, mg/Kg, max.	5	ISO 3856-6

5 Packaging, storage and labelling

5.1 Packaging

5.1.1 The product shall be packaged in suitable containers that are strong enough to withstand normal usage and transportation and that prevent leaking, drying out and contamination of the product.

5.1.2 The quantity of product packaged in a container shall be in accordance with the requirements of RS OIML R 87.

5.2 Storage

The product shall be stored in a cool and dry place at room temperature and at a relative humidity not more than 65%. Direct exposure of the powder to heat or sunlight must be avoided, the storage life of powders under above conditions will not be less than 6 months after the manufacturing date.

5.3 Labelling

Each container, or a label securely fixed to the container, shall be clearly, legibly and indelibly marked with the following information:

- a) the name of product as "Putty powder for exterior walls;

- b) the manufacturer's name and full address;
- c) batch identification;
- d) date of manufacture;
- e) expiry date;
- f) net weight;
- g) country of origin; and
- h) instructions for use.

6 Sampling

Representative samples of the product shall be drawn as prescribed in ISO 8130-9.

Annex A (normative)

Determination of resistance to acid/alkali

A.1 Principle

The method covers the determination of the resistance to failure, in an accelerated manner, of powder coatings when immersed in acid and alkali solutions for a fixed period.

A.2 Apparatus

A.2.1 Containers – Corrosion resistant containers equipped with the means to control the solution temperature within 60 ± 1 °C and to control the liquid level at 5 mm.

A.2.2 Cover – The container shall be provided with covers to retard evaporation and to contain the test specimens completely.

A.3 Test specimens

Unless otherwise specified, the test specimens shall be 100mm x 300 mm x 0.9 mm in size.

A.4 Reagents

A.4.1 Hydrochloric acid, 10%.

A.4.2 Nitric acid, 10%.

A.4.3 Sulphuric acid, 20%.

A.4.4 Sodium hydroxide, 25%.

A.5 Procedure

A.5.1 Immersion – Suspend the test specimens vertically in the container so that at least one half of the surface area is submerged in the solutions in the order nitric acid, sulphuric acid, hydrochloric acid and sodium hydroxide for a period of 12 h each. Separate the test specimens so that they are not in contact with any metal and are no closer together than 25mm at any point in the bath. Replace the test solutions with fresh solutions every 168 h. If successive tests are to be correlated, use reference panels coated with a control paint.

A.5.2 Examination of specimens – When the specimens are ready for transfer and/or examination, carefully remove, gently wash or dip in clean running water not warmer than the temperature of the test solution to remove the excess solution from the surface, and then carefully dry by blowing with air or blotting.

with absorbent paper. Examine the test coating for blisters, flaking and corrosion. The sample shall be treated as passing if there is no blistering, flaking and corrosion.

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Bibliography

- [1] IS 13871, *Powder coatings — Specification*, 1993

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