

IRON OXIDE RED H130

TECHNICAL DATA SHEET (TDS) — INDUSTRIAL & CONSTRUCTION PIGMENT

1. Product Identification

Product	Iron Oxide Red H130
Type	Synthetic inorganic iron oxide red pigment
Chemical name	Iron(III) oxide / Ferric oxide
Formula	Fe ₂ O ₃
Colour Index	Pigment Red 101 (C.I. 77491)
CAS No.	1309-37-1
Appearance	Fine red powder
Primary uses	Industrial coatings, plastics, inks, cement, mortar, concrete, pavers, tiles and precast products
Shade	Red; light to deep shades are achievable by changing pigment dosage and formulation

2. Product Description

Iron Oxide Red H130 is a synthetic ferric oxide pigment designed for durable red coloration. Commercial H130/130 grades commonly provide high tinting strength, good opacity and strong resistance to light, weathering and alkaline cementitious environments. Exact specifications vary by manufacturer; the values below are representative reference values compiled from public H130/130 technical data and standards.

3. Typical Technical Specification

Parameter	Typical / Reference value	Method / reference
Fe ₂ O ₃	≥95%; many H130 grades ≥96%	ISO 1248 / supplier method
Tinting strength	95–105%	ISO 787-24 / equivalent
Colour difference ΔE	≤1.0 vs. standard	Supplier colour method
Oil absorption	15–25 ml/100 g	ISO 787-5
Moisture	≤1.0%	ISO 787-2
Water-soluble salts	≤0.3–0.5%	ISO 787-3
pH	Approx. 3–7 / 4–7	ISO 787-9
Residue on fine sieve	≤0.3–0.5%	ISO 787-7 / equivalent
Specific gravity	Approx. 5.0 g/cm ³	ISO 787-10
Bulk density	Approx. 0.7–1.1 g/cm ³	ISO 787-11 / supplier
Fine particle size	Approx. 0.17 μm for representative fine grades	Supplier method
Physical form	Uniform fine red powder	Visual inspection

4. Colour / Shade Development

H130 can produce light red, terracotta, brick red, medium red and deep red shades. The final shade is controlled mainly by pigment dosage, but cement/binder colour, aggregate colour, dispersion, water content, curing, surface texture and other raw materials also have a major effect. White cement generally gives a cleaner and brighter red; grey cement generally gives a more muted or darker red.

Desired shade	Indicative dosage*	Typical result
Very light / tint	1–2%	Soft / pastel red
Light	2–3%	Light red / terracotta
Medium	3–5%	Standard construction red

Desired shade	Indicative dosage*	Typical result
Deep	5–7%	Rich / deep red
Near saturation	7–9%	Limited additional colour gain
Upper reference	Up to 10%	Only with validated formulation testing

*For cementitious applications, dosage is calculated on cement/binder weight, not total concrete weight. Industry guidance commonly places practical use around 2–5%, while saturation often occurs around 7–9%. ASTM C979/C979M-24 is the relevant ASTM specification for pigments used in integrally coloured concrete. Always approve a fully cured trial panel before production.

5. Recommended Applications

Construction	Concrete blocks, paver blocks, roof/floor tiles, precast concrete, decorative concrete, mortar, plaster/render, grout and
Industrial	General industrial coatings, primers, paints, powder coatings and selected plastic/rubber formulations, subject to comp
Other	Printing inks and coloured construction products where dispersion and chemical/thermal performance are suitable.

6. Concrete, Mortar & Paver Block Dosage

Pigment dosage should be calculated from the cementitious binder weight. Example: 100 kg cement at 4% dosage requires 4 kg pigment. Keep cement source, aggregate colour, water/binder ratio, mixing sequence, mixing time and curing conditions consistent between batches.

Binder	1%	3%	5%	7%
25 kg	0.25 kg	0.75 kg	1.25 kg	1.75 kg
50 kg	0.50 kg	1.50 kg	2.50 kg	3.50 kg
100 kg	1.00 kg	3.00 kg	5.00 kg	7.00 kg
500 kg	5.00 kg	15.00 kg	25.00 kg	35.00 kg
1,000 kg	10.00 kg	30.00 kg	50.00 kg	70.00 kg

7. Mixing & Dispersion

1) Weigh pigment and binder accurately. 2) Pre-blend pigment with part of the dry cement/fine aggregate. 3) Add to the main dry mix and disperse uniformly. 4) Add water and admixtures according to the established formulation. 5) Avoid changing water content to compensate for colour. 6) Cast and cure a trial sample before production approval.

8. Industrial Coatings & Plastics

Industrial dosage is formulation-specific and should not be copied from concrete dosage. Establish loading by laboratory drawdown/film testing or plastic compounding trials. Check colour strength, opacity, undertone, gloss, viscosity, dispersion, heat stability and compatibility with the selected binder/resin.

9. Performance Characteristics

- High opacity and strong red tinting performance.
- Good light and weather resistance expected from synthetic iron oxide grades.
- Suitable for alkaline cementitious environments when the grade meets the relevant pigment specification.
- Insoluble inorganic pigment; colour comes from dispersed pigment particles rather than a soluble dye.
- Fine particle size supports strong colour development, but proper dispersion remains essential.

10. Standards & Quality Control

ISO 1248:2006 specifies requirements and test methods for manufactured and natural iron oxide pigments for general use. ASTM C979/C979M-24 covers powder pigments for integrally coloured concrete and includes tests concerning water wettability, alkali resistance, sulfates, water solubility, atmospheric curing stability, light resistance, effects on concrete and colour matching. Compatibility with other concrete admixtures should be verified for the actual formulation.

11. Storage & Handling

Store sealed in a cool, dry, clean and well-ventilated location. Protect from moisture, contamination and direct weather exposure. Keep bags off the floor. Avoid creating airborne dust during handling. Use appropriate eye, skin and respiratory protection according to the applicable SDS and workplace requirements.

12. Packaging

Typical commercial packaging for Iron Oxide Red 130/H130 is 25 kg bags, with palletized or bulk packaging available from some suppliers. Confirm the actual package size on the product label before commercial issue.

13. Shelf Life

Synthetic iron oxide pigment is generally stable when kept dry and uncontaminated. The official shelf-life claim should follow the actual manufacturer's label, SDS or COA.

14. Important Disclaimer

H130/130 is a grade designation used by multiple suppliers and is not a single universal global specification. This TDS is a professional reference document compiled from publicly available technical information. It is not a batch-specific manufacturer certificate. Before commercial release, the numerical specification should be checked against the actual supplier's current TDS and COA.

15. Public Technical References

ISO 1248:2006 — Iron oxide pigments — Specifications and methods of test.

ASTM C979/C979M-24 — Standard Specification for Pigments for Integrally Colored Concrete.

Public Iron Oxide Red 130/H130 technical specifications from commercial pigment manufacturers/distributors.

Published industry guidance on concrete pigment dosage and shade development.