



Technologies

TECHNICAL BULLETIN

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PAINT GRIP 253

1. INTRODUCTION

Paint Grip 253 (previously known as Kephos 253 or Paint Grip S1006), is a non aqueous, liquid chemical used undiluted (except for dip operations) to produce a corrosion-resisting, paint-bonding coating on steel. The **Paint Grip** coating, when dry, protects the surface from fingerprints, rust, etc., during temporary indoor storage (usually for six months or more.)

Paint Grip 253 is applied at room temperature by brushing, dipping, spraying, flow coating, or roll coating. One litre of **Paint Grip 253** will cover from 18-28 m² of surface depending upon the conditions of application. **Paint Grip** treated work can be spot welded by most commonly used techniques.

Most paint finishes may be applied direct to the **Paint Grip** coating.

2. MAKE UP AND OPERATION

Paint Grip 253 is applied at ambient temperature with a contact time long enough to give the optimum coating weight of 2.1-2.7 g/m².

Paint Grip 253 when applied by dip is diluted 1:1 with **P3-Reducer 37H** or **P3-Reducer 50**. The bath is controlled by a titration and solids check.

3. PROCESS SEQUENCE

- A. Solvent degrease
- B. Coat with **Paint Grip 253**
- C. Dry

Note: If the work is cleaned in an aqueous medium, it must be rinsed then dried before contact with **Paint Grip 253**.

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4. EQUIPMENT

(a) General

The equipment for the **Paint Grip 253** solution may be constructed of stainless steel (Type 316 preferred), polythene, fibreglass, vitreous enamel, or lead. Stainless steel or polythene nozzles should be used on spray equipment. Dry off areas should be well ventilated.

(b) Immersion

The tank should be designed so that the surface area is minimised to lessen solvent loss through evaporation.

A lid should be provided to seal tank when not in use, and thus prevent evaporation.

The sides of the tank should be well above the working level of the liquid both to accommodate the rise in level when work is processed in the bath and to prevent convective evaporation from cross draughts of air.

A drain tray, covered with polythene film and sloped downwards towards the tank, will help increase production rate.

Provision for removing the pieces at a slow steady rate from the bath will help obtain even coatings.

(c) Spray

Conventional spray equipment can be used. When sprayed from a pressure pot, fluid flow of 200-300 mls per minute is recommended. Binks 230 63 PB and Arnold/Devilbiss JGA-502/78/FX setups are suitable.

Atomising air pressure of 280 kPa (40 psi) is usually satisfactory, but may be reduced in warm weather or increased in cold weather.

An Arnold/Devilbiss JGA-502/105J/EX setup is suitable for suction guns.

Paint Grip 253 can be applied by all types of spray equipment, including electrostatic and airless.

Your Henkel technical representative will advise on these methods of application of **Paint Grip 253**.

Equipment can be cleaned with **P3-Reducer 37H** or **P3-Reducer 50**.

Coverage rate for spray application is about 18 m² per litre to obtain a dry film thickness of 2-3 micrometers (0.0001 inch.)

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5. BATH MAKE UP AND CONTROL

(a) Make Up

For each 1,000 litres of bath add with thorough mixing:

Paint Grip 253	500 litres
P3-Reducer 37H	500 litres

Note: The amount of solvent may be increased in the winter months to assist draining and drying.

(b) Control Points (for normal operations)

Paint Grip titration	7-8 mls
Immersion time	5-10 seconds
Bath Temperature	10-27°C

6. SURFACE PREPARATION

The work can be degreased in Trichlorethylene or similar type solvent, since the work must be clean and dry and below 38°C before entering the dip tank.

Alternatively, the work may be cleaned in a suitable **Ridoline** cleaner, rinsed then dried.

Spot rust can be removed with **Deoxidine 624**, diluted with 2-3 volumes of water. Residues must be wiped clean with damp rags, followed by a clean rag, dampened with methylated spirits.

Small areas of rust may be removed by sanding with 80 grit paper.

7. TESTING & BATH MAINTENANCE

(a) General

Paint Grip 253 tanks are controlled by a single acid titration.

(b) Paint Grip Titration

- (i) Pipette 10 ml of the bath into a conical flask.
- (ii) Add 500-100 mls of a 2% soap solution, (prepared by dissolving 20 gms of soft soap or detergent in one litre of water) and shake briskly.
- (iii) Add 5-6 drops of phenolphthalein indicator.
- (iv) Titrate while shaking with 0.5N Sodium Hydroxide solution until a faint permanent pink colour appears.
- (v) Record the number of millilitre of 0.5N Sodium Hydroxide solution used as the **Paint Grip** titration.
- (vi) To replenish, add 33 litres of **Paint Grip 253** per 1,000 litres of bath to raise the **Paint Grip** titration by 0.5 mls.
- (vii) To reduce the **Paint Grip** titration by 0.5 mls, add 67 litres **P3-Reducer 37H** or **P3-Reducer 90** per 1,000 litres of bath.

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8. OPERATIONAL RECOMMENDATIONS

- (i) Do not allow the **Paint Grip** solution to become contaminated with water.
- (ii) Before treating with **Paint Grip**, the temperature of the work must be lower than 38°C. Both **Paint Grip 253** and **P3-Reducer 37H** have flash points of 27°C.
- (iii) Over many months of operation, swarf particles may build up in the tank and contaminate the **Paint Grip** film. If such conditions arise, the bath contents should be removed from the tank and filtered through a suitable medium (e.g. felt and fine silk.) The tank should then be cleaned of all debris before recharging with the **Paint Grip** solution.

9. AFTER TREATMENT

Paint Grip treated work will air dry in about 10-20 minutes. Parts may be dried in two minutes using a conventional indirectly fired oven (at 93°C) or other means which will not contaminate the coating with fumes, oil, or partially burnt gases. Sprayed films will air-dry very rapidly. Painting can be done as soon as the work has dried. After prolonged storage or handling, e.g. during fabrication, it is advisable to solvent wipe with white spirits before painting to remove lint or soil.

10. HANDLING PRECAUTIONS

The following precautions should be observed during the operation of the **Paint Grip 253** process.

- (a) Adequate ventilation should be provided for the **Paint Grip** processing area. Operators should not breathe **Paint Grip** vapours; spray in a conventional spray booth, or properly ventilated area.

Prolonged inhalation of **Paint Grip 253** spray or mist may irritate or injure the mucous membranes or respiratory tract. Adequate ventilation exhaust facilities, masks, respirators, etc., should be provided.

- (b) Operators should be equipped with solvent-resistant gloves and aprons (preferably nitrile rubber.)
- (c) Wear gloves and goggles to avoid skin and eye contact. Wash splashes immediately with plenty of water and seek medical treatment.

11. HENKEL PRODUCT REFERENCE

Paint Grip 253
P3-Reducer 37H
P3-Reducer 50

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DISCLAIMER

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