

TECHNICAL DATA SHEET

1. Product and Supplier identification

Product name:
FW1 Fluorescent and Dual-colored Magnetic Powder
FW1f Fluorescent and Dual-colored Magnetic Powder
High Sensitivity



Supplier:
NDT ITALIANA SRL
Via del Lavoro 28
20863 Concorezzo (MB) Italy
Tel: (+39) 039.647590
Fax: (+39) 039.647799
www.ndt.it / info@ndt.it

2. Technical specification

Size, shape and magnetic properties suitable for non-destructive tests

Particles meet or exceed: ASTM E 709; ASTM E 1444; ASTM E 3024; ASME Sec V Art.7; ISO 9934; ISO 10893-5; NAVSEA 250-1500-1; BS 4069; MIL-STD-271; MIL-STD-1949; AMS-3044; AMS-3042; DIN 54132

Color: Green

Shelf life: 5 years from batch production date (4 years if in spray, respecting our conditions for use and storing).

Warning: the products should always be used with adequate ventilation and away from sparks and open flames, wearing appropriate protective clothing.

Temperature Limits: 0° - 85°C (32-185°F)

Health and Safety: Refer to Material Safety Data Sheet (MSDS)

3. DESCRIPTION / APPLICATION(S)

Description of material: Fluorescent and dual-colored magnetic powder Elite FW1

Application: Magnetoscopic tests of metallic materials in:

1) UV light, 2) both UV light and Visible Light (Dual), 3) Visible Light, 4) Blue light.

Recommended for its high sensitivity and fluorescence to detect all kind of defects from medium-large to fine.

Preparation:

- A. In Oil: Dilute Elite FW1 – FW1f powder with a small amount of Oil K and mix it very well to form a uniform slurry, then add to your Oil bath. Recommended concentration: from 0,5g to 1,5g of Elite FW1 – FW1f powder per litre of Oil K.
- B. In Water: Dilute Elite FW1 – FW1f powder with a small amount of water conditioner (Elite W4CA, W4AC, or D4CA) and mix it very well to form a uniform slurry. Then, add all the necessary amount of water conditioner (recommended concentration from 0,5% to 2% of final bath). Finally, add to the water bath and mix well. Recommended concentration: from 0,5g to 1,5g of Elite FW1 – FW1f powder per litre of water.
- C. In Spray: powder already diluted in Oil K and ready to use, concentration 0,1-0,4 ml in 100ml ASTM D96 centrifuge tube.

Settling test: the settling test to check particle concentration shall be performed upon start-up, at each shift thereafter and whenever the bath is changed or adjusted.

Checking Bath Concentration: settling test is essential to check the bath concentration and is accomplished in a graduated pear-shaped centrifuge tube (ASTM E709).

The recommended procedure is:

1. Run the pump for 30-60 minutes, to agitate the suspension to assure particle distribution;
2. Fill 100 ml sample into the centrifuge tube;
3. Demagnetize the sample and stand, together;
4. Allow particles to settle for a minimum of 30 minutes in water or 60 minute in oil and check if completely settled by a turning movement of the tube to let drop all particles left on glass walls;
5. Adjust bath, either by adding particles or vehicle, if necessary.

NB: In order to get the best contrast ratio of indications versus background, surface conditions are an important variable. All other conditions being the same, it is recommended to:

- In case of rough surfaces, use a lower bath concentration in order to avoid excessive background;
- In case of machined or smooth surfaces, use higher concentration to assure better surface wetting ability and faster detection of very tight indications.

Application Method: Product can be applied in any way: by spraying, flooding and in all (even low agitation) stationary magnetic equipments' recirculation tanks.

4. Recommended procedure for Fluorescent and Dual-colored Magnetic Powder Elite FW1/ FW1f use in undarkened area (visible light >20 lx) according to ASME V Art.7 Appendix III; ASTM E 709; ISO 9934-1 and other applicable Standards

Essential Variables:

- Particle manufacturer and designation: NDT ITALIANA Srl / Elite FW1 – FW1f
- Minimum UV Light Intensity: 20W/m² (2000 microW/cm²)
- Maximum Visible Light Intensity: 2000 lx
(Visible light intensity recommended in case of very small indications: 250-350 lx.)

Elite FW1 – FW1f Fluorescent and Dual-colored Magnetic Powder

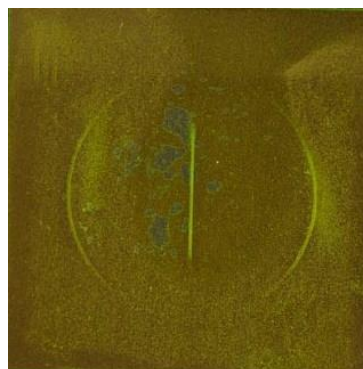
UV Light: 1200 microW/cm²

Visible Light: < 20 lx



UV Light: 2000 microW/cm²

Visible Light: 2000 lx



UV Light: 0 microW/cm²

Visible Light: 500 lx



According to the results of the test, illustrated under the set of photos, the indications under the proposed conditions appear the same or better than obtained under standard conditions.