

## HARDFLOOR (H)

### **Non metallic, monolithic surface hardening compound**

**Uses:** HARDFLOOR(H) Special provide a highly abrasion resistant surface to concrete floors by the dry shake-on method which ensures that the hardwearing surface bonds monolithically to the base concrete. They are ideally suited for all industrial areas subject to the heaviest traffic, e.g. loading bays, trucking lanes, car parks, workshops, machine shops, ramps and spillways.

### **Advantages:**

- Non metallic - does not rust or stain.
- provides a hard, abrasion resistant surface
- Forms monolithic bond with base concrete
- Easy and economical to apply

**Description:** HARDFLOOR(H) Special are quality controlled, factory blended powder which are ready to use on site. They contain special hardwearing aggregates which have been selected for abrasion and wear resistant properties as well as shape and size. These latter considerations, together with the use of high performance workability admixtures, produce a material which is easy to trowel into the surface of fresh, wet concrete.

HARDFLOOR(H) Special cures monolithically to provide a dense, non-porous surface which is extremely hardwearing and abrasion resistant.

Monolithic cure ensures that problems normally associated with thin 'granolithic' screeds, viz. shrinkage, cracking, etc., are completely overcome. Being non-metallic, HARDFLOOR(H) Special provide a nonslip surface which will never rust and disintegrate.

### **Properties:**

- **Abrasion resistance:** HARDFLOOR(H) Special improves the abrasion resistance of concrete by 250%.
- **Compressive strength:** At water contents equivalent to those obtained in practical applications, the typical 28 days compressive strength of HARDFLOOR Special cubes is 90 N/mm<sup>2</sup>.
- **Hardness (Moh's Scale):** The selected aggregates contained within HARDFLOOR(H) Special have a hardness value of 7 on the Moh's original scale.

### **Specification clause**

- **Non metallic surface floor hardener:** All concrete floors shall be surfaced or broadcast with HARDFLOOR(H) Special, a non-metallic monolithic surface floor hardening compounds containing rust free, hardwearing aggregates. The aggregates shall have a Moh's hardness of not less than 7.

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- **Compressive strength:** HARDFLOOR(H) Special shall possess a minimum compressive strength of 90 N/mm<sup>2</sup> when tested as per BS 1881, Part 116, 1983.
- **Impact resistance:** Very good

## Application instructions

**Base concrete:** The base concrete should have a minimum cement content of 300 kg/m<sup>3</sup>. The concrete mix should be designed to minimize segregation and bleeding. Free water cement ratios of less than 0.55 are required.

Use of 's water reducing admixture is recommended. The base concrete should be laid and compacted in accordance with good concrete practice. Accurate finished profile and minimum laitance build-up should be ensured. Particular attention should be paid to bay edges and corners to ensure full compaction. HARDFLOOR(H) Special is applied for different types of industrial use.

Application Rate (kg/m <sup>2</sup> )	Intended traffic use
7.0	Heavy
5.0	Medium
3.0	Light

It is recommended that the floor be marked off into bays of known area. Sufficient material should then be laid out to meet the required spread

rates. Application of HARDFLOOR(H) Special can begin when the base concrete has stiffened to the point when light foot traffic leaves an imprint of about 3mm. Any bleed water should by now have evaporated. HARDFLOOR Special is applied in two stages.

(a) The first application is made using 50% to 70% of the total material. HARDFLOOR(H) Special is evenly broadcast onto the concrete surface. When the material becomes uniformly dark by the absorption of moisture from the concrete this first application can be floated. Wooden floats or, on large areas, the power trowel with disc may be used. It is important, however, that the surface is not over worked.

(b) Immediately after floating, the remaining HARDFLOOR(H) Special is sprinkled evenly over the surface. Again moisture is absorbed and the surface can be floated in the same way as before. Final finishing of the floor using a power trowel can be carried out when the floor has stiffened sufficiently so that damage will not be caused.

**Timing of Application:** The timing of application HARDFLOOR(H) Special is important and critical. If applied too early, bleed or excess water will wash away the cementitious content of the products, thereby making them ineffective. Also denser aggregates sink into the concrete.

If the application of HARDFLOOR(H) Special is done too late, there will not be sufficient

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water/moisture to absorb the material into the concrete. Material forcibly applied and trowelled thus, will cause cracks on the surface later, as there is no water/ moisture to hydrate the product.

**Bay edges:** While applying HARDFLOOR(H) Special at the edges of the concrete floor or, at the end of bays, extra precaution should be taken by way of sprinkling more material and finishing it smoothly with a steel trowel. This is an additional protection particularly to bay edges where the reaction due to heavy or impact is felt more.

**Curing:** Tests have shown that proper curing of concrete floors treated with products such as HARDFLOOR Special is essential to ensure the physical properties of the floor. The most efficient method of curing by using Concur, curing membrane which conforms to ASTM and DOE specifications. However, in indoor applications where curing conditions are less arduous and breakdown of the membrane slower, alternative approved methods of curing such as polythene sheeting or water pending are acceptable.

**Ready to use:** HARDFLOOR(H) Special is supplied ready to use on site. Cement or aggregates should never be added to HARDFLOOR(H) Special.

**Colored floors:** When a colored floor is required, it is strongly recommended that a job site trial area is laid.

**Surface treatments:** Penetration type surface treatments are recommended to give low porosity and dust proof property.

**Limitations:** For concretes with optimized water cement ratios, HARDFLOOR(H) Special shall not be broadcast in excess of 3 – 4 kg /m<sup>2</sup>. For such applications, consult .

HARDFLOOR (H) Special is not advised for broadcast over concrete in subzero temperatures, such as, floorings for cold storages etc.

### Estimating

**Packaging:** HARDFLOOR(H) Special is supplied in sealed 25 kg HDPE bags.

**Storage:** If protected from the environment in ordinal undamaged packing, the shelf life of HARDFLOOR(H) is 12 months. If stored in high temperature and high humidity locations, the shelf life will be reduced.

### Precautions

**Health & Safety instructions:** HARDFLOOR (H) Special contains Portland cement and is therefore alkaline when in contact with water. Prolonged contact with the skin should be avoided. Any eye contamination should be washed immediately with plenty of clean water and medical advice sought.

**Fire:** HARDFLOOR(H) Special is not flammable.

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## REDWOP CHEMICALS PVT. LTD.

### Office:

1<sup>st</sup> Floor, Suryachandra Complex,  
Opp Punjab Honda Showroom,  
Kalawad Road,  
Rajkot- (Guj.)INDIA.  
Pin.360005

### Factory:

Village Shapara, Nr.Jay Internation  
School,Opp Arya Bhagwati Society,  
Kalawad Road,  
Metoda,G.I.D.C  
Rajkot.(Guj.)INDIA.

Customer Care: +91 97246 55551

Phone no.: +91 281 2576664

E: [info@redwopchemical.com](mailto:info@redwopchemical.com)

W: [www.redwopchemical.com](http://www.redwopchemical.com)

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