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## TECHNICAL INFORMATION

T.I. No. 185

# POLYMER MODIFIED CEMENTITIOUS WEARING SURFACES

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### INTRODUCTION

**FLEXCRETE POLYMER ADMIXTURE 850** and **FLEXCRETE ADMIX 50** are often used in polymer modified floor screeds and it is important that the recommendations given in BS 8204 : Part 3 : 1993 "In-situ floorings. Code of practice for polymer modified cementitious wearing surfaces" are strictly adhered to. This is a very thorough document giving details on everything from material selection and mix design right through to application and testing. It is important that all potential clients should be referred to this document and that our recommendations should be read in conjunction with it. A brief summary of some of the most salient points is given below.

### MATERIALS

#### **Polymers**

**POLYMER ADMIXTURE 850** is a styrene acrylic copolymer and fully complies with BS 8204: Part 3. **ADMIX 50** does not strictly comply with the standard but can be used in any of the given mix designs at a dosage of 10kg per 50kg of cement.

#### **Bonding Agents**

A list of suitable bonding agents is given in Table 3. We always recommend the use of a bonding agent in flooring situations of this type to enhance the bond. We find that **850** or **ADMIX 50** mixed with 1 part water and 2 part fresh cement gives an ideal consistency and would comply with the recommendations. The advice given on overcoating should be strictly adhered to.

#### **Cement**

We would recommend the use of ordinary Portland cement, class 42.5 N, to BS 12 : 1991 for the majority of applications. Always ensure that fresh cement is used.

#### **Aggregates**

Selection of suitable aggregates is the key to a successful floor screed. In addition to the recommendations given, the sand should be sharp and washed and ideally be as close as possible to the old Zone 2 classification.

#### **Pigments and Admixtures**

Iron oxide pigments to BS 1014 can be used but will suffer from the same efflorescence problem found with all pigmented concretes. Consideration should be given to **CEMPROTEC E-FLOOR** where a decorative finish is required. As a general rule, admixtures are not required and compatibility tests would have to be carried out by the contractor prior to use.

**MIX DESIGN (Typical)**

| CLASS                 | THICKNESS<br>(mm) | AGGREGATE<br>: CEMENT<br>RATIO | DRY SAND<br>(kg) | DRY AGGREGATE |             | POLYMER<br>DISPERSION<br>(litres) | MAX. EXTRA<br>WATER<br>(litres) |
|-----------------------|-------------------|--------------------------------|------------------|---------------|-------------|-----------------------------------|---------------------------------|
|                       |                   |                                |                  | SIZE (mm)     | WEIGHT (kg) |                                   |                                 |
| LIGHT DUTY            | 8 - 15            | 1 : 4.0                        | 200              | -             | -           | 12                                | 4                               |
| MEDIUM/<br>HEAVY DUTY | 10 - 15           | 1 : 4.0                        | 100              | 3             | 100         | 12                                | 8                               |
| MEDIUM/<br>HEAVY DUTY | 15 - 30           | 1 : 4.0                        | 112.5            | 6             | 87.5        | 10                                | 8.5                             |
| MEDIUM/<br>HEAVY DUTY | 25 - 40           | 1 : 4.5                        | 125              | 10            | 100         | 11                                | 7.3                             |

**NOTES**

Mix proportions are based on 50kg of cement.

It is assumed that damp aggregates are used with 5% water in the sand and 1% water in the single sized aggregates. Maximum water additions assume damp aggregates are used and give a maximum water : cement ratio of 0.40.

**MIXING**

Forced action mixers of the rotating pan, paddle or trough type should always be used for mixing floor screeds. As a general rule, electric driven mixers do not have sufficient power and diesel or petrol driven units should be used to give optimum mixing performance.

**SUMMARY**

It is not possible, because of copyright laws, to fully reproduce the contents of BS 8204 Part 3 but the above is an indication of the depth of advice that is given. Every flooring contractor of any repute should be aware of the contents of this document and by following this code of practice the minefields endemic in flooring can be safely avoided.

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