

### MONNELI ESPOCEM

*Non Shrink Cementitious Grout for Anchoring & Filling*

#### Product Description

A blend of cement, silica sand, selected aggregate and chemical additives. When the product is mixed with water it becomes self-leveling non-shrinking and very fluid mortar, with high initial and final mechanical strength. The mix is flowable which makes it easier to apply in irregular spaces.

Has excellent characteristics of adhesion to the substrate, impermeability and flowable consistency. It is featured by thermal expansion coefficient similar to high quality concrete.

#### Uses

ESPOCEM can be used for the following:

- Machinery anchoring, anchoring bolts of steel structures footings, rigid filling of prefabricated elements, underpinnings
- Heavy duty support beneath machine base plates, bridge bearings, tie bar hole filling, crane rails, precast elements, bridge bearing application, etc.
- Repairing and construction of degraded or damaged structural elements such as concrete beams, columns, walls, honey combed concrete, floors and pillars
- Repair of concrete pavements (roads, airports, industries), and rigid joints filling, up to 25 cm of thickness, in prefabricated residential and industrial buildings

#### Advantages

- Suitable for heavy duty support under machines base plates
- After curing, the product has high mechanical resistance even after a short time of curing

- Thermal expansion coefficient and permeability coefficient which is similar to high quality concrete
- Low alkali content minimizes the risk of alkali-silica reaction
- Exceptional bond to concrete substrates without primer
- Suitable for placement by pumping or pouring techniques
- Self compacting, flowable nature eliminates honey combing while applying without vibration (ensures a complete filling of damaged and irregular areas)
- Low permeability and high strength which cause very good protection against chlorides and carbon dioxide

#### Instructions for Use

##### Surface Preparation

The surface must be solid, compact, clean, free from dust, cement laitance, curing compound, oils, grease, etc. All loose parts of concrete should be removed. A coarse surface profile with the aggregate exposed is preferred.

Saturate the support with water several hours prior to grouting. Concrete surface should be only damped, with no free water prior to grouting in order to avoid possible water absorption at the moment of casting.

Base plate must be clean and free from oil, grease, rust, etc.

Formwork should be constructed to be leak proof as ESPOCEM is a free flowing grout. It should also include outlets for the pre-soaking water.

### **Mixing**

To prepare the mortar, pour into a cement mixer or into a container about 3.5 liters of clean water (according to required consistency) for every 25kg bag of ESPOCEM.

### **Application**

The mixed grout should be poured only from one side of the formwork to eliminate the entrapment of air. This can be achieved by pouring the grout across the shortest distance.

Maintain a constant hydrostatic hand, preferably of at least 15 cm on the side where the grout has been poured, allow 10 cm clearance between the side of the form and the base plate of the machine.

Do not add extra water to the mix more than what specified. If the mix starts to harden, do not use the mix and prepare a new one.

ESPOCEM can be placed in thicknesses up to 25 cm.

### **Curing**

The repair area shall be cured in accordance with good concrete curing practice and protected from drying winds. Curing shall be done with non-degradable curing compound BETOCURE AR. Alternately; a wet Hessian cloth covered with polyethylene sheet can also be employed.

### **Cleaning**

ESPOCEM should be removed from tools and equipment and mixers with clean water immediately after use. Cured material should be removed mechanically.

### **Recommendations**

- Do not apply the product at a temperature less than +5°C Variation of temperature will increase or reduce the initial and final setting time of the mortar.
- During the peak temperature of the day in the summer season, working area should be covered if work to be executed externally.
- In warm weather, store the material in cool place. Make sure to use cool water to keep the mixed mortar temperature below 25°C.

### **Technical Data**

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Properties	Results
Appearance	Grey powder
Dry Density at 25°C	2.25 kg/L
VOC	1.0 g/L
Compressive strength at 7 days at 28 days (ASTM C109)	50 N / mm <sup>2</sup> 75 N / mm <sup>2</sup>
Flexural strength at 28 days (ASTM C580)	10 N / mm <sup>2</sup>
Modulus of elasticity	23000 N / mm <sup>2</sup>
Expansion at 24 hours	Up to 1%
Initial setting time	1.5 - 2 hours
Final setting time	3 – 3.5 hours
Noxiousity according to ECM 88/379	No

All values are subject to 5-10 % tolerance

### **Applicable Standards**

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- ASTM C 109, ASTM C 1107, ASTM C 827, ASTM C 469
- BS 1881, BS 4551 & BS 6319
- UNI 8147

### **Yield**

12.7 liters per 25kg bag.

### **Packaging**

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ESPOCEM is supplied in 25kg bags.

## Storage

Keep the product in dry and sheltered place into original well closed packaging. In these conditions, product shelf life will be 12 months from production date.

## Health & Safety

ESPOCEM is a cement-based product. During application, wear appropriate protective clothing, goggles, gloves and respiratory equipment if necessary.

In case of contact with skin, rinse with water and again wash thoroughly with soap and water. In case of contact with eyes, rinse with plenty of water and seek medical advice accordingly.

If ingested, obtain medical attention immediately. Do not induce vomiting.

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DUBAI  
ABU DHABI  
KSA  
ITALY

P.O. Box 123808 Dubai UAE  
P.O. Box 127326 Abu Dhabi, UAE  
P.O. Box 335896 Code: 11383 - Riyadh KSA  
Z.I. Ponte d'Assi 06024 Gubbio (PG)

T. +971 4 8803488 F. +971 4 8803450  
T. +971 2 5511949 F. +971 2 5511749  
T. +966 1 2654277 F. +966 1 2654335  
T. +39 75 9221297 F. +39 75 9221174

[colmef@colmef.ae](mailto:colmef@colmef.ae)

[www.colmef-me.com](http://www.colmef-me.com)

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